Rural Economic Development in the Mid-Atlantic Region: Developing a Place-Sensitive Plan for the Region

Dustin Bishop
Dickinson College

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Rural Economic Development in the Mid-Atlantic Region: Developing a Place-Sensitive Plan for the Region

By
Dustin Bishop

Submitted in fulfillment of the Honors Requirements for the Economics Department at Dickinson College

Professor Nicky Tynan, Supervisor

Carlisle, Pennsylvania
May, 2020
Abstract

Much research has been done on regional economic development across the United States, most of which focuses on the role of agriculture in Western states, the high levels of poverty among the Southern states and the Appalachian region, and the urban poverty of Northern coastal cities such as New York City and Washington D.C. However, the Mid-Atlantic region, particularly its rural areas, has not received comparable attention. This paper fills this gap and evaluates the state of the rural Mid-Atlantic economy (Pennsylvania, New York, Virginia, West Virginia, and Maryland). Section 1 provides an overview of definitions and methodology used in the paper. Section 2 examines the rural economic history of the Mid-Atlantic region and shows that there was significant urban-rural convergence from 1940-1980 while there were mostly strong divergence trends from 1980-present. Since the Great Recession, remote rural areas have been hardest hit in terms of stagnant economic growth and population losses and are also facing issues surrounding the rapidly aging population in the region. Section 3 describes the current state of the rural Mid-Atlantic economy in terms of the prominent industries in the region with particular focus given to manufacturing, recreation, and self-employment industries. Both theoretical and empirical evidence is given to assess the current state of the region’s rural economy and to show how the region’s economy will likely change in the immediate future. Section 4 outlines the state of rural broadband in the United States and the Mid-Atlantic states in particular. It also shows the lack of effectiveness of national programs (like the RUS) and the success of local efforts to expand rural broadband internet. Finally, Section 5 describes how a place-based economic development framework operates in both theory and practice. Findings from the previous sections are synthesized with this framework to form a place-sensitive rural economic development plan for the Mid-Atlantic region.

1 Though Washington DC, New Jersey, and Delaware are typically categorized as “Mid-Atlantic,” they will not be heavily discussed in this paper as they do not currently contain a rural county within their jurisdiction.
Introduction

Much research has been done on regional economic development across the United States, most of which focuses on the role of agriculture in Western states, the high levels of poverty among the Southern states and the Appalachian region, and the urban poverty of Northern coastal cities such as New York City and Washington D.C. However, the Mid-Atlantic region, particularly its rural areas, has not received comparable attention. This paper fills this gap and evaluates the state of the rural Mid-Atlantic economy (Pennsylvania, New York, Virginia, West Virginia, and Maryland).\(^2\) Section 2 of the paper examines the rural economic history of the Mid-Atlantic region, to understand how it has developed over time with regards to poverty and population change. Section 3 describes the current state of the rural Mid-Atlantic economy in terms of the prominent industries in the region, especially with regard to manufacturing, recreation, and self-employment. Both theoretical and empirical data are assessed to provide an overview of the region’s economy and how it might change in the immediate future. Section 4 outlines the state of rural broadband in the Mid-Atlantic states, showing how both national and local efforts have fared in recent years. Finally, Section 5 will describe what a place-based economic development framework looks like and will explain how the unique features of the Mid-Atlantic region can be synthesized to form a place-sensitive rural economic development plan for the Mid-Atlantic.

\(^2\) Though Washington DC, New Jersey, and Delaware are typically categorized as “Mid-Atlantic,” they will not be heavily discussed in this paper as they do not currently contain a rural county within their jurisdiction.
1.1 A Note on Definitions and Methodology

The term “rural” has not only many definitions in the public imagination but also among economists and statisticians. At the level of economic analysis, it is vital to clarify what precise definition is being used. According to the U.S. Census Bureau, there is no definition for a “rural” area, only what constitutes a metropolitan area.\(^3\) A metropolitan area is considered an area with at least 50,000 people, while rural areas are simply those that do not meet the urban threshold.\(^4\) Counties in which at least 25 percent of the population commutes to a nearby urban area for work are also designated as urban.\(^5\) At the county level, an urban county is simply one which contains an urban center of at least 50,000 people.\(^6\)

Within those places categorized as “rural,” however, there are a heterogenous group of regions that differ from one another. The Census Bureau further makes a distinction between Micropolitan areas (an urban cluster between 10,000 and 50,000) and noncore areas (which don’t meet the Micropolitan standard).\(^8\) Some scholars have divided rural areas into three categories: (1) Amenity-driven areas; (2) Metro-adjacent areas; and (3) Remote areas.\(^9\) Amenity-driven areas are typically areas with beautiful natural landscapes including mountains, lakes, and plains. Metro-adjacent areas are rural areas that are located near urban centers and often contribute to

\(^3\) A difficulty in the paper was many sources did not explicitly define how they were using the terms urban/rural/metropolitan, etc. Unless specified, I simply use the terms that each source uses, though they may not be referring to the Census definition in their research.


\(^6\) I will primarily be using county level data (and the definition of a rural/urban county offered above) in defining rural areas unless otherwise stated.

\(^7\) “Defining "Rural" Areas,” U.S. Census Bureau, 2019, 1.

\(^8\) Partridge and Rickman, “Geography of American Poverty,” 220.

and benefit from urban economic activity. Remote areas are regions far from cities and have largely specialized in resource-extraction heavy jobs to drive their economy. Such regions have been especially hurt by recent economic trends and the general shift away from manufacturing in the U.S. economy. All three types of rural areas will be discussed throughout this paper, particularly with reference to their place in the Mid-Atlantic economy. In this paper, counties labeled as “rural” are those which have been classified as such by the Rural-Urban Continuum Codes produced by the Economic Research Services group at the United States Department of Agriculture (USDA). Map A below shows the Rural-Urban Continuum Codes for 2013, showing that most remote rural areas (the dark green counties) in the Mid-Atlantic are located in Northern New York, Northern Pennsylvania, Central West Virginia, and Southern Virginia.10 This paper will discuss how these regions have evolved from 1940-2017 and what economic opportunities they possess for future economic development.

Map A: Rural-Urban Continuum Code, 2013

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10 Details on how the Rural-Urban Continuum Codes are determined are found in Description 1 and 2 in the Appendix.
Section 2: Population and Poverty

This section examines the relationship between population change and the poverty rate throughout the Mid-Atlantic region from 1940 to today. From 1940-1980, tremendous convergence occurred between urban and rural America, including in the Mid-Atlantic. Progress in terms of population growth and poverty reduction in rural areas even surpassed urban ones in the Mid-Atlantic, though West Virginia and Virginia considerably lagged behind the region as a whole. Rural areas near cities were able to benefit from rapidly expanding urban centers given the improvements made to transportation and the rise of suburbs while remote rural areas were heavily employed in mining and manufacturing. The 1980s marked a significant departure from this trend and ushered in an era of urban-rural divergence. The rise of the finance and insurance industries in the urban areas coupled with the 1981 Recession and loss of manufacturing jobs greatly harmed rural areas. Progress made under previous decades was reversed and rural counties west of the Appalachian Mountains, such as in West Virginia, Western Pennsylvania, and Western New York, faced harsh decline. This diverging trend was briefly paused in the 1990s, as rural regions benefited from a new nationwide rural development strategy focused on partnerships between the private and public sector and emphasizing the role of technology in a global economy. Divergence returned, however, in the 2000s with stagnant rural population growth and poverty reduction as remote rural areas suffered from decline in mining and manufacturing employment. The Great Recession further exacerbated rural stagnation in the region, hitting remote regions the worst. Today, an aging population and the rise in self-employment and the recreation industry present both challenges and opportunities for rural economic development.
2.1 Post-1940 and Urban/Rural Convergence

To understand the history of rural economic development, primary focus must be given to agriculture during the World War II era. As farmers continued to suffer from the Great Depression, the New Deal instituted agricultural price supports for crops to ensure income stability for farmers.\(^\text{11}\) Thus, the traditional method for protecting rural Americans was found in the form of price controls for farmers to support and stabilize their incomes. There were, however, larger, more structural, issues in the rural economy. Beginning in the 1920s, American agriculture had a significant excess supply of labor.\(^\text{12}\) While the federal government utilized price support programs for agriculture, several economists advocated for addressing the broader economic issue regarding rural labor (e.g. T.W. Schultz and D. Gale Johnson). They proposed that the nation should focus on creating policies to ease the outmigration of workers from rural to urban markets to address the oversupply of farm labor.\(^\text{13}\) Farmers were further affected by the growing advances in technology which further reduced the demand for agricultural labor. Such technology also found its way to urban markets, increasing the demand for urban workers.\(^\text{14}\) Thus, the combination of labor-saving technological change in rural markets and rising wages in urban markets created an incentive for rural-to-urban migration.

Migration to urban centers would play a crucial role in the convergence of the two regions. Convergence, when poorer economies grow at a rate fast enough to catch up with the economic growth of richer economies, was prevalent throughout the middle of the 20th century.

\(^{13}\) Artz etc., “Eighty Years.”
\(^{14}\) Artz etc., “Eighty Years.”
in the United States. Convergence between urban and rural areas from 1940 to 1980 meant that rural areas significantly closed the gap in income earnings with cities. A vital reason for such convergence was migration patterns across the United States. The large excess supply of labor employed in agriculture drove down rural wages, causing millions of workers to move to urban areas, seeking higher wages.\textsuperscript{15} Housing policies in the mid-20th century also promoted convergence between cities and rural areas. Affordable housing enabled the economically-diverse migrants of both highly educated and low skill workers to live and work within the same area.\textsuperscript{16} As conventional economic theory would predict, the migration to higher wage areas gradually caused urban wages to fall relative to rural incomes. As migration to cities grew significantly, rural income rose given the smaller supply of labor, thus benefitting both urban and rural regions.

The high levels of migration are reflected in the Mid-Atlantic population data from the period. The region had a 24\% increase in its population over the two decades from 1940-1960 (Table 1). Within the Mid-Atlantic region, Delaware, Maryland, New York, and Virginia had the largest increases in population. The large outflow from New Jersey was likely driven by the large migration to larger cities nearby such as New York City, Baltimore, and Washington DC contributing to the high population growth in those respective states. The sluggish growth of West Virginia is a theme that is seen throughout the remaining century, partly due to its lack of large cities and dense, mountainous geography.

\textsuperscript{15} Artz etc., “Eighty Years.”
Table 1: Population Change, 1940-1960

<table>
<thead>
<tr>
<th>State</th>
<th>Population 1940</th>
<th>Population 1960</th>
<th>Percentage Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delaware</td>
<td>266,505</td>
<td>446,292</td>
<td>67%</td>
</tr>
<tr>
<td>Maryland</td>
<td>1,821,244</td>
<td>3,100,689</td>
<td>70%</td>
</tr>
<tr>
<td>New Jersey</td>
<td>546,960</td>
<td>184,058</td>
<td>-66%</td>
</tr>
<tr>
<td>New York</td>
<td>13,479,142</td>
<td>16,782,304</td>
<td>25%</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>9,900,180</td>
<td>11,319,366</td>
<td>14%</td>
</tr>
<tr>
<td>Virginia</td>
<td>2,543,160</td>
<td>3,779,838</td>
<td>49%</td>
</tr>
<tr>
<td>West Virginia</td>
<td>1,729,205</td>
<td>1,860,421</td>
<td>8%</td>
</tr>
<tr>
<td>Region</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>United States</td>
<td>132,164,569</td>
<td>179,323,175</td>
<td>36%</td>
</tr>
<tr>
<td>Mid-Atlantic</td>
<td>30,286,396</td>
<td>37,472,968</td>
<td>24%</td>
</tr>
</tbody>
</table>

Map 1: Population Change in Rural Counties, 1940-1960

Note: Map contains only rural counties from the time. Given that the Rural-Urban Continuum Codes did not exist from the time of 1940-1960 but rather began in 1973, those counties classified as rural in 1973 are shown on the map. Likewise, all maps which contain data on rural counties before 1973 also use the rural classification of the 1973 Rural-Urban Continuum Codes.

In looking at Map 1, it is evident there is great heterogeneity of population change in rural counties throughout the region as some counties experienced significant gains while others saw decline. New York and Delaware are the only states in which all of their rural counties grew in population over the period. Most rural counties in New York had a population growth of over...
10 percent, especially in its southern counties. Pennsylvania had a combination of growth and loss, with most counties either having moderate population growth between 0-10% or heavy losses at levels exceeding -5%. Virginia and West Virginia primarily saw dramatic population losses in many of their rural counties. The significant number of such counties having a net outflow of population is in tension with the numbers provided in Table 1, which conveys overwhelming population gain. Though states such as Virginia, West Virginia, and Pennsylvania experienced rapid overall population growth, most of it was experienced in urban counties with large and rapidly growing populations while many rural counties with low populations lost population.

Poverty rates at the time were significantly higher than they are today and were highest among the Southern states in the region. The Northern and Eastern rural counties in the region, mostly in New Jersey, Pennsylvania and New York, had the lowest poverty levels with most counties being around 20 percent. The largest concentrations of poverty were undoubtedly located in Virginia (31%) and West Virginia (35%) (Table 3), particularly in the most remote counties which surround the border between the two states. The poverty and stagnation of West Virginia will be a consistent theme throughout the paper.
Map 2: Poverty Rate in Rural Counties, 1960

Note: Map contains only rural counties from the time. Given that the Rural-Urban Continuum Codes did not exist in 1960 but rather began in 1973, those counties classified as rural in 1973 are shown on the map. Likewise, all maps which contain data on rural counties before 1973 also use the rural classification of the 1973 Rural-Urban Continuum Codes.

2.2 1960-1980, Continued Rural Progress

As cities grew larger and more populated, nearby rural areas became increasingly interconnected to them economically. The 1960s and 1970s saw a major transition period for rural America, as rural-to-urban migration continued to increase, and the rise of the suburbs would leave a lasting impact on the rural economic landscape. Improvements made to automobiles and transportation systems allowed people to live in rural areas outside the city and commute to their jobs in urban areas. Such advances in transportation, most notably the interstate highway system which began in the 1950s, made daily commuting up to 60 miles one-way a possibility. Since rural workers could access highly specialized, well-paying jobs in urban centers while maintaining a more peaceful way of life in rural neighborhoods with lower costs of living, real income in these areas rose. The prosperity gained by rural areas adjacent to urban centers was especially felt in the Mid-Atlantic given the presence of major urban cities including New York, Baltimore, and Philadelphia. This is seen in the massive growth of New Jersey’s rural population of 120% (Table 2). While many left the state from 1940-1960 seeking urban
life, the ability to live in the suburbs while commuting to nearby cities for work enabled a large population boom in the state during the 1960s and 1970s.

Though urban areas continued to grow through the middle of the century, rural counties nevertheless maintained strong population growth. From 1960-1980, the nation saw a large increase in population growth due to the baby boom. This national trend is seen in the Mid-Atlantic as all states experience a substantial increase in population during the period with Delaware, Maryland, and Virginia experiencing the highest population growth. Table 2 shows that in the Mid-Atlantic region, there was larger population growth in its rural counties than the state average (18 percentage points vs 13 percentage points). The high rural growth rates reflect the broader literature that rural areas were relatively equal with urban areas with respect to population and income growth. Although population growth from 1960-1980 slowed from its previous 1940-1960 levels in some states, rural areas nevertheless maintained strong growth rates. Thus, in the Mid-Atlantic, rural-to-urban migration did not cause stagnant rural population growth but rather the two areas thrived together, with rural areas even maintaining a slight advantage.
Table 2: Population Change, 1960-1980

<table>
<thead>
<tr>
<th></th>
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<th></th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Rural</td>
<td>All</td>
<td>Rural</td>
</tr>
<tr>
<td>Delaware</td>
<td>138,846</td>
<td>446,292</td>
<td>196,223</td>
</tr>
<tr>
<td>Maryland</td>
<td>237,928</td>
<td>3,100,689</td>
<td>297,075</td>
</tr>
<tr>
<td>New Jersey</td>
<td>323,378</td>
<td>6,066,782</td>
<td>716,213</td>
</tr>
<tr>
<td>New York</td>
<td>1,506,278</td>
<td>16,782,304</td>
<td>1,688,788</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>1,689,187</td>
<td>11,319,366</td>
<td>1,826,377</td>
</tr>
<tr>
<td>Virginia</td>
<td>1,339,352</td>
<td>3,779,838</td>
<td>1,594,283</td>
</tr>
<tr>
<td>West Virginia</td>
<td>1,161,038</td>
<td>1,860,421</td>
<td>1,231,779</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Rural</td>
<td>All</td>
<td>Rural</td>
</tr>
<tr>
<td>United States</td>
<td>179,323,175</td>
<td>226,545,805</td>
<td>26%</td>
</tr>
<tr>
<td>Mid-Atlantic</td>
<td>6,396,007</td>
<td>43,355,692</td>
<td>18%</td>
</tr>
</tbody>
</table>

From 1960-1980, Map 3 shows largely encouraging rural population trends for the Middle Atlantic. Map 3 enables us to take a more nuanced look at where rural population growth came from and largely confirms Table 2’s data showing progress in rural population growth. Geographically, states east of the Appalachian Mountains (MD, DE, NJ, VA) experienced high overall and rural population growth while states west of the Mountains (PA and WV) faced moderate or stagnant growth. Rural counties in Southern New York, Central Pennsylvania, Northern Virginia and Northern West Virginia drove rural population growth for their respective states. Remote rural counties in New York continued their population gains, though fewer of its southern counties exhibited population growth of between 10-20%. Pennsylvania again had a mixture of population growth and decline but managed to reduce the number of declining counties from 16 to 8 with the largest reduction coming from counties that previously witnessed less than -5% growth, especially those in the western part of the state. The combination of population growth and reduction in PA concords with Table 2, showing a 0% overall population change in the state. The largest gains, however, clearly came from Virginia, whose number of
declining counties decreased from 39 to 22, and West Virginia, whose counties in decline fell from 29 to 11. A majority of the gains were made in the Shenandoah Valley and the James River Valley along the West Virginia-Virginia state border. Rural counties with declining populations were almost exclusively located in Northwestern Pennsylvania, Central West Virginia, and Southern Virginia; several of which saw large losses exceeding -5% population loss. Thus, the pattern of high population growth in the Northern and Eastern parts of the region (NJ, NY, VA) while the Southern parts of the region (WV) remain stagnant still persisted.

