



comprehensive economic development strategy

Growing Greater Philadelphia: Regional and County Subsector Analysis

### Introduction

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Growing Greater Philadelphia, the region's adopted comprehensive economic development strategy (CEDS), is a framework for economic growth identifying the economic strengths, employment trends, and future economic opportunities in the Greater Philadelphia region.

The subsector analysis highlights the top 10 most competitive industries at the regional and county level, including average weekly wages, total employment change from 2010 to 2017, and which subsectors are regionally significant based on employment and Location Quotient (LQ). Included at the regional level are the average weekly wages in the region's top 10 competitive subsectors compared to the national level. An equity analysis is provided, which analyzes the ethnicity of the workforce by subsector.



County Business Patterns (CBP), U.S. Census: CBP is a series of annually released economic data.

Quarterly Census of Employment and Wages (QCEW), U.S. Bureau of Labor Statistics (BLS): QCEW is wage and employment data reported by employers.

Current Population Survey (CPS), U.S. Census: The CPS provides monthly labor force statistics.

National Establishment Time-Series (NETS): NETS provides longitudinal data on businesses and employment.

Location Quotient (LQ): LQ is an industry's share of overall employment in one geography relative to the industry's share of overall employment in another geography. An LQ higher than 1.0 means that the subsector produces more than is demanded by the local economy, meaning it exports the excess goods and services. An LQ of 1.25 or higher means that the subsector is competitive in the county or region.

North American Industry Classification System (NAICS): NAICS is the classification system for industries at multiple levels. It is used in CBP, QCEW, and CPS data.

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# 2.51

million regional employees

# 40%

of jobs in six largest subsectors

## \$1,193.21

average weekly wage for all subsectors

2.27

highest region LQ

## Regional Subsector Analysis

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#### Top 10 Subsectors by Total Employment



Using employment data at the 3-digit North American Industry Classification System (NAICS) level, the region's top 10 subsectors are highlighted in the above table. These ten subsectors (of the 86 total subsectors in Greater Philadelphia) employ 1.35 million employees, which accounts for more than half (53.7 percent) of total employment in the region. The largest single subsector *Professional/Scientific/Technical Services* accounts for 201,510 employees, approximately eight percent of the region's employment.

#### Top 10 Subsectors by Location Quotient (LQ)



Region LQ is a subsector's share of total employment in a region relative to its share of total employment in the United States. An LQ above 1.25 may signal a particular subsector's significance to a region. There are four subsectors with LQs above 2.0, indicating strong regional competitiveness in these areas. The *Educational Services* subsector has the highest employment. The most competitive subsector by LQ is the *Securities/Commodity Contracts/Other* subsector with an LQ of 2.27, which accounts for 1.63 percent of the region's employment.

Source: County Business Patterns (2017)

2.50

#### Subsector Change in Employment for Greater Philadelphia (2010-2017)



This bubble chart shows the LQ and change in total employment for the region's top 10 subsectors. Additionally, the size of the bubbles represents the total employment in the region for each subsector. Since 2010, the *Educational Services* subsector gained the most jobs with 19,208, followed by *Hospitals* and *Social Assistance* with gains of 15,112 and 14,419, respectively. The *Petroleum/Coal Products Manufacturing* and *Performing Arts/Spectator Sports* subsectors have two of the highest regional LQs but relatively low employment in comparison.

Source: County Business Patterns (2010, 2017)

#### Shift-Share Analysis



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This chart is a shift-share analysis of employment change in the region for its top 10 subsectors. National growth represents the growth of total employment in the US during the period, while Industry Mix is the growth in each subsector over this time. Change represents the change in total employment in the subsector in the region during the period. Therefore, regional competitiveness is the share of change in the subsector that is not accounted for from national growth or industry mix. Regional competitiveness contributed substantially to the job growth (dark orange bars) in the *Performing Arts/Spectator Sports* and *Hospitals* subsectors, accounting for 11,200 and 18,806 jobs, respectively, while the remaining subsectors have little or no regional competitiveness. Regional competitiveness had a negative or minimal impact on job growth for the remaining subsectors from 2010 to 2017.

