REGIONAL SNAPSHOT

Northern Shenandoah Valley Regional Partnership (NSVRP), Virginia
Table of contents

01 Overview
02 Demography
03 Human capital
04 Labor force
05 Industry and occupation
Northern Shenandoah Valley Regional Partnership (NSVRP), VA

What is a regional snapshot?
Northern Shenandoah Valley Regional Partnership (NSVRP)
Region is comprised of six Virginia counties. I-81 crosses the region from south to north and connects to I-70 to the north. I-66 connects the region to Washington, DC.

- Clarke
- Frederick
- Page
- Shenandoah
- Warren
- Winchester
Overview

What is a regional snapshot?

What is the snapshot?
This snapshot is a demographic and economic assessment of the Northern Shenandoah Valley Regional Partnership (NSVRP) Region in Virginia. Using county-level data, PCRD analyzed a number of indicators to gauge the overall economic performance of the NSVRP Region in comparison to the rest of the state.

What is its purpose?
The snapshot is intended to inform the region’s leaders, organizations and residents of the key attributes of the region’s population and economy. In particular, it takes stock of the region’s important assets and challenges. With such data in hand, regional leaders and organizations are in a better position to invest in the mix of strategies that will spur the growth of the economy and provide a higher quality of life for residents of the region.

What are its focus areas?
PCRD secured and analyzed recent data from both public and private sources to generate the snapshot. In order to build a more comprehensive picture of the region, the report presents information under four key categories.

- Demography
- Human Capital
- Labor Force
- Industry & Occupation

When appropriate or relevant, the report compares information on the region with data on the remainder of the state. By so doing, the region is better able to determine how well it is performing relative to the state on a variety of important metrics.
02 demography

Population change
Age structure
Income and poverty
Demography

Population change

Questions:
• How does the region’s population trend compare to that of the state?
• What may be some of the elements driving the trends in the region? In the state?
• What strengths or challenges might these trends present?

Demography

Race

White 93.0%
Other 7.0%

2000
Black 3.9%
Asian 0.6%
American Indian & Alaska Native 0.2%
Native Hawaiian & Other Pacific islander 0.02%
Two or More Races 2.3%

Hispanics - 2000
2.5%

2014
White 91.3%
Other 8.7%

Black 4.9%
Asian 1.3%
American Indian & Alaska Native 0.5%
Native Hawaiian & Other Pacific islander 0.05%
Two or More Races 2.0%

Hispanics - 2014
7.1%


section 02
Population Age Structure, 2000

A visual presentation of the age distribution of the population (in percent)

Source: 2000 Decennial Census, U.S. Census Bureau
Population Age Structure, 2014

A visual presentation of the age distribution of the population (in percent)

Questions:

• Is the region experiencing an aging of its population? How does this compare to the rest of the state?

• Is there a sizable number of people of prime working age (20-49 years of age) in the region?

• Is the youth population (under 20 years old) growing or declining?

• What are the implications of the region’s age structure for the economic development efforts of the region?

### Demography

#### Income and poverty

<table>
<thead>
<tr>
<th></th>
<th>2003</th>
<th>2008</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Population in Poverty</td>
<td>8.9%</td>
<td>9.7%</td>
<td>10.8%</td>
</tr>
<tr>
<td>Minors (Age 0-17) in Poverty</td>
<td>12.4%</td>
<td>13.3%</td>
<td>16.1%</td>
</tr>
<tr>
<td>Real Median Household Income*</td>
<td>$57,849</td>
<td>$58,329</td>
<td>$57,042</td>
</tr>
</tbody>
</table>

#### Questions:

- **Is the poverty rate for individuals in the county getting better or worse?**
- **Is poverty for minors in the county lower or higher than the overall poverty rate for all individuals? Why?**
- **Has real median income (adjusted for inflation) improved or worsened over the 2003 to 2013 time period? What may be reasons for these changes?**

*Note: Regional Median Household income is the population-weighted average of median household income values across the NSVRP Region counties.*

Source: U.S. Census Bureau – Small Area Income and Poverty Estimates (SAIPE)
human capital

- Educational attainment
- Patents
Questions:

- What proportion of the adult population in the region has only a high school education?
- How many are college graduates (bachelors degree or higher)?
- How does the educational profile of the region compare to that of the rest of the state?
- What are the implications of the educational profile of the region in terms of the region’s economic opportunities or workforce challenges?

