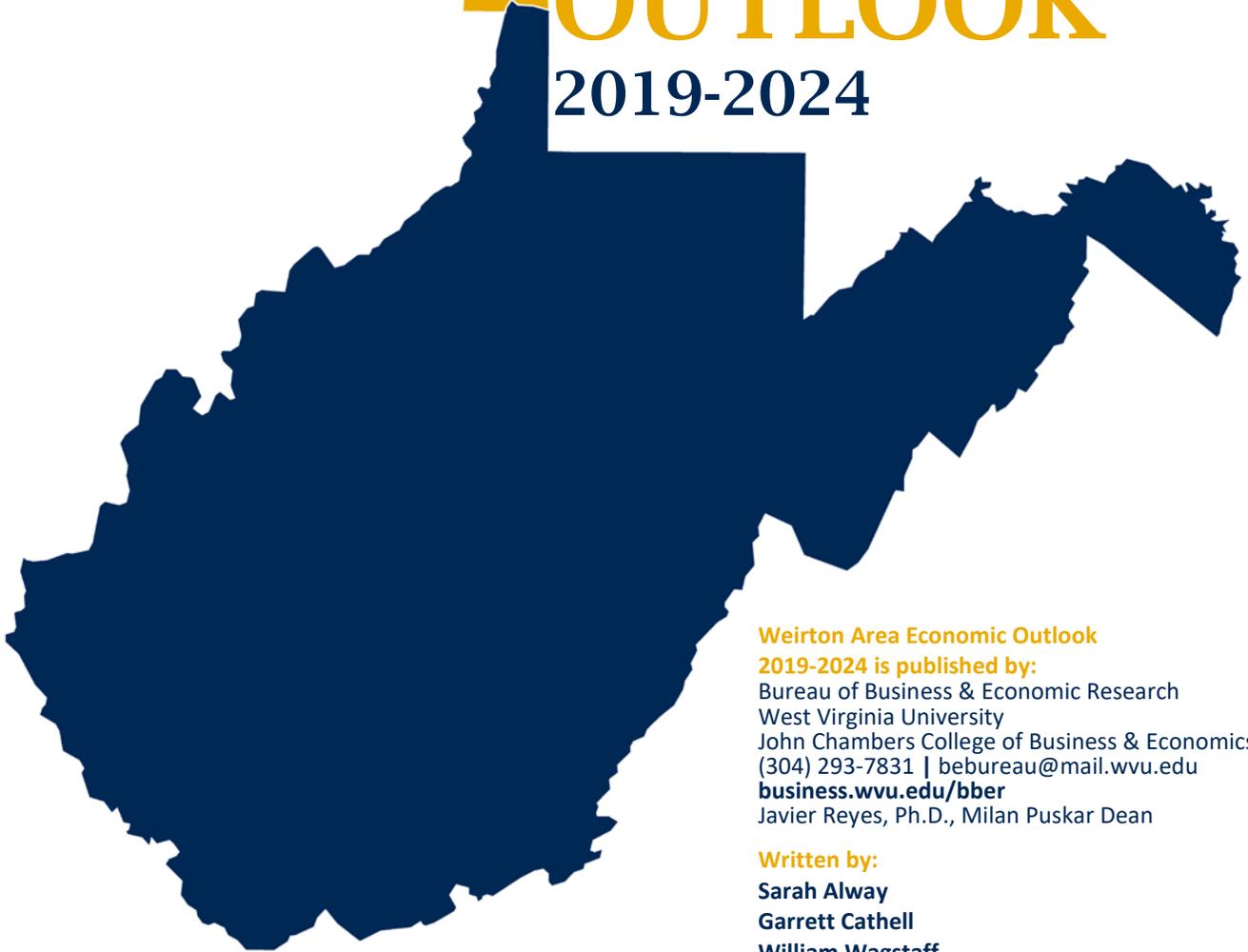


THE WEIRTON AREA

ECONOMIC OUTLOOK 2019-2024



Weirton Area Economic Outlook

2019-2024 is published by:

Bureau of Business & Economic Research
West Virginia University
John Chambers College of Business & Economics
(304) 293-7831 | bebureau@mail.wvu.edu
business.wvu.edu/bber
Javier Reyes, Ph.D., Milan Puskar Dean

Written by:

Sarah Alway
Garrett Cathell
William Wagstaff



John Deskins, Ph.D.
Director
Bureau of Business & Economic Research

Brian Lego
Research Assistant Professor
Bureau of Business & Economic Research

Recent Economic Performance

After several years of sustained economic declines, the Weirton Area¹ economy has begun to stabilize over the past year or so. The region registered a 10 percent decline in payrolls since 2010, with a sizable share of those losses focused in manufacturing and the leisure and hospitality sectors. Although the region has seen only limited growth in natural gas and natural gas liquids production, large increases in shale gas output in neighboring counties across the tri-state area has benefited workers living in the Weirton Area. Additions to the Appalachian Basin’s natural gas pipeline infrastructure have also bolstered the area’s economy, as construction payrolls surged in 2017 and 2018 to work on the Rover Pipeline’s Majorsville Lateral. Manufacturing payrolls have registered moderate gains in the past year, as several companies that produce equipment for the natural gas industry have ramped up hiring.²