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#### Wages and Equity

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This section analyzes wages and employee representation by gender, race, and ethnicity, and wages within the top 10 most competitive subsectors in the region. This analysis highlights when a particular gender, race, or ethnic group is more than 5 percent higher than their representation in the overall workforce in a particular subsector. This is referred to as overrepresented. For example, women account for 47 percent of the U.S. workforce but 50.1 percent of total employment in the *Museums/Historical Sites* subsector. Therefore, their representation in the *Museums/Historical Sites* subsector is 6.5 percent higher than their share of the U.S. workforce, meaning women are overrepresented in this subsector.

The region's average weekly wage was calculated using the average wage in each county and then weighing it based on the county's total employment. This average weekly wage for the region was used for comparisons with the region's top 10 subsectors and subsectors that were overrepresented by a particular race, ethnicity, or gender. The average weekly wages by subsector are not weighted. At the county-level, wage data for subsectors from QCEW is broken down by sector: local government, state government, federal government, or private sector. Since some of the data is suppressed by sector (CBP and QCEW suppress data for confidentiality/publication purposes) and there is no range provided, it is not possible to consistently weigh the data. Therefore, equal weight by sector to average the wages is assumed.

#### Wage Context: Is Greater Philadelphia Livable?

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The weighted average weekly wage for the entire region is \$1,193.21, which is 9.3 percent higher than the U.S. average of \$1,092.00. This equates to \$29.83 per hour for a 40-hour workweek. Although this is much higher than the minimum wage (\$7.25 in Pennsylvania; \$10.00 in New Jersey) and federal poverty level, household size and composition are also used to determine whether this average weekly wage is livable. According to the Massachusetts Institute of Technology Living Calculator, the livability changes based on the number of adults and children in the household.

Single (no children): \$25,898 per year/\$12.45 per hour

2 adults, 2 children (1 adult works): \$55,185/\$26.53 per hour

2 adults, 2 children (2 adult works): \$70,516/\$16.95 per hour

NAICS Subsector	Subsector: Regional Weighted Wage	% Difference: Region's Weighted Average Wage
Securities/Commodity Contracts/Other	\$3,234.66	171.1%
Petroleum/Coal Products Manufacturing	\$1,522.27	27.6%
Educational Services	\$1,326.57	11.2%
Performing Arts/Spectator Sports	\$2,446.84	105.1%
Transit/Ground Passenger Transportation	\$589.60	- 50.6%
Hospitals	\$1,369.22	14.8%
Museums/Historical Sites	\$856.80	- 28.2%
Nursing/Residential Care Facilities	\$761.15	- 36.2%
Personal/Laundry Services	\$509.42	- 57.3%
Social Assistance	\$603.76	- 49.4%

#### Competitive Subsectors Based on Wages



The highest average wage in the region is in the Securities/Commodity Contracts/Other subsector with \$3,234.66, followed by the Performing Arts/Spectator Sports and Petroleum/Coal Products Manufacturing subsectors. Although the Securities/Commodity Contracts/Other and Petroleum/Coal Products Manufacturing subsectors have high average weekly wages, they are 27.4 and 35.0 percent lower, respectively, than the U.S. average, whereas the average weekly wage in the Performing Arts/Spectator Sports subsector is 33.4 percent higher than the U.S. average.

#### Subsector Breakdown by Gender, Race, and Ethnicity



Securities/Commodity Contracts/Other subsector has an average weekly wage of \$3,234.66, which is 171.1 percent higher than the region's overall average weekly wage. The subsector's average weekly wage for the region is 27.4 percent lower than the subsector's average weekly wage of \$4,457.55 in the United States overall. Asian workers comprise 9.3 percent of the workforce in this subsector nationally. Since Asian workers represent 6.5 percent of the total workforce in the United States (and 6.3 percent of the workforce regionally), this means that they are overrepresented in this subsector by 43.1 percent.

*Petroleum/Coal Products Manufacturing* subsector has an average weekly wage of \$1,522.27, which is 27.6 percent higher than the region's overall average weekly wage. The subsector's average weekly wage for the region is 35.0 percent lower than the subsector's average weekly wage of \$2,342.00 in the United States overall. Hispanic or Latino workers comprise 20.7 percent of the workforce in this subsector nationally. Since Hispanic or Latino workers represent 17.6 percent of the total workforce in the United States (and 8.5 percent of the workforce regionally), this means that they are overrepresented in this subsector by 17.6 percent.

