

# Center for Economic and Community Development

Penn State | University Park, PA | June 2019

## Pennsylvania: Bust to Boom? Great Recession to Recovery & Beyond



### A Graphic Update 2008-18 Industries — Jobs — Wages Counties — Regions — Statewide

#### Prepared by:

Theodore R. Alter, Regional Economist  
Theodore E. Fuller, Development Economist  
Raymond L. Hoy, Research Associate  
Nolan C. Martino, Research Associate  
Cristy Halerz Schmidt, Applied Research Educator  
Tessa Sontheimer, Research Associate



Department of Agricultural Economics, Sociology, and Education

# Contents

|   |           |
|---|-----------|
| <b>Why This Report? .....</b>   | <b>2</b>  |
| <b>Summary .....</b>  | <b>3</b>  |
| <b>Glossary of Terms and Concepts .....</b>                                   | <b>4</b>  |
| <b>The Big Picture: Total Employment – Statewide 2008-18 .....</b>            | <b>5</b>  |
| <b>Total Employment – Counties: 2008-18 .....</b>                             | <b>7</b>  |
| <b>Total Employment – Gain and/or Loss: 2008-18.....</b>                      | <b>10</b> |
| <b>Total Employment – Philadelphia and Pittsburgh MSA’s: 2008-18 .....</b>    | <b>11</b> |
| <b>Total Employment – Five Regions: 2008-18.....</b>                          | <b>12</b> |
| Five Regions: 2008-18 .....   | 13        |
| Five Regions: 2015-18.....  | 14        |
| Five Regions: Number and Percent 2008-18 .....                                | 14        |
| <b>20 Major Industries – Statewide: 2008-18 .....</b>                         | <b>16</b> |
| 11 Growth Industries .....  | 17        |
| 9 Decline Industries.....   | 18        |
| Employment and Wages in 20 Major Industries .....                             | 19        |
| <b>Top Five Employment Growth Industries: 2008-18 .....</b>                   | <b>20</b> |
| Health Care and Social Assistance .....                                       | 20        |
| Accommodation and Food Services.....  | 22        |
| Transportation and Warehousing.....   | 24        |
| Professional, Scientific, and Technical Services.....                         | 26        |
| Administrative and Support and Waste Management and Remediation Services..... | 28        |

# Pennsylvania: Bust to Boom?

## Why This Report?

The Pennsylvania economy peaked in 2008. Since 2008 it has gone from “bust-to-boom.” The hard hit of the Great Recession (bust) and slow recovery has been followed by post-recovery growth (boom). Currently the Pennsylvania economy — along with the U.S economy — is on track for a record-breaking period of continuous overall employment growth.

However, the nature of the employment expansion is more complex across counties and industries. The 10 years of “bust-to-boom” during 2008-2018 seriously impacted local economies throughout the Commonwealth in varying degrees. This report tracks growth and decline in total employment and employment in major industries statewide, in Pennsylvania’s 67 counties, and PA’s five regions 2008-18. The time period includes the Great Recession - recovery (2008-15) and post-recovery growth (2Q 2015-18).

Bottom-line: The report is a graphic look – big picture and in detail – of the geography of job change in Pennsylvania – Great Recession - recovery and beyond.

## About This Report

**The Graphics:** This report seeks to tell the story of employment change by industry and geography in Pennsylvania both accurately and interestingly by maximizing graphics and minimizing text. Key points are noted for each Graphic.

### Geographic Areas of Pennsylvania in the Report:

- PA – statewide
- 67 counties
- Five regions: Southeast – Central – West – North – Northeast

### Data in the Report – Source:

- “Quarterly Census of Employment and Wages” (QCEW)
- Pennsylvania Department of Labor and Industry

### Other reports in this CECD series:

- *Pennsylvania Employment on the Move: 2001-17* (2018) [link](#)
- *Pennsylvania Population on the Move: 2000-17* (2018) [link](#)

### Please Note:

The authors welcome any comments and/or questions on the Report.

Dr. Ted Alter - [tra2@psu.edu](mailto:tra2@psu.edu) Dr. Ted Fuller – [tef4@psu.edu](mailto:tef4@psu.edu)

Penn State is an equal opportunity, affirmative action employer, and is committed to providing employment opportunities to all qualified applicants without regard to race, color, religion, age, sex, sexual orientation, gender identity, national origin, disability or protected veteran status. This publication is available in alternative media on request.

This work is/was supported by the USDA National Institute of Food and Agriculture and Hatch Appropriations under Project #PEN04633 and Accession #1014522.

Cover graphic designed by Jack Iffert

Photos: top (left to right) – Pubdog; Hunter Kahn; Penn State, bottom (left to right) – Penn State; fishhawk; Kevin Burkett

## PENNSYLVANIA: BUST TO BOOM? “GREAT RECESSION” TO RECOVERY & BEYOND

### A Summary

“Bust” to “Boom” is the story of the Pennsylvania economy 2008-18 – from being hit by near record decline in the “Great Recession,” to slow recovery, to what may be record breaking employment growth in the aggregate. During 2008-18 the Pennsylvania economy was in perpetual change as over 300,000 businesses in hundreds of industries in the state adjusted to decline, recovery, and expansion. This report tracks the varying geography of jobs and industries during “bust” to “boom” 2008 -18 across the county, regional, and state-wide level.

### Employment on The Move: The Big Picture 2008-18

#### TOTAL EMPLOYMENT- STATEWIDE

- Sharp decline 2008-09 — Slow recovery 2009-15 — Post-recovery growth 2015-18 Slow growth 2008-18 (3.1%) compared to the U.S. (7.6%)
- Slower growth than four neighbor states – NY, VA, DE, & MD

#### TOTAL EMPLOYMENT- 67 COUNTIES

- Recession- Recovery 2008-15: Widespread decline – Job loss in 49 counties
- Post-Recovery 2015-18: Job growth in 43 counties –including all counties in Southeast
- Bottom-line 2008-18: Solid growth in the Southeast– and solid decline in the West except for three counties in the Pittsburgh MSA

#### TOTAL EMPLOYMENT – FIVE REGIONS:

- Recession to Recovery 2008-15: Minimal job growth in the Southeast – decline in other four regions.
- Post-Recovery 2015-18: Employment growth concentrated in the Southeast (133,000 jobs) versus a combined growth of 12,800 jobs in the West, Central and Northeast regions and a loss of **-2,900** in the North.
- Bottom-line 2008-18: Solid job growth in the Southeast, minimal growth in Central, and decline in West, North, and Northeast regions.

### Employment on The Move: 20 Major Industries 2008-18

#### EMPLOYMENT – 2008-18:

- Growth: 11 Industries. Top in Job Growth: Health & Social Services (165,000 jobs)
- Decline: Nine industries. Top in Job Decline: Manufacturing (**-79,900** jobs)

#### EMPLOYMENT AND WAGES: 2008-18

- High Wages Industries: Saw a net employment growth of 21,821 jobs
- Middle Wage Industries: Saw a net employment growth of 76,613 jobs
- Low Wage Industries: Saw a net employment growth of 78,917 jobs

### Pennsylvania Jobs 2008-18: Two Pennsylvanias

**Where To?** The big picture of employment changes 2008-18 affirms previous reports of “Two Pennsylvanias” - the Southeast with solid growth and the West in continuing decline – except part of Pittsburgh MSA.

# Glossary of Terms & Concepts

## Key Terms

|                            |   |
|----------------------------|---|
| <b>2Q</b>                  | Second quarter of the fiscal year (April-June)  |
| <b>Employment</b>          | Filled jobs by place of work, reported by employer; includes full, part-time, temporary or permanent                                      |
| <b>MSA</b>                 | Metropolitan statistical area   |
| <b>NAICS</b>               | North American Industry Classification System   |
| <b>Recession</b>           | Popularly defined as two consecutive quarters of negative real GDP growth, but includes other relevant macroeconomic indicators           |
| <b>Average Weekly Wage</b> | Total paid compensation as well as bonuses, stock options, severance pay, and tips and other gratuities on average during April-June (2Q) |

The **North American Industry Classification System (NAICS)** is standard classification system used by Federal statistical agencies to group similar industries together for reporting. NAICS is used to classify businesses and business establishments for data collection, analysis, and to publish data related to employment, wages, and the US business economy. The NAICS is managed by the Office of Management and Budget (OMB).

NAICS codes specify broad industry by the first two digits and describe increasingly narrow industries with the number of digits added. The number of digits used in a classification ranges from two to six digits, with six being the most exact and specific. For example, Sector 11 is “Agriculture, Forestry, Fishing and Hunting”. Sector 111, the first subsector, is “Crop Production”. Sector 1112 is “Vegetable and Melon Farming”. At the five-digit level, Sector 11121 is “Vegetable and Melon Farming” and at the six-digit level is Sector 111211 is “Potato Farming”.

| Example of NAICS Classification |               |  |
|---------------------------------|---------------|--|
| 2 Digit Level                   | Sector 11     | Agriculture, Forestry, Fishing and Hunting |
| 3 Digit Level                   | Sector 111    | Crop Production                            |
| 4 Digit Level                   | Sector 1112   | Vegetable and Melon Farming                |
| 5 Digit Level                   | Sector 11121  | Vegetable and Melon Farming                |
| 6 Digit Level                   | Sector 111211 | Potato Farming                             |

More information on NAICS codes, the specific classification, and their history can be found [here](#).

Source: <https://www.census.gov/eos/www/naics/>

## Wage Group Breakdown

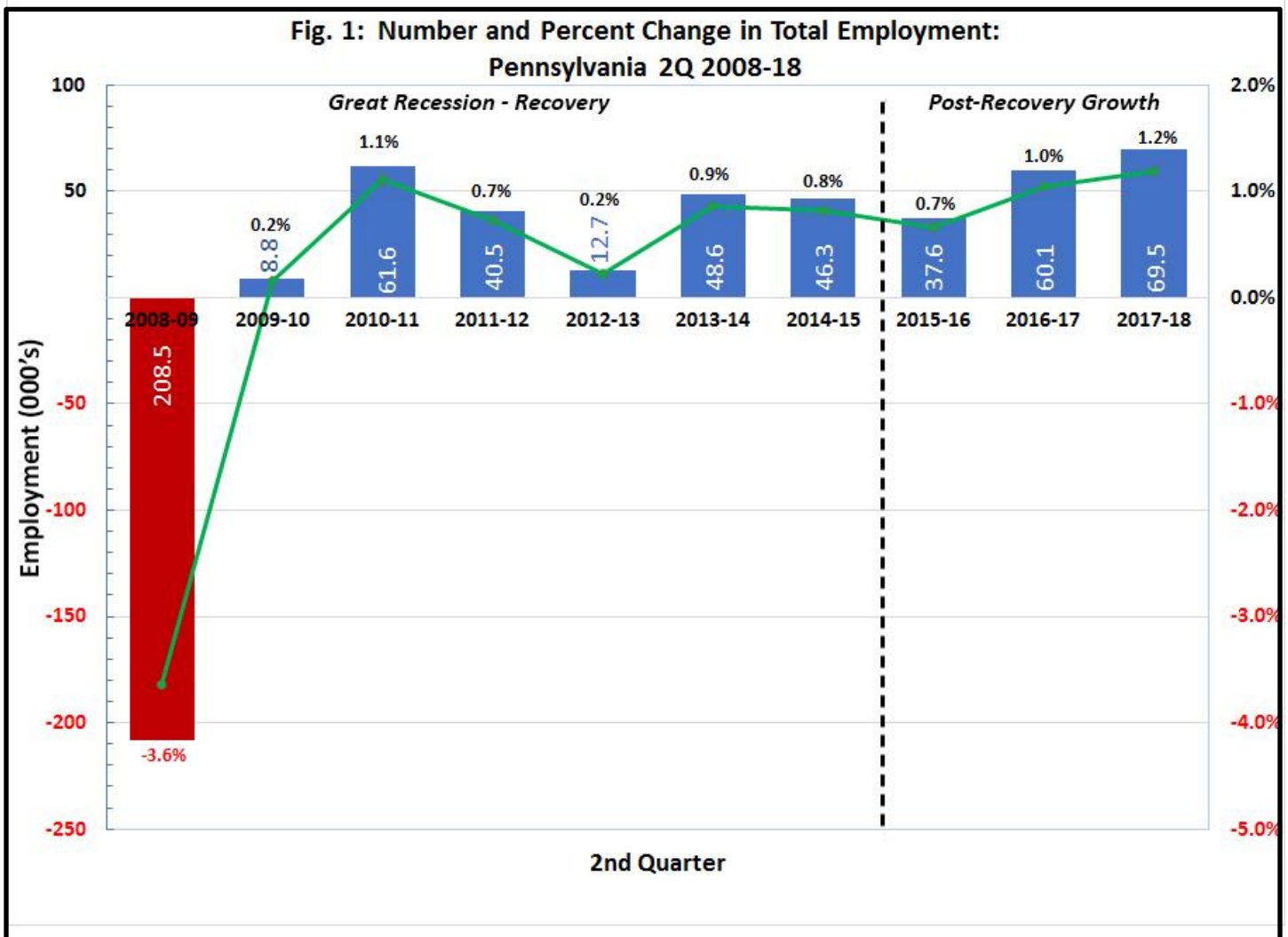
Detailed below is the classification system used for the organization of wage groups.

