Youth Employment Patterns Revisited

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Last summer, the Connecticut Economic Digest published an article on youth employment in Connecticut. It used wage and Department of Motor Vehicles records to illustrate employment change by industry from the second to third quarter of 2007 and 2010. The article noted that youth employment declined at nearly three times the rate of overall Connecticut employment. This summer, the Census Quarterly Workforce Indicators (QWI) dataset has been examined to provide a more detailed and longer-term analysis of labor market changes for youths in Connecticut. The analysis provides more detail as to how the recession has affected the state’s youngest segment of the labor force and analyzes long-term trends that help indicate the direction we are heading a full 3 years into the NBER-declared recovery.

Employment and Population Change

During the span from 1996 through 2011, available Census data illustrates some interesting statewide employment trends. From 1996Q2 onward, total employment of workers aged 35-44 declined the most by 2011Q3, falling 23 percent. Workers aged 55-64 represented the largest increase in employment during the span, increasing 75 percent over its 1996 levels.

Graph 1: 1996Q2 Indexed Age Cohort Emp through 2011Q3
Youth cohorts, 14-18 and 19-21 exhibit the most seasonality of the cohorts as seen in Graph 1. The precipitous decline in employment for teens under 19 from 2008 onward illustrates the cyclical effects of the recession. As was noted in last year’s article, decreasing youth labor force participation rates are a trend that has persisted for over two decades, but this three-year decline in teen employment represents a significant downward shift in employment.

Graph 2 shows indexed annual population and quarterly employment change by age cohort. A close fit between the two cohort variables indicates comparable change in population and employment level. The 25-34 age cohort exhibits this pattern.

Divergence between the two points signifies a shift in employment-to-population ratios. Employment increase (quarterly employment) exceeding their corresponding dots (annual population) indicate an increase in employment-to-population ratios with the opposite indicating decreased employment-to-population.

The three oldest cohorts exhibit the greatest population and employment increases over the 15-year period, in concordance with ideas of Connecticut as an aging state. The 65+ cohort has experienced a widening spread of increased employment from 2005 onward, showing an increase in employment-to-population ratio. The effects of the recession can be seen when examining the widening spread between population and
employment for many cohorts from 2007 onward, where pronounced dips in employment relative to cohort population compared to long-term trends are shown. The four youngest cohorts all exemplified this short-term shift to varying degrees.

For youth populations under 25, the relationship between the two variables is foremost seasonal, and secondly cyclical. The cyclical effects of business cycles are apparent when examining the proportional employment expansion experienced before the 2001 recession and by the steep contraction that occurred after 2008. The population of Connecticut youth under 25 years old increased 22 percent from 1996 through 2010, while employment for that cohort fell to a second-quarter low of 3 percent over 1996Q2 levels.

Since 1997, annual average employment for Connecticut youths has mirrored the U.S. business cycle, peaking in 2000 and 2007. Since that 2007 peak, youth employment is down 12.3 percent over 1996Q2 levels. Graph 2 illustrates the greater business cycle amplitude experienced by the youth cohort as compared to other groups. The next largest post-peak cohort decline was experienced by the 25-34 age cohort.

### Youth Industry Employment: Year-Over-Year

The obvious effect of the recession on youth employment in construction and real estate can be seen in Table A, with those industries respectively down 40 and 34 percent from 2007Q3 to 2011Q3. Finance also shed a quarter of its under 25 employment during the term. Healthcare and social assistance remained relatively flat with slight positive growth. The third quarter of 2007 was the peak of total youth employment, reaching 244,958 workers. It fell 31,000 jobs to 213,641 in 2010Q3.

In 2011Q3, the last period of available data, youth employment was up 1,207 to 214,848 jobs from the 2010Q3 low. The accommodations and food service sector contributed the most to this year-over-year (YOY) increase, rising 720 jobs. Manufacturing also had a sizable YOY increase of 717 youth employees, a 7 percent industry increase. Retail trade, down 1,696 jobs, had the largest drag on employment growth.

