

Economic Review of Pennsylvania 2008

**Center for Workforce
Information & Analysis
(CWIA)**

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Contents

	<u>Page</u>
Preface	4
Summary	5
I. Recent Trends and Developments	7
1) Labor Force Statistics	8
2) Industry Employment	11
3) Wages	13
4) Economic Indicators	15
II. Long-term Trends and Outlook	22
5) Demographics	23
6) Projections	26
Conclusion	32

Preface

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

Workers from the baby-boom generation are moving into their 60s and are retiring in large numbers. They are taking with them key skills that kept industry growing and prosperous. Far fewer youth are available to enter the labor market, forcing greater efficiencies and competition for key skills.

This report examines the demographic, economic, and labor market developments unfolding in Pennsylvania. While this report contains an analysis of Pennsylvania's entire workforce composition, it also focuses on the future trends of the commonwealth's economy, industries, and occupations.

(This report was submitted to the Employment and Training Administration, U.S. Department of Labor, as required by the Core Products and Services Grant.)

Summary

- Pennsylvania's employment reached 6,051,000 in 2008, an all-time high. However, the National Bureau of Economic Research declared that a national recession began in December 2007. As the effects of the recession took hold in the state, Pennsylvania's unemployment rate increased to 5.4 percent in 2008, its highest level since 2004.
- The Education & Health Services and Professional & Business Services industry sectors have posted the largest job gains over the past year, tallying nearly 75 percent of all jobs created in Pennsylvania.
- The highest wages within Pennsylvania are found in the Financial Activities, Professional & Business Services, and Information industry sectors. The Professional & Business Services industry sector pays more than \$16,000 dollars above the statewide average industry wage (nearly \$43,000).
- Pennsylvania's average weekly number of continued claims increased for the second year in a row as the current recession took hold in 2008. The state's average weekly number of initial claims also increased, surpassing its recent high in 2003, the highpoint of the previous economic downturn.
- Pennsylvania's diffusion, coincident, and leading indexes all show a significant slowing of the state's economy heading into 2009.
- Over the next ten years, Pennsylvania's population is projected to grow by just two percent. In comparison, the nation's population will grow by nearly nine percent.
- Pennsylvania's population is growing older. The number of Pennsylvanians age 65 and over was 1.9 million in 2007. The state's percentage of those ages 65 and over is the second highest in the nation (15.4 percent). Florida has the highest percentage of those 65 and over.
- Beginning around 2015, Pennsylvania's total working age population (age 25 to 64) will be less than the year before until at least 2029. Therefore, there will be workers shortages in the coming years and some areas, industries, and occupations will be affected sooner and harder than others. However, with the stock market crash of 2008, many Baby Boomers who lost significant wealth may elect to stay in the job market and thus make up the coming shortfall of younger workers.

- The proportion of minorities in the labor force will grow because of immigration and higher labor force participation rates
- Women will dominate Pennsylvania's labor force growth through 2016.
- Pennsylvania's Education & Health Services, Professional & Business Services, and Leisure & Hospitality industry sectors will account for nearly 90 percent of all annual employment growth through 2016.
- The health care and social assistance industries will dominate growth.
- While jobs are hard to come in the current recession, once an economic recovery takes hold employment in most major occupational groups will be plentiful in the years to come for current and future labor market participants. 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.