**Map 3: Population Change in Rural Counties, 1960-1980**

The positive rural population data from 1960-1980 was accompanied with positive rural economic development in the region and nationwide. Rural areas which were not close to cities were particularly impacted by the decline of agricultural employment and the rise of manufacturing and mining industries which led to a diversity of rural economies in these regions. Labor saving technology in the farming industry and the increase in urban migration which began in the 1940s continued to reduce agriculture’s previous dominance over rural employment. Despite the growth of cities across the nation, rural regions with rich natural resources saw a substantial increase in migration. In fact, by the end of the 1970s, rural areas with access to labor
markets and plentiful amenities were able to withstand and even reverse long-run trends of economic decline. Remote areas without such natural resources focused primarily on manufacturing and resource-extraction jobs in the coal and oil industries. This explains why remote rural counties in the Mid-Atlantic were able to sustain population gains despite being located far away from rapidly growing cities.

Maps 4 and 5 show that these national trends were largely reflected in the remote areas of the Mid-Atlantic. Map 4 shows an overview of the various industries in each county while Map 5 shows all rural counties, with the dark green counties signifying the most remote rural areas. In remote parts of central West Virginia, the mining industry played a key role in their economy while manufacturing was dominant in Northwestern Pennsylvania and Virginia. New York also had economic diversity, with employment in manufacturing and the government being prominent. A unique feature of the Mid-Atlantic which is not discussed in the national literature is how influential manufacturing and government employment appears to have been in the region’s rural economy since both rural counties close to and far away from urban areas were heavily employed in both industries. Despite these industry patterns, there were still a significant number of counties which were non-specialized throughout all states of the Mid-Atlantic but especially in West Virginia and Pennsylvania.

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Overall, rural areas, both close to and distant from urban areas, benefited from economic trends that enabled them to make significant progress in equalizing economic prosperity between rural counties and cities. In 1940, rural income constituted about 20% of urban income but rose dramatically to 80% by 1960 and continued to increase until 1980.\(^\text{18}\) Thus, urban migration

\(^{18}\) Artz etc., “Eighty Years.”
actually benefitted, rather than harmed, the rural economy and convergence between rural and urban America was nearly complete with respect to income. Data from the Mid-Atlantic region during this period confirms the convergence (Table 3). The poverty rate in the region fell faster than the national average (a reduction of 17 percentage points vs 10 percentage points). Though poverty significantly fell throughout the region (declining from 30% to 13%), rural areas saw the largest reductions. In all Mid-Atlantic states, the poverty rate in rural counties fell faster than the state average with West Virginia and Virginia seeing the largest decline. Not only was the decline in the average poverty rate impressive but Map 6 shows that such progress was seen among virtually all rural counties in the region. Virginia and West Virginia, which had the largest overall reductions, saw progress occurring throughout virtually all rural counties with several of them even falling below a 10% poverty rate. With the massive fall in poverty in these two states, Virginia and West Virginia had largely closed the gap between them and the rest of the Middle Atlantic states in both overall and rural poverty. Reductions in both Pennsylvania and New York resulted in every rural county having a poverty rate less than 18 percent in their state.

Table 3: Poverty Rate, 1960-1980

<table>
<thead>
<tr>
<th>State</th>
<th>Poverty Rate, 1960</th>
<th>Poverty Rate, 1980</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Rural</td>
<td>All</td>
</tr>
<tr>
<td>Delaware</td>
<td>26%</td>
<td>17%</td>
</tr>
<tr>
<td>Maryland</td>
<td>29%</td>
<td>17%</td>
</tr>
<tr>
<td>New Jersey</td>
<td>17%</td>
<td>11%</td>
</tr>
<tr>
<td>New York</td>
<td>20%</td>
<td>14%</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>23%</td>
<td>17%</td>
</tr>
<tr>
<td>Virginia</td>
<td>44%</td>
<td>31%</td>
</tr>
<tr>
<td>West Virginia</td>
<td>44%</td>
<td>35%</td>
</tr>
<tr>
<td>Region</td>
<td></td>
<td></td>
</tr>
<tr>
<td>US Average</td>
<td>22%</td>
<td></td>
</tr>
<tr>
<td>Mid-Atlantic Average</td>
<td>30%</td>
<td></td>
</tr>
</tbody>
</table>
2.3 The 1980s and the End of Convergence

The general convergence between urban and rural counties with respect to population and poverty came to a halt in the 1980s. The decade from 1980-1990 exhibited slowed population growth compared to the previous 1940-1960 levels, especially in rural counties. Table 4 shows that from 1980-1990, the Mid-Atlantic rural population growth slowed to a mere 3 percent while the nation grew at 10 percent. New York and Pennsylvania began to see reduced population growth in both rural and overall population while West Virginia suffered a population loss of -8%. Map 7 further shows that the negative impact on rural counties within the Mid-Atlantic from 1980-1990. For the first time, New York saw moderate population decline in many of its western rural counties, contributing to its rural population decline of -2% (Table 5). Pennsylvania, continuing its trend of mixed population change, saw a rise in the number of declining counties in the western part of the state while counties in Central PA vary widely in their results (Map 7). The staggering loss of population originally witnessed from 1940-1960 returned to West Virginia as most of its western counties had heavy losses exceeding -5%. The only exception to the trend
is Delaware and Maryland, which likely benefited from population growth in nearby Washington DC at the time. Here again we see the pattern of heavy losses for rural counties west of the Appalachian Mountains while those East of the Mountains saw moderate gains.

**Table 4: Population Change from 1980-2000**

<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Rural</td>
<td>All</td>
</tr>
<tr>
<td>Delaware</td>
<td>16%</td>
<td>12%</td>
</tr>
<tr>
<td>Maryland</td>
<td>61%</td>
<td>13%</td>
</tr>
<tr>
<td>New Jersey</td>
<td>NA</td>
<td>5%</td>
</tr>
<tr>
<td>New York</td>
<td>-2%</td>
<td>2%</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>-9%</td>
<td>0%</td>
</tr>
<tr>
<td>Virginia</td>
<td>39%</td>
<td>16%</td>
</tr>
<tr>
<td>West Virginia</td>
<td>15%</td>
<td>-8%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
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<tbody>
<tr>
<td></td>
<td>Rural</td>
<td>All</td>
</tr>
<tr>
<td>United States</td>
<td>10%</td>
<td></td>
</tr>
<tr>
<td>Mid-Atlantic</td>
<td>3%</td>
<td>4%</td>
</tr>
</tbody>
</table>

**Map 7: Population Change in Rural Counties, 1980-1990**

Source: Data is taken from the 1980 and 1990 Decennial Census from the US Census Bureau.
The beginning of divergence between urban and rural America beginning in 1980 played a crucial role in shaping the current economic status of many rural areas, especially in the Mid-Atlantic. At the national level, coastal states experienced high levels of growth compared to the interior continent. Many economists have noted the growth of coastal areas, especially cities, compared to the inland United States, as one notes that "America appears to be evolving into durable islands of wealth and poverty."\(^{19}\) However, when examining the interior states, a further distinction can be made between those in the Western half of the United States and those in the East. The Western interior has actually performed well since the 1980s, boasting an economy of rich natural resources, high levels of education, and natural amenities.\(^{20}\) From 1965 to 2016, the coastal states' economies grew by nearly 350 percent, the Western interior states grew even faster at 475 percent, while eastern interior states (which include the Mid-Atlantic) grew less than 190 percent during that time.\(^{21}\) Such stagnant growth has been accompanied by social and health issues, as the opioid crisis and increasing mortality rates have affected the region, specifically Appalachia, disproportionately more than the other two regions.\(^{22}\)

Among states in the eastern interior region, the Mid-Atlantic states have especially contributed to rising levels of regional inequality between urban and rural areas. When examining the change in income per capita from 1978-1987, six of the seven Mid-Atlantic states (NJ, NY, VA, PA, MD, DE) were classified as "upwardly divergent," meaning they experienced income per capita growth at a rate far faster than the national average.\(^{23}\) The likely cause of such

\(^{20}\) Austin, etc., "Jobs for the Heartland," 157.
\(^{21}\) Austin, etc., "Jobs for the Heartland," 175.
\(^{22}\) Austin, etc., "Jobs for the Heartland," 171.
high rates of growth among these states is the growth of the large metropolitan centers within
them, such as New York City, Philadelphia, Baltimore, and Pittsburgh. Thus, while rural
economies were largely stagnant, urban centers in the region boosted economic growth. The only
mid-Atlantic state that was classified as "downwardly divergent" (experienced income per capita
growth but at a rate well below the national average) was West Virginia.\textsuperscript{24} By these metrics, the
Mid-Atlantic states were by far the most influential states during the early phase of US regional
income divergence in the 1980s. Although incomes rose steadily in the Mid-Atlantic states,
poverty rates not only stalled but started to diverge from metro counties. This is reflected in
Table 5 where four of the six states with rural counties had increased poverty levels, with West
Virginia leading the pack with a staggering increase of 5 percentage points. The increase in
poverty within West Virginia is seen in Map 8, where the Western rural counties, which were the
most remote, were hit hardest. The divergence of the 1980s effectively ended the progress West
Virginia had made compared to other Mid-Atlantic states in the previous decades.

Table 5: Poverty Rate, 1980-2000

<table>
<thead>
<tr>
<th></th>
<th>Poverty Rate, 1980</th>
<th>Poverty Rate, 1990</th>
<th>Poverty Rate, 2000</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Rural</td>
<td>All</td>
<td>Rural</td>
</tr>
<tr>
<td>Delaware</td>
<td>14%</td>
<td>12%</td>
<td>11%</td>
</tr>
<tr>
<td>Maryland</td>
<td>10%</td>
<td>10%</td>
<td>12%</td>
</tr>
<tr>
<td>New Jersey</td>
<td>NA</td>
<td>10%</td>
<td>NA</td>
</tr>
<tr>
<td>New York</td>
<td>13%</td>
<td>13%</td>
<td>12%</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>11%</td>
<td>11%</td>
<td>13%</td>
</tr>
<tr>
<td>Virginia</td>
<td>15%</td>
<td>12%</td>
<td>16%</td>
</tr>
<tr>
<td>West Virginia</td>
<td>18%</td>
<td>15%</td>
<td>23%</td>
</tr>
<tr>
<td>Region</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>US Average</td>
<td>12%</td>
<td></td>
<td>13%</td>
</tr>
<tr>
<td>Mid-Atlantic Average</td>
<td>13%</td>
<td></td>
<td>13%</td>
</tr>
</tbody>
</table>

\textsuperscript{24} Coughlin and Mandelbaum, “Per Capita Incomes,” 28.
Map 8: Poverty Rate, 1990

Another reason for the urban-rural divergence of the 80s was the shift in industries among rural and urban economies, particularly in the Mid-Atlantic states. During the 1970s, total employment growth was sluggish given stagflation of the era and the Mid-Atlantic region also suffered sluggish employment growth. Nevertheless, there was convergence between urban and rural counties as rural growth was higher. The recovery from the 1981 recession marked a change in that pattern given the difference in industries present in nonmetro and metro regions. Rural regions saw dramatic job losses with the sharp decline in manufacturing employment in the 80s. Even western cities such as Pittsburgh and Buffalo, with a high concentration of manufacturing workers, saw employment decline. The decline in manufacturing coincided with the rise in white-collar sectors including finance, trade, insurance, and real estate especially began to grow in large coastal metropolitan cities. In the Mid-Atlantic region, these trends resulted in the growth of finance, insurance, and real estate (FIRE) companies in the New York City, New Jersey, and Philadelphia corridor. Of the Mid-Atlantic states, NJ had the highest

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Employment growth while PA experienced decline. Employment growth among nonmetro areas in the central and western areas of New York and Pennsylvania shifted toward eastern coastal cities. While rural Pennsylvania counties had an employment growth rate of 9.4% from 1974-1979, it sharply fell to -9.3% from 1980-1984. Nonmetropolitan counties in Western and Central New York state similarly suffered a net loss in employment. Though most employment in the FIRE industries took place in metropolitan areas, rural counties also employed such workers. Compared to the previous economic typology map, Map 9 shows the growing presence of service sector jobs (which includes the FIRE industries) particularly in New Jersey and New York which are near major cities. Map 9 also shows the decline of manufacturing employment which used to dominate New York, Pennsylvania, and Virginia. Though manufacturing was influential, other industries such as services and the government rose in prominence. Thus, the diversity of industries that rose in the 1960s with the decline of agriculture continued to expand with the rise of the service sector. In the Mid-Atlantic, the economic shift away from rural areas and Western cities such as Pittsburgh and Buffalo toward coastal cities such as New York City and New Jersey helps explain the divergence between rural and urban counties during this period.

26 Rosen, “Regional Variations,” pg. 4.
27 Rosen, “Regional Variations,” pg. 5.
While changes in industry relating to the manufacturing and financial sectors assisted in causing the divergence between rural and urban areas, other causes also played important roles. One such factor was the stagnation of population growth and migration at the national and Mid-Atlantic level. As previously mentioned, migration between urban and rural areas positively benefited both regions from 1940-1980. However, unlike in previous decades, now fewer low-skilled workers were moving to high-income areas to seek higher wages.\(^{29}\) One major factor that reduced migration is housing prices and related land use policies. Land use regulations beginning in the 1960s and 1970s, such as laws limiting the height of new buildings, reduced the growth of housing supply in urban areas.\(^{30}\) As the supply of housing did not keep up with rising demand, the cost of living in cities grew. The high cost of living in wealthy areas, especially large cities, has become so high that many do not consider moving to such locations financially viable. Thus, low-skilled workers did not seek higher wages among highly educated and skilled urban workers, further reinforcing the inequality between urban and rural workers. As seen below, the

\(^{29}\) Austin, etc., “Jobs for the Heartland,” 159.  
rural population stagnation of the 1980s was largely due to a fall in migration, rather than natural population change.

**Chart 1: Population and Migration**

![Chart showing population changes](chart)


Another prominent factor for the lack of convergence was related to rising energy prices. The price of energy use, largely tied to the price of oil and gasoline, is strongly correlated with the path of divergence since the 1980s. States rich in energy resources, mostly rural areas in the interior United States, benefit from high energy costs while states that consume rather than produce such energy, mostly coastal states with large metropolitan centers, are harmed by rising prices. Energy prices primarily rose after WWII and peaked in 1981 and fell through the late 1980s. The trend in energy prices closely reflected trends in income per capita statistics during this time. In 1981, per capita income in energy states (in which at least 4% of earnings came from the energy sector) was over 96 percent of the national average but declined to below 87 percent by 1987. In fact, eight of the ten states classified as "downwardly divergent" in 1987 were energy states (none of which were in the Mid-Atlantic). Though West Virginia wasn’t

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31 Coughlin and Mandelbaum, “Per Capita Incomes,” 32.
32 Coughlin and Mandelbaum, “Per Capita Incomes,” 33.
33 Coughlin and Mandelbaum, “Per Capita Incomes,” 35.
classified as an energy state, it did follow the similar pattern of decline given the importance of coal to its economy.

