Industry Outlook JENNIFER JETT PREZKOP Forecasting West Virginia's Future

West Virginia's economic woes have been the cause for much concern for several years. With a population that is both aging and shrinking, a major drug epidemic and the challenges facing the state's extraction industry, it's no wonder the state faced a \$500+ million budget deficit for 2017 and is facing an even larger revenue shortfall for 2018.

According to "West Virginia Economic Outlook 2017-2021," published by the West Virginia University (WVU) College of Business and Economics, the slight economic upturn expected over the next five years will provide some relief. While the state's economic health will rely heavily on that of the U.S. and the broader global economy, the report forecasts a continuation in the state's emergence from the recession at a recovery pace of 0.6 percent per year through 2021.

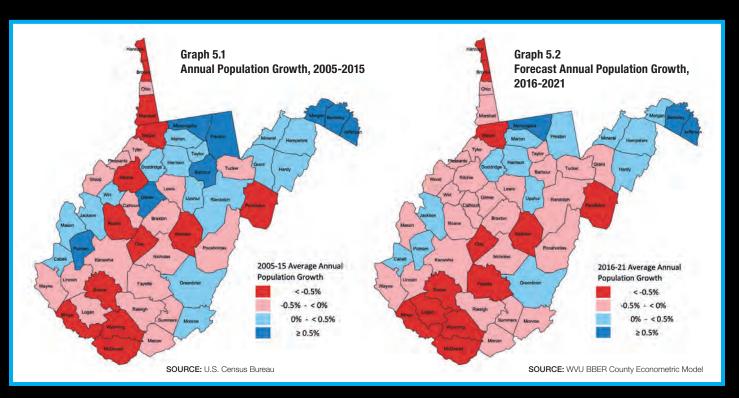
In order for West Virginians to help spur job and economic growth in the state, it's important to understand where we currently are and the challenges we are facing. The information in this piece, taken from "West Virginia Economic Outlook 2017-2021," will provide abbreviated insight into West Virginia's population, employment, exports and income rates and will look at eight specific industries in which the most growth is expected over the next five years.

Editor's Note: The information and graphics in this article have been taken from "West Virginia Economic Outlook 2017-2021," published in October 2016. For more information or to read the report in full, visit business.wvu.edu/centers/bureau-of-business-and-economic-research/ economic-outlook.

POPULATION

Despite the fact that West Virginia gained more than 26,500 residents between 2005-2015, 32 of the state's 55 counties actually registered outright losses in population. The counties that have lost population have done so due to natural population decline and/or negative net migration flows.

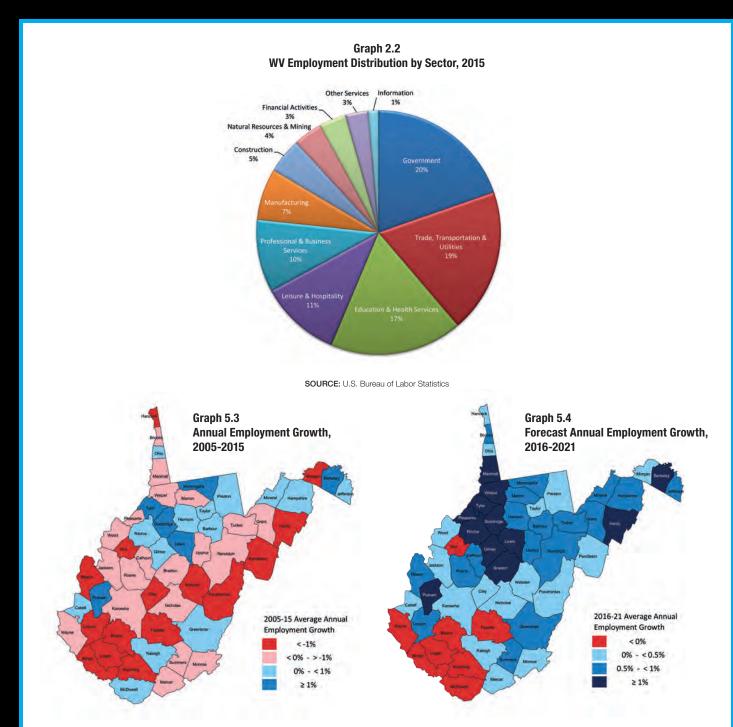
Over the next five years, 19 counties are expected to see their population numbers remain stable or increase during the outlook period. Berkeley, Jefferson and Monongalia counties will be West Virginia's fastest-growing counties at 1.3, 1.1 and 0.9 percent, respectively.



EMPLOYMENT

Doddridge County saw the fastest rate of job creation—2.1 percent per year—between 2005-2015. Monongalia, Berkeley, Lewis and Putnam counties rounded out the top five, and each registered average annual growth of at least 1.1 percent over the past 10 years.

