

Economic Impact Study

Backroads of Appalachia



Season: 2025

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Backroads of Appalachia – 2025 Economic Impact Summary

Independent Regional Impact Study

Prepared by Gregory Green, Ph.D. | January 2026

Overview

Backroads of Appalachia (BOA) leverages motorsports tourism to drive economic activity across 51 counties in Kentucky, West Virginia, Tennessee, and Virginia—regions historically impacted by the decline of coal and extractive industries. This independent analysis quantifies BOA's measurable economic contribution during calendar year 2025.

2025 Headline Impacts

- \$96.1 million in new regional spending
- \$69.96 million in Kentucky counties; \$26.17 million in West Virginia counties
- 1,083 full-time equivalent (FTE) jobs supported
- 92,987 total participants and spectators
- 88.4% traveled more than 150 miles, qualifying as non-local economic injection

How the Impact Was Measured

The study uses standard federal economic impact methodology, combining attendance and survey data from Backroads of Appalachia, BEA RIMS II economic multipliers, and Federal Reserve (FRED) data. Local spending was excluded; only new, non-local dollars were counted.

Spending Sectors Impacted

Visitor spending directly supports locally owned rural businesses, including lodging, full-service restaurants, fuel, and retail. Lodging and dining account for the largest share of total economic impact.

Regional Context

Over 90% of counties in the BOA footprint are experiencing population decline, with more than 125,000 residents lost since 2000. Employment participation and real GDP growth remain below state and national averages, underscoring the region's economic vulnerability.

Conclusion

In 2025, Backroads of Appalachia delivered nearly \$100 million in new spending and supported over 1,000 jobs in one of the most economically challenged regions of the United States. These results demonstrate that motorsports-driven tourism is a viable, scalable economic development strategy for Appalachia.

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Introduction

Backroads of Appalachia's (BOA) website states that BOA has an economic impact in the Eastern Kentucky and West Virginia region. This impact is because of Motorsport events. "[Through motor-sports-focused](#) tourism, we work to drive economic development and opportunity in the poverty-stricken areas of Appalachia." At present BOA organizes and operate dozens of events between February and December each calendar year. Often there are multiple events in different regions on the same weekend.

Every event brings people into the Appalachian region to participate or spectate a road race, a hill climb, a motorcycle ride, etc. While in central Appalachia event participants and spectators spend money on hotels, gasoline, food, and at local stores. Each dollar spent by BOA participants and spectators contributes to BOA's mission statement, which is providing growth within the central Appalachia regions of Kentucky and West Virginia.

During the 2025 calendar year Backroads of Appalachia, in the 51 counties spanning Kentucky, Tennessee, Virginia and West Virginia, generated an increase in spending of \$96,127,527. The secondary impact of increased spending is an increase in employment. This analysis measures BOA's impact at 1,083 full-time equivalent employees supported by the regional increase in spending.

Backroads of Appalachia continues to increase the number of regional events. At this point the increased number of events also contributes to an increased number of people attending these events. During the 2025 season there were 60,478 participants at Backroads of Kentucky events and 32,509 participants at Backroads of West Virginia events. Thus, during calendar year 2025 BOA brought at least 92,987 people to central Appalachia to participate in motor-sport events.

Data for this report includes three main sources, Backroads of Appalachia, the Bureau of Economic Analysis (BEA), and the Federal Reserve Bank of Saint Louis (FRED). BOA provides the head count and event data. The BEA generates multiplier values using data that a practitioner would not get access to. Finally, FRED provides all of the macroeconomic data used in the second half of this report. Thus, each party brings information to bare when discerning BOA's contribution to the region and the overall macroeconomic picture of eastern Kentucky and West Virginia.

The first data source is Backroads of Appalachia. This report uses detailed survey data which needs to be collected and reviewed at various points in time. The survey generates several measures. First, the survey collects zip code data from survey participants. Zip codes help define the distance between where people live and the center of the event location. This is important because spending by local participants must be removed from the impact calculations. Second, daily spending per person on lodging, gas, dining, and shopping is collected by the survey instrument. Finally, each event requires participants and spectators be counted. Backroads of Appalachia's participant and spectator count make calculating total spending numbers in this report feasible. That is, with spending per person per day known the report defines spending for every person per day.

The second source of data is the Bureau of Economic Analysis (BEA). The BEA RIMS II

program has operated since the early 1970s with RIMS II being operational since the 1980s. Regional multipliers for each BOA region were purchased and used to complete the economic impact measure of BOA related activity within the region.

The third source of data is the Federal Reserve Bank of Saint Louis (FRED). FRED warehouses economic data from the BEA, Bureau of Labor Statistics (BLS), and the Federal Reserve Bank of the United States, to name just a few data sources provided through FRED. The FRED data system is easily compatible with many software packages, making extracting data from FRED simpler than directly from most Government data sources.

In addition to this report showing the contribution of BOA through Backroads of Kentucky and Backroads of West Virginia this report also reviews the macroeconomic measures of the region. We review the regional population and growth in production. As a region we're also looking for in or out-migration, stable or unstable production, or regional shifts in employment. These measures don't show BOA contributions directly, but they do address the regional needs that are being addressed by BOA's continued presence in the region.

Backroads of Appalachia

Backroads of Appalachia's goal is to increase spending, employment, and economic development within the regions of Eastern Kentucky and West Virginia, through motorsport events. Thirty-two counties in Eastern KY, Tennessee, Virginia, and West Virginia comprise Backroads of Appalachia Kentucky. Nineteen West Virginia counties define the impact zone of Backroads of West Virginia. Each county benefits as participants and spectators enter the region to enjoy the roads, mountains, and people of central Appalachia. Each region has enough twisting and turning roads to enjoy your motorcycle or sports car's handling. There are back roads and trails that will challenge your skills on a dirt bike or in a Jeep as well.

BOA provides a forum where people with similar interests can meet and enjoy their hobbies together.

Economic impact studies require several ingredients. Each ingredient is introduced in this section. Once the needed information is gathered this section proceeds with the calculation of BOA's impact in the Central Appalachia Region. The order of presentation is not standardized. So, this analyst has chosen to introduce impact multipliers first. Second, average daily spending in the region is presented. Third, the number of people attending BOA sponsored events is gathered. Finally, these three ideas are combined to defined BOA's regional impact.

Multipliers

Multipliers are analysis tools used to determine the impact on total spending generated by each dollar brought into and spent in the region. Multipliers capture the dynamic process of a dollar passing through an economy. The idea of a multiplier is relatively simple. It is called a multiplier because a dollar spent within a region will change total spending in that region by more, a multiple, than the original dollar.

Total spending in any region occurs in multiple spending rounds. Within a single round one person’s spending becomes a second person’s income. The next round of spending begins as a portion of the second person’s new income is spent to become a third person’s income. Figure 1 on page 27 shows the process. A tourist comes into a region and spends a dollar. That dollar becomes another person’s income and the first round is over. The second person makes a spending decision. If the spending is within the region then total regional spending, caused by the original dollar, is now larger than the original dollar, and that spending becomes someone else’s income. The last step in Figure 1 is the loop from “Spending in Region” back to “New Person’s Income.” Round two is now over and round three begins. Every dollar currently being spent in an economy is at some point in this multiplier process.¹

The multiplier idea is not difficult to understand, spending leads to more spending, which leads to more spending, etc. Estimating the multiplier is a more challenging task. The challenge is caused by the availability of earnings and employment data by industry in smaller regions. Regional Data is available through the Bureau of Economic Analysis (BEA). BEA data can be downloaded and manipulated. However, if a region is small enough that reported industry earnings and employment data identifies a specific business the BEA cannot release earnings and employment data to the public for that industry. In a smaller region it is more likely that gaps, or holes, exist in the data. This is true of Eastern Kentucky and most counties from West Virginia in this study.

Table 1: BEA RIMS II Multipliers for Each Region

Sector	Final Demand	Employment	Location
General merchandise stores	1.3427	12.2759	BR-Kentucky
Gasoline stations	1.4614	11.5111	BR-Kentucky
Accommodation	1.3738	9.0519	BR-Kentucky
Full-service restaurants	1.4413	14.5818	BR-Kentucky
General merchandise stores	1.4177	13.4827	BR-West Virginia
Gasoline stations	1.4840	13.2222	BR-West Virginia
Accommodation	1.4353	10.5288	BR-West Virginia
Full-service restaurants	1.5042	15.0167	BR-West Virginia

The Bureau of Economic Analysis RIMS II project has provided multiplier estimates to analysts for decades. Table 1 on page 3 shows the RIMS II multipliers for four distinct industries.² These industries include spending at

¹The multiplier is the outcome of a geometric series

$$\text{Total Spending} = \sum_{t=0}^{\infty} x + xb + xb^2 + \dots + xb^t \dots = \frac{1}{1-b}x,$$

where $1/(1-b)$ is the multiplier and x is the amount of original spending. A dollar in the current example. So, the multiplier, $1/(1-b)$ is Total Spending/ x .

²The RIMS II multipliers are based on the North American Industrial Classification System (NAICS).

- General Merchandise Stores - grocery and souvenir purchases.
- Gas Stations - specifically gasoline purchases.
- Accommodations - thinking mainly of hotel lodging, but some participants travel in RVs.
- Full-Service Restaurants.

The BEA's RIMS II project allows an analyst to overcome data limitations existing in smaller regions.

Table 1 on page 3 presents the regional multipliers used to measure the economic impacts, spending and employment, of BOA sponsored events. There are two types of multipliers shown in Table 1. Final demand and employment multipliers. The final demand multiplier is used to measure the spending impact within a region caused by an injection of spending from outside the region. The Employment multiplier measures the number of jobs created for each million dollar increase in spending within a region.

Table 1's last column separates each sector's multiplier into Backroads of Kentucky and Backroads of West Virginia. Note that the multipliers are not the same across regions. Differences in multiplier magnitudes between regions is not uncommon. Multipliers are smaller in regions not containing major population centers. As we will see in Table 7 on page 8 BOA in Kentucky contains no counties with a population greater than 150,000, but BOA of West Virginia contains one County with a population greater than 150,000. Multiplier magnitudes also change based on imports and exports from a region. Larger regions will have fewer imports from outside the region and more exports sent out of their region.

Backroads of Appalachia's Impacts

Backroads of Appalachia has organized events that attract a variety of motor sport enthusiasts. Events occur between February and December and include car shows, hill climbs, motorcycle tours, off road Jeep events, etc. Figure 2 on page 28 is a map identifying where Backroads event participants and spectators come from, as determined by zip codes from participant and spectator surveys. A larger point in Figure 2 indicates a larger pool of people from that zip code. The survey information used to create Figure 2 indicates that the average person travels 150 miles from their house to the center of the West Virginia region.³ Figure 2 also indicates that 88.4% of the participants have traveled distances of over 150 miles to reach an event. Where this distance is an *as the crow flies* distance.⁴ Knowing the share of people traveling more than 150 miles to an event is used to remove 11.6% of the people from this study. The removed share of participants are considered local participants. Local spending in the region is considered part of normal regional spending, not an increase in regional spending.