|                     |  |
|---------------------|--|
| <b>Low Wages</b>    | Average weekly wages between \$0 - \$772     |
| <b>Middle Wages</b> | Average weekly wages between \$773 – \$1,288 |
| <b>High Wages</b>   | Average weekly wages above \$1,289           |

## The Big Picture Total Employment - Statewide: 2008-18

### TOTAL EMPLOYMENT—STATEWIDE: ANNUAL CHANGE 2008-18

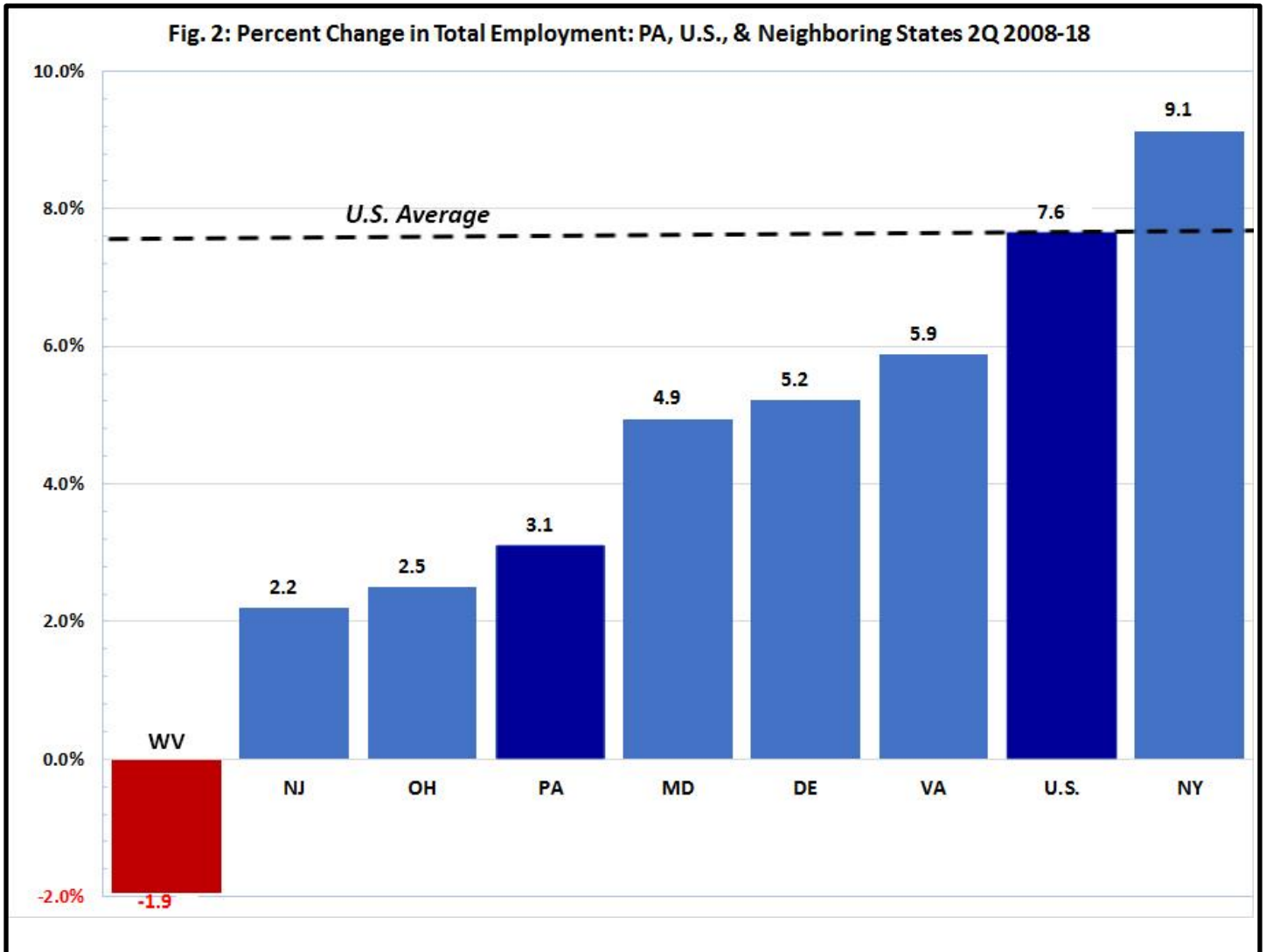
- **TOUGH START 2008-09:** PA loses 208,000 jobs – 4% of total employment- in first year of the **Great Recession**.
- **SLOW RECOVERY 2008-2015:** In 2015 - seven years after the start of the Great Recession - total employment statewide surpasses its pre-Recession 2008 high.
- **POST-RECOVERY GROWTH 2015-18:** The annual pace of job growth quickened to over 1% during 2016-18. Over 160,000 jobs were added to the PA economy during 2015-18.
- **BIG QUESTION – TOTAL EMPLOYMENT STATEWIDE – WHERE TO?** Is the 2015-18 upswing in PA job growth a temporary blip or will it continue going forward?



## PA Total Employment -Statewide - 2008-18: PA. vs U.S. & Neighboring States

### TOTAL EMPLOYMENT-PA vs U.S. & NEIGHBORING STATES: PERCENT CHANGE 2008-18

- **PA. LAGGED THE U.S. 2008-18:** PA 3.1% vs. U.S. 7.6%.
- **PA. LAGGED FOUR OF ITS NEIGHBORS:** NY, MD, VA, & DE
- **PA. OUTPACED THREE OF ITS NEIGHBORS:** Ohio, West Virginia and NJ
- **BIG QUESTION:** Why did the U.S. outpace PA. and six of seven neighboring states in job growth during 2008-18?

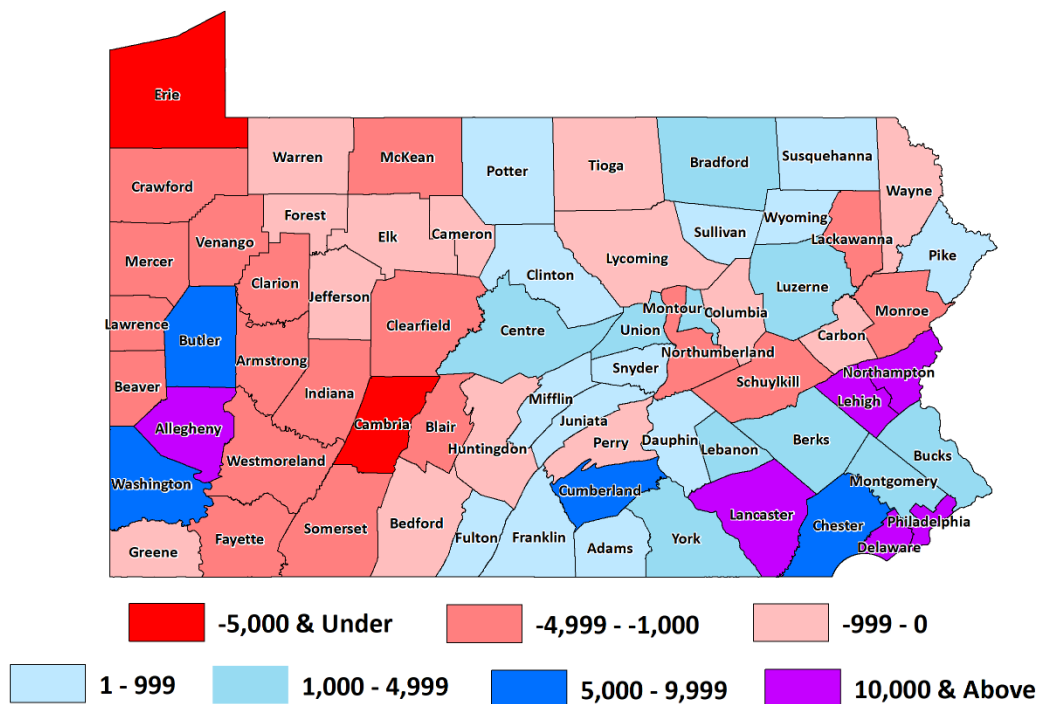


## PA Total Employment - Counties

### TOTAL EMPLOYMENT – COUNTIES: NUMBER CHANGE 2008-18

- **GROWTH AND DECLINE 2008-18 - COUNTIES - AN EVEN SPLIT:** 33 counties expanded employment and 34 experienced a decline.
- **GROWTH AND DECLINE – WHERE?** Employment increased in all counties in the southeast and declined in most of the counties in Western and Northern PA.
- **GROWTH AND DECLINE – WHERE? - LARGE vs SMALL?** Employment growth and decline among counties 2008-18 also appeared in part due to size of county employment base – notably:
  - Philadelphia County (2008 employment - 635,000) in the Southeast added over 51,000 jobs during 2008-18 - and all neighboring counties added jobs.
  - Allegheny County (employment 690,000 in 2008) in Western PA added over 12,000 jobs during 2008-18, and two adjacent counties gained over 5,000.
  - Only four other counties — all in the Southeast — had job gains of over 10,000 during 2008-18.
- **BIG QUESTION:** Were regional location and size of employment base (2008) key to county employment growth 2008-18?

**Map 1: Number Change in Total Employment: 2Q 2008-18**

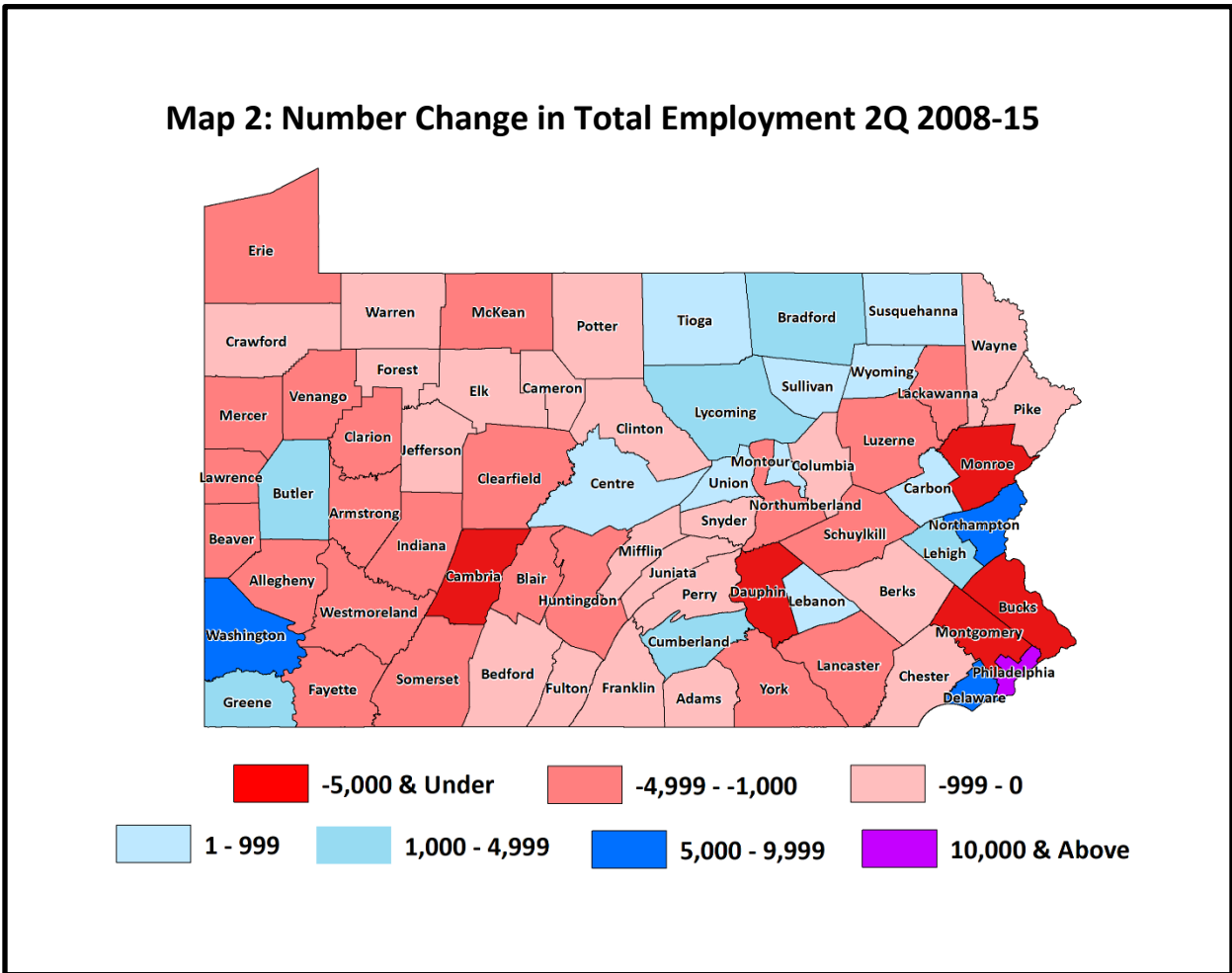




**TOTAL EMPLOYMENT – COUNTIES – “GREAT RECESSION” -RECOVERY: NUMBER CHANGE 2008-15**

- **TOTAL EMPLOYMENT – STATEWIDE – 2008-15:** Total employment peaked in Pennsylvania in 2008.
  - In 2015 — after a big dip during the Great Recession and years of slow recovery — total employment statewide surpassed 2008 high.
- **TOTAL EMPLOYMENT - DECLINE - 49 COUNTIES - 2008-15:** In 2015 total employment in Pennsylvania surpassed its 2008 pre-Recession high. – but 49 counties located across the state had employment decline during 2008-15
- **TOTAL EMPLOYMENT - JOB GROWTH – 18 COUNTIES - 2008-15:** The 18 counties growing jobs 2008-15 were dispersed across the state and included:
  - Philadelphia and Delaware counties – heart of PA’s largest MSA - Job growth over 20,000.
    - Six counties in northern tier plus two in the southwest- Job growth due in part to Marcellus shale development.
- **BOTTOMLINE – COUNTIES – 2008-15:** By 2015 employment in over two-thirds of PA’s counties returned to pre-recession high.

