

ECONOMIC REVIEW OF PENNSYLVANIA 2014

CENTER FOR WORKFORCE INFORMATION & ANALYSIS
AUGUST 2015

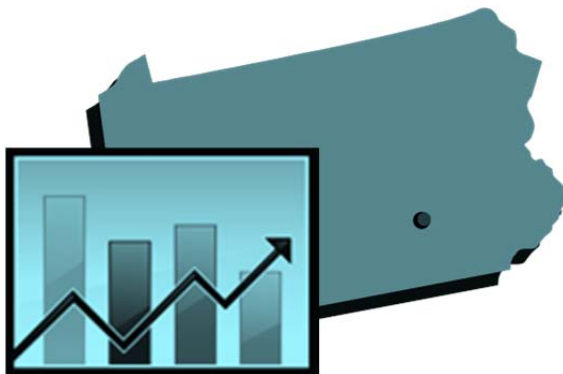


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PREFACE

Pennsylvania's future depends upon the development of a workforce able to compete in today's global economy. Understanding potential obstacles the future workforce will have to overcome is necessary when developing policies and strategies for Pennsylvania to remain economically competitive.

The National Bureau of Economic Research declared that a national economic recession began in December 2007 and ended in June of 2009. Labor markets tend to lag behind output markets, so that the peak monthly unemployment rate (8.7 percent) in Pennsylvania since the recession began occurred in February and March of 2010. On an annual basis, the unemployment rate in Pennsylvania during this period also peaked at 8.5 percent in 2010, which was its highest level since 1984. The annualized number of unemployed Pennsylvanians also peaked in 2010 at 540,000. The recession left nearly all industries in Pennsylvania with job losses in 2009 and 2010. Pennsylvania's average employment in 2010 was 5,841,000, its lowest level since 2003. Since then, Pennsylvania's labor market has shown signs of the subsequent recovery. In 2014, Pennsylvania's average employment rose to 6,009,000, an increase of 45,000 from 2013 and an increase of 168,000 from 2010. The average unemployment rate in 2014 was 5.8 percent which was 1.6 percentage points lower than in 2013. The economic recovery seems to be continuing and accelerating; however, more progress is needed. The task of effective workforce and economic development is needed to ensure that the economic turnaround strengthens and Pennsylvania's remaining 319,000 unemployed (as of December 2014) find sustainable employment.

Workers from the front-end of the baby-boom generation are moving into their 60s and, beginning in 2011, were expected to start the wave of retirement from the workforce in large numbers. Due to the weak economy, many have chosen to remain in the workforce, thus complicating the jobs outlook horizon for younger workers. Inevitably, as another economic expansion develops, baby boomers will leave the workforce in large numbers taking with them key skills that kept industry growing and prosperous. Unfortunately, based on Pennsylvania's demographics, far fewer youth are available to enter the labor market to replace those who will be leaving. While technology and global competition will help alleviate the need for workers, there will still be a shortage of workers, which will force greater efficiencies and competition for key skills.

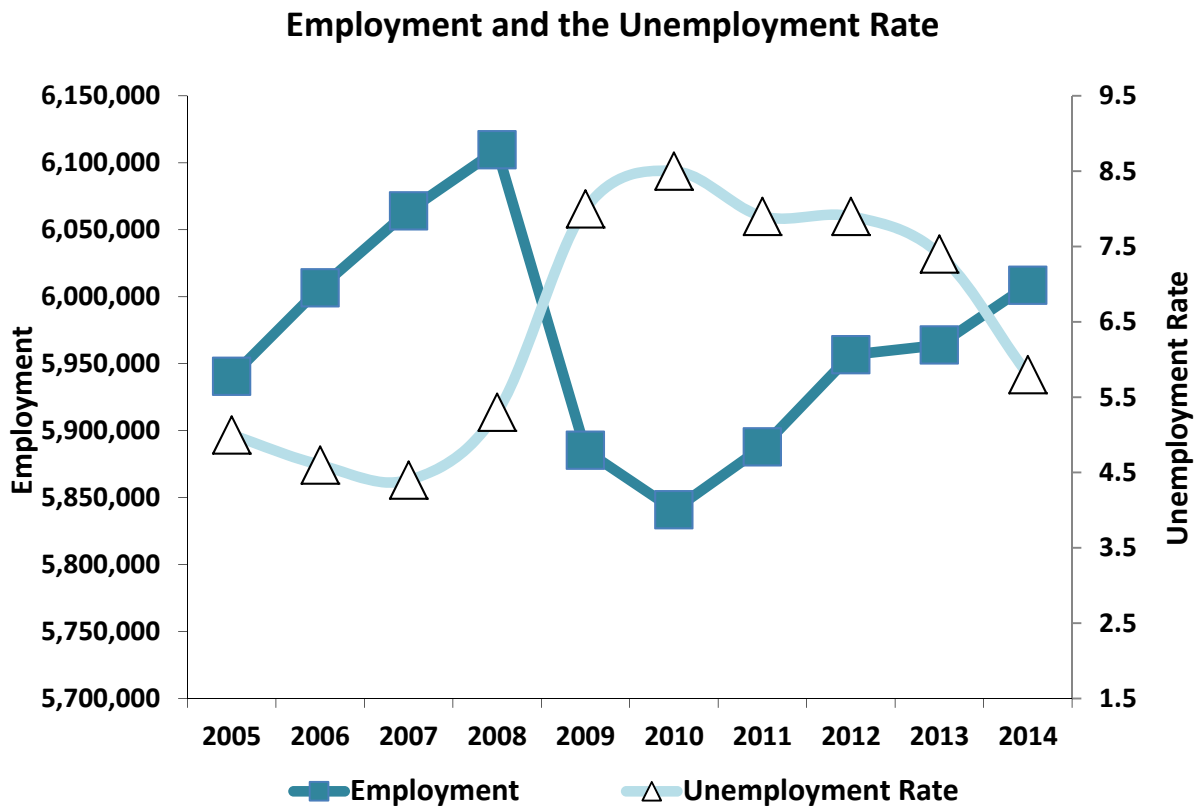
LABOR FORCE STATISTICS

Employment

Pennsylvania's average employment was 6,009,000 in 2014. Over the year, employment was up by 45,000, or 0.8 percent. In comparison, the U.S. average employment in 2014 was 146,305,000, up 2,376,000 from 2013, or 1.7 percent. In 2014, Pennsylvania's employment was 98.3 percent of its previous annual high, while the country set a new record at 100.6 percent of its previous annual high, which was set in 2007.

Unemployment Rate

Pennsylvania's average annual unemployment rate decreased by 1.6 percentage points to 5.8 percent in 2014, after falling by one-half of one percentage point in the previous year. The U.S. unemployment rate in 2014 fell to 6.2 percent, 1.2 percentage points lower than in 2013.



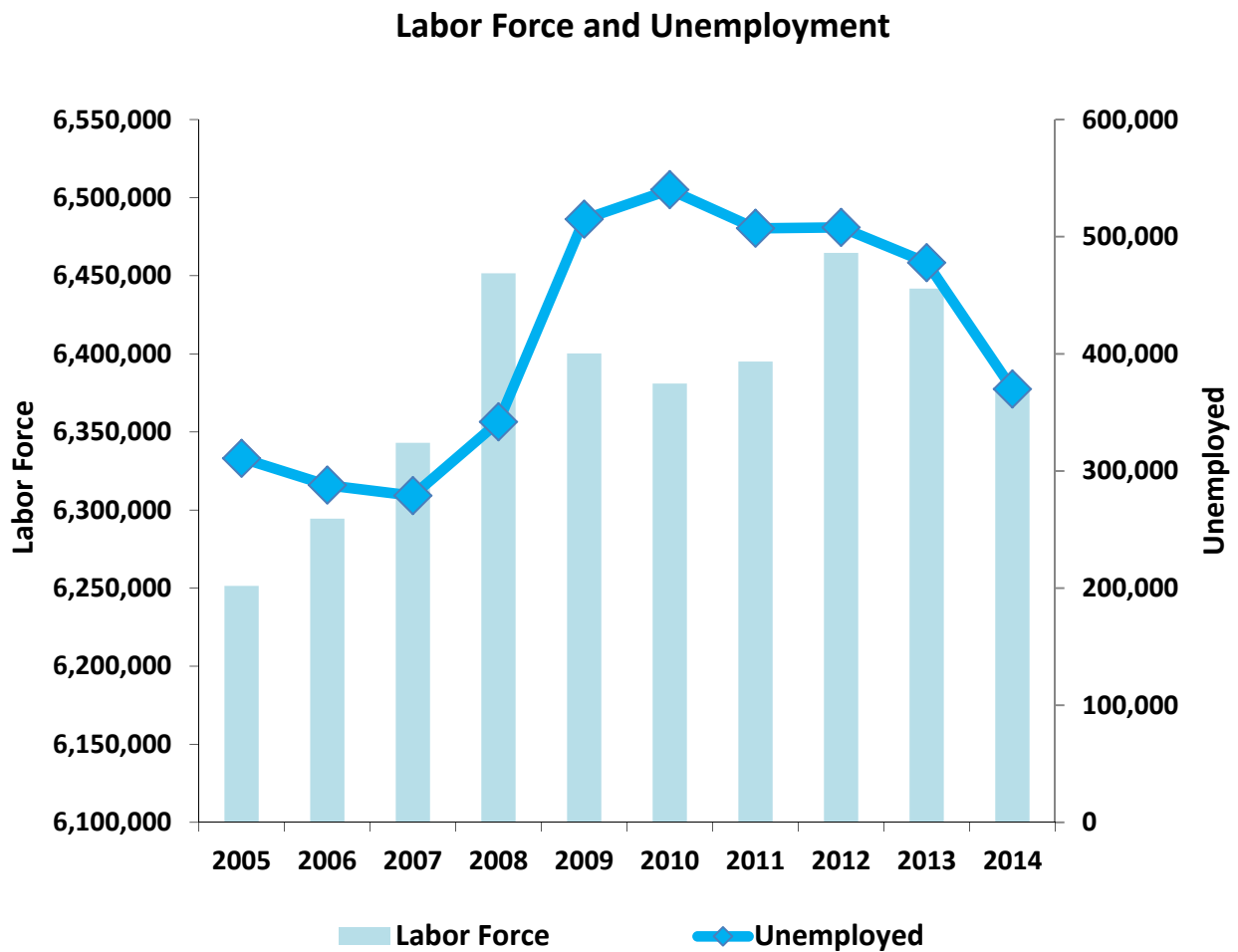
Source: Pennsylvania Local Area Unemployment Statistics

Labor Force

Pennsylvania's average labor force was 6,378,000 in 2014, down 63,000 from 2013, or 1.0 percent. This was the second consecutive decrease in the labor force after two years of increases. The U.S. labor force was 155,922,000 in 2014, up 533,000 from 2013, or 0.3 percent.