2.3 The 1990s

The 1990s saw a minor reversal of the negative trends of the 1980s across poverty rates and population growth. Nationally, the economic boom from 1993-2001 led to rising prosperity across the nation. The positive population trends of the 1990s were reflected in the Mid-Atlantic data, as the previously sluggish rates of poverty reduction were ended. In West Virginia, Maryland, Pennsylvania, and Virginia, rising rates of poverty in the past decade were ended and even reversed direction. The growth in the 1990s actually benefitted rural counties in the Mid-Atlantic more than urban ones. While poverty rates for the Mid-Atlantic as a whole remained nearly identical from 1980-1990 and 1990-2000 at 13%, states within the Mid-Atlantic show a disproportionate improvement in rural areas. Several states (WV, VA, PA, MD) witnessed a rise in poverty at the state level while simultaneously achieving reductions in rural poverty (Table 5). While four out of six Mid-Atlantic states with rural populations had rising poverty rates from 1980-1990, only two did during the 1990s. West Virginia, which had an increase of 5 percentage points in the 1980s, saw a drop of 3 percentage points during the next decade. The gains made by West Virginia were proportionate throughout the rural parts of the state (Map 11). The reductions in poverty accomplished by Pennsylvania and New York enabled them once again to have all their rural counties to have a poverty rate below 10%. With the exception of Delaware, all other states saw larger population growth in the 90s compared to the last decade. West Virginia, which suffered stark population losses in the 1980s, managed to significantly reduce its rural population outflow and even increase its state population growth. Here again we see that Mid-Atlantic trends in population and poverty largely coincide with patterns at the national level.
The rural prosperity of the 1990s was related to structural trends and a much-needed change in rural development philosophy at the federal level. Though the recovery from the 1981 recession aided the rural economy’s recovery, national efforts also contributed to the successes made during the time. For the first time since the New Deal, the Clinton Administration instituted several significant, national rural development initiatives. Unlike New Deal programs
in which the federal government played a significant role in implementing polices, Clinton emphasized the deregulation of agriculture and increasing the role of state and local governments in rural development. The administration emphasized the importance of partnership and communication between businesses, nonprofits, and government agencies.\textsuperscript{34} Rural development would function to “enhance the ability of rural communities to develop, to grow, and to improve their quality of life by targeting financial and technical resources in areas of greatest need through activities of greatest potential.”\textsuperscript{35} The 1990s also saw a growing concern to address issues of communication between urban and rural regions and workforce skills for employees to succeed in the global economy. The rise in workforce development programs reflected the growing need for workers to have the proper skills to succeed in a knowledge-driven workplace as from 1990-1999, the number of economic development organizations using labor force training programs as a means of development increased from 48 percent to 66 percent.\textsuperscript{36} As a part of adapting to the modern economy, the Farm Bill of 1996 attempted to phase out federal-price support policies in supporting rural economic development.\textsuperscript{37} The Clinton Administration’s overall rural development philosophy, which was carried on through the Bush Administration, reflected a shift in thinking away from protecting traditionally “rural” industries toward focusing on crucial financial and technological assets. The shift away from agricultural price supports and a commitment to addressing needs in the global economy especially benefitted rural Mid-Atlantic counties with their close proximity to urban areas. The rural-urban convergence, the stall of progress in the 1980s, and the resurgence of growth in the 1990s show that rural areas are not doomed to economic or population decline but rather are helped or harmed by the contingent

\textsuperscript{34} Marshall, “Rural Policy,” 29.
\textsuperscript{35} Marshall, “Rural Policy,” 29.
\textsuperscript{36} James, “Effect of Local Policy,” 19.
\textsuperscript{37} Marshall, “Rural Policy,” 31.
circumstances of the time. The prosperity of the 1990s presents an optimistic picture: that rural areas can thrive, even more than urban areas, given proper policies and national conditions that enable them to thrive.

2.4 The 2000s and the Role of Remote Rural Areas

The rise of technology and the globalized economy has further exacerbated the heterogeneity of distant rural economies. Among remote rural regions, those that have relied on natural resource extraction for prosperity have struggled the most since the 1990s. Such rural areas have long relied on natural resource extraction jobs to power their economy in the realm of oil, coal, and natural gas. Such industries since the end of World War II have experienced severe boom and bust cycles. Aside from sporadic, external shocks such as recessions, advances in technology have both hurt and aided the energy sector. New technologies have given rise to the use of renewable energy and have also been used for fracking.\(^{38}\) New technology has assisted in the growth of the oil and natural gas industry in the mid-2000s in places like North Dakota and Texas and the extraction of Marcellus shale from Mid-Atlantic and Midwestern states such as Ohio, Pennsylvania, and West Virginia. However, technology has also hurt certain energy sectors. Technology has steadily reduced the coal industry’s role in the U.S. economy over the past century. The fall of the coal industry was not due to trade policy as America has consistently remained a net exporter of coal.\(^{39}\) Rather it was due to advances in technology, accompanied by the shift from the Eastern to the Western United States where extraction is easier due to coal being located closer to the ground in such areas.\(^{40}\) Thus the Eastern U.S., especially Mid-Atlantic

\(^{38}\) Goetz, etc., “Economic Status,” 8.


\(^{40}\) Sumner, “Automation Causes Trade.”
states like Virginia and West Virginia, has generally lost jobs in its mining sector but others, such as Pennsylvania have seen a recent increase in natural gas-related employment. Map 12 confirms the national literature on the diminishing role of mining in rural economies. By 2004, though mining still played an important role in some southern West Virginia counties, it no longer had a dominating presence it had several decades ago.

**Map 12: Economic Typology, 2004**

![Economic Typology Classification, 2004](image)

**Source:** The County Typology Codes can be found on the USDA Economic Research Service webpage.

**Note:** Definitions for each typology classification can be found in Description 4 in the Appendix.

The increase in migration to the Western and Southern United States (the Sun Belt) is reflected in the stagnant population growth of the Mid-Atlantic region, in both urban and rural areas, during the 2000s. With the exception of Virginia and Delaware, most states had modest population growth, and none had their rural population outgrowing the state as a whole. The falling behind of remote rural areas is reflected in Map 13 below. The Mid-Atlantic’s most remote rural areas in Southern New York, Western Pennsylvania, and Central Appalachia all saw large population losses, with some counties losing over 5 percent of their population. Remote regions, which used to rely on industries like mining to employ a significant number of their workers, further suffered from population losses to cities. However, rural counties near urban
centers, those in Eastern Virginia and Eastern Maryland, experienced moderate growth. These counties likely benefitted from their proximity to cities, especially given the rise of FIRE industries in urban areas as previously mentioned. Thus, remote areas were particularly hit hard by the return of divergence which began in the 1980s.

Map 13: Population Change in Rural Counties, 2000-2010

Table 6: Population Change, 2000-2010

<table>
<thead>
<tr>
<th>State</th>
<th>Rural</th>
<th>All</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delaware</td>
<td>NA</td>
<td>15%</td>
</tr>
<tr>
<td>Maryland</td>
<td>7%</td>
<td>9%</td>
</tr>
<tr>
<td>New Jersey</td>
<td>NA</td>
<td>5%</td>
</tr>
<tr>
<td>New York</td>
<td>0%</td>
<td>2%</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>-1%</td>
<td>4%</td>
</tr>
<tr>
<td>Virginia</td>
<td>5%</td>
<td>13%</td>
</tr>
<tr>
<td>West Virginia</td>
<td>0%</td>
<td>2%</td>
</tr>
<tr>
<td><strong>Region</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>United States</td>
<td></td>
<td>10%</td>
</tr>
<tr>
<td>Mid-Atlantic</td>
<td>1%</td>
<td>5%</td>
</tr>
</tbody>
</table>

*Source: Data is taken from the 2000 and 2010 Decennial Census from the US Census Bureau.*
Once again, the population trends mirror the changes in the poverty rate. Maryland saw a remarkable 6 percentage point drop in the poverty rate from 2000-2010 (Table 7). With the exception of that state, however, the great majority of states saw an increase in both rural and overall poverty. Remote counties in Central West Virginia, Southern Virginia, and Northern New York, had rising poverty, with some having rates exceeding 30% (Map 14). With divergence returning to the region in the 2000s, West Virginia and Virginia returned to having the exceptionally high poverty rates compared to other states.

Table 7: Poverty Rate, 2000-2010

<table>
<thead>
<tr>
<th>State</th>
<th>Poverty Rate, 2000</th>
<th>Poverty Rate, 2010</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Rural</td>
<td>All</td>
</tr>
<tr>
<td>Delaware</td>
<td>11%</td>
<td>9%</td>
</tr>
<tr>
<td>Maryland</td>
<td>11%</td>
<td>9%</td>
</tr>
<tr>
<td>New Jersey</td>
<td>NA</td>
<td>9%</td>
</tr>
<tr>
<td>New York</td>
<td>13%</td>
<td>15%</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>12%</td>
<td>11%</td>
</tr>
<tr>
<td>Virginia</td>
<td>15%</td>
<td>10%</td>
</tr>
<tr>
<td>West Virginia</td>
<td>20%</td>
<td>18%</td>
</tr>
<tr>
<td>Region</td>
<td></td>
<td></td>
</tr>
<tr>
<td>US Average</td>
<td>12%</td>
<td></td>
</tr>
<tr>
<td>Mid-Atlantic Average</td>
<td>13%</td>
<td></td>
</tr>
</tbody>
</table>
2.4 The 2008 Recession and Remote Rural Areas

The prosperity experienced throughout the nation during the 1990s and mid-2000s abruptly ended with the 2008 recession. Every Mid-Atlantic state suffered a loss of rural population and had modest overall population growth. Rural areas, especially remote areas, were hurt the most and still feel the effects of the economic downturn. Though rural population growth had been lower than the national average since the 1980s, the Great Recession initiated a trend of significant rural population decline. As seen in Table 8 below, Mid-Atlantic rural population growth between 2010 and 2017 was -3%. From 2010-2017, the overwhelming majority of rural counties suffered population loss in every state. all rural counties in New York lost population and all but three counties in PA did so as well. Many counties in the Shenandoah Valley had a net outflow of residents as well as counties in Southern West Virginia and throughout Southern Virginia. The amount of rural Virginia counties having high population growth was greatly reduced and the state became a heterogeneous group of counties experiencing various levels of growth and decline. Though remote counties expectedly suffered from the Recession, even

Source: Poverty data at the county level can be found in the “Historical County Level Poverty Estimates Tool” page from the US Census Bureau.
metro-adjacent rural counties had much worse performance than in past downturns. Rural counties near cities, such as those in Central Pennsylvania, Eastern Virginia, and Central Maryland, had moderate population losses. Of counties that did grow, gains were largely moderate. In fact, for the first time in the periods mentioned in this paper, no county had above 8% growth.

Table 8: Population Change, 2010-2017

<table>
<thead>
<tr>
<th>State</th>
<th>Rural</th>
<th>All</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delaware</td>
<td>NA</td>
<td>5%</td>
</tr>
<tr>
<td>Maryland</td>
<td>-1%</td>
<td>4%</td>
</tr>
<tr>
<td>New Jersey</td>
<td>NA</td>
<td>2%</td>
</tr>
<tr>
<td>New York</td>
<td>-5%</td>
<td>2%</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>-2%</td>
<td>1%</td>
</tr>
<tr>
<td>Virginia</td>
<td>-3%</td>
<td>4%</td>
</tr>
<tr>
<td>West Virginia</td>
<td>-2%</td>
<td>0%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Region</th>
<th>Percentage Population Change, 2010-2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States</td>
<td>5.9%</td>
</tr>
<tr>
<td>Mid-Atlantic</td>
<td>-3%          0%</td>
</tr>
</tbody>
</table>

Map 15: Population Change, 2010-2017

Source: Data is taken from the 2010 and 2017 Decennial Census from the US Census Bureau.
Similar to previous decades, the stagnant population growth from 2010-2017 mirrors the sluggish reduction in poverty during the period. Most states saw no change in poverty in both their rural and urban counties. The major exception to this is the rural counties in Maryland, whose poverty rate grew by an incredible 7 percentage points, the largest increase in rural poverty in any previously mentioned time period. The stagnant poverty rate over this time shows these states, and especially their rural counties, have largely not returned to their pre-Recession poverty levels.

Table 9: Poverty Rate, 2010-2017

<table>
<thead>
<tr>
<th>State</th>
<th>Poverty Rate, 2010 Rural</th>
<th>Poverty Rate, 2010 All</th>
<th>Poverty Rate, 2017 Rural</th>
<th>Poverty Rate, 2017 All</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delaware</td>
<td>NA</td>
<td>12%</td>
<td>NA</td>
<td>14%</td>
</tr>
<tr>
<td>Maryland</td>
<td>6%</td>
<td>10%</td>
<td>13%</td>
<td>9%</td>
</tr>
<tr>
<td>New Jersey</td>
<td>14%</td>
<td>10%</td>
<td>NA</td>
<td>11%</td>
</tr>
<tr>
<td>New York</td>
<td>14%</td>
<td>15%</td>
<td>15%</td>
<td>14%</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>14%</td>
<td>13%</td>
<td>14%</td>
<td>13%</td>
</tr>
<tr>
<td>Virginia</td>
<td>18%</td>
<td>13%</td>
<td>17%</td>
<td>13%</td>
</tr>
<tr>
<td>West Virginia</td>
<td>19%</td>
<td>19%</td>
<td>19%</td>
<td>19%</td>
</tr>
<tr>
<td><strong>Region</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>US Average</td>
<td>15%</td>
<td></td>
<td>13%</td>
<td></td>
</tr>
<tr>
<td>Mid-Atlantic Average</td>
<td>14%</td>
<td></td>
<td>14%</td>
<td></td>
</tr>
</tbody>
</table>
Part of the reason for the decline in rural population is attributable to the housing bubble’s effect of significantly reducing rural and suburban residential development which has had long-term economic effects on the regions’ ability to recover. One consequence of negative population growth is that the population will tend to age, given the lack of births. Sluggish population growth leading to an aging population has occurred in the Mid-Atlantic in recent years. The maps below showing the percentage of the population 65 and over reflects this reality. The elderly population has risen dramatically in virtually every rural county in the Mid-Atlantic, with particularly strong growth in Maryland, Central West Virginia, and Upstate New York (Map 17b). Such trends will impact how rural areas will be able to both attract new younger workers while also adopting to the changing housing needs of an aging population. The rise in the elderly population also affects economic development, as it is generally harder for older people to escape poverty. Though there was initially a rapid increase in the supply of housing beginning in the early 2010s as the economy began to recover, the growth in the quantity of housing in the Mid-Atlantic and Northeast regions is projected to slow by 2020 and even decline

Source: Poverty data at the county level can be found in the “Historical County Level Poverty Estimates Tool” page from the US Census Bureau.
by 2030. The ability of the region to meet its evolving housing needs as the population ages, especially in rural areas, will continue to play a role in the rural economy in the years to come.

Map 17a: Percentage of Population aged 65 and older, 2000

Source: American Factfinder, Census.gov.

Map 17b: Percentage of Population aged 65 and older, 2017

Source: American Factfinder, Census.gov.

---

In addition to the issue of housing, employment levels have dropped off drastically in the aftermath of the Recession. Negative effects on rural employment are seen when comparing how urban and rural counties recovered from the recession. In the years leading up to the Recession (2001 to 2007), job growth in nonmetropolitan counties nationally was 4.6% while after the Recession (2007-2015) it was -0.3%. However, urban counties, though they were harmed by the recession, maintained relatively high rates of job growth, as they experienced 9.7% job growth in the pre-Recession years and 6.6% after it. When further examining rural counties during this time, remote rural areas have fared worse than those near urban centers. Since 2007, both rural counties and reclassified rural counties (those previously urban) have experienced slower economic and population growth. However, counties that have gone from being rural to urban (those close to urban counties) have experienced stronger economic growth than counties that have remained either rural or urban since 1950. Thus, traditionally rural areas have been harmed the most by the recession both in terms of population and economic growth while rural regions closer to urban counties have performed better. However, it should be noted that despite the prevalence of rural areas located adjacent to cities in the Mid-Atlantic, all states saw a fall in their rural populations.

42 Goetz, etc., “Economic Status,” 2.
43 Goetz, etc., “Economic Status,” 2.
44 Goetz, etc., “Economic Status,” 2.
45 Goetz, etc., “Economic Status,” 2.
Map 18 shows the current economic typology of the rural counties in the Mid-Atlantic region. When comparing it to the 2004 Typology Map (Map 12), several patterns emerge as to how rural industries have changed over time. Manufacturing declined over the decade, especially in Pennsylvania and Southern Virginia. Non-specialized counties remained prominent throughout the region and many formerly manufacturing-dependent counties became non-specialized in Southern Virginia. 2015 marked the first year the USDA’s Economic Research Services included the recreation industry in their survey. Recreation was prominent throughout New York, Northern Pennsylvania, and the Appalachian Mountains. Agricultural employment is virtually non-existent as only one county is farming dependent. Despite the overall decline in mining since the late 20th century, the industry did grow between 2004 and 2015 in West Virginia and Pennsylvania. Government-dependent counties remained prominent in Northern New York, Southern Virginia, and Central Pennsylvania. Overall, the region’s rural economy is
diverse and has many non-specialized counties which are able to adapt to changing economic trends.

### 2.6 The Current Urban-Rural Gap in the Nation and Mid-Atlantic

When comparing the rural and urban economy, a common feature noted is the higher poverty rate among nonmetropolitan areas. Not only is the average poverty rate higher for rural citizens, but they tend to remain in poverty for long periods of time as 20 percent of the rural population has been living at or below the federal poverty level (FPL) for three consecutive decades.\(^\text{46}\) In 2010, 85 percent of the 429 most persistently poor counties (counties in which the poverty rate has exceeded 20 percent in four consecutive decades) in the United States were classified as rural.\(^\text{47}\) While a distinguishing factor of urban poverty is the prevalence poor single-parent households, a prominent feature of the rural economy is the large presence of a “working poor” population.\(^\text{48}\) Such people have a job, even a full-time job, but they do not earn enough income to be above the poverty line. High poverty rates have accompanied high levels of inequality in rural areas; since 1989, the number of counties with both high poverty rates and high inequality levels has increased nationally but the relationship is especially strong in counties outside of small and midsize metropolitan areas.\(^\text{49}\) Rural poverty, like most forms of poverty, has a unique spatial component. In New England, for example, poverty is relatively low given the high level of social cohesion and a more egalitarian distribution of economic and social power.

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\(^{47}\) Scally and Posey, “Place-Based Initiatives,” 1.


