

WHEELING AREA

ECONOMIC OUTLOOK

2016



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Executive Summary

The Wheeling Area economy has performed well since the end of the Great Recession. Specifically, the Wheeling Region has exhibited stronger employment, output, and per capita personal income growth compared to the state of West Virginia overall in recent years. In this report, we present a detailed discussion of the current state of the Wheeling Area economy along with our forecast for the likely path of economic activity over the next five years.

Several key facts behind the recent economic performance of the Wheeling Area are as follows:

- **Around 1,600 jobs have been added in the region since early-2010.** This compares to job losses for West Virginia overall since early-2012.
 - **The economic recovery has been driven in large part by the natural resources and mining sector, which has added over 2,000 workers in the area since early-2011.** Coal production generally expanded in recent years, even as production in most other parts of West Virginia fell significantly. Natural gas production has exploded in the region, growing at rates well into the double digits.
 - **Overall economic output in the region continued to grow at a strong pace, primarily due to continued robust performance in the energy sector.**
 - **Another area of notable job growth has been in professional and business services.**
 - **The manufacturing, education and health services, and leisure and hospitality sectors have not gained traction in recent years. Construction activity has been somewhat volatile over the past couple years.**
 - **Despite a surge in unemployment in early-2015, overall unemployment in the region has improved substantially over the past four years, and the rate is now roughly on par with the overall West Virginia average, after years of lagging the state.**
 - **Much of the recent job growth in the Wheeling Area has been in high-wage industries, such as natural resources and mining and professional and business services.**
 - **Since 2010, per capita personal income in the Wheeling area has grown at a rate that substantially surpasses state and national averages.** Per capita income growth has been strong enough in Marshall County such that the county now ranks 3rd highest among the state's 55 counties, up from 10th just 6 years ago.
 - **Population in the area has declined steadily for around two decades.** Currently the area's population stands at around 77 percent of its late-1970s level.
- Our forecast calls for continued growth overall in the Wheeling Area over the next five years, however, some volatility is expected in the near term. Key aspects of our Wheeling Area forecast are as follows:**
- **We expect employment to increase over the coming years. Specifically, we forecast a 0.9 percent annual rate of employment growth through the end of 2020.** This growth rate is substantially better than that of West Virginia overall (0.5 percent), but lags expected employment growth at the national level (1.2 percent). Growth will be somewhat sluggish in the near term, but will pick up substantially later in the outlook period.
 - **The natural resources and mining sector is expected to produce the fastest rate of job growth in the coming years, with most of that growth coming in the later years of the outlook period.** After the natural gas industry's slowdown subsides, we expect job growth to pick back up in kind by late 2016 to early 2017 and accelerate as new pipelines and increased use of gas for electricity generation lift prices and encourage further development in the Marcellus and Utica Shale.
 - **The region's coal industry should stabilize and begin to rebound by 2017, but downside risks due to regulatory changes are significant and could lead to a substantially weaker performance.**
 - **The unemployment rate in the Wheeling Area is expected to decline gradually while the labor force is expected to grow slightly through 2020.** Strong growth in shale gas production will support potential gains in the labor force, but an aging population will limit overall improvement.
 - **Per capita personal income is expected to grow at an average annual rate of 2.4 percent** over the next five years, which will be higher than what is expected for the state as a whole (1.9 percent) and slightly outpace the national average (2.3 percent).
 - **We anticipate the region will continue to lose population going forward, but these losses will be slower when compared to the region's episodes of population declines from recent decades.**

Recent Economic Performance

SUMMARY The Wheeling Area¹ has remained on a path of economic recovery and has managed to outperform the broader West Virginia economy over the past two years. Indeed, while the state as a whole shed jobs from mid-2012 through late-2014, the Wheeling Area has seen payrolls expand by a count of roughly 600 workers over that time span. Overall, regional employers have added 1,600 jobs since the area emerged from its economic downturn in 2010 and the level of employment is only slightly below its pre-recession peak. Unfortunately, the Wheeling Area's performance has become less consistent by several measures in recent quarters due to a downturn in coal demand and a temporary slowdown in the natural gas industry's expansion caused by extremely low prices.²