BEA RIMS II multipliers are available for many industries based on a five digit NAICS code.

³The 2024 season of West Virginia events provided up to date survey data for all of the spending and distance data of this report.

⁴The distance is an arc distance, Haversine, in miles between the longitude and latitude of the West Virginia counties centroid and the longitude and latitude of the zip code left by survey takers.

Table 2: BEA RIMS II Multipliers and share of none local participants

Sector	Final Demand	Share
General merchandise stores	1.3427	88.4%
Gasoline stations	1.4614	88.4%
Accommodation	1.3738	88.4%
Full-service restaurants	1.4413	88.4%
General merchandise stores	1.4177	88.4%
Gasoline stations	1.4840	88.4%
Accommodation	1.4353	88.4%
Full-service restaurants	1.5042	88.4%

Table 2 on page 5 includes the non local participants in the calculation of economic impacts in the region. The column titled share refers to 88.4% share of none local participants whose spending will be counted as an impact on total spending in the region.

The four unique spending categories in Table 2, general merchandise stores, gasoline stations, accommodations, and full-service restaurants, represent four major categories where people spend money while visiting BOA events. To capture the daily spending in each category survey respondents were asked to state how much they spend per day on each category while at BOA events.

General merchandise stores receive spending of \$61.43 per person per day from BOA events. Goods in a general merchandise store are often imported from outside of a region.⁵ The BEA instructs users of RIMS II multipliers to remove the import cost from the price of a good. An easy way to think of this is as the import price being the cost to the store owner of getting a good into the store. Once in the store the store owner increases the good's value as they alter the good, complete it's processing, and/or stock their shelves with the good. The increase in value between the sale price of the good and the import cost of the good is called the value added. Others might call this the markup over cost. If you buy a pair of pants for \$50.00 only a portion of the \$50.00 is value added within the region, Suppose the markup over cost is 38%, then \$19 represents the value added of the \$50 price.⁶ RIMS II reports the value added as 38% of the final purchase value as spending within the region. Removing the value added from the average spending per person at general merchandise stores we report spending per person as 23 per person per day at general merchandise stores in the tables and calculations that follow.

Spending at gas stations on gasoline is similar to spending at general merchandise stores in that regional impacts are only counted on the value added at the gas station. The difference being that the value added for a gas station is reported as 17% of the total amount spent on gas by RIMS II. The survey of BOA participants and spectators defined total spending on

⁵Nearly every good in Walmart is produced outside of the region where it is sold.

⁶Value is added as people are paid to remove the pants from it's packaging, placed on a hanger, and then on the shelf/rack.

gasoline per day as \$86. However, removing the cost of importing fuel into the region leaves a value added of \$14 per person per day. This is the dollar amount associated with spending on gas that you will see in later tables.

The remaining expenditure categories, accommodations and full service restaurants, produce nearly all of their value in the region. Survey responses show spending on accommodations as \$192 per person per night. This number will be used to calculate total spending on Lodging in future tables.

Finally, BOA survey respondents reported \$84 spending per person per day at full-service restaurants while in the region. This number will be used to calculate total spending on full-service dining in future tables.

Table 3: BEA RIMS II Multipliers and share of none local participants and spending per person

Sector	Final Demand	Share	SPP
General merchandise stores	1.3427	0.884	23
Gasoline stations	1.4614	0.884	14
Accommodation	1.3738	0.884	192
Full-service restaurants	1.4413	0.884	84
General merchandise stores	1.4177	0.884	23
Gasoline stations	1.4840	0.884	14
Accommodation	1.4353	0.884	192
Full-service restaurants	1.5042	0.884	84

Table 3 on page 6 includes average spending per person with the heading **SPP**. Note that the numbers in Table 3 correspond precisely with the values introduced in the prior four paragraphs.

Backroads of Appalachia counts the number of participants and spectators at each event across the BOA season. BOA of Kentucky had total spectators and participants of 60,478 people at BOA events during the 2025 season. BOA of West Virginia had total spectators and participants of 32,509 people at BOA events during the 2025 season. This year was the third year of BOA of West Virginia. For BOA as a whole there were 92,987 spectators and participants across both regions.

Table 4: Adding Attendance and Nights in the Region

Sector	Final Demand	Share	SPP	PPL	Nights
General merchandise stores	1.3427	0.884	23	60,478	3
Gasoline stations	1.4614	0.884	14	60,478	3
Accommodation	1.3738	0.884	192	60,478	3
Full-service restaurants	1.4413	0.884	84	60,478	3
General merchandise stores	1.4177	0.884	23	32,509	2
Gasoline stations	1.4840	0.884	14	32,509	2
Accommodation	1.4353	0.884	192	32,509	2
Full-service restaurants	1.5042	0.884	84	32,509	2

Table 4 on page 7 is one step away from defining BOA’s contribution to the Kentucky and West Virginia regions’ total spending. However, all of the ingredients are there for the calculation, which is, for each row, the multiplier, times the share, times the daily spending per person, times the number of people attending all Kentucky events, times the number of nights in the region. The contribution of spending at General Merchandise stores would be $1.3427 \times 0.884 \times 23 \times 60,478 \times 3 = 4,953,108$.

Table 5: Contribution to Regional Spending

Sector	Project	Total Spending Increase
General merchandise stores	BR-Kentucky	\$ 4,953,108
Gasoline stations	BR-Kentucky	\$ 3,281,467
Accommodation	BR-Kentucky	\$42,305,388
Full-service restaurants	BR-Kentucky	\$19,418,005
General merchandise stores	BR-WestVirginia	\$ 1,874,123
Gasoline stations	BR-WestVirginia	\$ 1,194,120
Accommodation	BR-WestVirginia	\$15,839,074
Full-service restaurants	BR-WestVirginia	\$ 7,262,242

Table 5 on page 7 shows the outcome of the last calculation for every sector in both the Kentucky and the West Virginia region. The total spending in both regions associated with BOA events is \$96,127,527. Splitting this total across the two regions shows that BOA has added \$69,957,968 to total spending in the Kentucky region and \$26,169,559 to the West Virginia regional spending.

Table 6: Contribution to Regional Employment FTEs

Sector	Employment Mult	Project	Total Spending	Employment FTE
General merchandise stores	12.2759	BR-Kentucky	4,953,108	61
Gasoline stations	11.5111	BR-Kentucky	3,281,467	38
Accommodation	9.0519	BR-Kentucky	42,305,388	383
Full-service restaurants	14.5818	BR-Kentucky	19,418,005	283
General merchandise stores	13.4827	BR-WestVirginia	1,874,123	26
Gasoline stations	13.2222	BR-WestVirginia	1,194,120	16
Accommodation	10.5288	BR-WestVirginia	15,839,074	166
Full-service restaurants	15.0167	BR-WestVirginia	7,262,242	110

Increased spending in a region also has an impact on Employment. Table 6 on page 8 shows the employment impact for each sector. The calculation of employment is for Full-time equivalent employment. The employment multiplier measures the number of full-time equivalent per million dollar increase in expenditure. For example, BOA generates total spending of 4,953,108 in General merchandise spending. This spending generates an increase of $12.2759 \times 4.953108 \approx 61$ full-time equivalent employees in this sector.

There were 1,083 full-time equivalent jobs generated across the 51 counties in this analysis. This is a nice impact for these regions. We can look at this impact for each region separately as well. The impacts in the Kentucky region is a gain of 765 FTE employees and the remaining 318 jobs were gained in the West Virginia region.

Regional Macroeconomics

Table 7: Backroads of Appalachia, All Counties

ID	County	State	Square Miles	Population
1	Bell	KY	359.0728	23,051
2	Boyd	KY	159.8663	47,777
3	Carter	KY	409.4948	26,098
4	Clay	KY	469.2939	19,592
5	Estill	KY	253.0924	14,002
6	Floyd	KY	393.2917	34,532
7	Harlan	KY	465.8282	25,052
8	Jackson	KY	345.1932	13,358
9	Johnson	KY	261.9631	22,098
10	Knott	KY	351.5161	13,438
11	Lawrence	KY	415.5933	15,798
12	Lee	KY	208.8578	7,313
13	Leslie	KY	400.8850	9,729
14	Letcher	KY	337.9285	20,139
15	McCreary	KY	426.8014	16,824
16	Madison	KY	437.3541	99,582
17	Martin	KY	229.6171	10,696
18	Owsley	KY	197.4086	3,928
19	Perry	KY	339.7007	26,739

Table 7: Backroads of Appalachia, All Counties (*continued*)

ID	County	State	Square Miles	Population
20	Pike	KY	786.7258	55,430
21	Rockcastle	KY	316.5457	16,226
22	Whitley	KY	437.8287	37,233
23	Wolfe	KY	222.1693	6,364
24	Campbell	TN	480.1869	40,238
25	Hancock	TN	222.3226	7,038
26	Hawkins	TN	487.0528	59,371
27	Dickenson	VA	330.4487	13,411
28	Lee	VA	435.3752	21,780
29	Tazewell	VA	518.7883	38,875
30	Wise	VA	403.4377	34,973
31	Boone	WV	501.5313	20,496
32	Cabell	WV	281.0211	91,489
33	Clay	WV	341.9369	7,689
34	Fayette	WV	661.6091	38,600
35	Grant	WV	477.3693	10,971
36	Greenbrier	WV	1019.8073	31,851
37	Hardy	WV	582.3122	14,335
38	Kanawha	WV	901.6426	173,906
39	McDowell	WV	533.4545	17,147
40	Mercer	WV	418.9595	57,524
41	Mingo	WV	423.1373	21,712
42	Monroe	WV	472.7512	12,462
43	Nicholas	WV	646.8427	24,017
44	Pendleton	WV	696.0458	5,944
45	Pocahontas	WV	940.2333	7,653
46	Raleigh	WV	605.3554	72,379
47	Randolph	WV	1039.6943	27,190
48	Summers	WV	360.5904	11,544
49	Tucker	WV	419.0421	6,573
50	Webster	WV	553.4664	7,947
51	Wyoming	WV	499.4671	19,964

The Map of Figure 3 on page 29 identify the 51 counties in Kentucky, Tennessee, Virginia, and West Virginia impacted by Backroads of Appalachia events. Each county in Figure 3 is marked with a number. The numerical values in Figure 3 correspond to the County ID in Table 7 on page 8. So, the number 1 in Figure 3 corresponds to Bell county, the first entry in Table 7. Similarly, Boyd county's ID, as shown in Table 7, is 2. In Figure 3 this is a county sharing a boarder with West Virginia on the east and Carter county on the west. As stated above there are 51 counties sharing the impacts of Backroads of Appalachia's motor sport events. These counties represent 23,479.9 square miles across 4 states. In the region defined by these counties the population is 1,462,078 people.

Backroads of Appalachia operate in two unique regions. The first region is referred to as Backroads of Kentucky and includes counties 1 through 30, 32, and 41 in Table 7. These counties represent 11,807.8 square miles within 4 states. The population in this region includes 893,886 people. The second region is referred to as Backroads of West Virginia.