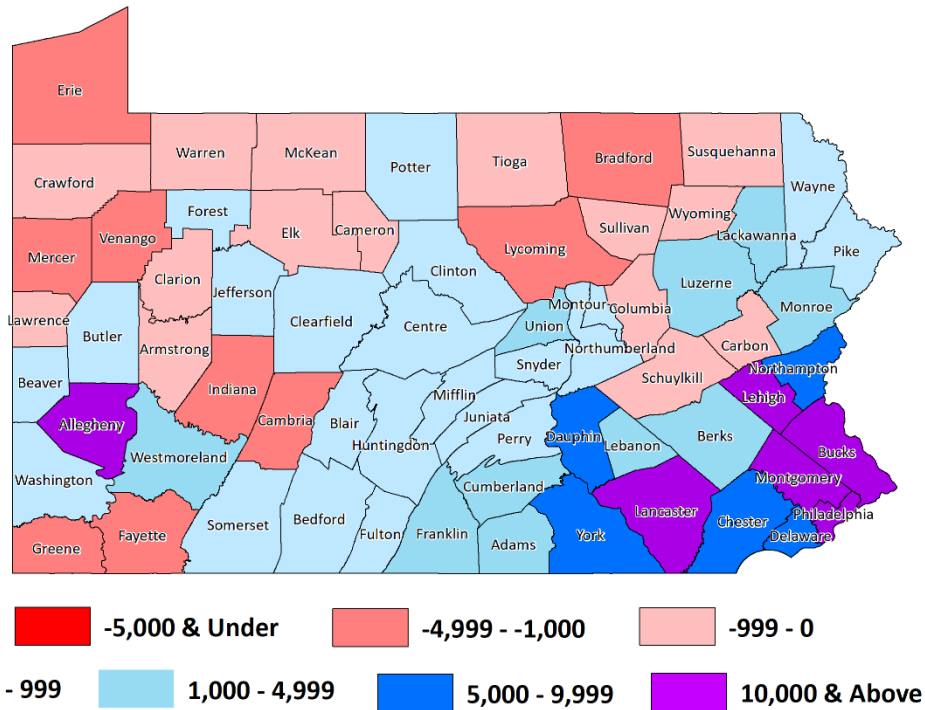
**Map 2: Number Change in Total Employment 2Q 2008-15**



**TOTAL EMPLOYMENT – COUNTIES – POST-RECOVERY GROWTH: NUMBER CHANGE 2015-18**

- **TOTAL EMPLOYMENT – STATE WIDE – 2015-18:** A three-year surge of job growth followed seven years of Recession and recovery and growth currently nears record length as PA’s economy currently hovers near full-employment.
- **TOTAL EMPLOYMENT – COUNTIES – GROWTH - 2015-18:** Forty-three counties added jobs including:
  - All counties in Southeast and Central PA
  - All counties in Philadelphia MSA, five of seven in Pittsburgh MSA
- **TOTAL EMPLOYMENT – COUNTIES – DECLINE - 2015-18:** Twenty-four counties had a decline in employment including:
  - Six Marcellus Shale counties in the northern tier
  - Nine of twelve counties in western PA outside the Pittsburgh MSA
- **BIG QUESTION:** How do size and location factor into a county’s employment growth?
  - Top growth counties 2015-18 were in the Southeast in or near the Philadelphia MSA and in the West all in the Pittsburgh MSA

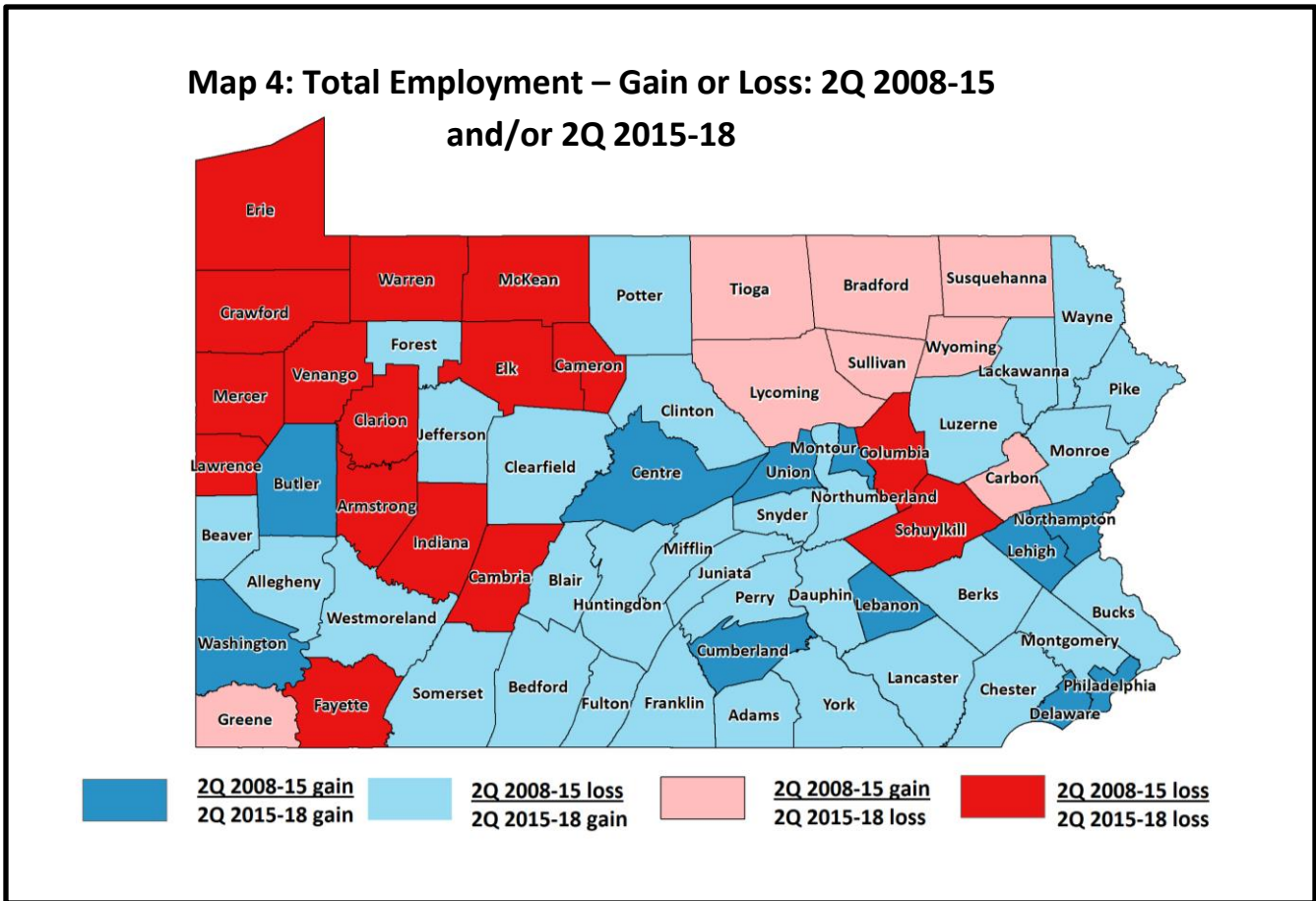
**Map 3: Number Change in Total Employment 2Q 2015-18**



## PA Total Employment – Gain and/or Loss

### TOTAL EMPLOYMENT – COUNTIES – EMPLOYMENT GAIN/LOSS: 2Q 2008-15 and/or 2Q 2015-18

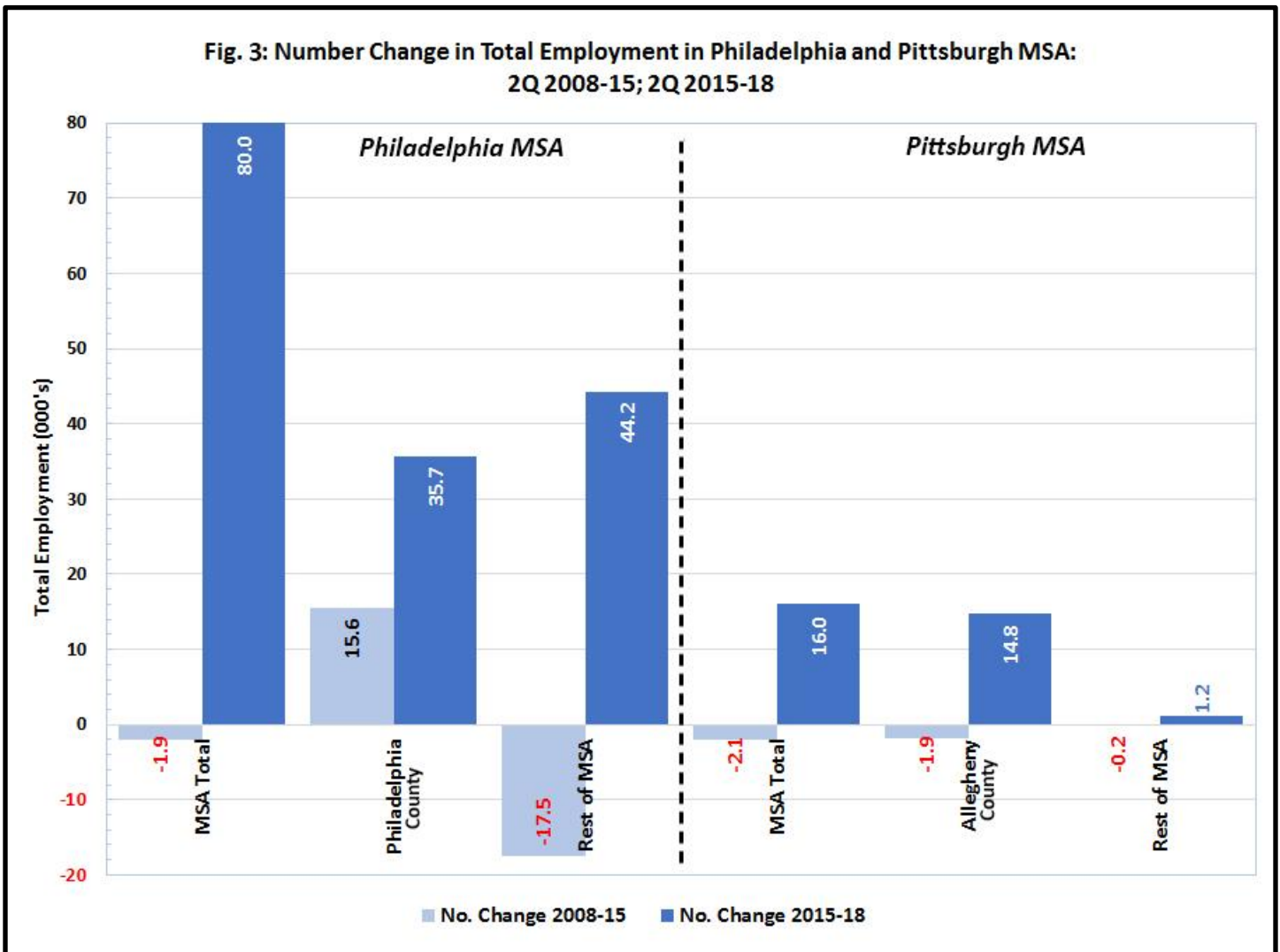
- **ONLY 11 COUNTIES JOB GROWTH RECESSION-RECOVERY (2008-15) and POST-RECOVERY GROWTH (2015-18) NOTABLY:**
  - Philadelphia and Delaware counties in the southeast – anchors of the Philadelphia MSA
  - Butler and Washington counties in western PA – in the Pittsburgh MSA
  - Centre County and Montour County
- **SIX OF EIGHT COUNTIES WITH JOB GAIN 2008-15 & JOB LOSS 2015-18 WERE:**
  - Heavy into Marcellus Shale gas development which slowed job-wise in the post recovery.
- **16 COUNTIES HAD JOB LOSS IN BOTH IN 2008 -15 AND 2015-18:**
  - Eight of the counties were in western PA outside the Pittsburgh MSA
  - Four were in the northern PA.
- **BIG QUESTION:** Why the continuing decline of counties in western PA outside the Pittsburgh MSA?