Recent Trends and Developments

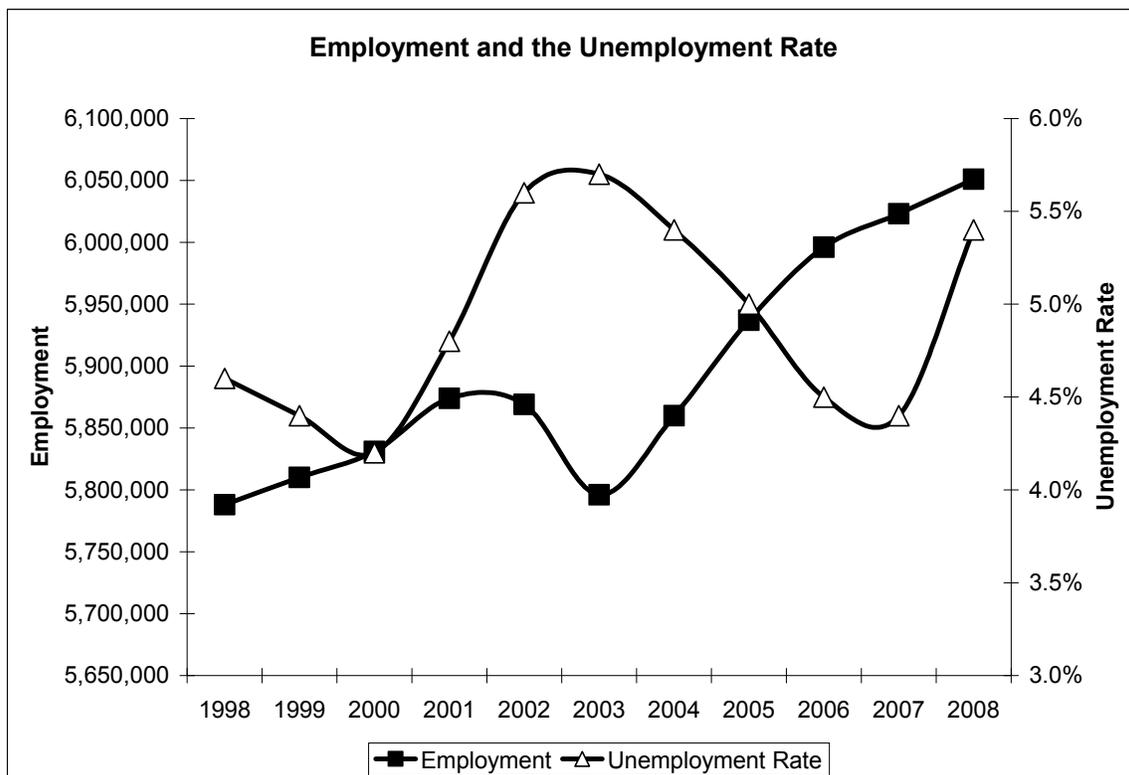
Labor Force Statistics

Employment

Pennsylvania's employment reached 6,051,000 in 2008, an all-time high. Over-the-year, employment was up by 28,000. However, the state's over-the-year employment change in 2008 slowed significantly from the previous three-year average change of 54,000. Since its 2003 trough, the state's employment level increased by 255,000, or over 4 percent, and is up nearly 276,000 from ten years ago, or nearly 5 percent.

Unemployment Rate

Pennsylvania's unemployment rate increased to 5.4 percent in 2008, its highest level since 2004. Over-the-year, the rate increased by one percentage point, its largest one year increase since 1991.

