

# **PENNSYLVANIA: GREAT RECESSION TO RECOVERY?**



## **INDUSTRIES ON THE MOVE**

### **HIGH – MIDDLE – LOW WAGE JOBS: GROWTH OR DECLINE?**

#### **A GRAPHIC UPDATE: 2008-14**



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## THE PENNSYLVANIA ECONOMY: GREAT RECESSION TO RECOVERY STATIONARY- OR - ON THE MOVE?

The Great Recession of 2008 is history and at first glance the Pennsylvania economy appears to have emerged unscathed. Total employment declined a mere -0.3% during 2008-14 – a loss of 190,000-plus jobs in the first year of the Recession was offset by five years of growth restoring employment to near pre-recession high in 2014.

The minimal decline in total employment 2008-14 suggests a static, no growth job scene in Pennsylvania during the six years of Recession to recovery. However - a drill down to industries reveals jobs on the move with continual gains and losses in hundreds of industries during 2008-14. The wide range of job gains and losses among industries 2008-14 raises the question: What was the real impact of the Recession and recovery on jobs and industries in Pennsylvania?

This report looks in-depth at job change in 19 Major industries and 256 Detailed industries in Pennsylvania during 2008-14. Special focus is on the impact of the Recession and recovery on jobs in high, middle and low wage industries - especially middle-wage industries.

### INDUSTRIES: CLASSIFICATION - DATA SOURCE

#### INDUSTRIES: MAJOR AND DETAILED

Major: 19 Industries (2-Digit NAICS)

Detailed: 256 Industries (4-digit NAICS)

#### INDUSTRY DATA SOURCE:

“Quarterly Census of Employment and Wages” – PA. Dept. of Labor & Industry

NOTE: This report seeks to tell the story of industry job change in Pennsylvania during the Great Recession and recovery by minimizing text and maximizing graphics - a graph is worth a thousand words.

The authors welcome any comments on content or format.

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## EXECUTIVE SUMMARY

“Everybody talks about the weather but nobody does anything about the weather.” – Mark Twain  
Flash Forward 2016: Add..... Middle-Income Job Decline?

The Great Recession of 2008-09, the deepest downturn since the Depression of the 1930s, is history - but its impact on jobs and industries in Pennsylvania was huge and likely lasting. Total private sector employment increased only 0.5% from 2008-14 - suggesting a no-growth economy with little job change during six years of Recession and recovery. In stark contrast - a drill down to industries reveals job on the move during 2008-14 - as 300,000-plus Pennsylvania businesses in hundreds of industries adjusted to Recession and recovery.

**BOTTOM LINE:** Six years of Recession and recovery had a real and lasting impact on the mix of jobs and industries in Pennsylvania - forcing painful adjustments for many in the workforce.

### IMPACT OF RECESSION-RECOVERY: MAJOR INDUSTRIES

The Recession-recovery impacted all of the 19 Major industries that drive the private sector in Pennsylvania. Key impacts during 2008-14 were:

- 10 industries added and 9 industries lost jobs
- The nine industries losing jobs shed over 168,000 jobs
- Job change ranged from 76,787 jobs added in Health Care & Social Assistance to 77,555 lost in Manufacturing

In the Post-Recession - the private sector has added over 100,000 jobs – possibly suggesting a new growth path for the Pennsylvania economy. During 2013-15:

- 14 industries – in total - added jobs over 114,000 jobs.
- Four industries- in total - shed only 5,000 jobs

### IMPACT OF RECESSION-RECOVERY: HIGH, MIDDLE, AND LOW WAGE INDUSTRIES

The Recession-recovery impacted jobs and wages in high, middle, and low wage industries. Key impacts on 256 Detailed industries grouped by weekly wage during 2001-14 were:

- Middle Wage industries –big job decline. Low Wage industries – big job gain.
  - 56 High Wage Industries (Net Gain 13,000 jobs)
  - 141 Middle Wage Industries (Net Loss 68,000 jobs)
  - 59 Low Wage Industries: (Net Gain 95,233 jobs)
- Low Wage industries (+8.5%) significantly lagged both High Wage (+17.4%) and Middle Wage industries (14.5%) in weekly wage increase 2008-14..

### MIDDLE INCOME JOB DECLINE: A REAL PROBLEM?

Middle income jobs – impacted by globalization and technological change - continued to decline in Pennsylvania during 2008-14. How to grow middle-wage jobs remains elusive in the Post-Recession. Current proposals to grow both middle-wage jobs and the economy include:

- Encouraging new entrepreneurs to turn ideas into new industries
- Investing in upgrading and modernizing public infrastructure
- Training (or retraining) labor force to meet current and future skill needs of industries

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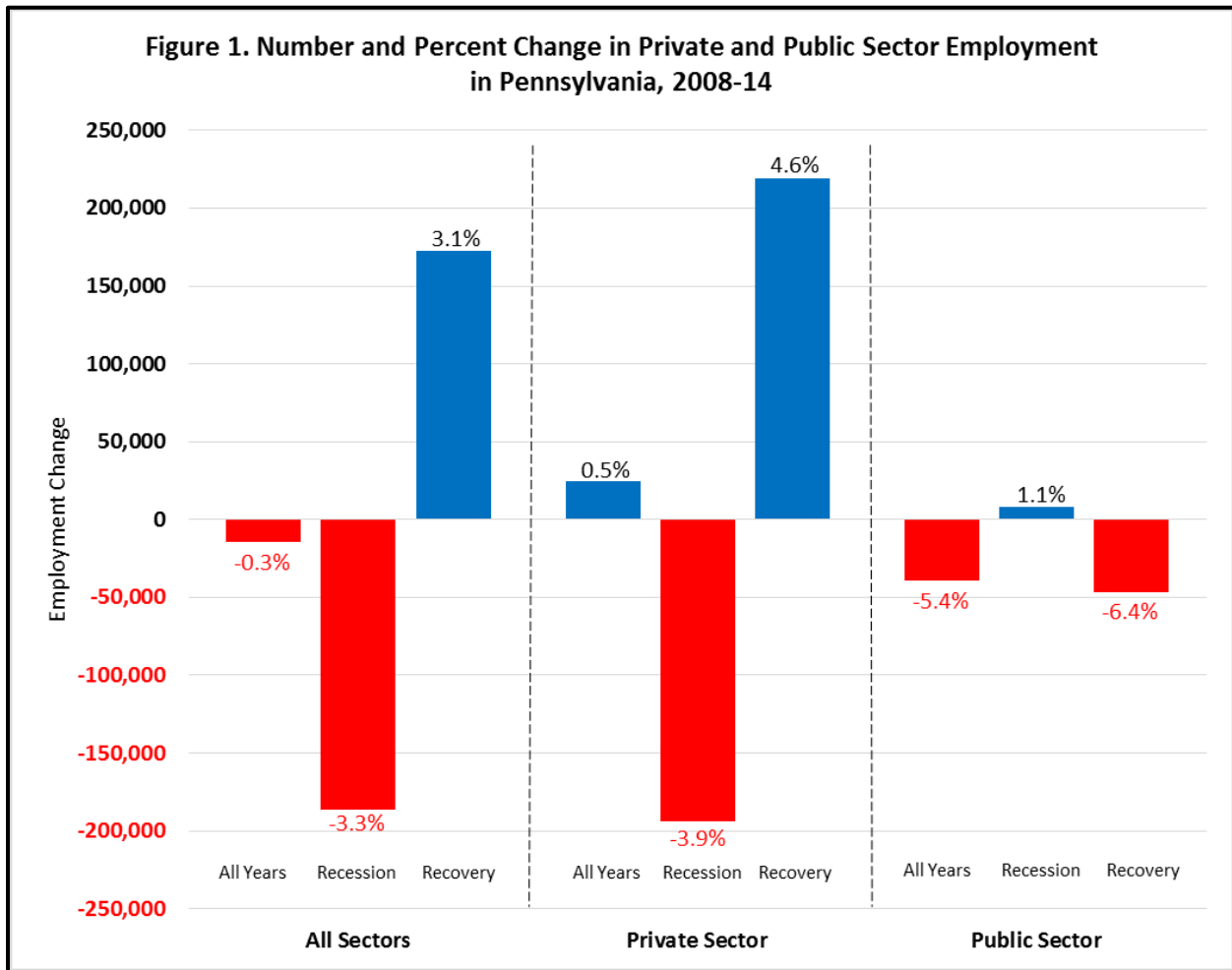
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**PENNSYLVANIA JOBS: GREAT RECESSION TO RECOVERY  
INDUSTRIES ON THE MOVE**