\(^{49}\) Goetz, etc., “Economic Status,” 11.
But in areas such as the Mississippi Delta or Appalachia, where there are large existing social and economic inequalities, poverty is more widespread and concentrated throughout the region. The Mid-Atlantic is unique as it contains states from the North, South, and even Appalachian region. Nationwide, the Northeast and Midwest have experienced strong economic growth and the Sunbelt has continued to grow while the Heartland and Rustbelt have suffered economic stagnation for decades. As seen in the table below, the Mid-Atlantic region has the 3rd lowest poverty rate (out of nine), behind only New England and West North Central (Table 10). Though this is encouraging, it is worth noting that the Mid-Atlantic region does have many urban areas and have enjoyed the benefits that go along with being located near metropolitan centers. Within the Mid-Atlantic region, poverty rates among rural counties give us a better view of the rural economy. Poverty rates have largely been stagnant since 2000 in most counties with no considerable change over time. Most counties, especially those throughout New York, Pennsylvania, and Maryland, have a poverty rate between 5-15%. However, large concentrations of poverty have persisted for the past 20 years in West Virginia, Southern Virginia, and Maryland with poverty rates exceeding 15 percent in many counties. Map 16 shows that poverty is disproportionality higher in rural counties in West Virginia and Virginia than other states. Areas that are geographically remote and scarcely populated are also those with the highest poverty rates.

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Table 10: Poverty Rate, Mid-Atlantic Region in 2017

<table>
<thead>
<tr>
<th>Region</th>
<th>Poverty Rate % (2017)</th>
</tr>
</thead>
<tbody>
<tr>
<td>East North Central</td>
<td>14.3</td>
</tr>
<tr>
<td>East South Central</td>
<td>18.1</td>
</tr>
<tr>
<td><strong>Mid-Atlantic</strong></td>
<td><strong>13.5</strong></td>
</tr>
<tr>
<td>Mountain</td>
<td>14.5</td>
</tr>
<tr>
<td>New England</td>
<td>10.9</td>
</tr>
<tr>
<td>Pacific</td>
<td>14.5</td>
</tr>
<tr>
<td>South Atlantic</td>
<td>14.8</td>
</tr>
<tr>
<td>West North Central</td>
<td>12.5</td>
</tr>
<tr>
<td>West South Central</td>
<td>16.6</td>
</tr>
</tbody>
</table>

**Source:** American Factfinder, Census.gov.
Section 3: Rural Industry Section

As seen from the Population and Poverty Section, historical and economic trends at the national and regional levels heavily determine whether rural areas thrive or stagnate. While Section 2 focused on these historical trends, this section details the current industry trends throughout the region’s rural areas. Despite the negative poverty and population trends experienced by many rural areas after the Great Recession, rural communities still find ways to economically thrive. Economic cluster theory and an emphasis on various key industries, highlights how the Mid-Atlantic can boost its economic development potential. Manufacturing, though facing large employment losses since its peak in the mid-20\textsuperscript{th} century, still plays an important role in the economy. Recreation and self-employment, though not highly discussed as important sectors, have benefitted the Mid-Atlantic’s rural economy, and offer ample future economic opportunities that are not dependent on natural resource extraction which do not provide long-term employment stability.

3.1 Cluster Theory

Cluster analysis has been used to understand what industries are prominent in certain regions. A cluster is defined as a group of industries that are located close to one another though they may not necessarily be in the same network.\textsuperscript{51} Besides the quantity, it is also important to consider the quality of economic clusters in a region. Economist Michael Porter distinguishes between what he terms "local clusters" and "traded clusters." Local industries are firms that sell their products within their local region while traded industries are those that export resources beyond their geographic areas. Overall, both urban and rural regions have a similar share of local

and traded clusters while rural areas have a distinct advantage in resource dependent industries.\(^5\)

By exploring the strengths of the rural economy in specific clusters, policies can be applied to build on these assets to improve and sustain economic well-being.

The benefits of businesses forming clusters was first clearly stated by the economist Alfred Marshall in his *Principles of Economics*. Marshall cites three crucial reasons why clusters tend to occur in an economy. First, doing so reduces transportation costs between firms since inputs are closer to suppliers.\(^6\) Second, firms clustering together tends to reduce labor costs by increasing the local labor supply of workers with similar skills.\(^7\) Finally, knowledge spillovers will occur when workers are in close proximity, increasing the knowledge in a regional economy and increasing productivity.\(^8\) A lack of agglomeration leads to structural disadvantages that are often associated with rural economies, namely low population densities and fewer economies of scale.

There is significant evidence, however, that economic clusters are not just an urban phenomenon as a variety of industries have clustered together in rural regions. Lumber and wood product clusters are located in 848 nonmetro counties while over 300 nonmetro counties contain significant stone, clay, and glass clusters.\(^9\) The presence of clusters existing in both urban and rural areas suggests that economic clustering is tied to how certain industries compete in their given areas, rather than the notion that all firms, regardless of industry, will seek the benefits of agglomeration in dense, urban settings. The positives of clustering can therefore extend to rural


\(^{54}\) Bernat, “Industry Clusters,” 173.


\(^{56}\) Gibbs and Bernat, “Rural Industry,” 19.
areas and offer much needed economic benefits, including a more stable economic base that is more likely to be resilient in the face of an economic downturn.57

Many have cited clustering as an opportunity for wage growth in rural areas. The theoretical basis for such an argument is grounded in the observation that as the density of a work force increases, the division of labor will also increase, leading to higher wages.58 Thus, clustering can be especially important for industries that require skilled and specialized labor that utilizes developing technologies.59 The theoretical support for rural clustering is reinforced by empirical data, as one study (Robert, 1997) shows that manufacturing workers in rural industry clusters earn about 13 percent more than other rural workers with the same education and experience level not working in such clusters.60 Although greater division of labor is expected to especially benefit highly educated workers, workers regardless of age or education can benefit from rural manufacturing clusters. The Roberts (1997) study found that the gain in wages from cluster employment is roughly equally across all workers, regardless of age or education level.61 Such a finding suggests that rising inequality between workers of different education attainment can at least be mitigated by fostering the benefits of economic clusters.

Though technology has come to be a dominant force in the modern economy, evidence shows that firms still prefer to be located near each other. Even having access to the internet, which greatly expands a firm’s ability to communicate worldwide, has not reduced the role of location and space in business creation and expansion. Research shows that areas with natural

57 Bernat, “Industry Clusters,” 175.
60 Gibbs and Bernat, “Rural Industry,” 18.
endowments are still influenceable even in a modern, tech-savvy economy in promoting growth. Pittsburgh, with its proximity to coal and oil fields has continued to be a major player in the steel and chemical industries despite the fact Pittsburgh's role in raw materials has largely ended.\textsuperscript{62} Thus, a place-sensitive framework that places value on a sense of place is still crucial even in an age of technology.

### 3.2 Rural Industries

In examining dominant clusters in rural economies, several industry patterns tend to emerge. Clusters that are disproportionately found in rural regions as opposed to metropolitan areas include Apparel, Footwear, and Textiles. Prominent rural traded clusters also include Hospitality and Tourism, Food Processing, Heavy Construction Services, Automotive, Metal Manufacturing, and Business Services.\textsuperscript{63} Cities often feature clusters such as Business Services, Financial Services, Hospitality and Tourism, Education and Knowledge Creation, Distribution Services, and Transportation and Logistics.\textsuperscript{64} Between 1990 and 2001, rural regions added manufacturing jobs at annual rate of .03 every year while metropolitan regions lost manufacturing jobs at an annual rate of -.67\%.\textsuperscript{65} From 1990 to 2001, rural areas made gains in traded industries like manufacturing and primary products such as Automotive, Tobacco, Forest Products, and natural resource-dependent industries as a group.\textsuperscript{66} These statistics disprove the notion that all poorer rural regions suffer from lack of favorable industries as there are ample economic opportunities available.

\textsuperscript{63} Gibbs and Bernat, “Rural Industry,” 23.
\textsuperscript{64} Gibbs and Bernat, “Rural Industry,” 24.
\textsuperscript{65} Gibbs and Bernat, “Rural Industry,” 33.
\textsuperscript{66} Gibbs and Bernat, “Rural Industry,” 34.
The textile industry had been a popular source of rural employment in the United States. However, a national decline in textiles and apparel employment has been seen since the 1970s, especially throughout the Southern and Southwestern states.\(^{67}\) In 1973, there were more than 2.4 million textile and apparel employees at the national level but only 1.5 million by 1996. The 40 percent decline in the textiles was worse than industries like manufacturing, which suffered an 8% loss in employment.\(^{68}\) Data in Table 11 shows that from 2000 to 2017, the South Atlantic and East South Central divisions suffered the greatest loss of employment, with the former losing over half of its workers. The decline of the textile industry has marked a shift in the rural manufacturing economy away from this once dominant industry. Though textile production in the US is at its highest level in history, textile firms have lost employment and offer lower wages with the rise in global trade among developing countries.\(^{69}\) However, Table 11 shows that while the South lost large numbers of jobs in the industry, the Mid-Atlantic region actually gained jobs.

Table 11: Textile Employment by Region, 2000-2017

<table>
<thead>
<tr>
<th>Region</th>
<th>2000</th>
<th>2017</th>
<th>% Change in Employment</th>
</tr>
</thead>
<tbody>
<tr>
<td>New England</td>
<td>30,288</td>
<td>22,954</td>
<td>-24%</td>
</tr>
<tr>
<td>Mid-Atlantic</td>
<td>52,578</td>
<td>53,745</td>
<td>2%</td>
</tr>
<tr>
<td>East North Central</td>
<td>26,775</td>
<td>61,229</td>
<td>129%</td>
</tr>
<tr>
<td>South Atlantic</td>
<td>321,314</td>
<td>151,984</td>
<td>-53%</td>
</tr>
<tr>
<td>East South Central</td>
<td>62,371</td>
<td>38,815</td>
<td>-38%</td>
</tr>
</tbody>
</table>

Note: Number of people employed in the “Textile Mills and Textile Products” Industry
Source: American Factfinder (CensusBureau.gov).

\(^{67}\) Gibbs and Bernat, “Rural Industry,” 34.
The significant decline in textiles, particularly in the South, also overshadows the progress made by rural manufacturing in general. When not counting the big three clusters previously mentioned, rural areas actually gained in traded industry employment faster than metro areas during the decade of 1990-2001. Describing the decline in textiles in the South not only suggests that rural areas should not rely on industries that have been displaced by the rise of globalization for future growth (such as textiles and apparels) but also that rural employment must be viewed at the industry level rather than overall employment growth or decline. The reports of aggregate employment loss among rural areas overstate the direness of their economic status as many of those jobs are from failing industries and other areas of employment present substantial promise, such as manufacturing, recreation, and self-employment.

3.3 Rural Manufacturing

Though manufacturing serves less of an influential role in the rural economy than it once did, it has evolved to remain an important driver of economic growth. When examining rural counties that perform better than the national average in terms of poverty rate, unemployment rate, housing quality, and education levels, patterns in the manufacturing sector begin to emerge. Above-average performing rural counties tend to have fewer jobs in resource-extraction based manufacturing (like coal and oil) and counties with heavy employment in traditional rural manufacturing sectors like mining and utilities have largely not been prosperous on a national

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70 Gibbs and Bernat, “Rural Industry,” 35.
71 Housing quality is determined by the housing problems rate, the percentage of households having one or more of four selected physical and financial housing conditions combined by the Census Bureau into a single indicator: (1) lacking complete plumbing facilities, (2) lacking complete kitchen facilities, (3) having 1.01 or more occupants per room, and (4) paying selected monthly owner costs or gross rent greater than 30 percent of household income.
72 Measured by the high school dropout rate
scale.\textsuperscript{73} Also, prosperous counties do have a strong presence of footloose manufacturing
(industries that can operate anywhere regardless of location). Footloose manufacturing employs
almost two and a half times more jobs than local resource-extraction manufacturing jobs in
counties with above-average economic, housing, and education levels.\textsuperscript{74} Such manufacturing
allows for a greater diversity of rural industry and has contributed to the relative economic
success of many counties. These same prosperous rural counties have more diverse economies
(as measured by the Herfindahl Index)\textsuperscript{75} since not relying on traditional extraction industries has
allowed them to adapt in an ever-changing economy in various industries and are to attract
industries that are able to succeed in a variety of locations\textsuperscript{76}. Thus, manufacturing has not
become obsolete in contributing to rural prosperity but has evolved from its mid-20\textsuperscript{th} century
form.

3.4 Manufacturing and Agriculture

Although farming is often viewed as an influential rural economic industry,
manufacturing remains a prevalent industry despite its decline in recent years. Despite the
association of rural areas with farming, rural manufacturing in the private sector provides more
than three times the income and over twice the number of jobs as agriculture.\textsuperscript{77} In fact,
agriculture is not a major economic factor in rural life today as farm income represents only

\textsuperscript{73} Sara-Beth James, “The Effect of Local Economic Development Policy on Employment Growth in Rural Counties in
\textsuperscript{74} James, “Effect of Local Policy.”
\textsuperscript{75} The Herfindahl Index is the summed square of each industry’s proportion of the economy and has a maximum
value of each industry’s proportion of the economy and has a maximum value of one when all employment is in
one industry. Lower values indicate a more diverse economy (James, 312).
\textsuperscript{76} James, “Effect of Local Policy,” 312.
\textsuperscript{77} Sarah Low, “Rural Manufacturing Resilience: Factors Associated with Plant Survival, 1996-2011, (Summary
about 2% of total income in rural counties.\textsuperscript{78} Low agricultural employment in the Mid-Atlantic is seen in Table 12 below, showing it accounts for less than 1% of the region’s workforce, the second lowest of all regions in the United States while manufacturing accounts for 20 percent of rural employment, most of which is concentrated in the Eastern U.S.\textsuperscript{79}

**Table 12: Agricultural Employment by Region, 2017.**

<table>
<thead>
<tr>
<th>Region</th>
<th>Employed in Agriculture (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>East North Central</td>
<td>1.3</td>
</tr>
<tr>
<td>East South Central</td>
<td>1.7</td>
</tr>
<tr>
<td>Mid-Atlantic</td>
<td>0.8</td>
</tr>
<tr>
<td>Mountain</td>
<td>2.8</td>
</tr>
<tr>
<td>New England</td>
<td>0.7</td>
</tr>
<tr>
<td>Pacific</td>
<td>2.4</td>
</tr>
<tr>
<td>South Atlantic</td>
<td>1.1</td>
</tr>
<tr>
<td>West North Central</td>
<td>3.1</td>
</tr>
<tr>
<td>West South Central</td>
<td>3.5</td>
</tr>
</tbody>
</table>

**Source:** American Factfinder, CensusBureau.gov

### 3.5 Manufacturing in the Mid-Atlantic Region

Despite the ongoing importance of manufacturing for rural economic development, the Mid-Atlantic has a relatively small size workforce employed in the manufacturing sector. It ranks 7\textsuperscript{th} out of the 9 geographical regions in the US, with 8.4 percent of its workers employed in manufacturing; and most manufacturing employment is in the Southern and Central states (Table 13). Among rural Mid-Atlantic counties, manufacturing has suffered severe losses since 2000. New York and Northern Pennsylvania have seen steady declines in manufacturing employment.

\textsuperscript{78} Porter, “Competitiveness,” 19.
(Map 19b). However, the region most affected appears to be in the Appalachian Mountains. Despite the loss in employment, even today Northern Pennsylvania and parts of Southern NY and Southern WV still employ many manufacturing workers.

Table 13: Manufacturing Employment by US Region, 2017

<table>
<thead>
<tr>
<th>Region</th>
<th>% Employed in Manufacturing</th>
</tr>
</thead>
<tbody>
<tr>
<td>East North Central</td>
<td>16</td>
</tr>
<tr>
<td>East South Central</td>
<td>13.7</td>
</tr>
<tr>
<td>Mid-Atlantic</td>
<td>8.4</td>
</tr>
<tr>
<td>Mountain</td>
<td>6.9</td>
</tr>
<tr>
<td>New England</td>
<td>9.9</td>
</tr>
<tr>
<td>Pacific</td>
<td>9.5</td>
</tr>
<tr>
<td>South Atlantic</td>
<td>8.1</td>
</tr>
<tr>
<td>West North Central</td>
<td>12.4</td>
</tr>
<tr>
<td>West South Central</td>
<td>9.1</td>
</tr>
</tbody>
</table>

Source: American Factfinder, Censusbureau.gov

Map 19a: Percentage of Workforce in Manufacturing Employment, 2000

Source: American Factfinder, Censusbureau.gov
Map 19b: Percentage of Workforce in Manufacturing Employment, 2017

Source: American Factfinder, Censusbureau.gov

3.6 Manufacturing Firm Size

The size of manufacturing plants, as well as their particular industry, sheds light on the state of American manufacturing. During the years 1996 to 2011, 45 percent of manufacturing plants closed across the country.\(^{80}\) Within those that remained, smaller, independent firms were more likely to survive than multi-unit plants (those with multiple branches) and survivors were mostly located in the Northeast and Midwest as opposed to the South and West.\(^{81}\) Also noteworthy is that rural manufacturing establishments were more likely to survive during the period than metropolitan ones (57 percent versus 53 percent).\(^{82}\) These findings run counter to the common narrative about today’s economy, namely that large businesses, both manufacturing and otherwise, have succeed at the expense of small, locally based plants, contributing to the

\(^{80}\) Low, “Rural Manufacturing,” 2.
\(^{81}\) Low, “Rural Manufacturing,” 2.
\(^{82}\) Low, “Rural Manufacturing,” 2.
economic stagnation faced by rural counties. In terms of sub-sectors, survival rates for the textile industry were among the lowest, reflecting the shift away from apparel manufacturing in the United States.\textsuperscript{83}

### 3.7 Manufacturing Innovation

Innovation has played a crucial role in how rural manufacturing has developed. Though it is difficult to quantify, innovation is typically measured using data from Research and Development (R&D) activities, such as budget funding for research. However, it is also important to include “user innovation,” which occurs when individuals encounter problems and think creatively to overcome them, but is not reflected in the R&D budget.\textsuperscript{84} The 2014 Economic Research Service Rural Establishment Innovation Survey (REIS) collected data which gathered information on both kinds of innovation and applied it to studying its effects on manufacturing.\textsuperscript{85} Examining both R&D and user innovation, the REIS report shows that urban areas tend to have higher levels of innovation than rural ones in both categories.\textsuperscript{86} Such a result is not necessarily surprising as it is consistent with theories regarding agglomeration. However, innovation rates are virtually the same when comparing urban and rural manufacturing establishments.\textsuperscript{87} Thus, the commonly held view that urban areas have the distinct advantage of greater innovation than rural areas appears to be industry dependent, rather than a broad truth.