## PA Total Employment – Philadelphia and Pittsburgh MSA’s

### TOTAL EMPLOYMENT – PHILADELPHIA AND PITTSBURGH MSAs: Number Change 2008-15

- **PA’S TWO LARGEST MSAs:**
  - Both had minimal job loss during Recession-recovery 2008-15
  - Philadelphia MSA added over 80,000 jobs during 2015-18 vs 16,000 in the Pittsburgh MSA
- **LOCATION OF GROWTH IN THE MSAs 2015-18:**
  - Philadelphia MSA:
    - Philadelphia County added 35,700 jobs – 45% of MSA total
    - Other four counties in MSA added 44,200 jobs – 55% of MSA total
  - Pittsburgh MSA: Allegheny County added 14,800 jobs – 93% of MSA total
    - Other six counties in MSA added 1,200 jobs – 7.5% of MSA total
- **BIG QUESTIONS:**
  - Why the big difference in job growth between Recession-recovery 2008-15 and post-recovery 2015-18 in both MSAs?
  - Why strong job growth in the “other four counties” in the Philadelphia MSA and minimal growth in the “other six counties” in the Pittsburgh MSA?

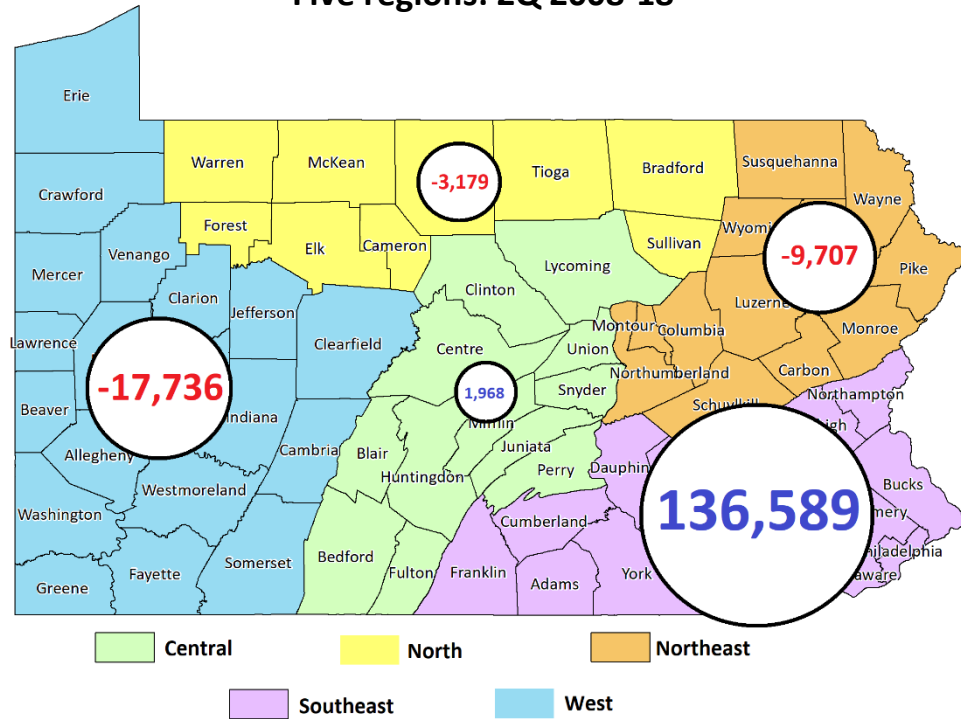


## Total Employment-Five Regions

### TOTAL EMPLOYMENT – FIVE REGIONS: NUMBER CHANGE 2008-18

- **GROWTH AND DECLINE – REGIONS -THE BIG PICTURE 2008-18:** Job growth in Southeast and Central regions and decline in the West, North and Northeast.
- **GROWTH IN DETAIL 2008-18:** Over 136,000 job growth in the 15 counties in the Southeast vs only 2,000 job growth in the 12 counties in the Central region. The Southeast’s employment growth rate (4.2%) was above the state average (3.1%) over the 10 years - but well below the U.S. (7.6%)
- **DECLINE IN DETAIL 2008-18:** Over 17,000 job decline in 19 counties in the West region, 9,700 decline in the 12 counties in Northeast PA and 3,200 decline in the nine counties in the North region.
- **BIG QUESTION:** Why the concentration of employment growth in the Southeast during 2008-18?

**Map 5: Number change in total employment –  
Five regions: 2Q 2008-18**

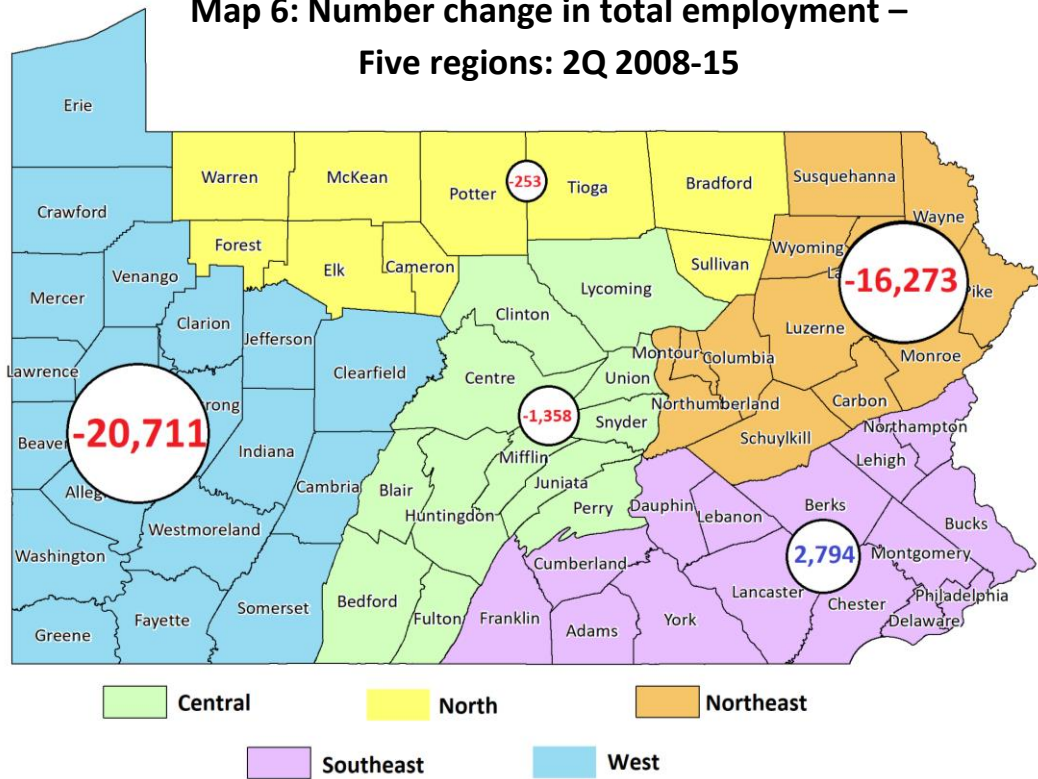


| Region    | % change 2Q 2008-18 |
|-----------|---------------------|
| Southeast | 4.3%                |
| Central   | 0.7%                |
| West      | -1.1%               |
| Northeast | -2.0%               |
| North     | -3.3%               |

**TOTAL EMPLOYMENT– FIVE REGIONS – GREAT RECESSION & RECOVERY: NUMBER CHANGE 2008-15**

- **GROWTH AND DECLINE – THE BIG PICTURE 2008-15:** Job loss in four regions - minimal job gain (0.1%) in the Southeast.
- **BOTTOMLINE 2008-15:** Statewide - total employment surpassed its pre-recession peak (2008) in 2015 - most of the state did not.
- **DECLINE 2008-15 – REGIONALLY CONCENTRATED?** West: Job loss over 20,000 (-1.3%). Northeast: job loss over 16,000 (-3.3%). Minimal loss – **less than 1%** - in Central and North regions
- **BIG QUESTION – 2008-15:** Why did the West and Northeast regions have the highest rates of employment decline?

**Map 6: Number change in total employment –  
Five regions: 2Q 2008-15**

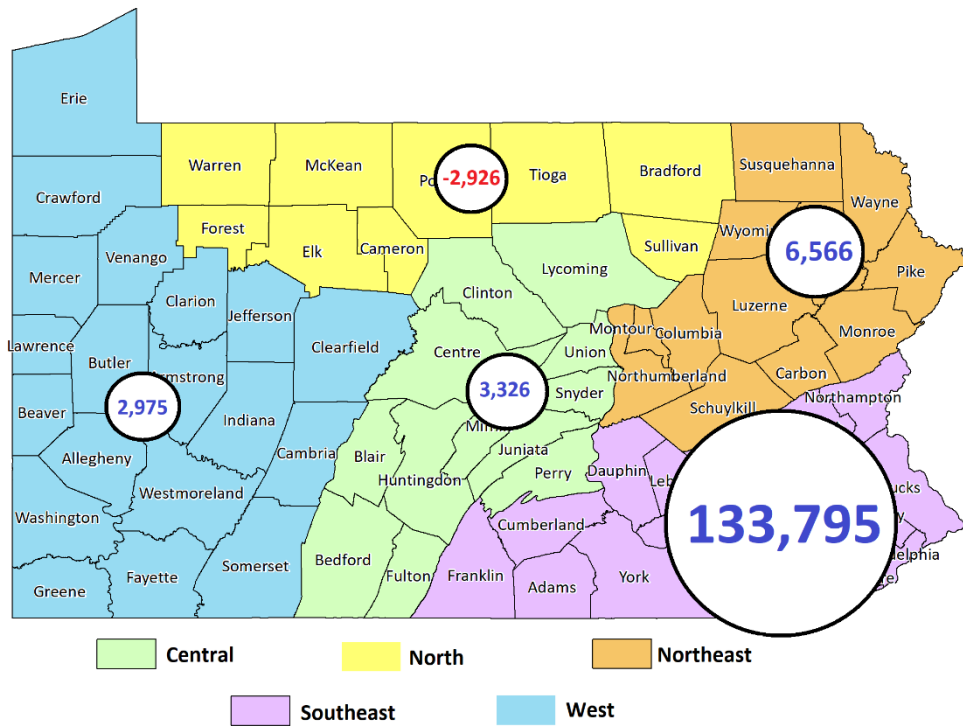


| Region    | % change 2Q 2008-15 |
|-----------|---------------------|
| Southeast | 0.1%                |
| North     | -0.3%               |
| Central   | -0.5%               |
| West      | -1.3%               |
| Northeast | -3.3%               |

**TOTAL EMPLOYMENT – FIVE REGIONS – POST RECOVERY GROWTH: NUMBER CHANGE 2015-18**

- **GROWTH AND DECLINE – THE BIG PICTURE 2015-18:** Employment growth concentrated in the Southeast versus minimal growth in the West, Central, and Northeast.
- **GROWTH AND DECLINE – RATES OF CHANGE 2015-18:** The Southeast not only outpaced all other regions in numbers of new jobs but also in rate of job growth. Notably total employment in the Southeast increased
- **BIG QUESTION:** Why the big differential in employment growth between the Southeast and the other regions – especially the West?

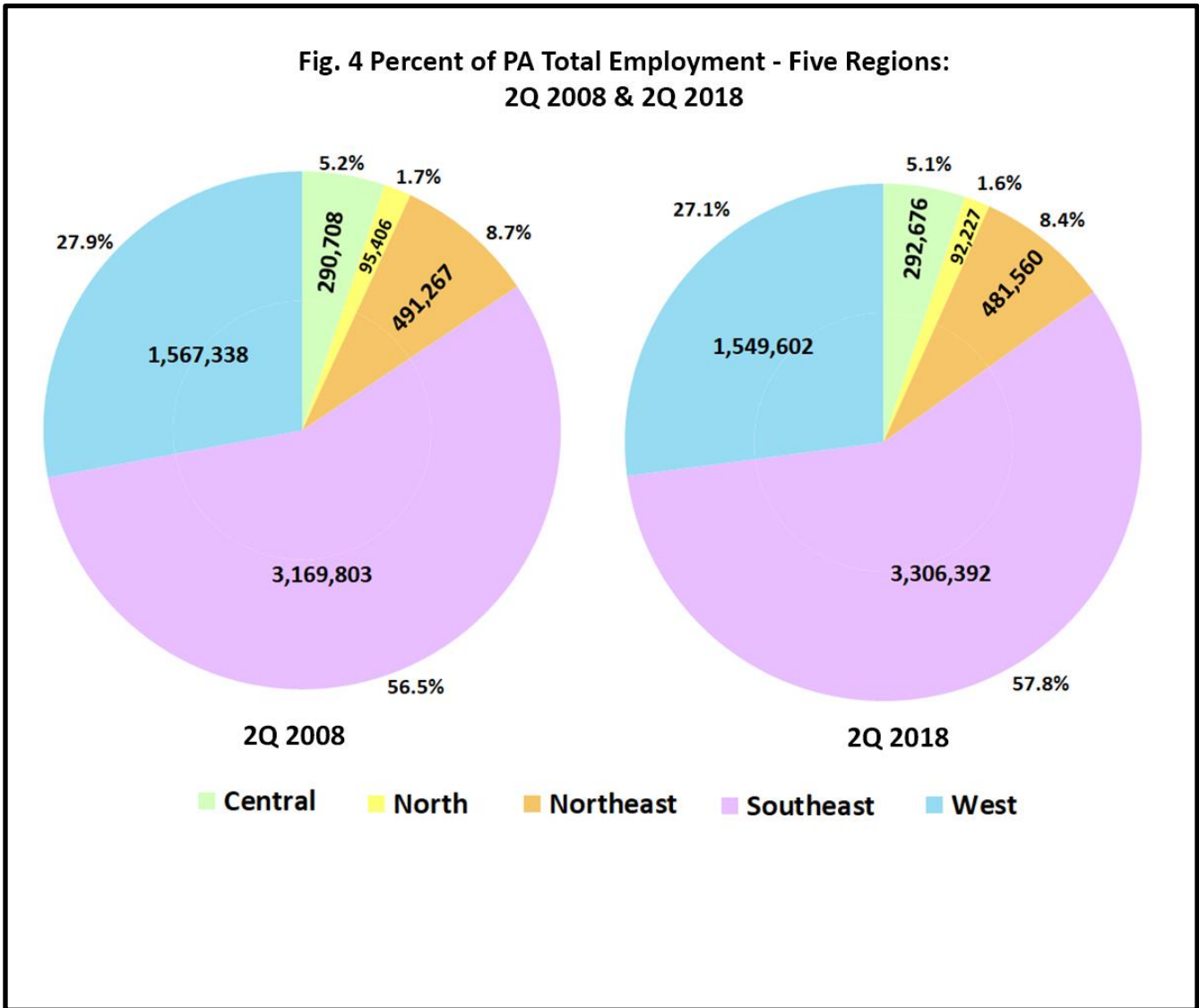
**Map 7: Number change in total employment – Five regions: 2Q 2015-18**



| Region    | % change 2Q 2015-18 |
|-----------|---------------------|
| Southeast | 4.2%                |
| Northeast | 1.4%                |
| Central   | 1.1%                |
| West      | 0.2%                |
| North     | -3.1%               |