Region 2 include county IDs 31, 33 through 40, and 42 through 51 of Table 7. These counties cover 11,672.11 square miles of WV. These 19 counties have a population of 568,192.

In this section we explore the Macroeconomics of the region. Each Macroeconomic variable compares the two regions to the U.S. as a whole and to the states that contain these regions. These comparisons create an Macroeconomic picture of each region and each region’s position in the state where it resides and to the U.S. as a whole.

Population

Table 8: Population Growth, State and U.S.

Region	Population Growth Rate
KY	0.5%
TN	0.96%
VA	0.89%
WV	-0.08%
US	0.77%

Population in the United states has grown at an annual average rate of 0.77%, see Table 8 on page 10. This rate of growth has occurred across the last 25 years. The population level in the U.S. has grown from 281,083,000 to 342,741,000 though September of 2025.

Table 8 presents the population growth rate for states touched by Backroads events. Table 8 shows Virginia and Tennessee growing at a faster rate than the United States. Kentucky’s population is growing, but at a slower rate than the United States as a whole, while West Virginia’s population growth is essentially zero.

Population growth rates for the United States and the four States included in this study are now comparable to population growth rates in the counties where Backroads of Appalachia events are held.

County Population Growth

A positive population growth rate is an obvious indication that a region’s population is healthy and attracting people to a location. More interesting is why population growth occurs. At the regional level population growth occurs because more children are being born within a region or because of in-migration. Similarly, a negative growth rate indicates a reduction in fertility or out-migration. If you live in a region where out-migration is occurring a logical question is why are people leaving the region. One cause of out-migration is an inability to find work, or work that meets a family’s needs.

Table 9 on page 11 shows the growth rate for every county in the BOA event region. Approximately 90.2% of all counties in the region are experiencing a negative rate of population growth. BOA of Kentucky, show three counties, Madison, KY, Hancock TN, and Hawkins TN,

Table 9: Population Growth, State and U.S.

ID	County	State	Pop GR	RGDP GR	RGDPPC GR
1	Bell	KY	-1.08%	-0.52%	0.56%
2	Boyd	KY	-0.17%	0.1%	0.28%
3	Carter	KY	-0.12%	0.08%	0.2%
4	Clay	KY	-1.1%	-0.32%	0.83%
5	Estill	KY	-0.39%	-0.11%	0.29%
6	Floyd	KY	-1%	-0.27%	0.77%
7	Harlan	KY	-1.18%	-4.23%	-3.05%
8	Jackson	KY	-0.12%	-1.47%	-1.33%
9	Johnson	KY	-0.3%	-0.99%	-0.68%
10	Knott	KY	-1.17%	-7.73%	-6.54%
11	Lawrence	KY	0%	-1.83%	-1.81%
12	Lee	KY	-0.33%	-0.75%	-0.42%
13	Leslie	KY	-1.01%	-5.21%	-4.2%
14	Letcher	KY	-0.85%	-5%	-4.18%
15	McCreary	KY	-0.03%	-0.15%	-0.12%
16	Madison	KY	1.26%	1.88%	0.66%
17	Martin	KY	-0.79%	-5.11%	-4.28%
18	Owsley	KY	-0.81%	-0.6%	0.19%
19	Perry	KY	-0.45%	-2.86%	-2.39%
20	Pike	KY	-0.88%	-2.15%	-1.26%
21	Rockcastle	KY	-0.05%	1.35%	1.39%
22	Whitley	KY	-0.06%	0.78%	0.9%
23	Wolfe	KY	-0.31%	0.92%	1.18%
24	Campbell	TN	-0.06%	0.52%	0.6%
25	Hancock	TN	0.06%	0.63%	0.6%
26	Hawkins	TN	0.24%	1.63%	1.44%
27	Dickenson	VA	-0.82%	2.24%	3.07%
28	Lee	VA	-0.46%	-1.73%	-1.23%
29	Tazewell	VA	-0.55%	-1.24%	-0.69%
30	Wise	VA	-0.82%	-2.37%	-1.54%
31	Boone	WV	-1%	-6.42%	-5.4%
32	Cabell	WV	-0.14%	0.95%	1.06%
33	Clay	WV	-1.35%	-6.07%	-4.69%
34	Fayette	WV	-0.82%	-0.59%	0.21%
35	Grant	WV	-0.15%	-0.95%	-0.79%
36	Greenbrier	WV	-0.22%	0.43%	0.62%
37	Hardy	WV	0.45%	2.04%	1.6%
38	Kanawha	WV	-0.52%	-0.28%	0.23%
39	McDowell	WV	-1.87%	-0.76%	1.1%
40	Mercer	WV	-0.29%	-0.3%	-0.04%
41	Mingo	WV	-0.97%	-4.96%	-4.01%
42	Monroe	WV	-0.3%	-0.41%	-0.09%
43	Nicholas	WV	-0.38%	-1.78%	-1.41%
44	Pendleton	WV	-1.25%	-2.19%	-0.96%
45	Pocahontas	WV	-0.59%	-0.6%	-0.06%
46	Raleigh	WV	-0.38%	0.25%	0.63%
47	Randolph	WV	-0.07%	-0.07%	-0.02%
48	Summers	WV	-0.79%	-0.08%	0.67%
49	Tucker	WV	-0.31%	1.77%	2.05%
50	Webster	WV	-0.94%	-5.56%	-4.59%
51	Wyoming	WV	-0.97%	-0.71%	0.24%

with positive rates of population growth. However, the remaining 30 counties are experiencing none positive rates of population growth. The time span in which population is declining corresponds to the movement of the United States away from using coal. It is safe to say that these counties are still working through a dynamic process of adjusting to a post coal industry.

Table 9 shows the counties from Backroads of West Virginia as well. In this grouping there is a single county with a positive population growth rate, Hardy county. The remaining West Virginia counties are experiencing none positive population growth rates. Historically, both the Kentucky and West Virginia regions studied here were connected to coal extraction and have experienced very negative impacts from the U.S. policy to move away from the use of coal.

Table 10: County Population Growth rates and doubling/halving times

ID	County	State	Growth Pop	Double Years
1	Bell	KY	-1.08%	64
2	Boyd	KY	-0.17%	408
3	Carter	KY	-0.12%	578
4	Clay	KY	-1.1%	63
5	Estill	KY	-0.39%	178
6	Floyd	KY	-1%	69
7	Harlan	KY	-1.18%	59
8	Jackson	KY	-0.12%	578
9	Johnson	KY	-0.3%	231
10	Knott	KY	-1.17%	59
11	Lawrence	KY	0%	Inf
12	Lee	KY	-0.33%	210
13	Leslie	KY	-1.01%	69
14	Letcher	KY	-0.85%	82
15	McCreary	KY	-0.03%	2310
16	Madison	KY	1.26%	55
17	Martin	KY	-0.79%	88
18	Owsley	KY	-0.81%	86
19	Perry	KY	-0.45%	154
20	Pike	KY	-0.88%	79
21	Rockcastle	KY	-0.05%	1386
22	Whitley	KY	-0.06%	1155
23	Wolfe	KY	-0.31%	224
24	Campbell	TN	-0.06%	1155
25	Hancock	TN	0.06%	1155
26	Hawkins	TN	0.24%	289
27	Dickenson	VA	-0.82%	85
28	Lee	VA	-0.46%	151
29	Tazewell	VA	-0.55%	126
30	Wise	VA	-0.82%	85
31	Cabell	WV	-1%	69
32	Mingo	WV	-0.14%	495
33	Boone	WV	-1.35%	51
34	Clay	WV	-0.82%	85
35	Fayette	WV	-0.15%	462

Table 10: County Population Growth rates and doubling/halving times
(continued)

ID	County	State	Growth Pop	Double Years
36	Grant	WV	-0.22%	315
37	Greenbrier	WV	0.45%	154
38	Hardy	WV	-0.52%	133
39	Kanawha	WV	-1.87%	37
40	McDowell	WV	-0.29%	239
41	Mercer	WV	-0.97%	71
42	Monroe	WV	-0.3%	231
43	Nicholas	WV	-0.38%	182
44	Pendleton	WV	-1.25%	55
45	Pocahontas	WV	-0.59%	117
46	Raleigh	WV	-0.38%	182
47	Randolph	WV	-0.07%	990
48	Summers	WV	-0.79%	88
49	Tucker	WV	-0.31%	224
50	Webster	WV	-0.94%	74
51	Wyoming	WV	-0.97%	71

Table 10 on page 12 provides the population growth of each county and a column titled *Double Years*. In the column *Double Years* is defined the number of years required for a county with a stated growth rate to double. If growth is negative *Double Years* defines the number of years until population falls by half. The doubling or halving calculation is not complicated. Let r represent a growth rate and t time, measured in years. Finding the doubling/halving time is to find the solution to

$$t = \left| \frac{\ln(2)}{r} \right|,$$

where \ln is the logarithm function for the natural logarithms. For example, Pike County's, ID = 20, population is growing at -0.9% per year. The negative sign indicates a halving time, and the calculation is

$$t = \left| \frac{\ln(2)}{-0.009} \right| = 77.0163534 \approx 78.$$

The conclusion is that if Pike county's population continues to decline at 0.9% per year that it's population level will be half what it is today in 78 years. The column Doubling Years in Table 10 presents this doubling/halving calculation for all Counties in this study.

For some people the doubling or halving times in Table 10 may be more meaningful than the growth rates. The doubling or halving time measures a duration of time, which is something tangible.

Regional Population

Table 8 on page 10 demonstrated that Kentucky, Tennessee, Virginia and the U.S. as a whole are experiencing positive population growth. Table 8 reports population growth in

West Virginia as 0. Tables 9 and 10 on pages 11 and 12 respectively demonstrate that counties impacted by Backroads of Appalachia are counties that are currently experiencing out-migration. Thus, Backroads of Appalachia is serving a population in need of their injection of funds.

Figure 4 on page 29 shows the annual population in the 51 county region as a single region. Figure 4 confirms the decline in population since 2000, demonstrating an out-migration of approximately 125 thousand people since the year 2000.

Figure 5 on page 30 represents the population of the region served by Backroads of Kentucky. Figure 5 shows this Kentucky region, declining, but very slowly, for the first ten years of this century. However, since approximately 2008 the Kentucky region has experienced out-migration of nearly 60 thousand individuals.

Figure 6 on page 30 shows the shift in population within the region served by Backroads of West Virginia. Figure 6 demonstrates the population decline experienced within the region since 2000, an out-migration of over 60 thousand people in the last 24 years.⁷

This look at population growth shows that the United States and the four states in this analysis are experiencing increases in population, with the exception of West Virginia. That the state populations are growing while the individual counties within the states are not simply begs the question; in what counties within each state are the population growth rates positive? Positive enough to offset the negative population growth rates of the counties in this study? Also possible is the out migration from counties might be to other regions within the same state.

Real GDP

In this subsection the region is explored by way of another economic measure, Real Gross Domestic Product (RGDP). RGDP is a measure of the value, adjusted for inflation, of all final goods and services produced within a defined region during a specified time period.