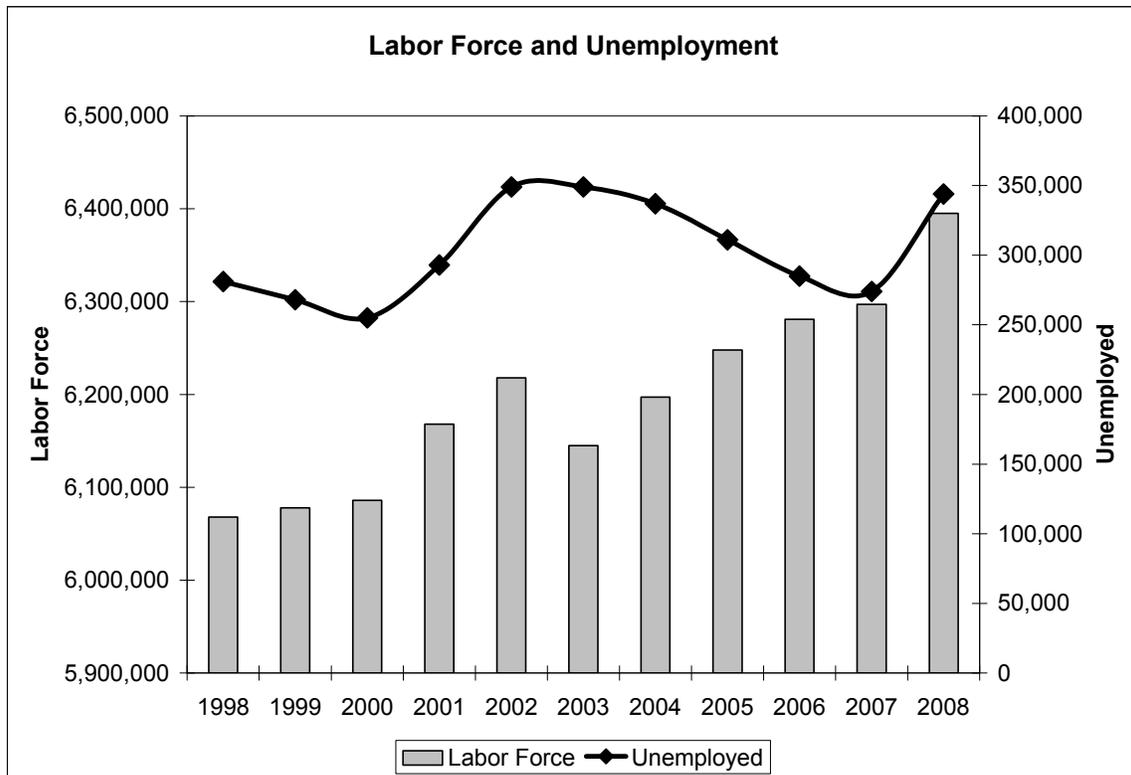


Labor Force

Pennsylvania's labor force was 6,395,000 in 2008, up 98,000 from last year. The state's labor force was up 250,000 since the recent 2003 low, and up 327,000 from 1998.

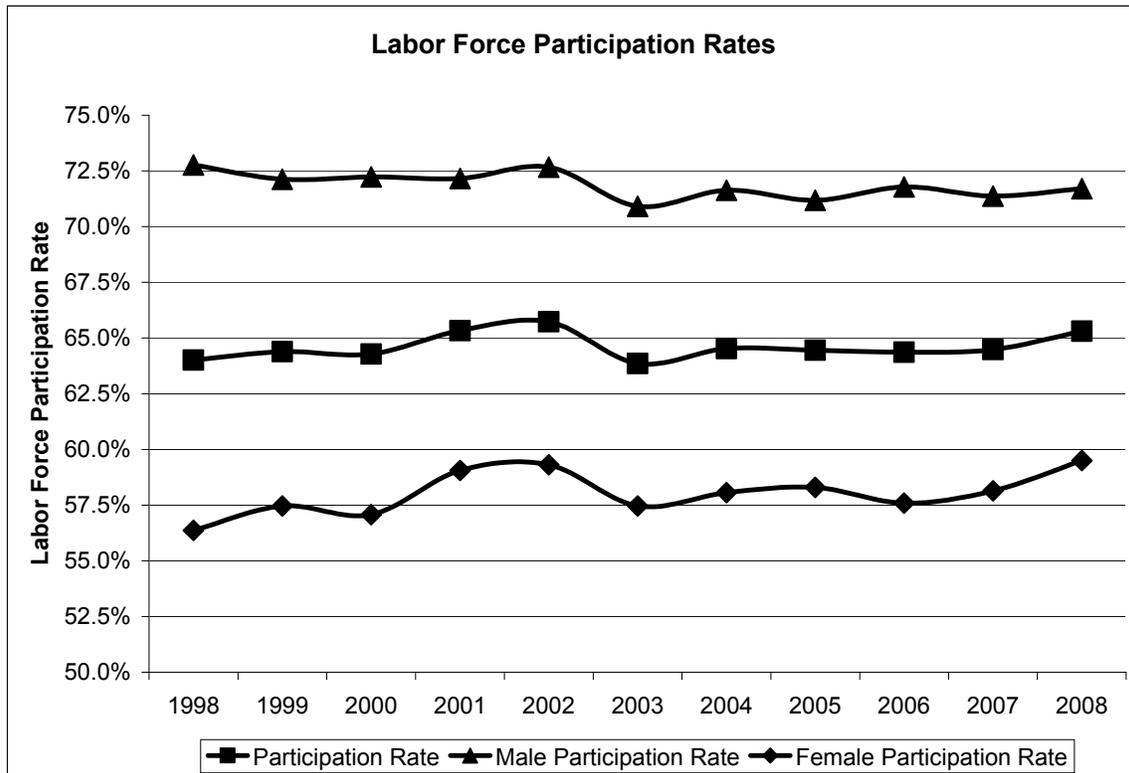
Unemployed

The number of unemployed Pennsylvanians increased for the first time in four years, coming in at 344,000 – the highest level since 2003. The over-the-year change was 70,000, the largest one year change since 1991.