**TOTAL EMPLOYMENT – FIVE REGIONS – NUMBER AND PERCENT OF TOTAL: 2008 & 2018**

- **THE BIG PICTURE – 2008 & 2018:** The Southeast dominates – increasing its percent of statewide employment from 56.5 percent in 2008 and to 57.8 percent in 2018. The West’s share of statewide employments declines from 27.9 percent in 2008 to 27.1 percent in 2018.
- **CENTRAL-NORTH & NORTHEAST REGIONS – 2008 & 2018:** The three Regions combined share of statewide employment shrinks slightly from 15.6 percent in 2008 to 15.1 percent in 2018. All three regions lose share.
- **BIG QUESTION:** Has the shift of employment to the Southeast been long-run? What forces propelled the 2008-18 shifts?



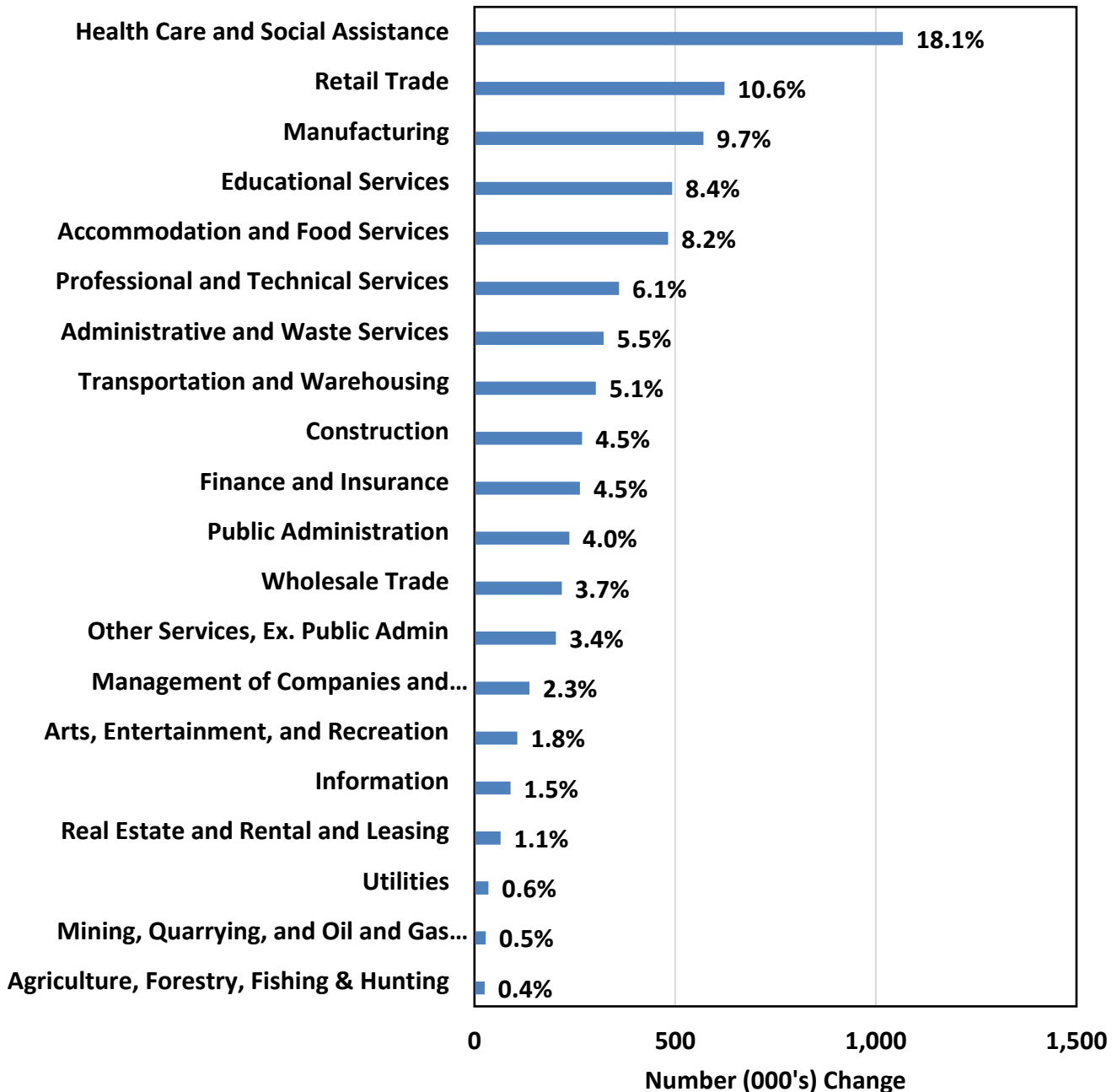


20 Major Industries: 2008-18

20 MAJOR INDUSTRIES – EMPLOYMENT – NUMBER and PERCENT OF TOTAL EMPLOYMENT: 2Q 2018

- **TOP INDUSTRY -2018:** Health Care & Social Services – employment 1,067,094 – nearly one-fifth of PA total.
- **TOP FIVE INDUSTRIES – 2018:** Employment 3,235,000 – over 50 percent of PA total – includes retail trade (No. 2) and manufacturing (No. 3).
- **BOTTOM FIVE INDUSTRIES – 2018:** Employment 324,889 – 5.5 percent of PA total – includes mining, quarrying, and oil and gas extraction (No. 20)

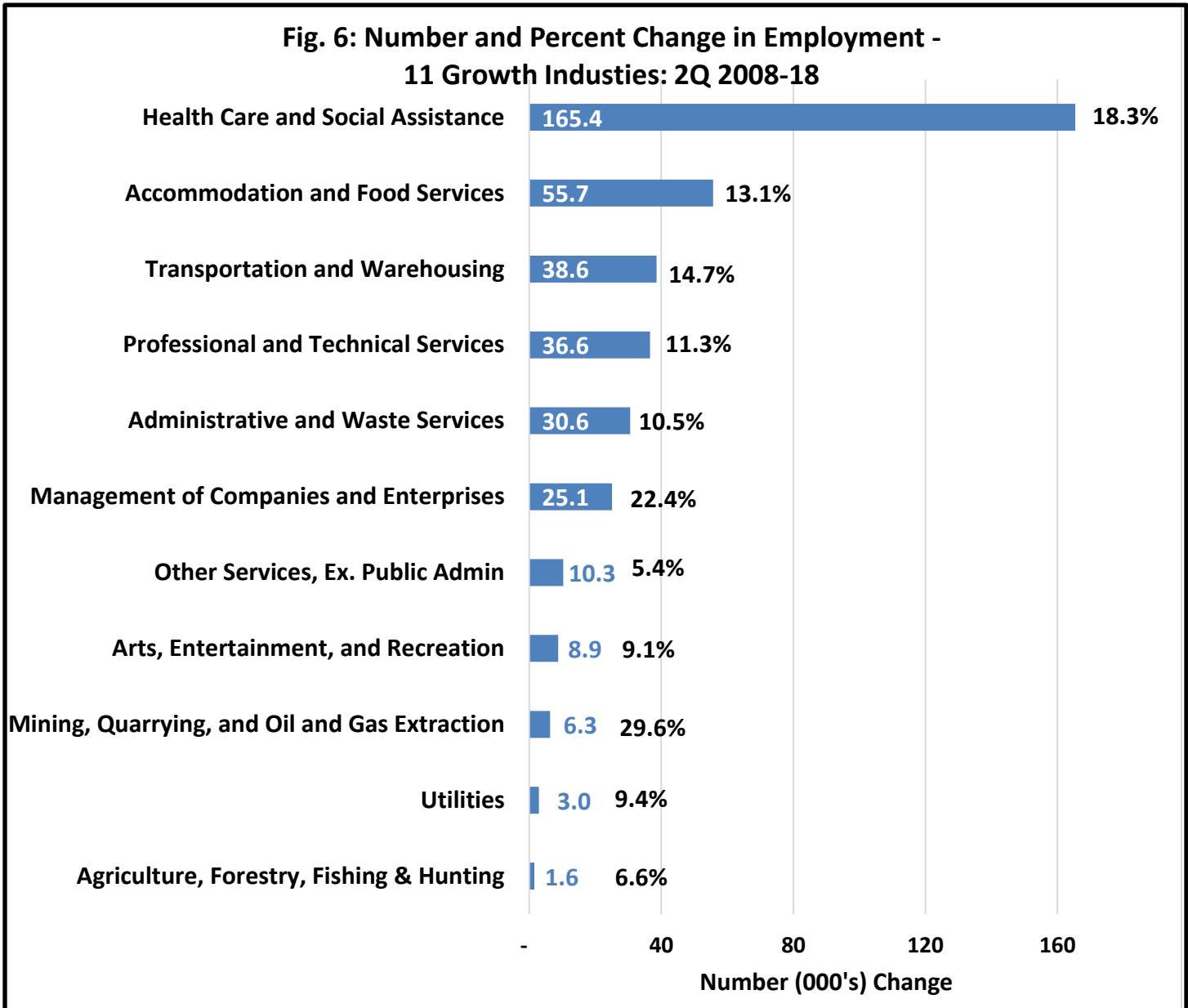
**Fig. 5: Number of Employed and Percent of Total Employment - 20 Industries: 2Q 2018**



## 20 Major Industries: 2008-18

### 11 GROWTH INDUSTRIES – EMPLOYMENT: NUMBER and PERCENT CHANGE, 2008-18

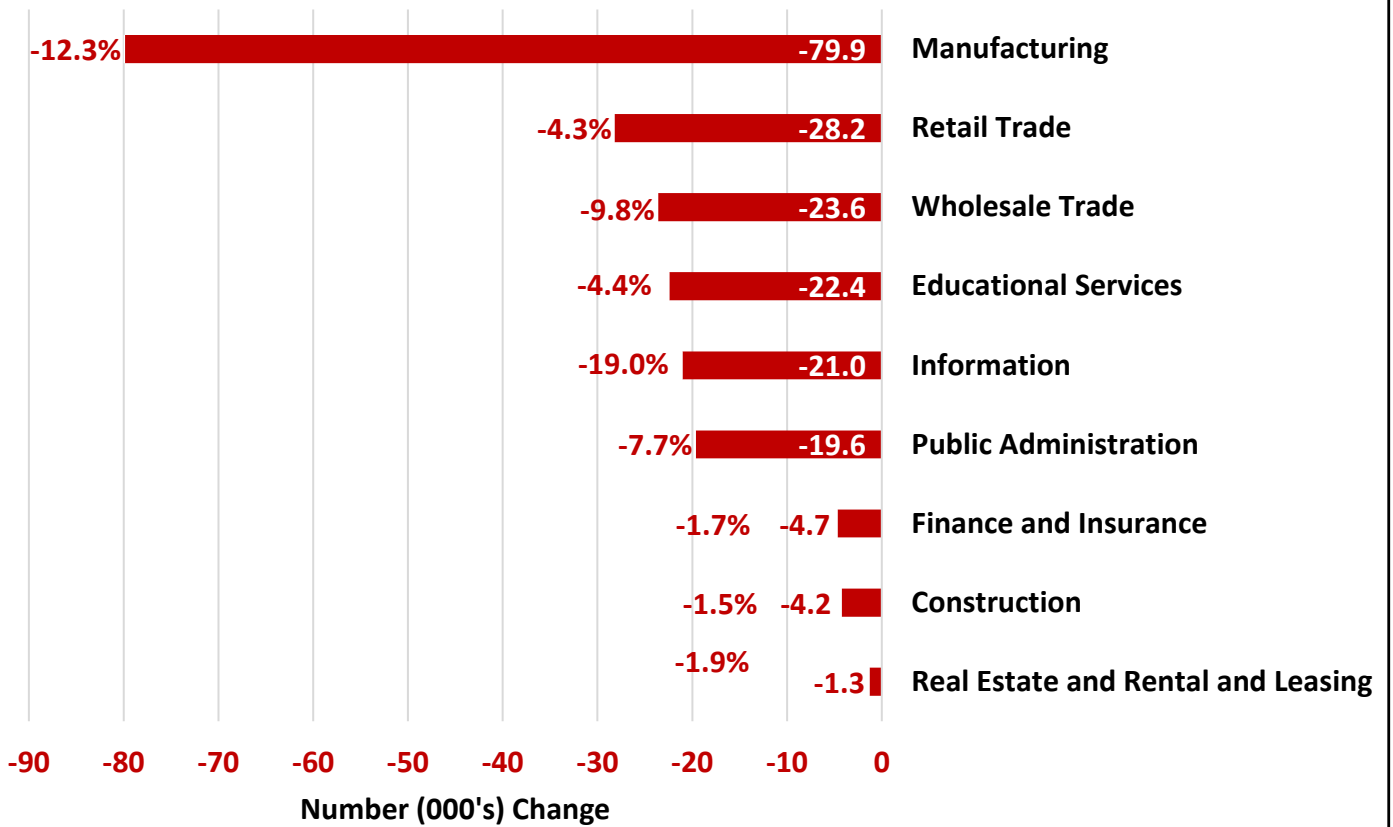
- **TOP GROWTH INDUSTRY – HEALTH and HUMAN SERVICES:** Dominated job growth in PA adding over 165,000 jobs during 2008-18 – an increase of 18.3 percent.
- **OTHER TOP-FIVE GROWTH INDUSTRIES:** In combo added 161,500 jobs – less than Health and Social Services.
  - Accommodation & Food Services (No. 2) added over 55,000 jobs. Transportation & Warehousing (No. 3) and Professional and Technical Services each had employment gains slightly above 36,000.
- **BIG QUESTION:** How much of job growth in Health and Social Services is tied to PA’s aging population?