**THE BIG PICTURE: TOTAL EMPLOYMENT, 2008-14** (Figure 1)

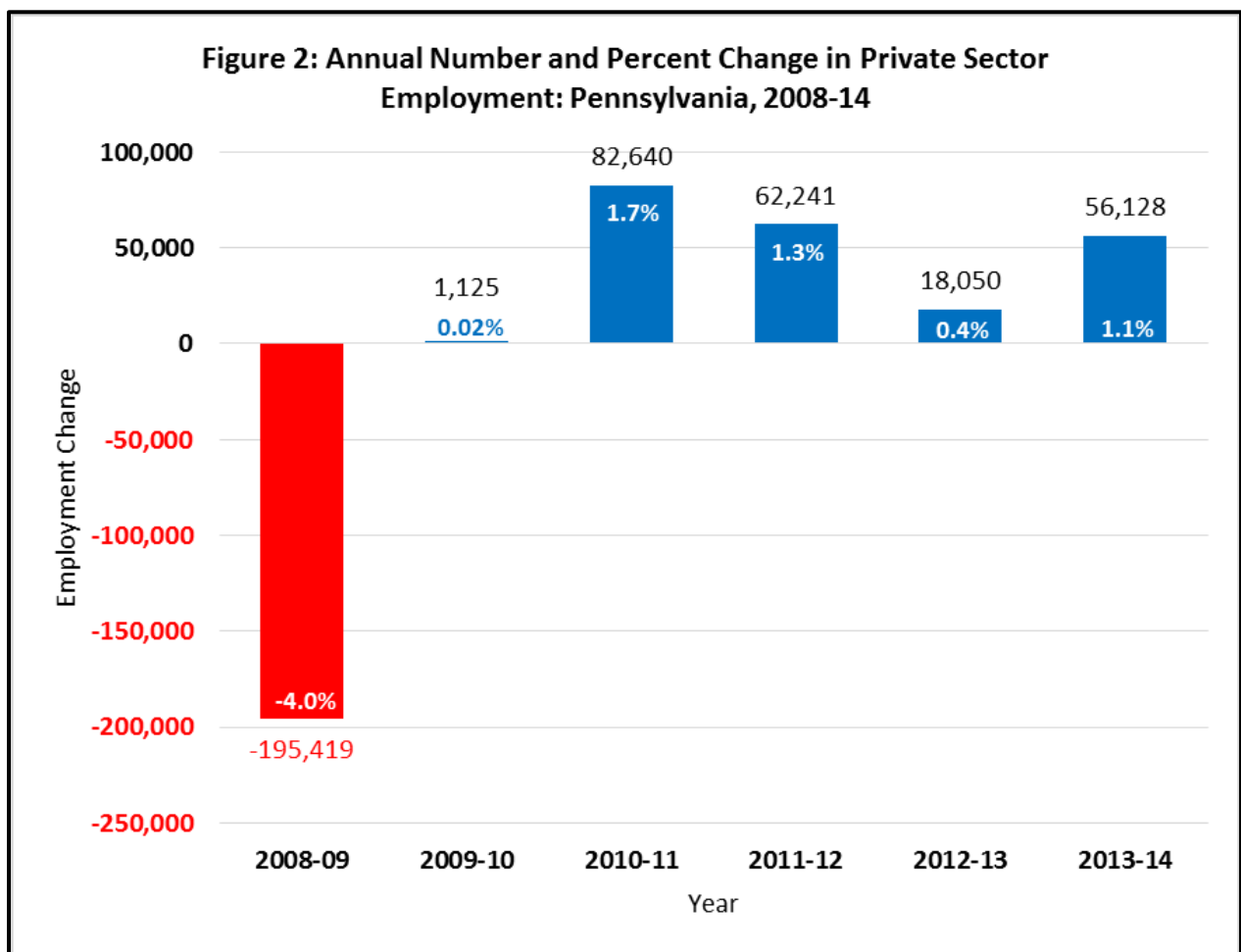
- **ON THE DOWNSIDE:** Total employment in Pennsylvania took a big hit early in the Great Recession - over 190,000 jobs were lost the first year between 2008 and 2009.
- **ON THE UPSIDE:** An uptick in 2010 led to 5 years of job growth in the private sector (2010-14).
- **ON BALANCE:** Total employment declined only -0.3 percent during 2008-14. The job gains between 2010 and 2014 in the private sector failed to offset the huge job loss in 2008-09, and the job loss in the public sector 2010-14.
- **BOTTOM LINE:** The minimal change in total employment during 2008-14 suggests a static, no-growth Pennsylvania economy - Great Recession to recovery.



\*Time periods are: "All years" - 2008 to 2014, "Recession" - 2008 to 2010, and "Recovery" - 2010 to 2014.

**PRIVATE SECTOR EMPLOYMENT: A SLIGHT UPTICK, 2008-14 (Figure 2)**

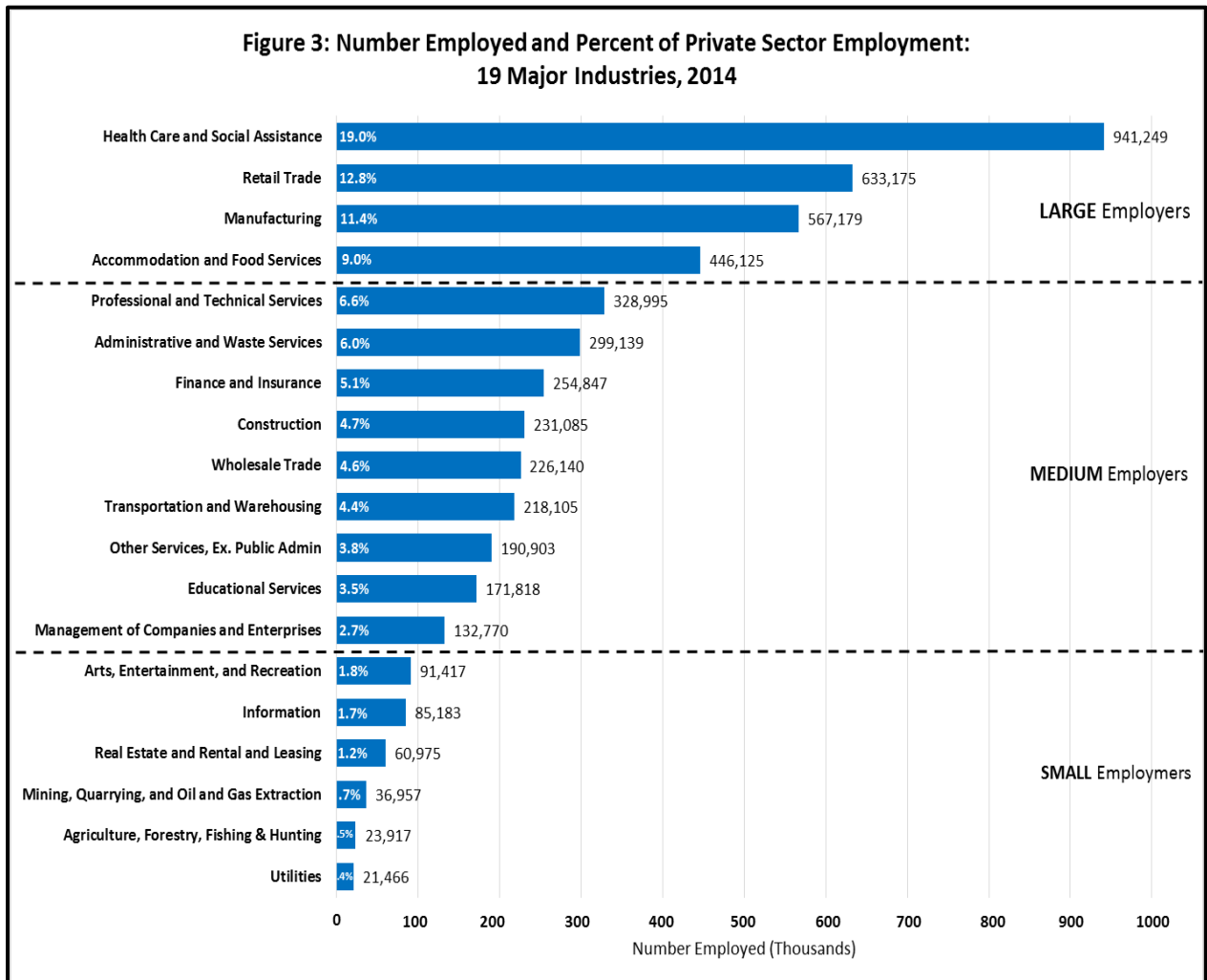
- **THE PRIVATE SECTOR:** Accounting for roughly 88 percent of total employment – The private sector was the main driver of the Pennsylvania economy during the Great Recession and recovery (2008-14).
- **ON THE DOWNSIDE:** Private sector employment expanded only 0.5 percent during 2008-14, suggesting a static, no growth state economy over the six years.
- **ON THE UPSIDE:** The annual upswing in private sector jobs from 2010 to 2014 suggests an economy in motion and on the road to recovery – driven by 300,000+ Pennsylvania businesses in hundreds of industries adjusting to the Recession and recovery.



