2014

A partnership among Keystone College, King’s College, Luzerne County Community College, Marywood University, Misericordia University, Penn State Wilkes-Barre, The Commonwealth Medical College, University of Scranton & Wilkes University

STRUCTURAL UNEMPLOYMENT
An analysis of the jobs-skills mismatch in Lackawanna and Luzerne Counties
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Introduction
Lackawanna and Luzerne County have been significantly impacted by unemployment in the wake of the Great Recession that began around 2008. Anecdotal evidence has suggested that there are a large number of people in the region who have been unemployed for long periods of time. The purpose of this study is to examine this population of long-term unemployed workers, defined as those who have exhausted their unemployment compensation (UC) benefits. As the U.S. economy is still recovering from an economic downturn, some parts of the country struggle to recover much at all. To combat this, leaders must understand the segment of the population that has remained unable to find work, and provide opportunities for those long-term unemployed workers to re-enter the workplace through retraining.

Research Methods
The scope of this analysis is for Lackawanna and Luzerne Counties. Each county is considered separately, but some qualitative conclusions are drawn from considering the data from each county together. Data is aggregated from 2009 through 2012, and therefore includes the worst of the economic downturn as well as several quarters of modest on-and-off growth that has characterized our region’s economy since the Great Recession.

The subject of the study is the population of long-term unemployed individuals in Lackawanna and Luzerne counties – defined as those who exhausted their unemployment compensation during the time between 2009 and 2012. Data on unemployment compensation exhaustees was sourced from the Pennsylvania Unemployment Compensation System. The breakdown of exhaustees by industry is then compared against the total breakdown of current employment by industry in order to identify industries that are overrepresented or underrepresented among exhaustees. Total employment data was sourced from the Quarterly Census of Employment and Wages, a program of the Bureau of Labor Statistics. The breakdown of exhaustees by industry is also compared against the breakdown by industry of advertised jobs. Advertised jobs data was sourced from the Pennsylvania Department of Labor & Industry’s Labor Market Information System.

Data breakdowns by industry are classified using supersectors of the NAICS (North American Industry Classification System). The supersector level of analysis was used because this is how data on unemployment compensation exhaustees was available. The chart below summarizes the supersectors considered.
**Supersector** | **Component Sectors (2-digit NAICS industries)**
--- | ---
Natural Resources and Mining | Logging, Mining
Construction | Construction
Manufacturing | Durable goods manufacturing, Nondurable goods manufacturing
Trade, Transportation, and Utilities | Wholesale trade, Retail trade, Transportation and warehousing, Utilities
Information | Information
Financial Activities | Finance and insurance, Real estate rental and leasing
Professional and Business Services | Professional, scientific, and technical services, Management of companies and enterprises, Administrative and waste services
Education and Health Services | Educational services, health care and social assistance
Leisure and Hospitality | Arts, entertainment, and recreation, accommodations and food services
Other Services | Other services
Government/Public Administration | Federal, State, Local

*Source: Bureau of Labor Statistics*

### Regional Economic Survey

Overall, the prevailing economic condition in Lackawanna and Luzerne counties has been a sluggish recovery. Though unemployment has been trending downward generally, the most recent unemployment rates for Lackawanna and Luzerne counties are 7.5 percent and 8.3 percent, respectively (March 2014).\(^1\) These rates are lower than during the worst periods of the recession, but still remain significantly higher than pre-recession levels. The rate of recovery in the region has lagged behind Pennsylvania and the United States as a whole. According to The Institute’s 2013 Economy Tracker, published in Fall 2013, “research has indicated that Lackawanna County and Luzerne County have been growing at a slow, steady pace over the past few years. The population has increased and the unemployment rate has maintained a level below its peak in 2010. The two counties have exhibited some recovery from the worst of the Great Recession, but remain below state and national standards in a large number of the business and economic indicators.”

### Total Employment

During the time period from the first quarter of 2009 through the second quarter of 2013, total employment has averaged 94,284 for Lackawanna County and 131,617 for Luzerne County. Lackawanna County’s total employment has grown modestly since its recent low in the first
quarter of 2010. That quarter also marked Luzerne County’s low point. Luzerne County saw both a greater decrease between 2009 and 2010 and a more noticeable growth in employment since 2011.