**NINE DECLINING INDUSTRIES – EMPLOYMENT: NUMBER and PERCENT CHANGE 2Q 2008-18**

- **TOP DECLINING INDUSTRY – MANUFACTURING:** Lost nearly 80,000 jobs (-12.3%) during 2Q 2008-18.
- **OTHER TOP-FIVE DECLINING INDUSTRIES:** Had job losses ranging from 19,000 to 28,000. Industries included Retail Trade (No. 2) – decline -4.3 percent and Wholesale Trade – decline -9.8 percent.
- **BIG QUESTION – MANUFACTURING – WHERE TO?** Took a big hit in the Great Recession – but essentially no decline during post-Recession growth 2Q 2015-18.

**Fig. 7: Number and Percent Change in Employment - 9 Decline Industries: 2Q 2008-18**



**20 MAJOR INDUSTRIES – EMPLOYMENT AND WAGES: Table 1: NUMBER and PERCENT CHANGE 2Q 2008-18**

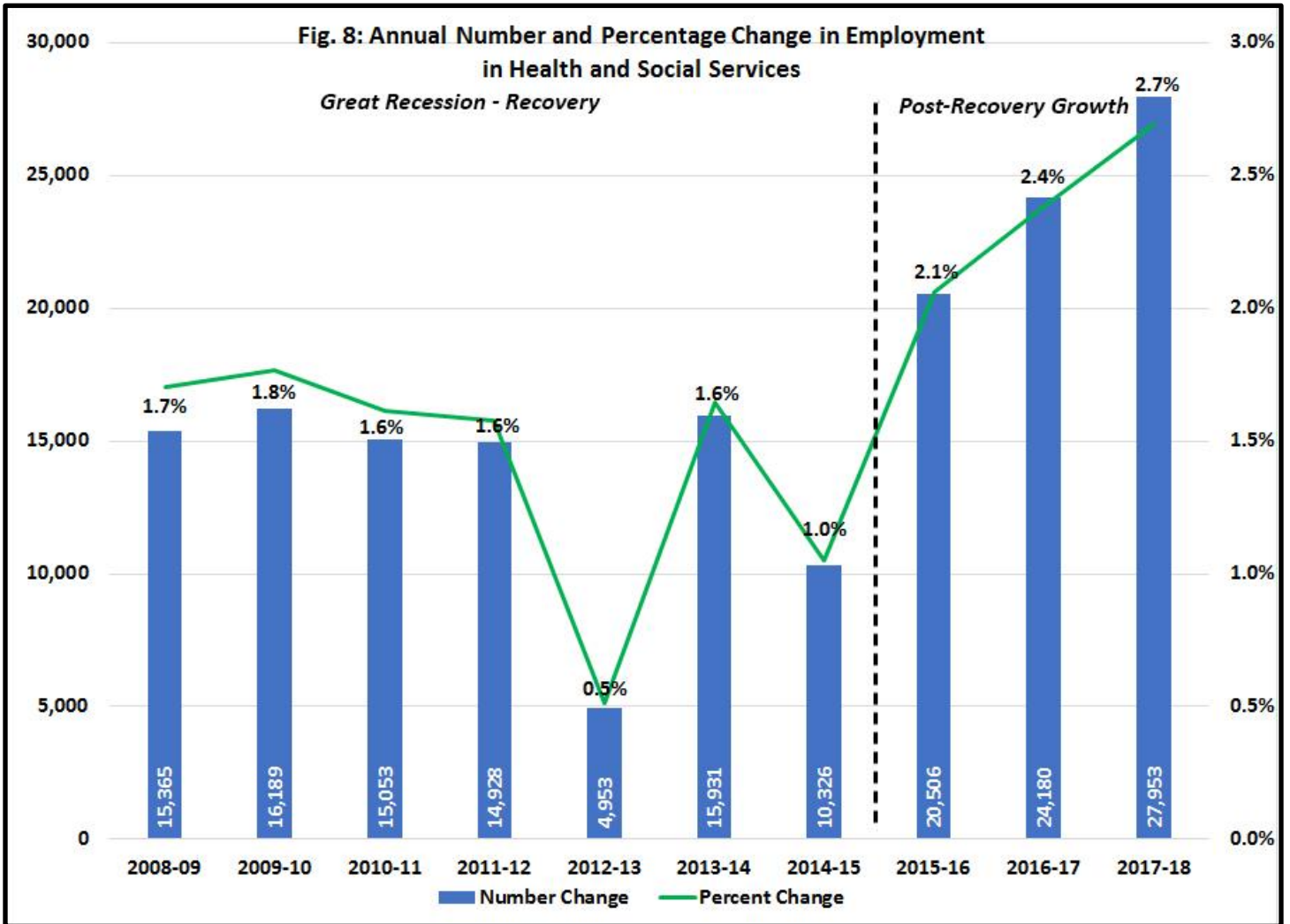
- **HIGH WAGE INDUSTRIES:** Four out of seven industries saw employment growth with a net gain of 21,821 jobs
- **MIDDLE WAGE INDUSTRIES:** Two out of seven industries saw employment growth with a net gain of 76,613 jobs
- **LOW WAGE INDUSTRIES:** Five out of six industries saw employment growth with a net gain of 78,917 jobs

| Industry                                      | NAICS | Number Change in Employment | Percent Change in Employment | Average Weekly Wage 2Q 2018 |
|---|-------|-----------------------------|------------------------------|-----------------------------|
| <b>High Wage</b>                              |       |                             |                              |                             |
| Professional and Technical Services           | 54    | 36,632                      | 11.3%                        | \$1,700                     |
| Management of Companies and Enterprises       | 55    | 25,128                      | 22.4%                        | \$2,286                     |
| Mining, Quarrying, and Oil and Gas Extraction | 21    | 6,346                       | 29.6%                        | \$1,613                     |
| Utilities                                     | 22    | 3,011                       | 9.4%                         | \$1,742                     |
| Finance and Insurance                         | 52    | -4,668                      | -1.7%                        | \$1,711                     |
| Information                                   | 51    | -21,032                     | -19.0%                       | \$1,511                     |
| Wholesale Trade                               | 42    | -23,596                     | -9.8%                        | \$1,462                     |
| <b>Middle Wage</b>                            |       |                             |                              |                             |
| Health Care and Social Assistance             | 62    | 165,384                     | 18.3%                        | \$958                       |
| Transportation and Warehousing                | 48-49 | 38,639                      | 14.7%                        | \$946                       |
| Real Estate and Rental and Leasing            | 53    | -1,282                      | -1.9%                        | \$1,047                     |
| Construction                                  | 23    | -4,210                      | -1.5%                        | \$1,235                     |
| Public Administration                         | 92    | -19,619                     | -7.7%                        | \$1,163                     |
| Educational Services                          | 61    | -22,430                     | -4.4%                        | \$1,115                     |
| Manufacturing                                 | 31-33 | -79,869                     | -12.3%                       | \$1,165                     |
| <b>Low Wage</b>                               |       |                             |                              |                             |
| Accommodation and Food Services               | 72    | 55,720                      | 13.1%                        | \$356                       |
| Administrative and Waste Services             | 56    | 30,600                      | 10.5%                        | \$695                       |
| Other Services, Ex. Public Admin              | 81    | 10,325                      | 5.4%                         | \$645                       |
| Arts, Entertainment, and Recreation           | 71    | 8,873                       | 9.1%                         | \$545                       |
| Agriculture, Forestry, Fishing & Hunting      | 11    | 1,575                       | 6.6%                         | \$677                       |
| Retail Trade                                  | 44-45 | -28,176                     | -4.3%                        | \$552                       |

## Top Five Growth Industries: A Closer Look

### 1 Health Care and Social Assistance

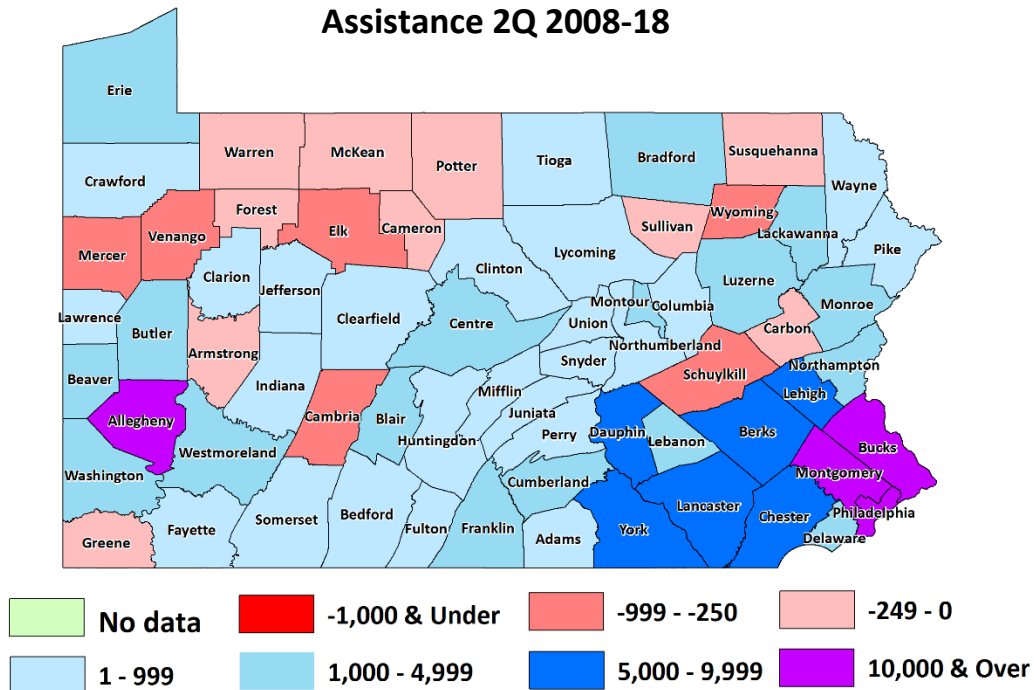
- EMPLOYMENT – ANNUAL CHANGE 2Q 2008-18 (Fig. 8):** Job growth in all years 2Q 2008-18. Annual growth over 1.0 percent during Great Recession 2008-12, and over 2.0 percent during post-recovery growth 2015-18.
- EMPLOYMENT - 18 FOUR-DIGIT INDUSTRIES- 2Q 2008-18 (Table 2):** Employment increased in thirteen of 18 industries 2008-18. Net employment growth in the 18 industries grouped by average weekly wage (2Q 2018) was – HIGH WAGE: **12,021**, MIDDLE WAGE: **31,868**, and LOW WAGE: **121,495**.
- EMPLOYMENT – 67 COUNTIES – (Map 8):** Health & Social Services employment increased in 51 counties during 2Q 2008-18. Counties with largest job gains were in the southeast (nine of 15 counties gained over 5,000). Nine of the 16 counties with employment decline were in rural northern PA.