Though 2011Q3’s YOY 0.6 percent growth of 1,207 youth workers seems anemic, the previous three summers were far worse. From 2009 to 2010 all but three sectors experienced negative employment change. Then from 2010 to 2011 a majority of sectors experienced growth. Construction added jobs while real estate still shed 187. Like many other areas of the economy, the recovery for Connecticut’s youths has been tepid at best.

### Peak Quarter Employment Q2-Q3

When examining the past 15 years of available QWI data, the third quarter saw total youth employment increase by 12.7 percent on average from the previous second quarter, as shown in Table B. The lowest quarter-to-quarter percent change of 9.6 percent occurred in 2008, while the highest occurred in 1998 at 14.9 percent. In 2011, total youth employment increased by 13.6 percent from Q2 to Q3. This examination of quarter-to-quarter change highlights the highly seasonal nature of youth employment.

The largest share of seasonal employment gains for Connecticut workers under 25 years old occurred in NAICS sectors 71, 72, and 56. These three industries accounted for 38 percent of the

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**TABLE A**

<table>
<thead>
<tr>
<th>NAICS</th>
<th>2011Q3</th>
<th>2010Q3</th>
<th>2009Q3</th>
<th>2008Q3</th>
<th>2007Q3</th>
<th>Change 07-11</th>
<th>Year-over-Year Change 09-10</th>
<th>Year-over-Year Change 10-11</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Industries</td>
<td>214,848</td>
<td>213,641</td>
<td>212,581</td>
<td>211,521</td>
<td>210,461</td>
<td>-30,110 -12.3%</td>
<td>-1,548 -0.7%</td>
<td>1,207 0.6%</td>
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<tr>
<td>12 Mining</td>
<td>62</td>
<td>57</td>
<td>52</td>
<td>47</td>
<td>42</td>
<td>-5       -9.8%</td>
<td>-36 -0.8%</td>
<td>-9 -2.2%</td>
</tr>
<tr>
<td>22 Utilities</td>
<td>374</td>
<td>412</td>
<td>402</td>
<td>350</td>
<td>319</td>
<td>-55       -14.7%</td>
<td>-52 -12.9%</td>
<td>-31 -8.9%</td>
</tr>
<tr>
<td>21 Mining</td>
<td>62</td>
<td>57</td>
<td>52</td>
<td>47</td>
<td>42</td>
<td>-5       -9.8%</td>
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<td>-9 -2.2%</td>
</tr>
</tbody>
</table>

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**NOTE:** Data excludes individuals working for private households, agriculture, and some industries with small youth employment.
total average employment change for Connecticut youths. The three industry sectors with the largest Q2 to Q3 average percent increase in youth employment were NAICS sectors 71, 22, and 92, respectively, adding 87.5, 77.2, and 63.2 percent to their Q2 average employment levels. In 2011, the largest and smallest Q2-Q3 youth employment percent change occurred respectively in arts, entertainment, and recreation (NAICS 71) and educational services (NAICS 61). The former more than doubled its youth employment from the second to third quarter of 2011, growing from 6,913 to 14,378 workers. Educational services experienced the only Q2-Q3 decline, decreasing 13.5 percent to 9,536 during the period. These changes in youth employment strongly conform to seasonal factors, as adolescent campers, much to their chagrin, cannot attend day camp during the school year.

Retail Trade

For retail trade (NAICS 44-45), the largest youth employing industry in Connecticut, 2011Q2-Q3 employment increased by 4.5 percent to 50,746 youth workers, well below the 7.8 percent increase experienced during the summer of 2010. Youth employment in this sector is down roughly 7,500 jobs from its 2007 high, with employment levels currently at their lowest in the 15 years of available data.

Summer retail employment for young teens under 19 years old peaked in 2000. It has since declined from 21,307 that year to 9,264 in 2011 while older youths 19-24 years old have been stable and increased by 7,503 (22.2 percent). Workers 22-24 comprise the largest employment gains within the youth cohort. Future research coupling cohort educational attainment information to this data could help determine if older youths are holding onto their retail jobs longer, contributing to underemployment and decreased teen employment.