Rural manufacturing proves to be highly innovative when compared to its urban counterpart. In rural areas, manufacturing is the leading economic sector in innovation, with the

\textsuperscript{83} Low, “Rural Manufacturing,” 1.
\textsuperscript{85} Wojan and Parker, “Innovation in the Rural Nonfarm Economy,” 1.
\textsuperscript{86} Wojan and Parker, “Innovation in the Rural Nonfarm Economy,” 2.
\textsuperscript{87} Wojan and Parker, “Innovation in the Rural Nonfarm Economy,” 2.
subsectors of pharmaceuticals, chemicals, and plastics being the most innovative.\textsuperscript{88} However, the relative success of innovation in rural manufacturing is not a universal truth across industries. Rural service-sector industries tend to lag behind those in urban areas and struggle with innovation in general.\textsuperscript{89} Thus, the innovation gap between rural and metropolitan areas seems to apply to manufacturing alone.

\textbf{3.8 The Recreation Industry}

Some rural regions have used their abundant natural amenities to build a strong recreational-based economy rather than resource extraction jobs. The positives and negatives of such employment have been debated in the economics literature. Some have argued that amenities-driven economies trap local workers in low wage service jobs and hurt low-income residents due to their higher housing prices.\textsuperscript{90} Others have noted that regions can use their natural resources to fill a particular niche market and offer residents a quiet, peaceful rural life that many desire. Recent empirical research tends to favor the latter claim as rural counties with an abundance of amenities have seen positive population and economic growth. During the 1990s, amenities-driven counties averaged 20 percent population growth, three times more than nonmetropolitan counties in general, as well as 24 percent employment growth, over twice rate of nonmetro counties.\textsuperscript{91} One advantage of rural recreational development is that the jobs it produces generally don’t require high levels of education unlike like high-tech urban jobs.\textsuperscript{92} This

\textsuperscript{88} Wojan and Parker, “Innovation in the Rural Nonfarm Economy,” 2.
\textsuperscript{89} Wojan and Parker, “Innovation in the Rural Nonfarm Economy,” 2.
\textsuperscript{91} Reeder and Brown, “Recreation, Tourism, and Rural Well-Being,” iii.
\textsuperscript{92} Reeder and Brown, “Recreation, Tourism, and Rural Well-Being,” 1.
provides an advantage for lower-educated and lower-skilled workers to capitalize on such economic opportunities.

The relationship between recreationally focused rural counties and employment shows a positive correlation. Though many consider service jobs as lower-paying, such jobs in areas with high levels of recreational employment have higher earnings than comparable non-metropolitan jobs generally.\textsuperscript{93} Though the concern over high housing costs are justified, the greater wages earned by residents of these areas more than compensates for higher rent costs. Rent is on average 23% higher for rural recreational counties than for rural non-recreational counties, which amounts to about an extra $1,000 per year. However, the average resident of amenity-driven areas earns on average $3,000 more than their other rural counterparts.\textsuperscript{94}

Given that natural landscapes differ across regions, it is important to note that the advantages offered by natural amenities are context dependent. Growth across amenity-driven rural counties is not identical throughout the nation. Those with ski resorts are among the wealthiest counties (especially common in the Northeast) while those that feature reservoir lakes are among the poorest counties with a less educated population (common in Southern Appalachia).\textsuperscript{95} Throughout the U.S., recreational counties are most common in the West, Upper Midwest, and Northeast.\textsuperscript{96} The Western states maintain many national parks and opportunities for hiking, mountain climbing, and fishing while those in the Northeast and New York are

\textsuperscript{93} Reeder and Brown, “Recreation, Tourism, and Rural Well-Being,” 24.
\textsuperscript{94} Reeder and Brown, “Recreation, Tourism, and Rural Well-Being,” 24.
\textsuperscript{95} Reeder and Brown, “Recreation, Tourism, and Rural Well-Being,” iv.
\textsuperscript{96} Reeder and Brown, “Recreation, Tourism, and Rural Well-Being,” 5.
common places for people to have second homes where they enjoy winter activities, such as snowboarding and skiing.97

In the Mid-Atlantic region, most counties that have firm recreational establishments are common in West Virginia, Northern Pennsylvania, and Upstate New York (Map 20).98 As seen in the map below, areas near the Appalachian Mountains in West Virginia and Upstate New York have the most Recreational and Arts employment. Though it does not have a commanding presence in the regional economy overall, the industry is important to several rural counties. While most rural counties have roughly 5-10% of their workforce employed in Recreation and the Arts, remote counties in West Virginia and New York have larger concentrations of employment. Also, the industry had an impressive track record over the period of 2000-2017. Though many rural industries declined in the aftermath of the Great Recession, Recreation employment actually grew from 2010-2017, especially in remote West Virginia. Another encouraging feature is found when comparing Map 20 and Map 18. When examining both, it can be seen that many counties which are non-specialized are located near recreation-dependent counties. This suggests that the former counties have the rural natural amenities to take advantage of recreational employment but have not taken the opportunity to do so. Thus, remote non-specialized counties in the Mid-Atlantic are capable of enjoying the benefits associated with recreation employment.

97 Reeder and Brown, “Recreation, Tourism, and Rural Well-Being,” 3.  
98 Reeder and Brown, “Recreation, Tourism, and Rural Well-Being,” 5.
3.9 Self-Employment

Self-employment is also an important industry to consider when examining the state of the rural economy. Many consider it to be a last resort for those unable to find a job and believe that it does not provide either high wages or positive spillover effects for the local economy. However, Stephan J. Goetz, David A. Fleming, and Anil Rupasingha (2012) challenge this view. They believe this traditional view undervalues the role self-employment has on the economy, especially since 2000. Their examination of several empirical studies shows that self-employment increases wages and per capita income and can reduce poverty, especially in rural areas improvements and poverty reduction.99 There has been substantial growth since 2000 in the

ratio of self-employed workers to wage employment, going from about .20 to over .30. This number would be even higher if incorporated jobs are added into the self-employment numbers. With respect to what industries these workers are operating in, the three largest industries are professional and business services, construction, and health and education services, together comprising about 50 percent of all self-employment. Though many view self-employment as dominated by agriculture, the amount of self-employed workers in agriculture actually declined from 2000-2010. Furthermore, the Bureau of Labor Statistics predicts that from 2012-2022, self-employment will decline in agricultural self-employment by over 25% but will increase with respect to personal care aides (72%), Management Analysis (30%), and Construction and Maintenance (20%). These findings show that self-employment provides jobs with adequate earnings, have positive effects on their local economies, and are primarily in industries expected to grow in the future.

Remote areas have turned to self-employment to boost their local economies, especially after the Great Recession. Though many rural areas have experienced a “jobless recovery” after the Recession, the number of self-employed rural workers has actually increased nationwide. Several studies have shown a positive relationship between self-employment and reduced poverty rates at the county level (Goetz and Rupasingha, 2011) and have been especially positive in lagging economic regions such as Central Appalachia (Stephens, Partridge, and Faggian 2013). In the Mid-Atlantic region, self-employment was popular throughout the 2000s and was highest in Virginia, Northern Pennsylvania, and virtually all of New York (Map 21a). Moreover,

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100 Goetz, etc., “The Economic Impacts of Self-Employment,” pg. 316.
104 Scally and Posey, “Place-Based Initiatives,” 3.
the Great Recession did not disrupt self-employment as it remained higher after the Great Recession (Map 21b). However, contrary to the idea that self-employment will rise during economic downturns, self-employment actually tends to follow the same trends as regular employment. As Bashir, Gebremedhin, and Fletcher (2011) found when studying rural Northeastern counties, employment growth is positively correlated with self-employment growth, meaning that a decrease in employment opportunities decreases self-employment. This is because, during recessions, people find self-employment too risky and usually opt for a wage-job that proves more employment security. Thus, self-employment cannot be viewed as a substitute for regular employment but can nevertheless play a role in rural economic development. Not only does self-employment data on the national level convey positive news regarding its effect on employment but it can also benefit the Mid-Atlantic region’s more remote counties that have struggled in the aftermath of the Great Recession.

3.10 Labor Issues

Rather than a lack of innovation among rural manufacturing firms, managers are mostly concerned with a lack of quality labor. A survey conducted by the USDA in 1998 was sent to rural manufacturing managers to better understand the issues facing them. For rural
manufacturing employers, quality of labor was the most cited issue they face as a business, with 75 percent citing it as a problem and around 35% citing it as a major problem. Concerns over poor labor quality outweigh the conventional issues that many policymakers attribute to employers such as labor costs and high tax rates. Many economic development initiatives tend to focus on enabling the flow of financial capital to businesses. Such an emphasis on financial deregulation has been prominent since the 1980s with the repeal of the Glass Steagall Act, which removed a law banning the merger of commercial banks and investment banks, and the passage of the Interstate Banking and Branching Efficiency Act of 1994, which removed regulations on bank branches crossing interstate lines. These two major acts, along with the removal of other laws, gave banks the ability to consolidate and form large financial institutions that were previously prohibited. One result of such deregulation has been the loss of small community banks to meet the needs of small businesses and other institutions that employ middle class workers. The loss of smaller banks has hit rural areas particularly hard, as lending was lower than in 1996 while loans to large banks in cities has continued to grow. The decline of community banks has also resulted in a loss of social and community capital as local institutions which were largely trusted and relied upon by the public were gradually replaced by large, distant banks which had little connection to them.

Policies that have been proposed to aid struggling rural areas have typically stressed financial infrastructure issues such as lack of credit and lower tax rates. However, issues surrounding access to human resources tend to dominate the list of concerns of rural businesses.

109 Hendrickson, etc., “Countering,” 23.
rather than ensuring manufacturing firms have adequate access to financial resources; only 7 percent of plants in remote rural areas identify a lack of financial assistance as a constraint. Quality of labor issues surround not so much advanced education as work attitude and the “low level of general skills in the workforce.” Thus, reforms need to focus most on the biggest issues facing employers rather than conventional ideas that have typically governed economic development.

The one exception to the concern for human resource development is the Appalachian region. According to the same survey, only manufacturing establishments in Appalachia identify infrastructure as a crucial problem while the rest focus heavily on human resource issues. Only about 18 percent of firms in the region find poor quality of labor an issue, which is half as much as rural areas generally. Instead, infrastructure is a major concern of the area. Such a response likely reflects the poor state of roads and water and sewer systems across the region compared to other regions such as the Northeastern and Western United States. Along with Appalachia, several states in the Mid-Atlantic also suffer from poor infrastructure quality. A 2017 report on the nation’s infrastructure reveals that several states in the region have many degrading roads and bridges. According to the report, at least 30% of all roads in West Virginia, Pennsylvania, and New Jersey are structurally deficient and the quality of bridges is especially poor in the states west of the Appalachian Mountains, such as West Virginia, Pennsylvania, and New York. Another unique concern raised by Appalachian manufacturers that was not raised by other

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regions is the high levels of state and local taxes, listing it as one of the top issues facing their businesses.\footnote{McGranahan, “Local Problems,” 2.}

### Table 13: Infrastructure in the Mid-Atlantic

<table>
<thead>
<tr>
<th>State</th>
<th>Total Miles of Roads</th>
<th>% Percentage of Roads Structurally Deficient</th>
<th>% Bridges Structurally Deficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>DE</td>
<td>6000 miles</td>
<td>18%</td>
<td>4.40%</td>
</tr>
<tr>
<td>MD</td>
<td>32000 miles</td>
<td>11%</td>
<td>5.60%</td>
</tr>
<tr>
<td>NJ</td>
<td>39000 miles</td>
<td>37%</td>
<td>8.80%</td>
</tr>
<tr>
<td>NY</td>
<td>114000 miles</td>
<td>19%</td>
<td>10.50%</td>
</tr>
<tr>
<td>PA</td>
<td>120000 miles</td>
<td>30%</td>
<td>18.30%</td>
</tr>
<tr>
<td>VA</td>
<td>75000 miles</td>
<td>10%</td>
<td>5.90%</td>
</tr>
<tr>
<td>WV</td>
<td>39000 miles</td>
<td>31%</td>
<td>18.90%</td>
</tr>
</tbody>
</table>

Source: InfrastructureReportCard.org

### 3.11 Rural Industry: Summary

In summary, the Mid-Atlantic region has a diverse economic landscape throughout its rural counties. Despite its recent decline, manufacturing continues to play a key role in the rural economy. Agglomeration is a strong feature of the rural, as well as the urban, economy as firms tend to cluster together geographically, demonstrating that firms still value location and geography even in an age of technology. Despite perceptions that assume rural areas are at a unique disadvantage when compared to their urban counterparts, rural manufacturing remains just as innovative as urban plants. Rather than viewing manufacturing as declining, one must rather view it as shifting and adapting to new economic circumstances. A shift in industry, rather than overall decline, is especially important to consider when examining the Mid-Atlantic as manufacturing still drives economic growth and has not been as negatively affected by
downturns in the extraction-based and textile manufacturing sector as other regions. Recreation and self-employment also offer crucial opportunities for Mid-Atlantic rural economies. Recreational employment provides both ample employment opportunities throughout the region given how popular the industry and provides competitive wages for its workers. Many non-specialized counties are near recreation-dependent counties, providing opportunities for future economic development efforts in those areas. Self-employment also serves an important role in the region and can provide a steady source of economic activity for some. Altogether, rural counties in the Mid-Atlantic continue to thrive amidst various economic trends and has several opportunities to grow its economy.
Section 4: Rural Broadband in the Mid-Atlantic Region

Broadband is a crucial element in being able to participate in the modern, technology-driven economy. However, the United States in general, and its rural areas in particular, have poorer internet service compared to other developed countries. In the Mid-Atlantic region, several states with large rural populations (Pennsylvania, Virginia, and West Virginia) rank poorly when compared to other states in the country. Multiple studies have shown that the expansion brings many benefits, including increased economic growth, incomes, and employment, and can even assist in mitigating negative population trends in rural areas.

Enlarging rural broadband networks has its own set of unique challenges which include low population density, lack of available infrastructure, and geographic issues (such as dense foliage and mountainous terrain) which makes reaching these areas especially difficult. To combat these barriers, national programs like the Rural Utilities Service (RUS) have been created to expand high-speed internet service to unserved rural areas. However, several criticisms of the RUS (and federal programs in general), arguing that they do not directly target remote rural areas enough, their funding is often ineffectively allocated, and that they are not innovative enough to encourage broadband investment. However, several local alternatives have been used to expand rural broadband, including the use of the Anchor Tenant Model and TV White Space Spectrum.

This section will show how such local efforts have been used to expand rural broadband in the absence of successful national subsidy programs.