**Table 2: Employment Change 2008-18 and Weekly Wage:  
Four Digit Industries in Health Care and Social Assistance**

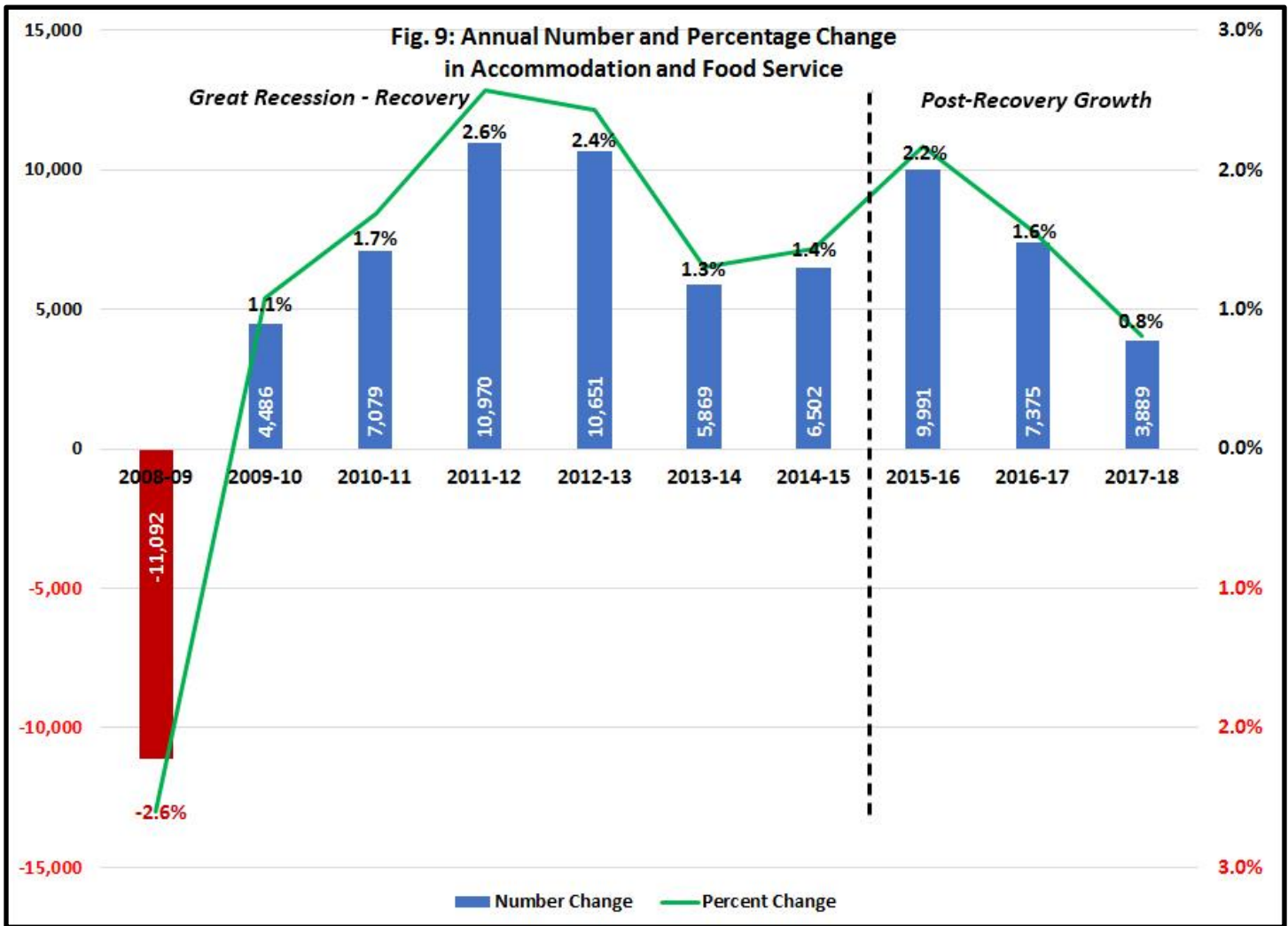
| Industry                                | NAICS | Number Change in Employment | Percent Change in Employment | Average Weekly Wage 2Q 2018 |
|---|-------|-----------------------------|------------------------------|-----------------------------|
| <i>High Wage</i>                        |       |                             |                              |                             |
| Offices of Physicians                   | 6211  | 12,021                      | 11.4%                        | \$1,847                     |
| <i>Middle Wage</i>                      |       |                             |                              |                             |
| Outpatient Care Centers                 | 6214  | 14,835                      | 46.9%                        | \$1,134                     |
| Offices of Other Health Practitioners   | 6213  | 9,682                       | 28.1%                        | \$815                       |
| Other Ambulatory Health Care Services   | 6219  | 3,104                       | 16.8%                        | \$978                       |
| Other Hospitals                         | 6223  | 2,850                       | 14.2%                        | \$1,133                     |
| Offices of Dentists                     | 6212  | 1,756                       | 5.4%                         | \$934                       |
| Psychiatric & Substance Abuse Hospitals | 6222  | 169                         | 1.3%                         | \$1,047                     |
| General Medical and Surgical Hospitals  | 6221  | -228                        | -0.1%                        | \$1,190                     |
| Medical and Diagnostic Laboratories     | 6215  | -300                        | -2.7%                        | \$1,208                     |
| <i>Low Wage</i>                         |       |                             |                              |                             |
| Individual and Family Services          | 6241  | 68,285                      | 79.1%                        | \$542                       |
| Home Health Care Services               | 6216  | 32,087                      | 95.5%                        | \$736                       |
| Community Care Facility for the Elderly | 6233  | 11,266                      | 19.5%                        | \$577                       |
| Residential Mental Health Facilities    | 6232  | 8,707                       | 17.6%                        | \$682                       |
| Child Day Care Services                 | 6244  | 5,322                       | 13.1%                        | \$433                       |
| Emergency and Other Relief Services     | 6242  | 857                         | 13.2%                        | \$721                       |
| Vocational Rehabilitation Services      | 6243  | -591                        | -4.6%                        | \$606                       |
| Nursing Care Facilities                 | 6231  | -906                        | -1.1%                        | \$733                       |
| Other Residential Care Facilities       | 6239  | -3,532                      | -31.9%                       | \$662                       |

**Map 8: Number Change in Employment in Health & Social Assistance 2Q 2008-18**



## 2 Accommodations and Food Services

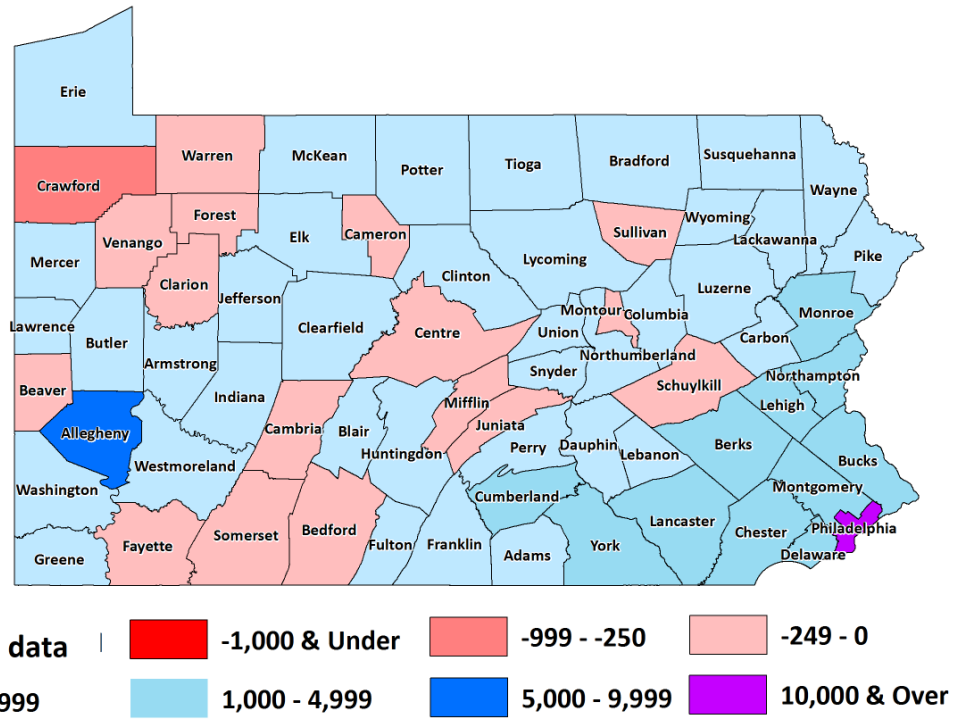
- **EMPLOYMENT – ANNUAL CHANGE 2Q 2008-18 (Fig. 9):** Took a big hit in the first year of the Great Recession-and roller-coaster growth 2009-18. Recently in the post-recovery 2015-18 job growth slowed 2.2 to 0.8 percent.
- **EMPLOYMENT – FOUR 4 DIGIT INDUSTRIES – 2Q 2008-18 (Table 3):** Employment increased in three of four industries 2008-18. All four industries grouped by average weekly wage (2Q 2018) were **LOW WAGE**.
- **EMPLOYMENT – 67 COUNTIES – (Map 9):** Accommodation and Food Services employment increased in 50 counties during 2Q 2008-18. Counties with greatest gains were in the Southeast – centered on Philadelphia County which gained 10,000 new jobs. Nine of 17 counties with job loss were in western PA.



**Table 3: Employment Change 2008-18 and Weekly Wage:  
Four Digit Industries in Accommodations and Food**

| Industry                              | NAICS | Number Change in Employment | Percent Change in Employment | Average Weekly Wage 2Q 2018 |
|---------------------------------------|-------|-----------------------------|------------------------------|-----------------------------|
| <i>Low Wage Industries</i>            |       |                             |                              |                             |
| Traveler Accommodation                | 7211  | 8,062                       | 16.3%                        | \$519                       |
| Special Food Services                 | 7223  | 6,974                       | 20.8%                        | \$467                       |
| RV Parks and Recreational Camps       | 7212  | 806                         | 26.4%                        | \$399                       |
| Drinking Places (Alcoholic Beverages) | 7224  | -1,181                      | -6.5%                        | \$306                       |

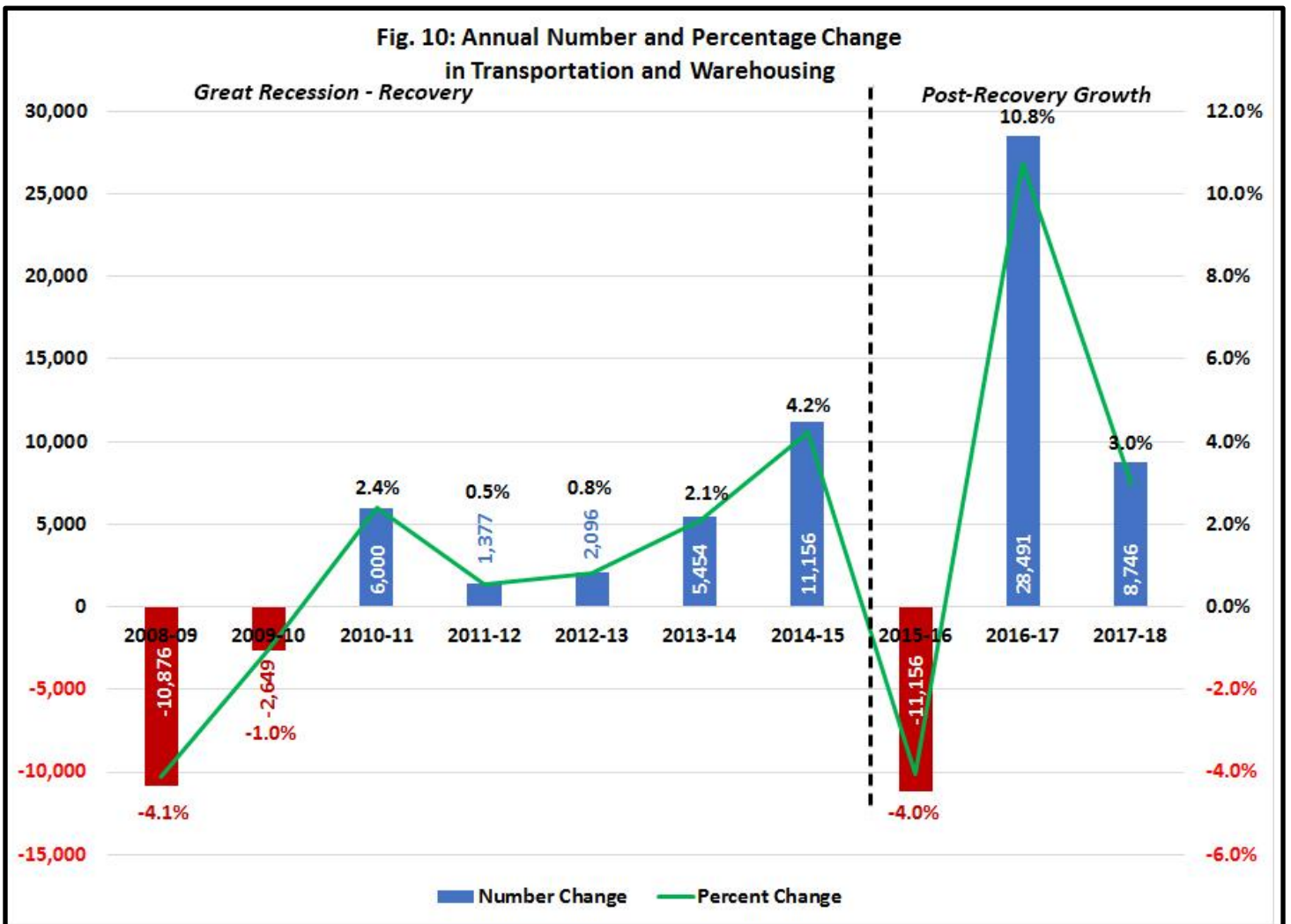
**Map 9: Number Change in Employment in  
Accommodations and Food Services 2Q 2008-18**