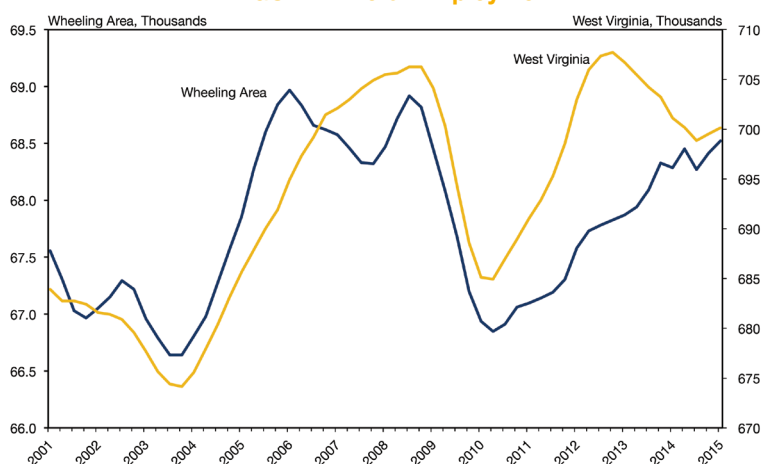
COUNTY OUTCOMES In terms of the four counties that comprise the Wheeling Area, Ohio and Belmont counties are the largest employment centers as they contain more than three-fourths of the region's jobs. However, each of these counties have experienced appreciably different rates of growth in recent years. Belmont County, Ohio, accounted for the majority of the region's job losses during the Great Recession, as employers shed more than 2,200 jobs between 2008 and 2010. The county's economic recovery was generally sluggish but has gained significant momentum as nearly 60 percent of overall payrolls during the economic downturn have been recovered since the second quarter of 2013. Gains have also been spread across a range of goods-producing and service-providing sectors, but growth has been especially strong in the natural gas and construction industries.

After experiencing moderate job losses during the national economic downturn, Ohio County has struggled to gain momentum as total payrolls have continued to trend slightly lower over the past few years. Marshall County experienced a relatively mild economic downturn, with payrolls declining nearly 5 percent from early-2007 to mid-2009. Since that point, however, Marshall has ranked among the state's fastest-growing counties in terms of new job creation thanks to robust growth in coal and natural gas production. Employers in the county added roughly 1,300 jobs between the second quarter of 2009 and fourth quarter of 2014—a cumulative gain of 12 percent.

Similarly, rapid growth in the natural gas industry helped to place Wetzel County among the state's strongest-performing areas coming out of the recession. Employment in the county expanded more than 15 percent between the first quarter of 2010 and fourth quarter 2012 fueled by rapid growth in both natural gas extraction and construction projects associated with energy infrastructure. Since that point, however, payroll levels have trended slightly lower, largely as a result of a dip in construction activity.

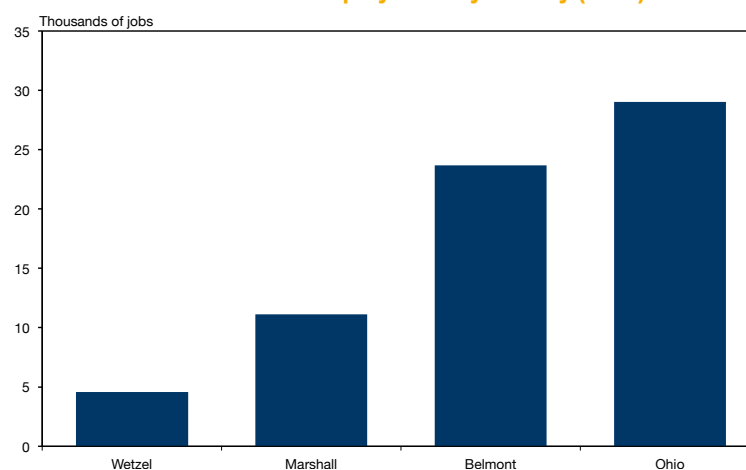
ENERGY Energy production has been a part of the Wheeling Area's economy for many years, but that role has become increasingly larger in recent years. In fact, the natural resources and mining sector has been a leading contributor to growth in the region, adding 2,500 workers on net since the beginning of 2011. Unlike most energy-producing regions in West Virginia, the Wheeling Area's energy sector has high levels of production across multiple fossil fuel types.

FIGURE 1: Total Employment



Sources: US Bureau of Labor Statistics; WorkForceWV
Note: Series are presented as 4-quarter moving averages.

FIGURE 2: Total Employment by County (2014)



Source: US Bureau of Labor Statistics

1. The Wheeling Area is made up of four counties: Marshall, Ohio and Wetzel counties in West Virginia and Belmont County in Ohio.

2. Sources for historical information are noted in each figure.

COAL Marshall County ranked as the top coal-producing county in West Virginia and Belmont County came in second for the state of Ohio. Meanwhile, Ohio County has managed to move up to an overall ranking of 8th in coal tonnage after ranking only 16th statewide as recently as 2012. Marshall and Ohio counties have each recorded sizable increases in coal tonnage mined during the past two years, but output from Belmont County mines has not held up as well as calendar year 2014 production has fallen one-third from 2011 levels.

Although coal production in Marshall and Ohio counties has outperformed the state's southern coal-producing counties, a combination of regulatory and market-related factors that have weighed heavily on domestic thermal coal demand have begun to affect coal production from some of the Wheeling Area's highly-productive operations. Indeed, seasonally-adjusted coal tonnage mined in Marshall County has declined 6 percent during the first six months of 2015 compared to the same time period a year earlier. Ohio County continues to record double-digit rates of growth in coal production, but the rate of increases have slowed appreciably during the first two quarters of 2015.