Overall, total employment in retail stayed relatively flat from 2011Q2 to 2011Q3, rising 0.8 percent. It must also be noted that the 4th quarter is peak for this sector, in correspondence with winter holidays.

The recent recession has had a pronounced effect on this sector. Until 2008 the industry’s total employment held largely around 190,000 Connecticut workers. It has since shed nearly 20,000 jobs. Despite the tremendous losses retail suffered in the wake of the recession, youth workers have consistently comprised about 30 percent of that sector’s labor force, indicating that though retail employment is down overall, youths do not appear to be crowded out by older workers in this sector, a frequently proposed idea when analyzing the recovery period.

Accommodation and Food Service

The second largest employer for Connecticut youths, accommodation and food service exhibited a decrease in teen employment similar to the shift experienced in retail. The sector continually added to youth employment from 1996 through its 2007Q3 peak, averaging a third quarter YOY increase of 1,080 youth workers. Unlike retail, where youth employment hasn’t yet recovered to near pre-recession levels, accommodation and food service has quickly recovered its footing and added 720 youth workers year-over-year by 2011Q3. Employment that quarter stood at 1,668 youth workers below peak levels.

The story for teens under 19 years old in this sector is similar to their experience in retail, with the decline in employment. Accommodations employed 4,184 fewer workers under 19 years old in 2011Q3 than in 2007Q3. These sub-cohort declines were met with
increases in the two older segments of the cohort. Annual census population data unfortunately doesn’t match the QWI three year age sub-cohorts, so a conclusive statement if this represents simple aging of the under 25 cohort or if teen employment-to-population ratios are declining cannot be made.

Overall, the third quarter accommodation sector’s employment peaked in 2008 at 113,763 workers, a year after the youth cohort peaked. After one YOY decline of 2,168 jobs in 2009Q3 the sector has added jobs in 2010 and 2011. The third quarter of 2011 showed total accommodation employment at 114,989 workers, exceeding pre-recession levels. Youth cohort employment was 37.6 percent of the sector. This continues a trend of decreasing employment share of the industry. In 2006, the youth share peaked at 40 percent of total industry employment. It has since steadily declined to current levels.

Conclusions
Summer employment is a great opportunity for youths to develop important work skills and is often one’s initiation into the workforce. This examination of employment trends using Census Quarterly Workforce Indicators data highlights the steep decline in employment for Connecticut teens in recent years. The most recent quarter of available data, 2011Q3, shows that Connecticut youths have begun to recover jobs, a promising change from prior summers.

Data on national-level youth employment, released sooner than state-level data, indicates that U.S. youth employment in July 2012 was 4.4 percent greater than in July 2011.1 Hopefully state-level data, when available, will show that Connecticut youths experienced similar employment growth this summer.


Graph 4: Third Quarter Accommodation & Food Service Employment

<table>
<thead>
<tr>
<th>Year</th>
<th>under 19</th>
<th>19-21</th>
<th>22-24</th>
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<tbody>
<tr>
<td>1999</td>
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<td>2001</td>
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<td>2011</td>
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Sources: *The Connecticut Economy, University of Connecticut **Farmington Bank ***Federal Reserve Bank of Philadelphia

The Connecticut Economy’s General Drift Indicators are composite measures of the four-quarter change in three coincident (Connecticut Manufacturing Production Index, nonfarm employment, and real personal income) and four leading (housing permits, manufacturing average weekly hours, Hartford help-wanted advertising, and initial unemployment claims) economic variables, and are indexed so 1986 = 100.

The Farmington Bank Business Barometer is a measure of overall economic growth in the state of Connecticut that is derived from non-manufacturing employment, real disposable personal income, and manufacturing production.

The Philadelphia Fed’s Coincident Index summarizes current economic condition by using four coincident variables: nonfarm payroll employment, average hours worked in manufacturing, the unemployment rate, and wage and salary disbursements deflated by the consumer price index (U.S. city average).