COUNTY DIFFERENCES While each of the Weirton Area’s three counties have struggled with prolonged periods of job losses or minimal growth since the end of the Great Recession. The region’s two larger counties, Jefferson and Hancock are anchored by the cities of Steubenville and most of Weirton. A large share of the region’s job losses since 2010 have originated from these areas. Indeed, both counties witnessed multiple large layoff events in manufacturing, which accounted for nearly half of the area’s losses during this time period. Brooke County experienced a moderate increase in payrolls between 2012 and 2015, some of which can be linked to the tri-state region’s initial surge in natural gas production over this span of years. More recently, Brooke County payrolls have slipped somewhat as a couple of the county’s feature employers have cut jobs.

ENERGY Many regions in West Virginia have a deep historical connection to energy production, whether its coal or natural gas.

Local coal production in the Weirton Area has declined in a significant fashion over the past couple of decades and the region’s three counties tend to produce much lower levels of natural gas compared to nearby counties in the tri-state area. However, Brooke County has seen appreciable gains in natural gas liquids while Jefferson County has begun to see additional exploration activity occur following a massive surge in gas yields in nearby Belmont County. Shell’s construction of an ethane cracker

Figure 1: Total Employment

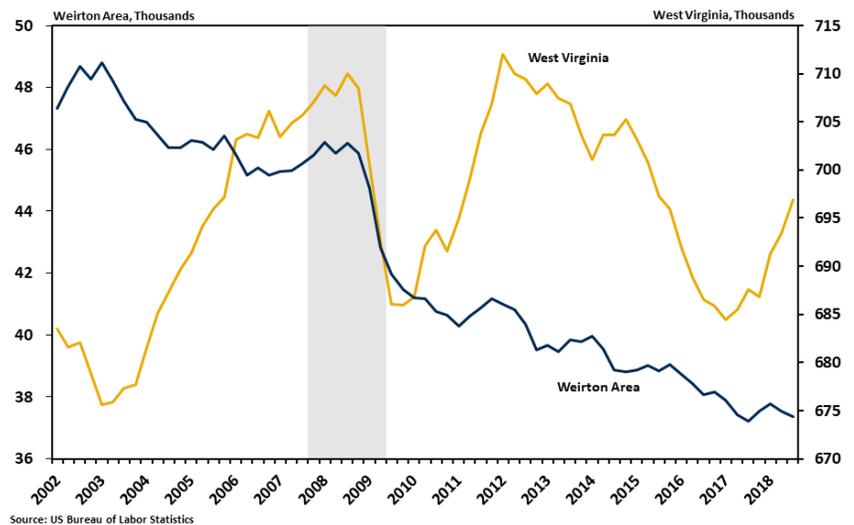
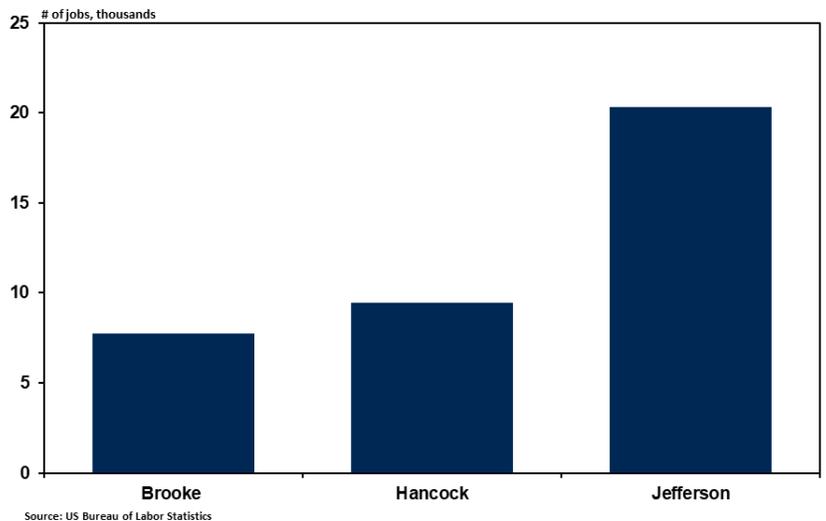


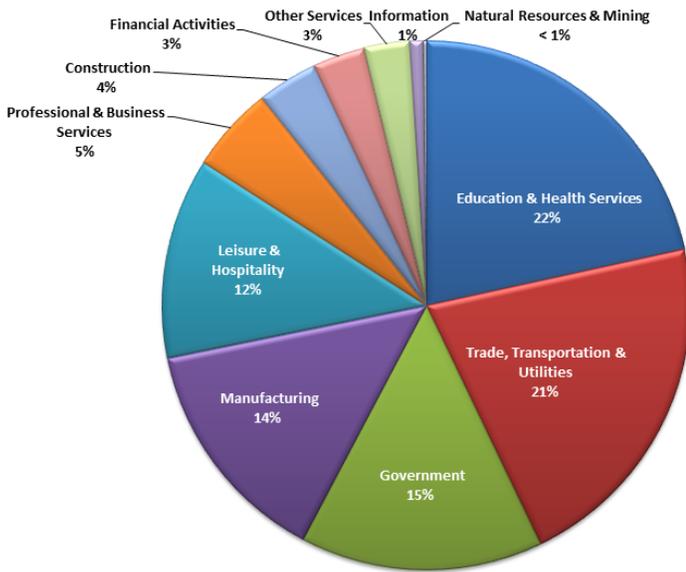
Figure 2: Total Employment by County (2017)



¹ For the purposes of this report, The Weirton Area is comprised of three counties: Brooke and Hancock counties in West Virginia plus Jefferson County, Ohio.