*Educational Services* subsector has an average weekly wage of \$1,326.57, which is 11.2 percent higher than the region's overall average weekly wage. The subsector's average weekly wage for the region is also 31.5 percent higher than the average weekly wage for this subsector of \$1,008.77 for this subsector in the United States overall. Women workers comprise 69.6 percent of the workforce in this subsector nationally. Since women workers represent 47.0 percent of the total workforce in the United States (and 48.8 percent of the workforce regionally), this means that they are overrepresented in this subsector by 48.1 percent.

*Performing Arts/Spectator Sports* subsector has an average weekly wage of \$2,446.84, which is 105.1 percent higher than the region's overall average weekly wage. The subsector's average weekly wage for the region is also 33.4 percent higher than the subsector's average weekly wage of \$1,834.68 in the United States overall. White workers comprise 83.5 percent of the workforce in this subsector nationally. Since White workers represent 77.7 percent of the total workforce in the United States (and 69.6 percent of the workforce regionally), this means that they are overrepresented in this subsector by 7.5 percent.

*Transit/Ground Passenger Transportation* subsector has an average weekly wage of \$589.60, which is 50.6 percent lower than the region's overall average weekly wage. The subsector's average weekly wage for the region is also 39.0 percent lower than the subsector's average weekly wage of \$967.15 in the United States overall. Black or African American workers comprise 31.4 percent of the workforce in this subsector nationally. Since Black or African American workers represent 12.3 percent of the total workforce in the United States (and 18.9 percent of the workforce regionally), this means that they are overrepresented in this subsector by 155.3 percent.

#### Subsector Breakdown by Gender, Race, and Ethnicity



*Hospitals* subsector has an average weekly wage of \$1,369.22, which is 14.8 percent higher than the region's overall average weekly wage. The subsector's average weekly wage for the region is also 6.1 percent higher than the subsector's average weekly wage of \$1,290.75 in the United States overall. Women workers comprise 74.9 percent of the workforce in this subsector nationally. Since women workers represent 47.0 percent of the total workforce in the United Status (and 48.8 percent of the workforce regionally), this means that they are overrepresented in this subsector by 59.4 percent.

*Museums/Historical Sites* subsector has an average weekly wage of \$856.80, which is 28.2 percent lower than the region's overall average weekly wage. However, the subsector's average weekly wage for the region is 14.5 percent higher than the subsector's average weekly wage of \$748.34 in the United States overall. White workers comprise 82.9 percent of the workforce in this subsector nationally. Since White workers represent 77.7 percent of the total workforce in the United States (and 69.6 percent of the workforce regionally), this means that they are overrepresented in this subsector by 6.7 percent.

*Nursing/Residential Care Facilities* subsector has an average weekly wage of \$761.15, which is 36.2 percent lower than the region's overall average weekly wage. However, the subsector's average weekly wage for the region is 15.8 percent higher than the subsector's average weekly wage of \$657.54 in the United States overall. Black or African American workers comprise 26.2 percent of the workforce in this subsector nationally. Since Black or African American workers represent 12.3 percent of the total workforce in the United States (and 18.9 percent of the workforce regionally), this means that they are overrepresented in the subsector by 113.0 percent.

*Personal/Laundry Services* subsector has an average weekly wage of \$509.42, which is 57.3 percent lower than the region's overall average weekly wage. The subsector's average weekly wage for the region is also 9.4 percent lower than the subsector's average weekly wage of \$562.40 in the United States overall. Asian workers comprise 16.6 percent of the workforce in this subsector nationally. Since Asian workers represent 6.5 percent of the total workforce in the United States (and 6.3 percent of the workforce regionally), this means that they are overrepresented in this subsector by 155.4 percent.

**Social Assistance** subsector has an average weekly wage of \$603.76, which is 49.4 percent lower than the region's overall average weekly wage. However, the subsector's average weekly wage in the region is 18.7 percent higher than the subsector's average weekly wage of \$508.64 in the United States overall. Women workers comprise 83.8 percent of the workforce in this subsector nationally. Since women workers represent 47.0 percent of the total workforce in the United States (and 48.8 percent of the workforce regionally), this means that they are overrepresented in this subsector by 78.3 percent.