OIL AND GAS Natural gas, oil and natural gas liquids extraction have emerged as significant sources of growth for the Wheeling Area economy thanks to the implementation of horizontal drilling and fracking in the Marcellus and Utica Shale plays. Wetzel and Marshall rank as West Virginia's third and fourth highest production counties for natural gas while Ohio County ranks as 7th statewide. In addition, Marshall County leads the state in natural gas liquids production and Ohio and Wetzel rank first and second in overall oil production, respectively.

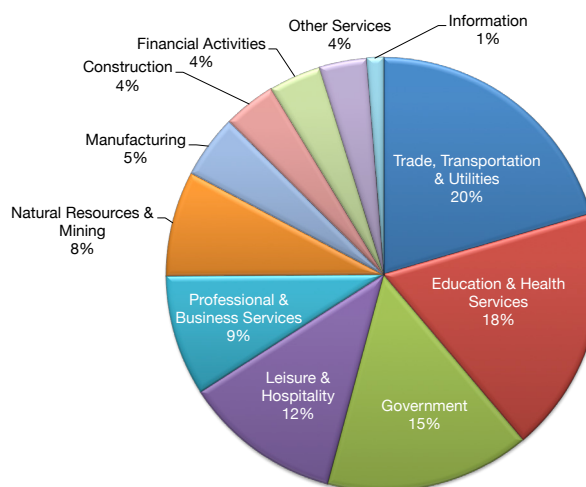
Provisional data covering nearly the first three quarters of 2015 indicate natural gas output in the area has expanded at a double-digit rate compared to last year; however, month-to-month production growth has slowed considerably as extremely low prices in the Marcellus region have caused companies to operate fewer rigs and complete fewer new wells. As a result, legacy well production declines are starting to offset the strong productivity gains many companies have been able to generate in the current bear market. Despite the low price environment, oil and gas production in the Utica Shale play continues to expand rapidly. According to the Ohio Division of Natural Resources, Belmont County has managed to exceed 2014 calendar year total for oil and gas production in just the first half of 2015.

OTHER SECTORS Although energy industries have been a key driver of growth in the Wheeling Area in recent years, other segments of the economy have had an impact on the region's performance. Construction activity across the region as a whole has declined slightly over the past two years but remains well above the nadir observed between 2009 and 2011 thanks to increased homebuilding activity and the continued build-up of oil and gas-related infrastructure.³ The professional and business services sector has continued to add workers at a consistent rate since the beginning of 2011 due in part to businesses providing support services and contract workers to oil and gas industries as well as the national economic recovery bolstering demand for legal, staffing and accounting services. The trade, transportation and utilities sector has expanded moderately since the end of the recession as rapidly-growing personal incomes have stimulated new retail development and the expanding oil and gas industries have led to increased employment at transportation companies that haul drilling fluids and materials to rig sites and well pads.

At the same time, several sectors in the region have failed to generate any appreciable levels of new job growth since the end of the economic downturn. The Wheeling Area's manufacturing sector appears to have stabilized over the past few quarters after losing nearly 700 jobs between mid-2012 and mid-2014. Overall, the manufacturing sector is approximately 40 percent smaller in terms of employment levels than it was 10 years ago due in large part to the long-term decline in the region's chemicals industry.

While education and health services employment has expanded at a relatively steady pace nationally, the sector's payroll levels in the four-county region have

FIGURE 3: Wheeling Area Employment Distribution by Sector (2014)



³ Construction starts data come from McGraw-Hill Construction and only cover Marshall, Ohio and Wetzel counties in West Virginia.

Source: WorkForceWV
Note: Construction and Natural Resources & Mining reflect averages through 3rd quarter.

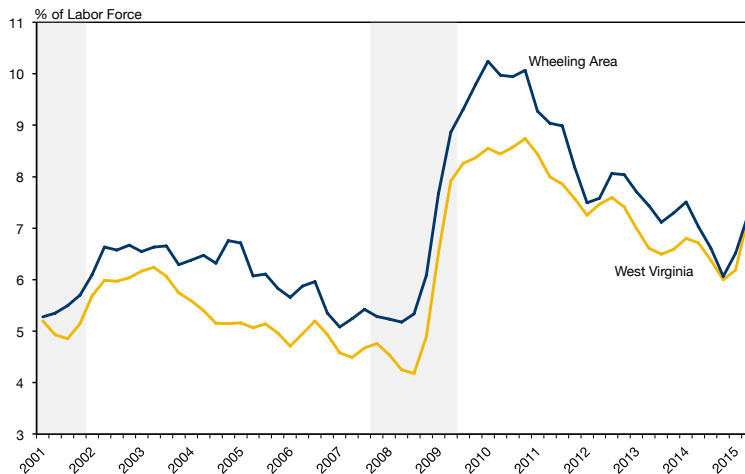
declined moderately in recent years. The strong growth observed in the Wheeling Area’s natural gas industry and erstwhile gains in coal mining employment have bolstered personal incomes and provided a boost to demand for hotels, restaurants and other discretionary spending outlets. Unfortunately, the broader leisure and hospitality sector has not fared as well due in large part to the expansion of gaming into neighboring states, which has weighed on visits to Wheeling Island Hotel, Racetrack and Casino.