<table>
<thead>
<tr>
<th>Year/Quarter</th>
<th>Lackawanna County</th>
<th>Luzerne County</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009 Q1</td>
<td>92,775</td>
<td>134,794</td>
</tr>
<tr>
<td>2009 Q2</td>
<td>94,092</td>
<td>130,297</td>
</tr>
<tr>
<td>2009 Q3</td>
<td>92,479</td>
<td>128,439</td>
</tr>
<tr>
<td>2009 Q4</td>
<td>93,937</td>
<td>128,912</td>
</tr>
<tr>
<td>2010 Q1</td>
<td>91,645</td>
<td>125,120</td>
</tr>
<tr>
<td>2010 Q2</td>
<td>91,869</td>
<td>128,313</td>
</tr>
<tr>
<td>2010 Q3</td>
<td>94,414</td>
<td>130,177</td>
</tr>
<tr>
<td>2010 Q4</td>
<td>96,865</td>
<td>135,080</td>
</tr>
<tr>
<td>2011 Q1</td>
<td>93,667</td>
<td>130,396</td>
</tr>
<tr>
<td>2011 Q2</td>
<td>94,710</td>
<td>129,734</td>
</tr>
<tr>
<td>2011 Q3</td>
<td>96,123</td>
<td>130,992</td>
</tr>
<tr>
<td>2011 Q4</td>
<td>96,532</td>
<td>135,274</td>
</tr>
<tr>
<td>2012 Q1</td>
<td>94,002</td>
<td>132,296</td>
</tr>
<tr>
<td>2012 Q2</td>
<td>95,006</td>
<td>133,797</td>
</tr>
<tr>
<td>2012 Q3</td>
<td>94,712</td>
<td>133,797</td>
</tr>
<tr>
<td>2012 Q4</td>
<td>96,461</td>
<td>135,803</td>
</tr>
<tr>
<td>2013 Q1</td>
<td>94,214</td>
<td>131,889</td>
</tr>
<tr>
<td>2013 Q2</td>
<td>93,615</td>
<td>134,001</td>
</tr>
</tbody>
</table>

Source: U.S. Census Bureau – Quarterly Workforce Indicators

**New Hires, Separations, and Turnover**

Data on new hires, separations, and turnover was obtained from the U.S. Census Bureau’s Quarterly Workforce Indicators dataset. Since the beginning of the 2009 economic year the amount of new hires for both Lackawanna and Luzerne Counties grew steadily. However, new hires in both counties fell in 2012 and the hiring rate has stalled since then, below pre-recession levels. This lack of new hires amid a slowly declining unemployment rate may mean that some unemployed workers are dropping out of the labor force after failing to find work. Similarly, the average quarterly separations for each year have fluctuated in both counties, but it has followed a similar upward trend after 2009.
The turnover rate is calculated by taking the total number of stable hires and adding it to the number of separations, and then dividing by average employment for the entire quarter. It determines the rate at which stable jobs are started and finished. After declining between 2008 and 2009, both counties’ turnover rates have risen considerably. Increasing turnover rates send mixed messages as some would argue that increasing turnover rates could be a good sign for the economy, as it means workers are seeking out and finding new jobs, because better jobs are becoming available. However, it can also mean that workers are not staying in jobs for very long because of lack of stability in the economy, skills and productivity challenges, or other issues.

<table>
<thead>
<tr>
<th>Year</th>
<th>Lackawanna</th>
<th>Luzerne</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>8.8%</td>
<td>9.2%</td>
</tr>
<tr>
<td>2009</td>
<td>8.1%</td>
<td>8.3%</td>
</tr>
<tr>
<td>2010</td>
<td>8.6%</td>
<td>9.3%</td>
</tr>
<tr>
<td>2011</td>
<td>9.3%</td>
<td>9.4%</td>
</tr>
<tr>
<td>2012</td>
<td>9.9%</td>
<td>9.6%</td>
</tr>
</tbody>
</table>

Source: U.S. Census Bureau – Quarterly Workforce Indicators
Number of Job Openings

Between the first quarter of 2009 and the second quarter of 2013, an average of almost 8,900 job advertisements was available for Luzerne County in each quarter. In Lackawanna County, job advertisements per quarter averaged around 8,200. In the most recent quarter for which data is available (Q2 2013), both counties reached their highest total advertised jobs since the beginning of 2009.