RGDP solves the inflation problem inherent in values measures by valuing each year's output in a single base year's prices.⁸ Each year's GDP has now been controlled for price movement leaving output as the only variable still moving. This leads to the name change of GDP to RGDP. RGDP was designed to measure output produced within an economy during a designated time period, which is annually in the state and county data and quarterly in the U.S. data.⁹

Several ideas are conveyed with RGDP. If RGDP is increasing across time we say an economy is growing. Growth means access to more goods and services for all consumers. A lack of growth would mean the opposite, namely, less access to goods and services for all consumers.

⁷This is a decline that has been in motion since 1980 in the West Virginia region.

⁸The process is now performed *chaining* years together but drives us to the same end.

⁹The inflation adjustment makes changes in goods and service production comparable across time. Controlling for inflation amounts to using the same prices from one time period, the base year, to value each every years output. So, any change in the inflation adjusted value is caused only by the output portion of the value measure.

At the national level a negative rate of growth in RGDP lasting more than two quarters is the definition of a recession.

Figure 7 on page 31 is a picture of U.S. RGDP since 2005. Moving from left to right Figure 7 shows an upward trend in output. For most years RGDP is greater than the year before. However, there are two time periods when the RGDP series slopes downward, meaning negative growth, 2008-2009 and 2019 - 2020. Both periods of negative growth identify periods of U.S. recessions.

Table 11: State and U.S. RGDP Growth since 1/1/2005

State	Growth Rate
KY	1.25%
TN	2.32%
VA	1.63%
WV	0.85%
US	2.02%

Table 11 on page 15 shows that U.S. RGDP has grown at an annual average rate of 2.02% since 2005. At this rate of growth output in the United States will double in approximately 35 years. Table 11 also shows growth for each state where Backroads of Appalachia’s impacts are felt. At the state level higher growth in RGDP often identifies a State with a stronger industrial base. A stronger industrial base usually means higher paying jobs within the State, which does provide access to more goods and services for consumers. However, more access to goods and services within a state does not mean greater access in every county within that state.

Table 12: County RGDP Growth since 1/1/2001

ID	County	State	Growth RGDP	Double Years
1	Bell	Kentucky	-0.52%	133
2	Boyd	Kentucky	0.1%	693
3	Carter	Kentucky	0.08%	866
4	Clay	Kentucky	-0.32%	217
5	Estill	Kentucky	-0.11%	630
6	Floyd	Kentucky	-0.27%	257
7	Harlan	Kentucky	-4.23%	16
8	Jackson	Kentucky	-1.47%	47
9	Johnson	Kentucky	-0.99%	70
10	Knott	Kentucky	-7.73%	9
11	Lawrence	Kentucky	-1.83%	38
12	Lee	Kentucky	-0.75%	92
13	Leslie	Kentucky	-5.21%	13
14	Letcher	Kentucky	-5%	14
15	McCreary	Kentucky	-0.15%	462
16	Madison	Kentucky	1.88%	37
17	Martin	Kentucky	-5.11%	14

Table 12: County RGDP Growth since 1/1/2001 (*continued*)

ID	County	State	Growth RGDP	Double Years
18	Owsley	Kentucky	-0.6%	116
19	Perry	Kentucky	-2.86%	24
20	Pike	Kentucky	-2.15%	32
21	Rockcastle	Kentucky	1.35%	51
22	Whitley	Kentucky	0.78%	89
23	Wolfe	Kentucky	0.92%	75
24	Campbell	Tennessee	0.52%	133
25	Hancock	Tennessee	0.63%	110
26	Hawkins	Tennessee	1.63%	43
27	Dickenson	Virginia	2.24%	31
28	Lee	Virginia	-1.73%	40
29	Tazewell	Virginia	-1.24%	56
30	Wise	Virginia	-2.37%	29
31	Boone	West Virginia	-6.42%	11
32	Cabell	West Virginia	0.95%	73
33	Clay	West Virginia	-6.07%	11
34	Fayette	West Virginia	-0.59%	117
35	Grant	West Virginia	-0.95%	73
36	Greenbrier	West Virginia	0.43%	161
37	Hardy	West Virginia	2.04%	34
38	Kanawha	West Virginia	-0.28%	248
39	McDowell	West Virginia	-0.76%	91
40	Mercer	West Virginia	-0.3%	231
41	Mingo	West Virginia	-4.96%	14
42	Monroe	West Virginia	-0.41%	169
43	Nicholas	West Virginia	-1.78%	39
44	Pendleton	West Virginia	-2.19%	32
45	Pocahontas	West Virginia	-0.6%	116
46	Raleigh	West Virginia	0.25%	277
47	Randolph	West Virginia	-0.07%	990
48	Summers	West Virginia	-0.08%	866
49	Tucker	West Virginia	1.77%	39
50	Webster	West Virginia	-5.56%	12
51	Wyoming	West Virginia	-0.71%	98

Table 12 on page 15 provide the average rate of growth in County level RGDP since 2001. The column Double Years show the approximate number of years necessary to double output within each county at that county's current average annual growth in RGDP, if the Growth RGDP number is positive. Similarly, if the Growth RGDP number in Table 12 is negative the interpretation of the Double Years number is the number of years until output falls by half. For example, Knott county's growth rate in output is -7.73%. If Knott county's growth rate continues at this level their production of output will fall by half every 9 years.¹⁰

Looking at the Real GDP numbers for counties in the BOA region suggest a region that has been depressed for some time, with some brighter outlook counties also in the mix. One fix

¹⁰A closer look at Knott County's RGDP shows that this is accurate as the county's RGDP has halved twice in the last 20 years.

for a lack of growth in RGDP is to create an industrial base. Clearly, easier said than done. The same outcome might occur with a resource extraction base, but resource extraction is not always a stable source of regional growth, as Appalachia knows all too well.

Regional Real GDP

Figure 8 on page 31 demonstrates the motion of RGDP, the *business cycle*, since January of 2001. The region as a whole was experiencing growth from the start of the century until the national recession of 2008. The region, while currently growing, has not exceeded its 2001 production levels, which means not close to producing output at its 2008 peak. So, the region has experienced a long period of declining output with growth starting again in January 2020. Regional RGDP has continued to grow across the last year of available data. The region has now reached its 2015 level of output.

Figures 9 and 10 on pages 32 and 32 show the separate BOA of Kentucky and BOA of West Virginia regions experience with output. As expected, these figures show BOA's separate regions behaving in a nearly identical manner as the region as a whole. Both regions have been growing since 2020 and are, as of the last data point, producing near their 2015 level of output.

Real GDP Per Capita

Real GDP and population were the subject of the previous two subsections. In this subsection the two ideas are combined introducing Real GDP per capita. Real GDP per capita is defined as

$$\text{RGDDPC}_t = \frac{\text{RGDP}_t}{\text{Population}_t},$$

where RGDDPC_t is Real Gross Domestic Product per Capita at time t , RGDP_t is Real Gross Domestic Product at time t , and Population_t is the population at time t . Read literally RGDDPC is the output per person within a region. The measure can be misused. Many studies have used this measure as a measure of well being, which is misleading. In this study think of different levels of RGDDPC as differences in the availability of output across regions.

Figure 11 on page 33 reflects RGDDPC between 1/1/2005 and 1/1/2024 in the United States, Kentucky, Tennessee, Virginia, and West Virginia. In terms of access to goods and services the U.S. and VA are very similar with both experiencing an acceleration in available goods and services between 2015 and the present. Tennessee experienced a very similar acceleration over the same time span. West Virginia has experienced an acceleration in the last 2 to 3 years, while Kentucky's RGDDPC is growing, it is growing at a slower rate than the other states in this study.¹¹

Table 13: State and U.S. Growth in RGDDPC since 2005

¹¹The slope of a time series is not directly connected to growth. However, growth will be faster the steeper the slope (moving from left to right) on a time series graph. Growth is more about the speed of reaching point B from point A. The steeper the slope of a time series the faster that transition will happen.

Region	Growth Rate
KY	0.8%
TN	1.36%
VA	0.81%
WV	1.05%
US	1.25%

Table 13 on page 17 illustrates Real GDP per Capita (RGDPPC) average rate of growth in the United States, Kentucky, Tennessee, Virginia, and West Virginia since 2005. Tennessee's growth in RGDPPC has increased by one-tenth of a percent, having accelerated since last year. However, the remaining states, and the United States, are growing at the same rate as last year.

Table 14: County Growth in RGDPPC since 2001

ID	County	State	Real GDP Per Capita
1	Bell	KY	0.56%
2	Boyd	KY	0.28%
3	Carter	KY	0.2%
4	Clay	KY	0.83%
5	Estill	KY	0.29%
6	Floyd	KY	0.77%
7	Harlan	KY	-3.05%
8	Jackson	KY	-1.33%
9	Johnson	KY	-0.68%
10	Knott	KY	-6.54%
11	Lawrence	KY	-1.81%
12	Lee	KY	-0.42%
13	Leslie	KY	-4.2%
14	Letcher	KY	-4.18%
15	McCreary	KY	-0.12%
16	Madison	KY	0.66%
17	Martin	KY	-4.28%
18	Owsley	KY	0.19%
19	Perry	KY	-2.39%
20	Pike	KY	-1.26%
21	Rockcastle	KY	1.39%
22	Whitley	KY	0.9%
23	Wolfe	KY	1.18%
24	Campbell	TN	0.6%
25	Hancock	TN	0.6%
26	Hawkins	TN	1.44%
27	Dickenson	VA	3.07%
28	Lee	VA	-1.23%
29	Tazewell	VA	-0.69%
30	Wise	VA	-1.54%
31	Boone	WV	-5.4%
32	Cabell	WV	1.06%
33	Clay	WV	-4.69%
34	Fayette	WV	0.21%

Table 14: County Growth in RGDPPC since 2001 (*continued*)

ID	County	State	Real GDP Per Capita
35	Grant	WV	-0.79%
36	Greenbrier	WV	0.62%
37	Hardy	WV	1.6%
38	Kanawha	WV	0.23%
39	McDowell	WV	1.1%
40	Mercer	WV	-0.04%
41	Mingo	WV	-4.01%
42	Monroe	WV	-0.09%
43	Nicholas	WV	-1.41%
44	Pendleton	WV	-0.96%
45	Pocahontas	WV	-0.06%
46	Raleigh	WV	0.63%
47	Randolph	WV	-0.02%
48	Summers	WV	0.67%
49	Tucker	WV	2.05%
50	Webster	WV	-4.59%
51	Wyoming	WV	0.24%

Table 14 on page 18 shows an increase in the output per person in more counties than Table 12 was showing in output, RGDP, alone. In fact the data is nearly split. There are 49% of counties that experienced positive growth in RGDPPC. This suggests a question; what causes growth in Real GDP Per Capita? If output, RGDP, grows at a faster rate than the growth in population there will be growth in Real GDP, or if the decline in RGDP is less than the decline in Population then RGDPPC will grow.¹² So, a positive rate of growth in GDPPC could mean a decline in population but a smaller decline in RGDP, or an increase in RGDP that is greater than the growth in population.