UNEMPLOYMENT The Wheeling Area’s unemployment rate reached a peak of 10.2 percent during the first quarter of 2010—the highest reading since 1992. Aside from a few brief increases, the region’s jobless rate generally declined over the subsequent four-year period before settling at 6.1 percent by the end of 2014. In addition, the rate is now roughly in line with the statewide average after exceeding it by more than a full percentage point during the economic downturn. During the first half of 2015, however, the unemployment rate has risen sharply and sits at 7.2 percent as of the second quarter. Among the region’s four counties, Ohio County has the lowest seasonally-adjusted unemployment rate at roughly 6 percent while Wetzel County’s jobless rate is the region’s highest at 10.9 percent.

LABOR FORCE Labor force attrition initially pushed the regional unemployment rate down, but the Wheeling area did see a sizable rebound in the size of its overall workforce between 2012 and 2014. Conditions have become more volatile since the first quarter of 2014, but the area has seen its labor force expand in size since the beginning of 2015. This suggests some of the reported increases in the unemployment rate might have been driven at least in part by once-discouraged workers returning to labor force. For the region as a whole, labor force participation rates tend to come in a few percentage points higher when compared to the statewide average. However, Wetzel County does have a very low rate of workforce participation at 45 percent, which is due primarily to its disproportionate share of residents over the age of 65.

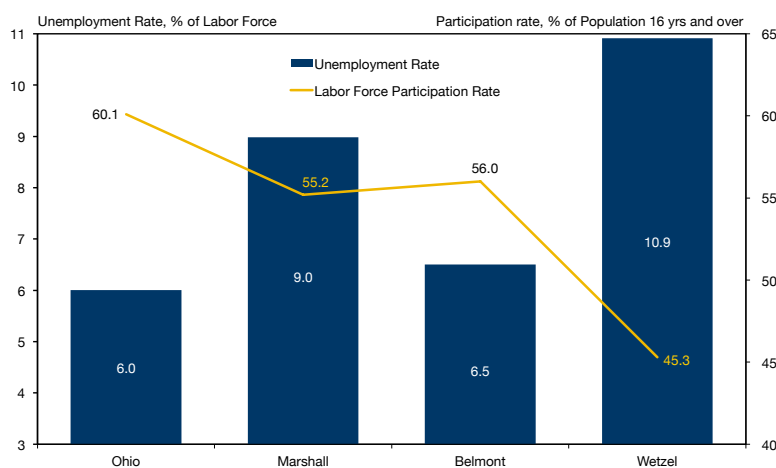
INCOME Per capita personal income in the Wheeling Area was estimated at approximately \$38,100 during 2014, which represented a 3.7 percent gain over the previous calendar year (without adjusting for inflation). Overall, the region has seen per capita income rise at an average annual rate of 5.5 percent since 2010, beating both the state and national rates observed during this period by nearly two full percentage points. Across the four counties in the region, per capita income levels lag the national average, but Marshall has closed the income gap rapidly since 2010 thanks to a 32 percent increase in per capita income in that time period. In fact, Marshall County ranks third among West Virginia

FIGURE 4: Unemployment Rate



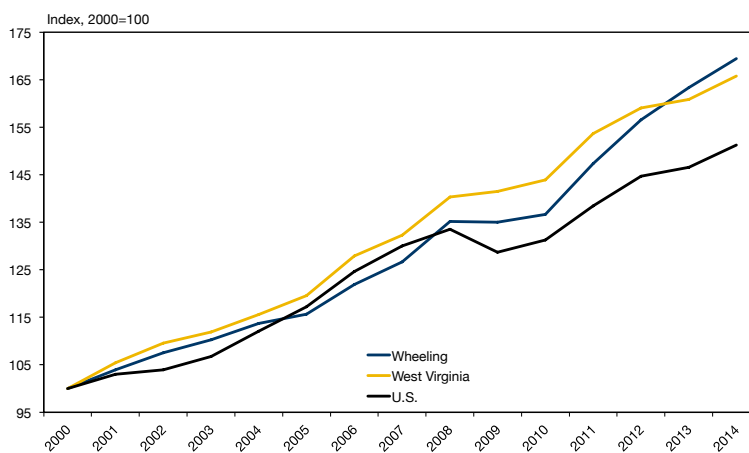
Source: US Bureau of Labor Statistics
*Shaded regions indicate recessions

FIGURE 5: Unemployment Rate and Labor Force Participation Rate by County



Sources: US Bureau of Labor Statistics; US Census Bureau

FIGURE 6: Per Capita Personal Income



Source: US Bureau of Economic Analysis
*Note: The 2014 figure for Wheeling Area is an estimate.