Subsequent sections of this analysis will examine advertised job openings in more detail as they relate to the long-term unemployed.

![Graph showing job advertisements by quarter for Luzerne and Lackawanna counties. Source: PA Dept. of Labor and Industry – Labor Market Information System]

Long Term Unemployed by Industry Sector

This section of the report will analyze unemployment compensation exhaustees compared against the makeup of employment in the region as a whole. Exhaustees are categorized by their pre-unemployment industry supersector, and these breakdowns for each county are compared against total employment to determine which industries are overrepresented and underrepresented among the long-term unemployed. This will highlight the industries from which workers were more or less likely to become long-term unemployed from the time period of 2009 to 2012.

Luzerne County

There are five aggregate industry sectors (supersectors) representing the largest number of employed in Luzerne County, accounting for over 80 percent of total employment. These supersectors are: education and health services; trade, transportation, & utilities; manufacturing; leisure & hospitality; and professional & business services. The two largest supersectors, making up about half of the employed, are trade, transportation, & utilities and education & health services.
The largest share of exhaustees worked in the trade, transportation, & utilities supersector prior to filing from UC. The next largest supersectors were professional & business services, manufacturing, education & health services, and construction. These five supersectors make up the vast majority of all exhaustees.
### Luzerne County

<table>
<thead>
<tr>
<th>Supersector</th>
<th>Employment (+) Exhaustees (-)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education &amp; Health Services</td>
<td>11.86</td>
</tr>
<tr>
<td>Natural Resources &amp; Mining</td>
<td>0.30</td>
</tr>
<tr>
<td>Information</td>
<td>0.56</td>
</tr>
<tr>
<td>Financial Activities</td>
<td>0.70</td>
</tr>
<tr>
<td>Leisure and Hospitality</td>
<td>2.63</td>
</tr>
<tr>
<td>Construction</td>
<td>-8.32</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>-3.12</td>
</tr>
<tr>
<td>Professional &amp; Business</td>
<td>-8.90</td>
</tr>
<tr>
<td>Trade, Transportation, &amp; Utilities</td>
<td>2.38</td>
</tr>
<tr>
<td>Government/Public Administration</td>
<td>3.10</td>
</tr>
</tbody>
</table>

The table above shows the difference between the percentage of all exhaustees in each supersector and the percentage of total employment for that supersector. Positive numbers indicate that that supersector has a greater share of total employment than total exhaustees; negative numbers indicate a greater share of exhaustees than share of total employment. Education and health services had by far the largest differential, meaning that a relatively small percentage of exhaustees worked in that field prior to filing for UC. This is evidence for the relative strength in that group of industries. Other supersectors with a noticeable, positive difference between the percentage of total employment over the percentage of exhaustees are leisure & hospitality (+2.63), trade, transportation & utilities (+2.38), and public administration (+3.10).

Supersectors in which the percentage of unemployed exhaustees outweighs the employed in the respective sector are as follows: professional & business services (-8.90), construction (-8.32), and manufacturing (-3.12). Professional and business services made up 9.8 percent of the total employment during the time period analyzed, but nearly twice that proportion of the total exhaustees. The construction sector has taken a hard hit due to the economic downturn and decline in new housing construction that began in 2008. The construction industry made up only 3.58 percent of the total employment in the economy, but accounts for 11.9 percent of the long-term unemployed. The manufacturing industry is also somewhat overrepresented among the long-term unemployed.

**Lackawanna County**

The total distribution of employment in Lackawanna County is not dramatically different from that of Luzerne County. The top five largest supersectors by employment are the same as in Luzerne County, though in Lackawanna County education & health services takes the top spot from trade, transportation & utilities, which ranks second. Together, these industries account for about half of all jobs in the county.
As with total employment, the total exhaustee breakdown by supersector is not significantly different from Luzerne County’s breakdown. The largest share of exhaustees worked in the trade, transportation & utilities supersector prior to filing from UC. The next largest supersectors were manufacturing, professional & business services, education & health services, and construction. These five supersectors make up the vast majority of all exhaustees. At just over 17 percent,
manufacturing made up a larger share of Lackawanna County exhaustees than Luzerne County exhaustees.