## **County Subsector Analysis**



## Burlington County





The bubble chart on the next slide illustrates employment change and the county LQ between 2010 and 2017 for the top 10 subsectors in Burlington County. These subsectors represent 19.7 percent of the total employment in the county. More than half of this employment comes from *Credit Intermediation/Related Activities* (10,171 employees) and *Merchant Wholesalers/Durable Goods* (8,585 employees) subsectors, which also have the highest county LQs. The *Computer/Electronic Product Manufacturing* subsector has the highest county LQ (4.07; region LQ: 1.06) but lost over 2,800 jobs. The *Merchant Wholesalers/Durable Goods* subsector has the lowest county LQ (1.73; region LQ: 1.01) but gained over 1,300 jobs.

Five of the top 10 county subsectors pay higher wages than compared to the United States. The *Credit Intermediation/Related Activities* has the highest average wage at nearly \$2,500 per week, which is 60.2 percent higher than the U.S. average. The *Rental/Leasing Services* and *Motion Picture/Sound Recording Industries* subsectors also have high average wages, as they are 95.7 and 99.3 percent higher than the U.S. average, respectively. The *Gasoline Stations, Wood Product Manufacturing,* and *Warehousing/Storage* subsector employees earn the same wage as compared to the U.S. total.

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Total Employment Change

## Camden County



The bubble chart on the next page illustrates total employment and the county LQ for the top 10 subsectors in Camden County from 2010 to 2017. Employment is concentrated in Camden County's three largest subsectors: *Couriers/Messengers* (2,159 employees), *Transit/Ground Passenger Transportation* (2,099 employees), and *Food Manufacturing* (3,194 employees) account for 75 percent of the employment in these top subsectors. The *Water Transportation* subsector has a county LQ of 8.93 (region LQ .98) and lost under 100 jobs between 2010 to 2017. The *Food Manufacturing* subsector has a county LQ of 1.96 (region LQ .77) but gained over 1,000 jobs in the same time period.

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Five of the top 10 county subsectors pay higher weekly wages than compared to the United States. The *Textile Product Mills* subsector has the highest average weekly wage at nearly \$1,250 per week, which is 55 percent higher than the U.S. average of \$807. The *Food Manufacturing* and *Furniture/Home Furnishings Stores* subsectors also have high average weekly wages, as they are 31 and 27.9 percent higher than the U.S. average, respectively. The *Transit/Ground Passenger Transportation* subsector employees earn a weekly average wage of \$560 per week, which is 38 percent less than the U.S. average of \$904.

### Camden County: Employment Change (2010–17) and County LQ *<sup>®dvrpc</sup>*



Source: County Business Patterns (2010, 2017)

## **Gloucester County**





The bubble chart on the next page highlights total employment change and county LQ for the top 10 subsectors in Gloucester County from 2010-2017. These subsectors account for 19.7 percent of the total employment. The four largest subsectors account for 80 percent of the employees: *Specialty Trade Contractors, General Merchandise Stores, Food Manufacturing,* and *Warehousing/Storage.* The largest subsector, *Specialty Trade Contractors,* accounts for 27.6 percent of the total employment in the top 10 subsectors. The *Petroleum/Coal Products Manufacturing* subsector is competitive at the county and regional levels, with a county LQ of 5.24 and a regional LQ of 2.24. The *Food Manufacturing* subsector has a county LQ of 4.09 (region LQ .77) and gained over 2,000 jobs between 2010 and 2017.

Five of the subsectors in Gloucester County pay higher weekly average wages than compared to the U.S. average. The *Rental/Leasing Services* subsector pays an average weekly wage of \$1,519, which is 55 percent higher than the U.S. weekly average wage of \$678. *The Specialty Trade Contractors* subsector pays an average weekly wage of \$1,277, which is 20 percent higher than the U.S. average weekly wage.