Source: 2009-2013 American Community Survey 5-Year Estimates
Patenting trends are an important indicator of the level of innovation in a region. Commercializing this innovation can lead to long-term growth for regional economies.

Questions:

- How does the region’s patent rate compare to that of the rest of the state?
- How have rates changed over time?
- What might this data suggest for the future of the region?

*Note: Patent origin is determined by the residence of the first-named inventor. Since a number of workers commute into the region, the number of patents produced in the NSVRP Region could be high. However, among residents of the region, patent production is relatively low.*
04 labor force

Unemployment rates
Earnings per worker
Source of labor for the region
Questions:

- How does the region’s unemployment rate compare to the rest of the state and nation?
- How does the region’s unemployment peak and post-2009 recovery compare to the state and nation?
- What might this suggest for the region’s economic future?

Source: LAUS, BLS
Questions:

• How does the region’s average earnings compare to that of the rest of the state?
• What might be some driving factors for the differences?
• Do these represent potential strengths or challenges for the region?

NOTE: Earnings include wages, salaries, supplements and earnings from partnerships and proprietorships.

Source: EMSI Class of Worker 2014.4 (QCEW, non-QCEW, self-employed and extended proprietors)
Labor force

Journey to Work

Questions:
- How many people employed in the region actually reside outside the region? How many who live in the region commute to jobs outside the region?
- What are the implications for the region’s economic development efforts?

<table>
<thead>
<tr>
<th>Population</th>
<th>2013 Jobs</th>
<th>Proportion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employed in Region</td>
<td>84,028</td>
<td>100.0%</td>
</tr>
<tr>
<td>Employed in Region but Living</td>
<td>28,728</td>
<td>34.2%</td>
</tr>
<tr>
<td>Living Outside</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employed and Living in Region</td>
<td>55,300</td>
<td>65.8%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Population</th>
<th>2013 Jobs</th>
<th>Proportion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Region Residents</td>
<td>104,869</td>
<td>100.0%</td>
</tr>
<tr>
<td>Employed Outside Region but</td>
<td>49,569</td>
<td>47.3%</td>
</tr>
<tr>
<td>Living in Region</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employed and Living in Region</td>
<td>55,300</td>
<td>52.7%</td>
</tr>
</tbody>
</table>

Source: LEHD, OTM, U.S. Census Bureau
05
industry and occupation

- Establishments
- Employment by industry
- Cluster analysis
- Top occupations
- STEM occupations
## Establishments

### Components of Change for Establishments 2000-2011

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Establishments Launched</td>
<td>19,583</td>
</tr>
<tr>
<td>Establishments Closed</td>
<td>9,562</td>
</tr>
<tr>
<td><strong>Net Change</strong></td>
<td>10,021</td>
</tr>
<tr>
<td>Net Migration</td>
<td>451</td>
</tr>
<tr>
<td>(Establishments moving into minus Establishments moving out of the region)</td>
<td></td>
</tr>
<tr>
<td><strong>Total Change</strong></td>
<td>10,472</td>
</tr>
<tr>
<td><strong>Percent Change</strong></td>
<td>113.4%</td>
</tr>
</tbody>
</table>

An establishment is a physical business location. Branches, standalones and headquarters are all considered types of establishments.

### Definition of Company Stages

- **0**  Self-employed
- **1**  2-9 employees
- **2**  10-99 employees
- **3**  100-499 employees
- **4**  500+ employees

Source: National Establishment Time Series (NETS) – 2011 Database
## Establishments

### Number of Establishments by Company Stages

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage 0</td>
<td>2,522</td>
<td>27.3%</td>
<td>5,178</td>
<td>26.3%</td>
</tr>
<tr>
<td>Stage 1</td>
<td>5,144</td>
<td>55.7%</td>
<td>12,710</td>
<td>64.5%</td>
</tr>
<tr>
<td>Stage 2</td>
<td>1,415</td>
<td>15.3%</td>
<td>1,661</td>
<td>8.4%</td>
</tr>
<tr>
<td>Stage 3</td>
<td>132</td>
<td>1.4%</td>
<td>144</td>
<td>0.7%</td>
</tr>
<tr>
<td>Stage 4</td>
<td>21</td>
<td>0.2%</td>
<td>13</td>
<td>0.1%</td>
</tr>
<tr>
<td>Total</td>
<td>9,234</td>
<td>100%</td>
<td>19,706</td>
<td>100.00%</td>
</tr>
</tbody>
</table>