Typically RGDPPC is correlated with average wages. Increasing GDPPC correlated to increasing wage earnings.

Labor Statistics

Several labor statistics provide an economic signal. The signal provided by employment data shows the direction output data is most likely moving. Employment data is valuable because it is timely. Nationally and regionally employment data is gathered monthly. As of the writing of this report RGDP data is available annually and the last number available is from 1/1/2023 at the regional level. However, the latest employment data is from 9/1/2025 regionally.

Employment rises as an economy grows, more output more hands needed to produce output.

¹²The math is pretty simple,

$$g_{RGDPPC} = g_{RGDP} - g_{Population} \geq 0.$$

Unemployment, which is typically reported, in the form of an unemployment rate typically rises when the economy is beginning to slow, or a few months after a slowing in production has occurred.¹³

There are several labor force statistics that we will introduce. The Bureau of Labor Statistics (BLS) defines and gathers [labor force statistics](#) monthly using *the Current Population Survey* (CPS). This analysis uses the unemployment rate, and labor force to population ratio to explain the motion in a regional economy.

The BLS defines being employed as “meeting any of the following criteria:”

1. "worked at least 1 hour as a paid employee."
2. "worked at least 1 hour in their own business, profession, trade, or farm."
3. "were temporarily absent from their job, business, or farm, whether or not they were paid for the time off."
4. "worked without pay for a minimum of 15 hours in a business or farm owned by a member of their family."

during the week of the CPS.

To be *unemployed* means you “meet all of the following criteria:”

- "They were not employed during the survey reference week."
- "They were available for work during the survey reference week, except for temporary illness."
- "They made at least one specific, active effort to find a job during the 4-week period ending with the survey reference week OR they were temporarily laid off and expecting to be recalled to their job."

The *Labor Force* is defined as the employed plus the unemployed workers. A verbal definition of labor force is the number of people working or looking for work.

The **unemployment rate** is easily defined as well. The unemployment rate is the number of people unemployed divided by the labor force. So, it is the share of the labor force that is currently looking for work. Thus, to be unemployed you must first be in the labor force.

The Labor force participation rate is the ratio of the labor force to the civilian noninstitutional population. The [civilian noninstitutional population](#) is defined at the BLS website.

Finally the employment to population ratio which is the ratio of the employed to the noninstitutional population. The employment to population ratio is the share of noninstitutional labor that is working.

¹³The word "typically" means a correlation. Just because output rises does not guarantee that unemployment will fall, although it is quite likely.

Table 15: Last Measured Employment and Population Levels

Region	Employment Level	Population Level	Emp/Pop
KY	1,929,600	4,588,372	42.1 %
TN	3,313,500	7,227,750	45.8 %
VA	4,446,300	8,811,195	50.5 %
WV	745,700	1,769,979	42.1 %
US	163,656,000	342,741,000	47.7 %

Table 15 on page 21 shows the employment and population level of each State where impacts from Backroads of Appalachia’s events are felt. Also shown in Table 15 is an employment to population ratio, showing the share of the total population of each region’s population that is employed.¹⁴ Table 15 shows a similar share of employment to population within each region. Virginia is above the National employment to population ratio. The remaining states in Table 15 are below the national share of employment to population. All states are above 42.5%. This number will be different for counties in the same states.

Table 16: Last Measured Employment and Population Levels

Region	County	State	Employment Level	Population Level	Emp/Pop
1	Bell	KY	7,002	23,051	30.4%
2	Boyd	KY	17,724	47,777	37.1%
3	Carter	KY	9,120	26,098	34.9%
4	Clay	KY	5,424	19,592	27.7%
5	Estill	KY	4,581	14,002	32.7%
6	Floyd	KY	10,711	34,532	31%
7	Harlan	KY	6,915	25,052	27.6%
8	Jackson	KY	3,582	13,358	26.8%
9	Johnson	KY	7,087	22,098	32.1%
10	Knott	KY	4,103	13,438	30.5%
11	Lawrence	KY	4,860	15,798	30.8%
12	Lee	KY	2,372	7,313	32.4%
13	Leslie	KY	3,340	9,729	34.3%
14	Letcher	KY	7,047	20,139	35%
15	McCreary	KY	4,911	16,824	29.2%
16	Madison	KY	42,594	99,582	42.8%
17	Martin	KY	2,501	10,696	23.4%
18	Owsley	KY	1,243	3,928	31.6%
19	Perry	KY	9,891	26,739	37%
20	Pike	KY	18,163	55,430	32.8%
21	Rockcastle	KY	5,949	16,226	36.7%
22	Whitley	KY	14,473	37,233	38.9%
23	Wolfe	KY	1,355	6,364	21.3%

¹⁴This number is not the same as the BLS employment to population ratio. The BLS uses civilian noninstitutional population age 16 and older, which is not available at the county level. Consequently, I am using the total regional population in the denominator of my calculations, which includes individuals under age 16 and those in an institution.

Table 16: Last Measured Employment and Population Levels (*continued*)

Region	County	State	Employment Level	Population Level	Emp/Pop
24	Campbell	TN	15,375	40,238	38.2%
25	Hancock	TN	2,231	7,038	31.7%
26	Hawkins	TN	21,077	59,371	35.5%
27	Dickenson	VA	4,539	13,411	33.8%
28	Lee	VA	7,439	21,780	34.2%
29	Tazewell	VA	14,230	38,875	36.6%
30	Wise	VA	12,441	34,973	35.6%
31	Boone	WV	6,932	20,496	33.8%
32	Cabell	WV	40,283	91,489	44%
33	Clay	WV	2,419	7,689	31.5%
34	Fayette	WV	15,158	38,600	39.3%
35	Grant	WV	5,096	10,971	46.4%
36	Greenbrier	WV	13,531	31,851	42.5%
37	Hardy	WV	7,266	14,335	50.7%
38	Kanawha	WV	76,916	173,906	44.2%
39	McDowell	WV	3,211	17,147	18.7%
40	Mercer	WV	21,869	57,524	38%
41	Mingo	WV	6,639	21,712	30.6%
42	Monroe	WV	4,808	12,462	38.6%
43	Nicholas	WV	9,071	24,017	37.8%
44	Pendleton	WV	2,940	5,944	49.5%
45	Pocahontas	WV	3,547	7,653	46.3%
46	Raleigh	WV	28,589	72,379	39.5%
47	Randolph	WV	9,626	27,190	35.4%
48	Summers	WV	3,832	11,544	33.2%
49	Tucker	WV	3,283	6,573	49.9%
50	Webster	WV	2,926	7,947	36.8%
51	Wyoming	WV	6,637	19,964	33.2%

Table 16 on page 21 reports the employment to population ratio for each county included in this study. The majority of employment to population ratios in this set of counties are below the employment to population ratio of the state where the counties reside. However, there are some counties in this study whose employment to population ratio are higher than the U.S. as a whole. For example, Greenbrier, Pendleton, and Tucker each in West Virginia.

Table 16's lower ratios of employment to population do not have an easy explanation. The most obvious explanation would be that these counties have a large population that is under 16 and/or retired. Perhaps there is a larger than usual level of generational wealth from an era of coal extraction, although I don't think this is the case. Maybe there is a larger than usual cash economy within the region where people are working but not leaving a paper trail that would appear in Gross Domestic Product. The actual explanation is not known at this time.

Unemployment Rate

Table 17: Region's Last Measured Unemployment Rates

ID	County	State	Unemployment Rate
1	Bell	KY	6.4%
2	Boyd	KY	5.3%
3	Carter	KY	6.6%
4	Clay	KY	6.2%
5	Estill	KY	5.6%
6	Floyd	KY	5.8%
7	Harlan	KY	6.7%
8	Jackson	KY	6.9%
9	Johnson	KY	6.4%
10	Knott	KY	6.3%
11	Lawrence	KY	6.6%
12	Lee	KY	5.1%
13	Leslie	KY	5.2%
14	Letcher	KY	5.8%
15	McCreary	KY	6%
16	Madison	KY	4.5%
17	Martin	KY	8.5%
18	Owsley	KY	5.3%
19	Perry	KY	4.8%
20	Pike	KY	5.9%
21	Rockcastle	KY	4.9%
22	Whitley	KY	4.8%
23	Wolfe	KY	7.2%
24	Campbell	TN	3.6%
25	Hancock	TN	4.6%
26	Hawkins	TN	4.1%
27	Dickenson	VA	4.3%
28	Lee	VA	4.6%
29	Tazewell	VA	4.8%
30	Wise	VA	4%
31	Boone	WV	5.3%
32	Cabell	WV	4%
33	Clay	WV	6.7%
34	Fayette	WV	4.5%
35	Grant	WV	3.5%
36	Greenbrier	WV	4.2%
37	Hardy	WV	3.5%
38	Kanawha	WV	4.2%
39	McDowell	WV	10.1%
40	Mercer	WV	4.3%
41	Mingo	WV	6.8%
42	Monroe	WV	5%
43	Nicholas	WV	5.6%
44	Pendleton	WV	3.5%
45	Pocahontas	WV	4.3%
46	Raleigh	WV	4.5%
47	Randolph	WV	4.8%
48	Summers	WV	5%
49	Tucker	WV	3.6%
50	Webster	WV	5.6%

Table 17: Region’s Last Measured Unemployment Rates (*continued*)

ID	County	State	Unemployment Rate
51	Wyoming	WV	6%

Figure 12 on page 33 shows the United States unemployment rate and the four states touched by Backroads of Appalachia events. Figure 12 shows that each State and the United States unemployment rate move in the same general direction, moving up or down at roughly the same time. However, the region’s unemployment rate is more often than not near the highest level of unemployment. A standard correlation, mentioned above, is the unemployment rate dropping as output rises and unemployment rates rising when output is falling. Typically the actual motion of unemployment is to lag behind a reduction or rise in output. Given that employment data is collected monthly once we see unemployment rates rising we would speculate that output is, and has been, falling. But we will not see falling output until the output data is available. Thus, the importance of the employment statistics.

Figure 12 does show that each State had the same motion during the 2008 - 2009 recession and the pandemic recession of 2020 as the US as a whole. The most visible difference is the magnitude of the unemployment rate. Figure 12 shows Virginia as always experiencing a lower rate of unemployment. The remaining states switch their order as the economy moves forward through time.

Conclusion

The U.S. Census Bureau provides a map [identifying all U.S. counties](#) that are below the U.S. poverty line. Many, but not all, BOA counties are marked as being in this poverty range. Dropping below the poverty line has made this region seek out new means for economic growth. An industrial base would bring the most long term growth to this region, as would resource extraction. BOA offers an increase in tourism. Tourism also brings potential investors to experience the region. Tourism alone may not return this region to it’s 2008 output levels, but it does make a significant contribution financially, with employment, and regional exposure to potential investors. Thus, BOA events are a timely addition to a stressed region.