Labor Force Participation

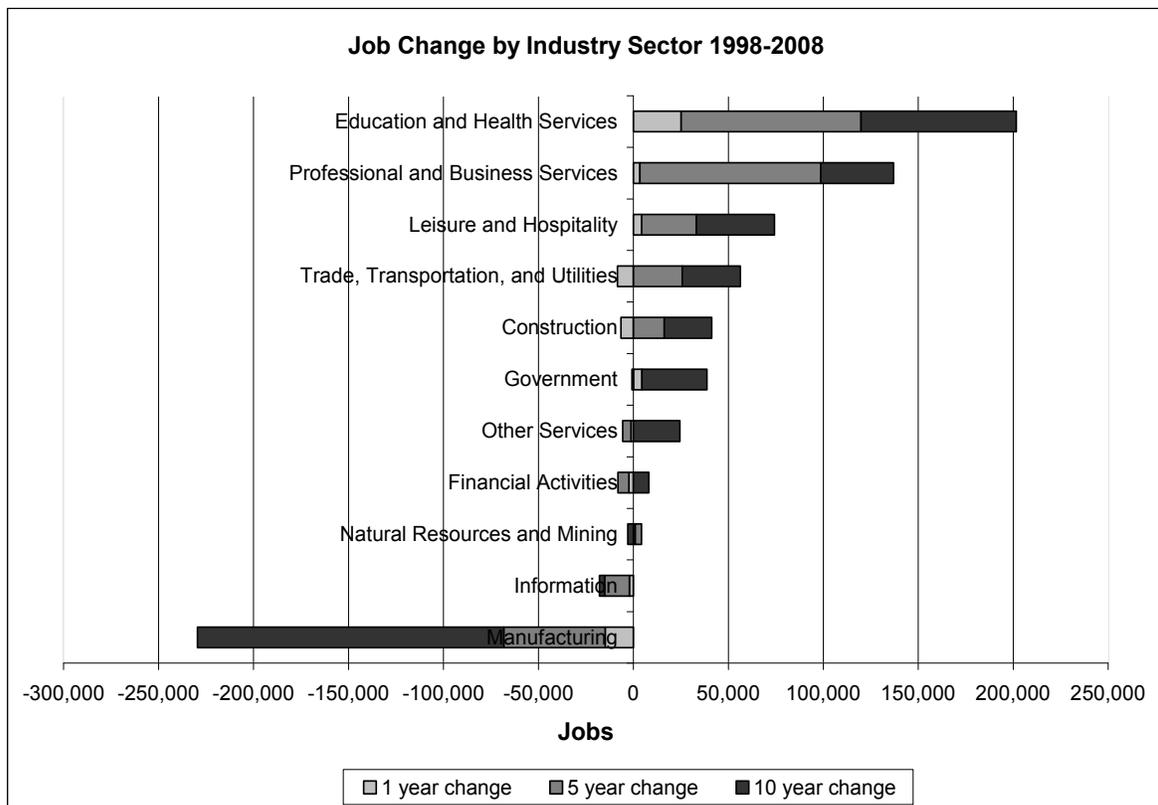
Pennsylvania's labor force participation rate was 65.3 percent in 2008, up nearly one percentage point from 2007. The rate peaked in 2002 at 65.8 percent. (The rate is a measure of people who are working or who want to work. It goes up when employment increases and or the perception that there is work rises.) In 2008, the male labor force participation rate was 71.7 percent, up slightly from the previous year, and the female rate was 59.5 percent, up substantially from 2007's rate of 58.1 percent.