² Sources for historical information are noted in each figure.

Figure 3: Weirton Area Employment Distribution by Sector



Source: US Bureau of Labor Statistics; 2017 data.

just across the border in Beaver County, PA, and ongoing discussions to construct a smaller facility in Belmont County, OH, has already incentivized natural gas companies with assets in neighboring counties to take advantage of the rich gas deposits that tend to be more abundant in this portion of the Marcellus and Utica shale plays. Finally, the Majorsville lateral pipeline and additional network of condensate lines connect the region’s natural gas and NGL output to higher-demand markets where demand outstrips available supply.

In addition to the emergence of natural gas and NGL production in recent years, the Weirton Area has long been a major location for electricity generation as the area contains two large coal-fired power plants. FirstEnergy’s Sammis plant possesses 2.2 GW of generating capacity while the Cardinal Power Plant has a capacity of roughly 1.8 GW. FirstEnergy has already announced the Sammis plant will undergo a two-step shutdown over the next few years, as the plant has struggled to compete with newer, more efficient natural gas plants that operate within Ohio’s deregulated wholesale power market. The Cardinal Power Plant has announced plans to switch half of its generation capacity over to natural gas.

One additional illustration of the indirect impact of natural gas on the region is the upcoming start to construction of a combined cycle natural gas power plant in Brooke County. The \$800 million project will construct one of the state’s first natural gas power plants and upon completion

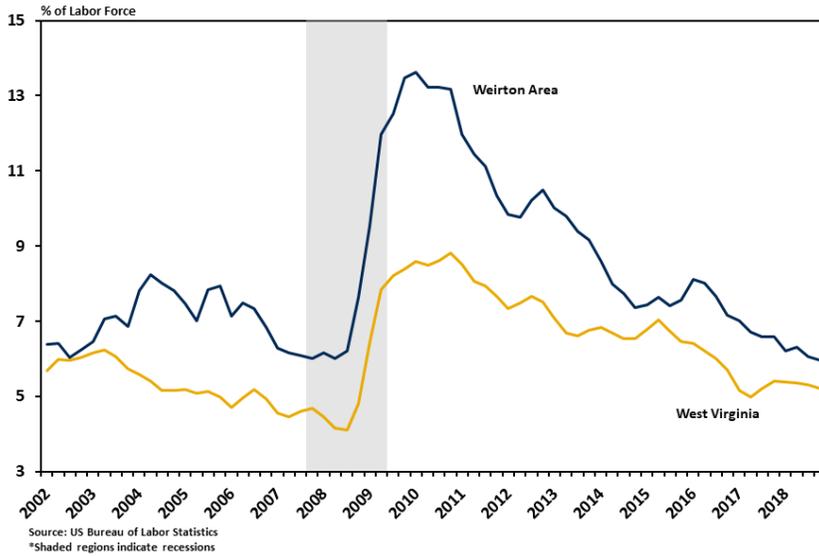
will help to diversify the state’s electricity generation portfolio away from coal to other fuel sources.

MANUFACTURING Once synonymous with steel production, the Weirton Area’s manufacturing sector has experienced significant turbulence over the past few decades due to changing global trade patterns, productivity growth and other macro-level structural changes. Nonetheless, at 14 percent of total payrolls and nearly 25 percent of regional output, manufacturing continues to play a dominant role in the Weirton Area economy. Overall, the sector lost nearly 1,000 jobs since the beginning of 2012 (or an 18 percent decline), though most of those losses stem from a couple of major plant consolidations that occurred a few years ago.

The plastics, food processing, and a few miscellaneous manufacturing subsectors have managed to add a moderate number of jobs over the past two years. The shale gas boom throughout the region has generated some measurable benefits for the Weirton Area’s manufacturing base, most notably chemicals and plastics producers, which rely heavily on natural gas and by-products from shale deposits as feedstock for their production processes. In addition, new companies have emerged to be components of the gas industry’s supply chain. For example, Pietro Fiorentini opened a new facility to supply gas pressure regulators and components for natural gas treatment plants. Other companies have altered or expanded their production lines to manufacture pipe fittings, controls and other components for wellpads, pipelines, and substations.

SERVICE SECTORS While the Weirton Area’s economy remains highly reliant upon manufacturing and broader energy production vis-à-vis power plants and rising gas output, service providing sectors play a critical and growing role in the region’s economic fortunes. Education and health services contains more than one-in-five of the region’s jobs. Although some of this total accounts for a couple of small private higher education institutions, most of the sector is associated with healthcare providers, which have generally been a source of stability and some growth over the past decade or so – in line with broader national trends.