Unemployed

The average number of unemployed Pennsylvanians in 2014 decreased by 108,000, or 22.6 percent, to 370,000. The U.S. unemployment level in 2014 was 9,616,000, down 1,843,000 or 16.1 percent from 2013.

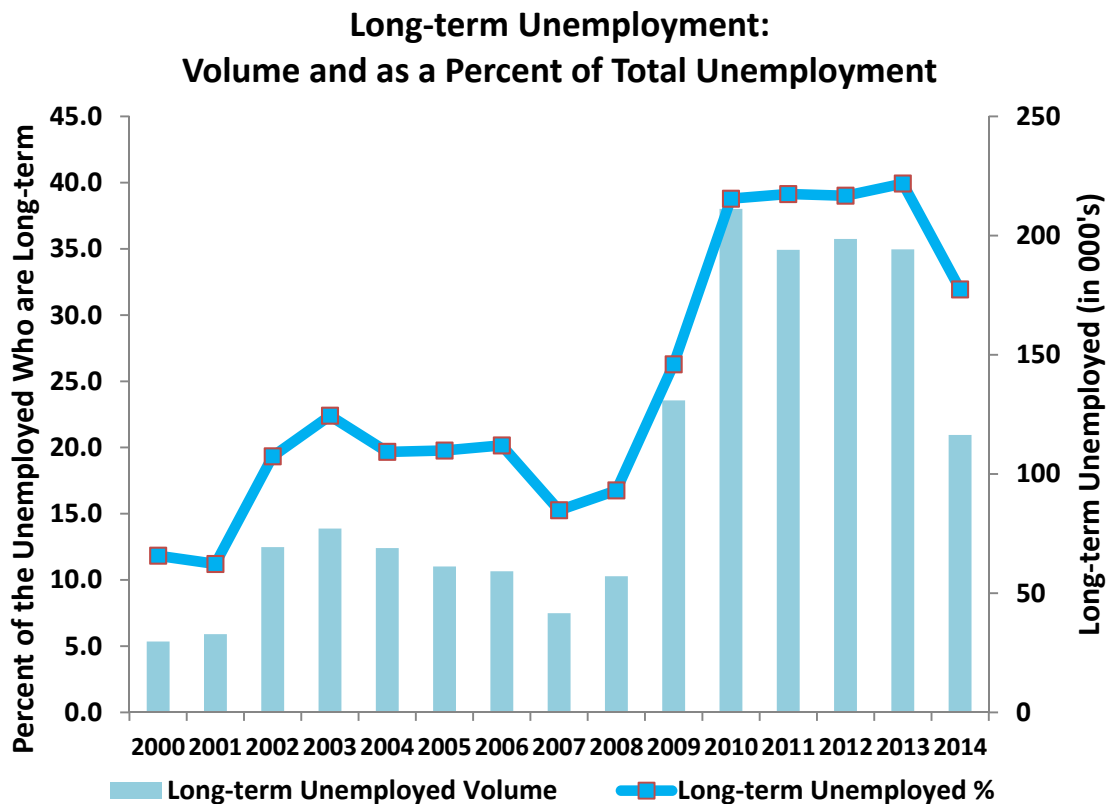


Source: Pennsylvania Local Area Unemployment Statistics

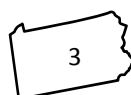
Long-term Unemployment

Two dimensions of unemployment are its volume (the number of people unemployed at a given time) and duration (the length of time that those unemployed remain unemployed). One measure of duration can be obtained by classifying the unemployed into two categories: short-term (unemployed 26 weeks or less) and long-term (27 weeks or more). The volumes of both short-term and long-term unemployment as well as the average duration of unemployment tend to increase during recessions and their aftermath. In non-recessionary times, the level of unemployment is low and consists mostly of the short-term unemployed, who are entrants to the labor market or people looking for better opportunities. During a recession, the percentage of the unemployed who are classified as long-term, the long-term ratio, increases as more of the unemployed move from short-term to long-term unemployment and relatively fewer new entrants seek work. As a recession lengthens, the long-term unemployed find it increasingly more difficult to find work the longer they are unemployed; therefore, even after the recession ends, the long-term ratio may continue to increase.

From 2007 to 2010, the number of long-term unemployed in Pennsylvania and in the U.S. increased more than fivefold. In Pennsylvania, both the number and percent of the long-term unemployed remained elevated through 2013, but decreased by 77,800 or 40.1 percent from the 2013 level during 2014 to 116,400. The share of those unemployed long-term dropped to 31.9 percent of the total unemployed population. The U.S. long-term unemployment level decreased 25.3 percent to 3,218,000 from 2013 to 2014 and constituted 33.4 percent of the nation's unemployed population.



Source: Census' Current Population Survey



Alternative Measures of Labor Underutilization

The official unemployment rate discussed earlier (which is termed U3) is one of six measures of labor underutilization reported by the Bureau of Labor Statistics (BLS) on a monthly basis. It measures the percent of the labor force who do not have a job, but are available for work and have actively searched for a job during the four weeks prior to the survey week. It could be claimed that this measure understates the degree that labor is underutilized in the economy, since it doesn't take into account people who are working part-time for economic reasons (but would prefer to work full-time) and marginally attached workers, who want and are available for work and had looked for a job in the prior year (though not in the previous four weeks). The part-time employees count as employed, while the marginally attached workers are considered to be not in the labor force. The broadest measure of labor underutilization (termed U6) accounts for both of these groups and consequently, is significantly larger than U3 (usually about twice the size). The U6 rate tends to move in the same direction as U3, indicating that the labor market is improving as the rate decreases. As evidenced in the graph below, such was the case in 2014 as the U6 rate decreased from 13.4 percent in 2013 to 11.6 percent.

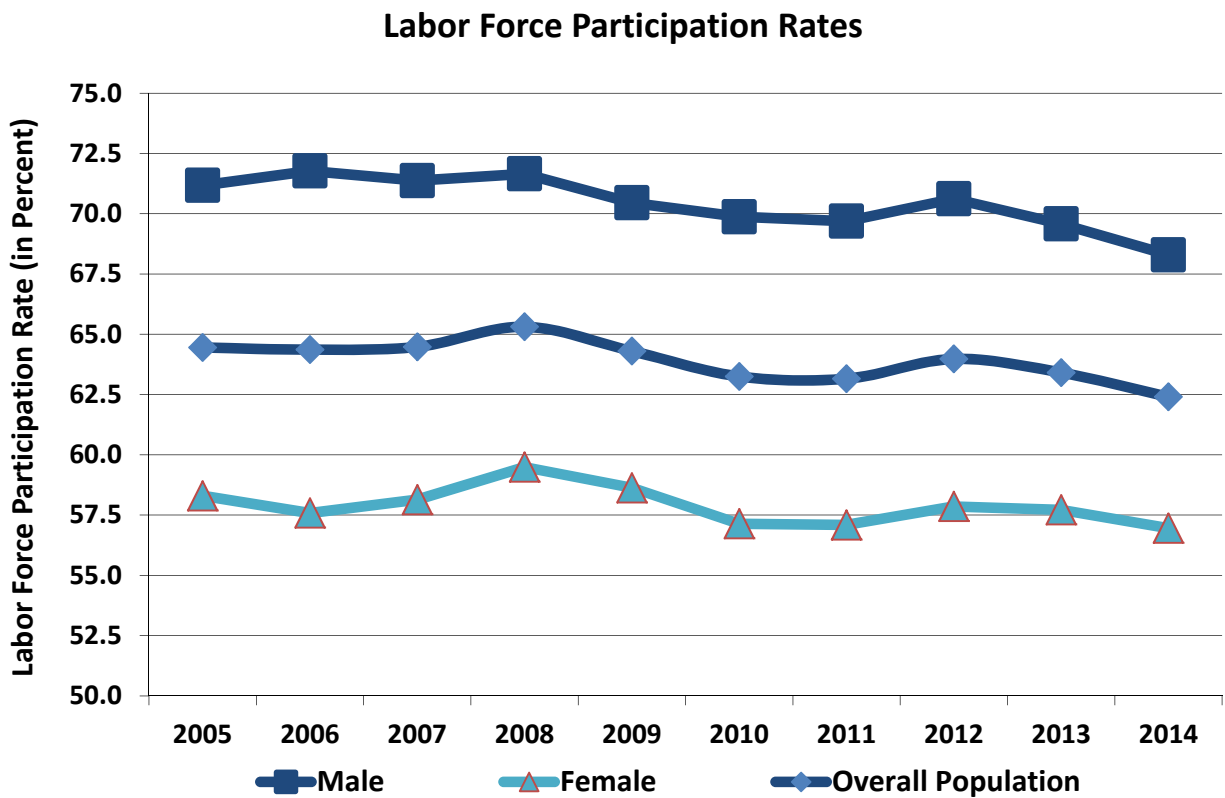
Comparison of Two Measures of Labor Underutilization: U6 and U3



Source: Census' Current Population Survey

Labor Force Participation

Pennsylvania's labor force participation rate was 62.4 percent in 2014, down 1.0 percentage point from 2013. Over the last 10 years, the peak rate was 65.3 percent in 2008. The rate is a measure of people who are working or who want to work as a percentage of the relevant population. Demographic and sociological factors tend to dominate the long-term trend in the rate; however, cyclical factors such as an improvement in the prospects of employment can increase the rate in the short run. In 2014, the male labor force participation rate was 68.3 percent, down 1.3 percentage points from the previous year, and the female rate was 57.0 percent, down 0.7 percentage point from 2013. During the same period, the nation's average labor force participation rate was 62.9 percent, down 0.3 percentage point from 2013.