<table>
<thead>
<tr>
<th>Lackawanna County Supersector</th>
<th>Employment (+) Exhaustees (-)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education &amp; Health Services</td>
<td>16.06</td>
</tr>
<tr>
<td>Natural Resources &amp; Mining</td>
<td>0.20</td>
</tr>
<tr>
<td>Information</td>
<td>-1.21</td>
</tr>
<tr>
<td>Financial Activities</td>
<td>1.88</td>
</tr>
<tr>
<td>Leisure &amp; Hospitality</td>
<td>3.60</td>
</tr>
<tr>
<td>Construction</td>
<td>-8.29</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>-6.38</td>
</tr>
<tr>
<td>Professional &amp; Business</td>
<td>-5.68</td>
</tr>
<tr>
<td>Trade, Transportation &amp; Utilities</td>
<td>-1.61</td>
</tr>
<tr>
<td>Government/Public Administration</td>
<td>2.44</td>
</tr>
</tbody>
</table>

As with the prior table of exhaustee-total employment differentials, positive numbers above indicate that that supersector has a greater share of total employment than total exhaustees; negative numbers indicate a greater share of exhaustees. Those supersectors with a noticeable, positive differential of the percentage of employed over unemployed exhaustees are education & health services (+16.06), leisure & hospitality (+3.60), financial activities (+1.88), and public administration (+2.44). Mirroring a similar trend in Luzerne County, the education & health services supersector represents the largest pool of workers, 28.86 percent of the employed, while accounting for a comparatively low 12.8 percent of unemployed exhaustees. The leisure & hospitality supersector comprises 9.3 percent of all employment while only 5.7 percent of the exhaustees had previously worked in the sector. In Lackawanna, 3.84 percent of the employed are in government or public administration, while just 1.4 percent of the unemployed exhaustees come from that supersector. These are all industries that are underrepresented among UC exhaustees compared with the economy as a whole.

The super sectors with a noticeable, negative differential in the percentage of employed versus percentage of the UC exhaustees are as follows: construction (-8.29), manufacturing (6.38), professional & business services (-5.68). The construction industry makes up only 3.41 percent of the total employment but accounts for 11.7 percent of the exhaustees, a significant overrepresentation among the long-term unemployed. The manufacturing sector, employing 10.82 percent of the total employed accounts for 17.2 percent of the exhaustees. The professional & business services supersector employs 10.52 percent of the total while 16.1 percent of exhaustees previously came from that supersector.
In each of the two counties, construction, manufacturing, and professional and business services workers have the most disproportionate shares of UC exhaustees. This indicates that workers from these industries have had a relatively high likelihood of becoming long-term employed compared with workers as a whole in the two counties during the time period of 2009 through 2012.

**Long-Term Unemployed and Advertised Jobs**

In this section, the unemployment compensation exhaustees will be compared with advertised jobs broken down by industry supersector. This will indicate where long-term unemployed workers may be able to find opportunities to work through targeted retraining or other workforce development programs.

**Luzerne County**

In Luzerne County of 2012, the three industry supersectors with the largest share of job advertisements were education & health services, trade, transportation & utilities, and professional & business services. Together, these made up about three-quarters of all advertised job openings. As examined above, the largest shares of UC exhaustees come from trade, transportation & utilities, professional & business services, manufacturing, education & health services, and construction.
The table above shows the difference between the percentage of all exhaustees in a supersector and the percentage of total job advertisements in that supersector. Positive numbers indicate that that supersector has a greater share of all job advertisements than total exhaustees; negative numbers indicate a greater share of exhaustees than the share of job advertisements for that supersector. The leisure & hospitality (-2.94), construction (-11.02), and manufacturing (-7.37) sectors are the only sectors in Luzerne County in which the percentage of all job advertisements are significantly lower than the percentage of UC exhaustees. The long-term unemployed, who previously worked in the construction industry, will find it the most difficult to find new work in their field, as less than one percent of advertisements are for construction jobs while that supersector accounts for 11.9 percent of the exhaustees. Those
who had been in manufacturing are 14.3 percent of all UC exhaustees, but only 6.93 percent of advertisements, about half the proportion, are for jobs in that field. These negative differentials likely represent shrinking industries and an oversupply of workers with those specific skills. The leisure & hospitality industry represent 6.9 percent of the total exhaustees and just under four percent of the advertisements. The large portion of manufacturing and construction exhaustees will find it difficult to find job listings as they represent 26.2 percent of total exhaustees and only 8 percent of the total job advertisements in Luzerne County.