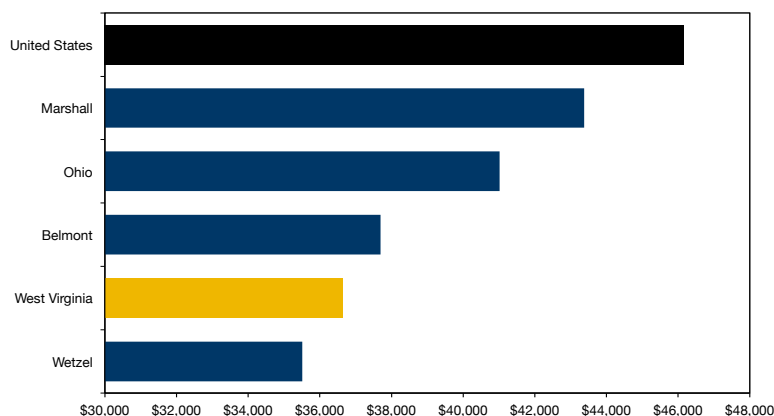
counties in terms of per capita income, moving up from 10th as recently as 2008.

The underlying composition of jobs created in the region has been the key contributing factor to such strong income growth during the past few years. Indeed, strong employment gains observed across the energy sector and in professional business services have been a significant boost to local income levels. According to data from the Bureau of Labor Statistics, the average annual nominal wage for all workers employed in the four-county area increased at a rate of 4.5 percent per year between 2010 and 2014, surpassing \$40,000.

DEMOGRAPHICS Unlike the state of West Virginia as a whole, where the current population count is ahead of 2004 levels, the Wheeling Area has seen the number of residents dwindle at a fairly considerable and steady rate each year for nearly two decades. Over the long term, the size of the region's population has declined from more than 208,000 in the late 1970s to just above 161,000 in 2014. All four counties in the area have seen their population numbers fall in the past 10 years, but Wetzel County has suffered the largest percentage decline over that time period at 0.7 percent per year.

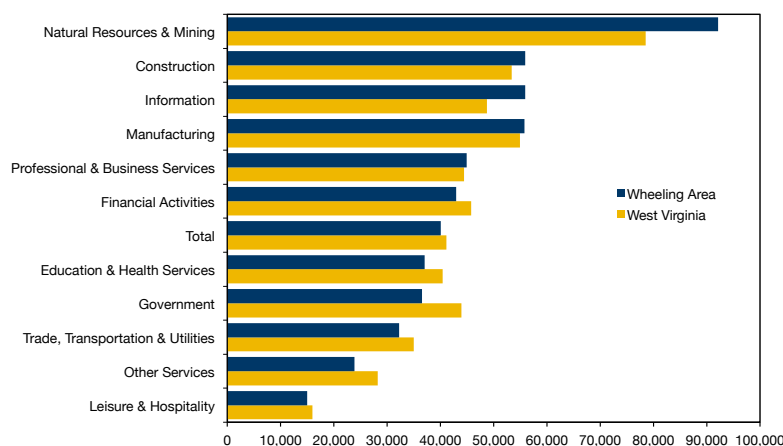
In addition to losing residents to other areas via net out-migration, Wheeling has seen its population decline as a result of deaths outnumbering births. With a significantly higher share of residents over the age of 65 and a median age 2 years greater than West Virginia as a whole, which is already one of the highest among all 50 states, death rates will tend to be higher than normal and birth rates will be below average. As a result, the Wheeling Area would likely need a considerable shift in both migration trends as well as birth and death rates in order to see its long-term population losses end or even subside.

FIGURE 7: Per Capita Personal Income by County (2014)



Source: US Bureau of Economic Analysis

FIGURE 8: Average Annual Salary by Major Sector (2014)



Source: US Bureau of Labor Statistics

FIGURE 9: Summary Population Profiles

	Wheeling Area	West Virginia	United States
Total Population (2014)	161,193	1,850,326	318,857,056
% Population Under 18 (2014)	19.4%	20.5%	23.1%
% Population 65 Years + (2014)	19.4%	17.8%	14.5%
Population with Less than High School Diploma (2013, % of pop. 25 yrs. +)	11.9%	15.4%	13.4%
Population with High School Diploma, No College (2013, % of pop. 25 yrs. +)	42.6%	40.2%	27.8%
Population with Some College (2013, % of pop. 25 yrs. +)	27.6%	25.4%	29.2%
Population with Bachelor's Degree or Higher (2013, % of pop. 25 yrs.+)	17.8%	18.9%	29.6%
Median Age (2014)	44.0	42.0	37.7
Average Household Size (2013)	2.30	2.44	2.65

Source: US Census Bureau

Wheeling Area Outlook

EMPLOYMENT GROWTH Expectations for the US and West Virginia during the forecast horizon will have a significant impact on Wheeling's performance going forward.⁴ The forecast calls for the economic recovery to continue over the next five years. Projected economic growth at the state and national level during the outlook period is expected to filter down to the Wheeling economy and allow it to enjoy a solid recovery through the end of 2020. We anticipate total payrolls in the region will expand at a rate of more than 0.9 percent per year. While this will lag the national average of 1.2 percent, the Wheeling area will easily outpace the statewide average of 0.5 percent.