Source: Census' Current Population Survey

Nominal and Real Wage Rates

In addition to looking at employment and the labor force as measures of labor demand and labor supply, it is instructive to look at the wage rate, which is the “price” of labor. The nominal wage rate is measured in current (year in question) dollars, while the real wage rate is measured in constant dollars, holding prices at their level in a base year. As such, the real wage rate factors out the effects of inflation and is a measure of the purchasing power of the wage rate. The nominal wage rate tends to increase over time as it reflects a higher price level and increased labor productivity, albeit with a lag. In situations of increasing labor demand, such as periods of recovery in the economy, one usually experiences increases in employment and (real) wages. Such was the case in 2014, when the real wage increased by 1.3 percent after falling by 0.1 percent in the prior year.



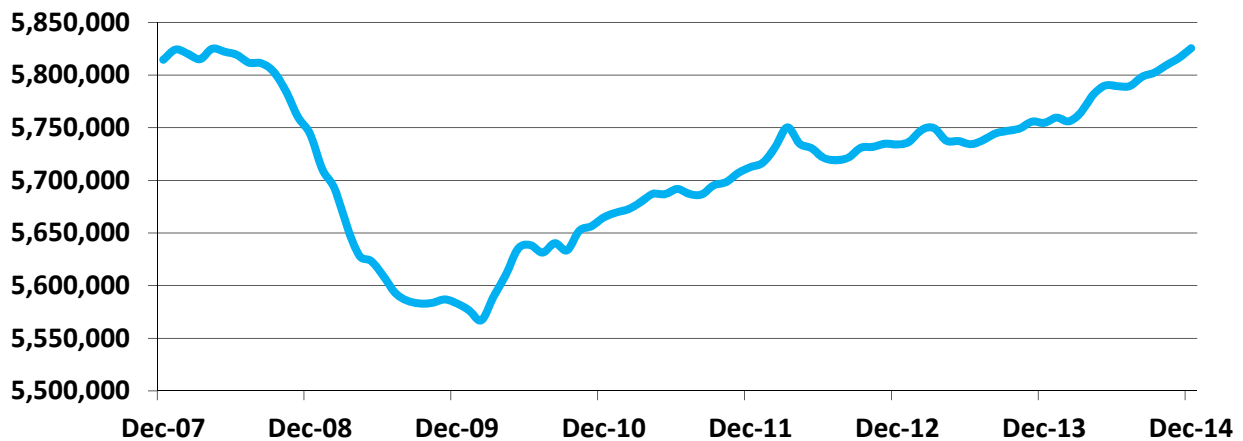
Sources: Quarterly Census of Employment and Wages, Bureau of Labor Statistics, and Center for Workforce Information & Analysis
The real wage was calculated by deflating the nominal wage by the annual value of the broadest CPI-U not seasonally adjusted (U.S. City Average for all items), with base period of 1982-1984 = 100. Wage data for 2014 was preliminary.

INDUSTRY EMPLOYMENT

Jobs

Pennsylvania's total nonfarm jobs were at 5,825,500 in December 2014, up 70,900 (1.2 percent) from one year before and up 258,300 since the most recent jobs low in February 2010. The December 2014 jobs count set a new high, surpassing the previous high of April 2008 by 500. Consequently, this was the first month that Pennsylvania regained all the jobs (and more) that were lost during the recession. U.S. nonfarm jobs were at 140.6 million in December 2014, up 3.1 million jobs from one year prior or 2.3 percent. The U.S. gained 2.2 million jobs (1.6 percent) since the start of the recession. A glance at the chart below shows that Pennsylvania is currently in a jobs-expansion period following the job recovery period which began in early 2010. Measured by its percentage of pre-recession jobs, Pennsylvania has fared worse than the nation in its jobs recovery since the start of the recession. The state jobs count is up 0.2 percent versus the nation's 1.6 percent increase since December 2007. The job recovery and expansion in the state as well as the nation has occurred only in private jobs, while government jobs in each decreased over the last year and are still below their pre-recession levels.

PA Total Nonfarm Jobs December 2007 to December 2014 (Seasonally Adjusted)



	December 2014	QTY Change	PA Change from December 2007		US Change from December 2007
			Volume	Percent	Percent
Total Nonfarm Jobs	5,825,500	70,900	10,900	0.2%	1.6%
Total Private Jobs	5,117,100	78,700	57,100	1.1%	2.3%
Government Jobs	708,400	-7,800	-46,200	-6.1%	-2.1%

Source: Bureau of Labor Statistics, Current Employment Statistics



Goods-producing Jobs

Goods-producing jobs in Pennsylvania in December 2014 were up 17,400 from one year prior, but were still down 95,600 or 10.2 percent since the start of the recession. All three industry supersectors grew over the year with construction increasing by 4.9 percent and mining & logging by 3.9 percent. Since December 2007, the state fared slightly better than the nation, being down 10.2 percent in goods-producing jobs compared to the nation's drop of 11.3 percent. This slight outperformance was led by mining & logging in Pennsylvania which increased by 77.5 percent, far outpacing its job growth in the nation. Construction also aided this outperformance with a job decrease of 10.7 percent, while at the national level it fell by 16.2 percent. Jobs in manufacturing, which is the biggest of these industry supersectors, decreased by 12.9 percent over this period compared to a 10.5 percent at the national level. Over the year, durable goods jobs rose by 0.5 percent, while nondurable goods grew by 1.5 percent. Compared to their pre-recession job levels, both durable goods and nondurable goods were faring worse than their counterparts in the nation and have not yet recovered to their pre-recession levels.

Pennsylvania Goods-producing Industries Nonagricultural Wage & Salary Employment (Seasonally Adjusted)

Industry	December 2014	OTY Change	PA Change from Dec '07		US Change from Dec '07
			Volume	Percent	Percent
Goods-producing Industries	840,700	17,400	-95,600	-10.2%	-11.3%
Mining & Logging	37,800	1,400	16,500	77.5%	23.4%
Construction	232,100	10,900	-27,700	-10.7%	-16.2%
Manufacturing	570,800	5,100	-84,400	-12.9%	-10.5%
Durable Goods	347,600	1,700	-57,400	-14.2%	-10.6%
Nondurable Goods	223,200	3,400	-27,000	-10.8%	-10.3%

Source: Bureau of Labor Statistics, Current Employment Statistics

Service-providing Jobs

In December 2014, Pennsylvania's service providing jobs were up 53,500 from one year prior and up 106,500 jobs or 2.2 percent since December 2007. Pennsylvania's best performing service-providing industry sectors (measured by percent increase) since the start of the recession were management of companies; health care & social assistance; arts, entertainment, and recreation; and educational services. Compared to the U.S., Pennsylvania was performing better in about one-fifth of all service-providing industry sectors. Management of companies was the best performing industry sector relative to the country as a whole, as its employment increased by 20.7 percent while increasing by 15.0 percent for the country. Industry sectors with the greatest underperformance included information; educational services; real estate & rental & leasing; and federal government. Finally, as of December 2014, the service-providing industries in both Pennsylvania and the nation had more jobs than at the recession's start, while jobs in the goods-producing industries were still substantially below their pre-recession levels.

**Pennsylvania Service-Providing Industries Nonagricultural Wage & Salary Employment
(Seasonally Adjusted)**

Industry	December 2014	OTY Change	PA Change from Dec '07		US Change from Dec '07
			Volume	Percent	Percent
Service-providing Industries	4,984,800	53,500	106,500	2.2%	4.1%
Trade, Transp. & Utilities	1,123,000	20,700	-11,500	-1.0%	-0.2%
Wholesale Trade	226,600	1,600	-13,600	-5.7%	-2.7%
Retail Trade	640,600	8500	-15,200	-2.3%	-0.5%
Transp., Warehouse & Utilities	255,800	10,600	17,300	7.3%	3.7%
Information	84,900	-1700	-23,400	-21.6%	-8.5%
Financial Activities	313,700	-1,200	-18,200	-5.5%	-2.8%
Finance & Insurance	254,200	-800	-11,000	-4.1%	-2.4%
Real Estate & Rental & Leasing	59,500	-400	-7,200	-10.8%	-3.9%
Professional & Business Services.	762,400	11,300	50,500	7.1%	7.7%
Professional & Technical Services	333,200	8,600	19,100	6.1%	8.8%
Management of Companies	133,900	1,300	23,000	20.7%	15.0%
Admin & Waste Services	295,300	1,400	8,400	2.9%	4.8%
Education & Health Services	1,190,600	20,500	111,700	10.4%	15.1%
Educational Services	234,400	6,200	18,400	8.5%	15.6%
Health Care & Social Assistance	956,200	14,300	93,300	10.8%	15.1%
Leisure & Hospitality	546,200	8,600	42,900	8.5%	10.3%
Arts, Entertainment &	94,100	800	8,400	9.8%	7.0%
Accommodations & Food	452,100	7,800	34,500	8.3%	10.9%
Other Services	255,600	3100	700	0.3%	1.7%
Government	708,400	-7,800	-46,200	-6.1%	-2.1%
Federal Government	96,300	200	-7,400	-7.1%	-0.9%
State Government	157,800	-700	-3,000	-1.9%	-1.2%
Local Government	454,300	-7,300	-35,800	-7.3%	-2.7%

Source: Bureau of Labor Statistics, Current Employment Statistics

OTHER ECONOMIC INDICATORS

New Hires

The number of new workers hired at companies increased by 44,800 in the fourth quarter of 2014, which represented a nine percent increase from the same quarter in 2013. The percentage changes of the clusters was similar, as new hires in goods-producing Industries increased by eight percent while increasing by seven percent in the service-providing Industries. At the sector level, more variability was present as new hires in mining and information both increased by 43 percent while those in government decreased by 13 percent.