Industry Employment

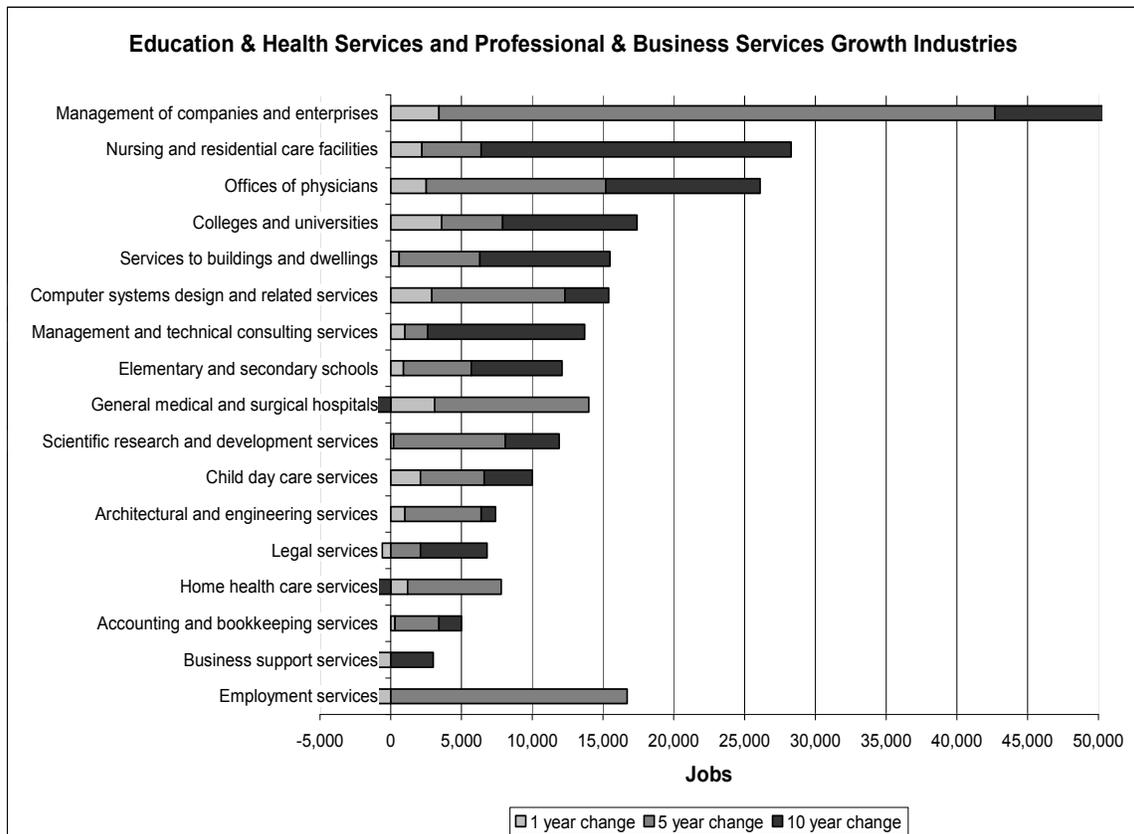
Jobs

The Education & Health Services and Professional & Business Services industry sectors have posted the largest job gains over the past year, tallying nearly 75 percent of all jobs created within Pennsylvania. In addition, both of these industry sectors have added the most jobs over the past five-year and ten-year time frames. In contrast, Pennsylvania's manufacturing industry shed the most jobs over the past year, accounting for over 40 percent of all jobs lost. The decline in manufacturing is a continuation of the industry's five-year and ten-year trends and beyond. The reason for the decline is threefold: the continued shift of manufacturing jobs to overseas producers; the outsourcing of specialized processes (i.e. accounting and janitorial services); and productivity gains causing a reduction in needed jobs. As a result, the Pennsylvania economy continues to adapt and transform itself from one of goods-producing to service-providing.