**PENNSYLVANIA JOBS: GREAT RECESSION TO RECOVERY  
MAJOR INDUSTRIES – ON THE MOVE**

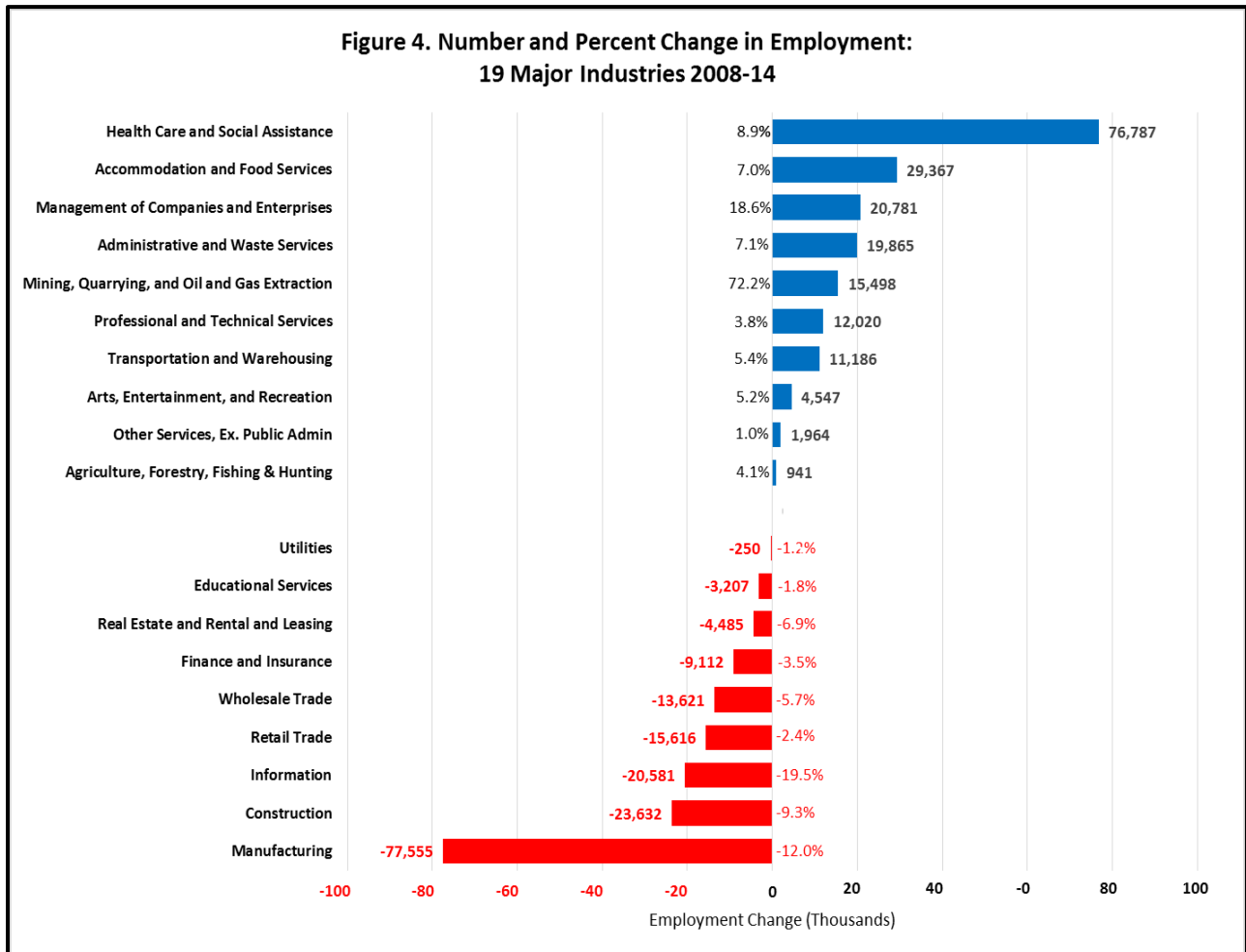
**EMPLOYMENT: 19 MAJOR INDUSTRIES – 2014 (Figure 3)**

- The 19 Major industries in the private sector drove the Pennsylvania economy, 2008-14.
- Employment in 2014 in the 19 Major industries ranged from 23,917 in Utilities to over 940,000 in Health Care & Social Assistance.
- In 2014 over one-half of private sector jobs were concentrated in four industries: Health & Social Assistance, Retail Trade, Manufacturing, and Accommodations & Food Services.
- **BOTTOM LINE:** A wide range of job input to the Pennsylvania economy among the 19 Major industries in 2014.



**JOBS ON THE MOVE: 19 MAJOR INDUSTRIES 2008-14 (Figure 4)**

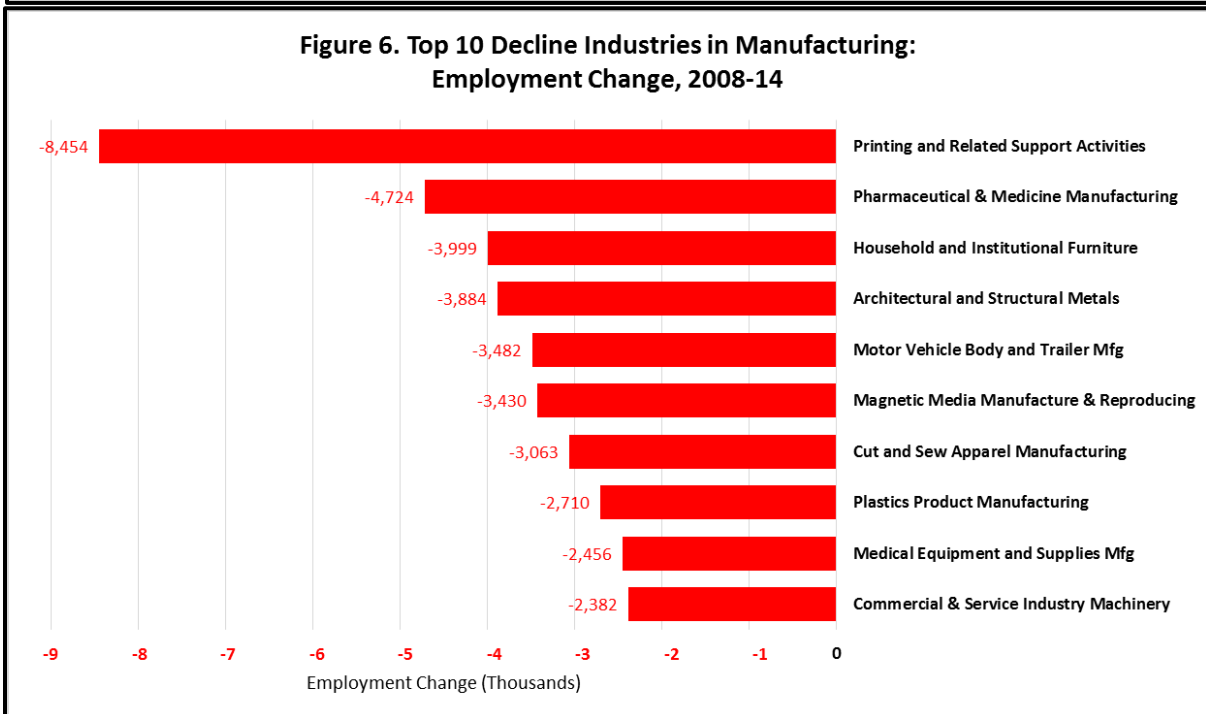
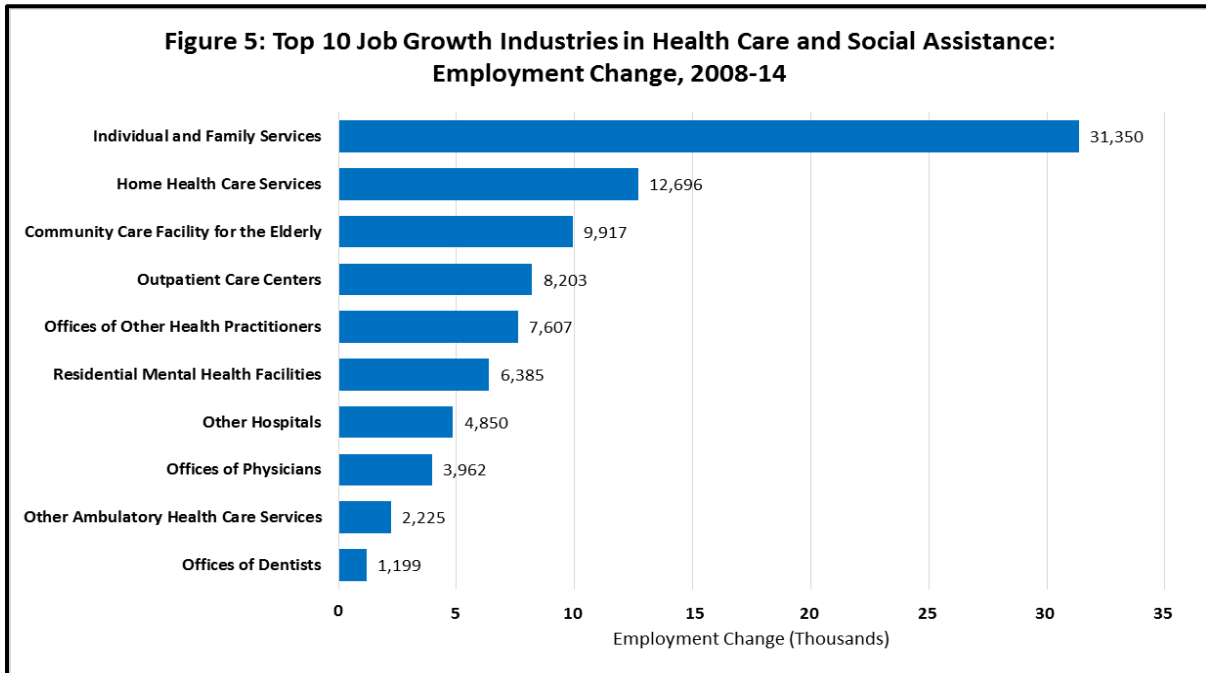
- **THE BIG PICTURE:** The private sector had a net increase of only 24,765 jobs 2008-14. This suggests a no-growth Pennsylvania economy during the six years of Recession and recovery.
- **IN CONTRAST:** A drill down into the 19 Major industries in the private sector reveals a job market on the move (2008-14):
  - Ten Major industries – in total – added 192,000 jobs.
  - Nine Major industries – in total - shed 168,000 jobs
- **BOTTOM LINE:** The minimal net gain in total private sector employment 2008-14 masked a wide range of both job gains and losses in the 19 Major industries – likely causing painful adjustments for many in the Pennsylvania workforce.