Figure 4: Unemployment Rate



has receded in a fairly steady fashion in the interim – falling to 6 percent during the fourth quarter of 2018. Brooke and Hancock counties recorded an annual average unemployment rate of 6.1 percent in 2018, while Jefferson County had the region’s highest jobless rate at 7.3 percent.

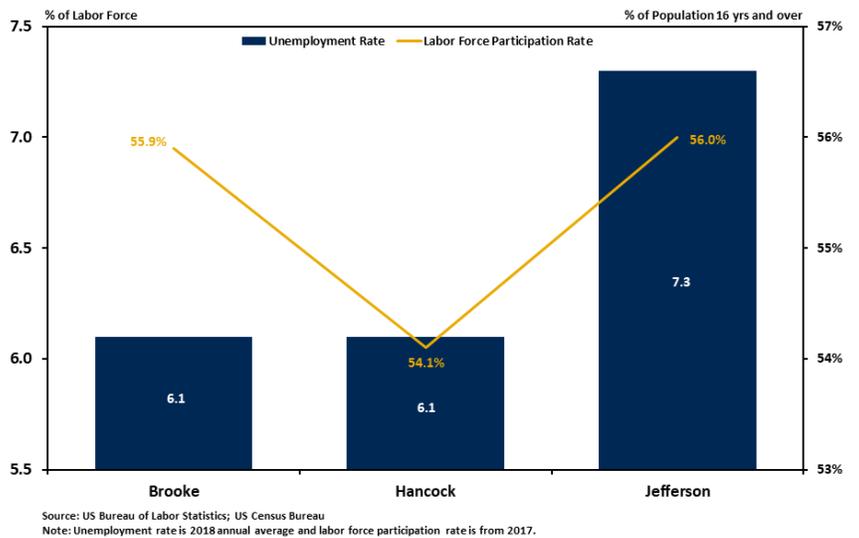
LABOR FORCE Even though a portion of the recent drop in the area’s unemployment rate can be connected stabilizing economic conditions, a combination of the area’s economic volatility and underlying demographic trends have been the key driving force behind a falling jobless rate. Indeed, the Weirton Area has experienced one of the largest proportional declines in population due to residents leaving the area. Overall, the region’s workforce has declined by nearly 11 percent (6,500 people) since the beginning of 2011. Labor force participation do exceed the statewide average for West Virginia, but at approximately 55 percent the region still lags the national rate for workforce participation by 8 percentage points overall. On a positive note, however, the three-county area’s low

Leisure and hospitality accounts for an above-average share of the region’s economy, due primarily to the presence of the Mountaineer Casino, Racetrack and Resort in New Cumberland. While area payrolls in this sector have been buoyed by hotels, restaurants and other companies ramping up hiring to meet demand growth created by an influx of natural gas industry and pipeline workers, the sector as a whole has lost nearly 800 jobs since early-2012. Gaming has accounted for a declining share of consumer discretionary spending at the national level since the Great Recession, which has affected all casinos across the US. To make matters worse, the casino has faced growing competition from the opening of newer venues that operating within just a few hours drivetime in neighboring states. Finally, while the legalization of sports betting outside of Las Vegas was initially seen as a boon to West Virginia casinos, as the state was early to adopt laws and guidelines to open the services in the Fall of 2018, the process has been marred by slow rollouts and legal disputes between mobile app technology companies and casinos.

UNEMPLOYMENT Given its large manufacturing footprint, the Weirton Area’s economy is very cyclical and tends to see large swings in its unemployment rate. In 2008, just as the US economy entered recession, the unemployment rate touched an all-time low of 5.9 percent – only to double within the next year to nearly 12 percent. By early-2010, the unemployment rate peaked at 13.6 percent and

declined by nearly 11 percent (6,500 people) since the beginning of 2011. Labor force participation do exceed the statewide average for West Virginia, but at approximately 55 percent the region still lags the national rate for workforce participation by 8 percentage points overall. On a positive note, however, the three-county area’s low

Figure 5: Unemployment and Labor Force Participation by County



labor force participation rate can be explained in part by an older population, as individuals in the 25 to 54 age groups actively participate in the workforce at rates generally on par with the national average.

INCOME Per capita personal income for the Weirton Area is estimated at approximately \$38,100 during calendar