This analysis shows Backroads of Appalachia 2025 activities contributing \$96,127,527 regionally with \$69,957,968 begin generated through BOA of Kentucky and \$26,169,559 generated by BOA of West Virginia. BOA’s events contributed 1,083 full time equivalent jobs to the region across the 2025 season, and will continue to contribute in years to come.

Through Backroads of Appalachia 92,987 people were brought to this region to enjoy the roads, mountains, and rivers on almost every weekend of 2025. BOA begins easing into their annual events each February and March. However, BOA is active nearly every weekend between April and October. Events then taper off during November and December.

The macroeconomic data shows the regional economy’s growth in output turning positive in 2020 after 12 years of negative growth. At this point the region is not producing as much as it was 25 years ago, but since 2020 it is moving in the right direction.

The regional employment to population ratio demonstrates that we're employing 10 to 20% less of the regional population than the U.S. as a whole. However, with enough growth in output the region should see a change in this trend.

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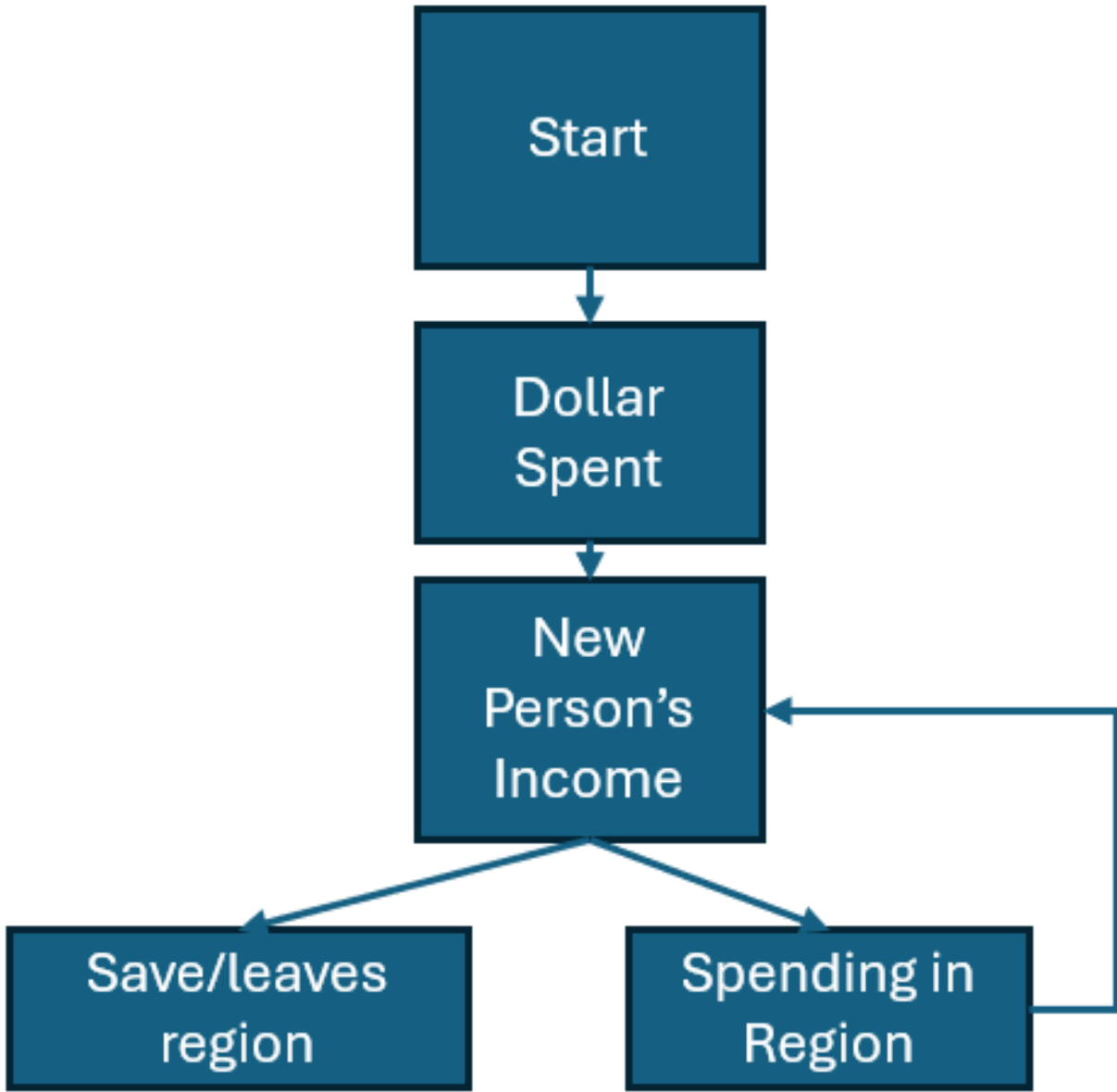