COUNTY DIFFERENCES Among the four counties, the forecast calls for Marshall County to lead in terms of growth over the next five years with an expected gain of 2 percent per year. In fact, Marshall County is projected to rank as one of the state's fastest-growing counties during the forecast horizon, reflecting the expectation for continued expansion in the energy sector. Job gains of 1 percent per year are expected for Belmont County, followed by Wetzel County at roughly 0.6 annually through 2020. Ohio County is expected to lag both the state and regional average with a projected gain of between 0.3 to 0.4 percent per year during the outlook period.

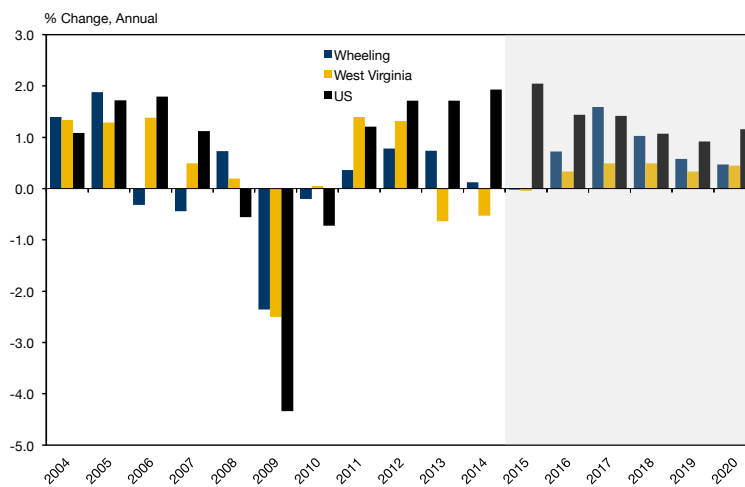
For the area as a whole, goods-producing sectors are expected to drive regional economic growth going forward. The natural resources and mining sector will likely grow more slowly in comparison to the past few years. Wheeling is expected to see payrolls in this sector rise at an average annual rate of nearly 5 percent per year, but anticipated growth within this sector will be subject to considerable upside and downside risks during the outlook period.

NATURAL GAS The oil and natural gas industries will generate the largest share of the overall sector's growth through 2020, but most of these gains are expected to be concentrated in the 2017 to 2020 time period. Given an insufficient availability of pipeline infrastructure and limited downstream processing capabilities in the area, regional natural gas prices will remain under pressure over the next year or so and likely hamper industry capital spending and exploration activity. Longer term, however, several major pipeline developments and the planned opening of the LNG export terminal in Cove Point, Maryland, should alleviate the bottlenecks and allow for prices to rise. This should encourage expanded

production, exploration and development of oil, natural gas and NGLs from both the Marcellus and Utica Shale plays. Moreover, both the regional and national electricity generation portfolio will likely continue to shift toward natural gas—including the planned combined-cycle plant in Moundsville—and create more end-market demand for gas produced in the region. Finally, downstream processing has the potential to get a foothold in the long-term as PTT Global Chemical recently advanced plans to conduct a detailed engineering analysis for the construction of an ethane cracker in Belmont County.

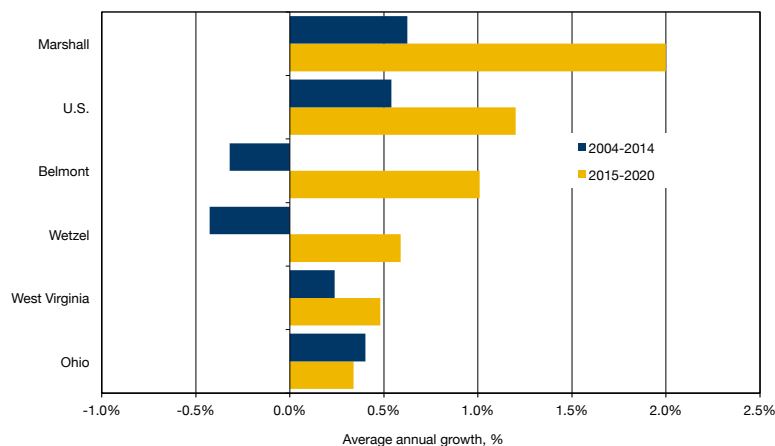
COAL Our forecast calls for the region's coal industry to struggle in comparison to recent years as the sharp drop in natural gas prices over the past year has prompted a large decline in coal use for electricity generation. Furthermore, export demand for the region's coal will hurt over the near term due to a strong dollar and excess

FIGURE 10: Employment Growth Forecast



Sources: US Bureau of Labor Statistics; WorkForceWV; WVU BBER Econometric Model; IHS Economics
*Note: Shaded region represents the forecast period

FIGURE 11: Wheeling Area Employment Growth Forecast by County



Sources: US Bureau of Labor Statistics, WVU BBER Econometric Model; IHS Economics

⁴ All forecast estimates presented herein are derived from the West Virginia University Bureau of Business & Economic Research Econometric Model unless otherwise noted.

global supply. Market conditions are expected to improve by 2017 as rising natural gas prices and drawn down inventories boost thermal coal demand from the region's highly-productive mining operations.