Figure 6: Per Capita Personal Income

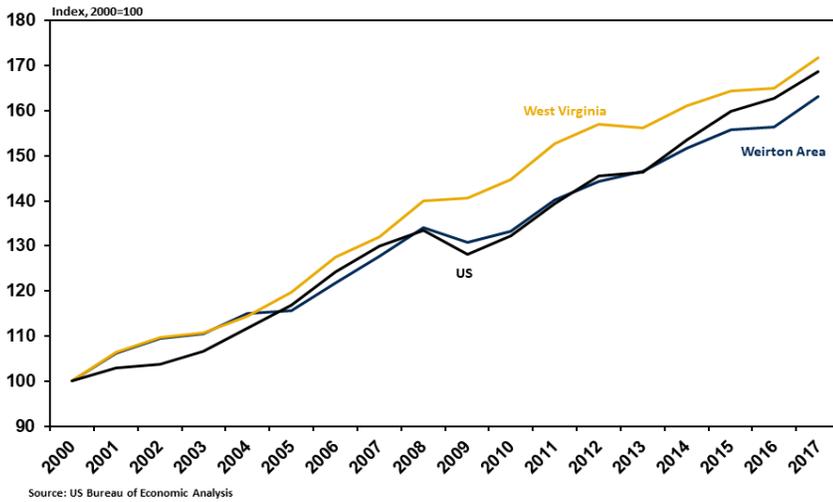
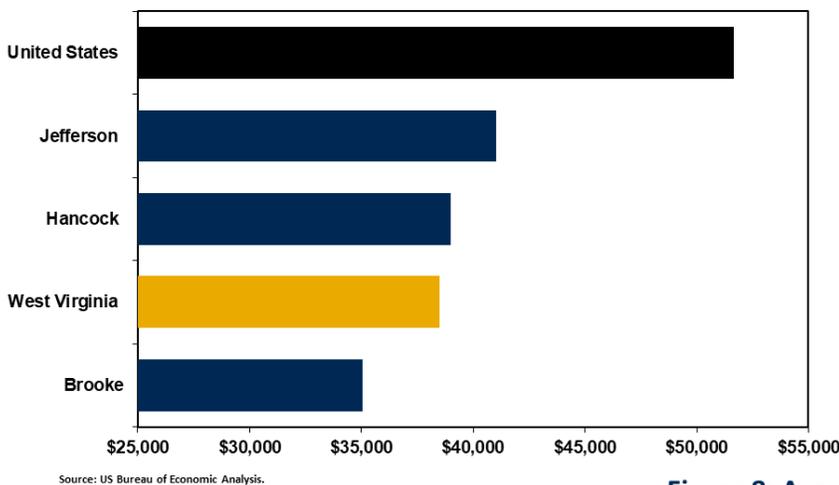


Figure 7: Per Capita Personal Income by Area (2017)



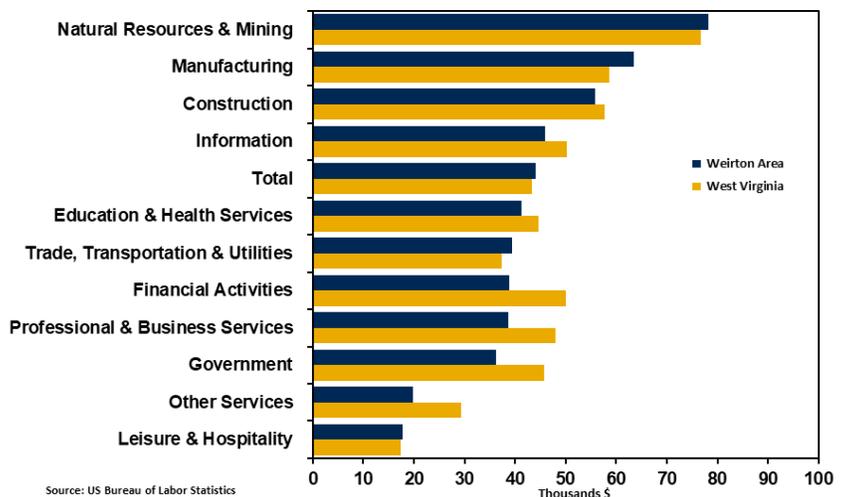
year 2017, which equals a 4.3 percent increase from the previous year. Overall per capita income for the region is 16 percent above 2011 levels (not adjusting for inflation, as presented in Figure 6), falling in between state and national averages over this timeframe. Jefferson County, OH, residents received income levels of \$41,100 per person during 2017, followed by Hancock County at \$39,900. Per capita incomes in the region are boosted to some extent by high wages paid by the manufacturing sector as well as the earnings of highly paid workers who commute into the Pittsburgh metro area for work daily. Moreover, growth in the gas industry has boosted local incomes as residents in the

area that hold mineral rights have seen their incomes boosted by rising volumes of gas withdrawals. Transfer payments account for an above-average share of personal income in the Weirton Area, though this is attributable to the region's high share of elderly residents.

POPULATION The Weirton Area's resident population totals have declined in a fairly steady fashion over the past few decades. Indeed, the region's population numbers have shrunk by roughly 14,000 since 2000. Each county in the region has lost residents, although Jefferson has recorded the largest net decline in population in terms of magnitude since 2010, but Brooke County has seen the largest percent decline in population over this time period at roughly 6.7 percent.

DEMOGRAPHIC CHARACTERISTICS Just as with the rest of the state, the Weirton Area's population has been negatively affected by deaths consistently outnumbering births. Part of this is due to the area's larger-than-normal share of elderly residents, but causes of death from a host of issues ranging from heart disease to drug overdoses help explain the region's high mortality rate. Finally, the three-county area lags both state and national averages in measures of educational attainment among the adult population. Less than 17 percent of residents aged 25 years and

Figure 8: Average Annual Salary by Major Sector (2017)



older possess at least a bachelor’s degree. On a positive note, the area does have a larger-than-normal share of adult residents with some level of college and most of these are holding a 2-two year degree or a postsecondary certification for trade or some other form of vocation training.