Pennsylvania New Hires, 2013 to 2014, 4th Quarter

Industry Sector	2014 Q4	2013 Q4	Change from 2013 Q4	
			Volume	Percent
Total New Hires	542,500	497,700	44,800	9%
Goods-producing Industries	46,700	43,100	3,600	8%
Ag, Forestry, Fishing, Hunt.	1,600	1,700	-100	-6%
Mining	2,000	1,400	600	43%
Construction	18,900	16,600	2,300	14%
Manufacturing	24,200	23,400	800	3%
Service-providing Industries	466,000	434,600	31,400	7%
Trade, Transp. & Utilities	120,800	113,100	7,700	7%
Wholesale Trade	10,800	10,500	300	3%
Retail Trade	73,000	67,800	5,200	8%
Transp., Warehouse & Utilities	37,000	34,800	2,200	6%
Information	5,000	3,500	1,500	43%
Financial Activities	12,100	11,800	300	3%
Finance & Insurance	8,700	8,500	200	2%
Real Estate & Rental & Leasing	3,400	3,300	100	3%
Professional & Business Services	172,300	146,000	26,300	18%
Professional & Technical Services	19,200	17,600	1,600	9%
Management of Companies	3,200	3,000	200	7%
Admin & Waste Services	149,900	125,400	24,500	20%
Education & Health Services	78,500	79,200	-700	-1%
Educational Services	27,500	29,300	-1,800	-6%
Health Care & Social Assistance	51,000	49,900	1,100	2%
Leisure & Hospitality	61,100	64,400	-3,300	-5%
Arts, Entertainment & Recreation	17,800	18,400	-600	-3%
Accommodation & Food Services	43,300	46,000	-2,700	-6%
Other Services	10,400	9,900	500	5%
Government	5,800	6,700	-900	-13%
Unclassified Industry	29,900	19,900	10,000	50%

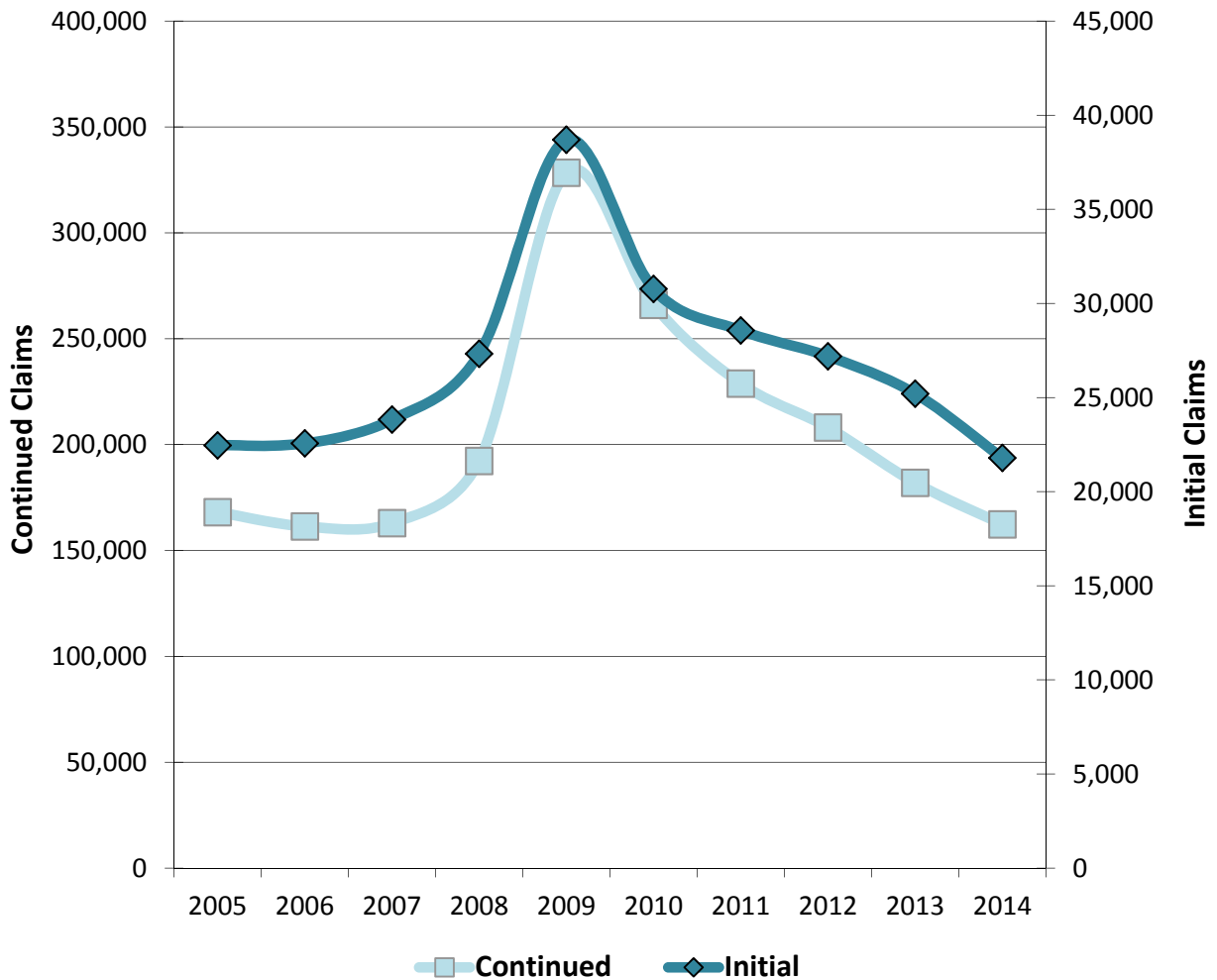
Due to rounding, the sums of sectors into larger categories may not equal the totals for those categories.

Source: Pennsylvania New Hire Reporting Program

Weekly Claims for Unemployment Compensation

Pennsylvania's average weekly number of initial claims continued to decrease in 2014, after peaking in 2009. The state's average weekly number of continued claims also decreased during the same period. The decline in initial claims indicates that fewer workers are being laid off, while the decrease in continuing claims indicates that covered unemployed workers are having an easier time finding jobs.

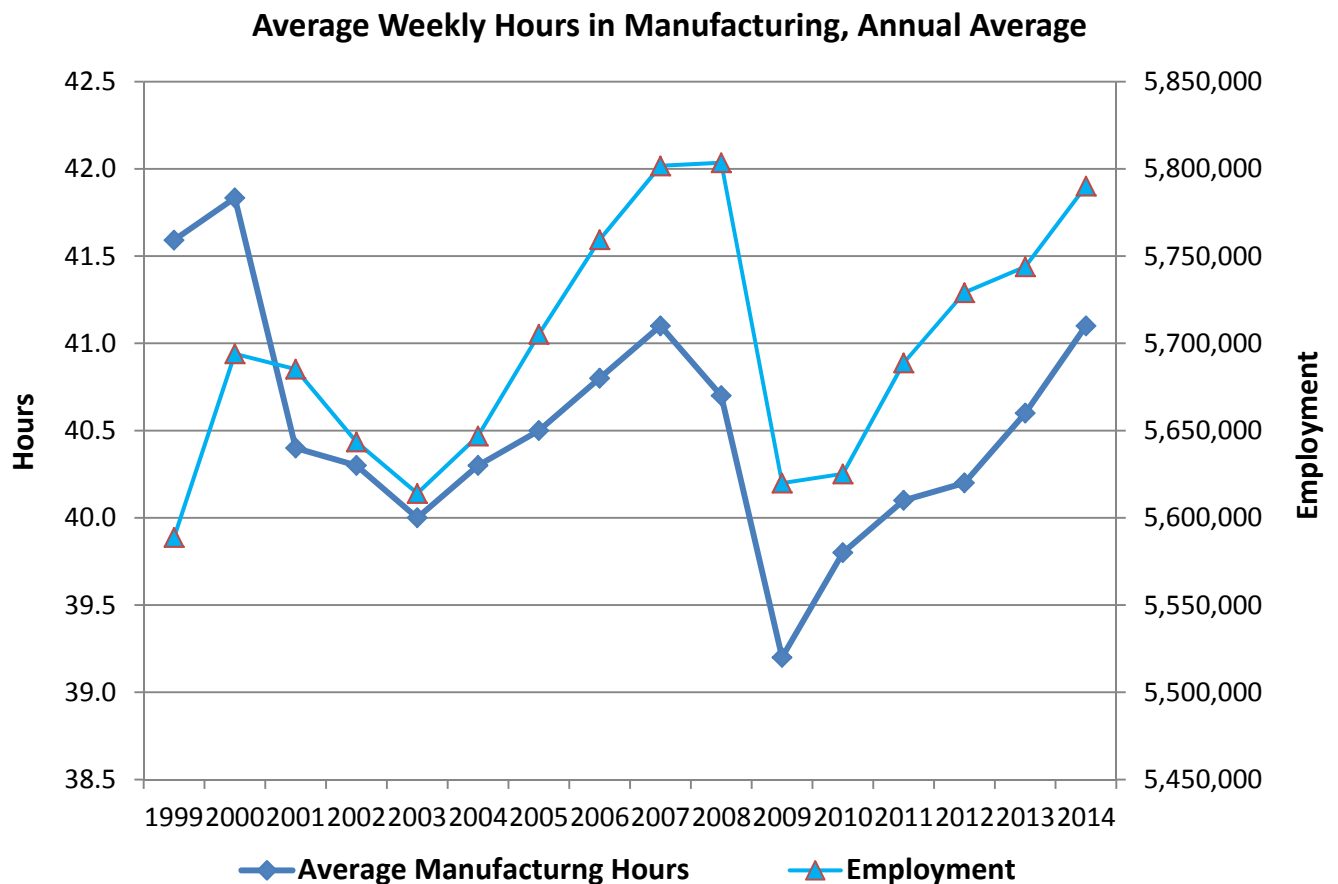
Weekly Average Initial and Continued Claims for Unemployment Compensation