Unfortunately, demand for thermal coal mined in the Wheeling Area will face significant downside risks from environmental regulatory changes, chiefly the Clean Power Plan, which seeks to curtail carbon dioxide emitted from electric power plants by more than 30 percent by 2030, relative to 2005 levels. For now, we have excluded the plan's impact from the baseline forecast given that the implementation period begins in 2022 and also due to the potential effects of likely court challenges and given the potential for changes that could be caused by the outcome of the 2016 presidential election. However, we have analyzed the potential impact of a preliminary version of the Clean Power Plan rule on Northern West Virginia coal production. For a discussion of the analysis and these results, see Coal Production in West Virginia: 2015 to 2035.

CONSTRUCTION The forecast calls for the construction sector to increase payrolls at a rate of 2 percent per year through 2020, although growth will be significantly stronger in 2017 and 2018 as development of the region's energy sector picks back up. The Moundsville Power combined-cycle natural gas power plant will be a particularly significant boost to construction employment in the medium term as construction of the \$600+ million facility gets underway.

MANUFACTURING Broader national improvements in business investment and capacity upgrades for some manufacturing industries bode well for fabricated metals and other locally-produced capital goods. In addition, the development of Utica and Marcellus shale gas resources offer upside potential for the Wheeling Area's chemicals, plastics and metals manufacturers, both by lowering the cost of feedstock and creating the potential for manufacturing new products.

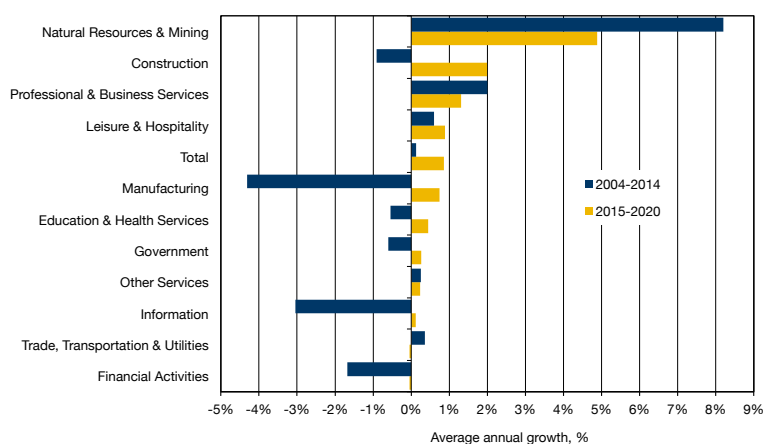
SERVICE-PROVIDING SECTORS Wheeling's professional and business services sector will see job growth of 1.3 percent annually during the next five years, coming in somewhat slower than what was observed over the past 10 years. Most of the growth will come from technically-oriented operations and back-office support businesses ramping up hiring as the national economic recovery continues to progress. In addition, a stronger oil and gas industry will also create demand from auxiliary and support function operations. A continued strong pace of income growth in the region should further bolster demand for restaurants, hotels and other similar establishments going forward, but the broader leisure and hospitality sector will be hurt to some extent by the dilution of casino visitors to venues in Ohio, Pennsylvania and Maryland.

We anticipate education and health services providers in the Wheeling Area will increase payrolls at a very modest pace through 2020. With limited growth potential for the region's private universities, healthcare will account for all of this sector's growth as a direct result of the large elderly population and expanded health insurance coverage. The public sector will likely experience minimal growth going forward. Although severance and property tax receipts associated with the natural gas industry's expansion offers some upside for state and local government tax revenue, a smaller residential tax base created by declining population will limit public sector hiring activity to some extent.

The forecast calls for moderate increases in employment for the broad trade, transportation and utilities sector. Rising income levels bode well for the retail prospects during the outlook, but broader industry trends toward fewer employees per store and a smaller local population base should offset this to some degree. The combined-cycle natural gas power plant in Marshall County will help to alleviate the jobs lost after the closing of the Kammer Power Plant, but the potential for additional losses in coal-fired generating capacity in the region remain due to shifts toward natural gas and other fuels as well as future regulatory changes.