Figure 1: Diagram of Regional Spending Flow



Figure 2: Event Participation

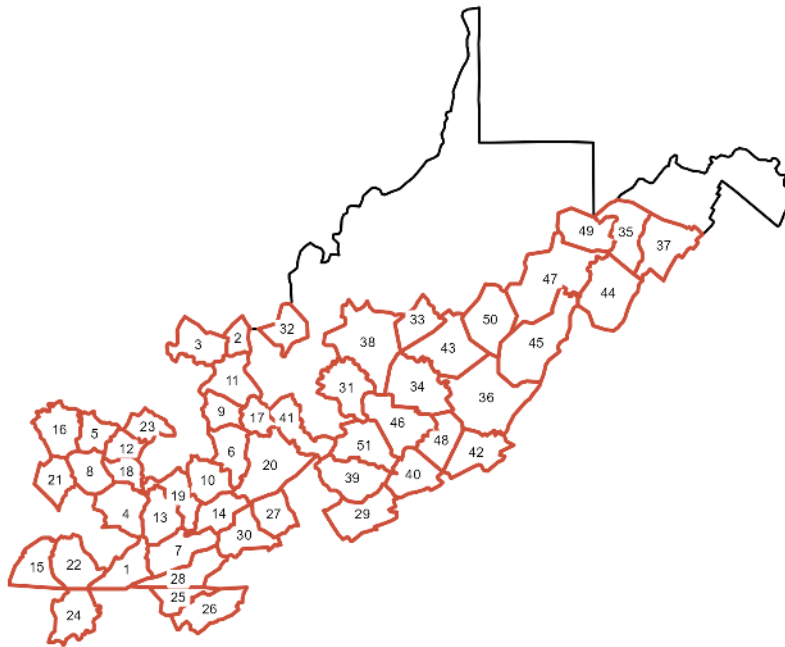


Figure 3: Backroads of Appalachia Counties

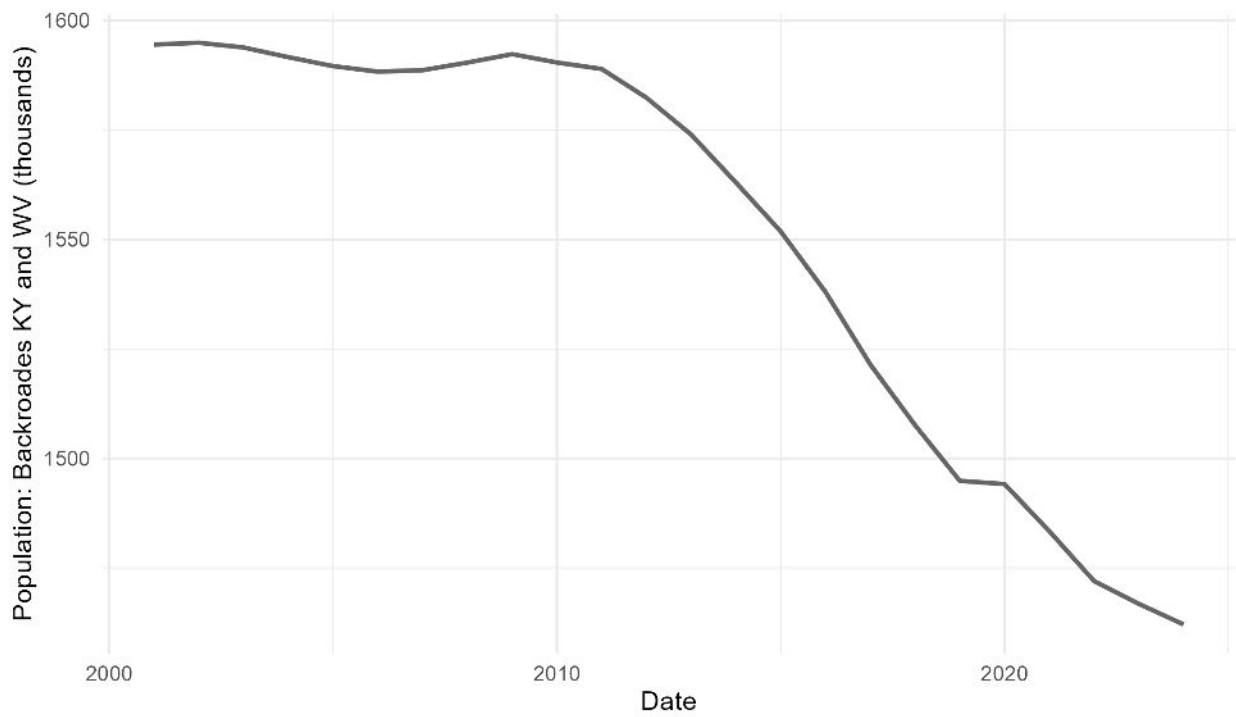


Figure 4: Population Across Backroads of Appalachia Counties

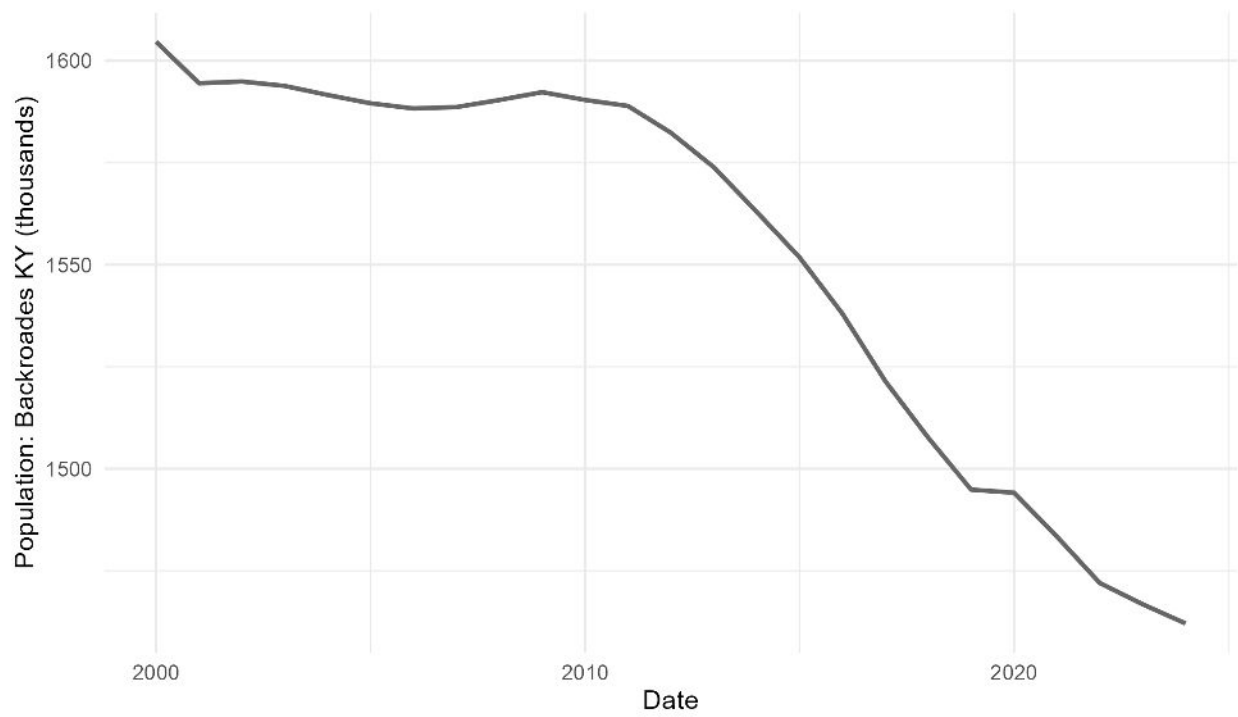


Figure 5: Population Across Backroads of Appalachia Kentucky

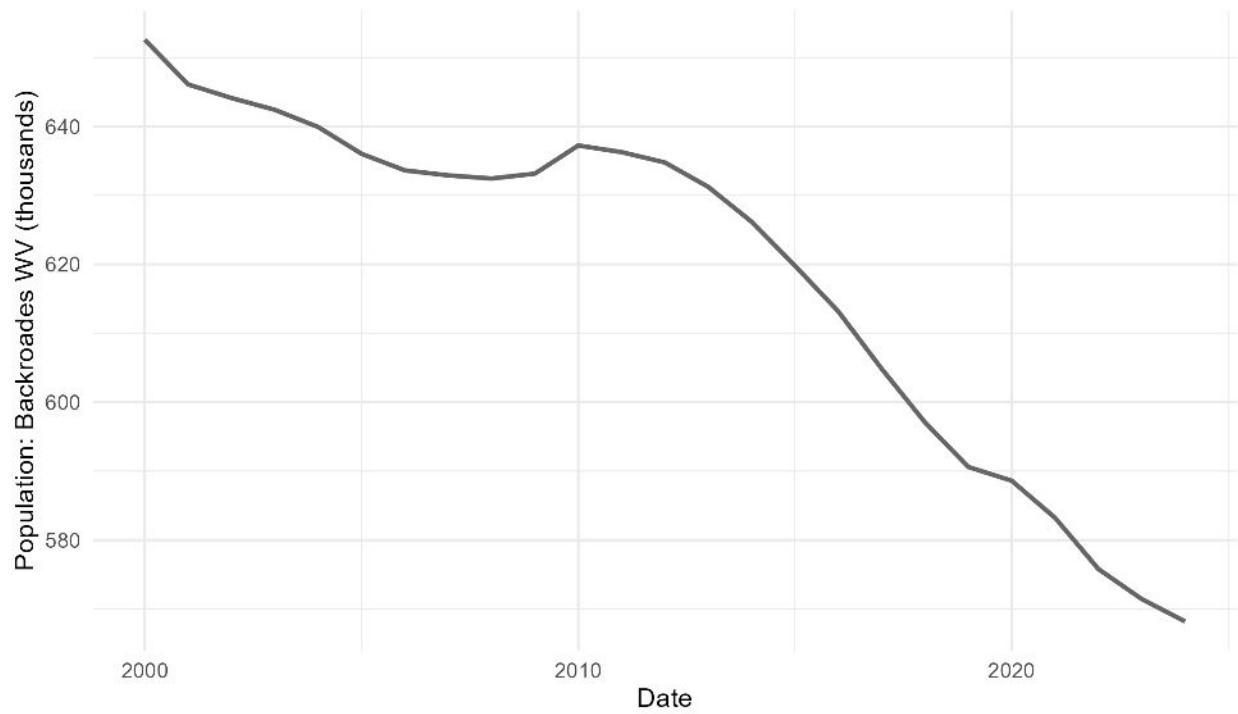


Figure 6: Population Across Backroads of Appalachia West Virginia