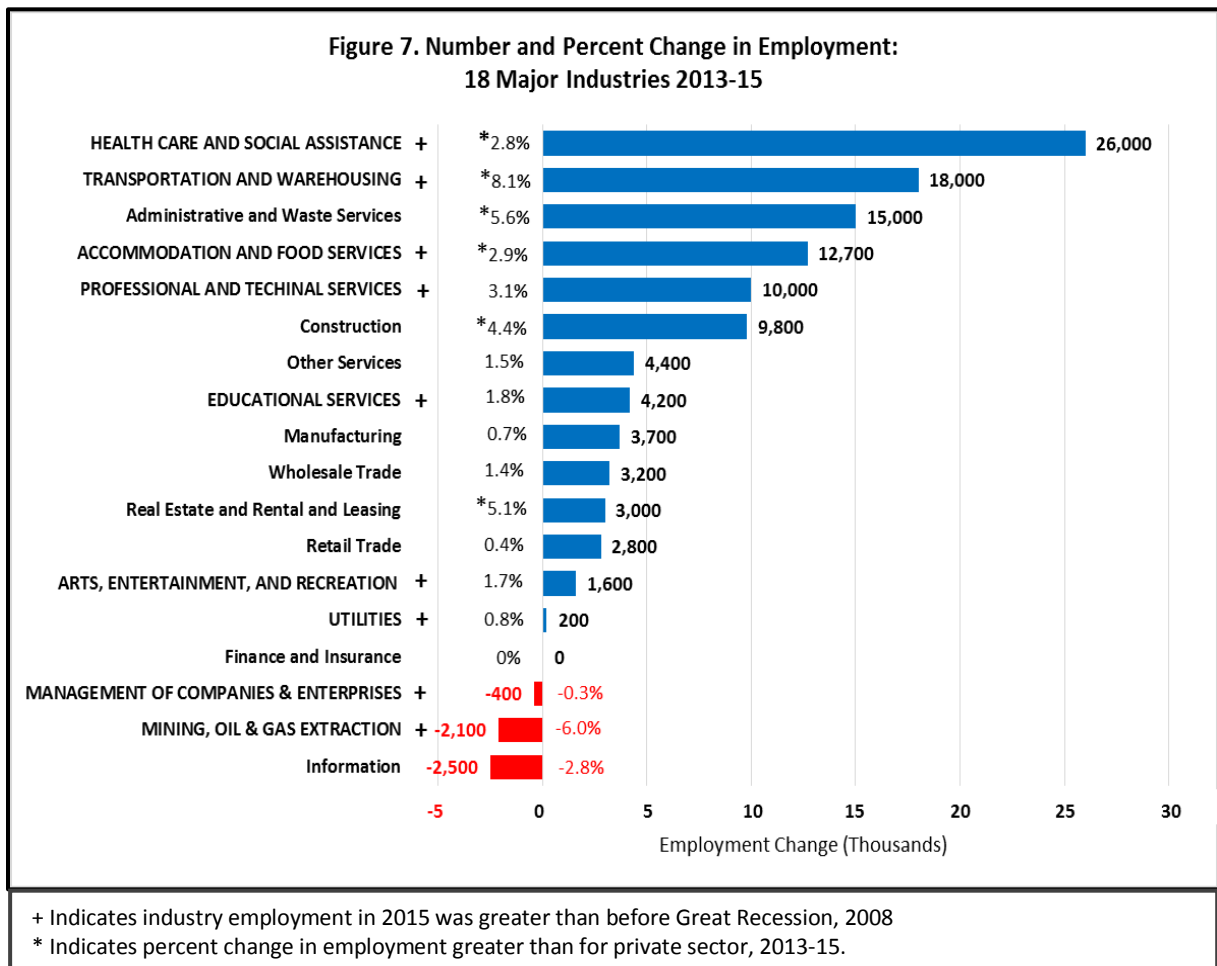
**JOB CHANGE -A CLOSER LOOK: HEALTH CARE & SOCIAL ASSISTANCE -MANUFACTURING (Figures 5 & 6)**

- Health Care & Social Assistance was the top Major industry in job growth between 2008 and 2014, and Manufacturing tops in job loss.
- A drill down to the Top-10 job growth industries in Health Care & Social Assistance, and the Top-10 job loss industries in Manufacturing – suggests a wide range of detailed industries were impacted during the Recession and recovery (2008-14).



**POST-RECOVERY, 2013-15: MAJOR INDUSTRIES ON THE MOVE – WHERE TO?** (Figure 7)

- **THE BIG PICTURE, 2013-15:** In 2014, private sector employment in Pennsylvania surged past its pre-Recession high - suggesting recovery from the Great Recession. Also on the plus side, the private sector added over 50,000 jobs in both 2014 and 2015 – far exceeding a job gain of 18,000 in 2012.
- **MAJOR INDUSTRIES, 2013-15:** A drill down to the 19 Major industries indicates a job upswing in most industries during 2013-15.
  - **ON THE PLUS SIDE:** 14 industries- in total - added over 114,000 jobs versus only 10 industries expanding employment between 2008 and 2014.
  - Also-during 2013-15: 4 industries - in total - lost only 5,000 plus jobs, versus 9 industries – in total - losing over 168,000 between 2008 and 2014.
- **PENNSYLVANIA JOBS: WHERE TO?** Predicting the future is hazardous at best. However, the recent 2013-15 job trends in most Major industries suggest the Pennsylvania economy may be on a new growth track – at least in the short run, or until the next recession.



Source: “Current Employment Survey” – PA Department of Labor & Industry

**PENNSYLVANIA JOBS: GREAT RECESSION TO RECOVERY  
HIGH, MIDDLE, AND LOW WAGE INDUSTRIES ON THE MOVE 2008-14**

The wide range of job gains and losses in the 19 Major industries during 2008-14 begs the question: What was the impact on jobs in high, middle and low wage industries?

**DEFINED: HIGH, MIDDLE, & LOW WAGE INDUSTRIES** (Table 1)

Amazingly, with all the attention on the decline of the middle class, there is no “official” definition of middle income. The high, middle, and low wage industries in this report are arbitrary – BUT roughly approximate high, middle, and low wage levels.

**Table 1. Industry Wage Groups - Defined**

Industries are defined high, middle, or low wage by: Industry Annual Average Weekly Wage (AAWW) as percent of private sector AAWW (i.e. percent of \$853 in 2008 - and \$972 in 2014).