4.1 Broadband in the United States

The lack of competition among broadband firms has led to high prices and poor service throughout the country. Most Americans have only one or two ISPs (Internet Service Provider)
to choose from for service.\footnote{Karl Bode, “How Bad Maps are Ruining American Broadband,” The Verge, 2018.} Most of these internet providers, such as CenturyLink, Frontier, and AT&T, began their existence as phone companies, which gave them control over the physical power lines which serve their customers area.\footnote{Allan Holmes and Chris Zubak-Skees, “How Broadband Providers Seem to Avoid Competition,” PublicIntegrity.org, 2015.} Aside from Internet providers, Cable TV providers, who own the cables in each household, are the only other significant actor in the market.\footnote{Holmes and Zubak-Skees, “Broadband Providers,” 2015.} Thus, the only significant competition in the broadband market is between these two actors. Where there is a plurality of providers, the ISPs often coordinate activity to retain their dominance in certain areas. According to the Center for Public Integrity, mapping the service areas of US providers shows that telecommunications companies appear to carve up territory to avoid competing with more than one other provider.\footnote{Holmes and Zubak-Skees, “Broadband Providers,” 2015.} This practice can be seen in Seattle which has three providers for its citizens, yet no resident has a choice of all three. Data from the Federal Communications Commission shows that about 55 percent of U.S. households have only one provider that offers service at 25 megabits per second, which is the minimum the FCC says is necessary to access the most advanced online applications. The FCC also states that less than 20 percent of Americans have no access to such speed.\footnote{Holmes and Zubak-Skees, “Broadband Providers,” 2015.}

Even with subsidies and tax benefits, major ISPs have not kept their promises in delivering high-quality internet access across the country. AT&T, for example, has failed to upgrade broadband technology in poor areas despite receiving subsidies and tax breaks for decades to do so.\footnote{Bode, “Bad Maps.”} Verizon has also made significant promise to expand access to fiber broadband service to every household in New Jersey and Pennsylvania and received billions in
tax deductions to accomplish their goal.\footnote{Bode, "Bad Maps."} The effort failed and the states have since agreed to forget Verizon's obligations altogether.\footnote{Bode, "Bad Maps."} The lack of results from large internet companies has created a strained relationship between them, their customers, and governments who attempt to work with such companies to expand broadband infrastructure. Subsidies for expanding rural broadband access have especially failed. Despite the Connect America Fund (CAF) spending over $4.5 billion each year since 1995 as well as over $10 billion from the 2009 stimulus package, rural broadband penetration has remained unsuccessful.\footnote{Scott Wallsten, "Rural Broadband Subsidies: The Gift that that Keeps on Giving," TechPolicyInstitute.org, 2018.} About 60 percent of the money has been used for overhead and administrative costs, severely limiting the amount of funds directly being used to solve the issue of lack of rural internet access.\footnote{Wallsten, “Rural Broadband Subsidies.”}

### 4.2 Comparative Broadband Services

Compared to other advanced countries, the US lags behind both in terms of broadband prices and ISP variety. US consumers pay among the highest prices for broadband in the developed world and ranks as the 9th most expensive out of the 34 countries involved in the Organization for Economic Co-operation and Development (OECD).\footnote{Bode, "Bad Maps."} Internet prices in five large US cities and five comparable French cities found that prices in the US were as much as 3.5 times higher than those in France for similar service.\footnote{Holmes and Zubak-Skees, “Broadband Providers,” 2015.} US internet consumers also face relatively fewer ISP options compared to other developed nations. In Seattle, for example, Comcast serves 95 percent of the Metro area while CenturyLink only offers services in the Southern region of the city.\footnote{Holmes and Zubak-Skees, “Broadband Providers,” 2015.}
The Mid-Atlantic reflects this trend, with CenturyLink and Xfinity-Comcast consistently among the top internet providers among its’ states. The story is different in France, however. In Nice, one can choose from six different internet providers that charge lower prices than US companies for relatively the same (if not better) quality of service.\textsuperscript{129} French success has been made possible, at least in part, by a regulatory policy known as open access, in which companies share networks for a prescribed fee.\textsuperscript{130} Some have suggested that the discrepancy between the US and other nations is the result of a difference in standards for service quality. Several European countries, including France, use copper wire, rather than cable or fiber, which leads to slower speeds. They cite a report by the European Commission, which finds that European countries on average provide only 74 percent of their advertised speeds, partly due to the use of cheaper DSL (copper) wiring.\textsuperscript{131} However, even compensating for the reduced speeds, France still offers better overall service. Accounting for slower speeds, average French costs are still 26% less than AT&T and 28% less than Time warner prices.\textsuperscript{132}

\textbf{4.3 Broadband in the Mid-Atlantic Region}

Throughout the Mid-Atlantic states, most have attempted to expand broadband through large-scale spending programs at the state level. New York, with its New York State Broadband Program, committed $500 million to target underserved and unserved areas. The bill especially targeted rural areas in the western counties of the state, which received $82 million.\textsuperscript{133} In 2019, a report from the project noted that although 98 percent of the state was covered, only 87 percent

\textsuperscript{129} Holmes and Zubak-Skees, “Broadband Providers,” 2015.
\textsuperscript{130} Holmes and Zubak-Skees, “Broadband Providers,” 2015.
\textsuperscript{131} Holmes and Zubak-Skees, “Broadband Providers,” 2015.
\textsuperscript{132} Holmes and Zubak-Skees, “Broadband Providers,” 2015.
\textsuperscript{133} Nate Benson, "Rural Broadband: New York still has work to do," \textit{WGRZ}, 2/20/2020.
of the rural population had sufficient internet access meeting FCC guidelines.\textsuperscript{134} Most of the money took the form of state grants that would be bid on by private companies and awarded to whomever could provide the best service to the state. Like most state efforts, these funds mostly take the form of matching grants to reduce the burden of construction costs and to fund preliminary feasibility studies. Maryland, Pennsylvania, and Virginia also have similar state programs. The Rural Maryland Act of 2017, unlike its previous broadband efforts, focuses on "last-mile services" which assists the final stages of connecting homes to internet service areas rather than "middle-mile services" which "involve interconnections between Internet service areas."\textsuperscript{135} Maryland's new plan signals it has made sufficient progress in the initial steps of expanding broadband access but needs to concentrate on the final step: connecting this infrastructure to individual homes. Most states in the Mid-Atlantic, especially those with the largest urban populations like New Jersey and New York, have high percentages of residents having access to high-speed internet under the FCC standard of 25 Megabytes per second (Mbps). More rural states, as expected, have lower rates of internet connectivity with West Virginia among the worst in the nation with only a 75% coverage rate. The Mid-Atlantic reflects the nationwide trend of densely populated and economically prosperous states having the best broadband networks while rural, poorer states rank among the worst.

\textsuperscript{134} Benson, “Rural Broadband.”
Table 1: Broadband Access in the Mid-Atlantic Region

<table>
<thead>
<tr>
<th>State</th>
<th>National Rank</th>
<th>Average Speed (Mbps)</th>
<th>Percentage of State Covered</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Jersey</td>
<td>1st</td>
<td>52.0</td>
<td>99%</td>
</tr>
<tr>
<td>New York</td>
<td>4th</td>
<td>45.2</td>
<td>97.8%</td>
</tr>
<tr>
<td>Delaware</td>
<td>6th</td>
<td>44.9</td>
<td>97.5%</td>
</tr>
<tr>
<td>Maryland</td>
<td>8th</td>
<td>51.3</td>
<td>96.7%</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>12th</td>
<td>41.4</td>
<td>94.7%</td>
</tr>
<tr>
<td>Virginia</td>
<td>22nd</td>
<td>48.7</td>
<td>89.9%</td>
</tr>
<tr>
<td>West Virginia</td>
<td>45th</td>
<td>29.9</td>
<td>75.2%</td>
</tr>
</tbody>
</table>

Source: Cooper, Tyler. "US States with the Worst and Best Internet Coverage 2018," Broadband Now, 8/14/2018.

When examining the effectiveness of such large-scale state efforts that usually cost several hundred million dollars, a major problem has been the lack of reliable data. The primary source for broadband access data is the FCC, whose standards have been heavily criticized. Under the FCC guidelines, their data comes exclusively from self-reporting done by ISPs themselves. If one household has internet access that meets the FCC's minimum requisite of 25 Mbps, then the entire census block is considered as having access.\(^{136}\) This problem especially overstates the number of rural households that have internet connection. Rather than relying on such questionable information, a study out of Pennsylvania State University collected its own data from 11 million broadband speed tests.\(^{137}\) The PSU study found that the traditional FCC data vastly overstated Americans' access to the internet, especially those in rural regions. Although the FCC stated that all Pennsylvania counties had median internet speeds of over 25 Mbps, the PSU research found that in fact no county had a median over 25 Mbps.\(^{138}\) Not only do the current maps vastly overstate customers' speeds but they are becoming more inaccurate.

\(^{136}\) “Broadband Availability and Access in Rural Pennsylvania (Executive Summary),” Center for Rural Pennsylvania, June 2019, pg.1.

\(^{137}\) “Broadband Availability and Access,” pg. 1.

\(^{138}\) “Broadband Availability and Access,” pg. 1.
overtime. By analyzing data from both 2014 and 2018, the researchers found the discrepancy between the ISPs' self-reported speed data and the PSU teams' data grew between the two periods, especially in rural areas. Thus, the maps produced by the FCC, which is the primary source for broadband access information, have increasingly overstated rural Americans' internet speeds. That the discrepancy between FCC data and the PSU report is greatest in rural areas is seen in Map 22 where internet speed in rural counties in Pennsylvania, West Virginia, and Virginia are especially overstated.

**Map 22: Difference Between FCC Data and PSU Report on Broadband Speed, 2017**

**Note:** The Map shows the difference between the data published by Penn State University’s study and the data presented by the FCC. In counties which are purple, the FCC data overstates the download speed relative to the findings of the PSU study, since the it is found by subtracting the PSU data from the FCC data (FCC-MLab).  
**Source:** “United States of Broadband,” *OpenTechInsitute*, 2018.

### 4.4 Broadband Benefits

There are several vital benefits that broadband access provides for an economy. In an increasingly interconnected economy, high-quality internet access allows businesses to participate in the growing online economy regardless of their location. An area with strong

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139 “Broadband Availability and Access,” pg. 2.
internet connection can attract new firms to the area. Internet is especially valuable in rural areas as differences in geographic distances are largest. It also has the potential to help rural self-employed businesses, connecting businessowners to their customers. This is especially important for rural areas since, as previously mentioned, self-employment has risen among rural areas since the 2008 recession. Such businesses are often reliant on using the internet to market and sell their products.

Multiple studies have shown that broadband improves the economic potential of regions. At the national level, increasing broadband access by 10 percentage points increases Gross Domestic Product by 1 percent while doubling the broadband speeds for an entire economy adds roughly 0.3 percent to GDP growth.\textsuperscript{140} Such studies have been replicated at the state level as well. Increasing availability of broadband have enabled states such as Iowa and North Carolina to become leaders in utilizing telecommunications for other sectors including health care, education, and public services.\textsuperscript{141} At the county level, counties which have expanded their residents’ access to broadband internet connection have performed better on average than those that have not. A report from the USDA Economic Research Service in 2009 found that counties with a longer history of broadband access had higher employment rates and incomes than nearby counties which did not have adequate broadband availability from 2000-2009.\textsuperscript{142} A similar study done by MIT in 2006, found that from 1998 and 2002, communities that had access to high-speed broadband experienced more economic and business growth (especially businesses that are

\textsuperscript{141} Marshall, “Rural Policy,” 40.
technology intensive) compared to other communities in nearby locations that did not have comparable access.\textsuperscript{143}

In addition to economic benefits, expanding broadband networks can also mitigate and even reverse negative social trends. Expanding broadband has shown to benefit struggling rural areas, such as Nebraska, in fending off negative population trends facing the state. Throughout the 1980s, 80 of Nebraska’s 93 counties saw a decline in population.\textsuperscript{144} In response to the population crisis, the state placed expanding internet availability as a top priority and, by 1990, 72 of their counties had either gained population or stabilized their population losses.\textsuperscript{145} While such statewide trends cannot conclusively show that broadband was the sole contributor to the state’s rebound, it is likely that expanding broadband technology was a crucial factor.

Broadband also serves an important role in the growing healthcare industry, especially in rural areas. Multiple studies have demonstrated the reduction in healthcare costs associated with using telemedicine. A Center for Disease Control study in 2011 showed that 80 percent of adult patients discharged from the emergency room said they went there because they couldn’t access a primary care provider.\textsuperscript{146} Of that 80 percent, 52 percent of them were from nonmetro areas.\textsuperscript{147} The study also compared the costs involved within-person acute care visits to meetings with medical professionals via the internet. The former costs between $135 and $175 while the average cost of a virtual checkup is around $40 or $50.\textsuperscript{148} A Johns Hopkins University study also reported that customers save around 20 percent from its “Hospital at Home” program which

\textsuperscript{143} Jackson and Clyford, “Rural America,” 1-2.
\textsuperscript{144} Marshall, “Rural Policy,” 40.
\textsuperscript{145} Marshall, “Rural Policy,” 41.
\textsuperscript{146} Koutsky, “Rural Broadband Programs,” pg. 9.
\textsuperscript{147} Koutsky, “Rural Broadband Programs,” pg. 9.
\textsuperscript{148} Koutsky, “Rural Broadband Programs,” pg. 9.
remotely serves Medicaid and Medicare Advantage patients when compared to in-person visits. Seeing the benefits of rural telemedicine, the FCC created the Healthcare Connect Fund (HCF) program in 2012 to supplement previous large-scale federal programs to expand telecommunications. Central to its mission was offering federal subsidies to expand fiber-optic deployment to rural health clinics. However, its rules and funding policies have made it difficult to rural healthcare providers to take advantage of the Fund’s services. HCF rules mandate that applicants provide 35 percent of the funding by themselves and the Fund’s definition of what counts as an eligible health care provider and their expenses have been considered too restrictive, preventing the federal effort from fulfilling its goal of helping rural telemedicine centers. Telemedicine can be especially beneficial to the Mid-Atlantic region given the rising elderly population, particularly in its rural counties.

4.5 Problems in Rural Broadband

Despite the many clear benefits of having a robust broadband network, rural areas have struggled to successfully implement efforts to build them. Unique features of rural regions, such low population density and difficult terrain, make them particularly challenging for ISPs to reach. In the absence of large groups of people clustered together as in urban areas, networks must span long distances to serve relatively few people. Given the difficulty in having to build networks over long distances to serve less people, there is a lack of incentive for companies to build such networks to connect rural America to the internet. Further reducing the effectiveness of ISPs is that lack of high-quality internet delivery methods such as Fiber-Optic cables to deliver broadband to rural homes. Traditional materials like DSL and Cable that were used in

149 Koutsky, “Rural Broadband Programs,” pg. 9.
150 Koutsky, “Rural Broadband Programs,” pg. 3.
traditional infrastructure like electric lines are most difficult to deploy in rural, low-density area
given the rural terrain, including mountains, rivers, and plains, which hinder efforts to expand
rural broadband.\textsuperscript{151} In such obscure rural areas, wireless tends to work better in reaching remote
populations. However, despite the higher quality of service provided by wireless, it is also
among the most expensive alternative methods (discussed further below).\textsuperscript{152} Without subsidies,
companies are often hesitant to go out of their way to reach the rural population. These factors
contribute to why, of the nearly 20 million Americans that lack access to the internet, most are
from rural areas.

The technology used to deliver broadband service is important to consider when
discussing the particular issues faced by rural regions. As mentioned, the two traditional means
of delivering broadband have been cable and DSL (Digital Subscriber Line). Cable refers to
internet service provided by local cable TV providers. Under this method, if there are fewer than
15 households per mile or a house is more than 250 feet away from the main road, cable
companies likely won't connect your house given the high costs involved.\textsuperscript{153} The difficulty in
traversing low-density and mountainous terrain make it a poor method for connecting rural
Americans to the internet. DSL, however, uses the bandwidth connection offered by existing
telephone lines (primarily made of cooper). One downside is that a home must be close (within
18,200 feet) of a DSL central office to gain internet access, making it difficult to include remote
households and facilities.\textsuperscript{154} Fiber-Optic internet is the newest and by far fastest method of
internet connection. Using fiber optic cables, which transmit data through light rather than

\textsuperscript{151} Patterson, etc., “Broadband Planning Primer and Toolkit,” pg. 10.
\textsuperscript{152} Patterson, etc., “Broadband Planning Primer and Toolkit,” pg. 10.
\textsuperscript{153} Patterson, etc., “Broadband Planning Primer and Toolkit,” pg. 49.
\textsuperscript{154} Patterson, etc., “Broadband Planning Primer and Toolkit,” pg. 51.
electricity as the other methods do, can enable homes to have internet speeds as much as ten times faster than traditional cable connection.\textsuperscript{155} Though they are becoming popular, they require significant investments in its infrastructure to transmit data successfully. In the Mid-Atlantic region most states, including Delaware, Maryland, New Jersey, New York, and Pennsylvania have over 60\% of their population using a Fiber-Optic network for internet connection, while only 3\% of West Virginia’s population uses Fiber-Optic.\textsuperscript{156} Another new form of internet service that has showed promise for rural areas is TV White Space. Using fixed wireless frequencies previously used in televisions, TV White Space can effectively penetrate dense foliage such as trees. While it does present a useful form of internet delivery, its transmitters can be expensive, and it would require that they be mass produced to be financially viable.\textsuperscript{157}

4.6 The Rural Utilities Service (RUS)

Due to these rural disadvantages, the federal government has provided financial incentives for companies and institutions to serve rural areas. The most prominent federal actor in such rural infrastructure operations has been the Rural Utilities Service (RUS). Operating under the United States Department of Agriculture (USDA), the program works to extend telecommunications infrastructure to rural parts of the country. However, it only began expanding broadband technology (including mobile wireless, telephone lines and fiber optic cables) specifically to rural communities in 2001 as part of a pilot program.\textsuperscript{158} Previously, none

\begin{footnotesize}
\begin{enumerate}
\item \textsuperscript{155} “Fiber-Optic Internet in the United States,” Broadband Now, 3/30/2020.
\item \textsuperscript{156} Tyler Cooper. “Fiber-Optic Internet in the United States,” 3/30/2020, \url{https://broadbandnow.com/Fiber}
\item \textsuperscript{157} Patterson, etc., “Broadband Planning Primer and Toolkit,” pg. 52.
\item \textsuperscript{158} Jackson and Clyford, “Rural America,” 5-6.
\end{enumerate}
\end{footnotesize}
of the existing federal loan programs were exclusively focused on expanding rural broadband access.\textsuperscript{159}