Figure 9: Summary Population Profiles

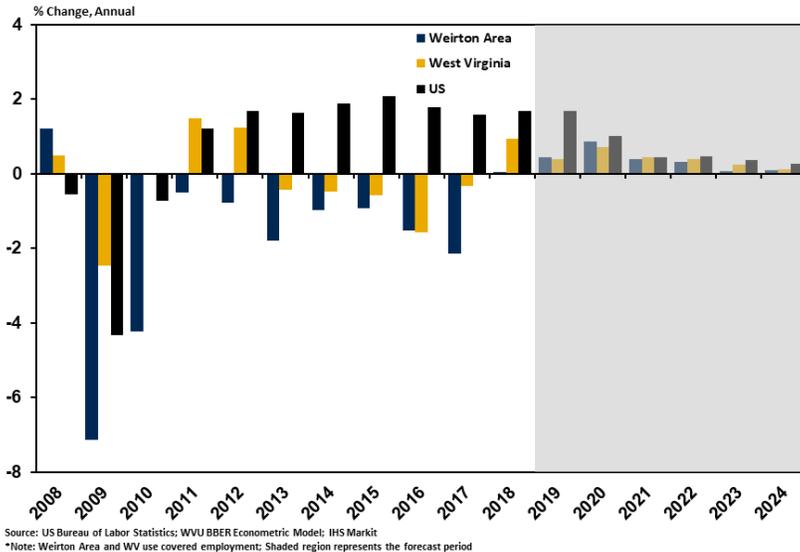
	Weirton Area	West Virginia	United States
Total Population (2017)	118,250	1,817,048	325,147,121
% Population Under 18 (2017)	19.0%	20.4%	22.8%
% Population 65 Years + (2017)	21.7%	18.7%	15.2%
Population with Less than High School Diploma (2017, 25 yrs. +)	10.1%	14.0%	12.8%
Population with High School Diploma, No College (2017, 25 yrs. +)	42.2%	40.7%	27.6%
Population with Some College (2017, 25 yrs. +)	31.0%	25.7%	28.9%
Population with Bachelor's Degree or Higher (2017, 25 yrs.+)	16.6%	19.6%	30.6%
Median Age (2017)	44.6	42.5	37.9
Mean Household Income (2017)	\$58,899	\$56,568	\$78,378
Average Household Size (2017)	2.34	2.49	2.73

Source: US Census Bureau

Economic Outlook

Expectations for the West Virginia and US economy during the 2019-2024 forecast horizon will have a significant impact on the performance of the Weirton Area going forward.³ The forecast calls for the region to recover on a path of economic growth that will tend to lag the statewide average and fall well short of broader national-level growth over the next five years.

Figure 10: Employment Growth Forecast



Overall, we anticipate total employment will increase by roughly 0.3 percent annually through 2024. The energy sector certainly provides a source of optimism for the region’s economy going forward. First, while no decision has been rendered, PTT Global Chemical’s proposed ethane cracker for Belmont County, Ohio, could provide a significant boost to the region’s outlook from numerous angles. Additionally, Shell’s ethane cracker facility, which is currently in the process of being built, will add to local growth potential even though it falls just outside of the area’s defined geographic footprint. For example, the facility would create numerous jobs during its construction and generate positive impacts for the region’s natural gas industry and, when combined with the ethane cracker in Monaca, PA, spur a new wave of development in the Mid- and Upper-Ohio Valley’s plastics and chemicals manufacturing industries.

While legal and/or regulatory hurdles pose an appreciable downside risk for the region’s energy sector, and by extension the overall economy, risks to the Wheeling Area’s forecast are biased to the upside. First, while no decision has been rendered, PTT Global Chemical’s proposed ethane cracker in Belmont County could provide a significant boost to the region’s outlook from numerous angles. For example, the facility would create numerous jobs during its construction and generate positive impacts for the region’s natural gas industry and, when combined with the ethane cracker in Monaca, PA, spur a new wave of development in the Mid-Ohio Valley’s plastics and chemicals manufacturing industries.

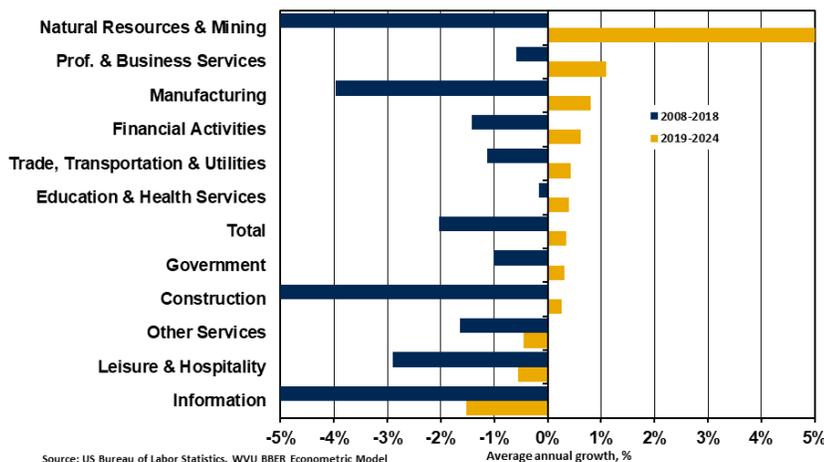
A second source of upside potential arises from the state’s recent memorandum of understanding with China Energy that would include \$84 billion in spending over the next 20 years. While specific details on what projects would emerge as a result of the agreement, the construction of natural gas-fired power plants and the development of mid- and downstream projects have been discussed, some of which would likely occur either within the region’s geographic footprint or close enough to enable local commuters obtain a high-paying job related to the energy industry.