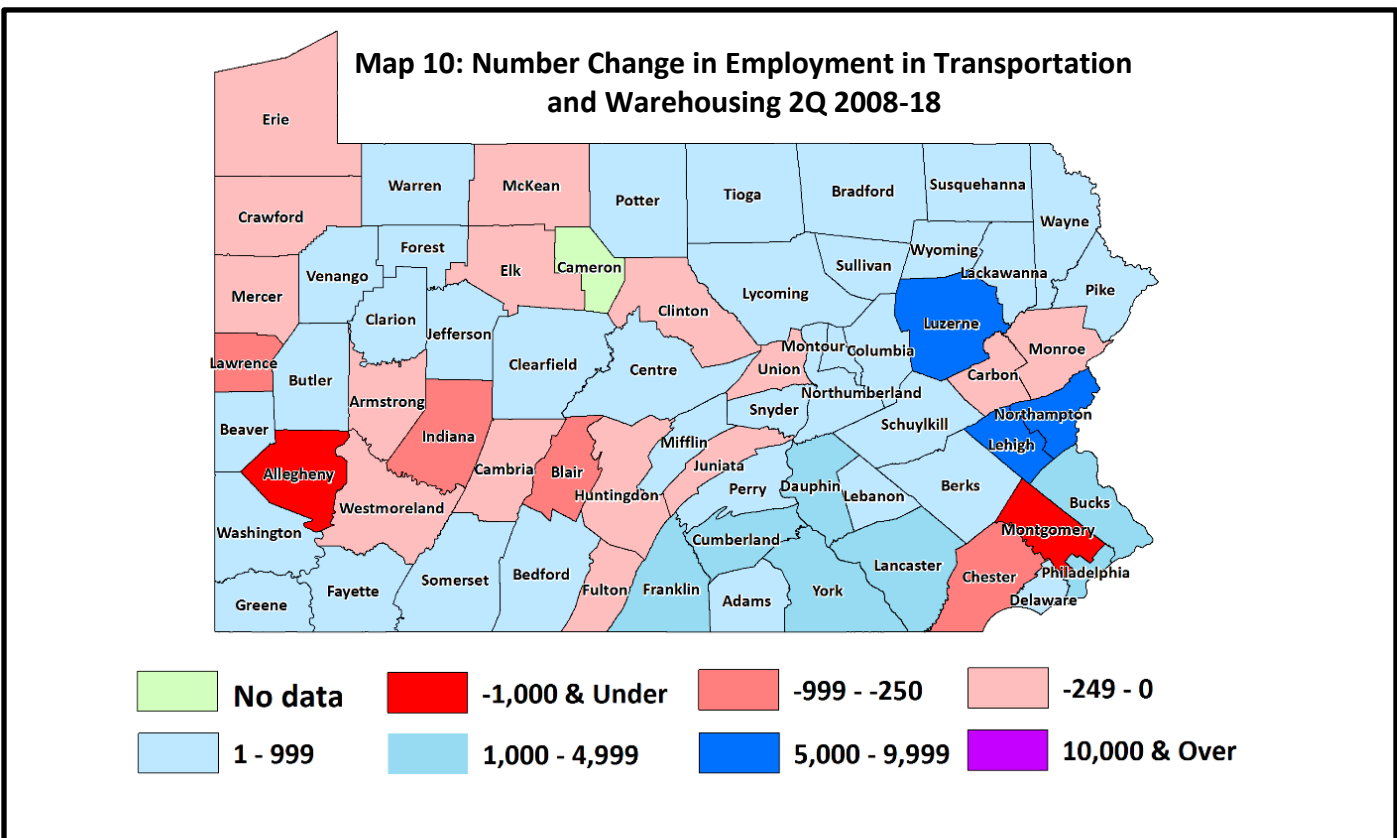
### 3 Transportation and Warehousing

- **EMPLOYMENT – ANNUAL CHANGE 2Q 2008-18 (Fig. 10):** Hit hard in the Great Recession (2008-10) but solid growth in the recovery years 2010-15. Roller coaster 2015-18 – i.e. **-4.0 percent decline** 2015-16 and **10.8 percent increase** 2016-17.
- **EMPLOYMENT – 21 FOUR-DIGIT INDUSTRIES (Table 4):** Employment increased in 18 of the 21 industries. Net employment gain in the 21 industries grouped by average weekly wage (2Q 2018) – HIGH WAGE: **974** MIDDLE WAGE: **42,959** and LOW WAGE **2,989**.
- **EMPLOYMENT – 67 COUNTIES – 2Q 2008-18:** Wholesale Trade and Warehousing employment increased in 46 counties. Counties with employment gains of over 1,000 were all located in northeastern or southeastern PA - notably Lehigh, Luzerne, and Northampton with gains over 5,000. Nine of the 21 counties with job loss were in western, and six in central PA.



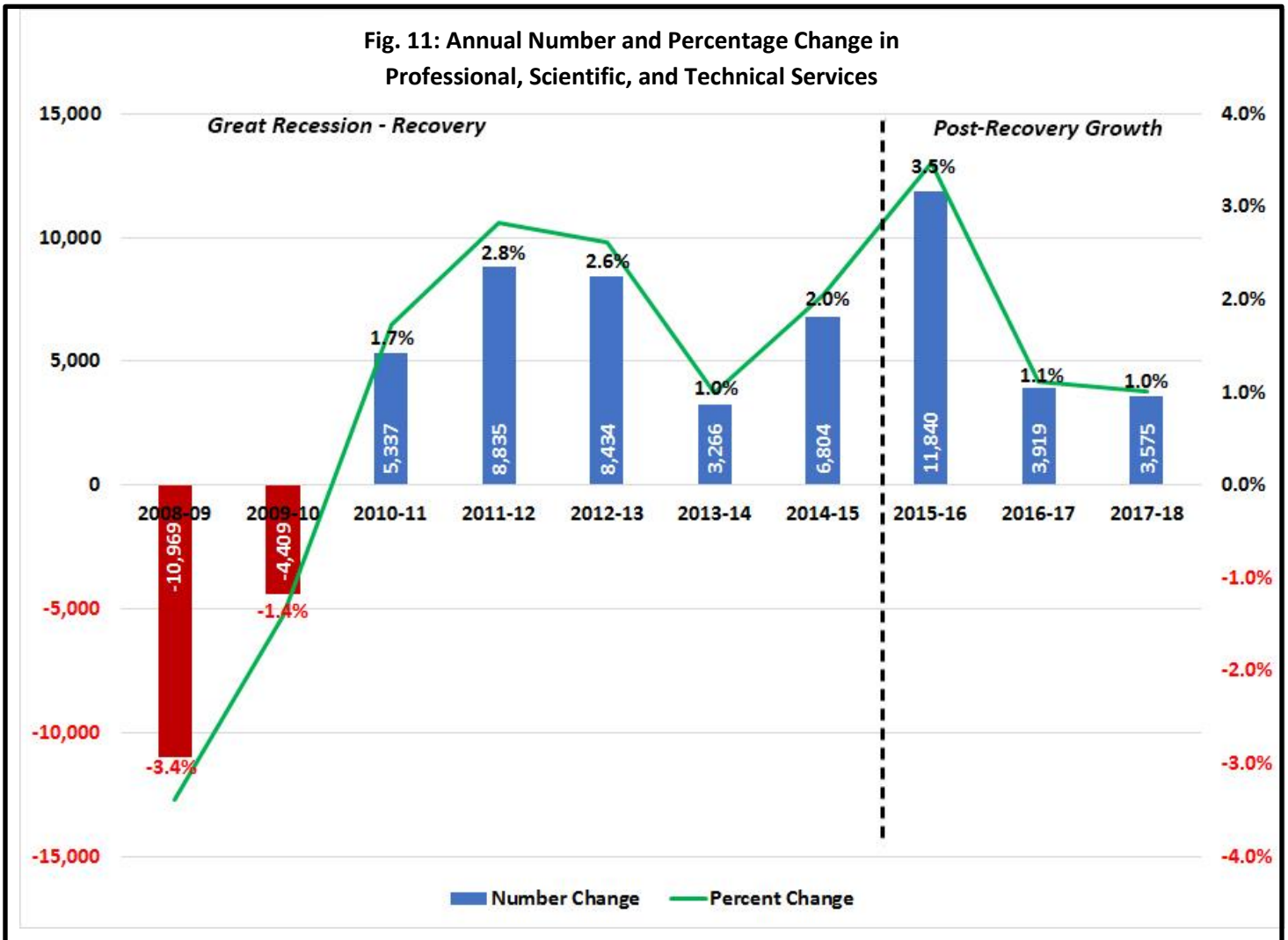
**Table 4: Employment Change 2008-18 and Weekly Wage: Four Digit Industries in Transportation and Warehousing**

| Industry                                | NAICS | Number Change in Employment | Percent Change in Employment | Average Weekly Wage 2Q 2018 |
|---|-------|-----------------------------|------------------------------|-----------------------------|
| <i>High Wage Industries</i>             |       |                             |                              |                             |
| Pipeline Transportation of Natural Gas  | 4862  | 500                         | 4.2%                         | \$1,647                     |
| Scheduled Air Transportation            | 4811  | 471                         | 34.8%                        | \$1,474                     |
| Nonscheduled Air Transportation         | 4812  | 3                           | 0.3%                         | \$1,367                     |
| <i>Middle Wage Industries</i>           |       |                             |                              |                             |
| Warehousing and Storage                 | 4931  | 28,140                      | 48.6%                        | \$840                       |
| General Freight Trucking                | 4841  | 3,569                       | 7.9%                         | \$1,083                     |
| Couriers                                | 4852  | 3,228                       | 12.9%                        | \$799                       |
| Specialized Freight Trucking            | 4842  | 2,780                       | 15.7%                        | \$1,006                     |
| Support Activities for Air Transport    | 4881  | 1,677                       | 35.9%                        | \$920                       |
| Freight Transportation Arrangement      | 4885  | 1,543                       | 36.2%                        | \$1,216                     |
| Support Activities, Road Transportation | 4884  | 928                         | 19.2%                        | \$955                       |
| Support Activities for Rail Transport   | 4882  | 363                         | 32.0%                        | \$1,052                     |
| Urban Transit Systems                   | 4851  | 303                         | 2.5%                         | \$1,278                     |
| Support Activities for Water Transport  | 4883  | 239                         | 13.7%                        | \$1,205                     |
| Interurban and Rural Bus Transportation | 4921  | 189                         | 24.2%                        | \$799                       |
| <i>Low Wage Industries</i>              |       |                             |                              |                             |
| Other Ground Passenger Transportation   | 4859  | 1,685                       | 52.7%                        | \$534                       |
| School and Employee Bus Transportation  | 4854  | 1,370                       | 5.8%                         | \$446                       |
| Local Messengers and Local Delivery     | 4922  | 968                         | 77.5%                        | \$673                       |
| Scenic/Sightseeing Transportation, Land | 4871  | 8                           | 1.3%                         | \$394                       |
| Other Support Activities for Transport  | 4889  | -123                        | -9.2%                        | \$659                       |
| Taxi and Limousine Service              | 4853  | -236                        | -10.5%                       | \$647                       |
| Charter Bus Industry                    | 4855  | -683                        | -24.8%                       | \$655                       |



## 4 Professional, Scientific, and Technical Services

- **EMPLOYMENT – ANNUAL CHANGE 2Q 2008-18 (Fig. 11):** Employment hard hit in the Great Recession 2Q 2008-10. Strong job growth during most years 2Q 2010-18 – tapering off 2015-18.
- **EMPLOYMENT – NINE FOUR-DIGIT INDUSTRIES – 2Q 2008-18 (Table 5):** Employment increased in seven of the nine four-digit industries during 2Q 2008-18. Net employment growth in the nine industries grouped by average weekly wage was – HIGH WAGE 31,395 AND MIDDLE WAGE 5,236.
- **EMPLOYMENT – 67 COUNTIES – 2Q 2008-18 (Map 12):** Only 31 counties had job gains in Professional & Technical Services 2Q 2008-18. Philadelphia and Allegheny were the only counties with gains of 5,000 and over. The 36 counties with job loss were dispersed across the Commonwealth.





## 5 Administrative and Support and Waste Management and Remediation Services

- **EMPLOYMENT – ANNUAL CHANGE 2Q 2008-2018 (Fig. 12):** Hit hard early in the Great Recession followed by nine consecutive years of job growth 2Q 2010 -18. Less than one percent growth in post-recovery 2015-18.
- **EMPLOYMENT – 11 FOUR-DIGIT INDUSTRIES – 2Q 2008-18 (Table 5):** Employment increased in seven of the 11 Four-digit industries 2Q 2008-18. Net employment change in the 11 industries by weekly wage level was HIGH WAGE: -5,258 MIDDLE WAGE: -1,938 LOW WAGE: 37,795
- **EMPLOYMENT- 67 COUNTIES - 2Q 2008-18 (Map 13):** Administrative and Waste Services increased in 36 counties during 2Q 2008-18. The 36 counties were widely dispersed across the commonwealth