### Questions:

- What stage businesses have shaped the region’s economic growth in the last 10 years?
- Which ones are growing or declining the most?
- Which stage of establishments are likely to shape the region’s future economic growth?
## Industry and occupation

### Establishments

#### Number of Jobs by Company Stages

<table>
<thead>
<tr>
<th>Year</th>
<th>2000</th>
<th>2011</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage 0</td>
<td>2,522</td>
<td>5,178</td>
<td>105.3%</td>
</tr>
<tr>
<td>Stage 1</td>
<td>18,879</td>
<td>36,438</td>
<td>93.0%</td>
</tr>
<tr>
<td>Stage 2</td>
<td>34,818</td>
<td>41,970</td>
<td>20.5%</td>
</tr>
<tr>
<td>Stage 3</td>
<td>24,060</td>
<td>25,551</td>
<td>6.2%</td>
</tr>
<tr>
<td>Stage 4</td>
<td>25,319</td>
<td>12,679</td>
<td>-49.9%</td>
</tr>
<tr>
<td>Total</td>
<td>105,598</td>
<td>121,816</td>
<td>15.4%</td>
</tr>
</tbody>
</table>

#### Sales ($2012) by Company Stages

<table>
<thead>
<tr>
<th>Year</th>
<th>2000</th>
<th>2011</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage 0</td>
<td>$302,852,795</td>
<td>$367,072,470</td>
<td>21.2%</td>
</tr>
<tr>
<td>Stage 1</td>
<td>$2,372,885,958</td>
<td>$2,817,471,789</td>
<td>18.7%</td>
</tr>
<tr>
<td>Stage 2</td>
<td>$4,178,101,148</td>
<td>$3,558,644,578</td>
<td>-14.8%</td>
</tr>
<tr>
<td>Stage 3</td>
<td>$2,991,661,550</td>
<td>$3,252,485,564</td>
<td>8.7%</td>
</tr>
<tr>
<td>Stage 4</td>
<td>$2,596,003,663</td>
<td>$1,241,081,727</td>
<td>-52.2%</td>
</tr>
<tr>
<td>Total</td>
<td>$12,441,505,114</td>
<td>$11,236,756,128</td>
<td>-9.7%</td>
</tr>
</tbody>
</table>

### Questions

- What establishments are the most numerous based on company stages?
- What stages have experienced the largest growth? The greatest decline?
- What company stage employs the largest number of people?
- What stage captures the most sales?
- Which ones have experienced the greatest percentage loss over the 2000-11 period?
## Industry and occupation

### Top ten industry sector employment growth

<table>
<thead>
<tr>
<th>NAICS</th>
<th>Description</th>
<th>2009 Jobs</th>
<th>2014 Jobs</th>
<th>Change</th>
<th>Change (%)</th>
<th>State Change (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>52</td>
<td>Finance and Insurance</td>
<td>3,689</td>
<td>4,583</td>
<td>894</td>
<td>24%</td>
<td>14%</td>
</tr>
<tr>
<td>53</td>
<td>Real Estate and Rental and Leasing</td>
<td>5,052</td>
<td>6,051</td>
<td>999</td>
<td>20%</td>
<td>15%</td>
</tr>
<tr>
<td>56</td>
<td>Administrative and Support and Waste Management and Remediation Services</td>
<td>5,075</td>
<td>5,925</td>
<td>850</td>
<td>17%</td>
<td>9%</td>
</tr>
<tr>
<td>61</td>
<td>Educational Services</td>
<td>3,038</td>
<td>3,544</td>
<td>506</td>
<td>17%</td>
<td>13%</td>
</tr>
<tr>
<td>71</td>
<td>Arts, Entertainment, and Recreation</td>
<td>2,255</td>
<td>2,630</td>
<td>375</td>
<td>17%</td>
<td>13%</td>
</tr>
<tr>
<td>22</td>
<td>Utilities</td>
<td>240</td>
<td>278</td>
<td>38</td>
<td>16%</td>
<td>-7%</td>
</tr>
<tr>
<td>62</td>
<td>Health Care and Social Assistance</td>
<td>11,980</td>
<td>13,430</td>
<td>1450</td>
<td>12%</td>
<td>11%</td>
</tr>
<tr>
<td>55</td>
<td>Management of Companies and Enterprises</td>
<td>912</td>
<td>1,017</td>
<td>105</td>
<td>12%</td>
<td>2%</td>
</tr>
<tr>
<td>54</td>
<td>Professional, Scientific, and Technical Services</td>
<td>4,536</td>
<td>5,027</td>
<td>491</td>
<td>11%</td>
<td>2%</td>
</tr>
<tr>
<td>48</td>
<td>Transportation and Warehousing</td>
<td>4,108</td>
<td>4,461</td>
<td>353</td>
<td>9%</td>
<td>5%</td>
</tr>
</tbody>
</table>