While the PTT Global Chemical and China Energy-backed developments would likely occur well into the forecast horizon, and perhaps even beyond it, they could provide the positive economic shock needed for the Weirton Area to arrest (or even reverse) its long-term trend of net out-migration and population decline.

Unfortunately, the region’s energy sector is not without negative anticipated outcomes during the outlook period. Specifically, FirstEnergy’s planned closure of its Sammis Power Plant in Jefferson County is expected to lead to the overall loss of more than 350 high-wage utility sector jobs once the plant is fully de-powered in mid-2022.

³ All forecast estimates presented herein are derived from the West Virginia University Bureau of Business & Economic Research Econometric Model unless otherwise noted.

Figure 11: Weirton Area Employment Growth Forecast by Sector



BUSINESS SERVICES The energy industry will play an outsized role in the Weirton Area’s performance during the outlook period in a direct manner, but its influence will extend segments of the region’s economy as well. Indeed, a significant portion of the region’s professional and business services sector has an interdependent relationship with the coal and natural gas industries throughout the tri-state area vis-à-vis providing contract labor workers, as well as engineering, legal and other support services.

CONSTRUCTION Construction payrolls in the Weirton Area are only expected to increase slightly by 2024. However, this slow rate of growth is more of a reflection of the timing in which projects will be completed rather than an indication of the sector’s fundamental health. Indeed, public infrastructure investment is expected to be at a relatively high level as the region has several projects listed for funding in the Roads to Prosperity program plus the Justice administration and state lawmakers have indicated an increasing willingness to beef up spending on repair of secondary roads. Additionally, growth in the tri-state area’s natural gas industry should foster nonresidential construction activity as other sectors with major connections to the industry expand and need to add more office and industrial space.

The advanced combined-cycle natural gas power plant in Brooke County is expected to create several hundred jobs during its peak phase of development. Meanwhile, the Shell ethane cracker along with the PTT Global Chemicals proposed project will have considerable impacts on the local construction sector, both positive and negative.

Additional infrastructure will be needed in the Weirton Area and broader region to accommodate the logistical demands of these projects. At the same time, these projects will require thousands of construction workers and be large enough to bid wages markedly higher across a host of skilled trades that might be needed for other major construction projects in the area – thereby potentially boosting the wage bill for publicly-funded infrastructure repair and development.

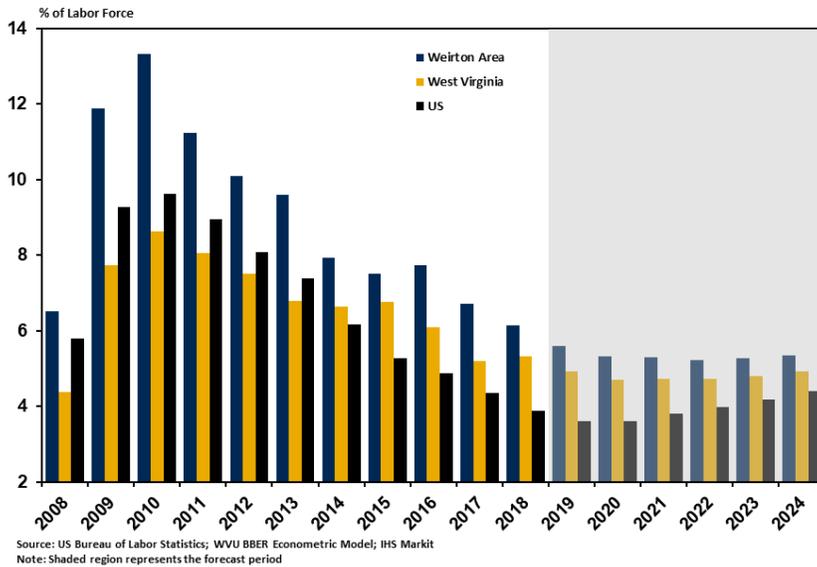
MANUFACTURING The forecast calls for manufacturing payrolls to increase 0.8 percent annually during the outlook period. The region’s chemicals industry has endured a

decades-long downward trend in both production and employment caused by the closure and downsizing of many plants over the years. Going forward, we anticipate at least some stabilization for these manufacturers, a direct result of an abundant supply of low-cost feedstock in the Marcellus and Utica Shale plays. Moreover, opportunities will increase as the Monaca, PA, Shell ethane cracker begins operation by the closing quarters of the forecast horizon since the facility will produce polyethylene pellets that can be used by local plastics and chemicals manufacturers and not imported from the Gulf Coast.