Jobs Detail

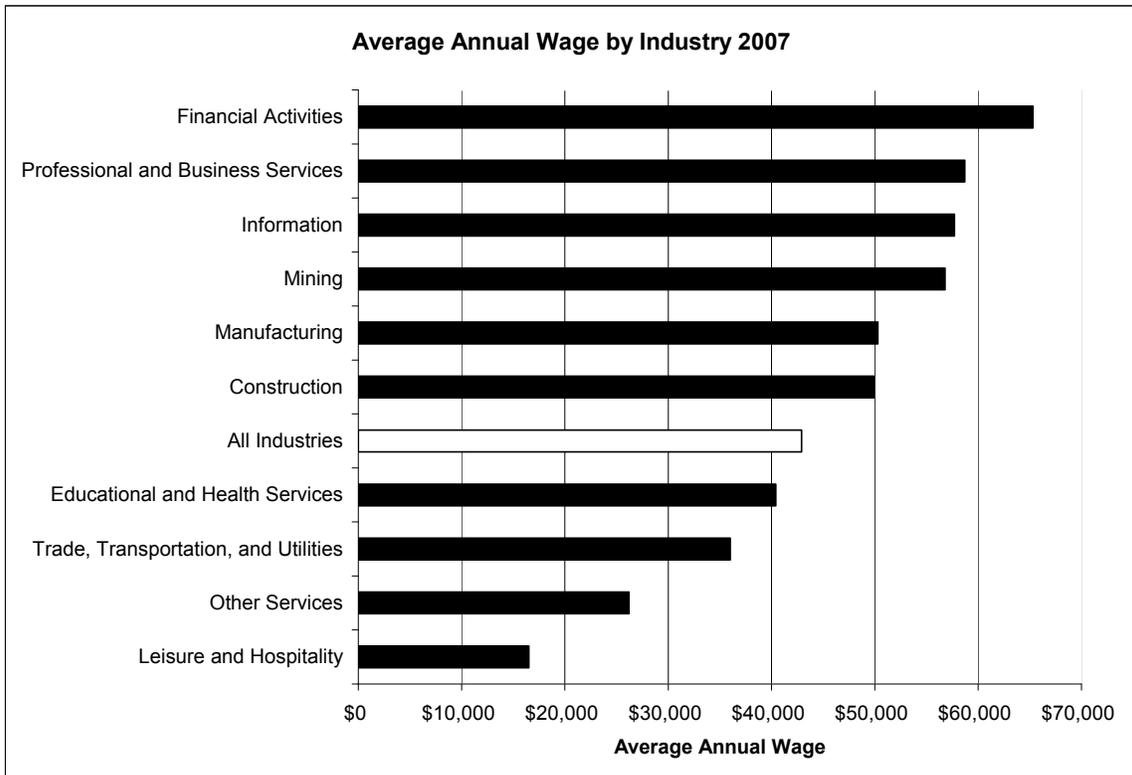
The specific industries in the Education & Health Services and Professional & Business Services sectors seeing the highest volume job growth over the past ten years were: Management of Companies & Enterprises, Nursing & Residential Care, Offices of Physicians, Colleges & Universities, Services to Buildings & Dwellings, and Computer Systems Design & Related Services. These industries reflect the demand for the efficient management of businesses, the growing health care needs of an aging population, the ever-increasing importance of technology to the state's economy, and the current and future labor force participants' constant demand for education in order to compete in the global market place.