Source: Pennsylvania Unemployment Compensation System

Average Weekly Hours in Manufacturing

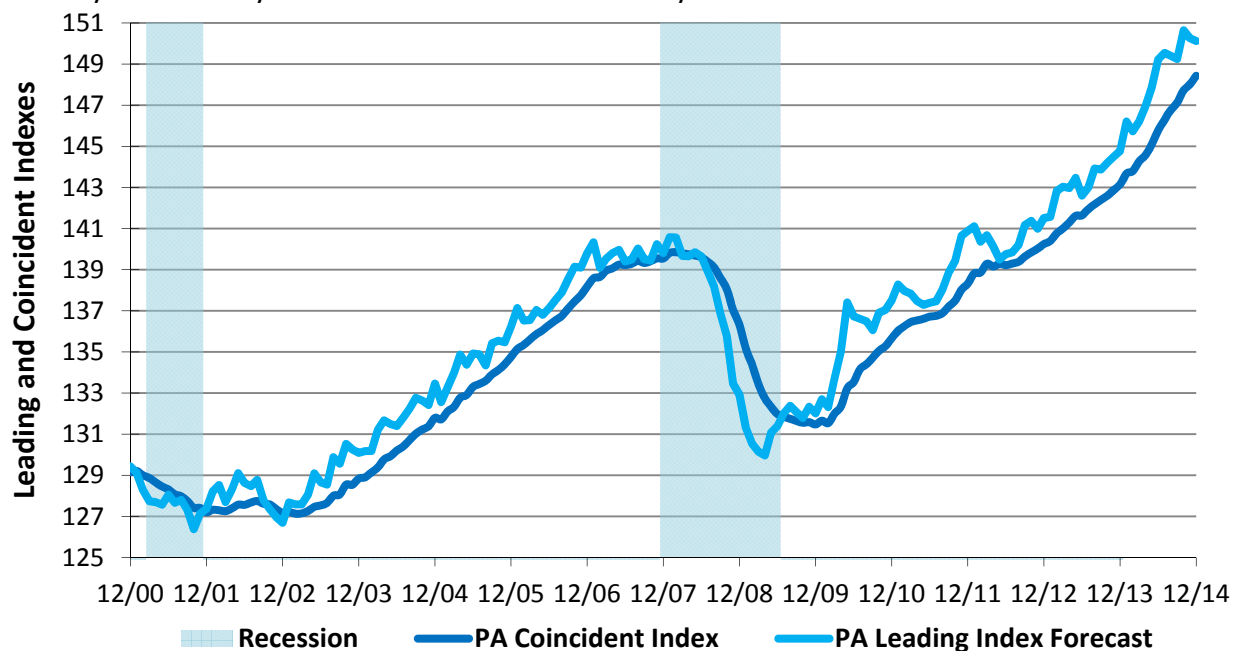
Average weekly hours are a leading indicator, often forecasting the direction of the state's economy. As the economy begins to grow out of a recession (e.g. in 2004), employers will tend to hold off on hiring new workers until they are more confident that economic growth is improving and instead, will have their existing employees work more hours. Eventually, as the economy continues to improve, businesses will be forced to add more workers and this increase in employment will reinforce the positive trend in economic growth (e.g. in 2005 to 2006). In contrast, when the economy is just beginning to slow down, employers wishing to maintain employee loyalty will try to keep their workers by reducing hours worked, rather than immediately laying off workers (e.g. in 2001). If the slowdown deepens, eventually businesses are forced to lay off workers, reinforcing the negative trend in economic growth (e.g. in 2002 to 2003). The annual average of weekly hours in manufacturing turned down in 2007 and 2008, signaling that employers were reducing hours due to the economic recession. From 2009 to the present, both average weekly hours and total employment have been increasing, although initially hours increased by a greater percentage. The continued increase in average hours may be signaling that more employment growth could be forthcoming.



Source: Bureau of Labor Statistics, Current Employment Statistics

Coincident and Leading Economic Indexes¹

The Federal Reserve Bank of Philadelphia produces on a monthly basis a coincident economic index and a leading economic index for Pennsylvania. The coincident index combines four state-level indicators to summarize current economic conditions. The four variables are nonfarm payroll employment, average hours worked in manufacturing, the unemployment rate, and wage and salary disbursements deflated by the consumer price index (U.S. city average). The trend for each state's index is set to the trend of its gross domestic product (GDP), so long-term growth in the state's index matches long-term growth in its GDP. The leading index for each state predicts the six-month growth rate of the state's coincident index. In addition to the coincident index, the models include other variables that lead the economy: state-level housing permits (1 to 4 units), state initial unemployment insurance claims, delivery times from the Institute for Supply Management manufacturing survey, and the interest rate spread between the 10-year Treasury bond and the 3-month Treasury bill.



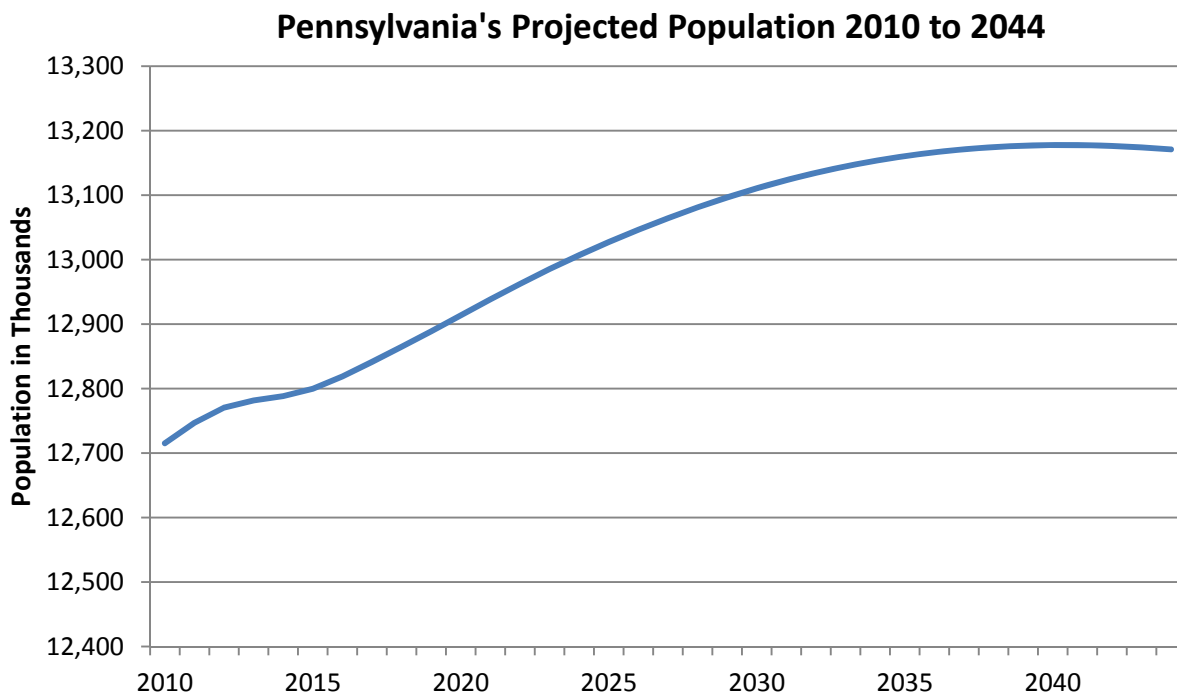
In the graph above, months of national recessions are depicted as solid light blue columns. Sustained rises in the coincident index indicate recoveries while sustained decreases indicate contractions. When the leading index forecast exceeds the coincident index, it is projecting growth over the following six months. Since the coincident index is rising and the leading index forecast is above it, these indicators signal that Pennsylvania is in a recovery which is anticipated to continue.

¹ Material for this section was taken from the Philadelphia Federal Reserve Website. More information on the indexes can be found at <http://www.phil.frb.org/research-and-data/regional-economy/indexes/coincident/> and <http://www.philadelphiafed.org/research-and-data/regional-economy/indexes/leading/>.

DEMOGRAPHICS

Population

Population change is the underlying force that moves the economy. Over the next 10 years, 2014 to 2024, Pennsylvania's population is projected to grow by 1.7 percent. In comparison, the nation's population is projected to grow by 8.2 percent. While the state's overall population growth will be relatively low in the years to come, its age distribution is expected to change more dramatically.