OTHER SECTORS The Weirton Area’s leisure and hospitality sector is expected to see slight declines in payroll levels during the outlook period. Hotels, restaurants and other similar local service establishments are expected to ratchet up hiring over the next year or so to meet increased demand created by energy sector companies. The Mountaineer Resort could benefit from the expansion of sports betting over the next couple of years, but these gains are expected to fade as more states begin to roll out their own sportsbook services. Trade, transportation and utilities will benefit from similar underlying trends in local consumer demand, but should also see some appreciable job growth for transportation companies that service natural gas drilling activities.

Education and health services is expected to add jobs at a 0.4 percent average annual rate through 2024. Healthcare demand is expected to grow consistently within the region, reflecting the region’s large share of elderly residents. Improved severance tax collections bode well

Figure 12: Unemployment Rate Forecast



rate of more than 1.3 percent through 2024, outpacing the statewide averages. Job growth in the region’s high-wage sectors will provide a significant boost, as should royalty payments that can be attributed to rising shale gas and NGL production in the region. The area’s high share of residents at or above the age of 65 will cause government transfer payments (i.e. Social Security and Medicare) to account for a growing share of incomes going forward.

POPULATION Historical demographic trends for the Weirton Area are expected to persist into the outlook period, but we do anticipate the region to register a noticeably smaller rate of decline over the next five years. Indeed, the forecast calls for the region’s population to

contract at an average annual rate of nearly 0.3 percent annually, or roughly half of the percentage decline that was averaged over the previous 10-year period.

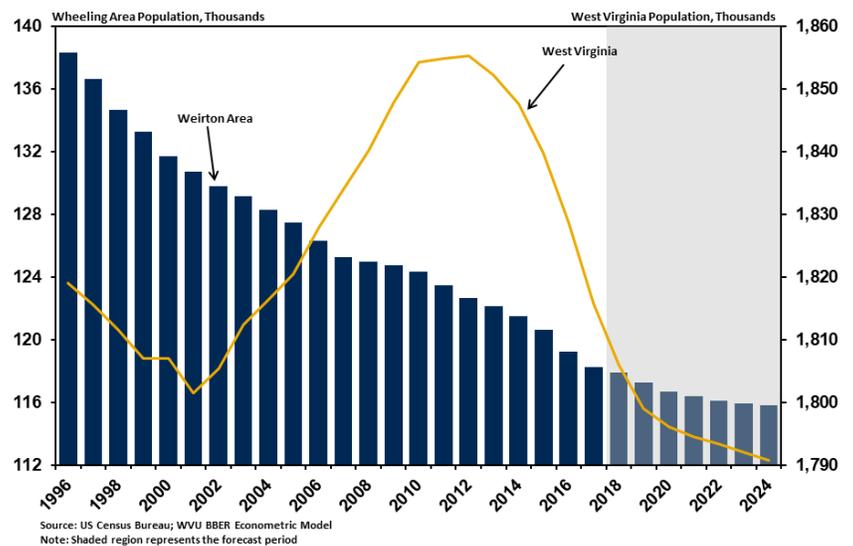
for many of the area’s local governments, as do heightened property tax revenues associated with industrial development and natural gas pipeline construction in the region. However, overall government employment in the Weirton Area is expected to increase at a rate lower than the overall regional average as structural budget problems for West Virginia’s state government dampen the outlook, as do expectations for a declining population.

UNEMPLOYMENT OUTLOOK Large revisions to historical data as well as any unanticipated changes in the Weirton Area’s labor force participation rate could cause the forecast for the regional unemployment rate to differ significantly from both its projected level and path. With that said, the forecast calls for the regional unemployment rate to remain in the mid-5.0 percent range through the early-2020. Growth in the energy sector will bring some previously-discouraged workers back into the labor force as they search for a job, thereby putting some upward pressure on the unemployment rate. Longer term, the area’s jobless rate is expected to settle around 5.3 percent. The potential addition of PTT Global Chemical’s ethane cracker and projects arising from the China Energy memorandum of understanding would likely lead to additional reductions in the region’s unemployment rate.

INCOME Inflation-adjusted per capita income in the Weirton Area is projected to increase at an average annual

contract at an average annual rate of nearly 0.3 percent annually, or roughly half of the percentage decline that was averaged over the previous 10-year period.

Figure 13: Population Forecast



Three fundamental demographic issues could hinder the region’s growth potential to some degree during the outlook period and over the longer term if they are not addressed in some fashion. First, workers must be educated and/or trained to meet the needs of the job market. Second, the population must be healthy and drug-free in order to consistently contribute to the economy and finally, a large and growing share of elderly population may limit potential economic growth as these households tend not to be part of the labor force and also generate less entrepreneurial activity on average. These issues

already pose a roadblock for each of these issues are already underlying demographic characteristics for much of the region and not improving upon them could seriously undermine the area's ultimate potential for economic growth.