Wages

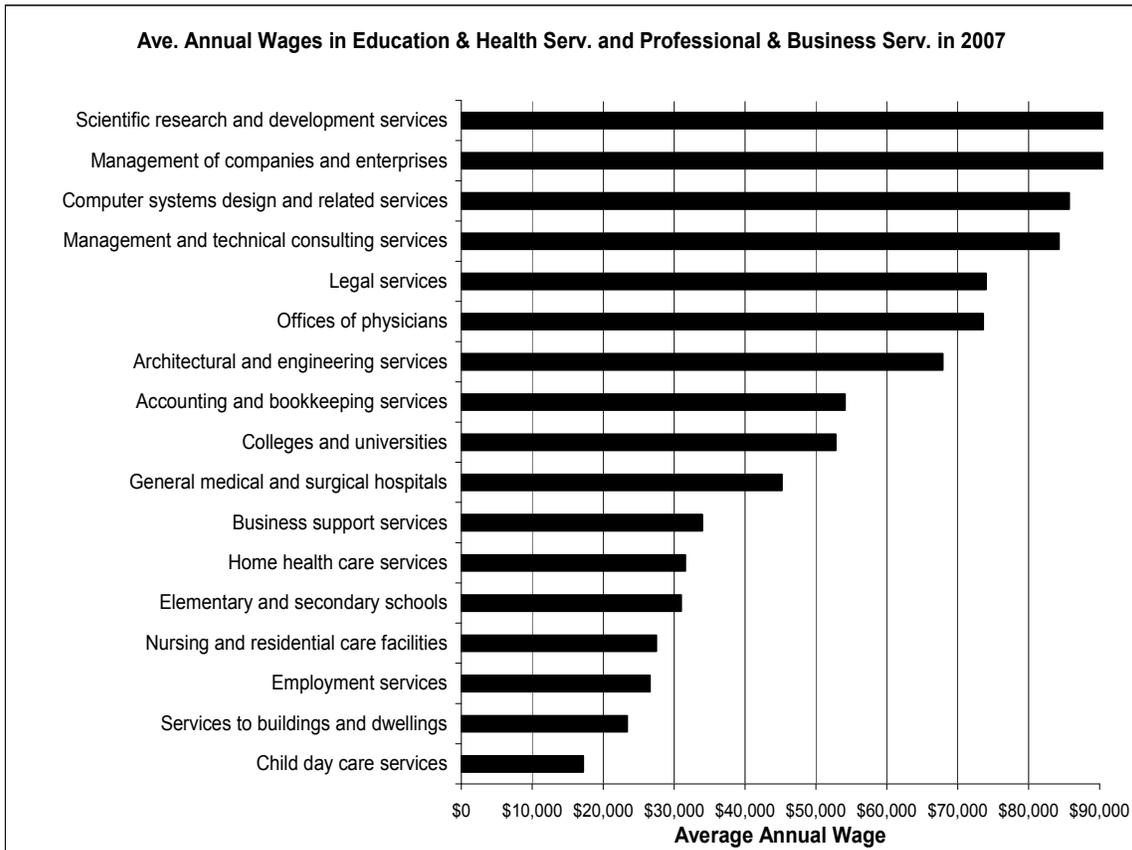
Industry Wages

The highest wages within Pennsylvania are found in the Financial Activities, Professional & Business Services, and Information industry sectors. While the Financial Activities and Information industries have seen relatively minor job growth over recent years, the Professional & Business Services industry is seeing rapid job growth and pays more than \$16,000 above the statewide annual average industry wage (nearly \$43,000). The Mining, Manufacturing, and Construction industries also pay above average wages. Education & Health Services, another high growth industry sector, pays slightly lower wages than the statewide average, but contains many high paying occupations.



Wages Detail

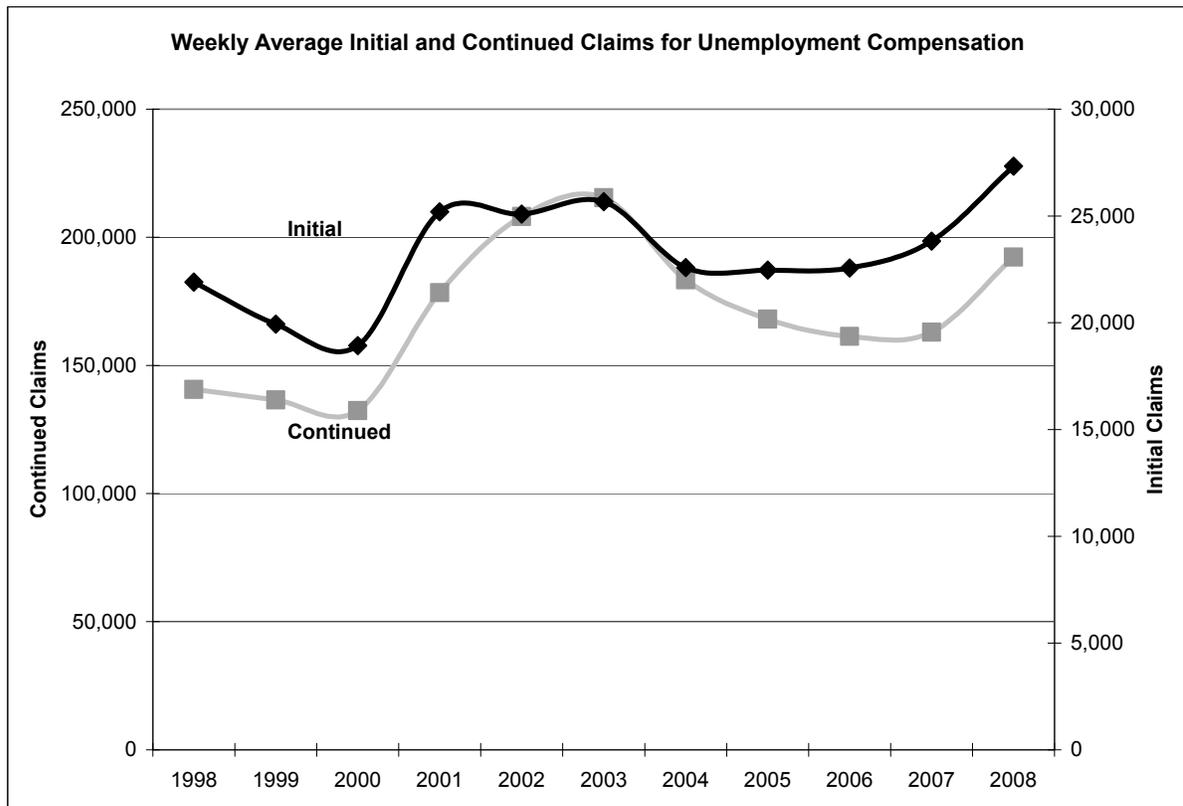
The specific industries in the Education & Health Services and Professional & Business Services sectors seeing the highest average annual wages are: Scientific Research and Development Services, Management of Companies and Enterprises, Computer Systems and Related Services, Management and Technical Consulting Services, Legal Services, and Offices of Physicians. Workers in these industries are earning on average in excess of \$70,000 a year. Anyone preparing for a career or a job change would do well to consider occupations in these industries.