During the 2016-2021 outlook period, Marshall and Ritchie counties are expected to see the fastest rates of job growth at roughly 2.4 percent per year. This strong growth will stem in large part from a rebound in direct hiring and contract labor utilization as producers continue to develop upstream and midstream natural gas resources throughout the Marcellus and Utica shales. Overall, the counties expected to enjoy the fastest rates of net job growth over the next five years are generally situated along the prime areas of known natural gas resources.



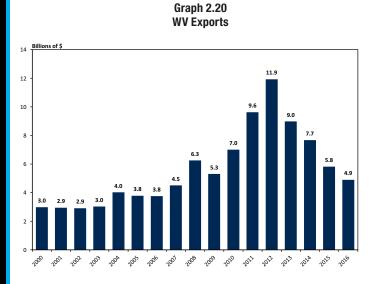
SOURCE: U.S. Bureau of Labor Statistics

SOURCE: WVU BBER County Econometric Model

EXPORTS

Given the state's large share of production of globally traded goods and commodities, export markets have always been an important source of demand for West Virginia. They have accounted for a growing share of the state's economic output over the past decade or so and also served to buoy the state's economy during the Great Recession.

Export activity deteriorated markedly in the past few years, falling 51 percent from its 2012 peak to 2015. Even with this decline, the dollar value of exports still represented the equivalent of 8 percent of state economic output in 2015.



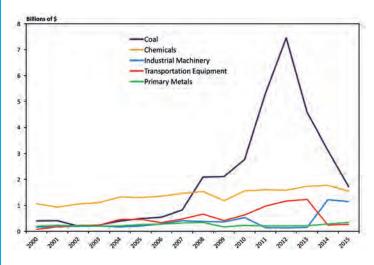
SOURCE: International Trade Administration

Graph 2.22 Top 10 Export Commodities, 2015

Exports Commodity	Export Value (millions of \$)	Share of Total West Virginia Exports (%)
Bituminous Coal	1,722	29.6%
Gears and Related Parts	527	9.1%
Flywheels and Pulleys	517	8.9%
Aluminum Alloy Plates	206	3.5%
Civilian Aircraft, Engines, and Parts	184	3.2%
Polyamides	181	3.1%
Polysulfides	151	2.6%
Artificial Joints, Parts & Accessories	119	2.0%
Polyacetals	111	1.9%
Polyesters (NESOI)	98	1.7%
All Export Commodities	5,815	-

SOURCE: U.S. Census Bureau

Graph 2.21 WV Top Five Exporting Industries



SOURCE: International Trade Administration

Graph 2.23 Top Destination Countries for WV Exports, 2015

Exports Destination Country	Export Value (millions of \$)	Percent change 2012-2015
Canada	\$1,755	-2%
China	\$456	-49%
Netherlands	\$401	-58%
Japan	\$325	-58%
Brazil	\$308	-55%
India	\$223	-70%
Ukraine	\$221	-38%
United Kingdom	\$212	-63%
Belgium	\$211	-36%
Germany	\$190	-45%

SOURCE: International Trade Administration

8 RISING INDUSTRIES

According to "West Virginia Economic Outlook 2017-2021," service-providing sectors will experience the most job growth, specifically professional and business services, education and health services, leisure and hospitality, trade-transportation and utilities, government, construction, natural resources and mining and manufacturing. Here we take a look at these eight rising industries and the role they will play in West Virginia's future.

Professional and Business Services

In the next five years, the professional and business services sector is expected to add jobs at a pace of more than 1.7 percent per year. Much of this growth is expected to come from increased contract labor utilization by natural gas producers and field support services firms, but the gas industry's improved prospects should also bolster demand for engineering, legal and other consulting industries.

Education and Health Services

Thanks to steadily growing demand for health care, education and health services will see employment grow at an average rate of 0.7 percent.

Leisure and Hospitality

Leisure and hospitality is expected to enjoy job gains of nearly 0.7 percent per year through 2021, with the food services and drinking places sector likely growing faster than the accommodation sector.

Trade-Transportation and Utilities

Retail will likely see moderate improvements of 0.3 percent per year through 2021, while wholesale trade and transportation and warehousing sectors are expected to see job growth proceed at roughly 0.4 percent. In addition,

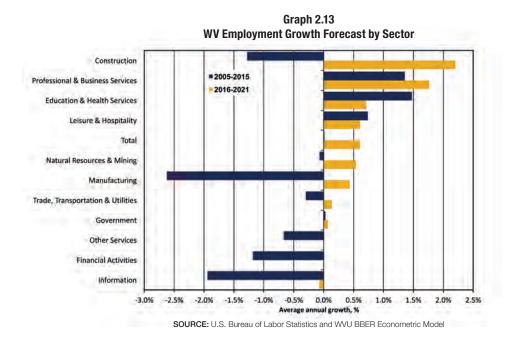
transportation companies that provide services to natural gas rigs and well sites will benefit from the anticipated growth in drilling activity.

Government

Government employment is projected to eke out a minimal increase as the structural budget issues facing the state government will likely limit any potential hiring activity and many local governments are dealing with shrinking tax bases and a lower level of receipts from coal severance tax allocations.