UNEMPLOYMENT Given the region's strong expectations for job growth and underlying demographic trends, we expect Wheeling's unemployment rate will decline from its current level over the next five years. We anticipate the area's jobless rate will generally track broader statewide trends, falling from an expected 2015 annual average of 7 percent to the upper 5 percent range by the end of the forecast horizon. Marshall County will see significant decline in its jobless rate over the forecast horizon, dropping from 9 percent in the second quarter of 2015 to below 7 percent by mid-2020. Wetzel County

FIGURE 12: Wheeling Area Employment Growth Forecast by Sector



Sources: US Bureau of Labor Statistics; WorkForceWV; WVU BBER Econometric Model

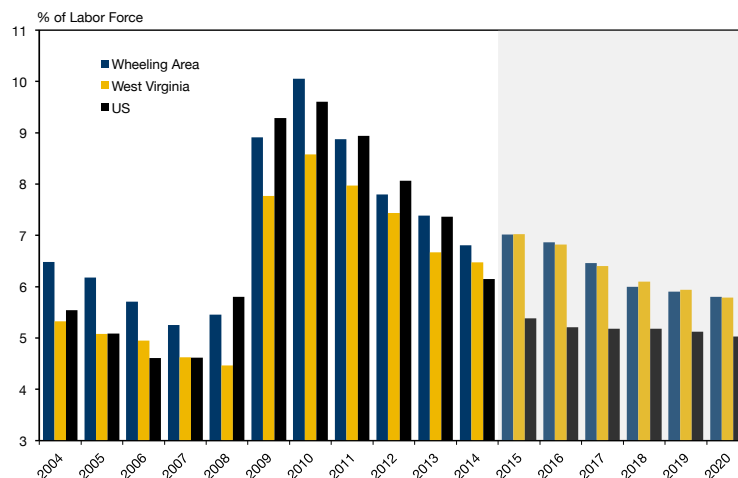
will also likely experience a sizable drop in this measure, but will continue to possess the region's highest unemployment rate throughout the forecast horizon.

LABOR FORCE Wheeling's labor force will see moderate growth during the outlook period. A healthy rate of new job growth in the energy sector and other segments should bring in new labor force entrants and provide the incentive for some individuals to return to the labor force. Unfortunately, prevailing demographic forces, namely the region's disproportionate share of residents at or close to retirement age, will put downward pressure on the labor force unless the area enjoys a significant shift in migration flows.

INCOME Inflation-adjusted per capita income is expected to increase 2.1 percent during 2015, a noticeable slowdown from the strong gains of recent years. Real wage growth will be weaker in comparison to recent history through 2016, but should rebound by the second half of the forecast horizon and easily surpass the national average. Owing to the area's above-average share of residents at or near retirement, government transfer payment programs, such as Social Security and Medicare, are expected to be the fastest-growing portion of personal income over the next five years. Overall, our forecast calls for the Wheeling Area to experience growth of 2.4 percent per year between 2015 and 2020, which will easily exceed anticipated statewide growth of nearly 1.9 percent and slightly surpass the expected national average of 2.3 percent.

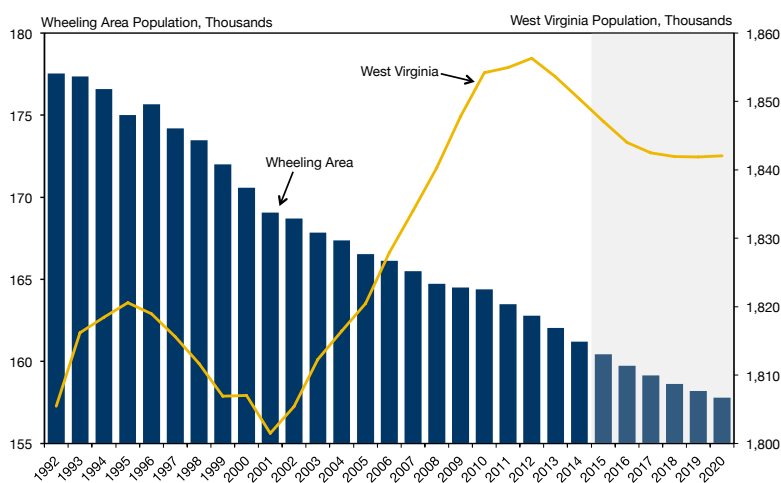
POPULATION Wheeling is expected to see its population decline further during the 2015 to 2020 forecast period. Solid job growth over the next five years is expected to prompt a smaller net migration outflows, thereby lessening the rate of decline in comparison to the past ten years. Nonetheless, the region's other principal underlying demographic trends, namely the tendency of deaths to outnumber births, will be difficult to overcome, causing Wheeling's population to shrink by approximately 500 residents per year through 2020, or an average annual rate of decline of more than 0.3 percent.

FIGURE 13: Unemployment Rate Forecast



Sources: US Bureau of Labor Statistics; WVU BBER Econometric Model; IHS Economics
Note: Shaded region represents the forecast period

FIGURE 14: Population Forecast



Sources: US Census Bureau; WVU BBER Econometric Model
Note: Shaded region represents the forecast period