Industries in which the advertisements and exhaustees have a noticeable, positive differential are education & health services (+13.58), financial activities (+4.02), and professional & business services (+4.23). More specifically, the education & health services represent 26.28 percent of the job advertisements but only 12.7 percent of the exhaustees. The professional & business services account for 22.93 percent of the job advertisements while accounting for an 18.7 percent share of UC exhaustees. The trade, transportation & utilities supersector, Luzerne’s largest as a percentage of total employment, represents 25.11 percent of the job advertisements while also being 24 percent of total UC exhaustees.

Lackawanna County’s largest shares of job advertisements were in the Professional & Business Services; Trade, Transportation & Utilities; and Education & Health Services, in that order. As with Luzerne County, these three supersectors make up about three-fourths of all advertised jobs.
The construction (-11.57) and manufacturing (-13.15) industries are two sectors in Lackawanna County in which the percentage of UC exhaustees significantly outweigh job advertisements. Those unemployed who worked in the construction industry face a significant challenge. Among all exhaustees, 11.7 percent come from construction while advertisements for construction jobs were virtually nonexistent: just 0.13 percent of the total. The manufacturing industry displays a similar pattern, with 17.2 percent of the exhaustees coming from manufacturing but those jobs only comprising 4.05 percent of total advertisements.
Industries with a noticeable positive differential of advertisements compared to exhaustees are education & health services (+11.07), financial activities (+7.66), professional & business services (+9.99). Education & health services, Lackawanna County’s largest industry by total employment, makes up 23.87 percent of the total job advertisements while accounting for a comparatively small 12.8 percent of the UC exhaustees. Financial activity job advertisements represent 11.76 percent of the total with a comparatively low 4.1 percent of exhaustees. The 16.1 percent of the exhaustees who had previously worked in the professional & business services will find that 26.1 percent of the advertisements are from their industry.

**Summary and Conclusions**

This analysis has shown that some industries are significantly overrepresented and underrepresented among those who have exhausted their unemployment compensation. These long-term unemployed individuals are disproportionately coming from several industry supersectors: construction, manufacturing, and professional & business services.

Unsurprisingly, there is a correlation between the industries from which long-term unemployed workers come from and industries that have few jobs available. This is because a lack of jobs in the industry in which an unemployed person last worked will make it more difficult for that person to find a new job.

One industry supersector that departs from this pattern is professional & business services. Though that industry group, which includes a variety of professional fields including law, accounting, advertising, management, design, architecture, engineering, scientific research, and waste management, makes up only ten percent of total employment in the two counties, it accounts for a share of 16 to 19 percent of all exhaustees. However, it also makes up a large share of job advertisements in both counties — about 26 and 23 percent of all advertised jobs in Lackawanna and Luzerne counties, respectively. Though there are job openings within this supersector, one possible explanation for why such a large share of long-term unemployed comes from this sector is that the job openings within this diverse supersector do not match up with the skillset of unemployed individuals who have worked in these industries.

The high rate of workers from the construction and manufacturing industries among the long-term unemployed may be a sign of a structural economic change. To mitigate this issue, there is an acute need for the retraining of unemployed workers, particularly those long-term unemployed from the construction and manufacturing industries.

Previous analysis by The Institute has indicated a large number of difficult-to-fill job openings in the healthcare industry. The above data on job advertisements has also corroborated this with a large number of advertisements in the education and health care supersector. Job training
programs, educational institutions, and other community resources should aim to connect the long-term unemployed with these available positions where possible by equipping these workers with the skills they need to survive in growing industries.

Further analysis could be performed if more extensive data on UC exhaustees were made available by the Pennsylvania Department of Labor and Industry. If data were available showing the demographics of UC filers and exhaustees by age, gender, race, industry, county of residence and other relevant demographic variables, a more complete picture of the long-term unemployed would be available. Further, a comparative analysis of filers and exhaustees could be done to show which demographic groups are more likely to exhaust their Unemployment Compensation after filing.