Pennsylvania defines industry clusters to serve as the basis for data-driven workforce development policies. An industry cluster includes industries closely linked by common products, labor pools, technologies, supplier chains and training needs. They take on strategic importance for long-term economic planning as changes that benefit one group member will generally impact other members of the cluster.

Industry clusters are comprised of specific six-digit North American Industry Classification System, or NAICS, codes. They are mutually exclusive, so that no two clusters contain the same NAICS code. Currently, there are 12 clusters identified, along with several critical sub-clusters. Combined, these 12 industry clusters account for nearly 83 percent of all employment in the Commonwealth.

Cluster Summary

The Wood, Wood Products and Publishing (WWP) cluster incorporates a supply line from raw material to finished product. It includes logging and lumber production, through the production of paper, to the publishing of magazines and newspapers. Industries found within the cluster include sawmills, truss manufacturing, stationery product manufacturing, printing machinery & equipment manufacturing, book stores and greeting card publishers.

<table>
<thead>
<tr>
<th></th>
<th>2012</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employer Units</td>
<td>4,878</td>
<td>4,563</td>
</tr>
<tr>
<td>Number of Jobs</td>
<td>110,045</td>
<td>102,985</td>
</tr>
<tr>
<td>Percent of Total Pennsylvania Jobs</td>
<td>2.0%</td>
<td>1.8%</td>
</tr>
<tr>
<td>Average Annual Wages</td>
<td>$47,437</td>
<td>$52,528</td>
</tr>
<tr>
<td>Location Quotient (LQ)</td>
<td>1.22</td>
<td>1.24</td>
</tr>
</tbody>
</table>

LQs greater than one suggest a competitive advantage.

While WWP cluster employment has declined by approximately six percent in Pennsylvania, the losses are not as great as those experienced nationwide. The state maintains a competitive Location Quotient (LQ) and, at 1.24, it is the highest among industry clusters. The majority of local areas remain competitive (as seen on page 3) regardless of the cluster’s small size. The cluster still pays a reasonable average wage, and is very close to the statewide average for all jobs ($53,996).
Top Industries Based on Employment

- Printing
- Newspaper Publishers
- Wood Kitchen Cabinet & Countertop Manufacturing
- Corrugated & Solid Fiber Box Manufacturing
- Lumber & Wood Merchant Wholesalers
- Sanitary Paper Product Manufacturing
- Periodical Publishers
- Sawmills
- Wood Container & Pallet Manufacturing
- All Other Miscellaneous Wood Product Mfg
- Industrial Paper Merchant Wholesalers
- Book Stores
- Paper, Except Newsprint, Mills
- Paper Bag & Coated & Treated Paper Manufacturing
- Stationery Product Manufacturing
- Book & Periodical Merchant Wholesalers
- Book Publishers
- Wood Window & Door Manufacturing
- Other Paperboard Container Manufacturing
- Other Millwork, Including Flooring

Percent Employment by County

- >4.0%
- 4.0% - 2.5%
- 2.5% - 1.5%
- < 1.5%

Major Employers

- The Procter & Gamble Paper Products Co.
- Wood Mode Inc
- Barnes & Noble Booksellers USA
- Conestoga Wood Specialties
- AC Products Inc
- Jeld-Wen Inc

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Employment Concentration

A location quotient, or LQ, compares a cluster’s share of local employment to its share of national employment. This value can be used when evaluating the strength of an industry cluster within an area. An LQ greater than one indicates that the cluster has, on average, more employees locally than typically expected implying a possible competitive advantage. Fifteen Workforce Development Areas (WDAs) have LQs greater than or equal to one with Northern Tier WDA the highest at 5.00. Eleven of those 15 areas also increased their competitiveness since 2012.

Northern Tier 5.00
North Central 2.89
Lancaster County 2.76
Central 2.57
Southern Alleghenies 1.77
South Central 1.70
Luzerne-Schuylkill Counties 1.56
Lackawanna County 1.51
Bucks County 1.45
Lehigh Valley 1.32
West Central 1.26
Westmoreland-Fayette Counties 1.22
Northwest 1.20
Pocono Counties 1.10
Bucks County 1.01
Montgomery County 0.98
Chester County 0.95
Tri-County 0.91
Southwest Corner 0.71
Delaware County 0.70
Philadelphia County 0.67
Three Rivers 0.48

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Educational Requirements

This graph illustrates the minimum educational attainment levels for jobs found in this cluster’s various industries. About 71 percent of WWP jobs require less than one year of on-the-job training to enter employment. Many of these jobs still fall into the skilled trades category and do not suffer from the high-turnover and low-wages found in the Hospitality, Leisure and Entertainment cluster.

Occupations with Significant Employment

The following table lists occupations that employ at least 1,800 people in the WWP cluster.

<table>
<thead>
<tr>
<th>SOC Code</th>
<th>Occupation</th>
<th>Cluster Wage 2017</th>
<th>Industry Cluster</th>
<th>All Industries</th>
</tr>
</thead>
<tbody>
<tr>
<td>51-5112</td>
<td>Printing Press Operators</td>
<td>$38,296</td>
<td>104</td>
<td>145</td>
</tr>
<tr>
<td>41-4012</td>
<td>Sales Representatives</td>
<td>$66,071</td>
<td>122</td>
<td>1,731</td>
</tr>
<tr>
<td>53-7062</td>
<td>Laborers &amp; Freight, Stock &amp; Material Movers</td>
<td>$28,662</td>
<td>139</td>
<td>4,257</td>
</tr>
<tr>
<td>51-9198</td>
<td>Helpers--Production Workers</td>
<td>$27,656</td>
<td>105</td>
<td>757</td>
</tr>
<tr>
<td>43-4051</td>
<td>Customer Service Representatives</td>
<td>$38,375</td>
<td>95</td>
<td>3,302</td>
</tr>
<tr>
<td>51-1011</td>
<td>Supervisors - Production &amp; Operating Workers</td>
<td>$59,237</td>
<td>51</td>
<td>456</td>
</tr>
<tr>
<td>51-5113</td>
<td>Print Binding &amp; Finishing Workers</td>
<td>$32,157</td>
<td>42</td>
<td>46</td>
</tr>
<tr>
<td>51-7011</td>
<td>Cabinetmakers &amp; Bench Carpenters</td>
<td>$36,771</td>
<td>21</td>
<td>41</td>
</tr>
<tr>
<td>41-2031</td>
<td>Retail Salespersons</td>
<td>$22,080</td>
<td>87</td>
<td>7,431</td>
</tr>
<tr>
<td>51-7042</td>
<td>Woodworking Machine Operators</td>
<td>$30,473</td>
<td>42</td>
<td>65</td>
</tr>
<tr>
<td>27-1024</td>
<td>Graphic Designers</td>
<td>$44,822</td>
<td>52</td>
<td>263</td>
</tr>
<tr>
<td>53-3032</td>
<td>Heavy &amp; Tractor- Trailer Truck Drivers</td>
<td>$41,861</td>
<td>57</td>
<td>2,335</td>
</tr>
<tr>
<td>11-1021</td>
<td>General &amp; Operations Managers</td>
<td>$116,723</td>
<td>61</td>
<td>1,993</td>
</tr>
<tr>
<td>53-7051</td>
<td>Industrial Truck &amp; Tractor Operators</td>
<td>$36,006</td>
<td>59</td>
<td>878</td>
</tr>
</tbody>
</table>

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