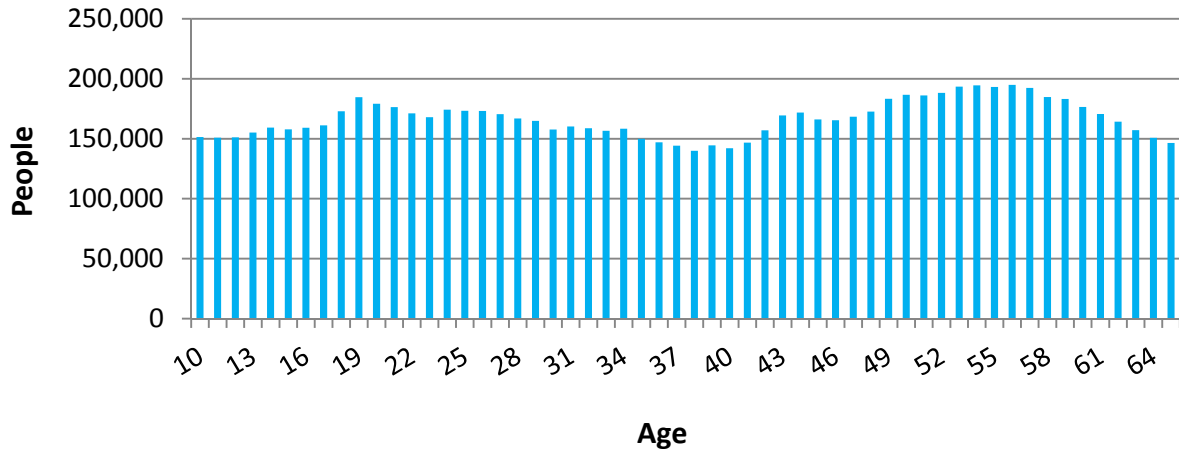


Source: U.S. Census Bureau and IHS Economics

Age

Pennsylvania's population is growing older. The number of Pennsylvanians age 65 and over was 2.1 million in 2014. The state's percentage of those aged 65 and over is the sixth highest in the nation (16.69 percent) – only Florida (19.06), Maine (18.31), West Virginia (17.76), Vermont (16.95) and Montana (16.72) are higher. This is largely a by-product of the aging of the population born during the baby-boom period after World War II (1946 to 1964). The oldest of the baby-boom generation turned 65 in 2011 (now age 68) and the youngest will turn 65 in 2029 (now age 50). Thus, a large wave of baby boomers will be leaving the workforce over the next few decades. Since the number of births from the mid-1960s until the mid-1980s was lower than that during the baby-boom years, the natural increase in the workforce population (entrants) will be insufficient to replace those leaving it (separations).

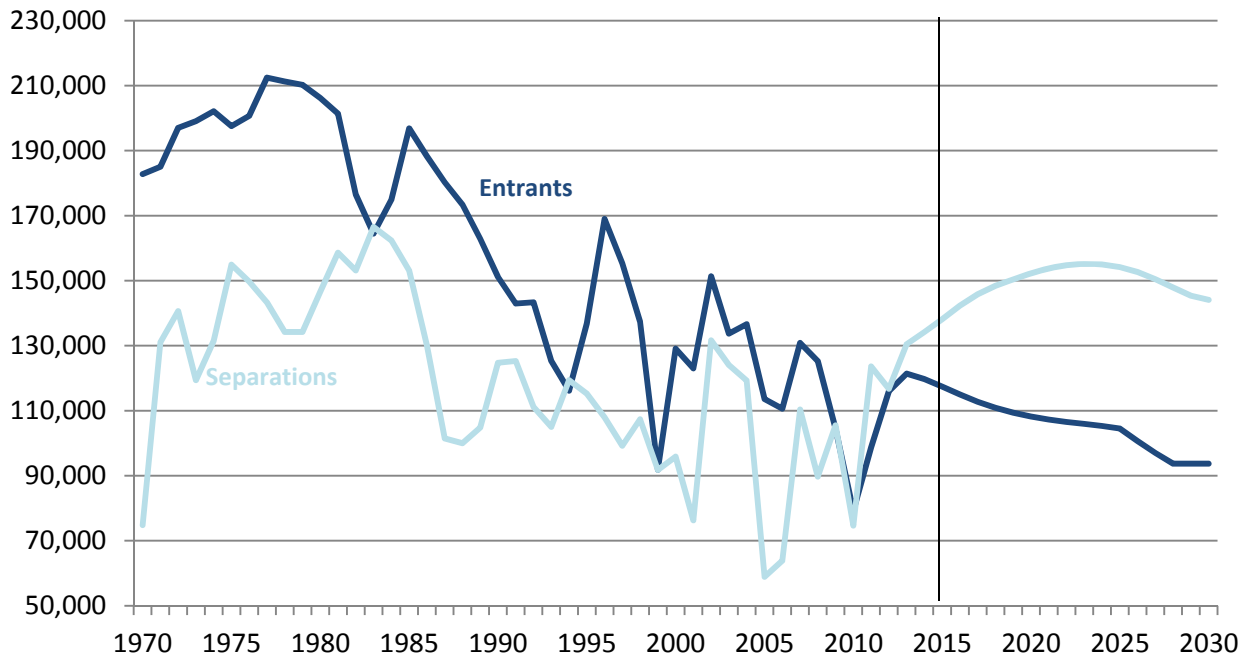
Pennsylvania Population: Age 10 to 65 in 2014



Source: U.S. Census Bureau

While the overall population will increase modestly, the workforce population will shrink barring a substantial in-migration of workers. Beginning around 2015, the total working age population (age 25 to 64) is projected to decline annually through 2044. This will result in worker shortages in the coming years with some areas, industries, and occupations being affected sooner and harder than others. Due to the stock market crash of 2008, many baby boomers who had lost significant wealth elected to stay in the job market and made up some of the coming shortfall of younger workers. The recent rebound in the market may reverse that trend.

Pennsylvania Labor Force Entrants and Separations, 1970-2030



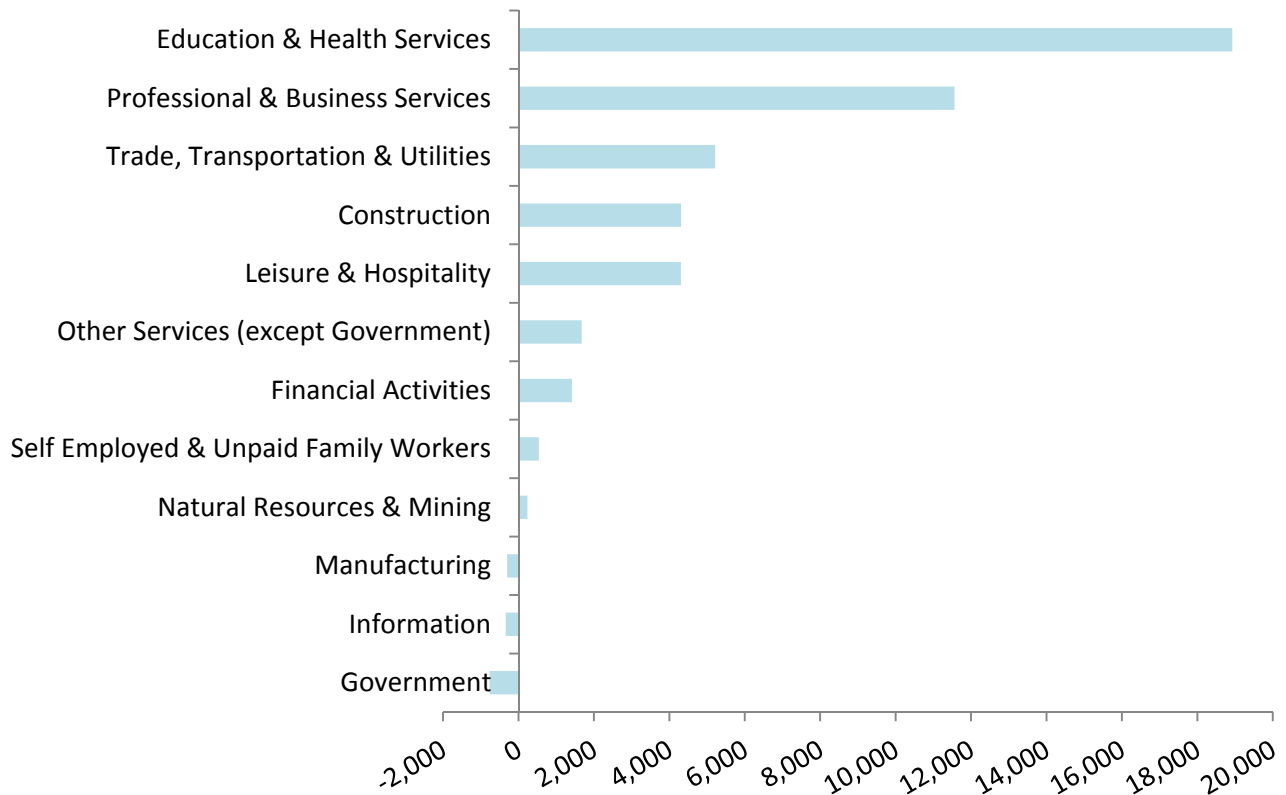
Source: Center for Workforce Information & Analysis

PROJECTIONS

Industry

Pennsylvania’s education & health services, professional & business services, and trade, transportation & utilities sectors are anticipated to account for 76 percent of the total annual employment growth through 2022. The government, information, and manufacturing sectors are the only three sectors projected to lose jobs annually. Both the growing and shrinking sectors reflect continuing trends that are reflecting the dynamics of an aging population’s need for more health care; the gradual transition of the baby-boom generation out of the workforce and into an active retirement; technological change which has affected all industries, but has been more pronounced in industries such as publishing (excluding internet) in the information sector; and the continued transformation of the state’s economy from that of a goods producer to a service provider.