Construction

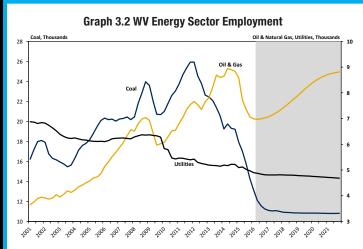
The construction sector is expected to get a major boost in the coming years. The forecast calls for the sector to grow on average 2.2 percent annually through the end of 2021. Much of the growth will occur between 2017-2019 as the energy industry will see several key projects proceed. Reconstruction in the areas affected by the June 2016 floods will also bolster activity over the next year or so. At the same time, major commercial projects as well as several major projects by WVU will continue to add tens of millions of dollars more in spending during the next few years. The forecast also calls for single-family housing starts to rise at approximately 6.5 percent per year through 2021.



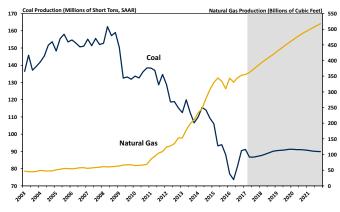
NATURAL RESOURCES AND MINING

The natural resources and mining sector experienced the biggest setback, losing jobs at an average annual rate of 8 percent in the last three years. Most job losses took place in the coal mining industry, which contracted at 11.1 percent per year. The oil and natural gas industry, on the other hand, grew 6.5 percent per year. In the next five years, the sector as a whole is expected to register a positive job growth of 0.5 percent per year. The coal mining industry will see limited opportunities for growth. The highly productive thermal coal mines in Northern West Virginia and lower-cost metallurgical coal mining operations in the state's southern coalfields will be better positioned to raise output and bring some idled workers back into the fold. Even with these moderate improvements, the industry will see employment contract at an average annual rate of nearly 2 percent per year through 2021.

On the flip side, the oil and natural gas industry is expected to add jobs at a rate of 4.6 percent per year. Natural gas production will likely rise at nearly 10 percent per year. Production and job growth will tend to be strongest during the late 2017-2020 timeframe as the price environment improves in response to new pipeline capacity entering service and allowing stranded supplies from the Appalachian Basin to reach markets seeing aggressive expansion in gas for electricity generation. Longer term, prospects for liquefied natural gas (LNG) exports directly from Cove Point, MD, around 2018 will allow shipments of Marcellus Shale gas to flow to European markets where prices are higher. Furthermore, the recent expansion of the Panama Canal also raises prospects for LNG exports since it offers enhanced access to Asian markets where overall energy use continues to grow rapidly.



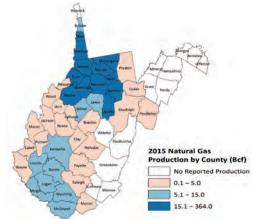
SOURCE: U.S. Bureau of Labor Statistics and WVU BBER Econometric Model



Graph 3.3 WV Coal and Natural Gas Output

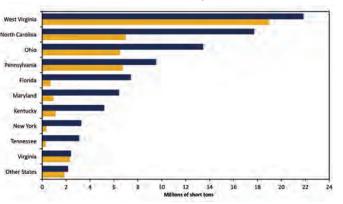
SOURCE: U.S. Energy Information Administration and WVU BBER Econometric Model

Graph 3.4 Natural Gas Production by County



SOURCE: WV Department of Environmental Protection

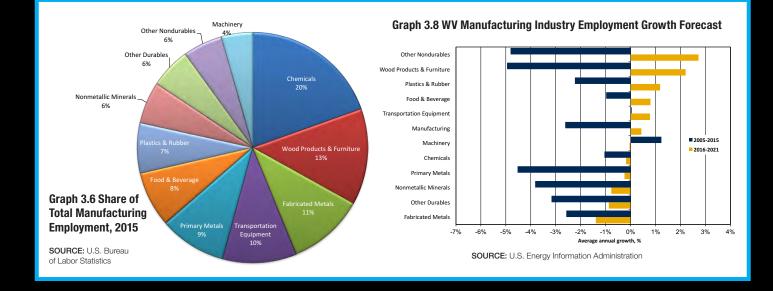
Graph 6.4 Top Destination States for Shipments of WV Coal to Electric Utilities, 2008 vs. 2015



SOURCE: U.S. Energy Information Administration

MANUFACTURING

The manufacturing sector contracted at an average rate of 0.6 percent per year in the last five years. The sector, however, is expected to record net job growth over the next five years at a rate of 0.4 percent per year. Manufacturers linked to the U.S. housing market, including furniture and finished wood products producers and certain plastics manufacturers, will enjoy solid growth during the outlook period. Other segments of the sector that should grow steadily over the next five years are food products and auto parts fabricators.



Congratulations, Joe Eddy,

on being named a West Virginia Executive Sharp Shooter!



Proudly Supported By:

AC&SINCORPORATED