Wage Group	Industry AAWW Percent of AAWW for Total Employment	Industry AAWW Range	
		2008	2014
HIGH	133% & over	\$1,134 & over	\$1,293 & over
MIDDLE	67 – 132%	\$572 – 1,133	\$651 – 1,292
LOW	0 – 66%	\$0 – 571	\$0 - 650

\*For reference: The top value of the low wage range is about 140 percent of the Federal poverty guideline for a family of four in both 2008 and 2014.

**A TRANSITION: MAJOR TO DETAILED INDUSTRIES**

To accurately track job change in high, middle, and low wage industries between 2008 and 2014, the report drills down from 19 Major industries to 256 Detailed industries by sorting each detailed industry into its corresponding wage group – i.e. a reality check that most Major industries are a mix of high, middle, and/or low wage Detailed industries.

**Table 2. Number of Detailed Industries in Industry Wage Groups: Major Industry, 2014**

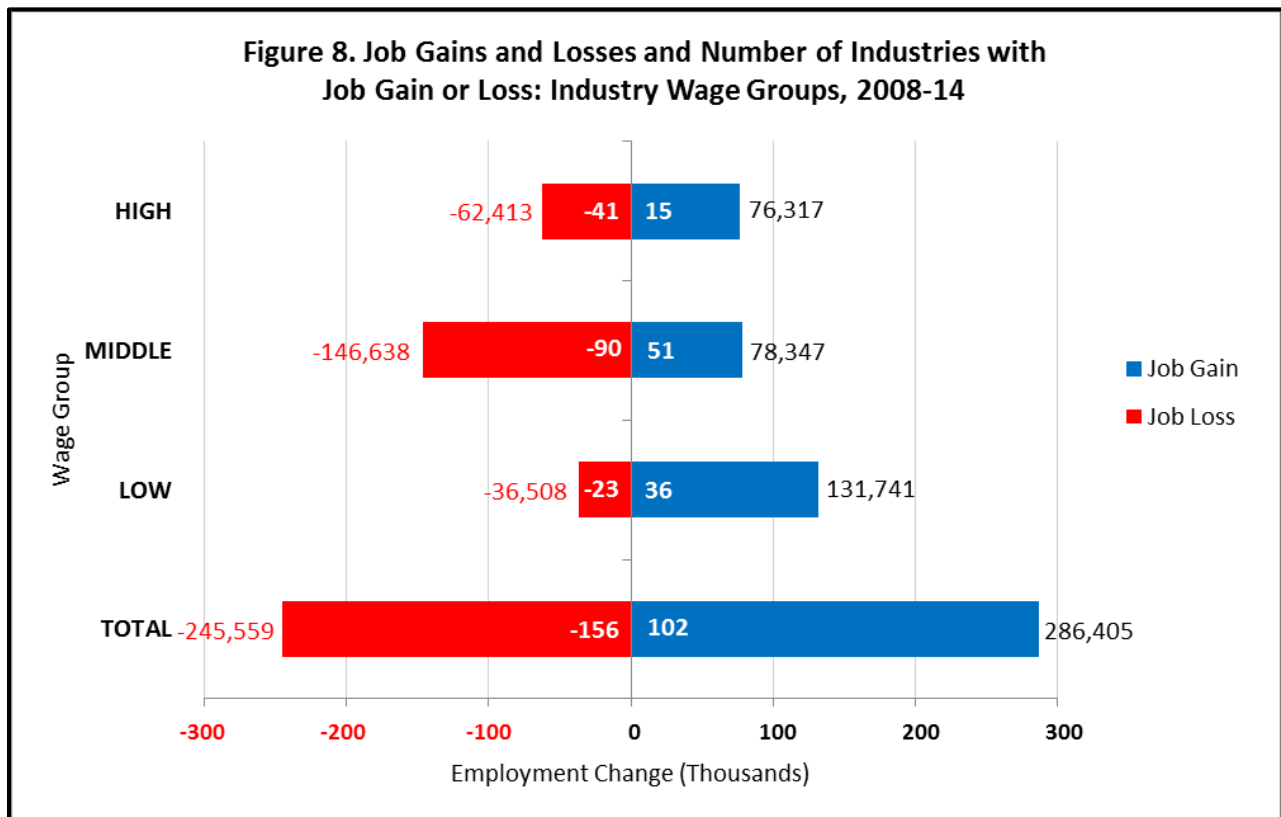
Major Industry	Number of Detailed Industries in Wage Groups			
	TOTAL	HIGH	MIDDLE	LOW
Manufacturing	79	20	57	2
Retail Trade	27	0	9	18
Transportation and Warehousing	24	2	13	9
Wholesale Trade	19	7	12	0
Health Care and Social Assistance	18	1	11	6
Agriculture, Forestry, Fishing & Hunting	15	0	7	8
Other Services, Ex. Public Admin	14	0	8	6
Information	12	7	5	0
Administrative and Waste Services	11	1	7	3
Construction	10	3	7	0
Professional and Technical Services	9	5	4	0
Arts, Entertainment, and Recreation	9	1	3	5
Real Estate and Rental and Leasing	8	2	5	1
Educational Services	7	0	6	1
Accommodation and Food Services	6	0	0	6
Finance and Insurance	6	5	1	0
Mining, Quarrying, and Oil and Gas Extraction	3	2	1	0
Utilities	3	3	0	0
Management of Companies and Enterprises	1	1	0	0

Industries Defined: “Major”- 2-Digit NAICS, “Detailed”- 4-Digit NAICS

**JOBS ON THE MOVE - 256 DETAILED INDUSTRIES, 2008-14: MANY WINNERS – MANY LOSERS (Figure 8)**

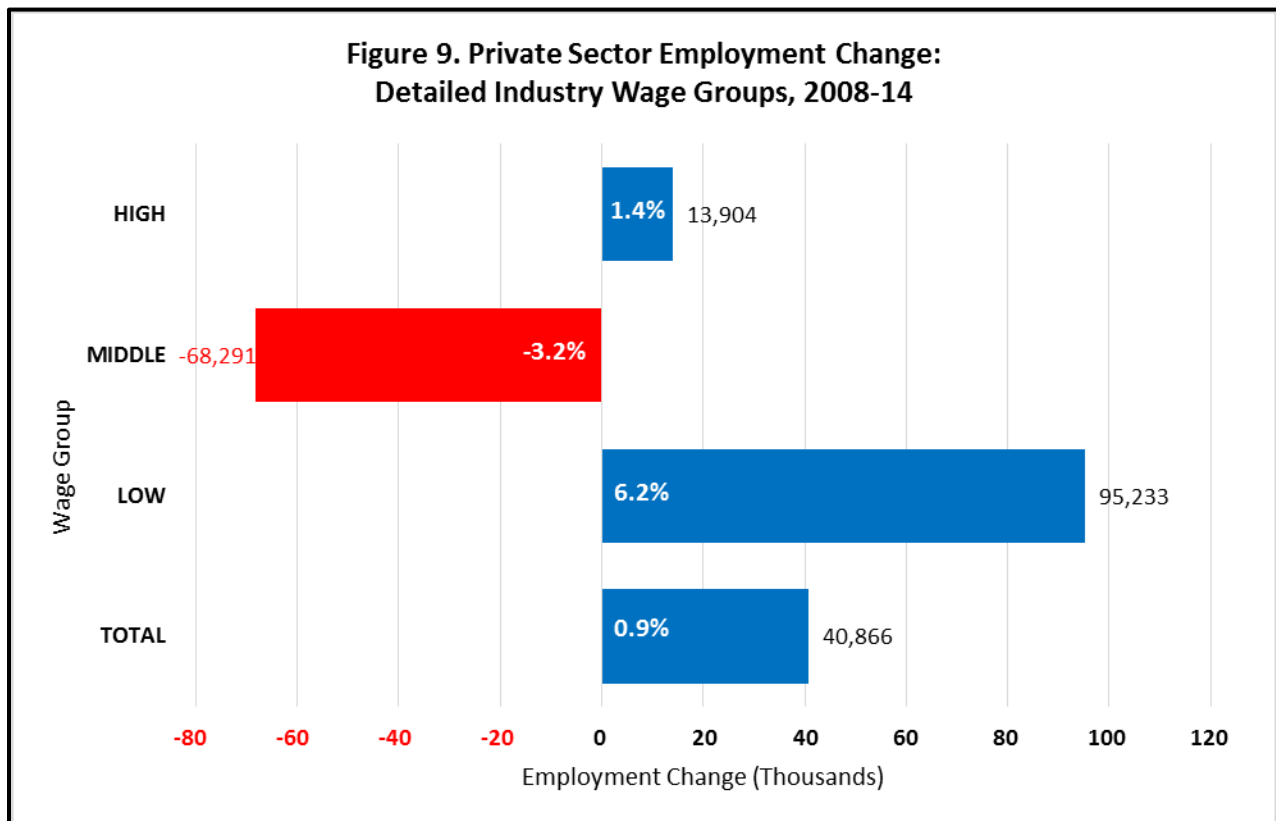
During 2008-14, the 256 Detailed industries (accounting for 95 percent of private sector jobs) had a combined net gain of only 40,000 jobs (0.9%). This suggests little action in the job market during the six years of Recession to recovery. However, another drill down to Detailed (individual) industries reveals a wide range of job gains and losses within and among high, middle and low wage industries.