Annual Employment Change by Industry Sector to 2022



Source: Center for Workforce Information & Analysis

Growing Industries

The list of growing industries is dominated by those found in the health care & social assistance sector. Added this year to the list of growing industries were warehousing & storage, specialty hospitals, utility system construction, scientific research & development services, residential building construction, and other financial investment activities.

Top 25 Growing Industries in Pennsylvania through 2022, by Volume

Industry	Annual Employment Growth
Employment Services	3,070
Individual & Family Services	2,970
General Medical & Surgical Hospitals	2,860
Restaurants & Other Eating Places	2,840
Home Health Care Services	1,990
Computer Systems Design & Related Services	1,960
Nursing Care Facilities (Skilled Nursing Facilities)	1,470
Management of Companies & Enterprises	1,470
Offices of Other Health Practitioners	1,390
Community Care Facilities For The Elderly	1,370
Colleges, Universities & Professional Schools	1,160
Offices of Physicians	1,060
Building Equipment Contractors	1,050
Warehousing & Storage	1,000
Outpatient Care Centers	990
Specialty (except Psychiatric & Substance Abuse) Hospitals	970
Child Day Care Services	860
General Freight Trucking	840
Architectural, Engineering & Related Services	830
Management, Scientific & Technical Consulting Services	740
Services to Buildings & Dwellings	740
Utility System Construction	730
Scientific Research & Development Services	710
Residential Building Construction	640
Other Financial Investment Activities	600

Source: Center for Workforce Information & Analysis

Declining Industries

The list of industries projected to decline is dominated by those found in the manufacturing sector. Some new industries to the list this year include newspaper, periodical, book, and directory publishers; wired telecommunications carriers; and couriers.

Top 25 Declining Industries in Pennsylvania through 2022, by Volume

Industry	Annual Employment Loss
Postal Service	-810
Department Stores	-470
Depository Credit Intermediation	-430
Newspaper, Periodical, Book & Directory Publishers	-330
Federal Government, Excluding Post Office	-320
Printing & Related Support Activities	-310
Wired Telecommunications Carriers	-280
Cut & Sew Apparel Manufacturing	-220
Couriers	-180
Elementary & Secondary Schools	-180
Metalworking Machinery Manufacturing	-140
Office Supplies, Stationery & Gift Stores	-130
Travel Arrangement & Reservation Services	-120
Florists	-120
Psychiatric & Substance Abuse Hospitals	-120
Other Miscellaneous Manufacturing	-110
Fabric Mills	-110
Pharmaceutical & Medicine Manufacturing	-110
Communications Equipment Manufacturing	-100
Semiconductor & Other Electronic Component Manufacturing	-90
Electric Goods Merchant Wholesalers	-90
Electric Power Generation, Transmission & Distribution	-90
Coal Mining	-90
Bakeries & Tortilla Manufacturing	-90
Drugs & Druggists' Sundries Merchant Wholesalers	-70

Source: Center for Workforce Information & Analysis

Emerging Industries

Pennsylvania has forecast a number of emerging industries through 2022. An emerging industry is defined here as having statewide employment of less than 15,000 and annual employment gains of at least 50. The emerging industries are spread throughout most industry sectors, with manufacturing (in spite of being projected to decline overall) and administrative services dominating the list.

Top 50 Emerging Industries in Pennsylvania through 2022

Industry	Annual Employment Gain
Highway, Street & Bridge Construction	300
Miscellaneous Durable Goods Merchant Wholesalers	240
Waste Collection	220
Other Wood Product Manufacturing	220
Other Support Services	210
Facilities Support Services	180
Educational Support Services	180
Machinery & Equip. Rental & Leasing	160
Medical & Diagnostic Laboratories	160
Other Information Services	130
Cement & Concrete Product Manufacturing	130
Software Publishers	120
Oil & Gas Extraction	120
Social Advocacy Organizations	120
Used Merchandise Stores	110
Museums, Historical Sites & Similar Institution	110
Other Residential Care Facilities	110
Commercial Machinery Repair/Maintenance	100
Other Transit & Ground Passenger Transportation	100
Sawmills & Wood Preservation	100
Remediation & Other Waste Management Services	100
Animal Slaughtering & Processing	90
Hardware & Plumbing Merchant Wholesalers	90
Consumer Goods Rental	90

Source: Center for Workforce Information & Analysis (Only 48 industries are shown, due to data suppression requirements to protect confidentiality).

Top 50 Emerging Industries in Pennsylvania through 2022 (continued)

Industry	Annual Employment Gain
Support Activities for Road Transportation	90
Other Schools & Instruction	90
Nondepository Credit Intermediation	90
Freight Transportation Arrangement	80
Other Personal Services	80
Gambling Industries	70
Activities Related to Real Estate	70
Promoters of Performing Arts, Sports & Similar Events	70
Other Fabricated Metal Product Manufacturing	70
Motion Picture & Video Industries	70
Specialized Design Services	60
Death Care Services	60
Automotive Equipment Rental & Leasing	60
Amusement Parks & Arcades	60
Technical & Trade Schools	60
Coating, Engraving, Heat Treating & Allied Activities	60
Emergency & Other Relief Services	60
Furniture Stores	60
Metal & Mineral (except Petroleum) Merchant Wholesalers	50
Chemical & Allied Products Merchant Wholesalers	50
Office Furniture (including Fixtures) Manufacturing	50
Pipeline Transportation of Natural Gas	50
Veneer, Plywood & Engineered Wood Product Manufacturing	50
Alcoholic Beverage Merchant Wholesalers	50

Source: Center for Workforce Information & Analysis (Only 48 industries are shown, due to data suppression requirements to protect confidentiality).

Occupations

Modest economic growth coupled with an aging workforce will create opportunities for job seekers in all major occupational groups. The greatest total opportunities among these groups will be in office & administrative support occupations; food preparation & serving related occupations; sales & related occupations; transportation & material moving occupations; and healthcare practitioners & technical occupations. Major occupational groups not already mentioned and having the best opportunities due to growth will be production occupations; education, training, & library occupations; business & financial operations occupations; and

installation, maintenance, & repair occupations. Major occupational groups not already listed and having the best opportunities due to replacements (mainly those leaving due to retirement) will be healthcare support occupations; personal care & service occupations; construction & extraction occupations; and computer & mathematical occupations.

Annual Employment Change by Major Occupation Group to 2022

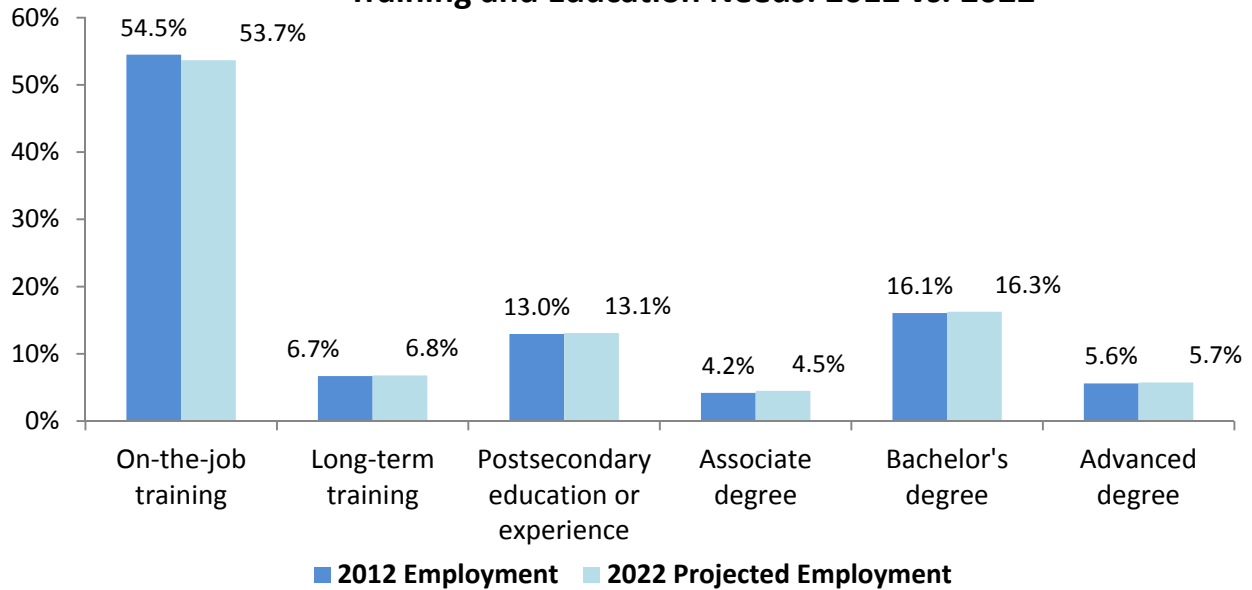
Occupational Group	Annual Change through 2022		
	Total	Due to Replacements	Due to Growth
Office & Administrative Support Occupations	26,150	5,080	21,070
Food Preparation & Serving Related Occupations	21,840	4,030	17,810
Sales & Related Occupations	20,980	1,850	19,130
Transportation & Material Moving Occupations	13,460	3,830	9,630
Healthcare Practitioners & Technical Occupations	13,410	5,950	7,460
Production Occupations	9,900	1,600	8,300
Personal Care & Service Occupations	9,240	3,830	5,410
Business & Financial Operations Occupations	8,840	2,880	5,960
Education, Training & Library Occupations	8,650	1,620	7,030
Construction & Extraction Occupations	8,220	3,740	4,480
Healthcare Support Occupations	7,780	3,860	3,930
Installation, Maintenance & Repair Occupations	7,490	1,950	5,540
Management Occupations	7,360	1,880	5,480
Building & Grounds Cleaning & Maintenance Occupations	6,270	1,850	4,410
Community & Social Service Occupations	4,910	1,630	3,270
Computer & Mathematical Occupations	4,550	2,290	2,260
Protective Service Occupations	3,980	820	3,160
Architecture & Engineering Occupations	3,210	930	2,280
Arts, Design, Entertainment, Sports & Media Occupations	2,540	470	2,060
Life, Physical & Social Science Occupations	1,800	470	1,340
Farming, Fishing & Forestry Occupations	1,490	50	1,440
Legal Occupations	1,320	550	770

Source: Center for Workforce Information & Analysis
 Totals may not sum due to rounding.