### Questions:

- What regional industry sectors have seen the greatest growth?
- Did they grow at the same rate as the state?
- What factors are causing the growth?

Source: EMSI Class of Worker 2014.4 (QCEW, non-QCEW, self-employed and extended proprietors)
## Industry and occupation

### Top six industry sector employment decline

<table>
<thead>
<tr>
<th>NAICS</th>
<th>Description</th>
<th>2009 Jobs</th>
<th>2014 Jobs</th>
<th>Change</th>
<th>Change (%)</th>
<th>State Change (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>31</td>
<td>Manufacturing</td>
<td>13,275</td>
<td>12,438</td>
<td>-837</td>
<td>-6%</td>
<td>-2%</td>
</tr>
<tr>
<td>42</td>
<td>Wholesale Trade</td>
<td>2,448</td>
<td>2,349</td>
<td>-99</td>
<td>-4%</td>
<td>-1%</td>
</tr>
<tr>
<td>23</td>
<td>Construction</td>
<td>7,894</td>
<td>7,590</td>
<td>-304</td>
<td>-4%</td>
<td>-7%</td>
</tr>
<tr>
<td>51</td>
<td>Information</td>
<td>1,233</td>
<td>1,196</td>
<td>-37</td>
<td>-3%</td>
<td>-10%</td>
</tr>
<tr>
<td>21</td>
<td>Mining, Quarrying, and Oil and Gas Extraction</td>
<td>238</td>
<td>234</td>
<td>-4</td>
<td>-2%</td>
<td>-4%</td>
</tr>
<tr>
<td>11</td>
<td>Crop and Animal Production</td>
<td>3,543</td>
<td>3,497</td>
<td>-46</td>
<td>-1%</td>
<td>-2%</td>
</tr>
</tbody>
</table>

**Questions:**

- How does the industry sector make-up of the region compare to the rest of the state?
- Which industry sectors are growing and declining the most in employment?
Industry cluster analysis

How to interpret cluster data results

The graph’s four quadrants tell a different story for each cluster.

**Mature**
- Top left (strong but declining)
- Contains clusters that are more concentrated in the region but are declining (negative growth). These clusters typically fall into the lower quadrant as job losses cause a decline in concentration.

**Stars**
- Top right (strong and advancing)
- Contains clusters that are more concentrated in the region and are growing. These clusters are strengths that help a region stand out from the competition. Small, high-growth clusters can be expected to become more dominant over time.

**Transforming**
- Bottom left (weak and declining)
- Contains clusters that are under-represented in the region (low concentration) and are also losing jobs. Clusters in this region may indicate a gap in the workforce pipeline if local industries anticipate a future need. In general, clusters in this quadrant show a lack of competitiveness.

**Emerging**
- Bottom right (weak but advancing)
- Contains clusters that are under-represented in the region but are growing, often quickly. If growth trends continue, these clusters will eventually move into the top right quadrant. Clusters in this quadrant are considered emerging strengths for the region.