### Gloucester County: Employment Change (2010–17) and County LQ *<sup>®dvrpc</sup>*



Source: County Business Patterns (2010, 2017)

## **Mercer County**





The bubble chart on the next page highlights the total employment change and county LQ from 2010 to 2017 for the top 10 subsectors in Mercer County. These subsectors account for 38.9 percent of the county's total employment. The *Educational Services* (22,914 employees) and *Professional/Scientific/Technical Services* (22,014 employees) subsectors combined account for 58.8 percent of the total employment in Mercer County. Other competitive subsectors include *Educational Services* with a county LQ of 1.82 (region LQ 2.20), *Nonstore Retailers* with a county LQ of 2.99 (region LQ 1.31) and *Merchant Wholesalers/Nondurable Goods* with a county LQ of 2.34 (region LQ 1.24).

Mercer County average weekly wages for the top 10 subsectors is similar to the average wages compared to the United States. Only two subsectors have higher weekly average wages: *Nonstore Retailers* (county \$954; United States \$822) and *Machinery Manufacturing* (county \$1,386; United States \$1,303). The highest average weekly wages in the county fall within the *Utilities* subsector (\$1,728), which is still 10 percent below the U.S. weekly average wage in this subsector. Although the *Educational Services* subsector makes up the largest employment subsector in the county, the average weekly wage of \$472 is 61.2 percent lower than the U.S. average weekly wage (\$1,216).

#### Mercer County: Employment Change (2010–17) and County LQ



Total Employment Change

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## Bucks County

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The bubble chart on the next page highlights the employment change and county LQ from 2010 to 2017 for the top 10 subsectors in Bucks County. Although the *Mining* (county LQ 4.39; region LQ .20) and *Textile Mills* (county LQ 2.99; region LQ .53) subsectors are the most competitive, they have low employment (252 and 212 employees, respectively). The *Chemical Manufacturing* subsector is the largest (county LQ 2.54; region LQ 1.22) with nearly 4,500 employees and has remained relatively steady between 2010 and 2017. The subsector is also competitive in the region with a regional LQ of 1.22. Although the *Fabricated Metal Product Manufacturing* and *Machinery Manufacturing* subsectors have high county LQs (2.18 and 2.22, respectively), they only have regional LQs of .59 and .61, respectively.

Only three of the top 10 subsectors have higher average weekly wages compared to the United States: *Textile Mills* (county \$1.038; United States \$891), *Plastic/Rubber* Products, Manufacturing (county \$1,134; United States \$1,027) and *Nonmetallic Mineral Product Manufacturing* (county \$1,175; United States \$1,143). The *Lessors of Nonfinancial Intangible Assets* (includes establishments engaged in assigning rights to assets) subsector has the highest average weekly wage (\$1,512 per week), although it is 29.6 percent lower than the U.S. average (\$2,148). The remaining subsectors in the county have similar average weekly wages compared to the United States for that particular industry.

#### Bucks County: Employment Change (2010–17) and County LQ



Source: County Business Patterns (2010, 2017)

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## **Chester County**

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The bubble chart on the next page highlights the employment change from 2010 to 2017 and county LQ for the top 10 subsectors in Chester County. Six of the 10 subsectors have less than 1,000 employees but high county LQs, suggesting that the high county LQs are driven by the subsectors' small share of the overall U.S. economy. The *Securities/Commodity Contract/Other* subsector has 17,252 employees (county LQ 4.23), accounting for 58.5 percent of the total employment. The *Support Activities for Agriculture/Forestry* subsector has a county LQ of 7.24 (region LQ .83) but only 813 employees. All the top 10 subsectors identified in Chester County have county LQs above 1.8, while the region LQs for the same subsectors are all below 1.3.

Seven of the top 10 subsectors in Chester County pay higher average weekly wages as compared to the United States. The *Lessors of Nonfinancial Intangible Assets* (includes establishments engaged in assigning rights to assets) subsector has the highest average weekly wage (\$1,512 per week), although it is 29.6 percent lower than the U.S. average. The *Nonstore Retailers* subsector has an average weekly wage (\$1,590, 48 percent higher as compared to the United States (\$833). The *Beverage/Tobacco Product Manufacturing* subsector is the only top 10 subsector in Chester County that pays an average weekly wage below that of the United States: \$597 and \$980, respectively.