- **56 HIGH WAGE INDUSTRIES: 2008-14**
  - 15 high wage industries added jobs: Total gain: 76,317 jobs.
  - 41 high wage industries lost jobs: Total lost: - 62,413 jobs
- **141 MIDDLE WAGE INDUSTRIES: 2008-14**
  - 51 middle wage industries added jobs: Total gain: 78,347 jobs
  - 90 middle wage industries lost jobs: Total lost: - 146,638 jobs.
- **59 LOW WAGE INDUSTRIES: 2008-14**
  - 36 low wage industries added jobs: Total gain: 131,741 jobs.
  - 23 low wage industries lost jobs: Total lost: - 36,508 jobs:
- **BOTTOM LINE, 256 INDUSTRIES: 2008-14**
  - A total of 286,405 jobs were added, and 245,559 were lost in a hyper active job market in Pennsylvania between 2008 and 2014.



**JOBS ON THE MOVE—THE BIG PICTURE: HIGH, MIDDLE AND LOW WAGE INDUSTRIES 2008-14 (Figure 9)**

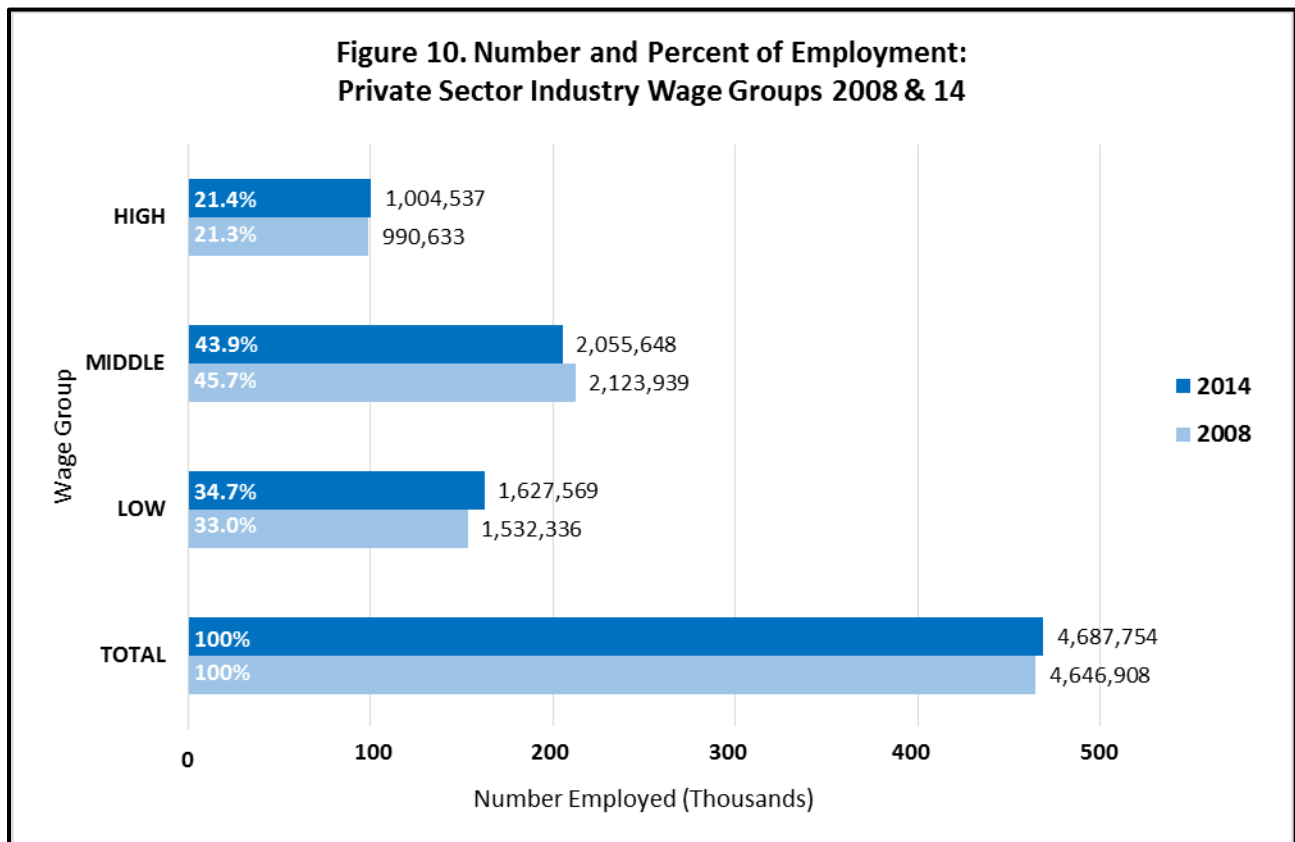
- **EMPLOYMENT, 256 INDUSTRIES: 2008-14**
  - A track of job change in 256 industries showed a wide range of gains and losses within and among high, middle, and low wage industries. So, what was the net impact on jobs in the three wage groups?
  
- **ON THE UPSIDE: 2008-14**
  - High wage industries had a net gain of 13,904 jobs. Job gains in 15 industries offset losses in 41 industries.
  - Low wage industries had a net gain of 95,233 jobs. Job gains in 36 industries offset losses in 22 industries.
  
- **ON THE DOWNSIDE: 2008-14**
  - Middle wage industries had a net loss 68,291 jobs. Job gains in 51 industries fell short of offsetting losses in 91 industries.
  
- **BOTTOM LINE: 2008-14**
  - The minimal net gain in total private sector employment 2008-14 masked a big shift in jobs from middle-wage to high and low-wage industries during the six years of Recession to recovery.