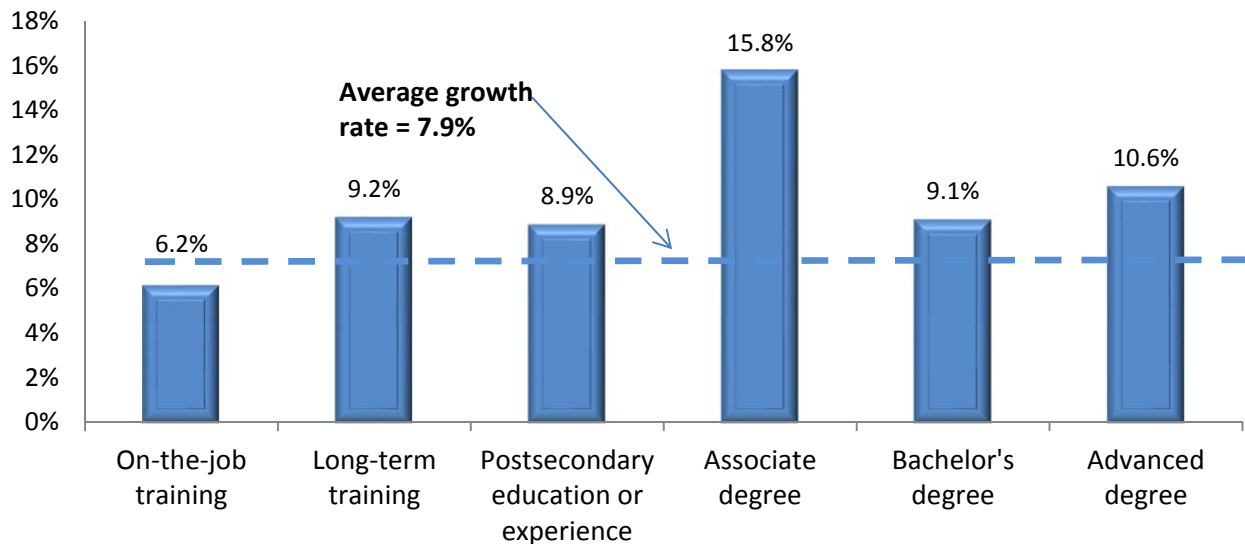
Educational and Training Needs

Over the 10-year period from 2012 to 2022, training and educational requirements of jobs will shift away from short-term and moderate-term on-the-job training towards long-term training and more advanced formal education. Jobs collectively requiring any of the training categories are projected to grow by 7.9 percent and jobs requiring each of the training categories individually, likewise will grow. While jobs requiring on-the-job training are projected to grow by 6.2 percent, jobs requiring an Associate degree are projected to grow by 15.8 percent and those requiring an advanced degree by 10.6 percent.

Training and Education Needs: 2012 vs. 2022



10 Year Growth Rate in Training and Education Needs



Source: Center for Workforce Information & Analysis
Totals may not sum due to rounding.

Emerging Occupations

Pennsylvania has forecast a number of emerging occupations through 2022. An emerging occupation is defined as having statewide employment less than 10,000 and projected to have at least 100 annual openings through 2022. The occupations are ranked in descending order from the highest annual percentage change. The emerging occupations are concentrated in the following major groups: Healthcare Practitioners & Technical Occupations; Community & Social Service Occupations; Healthcare Support Occupations; and Management Occupations.

Top 50 Emerging Occupations in Pennsylvania through 2022

Occupational Title	10 Year Percentage Change	Average Annual Openings		
		Total	Due to Growth	Due to Replacements
Physical Therapist Aides	39%	140	90	50
Diagnostic Medical Sonographers	36%	130	100	40
Information Security Analysts	34%	100	70	30
Meeting, Convention & Event Planners	29%	120	80	40
Physical Therapist Assistants	28%	210	120	90
Cardiovascular Technologists & Technicians	27%	120	80	40
Occupational Therapy Assistants	27%	120	60	60
Personal Financial Advisors	27%	340	210	130
Brickmasons & Blockmasons	26%	130	90	40
Surgical Technologists	26%	120	90	30
Logisticians	25%	190	130	60
Nurse Practitioners	24%	150	90	70
Medical Equipment Repairers	24%	140	60	70
Healthcare Social Workers	23%	350	180	170
Production Workers, All Other	21%	200	90	110
Operations Research Analysts	21%	100	50	50
Substance Abuse & Behavioral Disorder Counselors	21%	370	180	190
Massage Therapists	21%	100	60	30
Speech-Language Pathologists	20%	150	90	70
Respiratory Therapists	20%	180	100	80
Occupational Therapists	19%	190	110	80
Phlebotomists	19%	180	90	90
Veterinary Technologists & Technicians	19%	110	70	40
Medical Records & Health Information Technicians	19%	340	140	200
Paralegals & Legal Assistants	18%	310	170	150

Source: Center for Workforce Information & Analysis
Totals may not sum due to rounding.

Top 50 Emerging Occupations in Pennsylvania through 2022 (continued)

Occupational Title	10 Year Percentage Change	Average Annual Openings		
		Total	Due to Growth	Due to Replacements
Human Resources Managers	18%	150	60	90
Cement Masons & Concrete Finishers	18%	170	100	70
Computer-Controlled Machine Tool Operators, Metal	17%	310	120	190
Health Educators	17%	130	50	80
Mental Health & Substance Abuse Social Workers	17%	370	160	210
Opticians, Dispensing	16%	120	40	80
Radiologic Technologists	16%	300	160	140
Web Developers	16%	140	70	70
Crane & Tower Operators	16%	100	30	70
Dental Hygienists	16%	350	130	220
Manicurists & Pedicurists	16%	110	70	40
Painters, Construction & Maintenance	15%	260	130	130
Nonfarm Animal Caretakers	15%	180	100	80
Electrical Power-Line Installers & Repairers	15%	190	60	130
Computer & Information Systems Managers	15%	260	140	130
Security & Fire Alarm Systems Installers	15%	110	50	70
Education Administrators, Preschool & Childcare	15%	110	40	70
Biological Science Teachers, Postsecondary	14%	110	60	60
Rehabilitation Counselors	14%	250	100	150
Database Administrators	14%	160	70	90
Environmental Scientists & Specialists	14%	110	40	80
Cargo & Freight Agents	14%	130	40	80
Maintenance Workers, Machinery	13%	120	60	60
Marketing Managers	13%	200	70	120
Dietitians & Nutritionists	13%	100	50	50

Source: Center for Workforce Information & Analysis
 Totals may not sum due to rounding.

CONCLUSION

The Great Recession officially ended in June of 2009, but labor markets continued to deteriorate into 2010. The job recovery period that ensued was sluggish and meager, and it was not until 2014 that Pennsylvania recovered and surpassed its previous jobs high and entered into a jobs expansion period. Virtually all of Pennsylvania's labor market indicators in 2014 showed a true strengthening of the labor market. Pennsylvania's average employment was 6,009,000 in 2014, an increase of 45,000 jobs from 2013 or 0.8 percent. In 2014, the average unemployment rate was 5.8 percent, a decrease of 1.6 percentage points from 2013 and was 0.4 percentage point lower than the U.S. average rate for 2014, which was 6.2 percent. Pennsylvania's total nonfarm jobs were at 5,825,500 in December 2014, up 70,900 (1.2 percent) from one year before and up 258,300 since the most recent jobs low in February 2010. The December 2014 jobs count set a new high, surpassing the previous high of April 2008 by 500. Consequently, this was the first month that Pennsylvania regained all the jobs (and more) that were lost during the recession. Other signs of an improving labor market were decreases in long-term unemployment and U6 (the broadest measure of labor underutilization), and an increase in the nominal and real wage rate. The nation's labor market improvement over this period was somewhat better than Pennsylvania's, indicating there is still work to be done. Further, these improvements occurred while the labor force and the labor force participation rate were declining. This seems to be a national trend reflecting demographic changes and other longer term trends, rather than a sign of weakness in the labor market. In addition, this is occurring in an environment where Pennsylvania's economy continues to adapt and transform itself from goods-producing to service-providing industries. The leading economic index also projects continued growth in the economy going forward, which may result in further improvement in the labor market. However, there are potential headwinds that could affect the national economy, including international developments and (particularly monetary) policy changes which will also have a detrimental effect on Pennsylvania's economy and labor market.

The longer term trends indicate that workers from the baby-boom generation are moving into their 60s and will be retiring in large numbers over the coming years. They will take key skills with them. Beginning around 2015, Pennsylvania's total working age population (age 25 to 64) is projected to decline annually through 2044. Far fewer youth will be available to enter the labor market, forcing greater efficiencies and competition for key skills. Without a large influx of outside labor, there will be worker shortages in the coming years and some areas, industries, and occupations will be affected sooner and harder than others. With the stock market crash of 2008, many baby boomers who lost significant wealth elected to stay in the job market and made up for some of the coming shortfall of younger workers. The recent rebound in the market may reverse that trend.

Jobs in most major occupational groups will be plentiful for current and future labor market participants. If another downturn can be averted, modest economic growth coupled with an aging workforce will create opportunities for anyone seeking a job. The best paying jobs will go to those achieving more than a high school education.

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