#### Chester County: Employment Change (2010–17) & County LQ



Source: County Business Patterns (2010, 2017)

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## **Delaware County**



The bubble chart on the next page highlights the employment change from 2010 to 2017 and county LQ for the top 10 subsectors in Delaware County. The *Nursing/Residential Care* (county LQ 1.57; region LQ 1.38) and *Insurance Carriers* (county LQ 1.83; region LQ 1.25) subsectors account for 57 percent of the total employment within the county. The *Support Activities for Mining* (county LQ 8.85; region LQ .04) and *Transportation Equipment Manufacturing* (county LQ 4.40; region LQ .47) subsectors have high county LQs, but a relatively low number of employees (175 and 5,041, respectively) as compared to the *Nursing/Residential Care Facilities* subsector with 12,587 employees.

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Four of the top 10 subsectors pay higher average weekly wages as compared to the United States: *Transportation Equipment Manufacturing* (county \$2,000; United States \$1,444), *Paper Manufacturing* (county \$1,913; United States \$1,288), *Support Activities for Transportation* (county \$2,804; United States \$1,642) and *Publishing Industries (except Internet)* (county \$2,136; United States \$1,850). The *Support Activities for Transportation* subsector has the highest average weekly wage in the region (\$2,804 per week),which is 70.8 percent higher than the U.S. weekly wage average. Although the *Nursing/Residential Care* subsector has the largest number of employees, it has an average weekly wage of \$724, approximately 20 percent less than the average weekly wage for the United States (\$907).

#### Delaware County: Employment Change (2010–17) and County LQ



Source: County Business Patterns (2010, 2017)

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## Montgomery County



The bubble chart on the next page highlights the employment change from 2010 to 2017 and county LQ in the top 10 subsectors in Montgomery County. These subsectors only account for 5.1 percent of the total employment in the county. The four largest subsectors have slightly more than 22,000 employees combined, representing 84.3 percent of total employment in the group: *Heavy/Civil Engineering Construction* (county LQ 2.32; region LQ .68), *Chemical Manufacturing* (county LQ 1.60; region LQ 1.22), *Fabricated Metal Product Manufacturing* (county LQ 1.59; region LQ .59), and *Computer/Electronic Product Manufacturing* (county LQ 1.56: region LQ 1.06). The region LQs for Montgomery County all fall below 1.5, indicating that these subsectors are not regionally competitive.

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Although the top 10 subsectors in Montgomery County are not regionally competitive, eight of these industries pay higher average weekly wages as compared to the U.S. weekly average. The *Lessors of Nonfinancial Intangible Assets* subsector has the highest average weekly wage (\$2,791) and is 23 percent higher than the U.S. average weekly wage for this subsector (\$2,148). The *Chemical Manufacturing* subsector has an average weekly wage (\$2,405) that is 68.2 percent higher than the U.S. average weekly wage (\$1,430).



Source: County Business Patterns (2010, 2017)

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## Philadelphia County



The bubble chart on the next page highlights the employment change from 2010 to 2017 and county LQ for the top 10 subsectors in Philadelphia County. This group represents 29.8 percent of the county's total employment.

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The two largest subsectors, *Educational Services* (county LQ 2.14; region LQ 2.20) and *Hospitals* (county LQ 1.90; region LQ 1.41), account for 81.5 percent of the total employment and accounted for most of the job growth in the county between 2010 and 2017. The *Performing Arts/Spectator Sports* subsector (county LQ 3.39; region LQ 2.13) added over 12,000 employees between 2010 and 2017, making it one of the largest subsectors in Philadelphia County.

Seven of nine top 10 subsectors in the Philadelphia County have higher average weekly wages than the United States. The *Petroleum/Coal Products Manufacturing* subsector pays an average weekly wage of \$3,117, which is 34 percent higher than the U.S. weekly wage average. The average weekly wage in the *Performing Arts/Spectator Sports* subsector is \$2,591, which is 168.2 percent higher than the U.S. average weekly wage (\$966). Although the tourism industry is not regionally competitive, the *Museums/Historical Sites* subsector pays an average weekly wage (\$1,273) that is 34 percent higher than the U.S. average weekly wage (\$838).

#### Philadelphia County: Employment Change (2010–17) and County LQ



\* This bubble is located behind Educational Services

Source: County Business Patterns (2010, 2017)

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