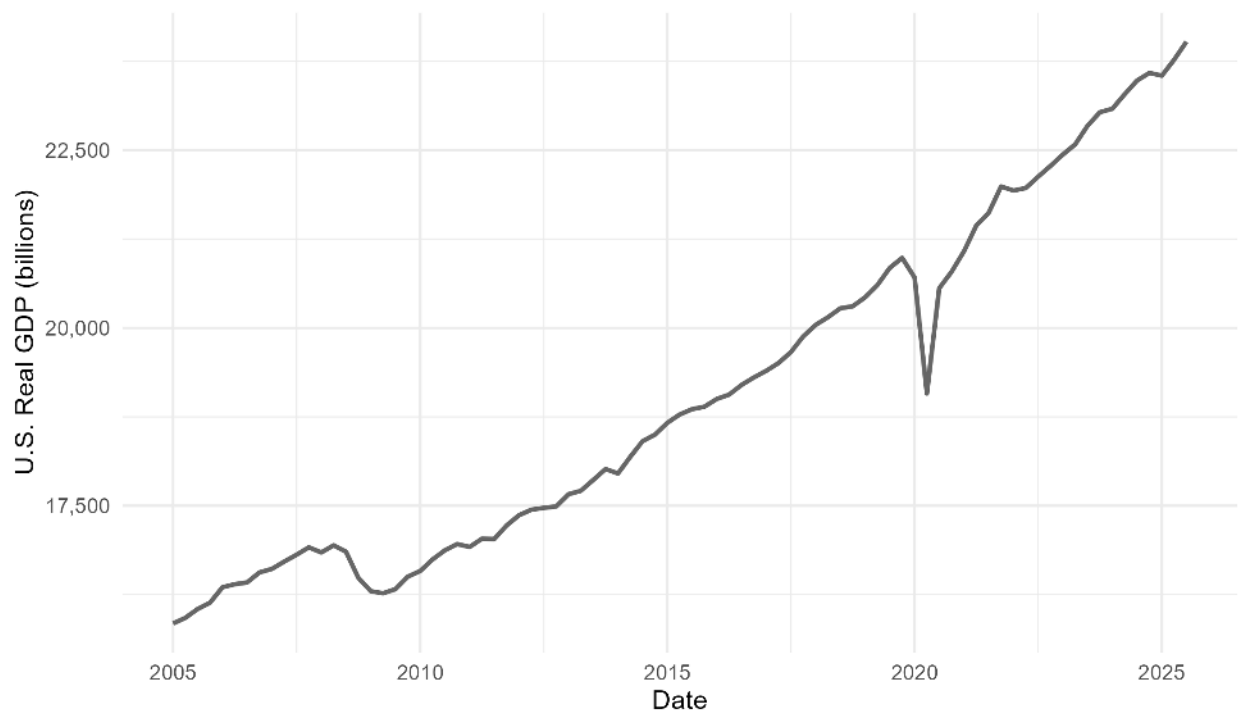


Figure 7: United States Real GDP

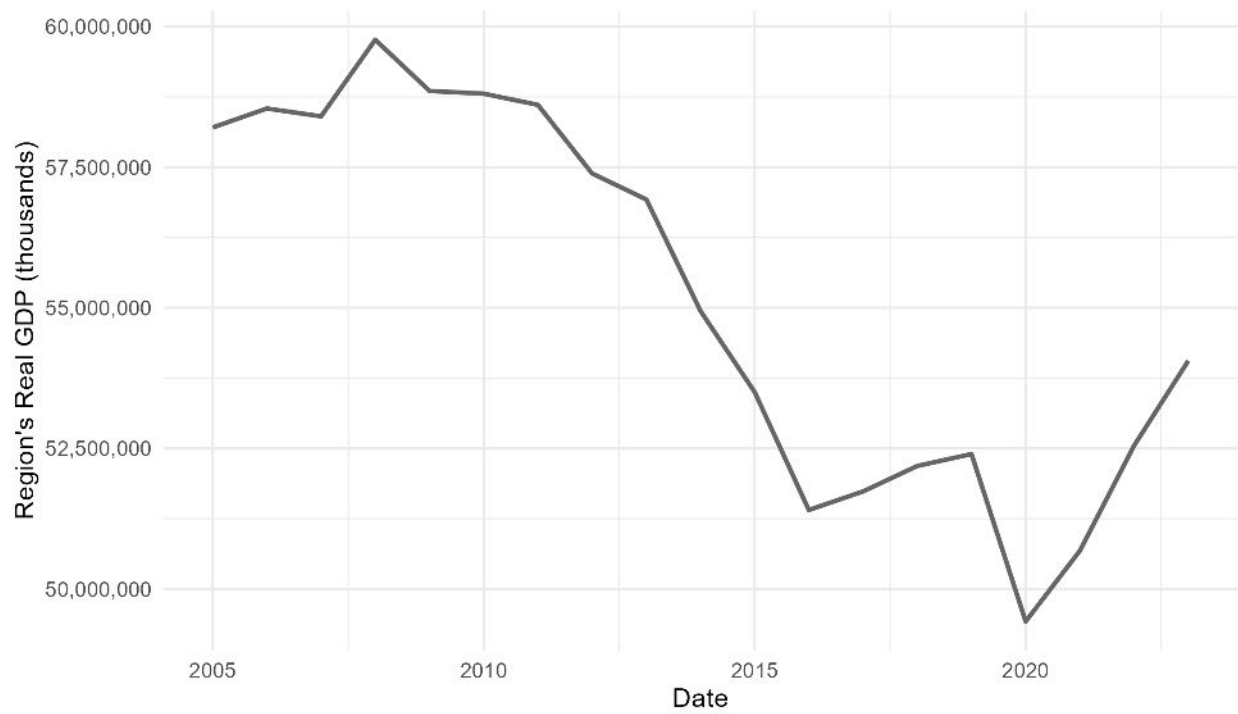


Figure 8: BOA Counties RGDP

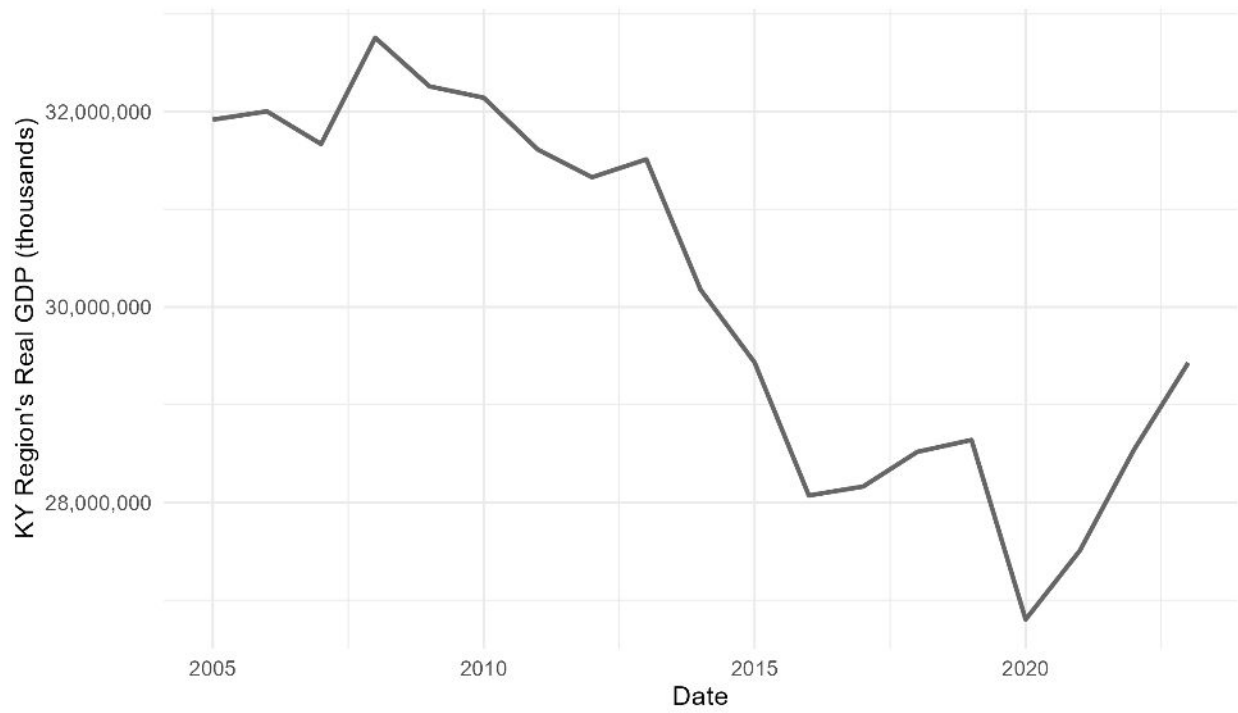


Figure 9: BOA of Kentucky Counties RGDP

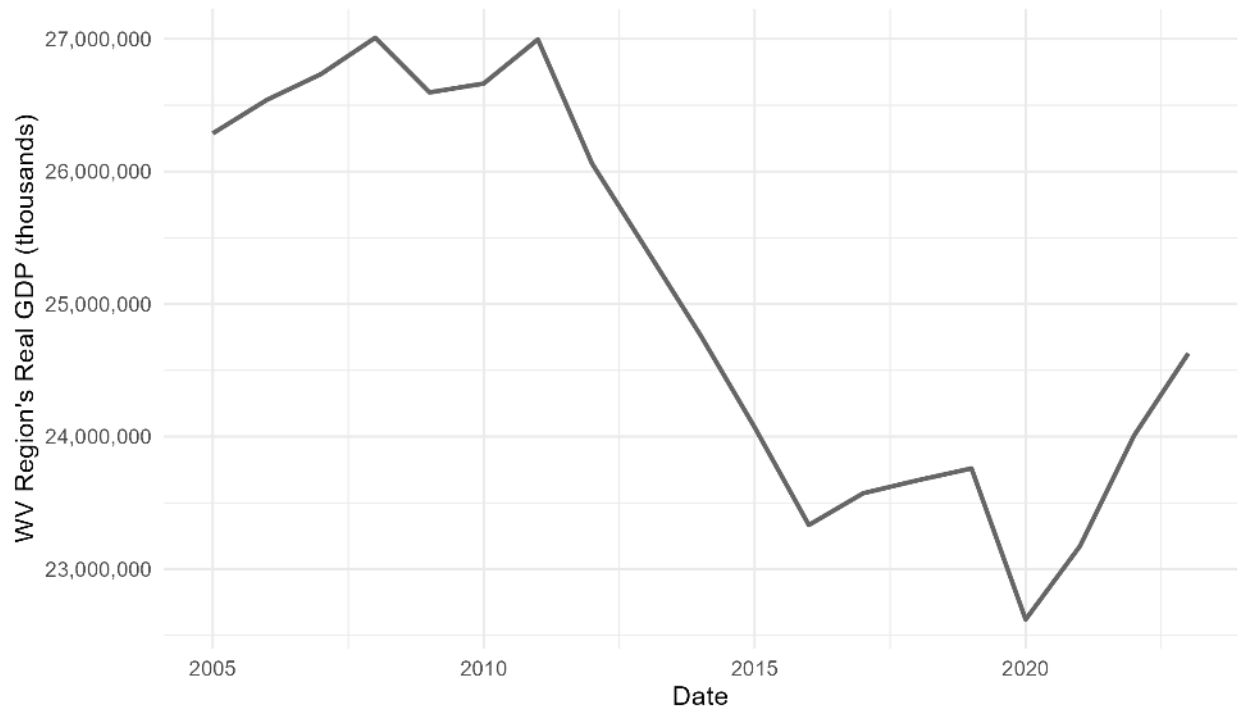


Figure 10: BOA of West Virginia Counties RGDP

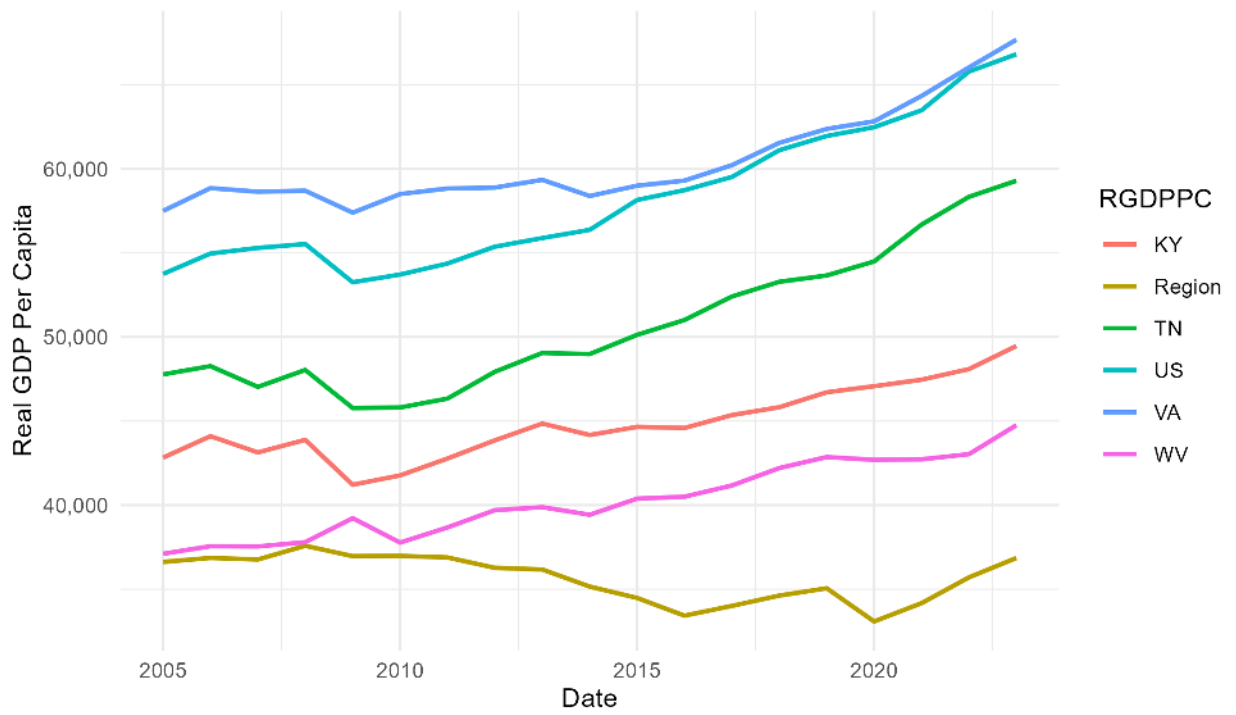


Figure 11: Region, States, and US Real GDP Per Capita

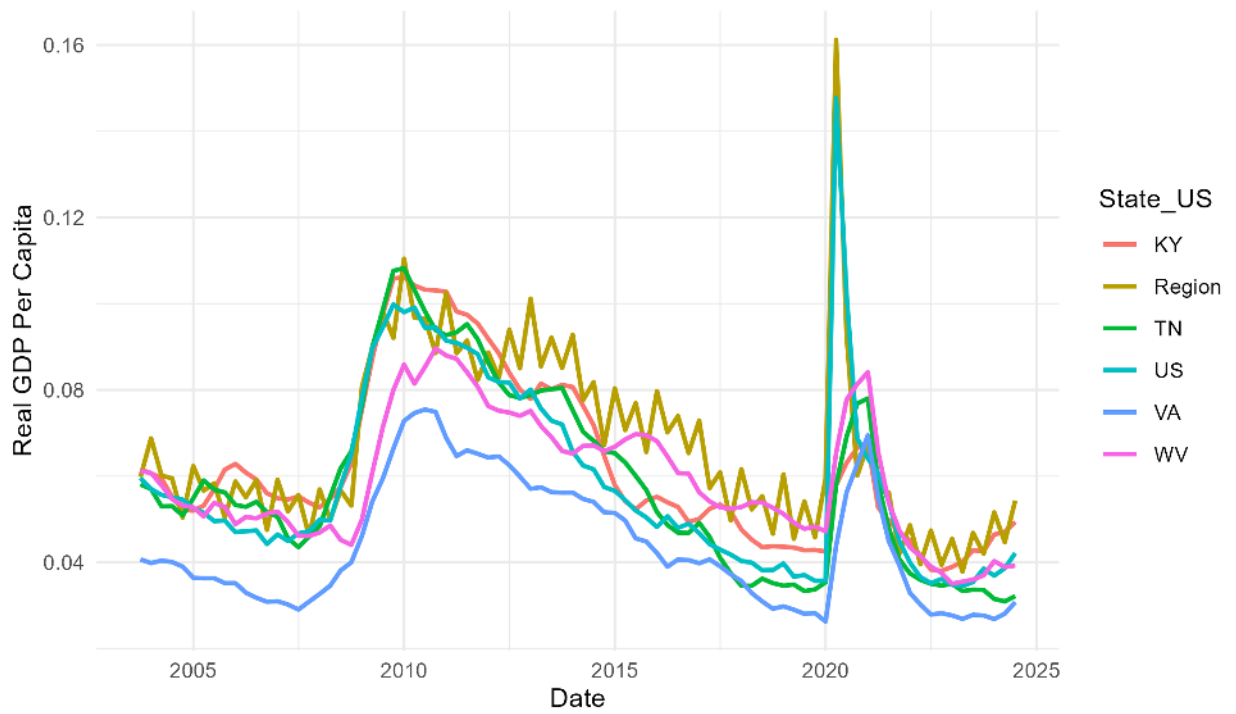


Figure 12: Region, States, and US Real GDP Per Capita