**RE-DISTRIBUTION OF JOBS: HIGH, MIDDLE AND LOW WAGE INDUSTRIES, 2008 -14 (Figure 10)**

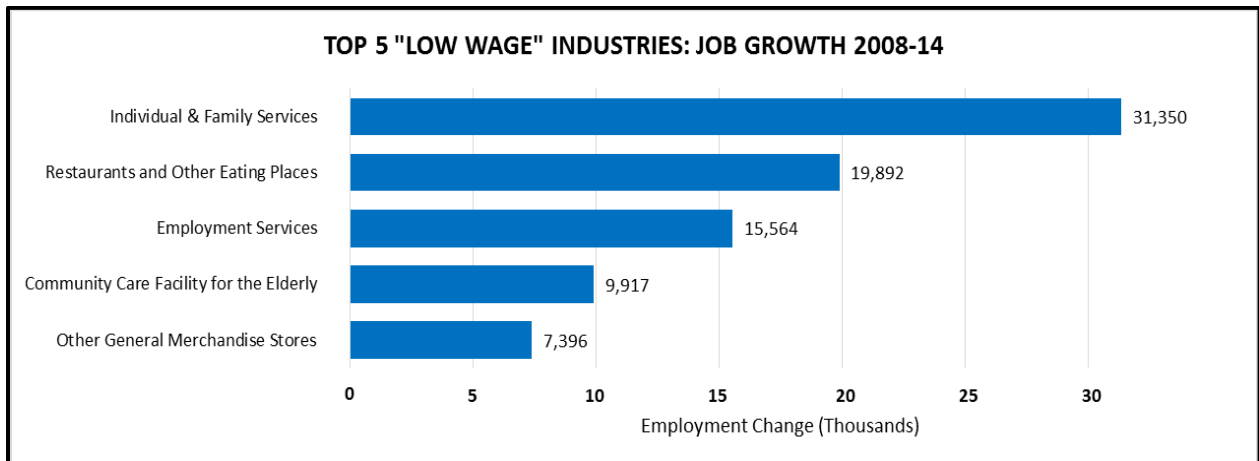
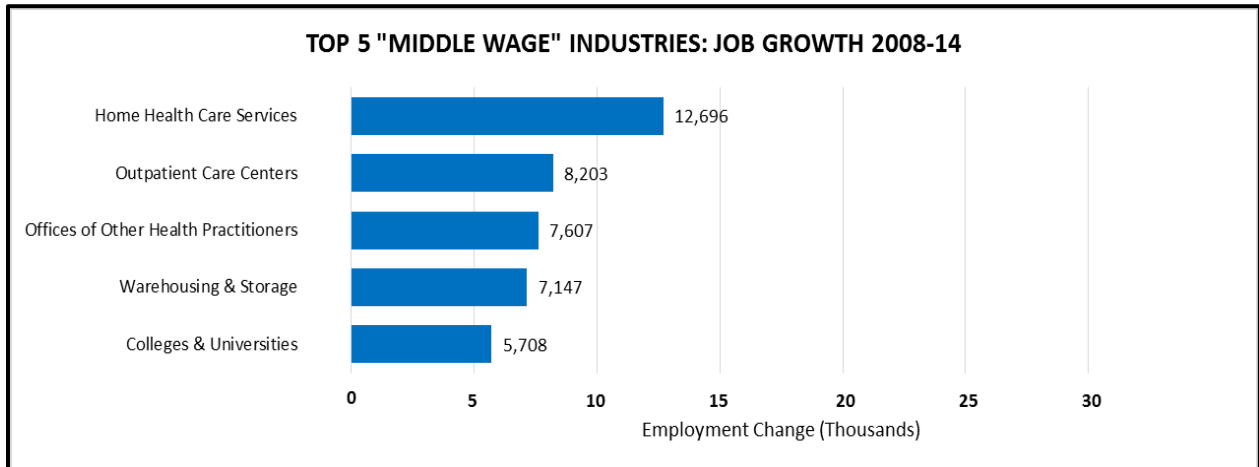
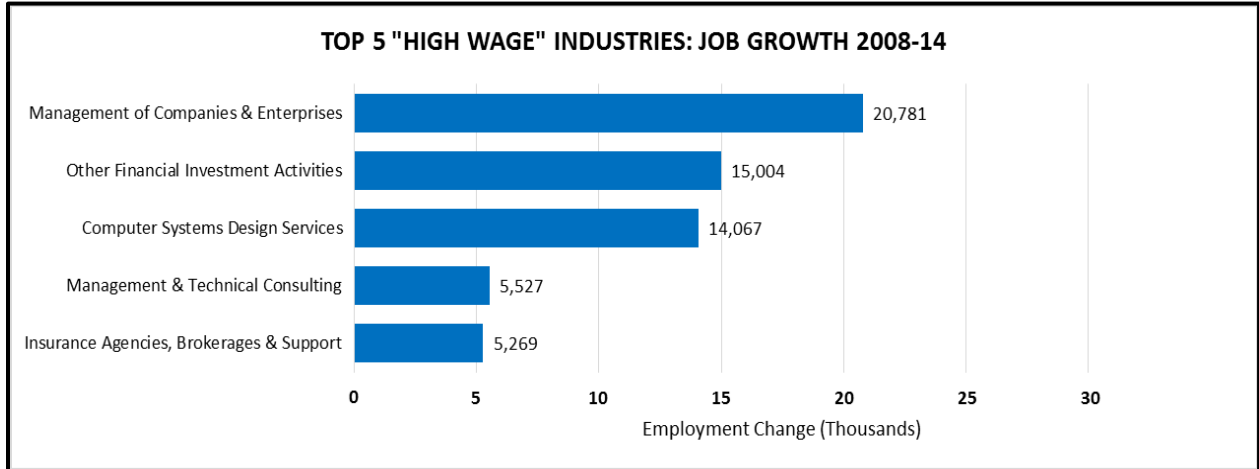
The job loss in middle wage industries coupled with the gains of high and low wage industries redistributed private sector employment among all three industry wage groups during 2008-14.

- **HIGH WAGE INDUSTRIES: SMALL JOB INCREASE 2008-14**
  - High wage industries with a small net gain of 13,904 jobs increased their share of private sector employment - from 21.3 to 21.4 percent.
- **LOW WAGE INDUSTRIES: BIG JOB INCREASE 2008-14**
  - Low wage industries with a big net gain of 95,233 jobs increased their share of private sector employment - from 33.0 to 34.7 percent.
- **MIDDLE WAGE INDUSTRIES: BIG JOB DECREASE 2008-14**
  - Middle wage industries with a big net loss of 68,291 jobs decreased their share of private sector employment – from 45.7 to 43.9 percent.
- **BOTTOM LINE: 2008-14**
  - The 2001-08 hollowing out of jobs in middle wage industries with coincident job growth in high (and mainly low) wage industries continued between 2008 and 2014 in Pennsylvania.



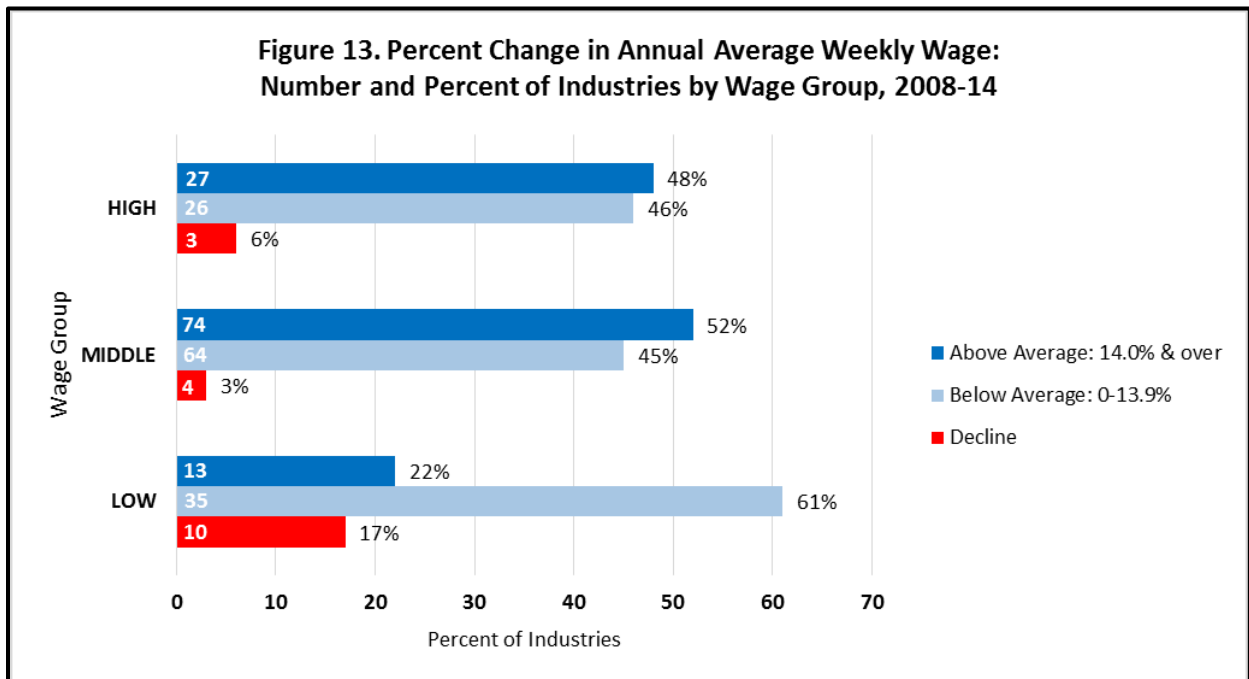
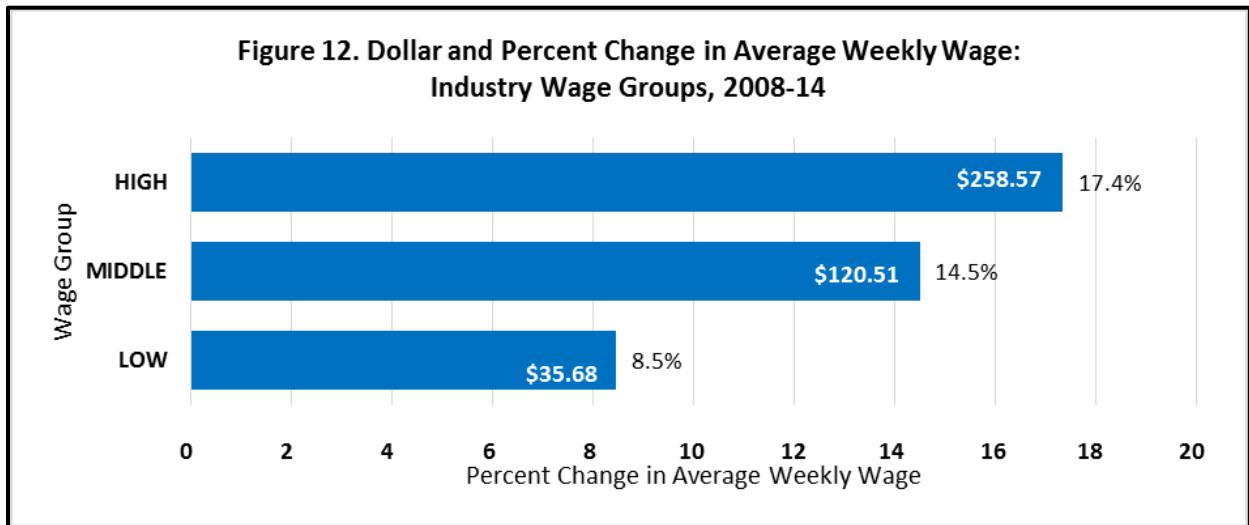
**JOB GROWTH: TOP 5 - HIGH, MIDDLE & LOW WAGE INDUSTRIES (Figure 11)**

- **A CLOSER LOOK:** Each figure below displays each wage group's top 5 industries that had the most employment growth between 2008 and 2014.