The pilot program known as the Distance Learning and Telemedicine Program operated under the current census definition of a rural area being defined as “an area that is not a city or town with a population greater than 50,000, and that is not an urbanized area contiguous and adjacent to a city or town with a population over 50,000.\textsuperscript{160} The new definition differed from the previous definition which categorized rural areas as towns with populations under 20,000, increasing the number of rural regions that qualify for RUS assistance programs.\textsuperscript{161} The pilot program gave special aid to community facilities that would use broadband access to connect various public institutions to one another, including schools, police facilities, and hospitals. Special priority was also given to areas and houses which did not have an existing internet service producer under the new effort.\textsuperscript{162} Alongside providing funding assistance, it also required that broadband technology used was of sufficient quality. Though RUS funding is “technology neutral” in terms of what specific kind of broadband technology is installed, the quality of service must adhere to the required minimum download speeds which continue to increase as technology advances.\textsuperscript{163} Rural broadband expansion programs were given more money in the American Recovery and Reinvestment Act of 2009 under President Obama, which included an

\begin{footnotesize}
\begin{itemize}
  \item \textsuperscript{159} Jackson and Clyford, “Rural America,” 7.
  \item \textsuperscript{160} Jackson and Clyford, “Rural America,” 48.
  \item \textsuperscript{161} Jackson and Clyford, “Rural America,” 48.
  \item \textsuperscript{162} Jackson and Clyford, “Rural America,” 8.
  \item \textsuperscript{163} With regard to broadband speeds, in 2011 the minimum standard was 3 megabits per second for fixed and mobile broadband service while the minimum broadband lending speed was 5 megabits per second (Jackson and Clyford, 8).
\end{itemize}
\end{footnotesize}
$7.2 billion and $4.7 billion for the newly established Broadband Technology Opportunities Program.\textsuperscript{164}

### 4.7 Criticisms of the RUS

Despite the growing budget and operations of the RUS, there have been several criticisms of the program. A common critique of the program is the complex application process for loans, resulting in a lack of funds being distributed. Some have argued that the approval process is not efficient enough to allow rural areas in need to take advantage of the money offered. In 2004, only 28\% of available funds were distributed to applicants and in 2005 only 5\% were.\textsuperscript{165} Critics have cited the burdensome application process, that can take months to gather the relevant information, as the reason for the lack of money being awarded. Among such critics have been the Senate Appropriations Committee, which, directed the RUS to reduce the burdensome approval process in 2006.\textsuperscript{166} The demand for reform appears to have been effective in streamlining the process as the application processing time was cut in half by 2006 from its 2003 levels.\textsuperscript{167}

Another prominent critique of the program was that the eligibility for aid was too broad to specifically help lagging rural areas. A concern has been that the definition of rural under the program has not been narrow enough to distinguish rural areas from suburban ones. An Inspectors General Report in 2005 found that 12\% of funds were given to communities located near large cities.\textsuperscript{168} Additionally, there has been concern that funds are not adequately favoring

\textsuperscript{164} Jackson and Clyford, “Rural America,” 10.
\textsuperscript{165} Jackson and Clyford, “Rural America,” 16-17.
\textsuperscript{166} Jackson and Clyford, “Rural America,” 17.
\textsuperscript{167} Jackson and Clyford, “Rural America,” 18.
\textsuperscript{168} Jackson and Clyford, “Rural America,” 18.
regions without an existing provider. In a 2007 hearing, RUS administrator James Andrews said that 40% of the program’s funding went to unserved areas.\textsuperscript{169} However, there is currently debate even among experts as to whether funds should be allowed to go to existing firms or whether assistance should be exclusively given to new firms. Some argue that helping new providers would promote competition against others while others contend that such activity reduces competition as it favors one firm over another.

4.8 Potential National Solutions

Given the relatively poor internet service most Americans have access to, several solutions have been offered to improve and expand broadband access. While many cite wireless connection as a great alternative to fixed-line broadband, it is also more expensive and can have especially poor connection in rural areas.\textsuperscript{170} Some cities in the US have already taken matters into their own hands and offered creative solutions. Cities such as Rochester have been building their own unique broadband networks and seeking public/private partnerships to help address broadband deficits.\textsuperscript{171} There are also significant reforms that can be made regarding spending and budgeting methods. Daniel Lyons, a telecommunications expert at the American Enterprise Institute, argued during his testimony to Congress that millions of rural Americans lack internet connection due to a failure in the structure of broadband aid. Many plans designed to expand broadband access rely on telephone-era subsidy programs which feature arcane, out-of-date funding mechanisms and a lack of transparency that is commonly expected today. One result of

\textsuperscript{169} Jackson and Clyford, “Rural America,” 19.
\textsuperscript{170} Bode, "Bad Maps."
\textsuperscript{171} Bode, "Bad Maps."
such funding mechanisms is that most (roughly 60 percent) of federal broadband funding goes toward paying administrative expenses rather than the actual building of broadband network.\textsuperscript{172}

A better alternative program would provide funds first to areas that will yield the greatest success and provide money last to where the yield will be the smallest.\textsuperscript{173} Under this idea, funds would be distributed to communities that have the most potential for accomplishing their goals, rather than sending recurring funds to existing providers in the same rural areas every year. Lyons argues this principle can be applied through a new funding system in which priority is given to areas where a one-time, upfront subsidy will have a large impact and focusing secondarily on areas that require long-term assistance. Another feature that should be included in a new framework would be the use of reverse auctions. Under a traditional auction system, the seller of a good or service will present it to a group of buyers, who then bid up the price and the buyer willing to spend the most will receive. However, under a reverse auction, the seller announces a price they are willing to accept from the buyers and the buyers then compete to offer the service at that given price. When applied to broadband, the seller (usually local governments) announce a project and the minimum price they are willing to accept from buyers to expand broadband services. This process eliminates firms’ ability to bid up prices and the government agency spends the least amount of money possible for a given project.

4.9 The Anchor Tenant Model, a Local Alternative to National Policy

Among the most effective and increasingly popular method of providing broadband service is the use of the "Anchor Tenant Model." Rather than using national subsidies, the

\textsuperscript{172} Lyons, “Broadband.”
\textsuperscript{173} Wallsten, “Rural Broadband Subsidies.”
Anchor Model relies on local partnerships to build large, high-speed broadband networks. Under this model, a local government serves as an "anchor tenant" and partners with a private sector actor, such as a hospital, university, or library, to provide up-front investment to guarantee its commitment to the project. Once the project is complete and all of the partners have access to the broadband network, the government entity, being the anchor for the network, can then share the network with third-party members in exchange for a prescribed fee. Similar to how a large business in a shopping mall draws in customers who then also shop at the other smaller shops within the mall, the local government "anchors" the private-sector partners and even attracts new broadband users to expand the network and earn revenue. Implicit in this model is that individual actors, such as schools and libraries, have neither the funds nor the knowledge to set up such networks themselves and have particular needs that differ from households, such as needing high-speed internet at substantially faster rates than the 25 Mbps standard set by the FCC for families. The Tenant Model allows for economies of scale to develop as the aggregation of users into a single network reduces unit costs and makes access cheaper for all involved. If the network is large enough, it can enable joint operations between urban and rural partners, allowing rural areas minimize costs and incentivize private sector companies to operate in rural areas.

The Anchor Tenant Model has been used effectively by organizations in the Mid-Atlantic states. The nDanville Fiber Network in Danville, Virginia, was the first municipally owned, open-access, open-services network in the United States. The area was hit hard by the decline of their local tobacco industry and initiated a fiber-optic expansion project in 2004 to provide the City, and three surrounding counties, high-quality internet service. The first phase connected all

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the schools while the second phase concentrated on connecting local businesses to the network. After completion, nDanville entered the third stage of offering open access to the network to third parties for a prescribed fee. Companies from Sweden, Germany, India, and China gained access to the network along with other third-party fiber companies in the area.\footnote{175}{Tom Koutsky. "Rural Broadband Programs and Community Anchor Institutions," SHLB Broadband Action Plan Policy Paper, 2017, pg. 11.} In rural Maryland, the Alleghany County Board of Education led an effort in cooperation with the city of Cumberland to expand broadband access and quality of internet speed. After receiving grant money that covered 50 percent of broadband network costs form the Appalachian Regional Commission (ARC) to help the effort, the community was able to provide high-speed internet to its students and local businesses.\footnote{176}{Koutsky, "Rural Broadband Programs," pg. 9.} These examples, and the many others like them, highlight the role of local cooperation and community assets in expanding internet access to rural citizens.

Though many have benefited by using the Anchor Model, existing funding guidelines have prevented the practice from becoming widespread. Many regulations and funding requirements either prohibit or discourage cooperation and resource sharing between Community Anchor Institutions (CIAs). Federal funding from FCC programs discourages CAIs from "leasing excess capacity for other uses on a subsidized network."\footnote{177}{Koutsky, "Rural Broadband Programs," pg. 31.} Thus, if a library or healthcare provider joins with a municipality to expand broadband, they can’t receive subsidies and engage in step three of the Anchor Tenant Model of expanding third-party users. Though the FCC introduced its E-rate program to help schools and libraries improve their Wi-Fi connections, they do not encourage cooperation between different CAIs and don’t allow other institutions such as colleges and community centers to partner in their efforts.\footnote{178}{Koutsky, "Rural Broadband Programs," pg. 32.}

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\footnote{176}{Koutsky, "Rural Broadband Programs," pg. 9.} 
\footnote{177}{Koutsky, "Rural Broadband Programs," pg. 31.} 
\footnote{178}{Koutsky, "Rural Broadband Programs," pg. 32.}
federal subsidies from the FCC is its preference for fiber-optic networks over other alternatives. Though fiber-optic certainly delivers faster speed than traditional cable and DSL methods, TV white space spectrum has become increasingly popular to use in rural areas given the ability of its frequency to penetrate dense foliage. Though the FCC has permitted the use of white space for compatible devices, there has been no definitive support for white space among its subsidy programs. Allocating money to the usage of white space spectrum, rather than exclusively fiber-optic, can better enable rural internet service.

4.10 The Mid-Atlantic Broadband Communities Corporation (MBC)

Aside from plans offered by state governments, the Mid-Atlantic Broadband Communities Corporation (MBC) is the most comprehensive broadband initiative in the region. It contains 1900 miles of open-access fiber optic network primarily located in Southern Virginia that connects the state with North Carolina. The MBC is a large middle-mile network operated through public-private partnerships with the assistance of county governments and local economic development firms. Its massive size and large involvement by multiple entities allow it to connect multiple economic sectors of the region to high-speed internet. Advanced manufacturing firms (such as automotive and aerospace companies), data centers, and IT services have been among the greatest users of the project. Aside from connecting businesses, the MBC connects the region's many vital pieces of infrastructure, including the Port of Virginia (which contains the largest intermodal rail port on the East Coast), international airports, and several major highways. The MBC also serves 23 community colleges, connecting them to a highly trained local workforce, especially in the manufacturing sector. The MBC can serve as a

model for how to improve upon a region’s economic and geographic strengths by using infrastructure to further enable the region to thrive.

**Map 23: Mid-Atlantic Broadband Communities Corporation (MBC) Network.**

![Map showing fiber-optic network of the MBC](image)

**Note:** The map shows the fiber-optic network of the MBC. The dots symbolize fiber-optic towers and the lines represent the fiber-optic lines.

**Source:** “Fiber Network,” MBC.com. [https://mbc-va.com/network/](https://mbc-va.com/network/)

### 4.11 Conclusion

When describing the state of broadband in the rural United States and the Mid-Atlantic states in particular, several important trends emerge. The first pattern is the overall lack of success of national subsidy programs meant to encourage the building of rural broadband networks. Not only do such programs often not allocate funds to areas most in need, but they also rely on FCC data which significantly overstates customer’s internet speeds. Because of this, many rural areas are not enjoying the benefits that come with broadband, which is especially needed in times of lackluster economic and population growth across the rural US. In the Mid-Atlantic context, a substantial number of remote regions of Virginia and West Virginia still lack high speed internet connection. A second clear trend is the relative success of locally based solutions compared to federal alternatives and they have been especially effective in the Middle Atlantic region. The Anchor Tenant Model enables local institutions to partner with one another
to expand high speed internet using assets in their communities. Part of the reason for their success is that each member has a stake in its success and that the broadband expansion is usually done for a specific project (such as schools or libraries) rather than having state governments build networks which businesses then pay to join. The use of TV White Space also marks a significant example of rural areas innovating beyond conventional methods to expand service. Such methods have helped expand the use of telemedicine, which is particularly important for the Mid-Atlantic region with its rapidly growing elderly population. Furthermore, the MBC shows promise for how local actors can partner together to expand rural broadband as part of a wider effort to help a region’s economy.
Section 5: Place-Sensitive Economic Development in the Mid-Atlantic Region

This section will describe what a place-based economic development philosophy looks like and relate it to the rural Mid-Atlantic region. A place-based economic development effort prioritizes the unique features of individual places to improve their economy and communities. It focuses on existing local assets and advantages to improve a region as opposed to regarding economic development as a homogenous path that all regions should follow. Sections 5.3-5.7 will describe how it can be used in a Mid-Atlantic context. These sections are not intended to lay out a detailed agenda for specific counties but rather relate how the findings of the previous sections regarding population and poverty, rural industries, and broadband, can be used to inform a place-sensitive effort. Many stagnant rural counties in the region have suffered from a lack of industrial diversity by becoming reliant upon one industry (such as mining in West Virginia) and have not fully taken advantage of other industries (such as recreation and self-employment).

There are several ways in which a place-sensitive rural economic development initiative can improve their situation. By using the Earned Income Tax Credit (EITC) in a manner that targets impoverished areas more specifically, it can help as such areas transition from a homogenous, stagnant economy to a diverse one with several promising avenues for growth. Broadband can also serve a vital role in enabling multiple industries in a region to prosper. Industries such as manufacturing, healthcare, and education can all benefit from broadband expansion as it makes places more attractive for financial investment and worker migration.

5.1 Place-Based Development

Placed-based economic development involves harboring the unique features of individual places and implementing development strategies within the context of those features to improve
the region’s economy. Under such a framework, unique opportunities exist in each location and development efforts should “mobilize regional assets and exploit synergies” to improve the region.\textsuperscript{182} Spatial factors include “aspects of the social, institutional, and economic fabric of localities as the filter through which all economic activity takes hold in a particular region.”\textsuperscript{183} Implicit in the focus on regional distinctiveness are multiple pathways and strategies that allow regions to develop and grow. Much traditional economic development, whether intentionally or not, regards development as a homogenous path, often focusing on creating large urban centers (especially as seen in the U.S.) to promote growth. As previously seen in the success of manufacturing, rural economies can and do thrive without having to essentially become large urban areas and can gain the benefits of agglomeration while still remaining nonmetropolitan. By understanding and maximizing the existing potential of a space, regions which have struggled economically can improve. A place-based approach to economic development runs counter to a space-neutral framework in which “policies that are designed without explicit consideration to space” are implemented to improve the economic well-being of a place.\textsuperscript{184} Spatially neutral efforts revolve around individuals, as the goal of such programs is to improve the economic status of individuals primarily, so that they may in turn benefit their surrounding economy and society. In practice, place-based initiatives focus on forming strategies to capitalize on unique local advantages and thereby create a niche market in which local products can be efficiently produced and consumed.\textsuperscript{185} While the rise of the global economy has caused space to become more “slippery” as capital goods and services can travel more freely, agglomeration theory

\textsuperscript{182} Fabrizio Barca, Philip McCann, and Andres Rodriguez-Pose. "The Case for Regional Development Intervention: Place-Based Versus Place-Neutral Approaches," \textit{Journal of Regional Science}, 2012, 139-140.
\textsuperscript{184} Barca, etc., “Case for Regional Development Intervention,” 138.
\textsuperscript{185} Salvia and Quaranta, "Place-Based Rural Development," 2.
shows that these resources tend to cluster together in large agglomerations.\textsuperscript{186} However, when examining the unique features and advantages of particular areas, it is important to not simply rely on a single industry for economic growth. As seen in places where mining and manufacturing used to be the dominant industry, being wedded to one sector can lead to stagnation when that industry suffers employment losses. Rather, it is important to incorporate a diversity of industries, interests, and abilities that pertain to each region to maximize their potential. As will be seen in sections 5.3-5.7, a holistic place-sensitive approach will value both influential economic sectors and respecting a diversity of industries.

Policies that acknowledge the role of place in economic activity and growth need not require a massive shift in economic thinking, however. Embracing the significance of location and the diversity between places does not necessarily involve discarding the role space-neutral policies can play in encouraging economic development. Instead, one can avoid a totally “place-based” plan in favor of a “place-sensitive” one, in which a development strategy is “both sensitive to the need for agglomeration and the need for it to occur in as many places as possible.”\textsuperscript{187} A place-sensitive agenda could feature a diverse range of policy options, including direct public investment by the federal government, tax benefits to individuals or groups, and regulation reform.\textsuperscript{188} These policies can be focused on low income areas, where they will have the most positive impact relative to treating all regions the same and thereby reducing the particular aid that could be given to struggling areas. Such a philosophy is conducive to the findings of economic cluster data which shows that rural areas can also reap the benefits of agglomeration as previously mentioned. Place sensitivity can play a role in reversing the four-

\textsuperscript{186} Barca, etc., “Case for Regional Development Intervention,” 136.
\textsuperscript{187} Hendrickson, etc., “Countering,” 19.
\textsuperscript{188} Austin, etc., “Jobs for the Heartland,” 218.
decades long trend of divergence between rural and urban places (especially in the Mid-Atlantic region) by enabling localities to plan the agenda of their unique region and receive assistance that will help them achieve it. The place-based approach does not advocate or require massive transfers of wealth from one area of the country to another but merely tailors’ policies to meet the specific needs of particular places that are susceptible to market failures and shocks.

5.2 Previous Spatially Blind Strategies

While formerly state and federal aid was designed to attract large firms in certain industries, it has also led to inequality and polarization as some industries receive benefits that others do not. Providing such advantages not only provides an unfair advantage to some companies over others but also encouraging the formation of interest groups to lobby for their particular firm. In practice, valuable resources have largely been used in failed attempts to save declining industries from current market conditions. What is needed now is a focus on a modern economy, driven by the rising role of human capital and specialized jobs rather than attempting to prevent failing industries from declining further.