Industry and occupation

Distribution of clusters in the Region by quadrants
# Industry cluster analysis

## Mature Clusters
- **Chemicals & Chemical Based Prod**: Location Quotient (2.96), Jobs (4,142)
- **Forest & Wood Products**: Location Quotient (1.93), Jobs (3,190)
- **Transportation & Logistics**: Location Quotient (1.22), Jobs (4,438)
- **Printing & Publishing**: Location Quotient (1.15), Jobs (2,280)
- **Advanced Materials**: Location Quotient (1.09), Jobs (3,748)
- **Arts, Ent, Rec. & Visitor Industries**: Location Quotient (1.00), Jobs (4,734)
- **Primary Metal Manufacturing**: Location Quotient (1.00), Jobs (263)

## Star Clusters
- **Agribusiness, Food Processing & Tech**: Location Quotient (2.00), Jobs (6,836)

## Emerging Clusters
- **Education & Knowledge Creation**: Location Quotient (0.91), Jobs (2,447)
- **Apparel & Textiles**: Location Quotient (0.68), Jobs (580)
- **Business & Financial Services**: Location Quotient (0.67), Jobs (10,273)
- **Defense & Security**: Location Quotient (0.48), Jobs (2,355)
- **Computer & Electronic Product Mfg.**: Location Quotient (0.24), Jobs (164)

## Transforming Clusters
- **Mining**: Location Quotient (0.95), Jobs (324)
- **Biomed/Biotechnical (Life Science)**: Location Quotient (0.94), Jobs (8,468)
- **Fabricated Metal Product Mfg.**: Location Quotient (0.92), Jobs (867)
- **Energy (Fossil & Renewable)**: Location Quotient (0.86), Jobs (5,367)
- **Elec Equip., App & Component Mfg.**: Location Quotient (0.58), Jobs (145)
- **Manufacturing Supercluster**: Location Quotient (0.48), Jobs (1,891)
- **Information Technology & Telecom.**: Location Quotient (0.45), Jobs (2,048)
- **Machinery Manufacturing**: Location Quotient (0.32), Jobs (246)
- **Transportation Equipment Mfg.**: Location Quotient (0.20), Jobs (206)
- **Glass & Ceramics**: Location Quotient (0.18), Jobs (36)

Note: Glass and ceramics cluster has too few jobs.

### Percent Growth in Specialization

### Level of Specialization

**NOTE:** The first number after each cluster represents its location quotient while the second number represents the number of total jobs (full and part time jobs by place of work) in that cluster in the region in 2014. The clusters are sorted in decreasing order by location quotient.
Industry Clusters: Leakages

Regional requirements, 2013

Business & Finance
Energy (Fossil & Renewable)
Advanced Materials
Agribusiness & Food Processing **
Defense & Security
Biomed/Biotechnical
IT & Telecommunications
Manufacturing Supercluster
Chemicals
Transportation and Logistics
Arts, Entertainment & Visitor Industries
Forestry & Wood Products
Transportation Equipment
Printing & Publishing
Education & Knowledge Creation
Fabricated Metal
Machinery Manufacturing
Primary Metal
Computer & Electronic Product
Apparel & Textiles
Mining
Electrical Equipment
Glass & Ceramics

Note: ** shows Star clusters

Source: EMSI 2014.4 (QCEW Employees, Non-QCEW Employees, Self-Employed, and Extended Proprietors); Industry cluster definitions by PCRD
Industry and occupation

Top five occupations in 2014

Questions:

• What are the education and skill requirements for these occupations?
• Do the emerging and star clusters align with the top occupations?
• What type salaries do these occupations typically provide?

Source: EMSI Class of Worker 2014.4 (QCEW, non-QCEW, self-employed and extended proprietors)
Questions:

• How do STEM jobs compare to the state?
• What has been the trend of STEM jobs over time?
• How important are STEM jobs to the region’s Star and Emerging clusters?

*Note: STEM and STEM-related occupation definitions from BLS (2010)
This report was prepared by the Purdue Center for Regional Development, in partnership with the Southern Rural Development Center and USDA Rural Development, in support of the Stronger Economies Together program.

Report Authors
Bo Beaulieu, PhD
Indraneel Kumar, PhD
Andrey Zhalnin, PhD

Data Analysis
Ayoung Kim

Report Design
Tyler Wright

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The Purdue Center for Regional Development (PCRD) seeks to pioneer new ideas and strategies that contribute to regional collaboration, innovation and prosperity.

For more information, please contact:

Dr. Bo Beaulieu,
PCRD Director:
ljb@purdue.edu

Or

765-494-7273

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