**WAGES ON THE MOVE: HIGH, MIDDLE AND LOW WAGE INDUSTRIES 2008-14** (Figures 12 & 13)

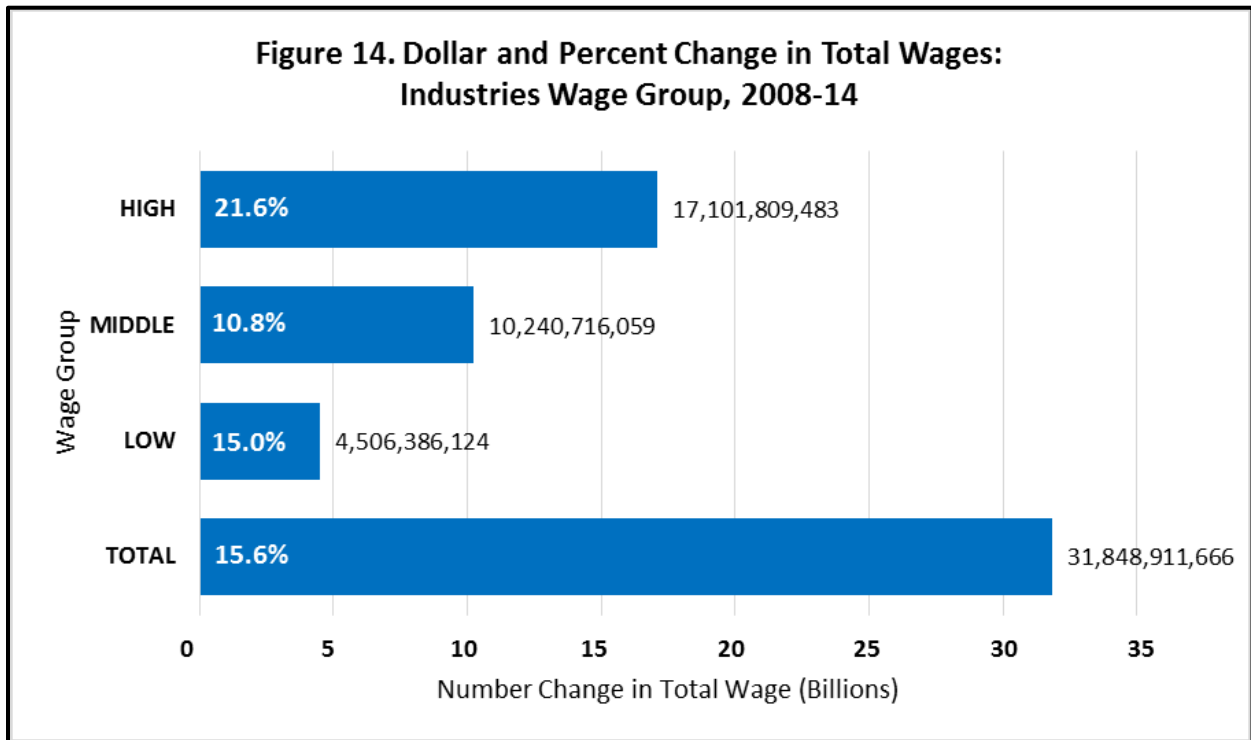
- **ANNUAL AVERAGE WEEKLY WAGE: On the rise 2008-14**
  - HIGH Wage Industries: Up \$259 (17.4%)
  - MIDDLE Wage Industries: Up \$121 (14.5%)
  - LOW Wage Industries: Up \$36 (8.5%)
  
- **BOTTOM LINE:** Low wage industries gained the most jobs, BUT lagged behind both high and middle wage industries in dollar - and more importantly, percent increase in Annual Average Weekly Wage 2008-14 – i.e. no wage catch-up for low wage industries during six years of Recession and recovery.





**TOTAL WAGES: HIGH, MIDDLE AND LOW WAGE INDUSTRIES, 2008-14 (Figure 14)**

- **TOTAL WAGES of the 256 industries increased \$31.8 billion 2008-14.**
  - 56 HIGH wage industries (small net job gain) – 21.6 % increase of \$17.1 billion
  - 142 MIDDLE wage industries (large net job loss) – 10.8% increase Of \$10.2 billion
  - 58 LOW wage industries (large net job gain) – 15.0% increase of \$4.5 billion
- **BOTTOM LINE:** The larger increase in total wages of high wage industries translated into a greater contribution to state and local income/wage tax revenues and consumer expenditures during 2008-14 than did the lesser total wage increases of middle and low wage industries.



**PENNSYLVANIA JOBS & INDUSTRIES: GREAT RECESSION TO RECOVERY 2008-14**  
**A SUMMING UP – WHERE TO? – WHAT TO DO?**

The Great Recession of 2008-09 is history in Pennsylvania - or is it? By 2014 total employment was back to pre-Recession high suggesting complete recovery from the 190,000 jobs lost early in the Recession. However a drill down to industries suggests that the rocky road from Recession to recovery seriously impacted the industry and income mix of jobs in Pennsylvania. A track of industry job change from Recession to recovery – reveals some significant trends with implications down the road.

**JOBS 2008-14 and BEYOND: MAJOR INDUSTRIES**

**THE BIG PICTURE 2008-14:** The private sector – driver of the Pennsylvania economy - added only 24,765 jobs (0.5% increase) from 2008 to 2014 This suggests a minimally active job scene - Great Recession to recovery. In contrast - a drill down to industries reveals a job market in perpetual motion as over 300,000 business establishments in hundreds of industries adjust in Recession and recovery.

**JOBS ON THE MOVE 2008-14, MAJOR INDUSTRIES:** Job-wise many industries were winners and many losers during the six years of Recession to recovery.

- **10 industries** – in total – added over **192,000 jobs**
- **9 industries** – in total - shed over **168,000 jobs**

**JOBS - POST RECESSION - WHERE TO?: MAJOR INDUSTRIES** Predicting industry job trends – even in the short-run - is a shaky venture. However – robust private sector job gains 2013-15 suggest the Pennsylvania economy may be on a new growth track. During 2013-15– a real turnaround from 2008-14:

- **14 industries** -in total-added **114,000 jobs**
- **4 industries**- in total - shed only **5,000 jobs**

**JOBS 2008-14: HIGH, MIDDLE AND LOW WAGE INDUSTRIES**

**THE BIG PICTURE 2008-14:** High and low wage industries added jobs, and middle wage industries shed jobs during the six years of Recession to recovery.

- **56 High Wage** Industries - Net job gain: **13,904**
- **141 Middle Wage** Industries - Net job loss: - **68,291**
- **56 Low Wage** Industries: Net job gain: **95,000**
- 

**WAGES ON THE MOVE 2008-14:** Average Weekly Wages increased for all three wage groups during the six years of Recession to recovery.

- **High Wage** Industries: **Up \$259 (17.4%)**
- **Middle Wage** Industries: **Up \$121 (14.5%)**
- **Low Wage** Industries: **Up \$ 36 (8.5%)**

## **A CONTINUING PROBLEM: THE DECLINE OF MIDDLE INCOME JOBS:**

**TRENDS – A DRILL DOWN:** The 141 middle wage industries had a net loss of -68,291 jobs in total during 2008-14, disguising the reality that 90 of these industries – in total - shed -146,638 jobs.

**COST TO WORKERS:** The actual loss of nearly 150,000 jobs in middle wage industries during 2008-14 suggests painful adjustments by many ex-employees in middle wage industries – including long-term unemployment or underemployment in a full (or part time) job in a lower wage industry.

**WHERE TO?** The 2008-14 job loss in middle-wage industries is likely to continue – in both Pennsylvania and the U.S. as globalization and technology (including robotics) continue to reduce the demand for labor.

**WHAT TO DO?** How to grow middle income jobs is the still unanswered question – either by economists or politicians. Current proposals to increase middle wage employment include:

- Encouraging entrepreneurs to turn ideas into new industries
- Investment in public infrastructure
- Training (or retraining) workers to fill job openings in middle wage industries