The practical usefulness of place-based efforts can be seen in evaluating the existing strengths of a particular area. In the case of Pennsylvania, it has a particular locational advantage of being located within ten hours of forty percent of the US economy with access to global trade markets through its access to the Atlantic. Unfortunately, what could be a great asset for growing the rural Pennsylvanian economy is currently a liability for the state. Its poor infrastructure, ranked among the worst in the nation, has restricted its ability to move goods

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189 Barca, etc., “Case for Regional Development Intervention,” 137.
efficiently via road, port or public railroad.\textsuperscript{191} Such job opportunities in trade and distribution could be targeted through development efforts to revive Pennsylvania’s economy.

5.3 The EITC in the Mid-Atlantic Region

The Earned Income Tax Credit (EITC) provides not only a means of reducing rural poverty but also illustrates how a place-sensitive plan can incorporate existing policies into its new framework. The EITC was enacted in 1975 for the purpose of reducing the tax burden of Social Security on low-income workers.\textsuperscript{192} In essence, it was designed to provide benefits to working citizens who were struggling economically, rather than a form of welfare. Since its creation, it has undergone several important changes as it was expanded in 1990 to provide a larger credit for families and again in 1993 to include additional credit for workers without children.\textsuperscript{193} The EITC has had an especially positive impact on rural areas, given the higher levels of poverty and lower wages compared to other regions. In 2008, a third of all rural residents received either the EITC or the Child Tax Credit (CTC). Among the states with the largest use of the program, the top five are all southern and fairly rural (Mississippi, Georgia, Florida, South Carolina, Louisiana). Though some have claimed such benefits reduce the incentives to work, several studies have also found that the EITC increases the number of work hours among low-income wage earners, especially those who are single parents.

The EITC can play an important role in a place-sensitive plan for the Mid-Atlantic states in particular. Economists Benjamin Austin, Edward Glaeser, and Lawrence Summers have argued that the EITC, though traditionally a place-neutral program, can be adopted for a place-

\textsuperscript{191} Powell, “Rural Pennsylvania.”
\textsuperscript{193} Bailey, “Earned Income Tax Credit,” 1.
based effort. The program can be revised to target areas with a more elastic labor supply and higher poverty rates, since they are more likely to benefit from such tax benefit programs.\textsuperscript{194} The authors note that the revised place-based effort would benefit regions such as West Virginia more than uniform national policies which treat all areas equally.\textsuperscript{195} Thus, even traditionally place-neutral policies like the EITC can function within a place-based framework with some minor adjustment. The recommendations of Austin, Summers, and Glaeser largely accord with the data presented in Table 14. When considering the Mid-Atlantic specifically, EITC benefits are primarily claimed by rural and micropolitan areas rather than urban ones. Of the five Mid-Atlantic states which contain rural counties, four of them disproportionately give EITC benefits to rural areas at higher rates than the state overall (Table 14). These numbers largely accord with the previous data given on the state of poverty in rural Mid-Atlantic counties, with higher rural than urban poverty rates and concentrations of poverty in West Virginia and Virginia. Not only can the EITC help low-income workers in rural areas but it can also serve larger goals of a more holistic place-sensitive approach. The Tax Credit can serve as a complement to the larger aim of ensuring regions have a diverse economy rather than relying on a single industry for economic success. The EITC can help provide economic stability for low income workers as their regions transition toward an economy with diverse industries. Thus, the EITC can play a complementary role in helping stagnant rural areas in the Mid-Atlantic within a place-sensitive approach.


Table 14: Percentage of Population Receiving EITC benefits

<table>
<thead>
<tr>
<th>State</th>
<th>Overall</th>
<th>Metropolitan Regions</th>
<th>Micropolitan Regions</th>
<th>Rural Regions</th>
</tr>
</thead>
<tbody>
<tr>
<td>PA</td>
<td>15.4%</td>
<td>15.2%</td>
<td>16.4%</td>
<td>15.9%</td>
</tr>
<tr>
<td>NY</td>
<td>19.2%</td>
<td>19.2%</td>
<td>18.7%</td>
<td>18.2%</td>
</tr>
<tr>
<td>NJ</td>
<td>13.9%</td>
<td>13.9%</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>VA</td>
<td>16.4%</td>
<td>15.4%</td>
<td>26.7%</td>
<td>22.7%</td>
</tr>
<tr>
<td>WV</td>
<td>14.3%</td>
<td>14%</td>
<td>16.8%</td>
<td>17.5%</td>
</tr>
<tr>
<td>MD</td>
<td>14.9%</td>
<td>14.8%</td>
<td>19%</td>
<td>18%</td>
</tr>
<tr>
<td>DE</td>
<td>17.2%</td>
<td>17.2%</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>


5.4 Broadband in a Place-Sensitive Plan

Broadband can serve an important role in developing a place-sensitive framework for the region’s rural counties. As argued in Section 4 of the paper, national broadband efforts have largely been unsuccessful in bridging the urban-rural internet divide. The federal government is largely not adaptive enough to meet the rapidly changing broadband technology, as seen in its lack of support for the increasingly popular use of TV White Space. Local solutions, however, hold far more promise for expanding internet connection to rural areas. Local efforts in the form of Anchor Tenant Institutions or specific projects like the MRC have proven to be more effective. Not only have they increased the number of rural Americans with internet access, but they also help connect workers in remote rural markets (like those who are self-employed) to the
wider economy and enable a diversity of economic industries to thrive while also focusing on particular needs and assets of area. Just as the decline of agriculture in the 1970s led to the rise of a heterogeneous group of rural industries, so too does the fall of traditional industries like manufacturing and mining present an opportunity for new industries to thrive in their former place. For areas that have struggled to bounce back from the decline of such sectors, such as areas of West Virginia, internet access can make their regions more attractive for investment and new workers. Broadband can enable industries like recreation, manufacturing, self-employment, and telemedicine to flourish in the current rural Mid-Atlantic economy.

5.5 Broadband in Rural Industry for the Mid-Atlantic Region

The Mid-Atlantic Broadband Communities Corporation (MBC) can serve as a model for how broadband can improve upon the Mid-Atlantic’s economic and geographic strengths. First and foremost, the Corporation took advantage of the large number of advanced manufacturing institutions in the area. Though rural manufacturing has declined with respect to employment, it remains an employment source for workers and can be highly innovative. The prominence of manufacturing throughout the Mid-Atlantic shows that MBC’s efforts can be replicated throughout the region, especially in areas like Pennsylvania where manufacturing is most dominant. It is also able to serve educational institutions, including 23 community colleges, given its large size and quality of service. Since education and healthcare are a growing sector in the Mid-Atlantic’s rural counties, MBC’s strategy can also apply to those industries as well as manufacturing. MBC also serves as a vital instrument for economic development as it serves areas that have relatively high rates of poverty, such as rural counties throughout Virginia and West Virginia. Overall, the MBC provides an excellent example of how broadband access can
serve the rural Mid-Atlantic’s economy by connecting rural areas to new economic opportunities and diversifying the region’s economic sectors.

5.6 Broadband in Rural Healthcare for the Mid-Atlantic

Broadband is especially important to the growing healthcare industry in the Mid-Atlantic region. Compared to the other 9 geographical regions of the United States, the Mid-Atlantic has the 2nd highest employment rate for the Education, Health Care, and Social Assistance industry, with over 26% working in it (Table 15). Map 24 further shows that the industry is the dominant employer in the most remote and poorest areas of the region, such as Central West Virginia and New York state. In Pennsylvania, health providers have already begun to utilize the internet to combine their services and improve the quality of life for rural residents. The trend of consolidation in the health care industry has hurt many rural healthcare providers given their lack of close proximity to other providers. In response, rural health organizations have increasingly aligned themselves with other rural organizations to reap the benefits of agglomeration noted in Section 3 of the paper. These collaborative efforts have reduced costs and helped share the risk by growing their networks. Though rural health organizations were previously more isolated and faced scarcer resources compared to their urban counterparts, broadband has allowed local healthcare providers to partner with one another to share resources. A study from the Center of Rural Pennsylvania studied five of such rural healthcare partnerships and found that these affiliations often minimized financial risks, enabled other providers to meet specific community health needs, and expanded the use of telemedicine to remote residents requiring special care services.196

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Table 15: Education and Health Care

<table>
<thead>
<tr>
<th>Region</th>
<th>% Employed in Education, Health Care, and Social Assistance</th>
</tr>
</thead>
<tbody>
<tr>
<td>East North Central</td>
<td>23.4</td>
</tr>
<tr>
<td>East South Central</td>
<td>23.1</td>
</tr>
<tr>
<td>Mid-Atlantic</td>
<td>26.2</td>
</tr>
<tr>
<td>Mountain</td>
<td>21.3</td>
</tr>
<tr>
<td>New England</td>
<td>27.4</td>
</tr>
<tr>
<td>Pacific</td>
<td>21.2</td>
</tr>
<tr>
<td>South Atlantic</td>
<td>22</td>
</tr>
<tr>
<td>West North Central</td>
<td>24.5</td>
</tr>
<tr>
<td>West South Central</td>
<td>22.1</td>
</tr>
</tbody>
</table>

Map 24: Percentage of Workforce Employed in Education, Health Care, and Social Assistance, 2017

Source: Census Bureau, American FactFinder.com

5.7 Broadband in Recreation and Self-Employment for the Mid-Atlantic

As discussed in Section 3, recreational employment and self-employment have a strong presence in the Mid-Atlantic’s rural counties. Not only this, but most counties which are currently non-specialized with respect to their economic industries are located near recreation-dependent counties, presenting untapped opportunity for them to expand their recreation
industry. As seen from Section 2’s discussion on the economic trends during the 1970s, rural areas with strong natural amenities and recreational opportunities have been able to mitigate economic and population losses. Broadband would enable such rural counties to take advantage of their recreational opportunities given recreational institutions are often located in remote areas lacking non-internet communication. Such jobs often provide good wages for workers and an opportunity for them to live in areas with a high quality of life. With many recreational opportunities existing in poorer rural areas in the Mid-Atlantic such as New York and West Virginia, recreational employment can aid in reducing poverty and raising living conditions in stagnant regions. Self-employment is also substantially helped by broadband connection, allowing people to advertise and sell their goods to a wider market. Similar to recreational employment, self-employment is popular in remote areas of the Mid-Atlantic, such as Central West Virginia, New York, and Northern Pennsylvania. Broadband can not only allow rural economies to have diverse industries but is especially able to benefit remote rural regions which have struggled the most with regard to sluggish economic growth and population losses.

5.8 Place-Sensitive Development: Conclusion

Place-sensitive development plans provide a valuable alternative to traditional economic development philosophy, especially for rural areas. It enables each region to utilize their existing strengths to improve their economic well-being. Such development efforts provide promise to struggling communities across the country, especially rural areas harmed by being reliant on declining industries, like manufacturing or mining. Within the Mid-Atlantic, certain general policy proposals can be given based on the success of local efforts rather than national programs. The Earned Income Tax Credit (EITC) can be used to aid impoverished areas struggling to transition from a sluggish economy to a diverse one with a promising future. Broadband can also
help such areas by enabling a diversity of industries to grow. Industries throughout the Mid-Atlantic such as manufacturing, telemedicine, recreation, and self-employment would be boosted by local efforts to expand broadband through methods like the Anchor Tenant Model discussed in Section 4. Such industries are not only prominent in the Mid-Atlantic generally but in struggling remote areas particularly, and access to broadband would enable them to reduce poverty and population loss.
Conclusion: Rural Economic Development in the Mid-Atlantic Region

This paper has related several crucial trends regarding the rural Mid-Atlantic economy. The data presented shows the close relationship between decadal poverty and population change from 1940-2017. It is also seen that such trends across the Mid-Atlantic closely mirror national trends with respect to both poverty and population. Over time, we see that various factors affect the convergence or divergence between rural and urban areas in the United States, suggesting that rural areas are not inevitably doomed to decline and stagnation. Section 3 highlighted the important aspects of the current rural economy in the region. Despite the decline in manufacturing employment since the mid-20th century, the industry nevertheless remains innovative, diverse, and crucial to rural employment. Both recreation and self-employment are not only prominent sources of work but present ample future economic opportunities. The resilience of these industries show promise for the rural economy, despite the widespread pessimism regarding the future of rural America. These encouraging facts require researchers to be more specific about describing industry trends, such clarifying the fact that the loss of manufacturing since the 20th century has mostly affected the textile industry in the Southern states while the Mid-Atlantic was largely spared from these negative trends. The broadband section highlights the importance of the internet in the current technology-driven economy. National efforts, such as the RUS, have largely failed to expand rural broadband but local initiatives, like Anchor Institutions and the MRC have provided a blueprint for rural internet expansion. These local efforts show the effectiveness of smaller-scale actors responding to their unique contexts to bolster our broadband infrastructure. The place-based section highlights the value of having an economic development framework that best utilizes existing local assets and strengths. The MBC was not only able to expand broadband access to rural residents but also
help the region’s economy by taking advantage of the unique strengths of the Mid-Atlantic that accords well with a place-sensitive effort to support a diverse set of economic industries that can help the area prosper. In such efforts, broadband can serve as unifying link to a diversity of growing economic sectors, such as healthcare, recreation, and manufacturing.
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Appendix

Description 1: Rural-Urban Continuum Code Definitions for 1974

Metro counties:

0 (Central counties of metro areas of 1 million population or more)
1 (Fringe counties of metro areas of 1 million population or more)
2 (Counties in metro areas of 250,000 to 1 million population)
3 (Counties in metro areas of fewer than 250,000 population)

Nonmetro counties:

4 (Urban population of 20,000 or more, adjacent to a metro area)
5 (Urban population of 20,000 or more, not adjacent to a metro area)
6 (Urban population of 2,500 to 19,999, adjacent to a metro area)
7 (Urban population of 2,500 to 19,999, not adjacent to a metro area)
8 (Completely rural or less than 2,500 urban population, adjacent to a metro area)
9 (Completely rural or less than 2,500 urban population, not adjacent to a metro area)

Description 2: Rural-Urban Continuum Code Definitions for 2013

Metro counties:

1 (Counties in metro areas of 1 million population or more)
2 (Counties in metro areas of 250,000 to 1 million population)
3 (Counties in metro areas of fewer than 250,000 population)

Nonmetro counties:

4 (Urban population of 20,000 or more, adjacent to a metro area)
5 (Urban population of 20,000 or more, not adjacent to a metro area)
6 (Urban population of 2,500 to 19,999, adjacent to a metro area)
7 (Urban population of 2,500 to 19,999, not adjacent to a metro area)
8 (Completely rural or less than 2,500 urban population, adjacent to a metro area)
9 (Completely rural or less than 2,500 urban population, not adjacent to a metro area)
**Description 3: Economic Typology Classifications for 1975 and 1985**

Farm-Dependent County: 20 percent or more of labor or income from previous five years came from farming.

Manufacturing-Dependent County: 30 percent or more of labor or income came from manufacturing.

Mining-Dependent County: 20 percent or more of labor or income came from mining.

Government-Dependent County: 25 percent or more of labor or income came from federal/state employment.

Retirement-Destination County: 15 percent or more immigration from people aged 60 or over in previous decade.

Persistent Poverty County: County had over 20 percent poverty for last three censuses.

**Note:** If a county qualified for more than one of mining, Federal/State government, or manufacturing types, it was classified in the industry in which it was the largest number of percentage points above the threshold.


**Description 4: Economic Typology Classifications for 2004**

Farming-Dependent County: either 15 percent or more of average annual labor and proprietors' earnings derived from farming during 1998-2000 or 15 percent or more of employed residents worked in farm occupations in 2000.

Mining-Dependent County: 15 percent or more of average annual labor and proprietors' earnings derived from mining during 1998-2000.

Manufacturing-dependent County: 25 percent or more of average annual labor and proprietors' earnings derived from manufacturing during 1998-2000.

Federal/State Government-Dependent County: 15 percent or more of average annual labor and proprietors' earnings derived from Federal and State government during 1998-2000.

Services-Dependent County: 45 percent or more of average annual labor and proprietors' earnings derived from services (SIC categories of retail trade; finance, insurance, and real estate; and services) during 1998-2000.

Persistent Poverty County: 20 percent or more of residents were poor as measured by each of the last 4 censuses, 1970, 1980, 1990, and 2000.
Retirement Destination County: number of residents 60 and older grew by 15 percent or more between 1990 and 2000 due to immigration.

Non-Specialized County: met none of the previous categories

Note: If a county qualified for more than one of mining, Federal/State government, or manufacturing types, it was classified in the industry in which it was the largest number of percentage points above the threshold.


Description 5: Economic Typology Classifications for 2015

Farm-Dependent County: Faming accounted for at 25% or more of the county's earnings or 16% or more of the employment averaged over 2010-2012.

Mining-Dependent County: Mining accounted for 13% or more of the county's earnings or 8% of the employment averaged over 2010-12.

Manufacturing-Dependent County: Manufacturing accounted for 23% or more of the county's earnings or 16% of the employment averaged over 2010-12.

Federal/State Government-Dependent County: Federal and State government accounted for 14% or more of the county's earnings or 9% or more of the employment averaged over 2010-2012.

Recreation-Dependent County: Recreation accounted for 10% or more of the county's earnings or 10% or more of the employment averaged over 2010-2012.

Note: If a county qualified for more than one of mining, Federal/State government, or manufacturing types, it was classified in the industry in which it was the largest number of percentage points above the threshold.