Economic Indicators

Weekly Claims

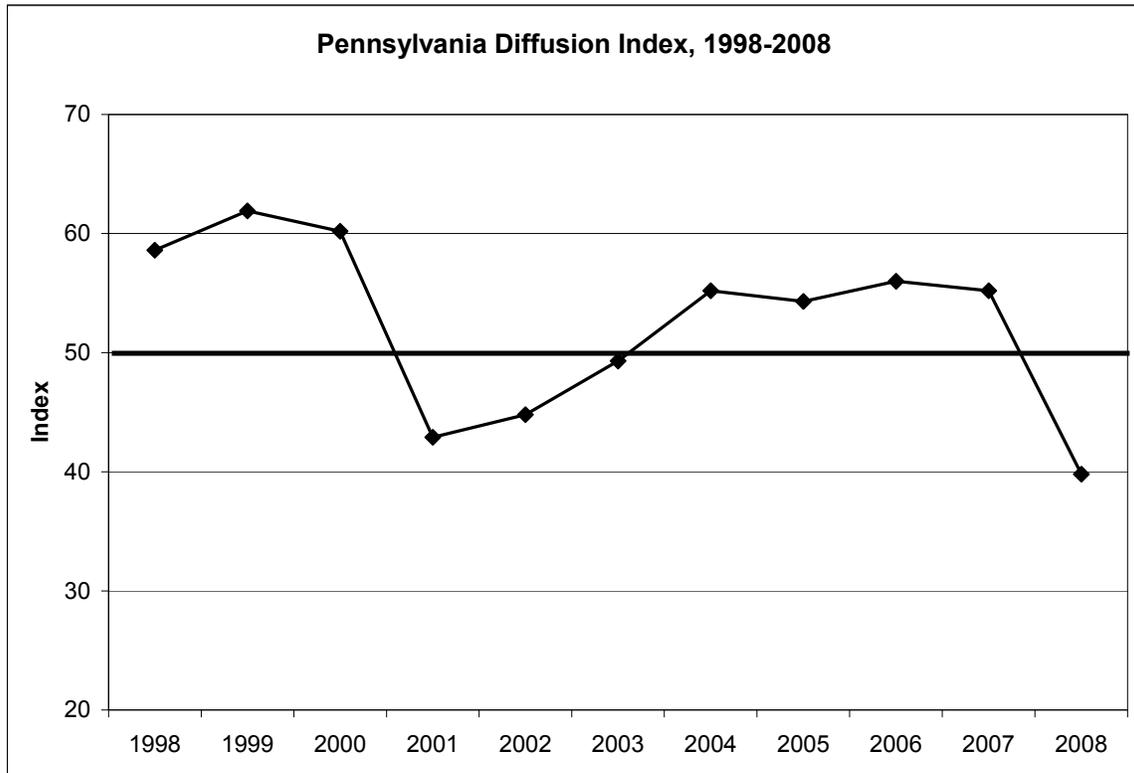
Pennsylvania's average weekly number of continued claims increased for the second year in a row as the current recession, which the National Bureau of Economic Research said began in December 2007, took hold in 2008. Thus, when individuals are laid off they are having a harder time finding employment. The state's average weekly number of initial claims also increased, surpassing its recent high in 2003, the highpoint of the previous economic downturn.



Diffusion Index

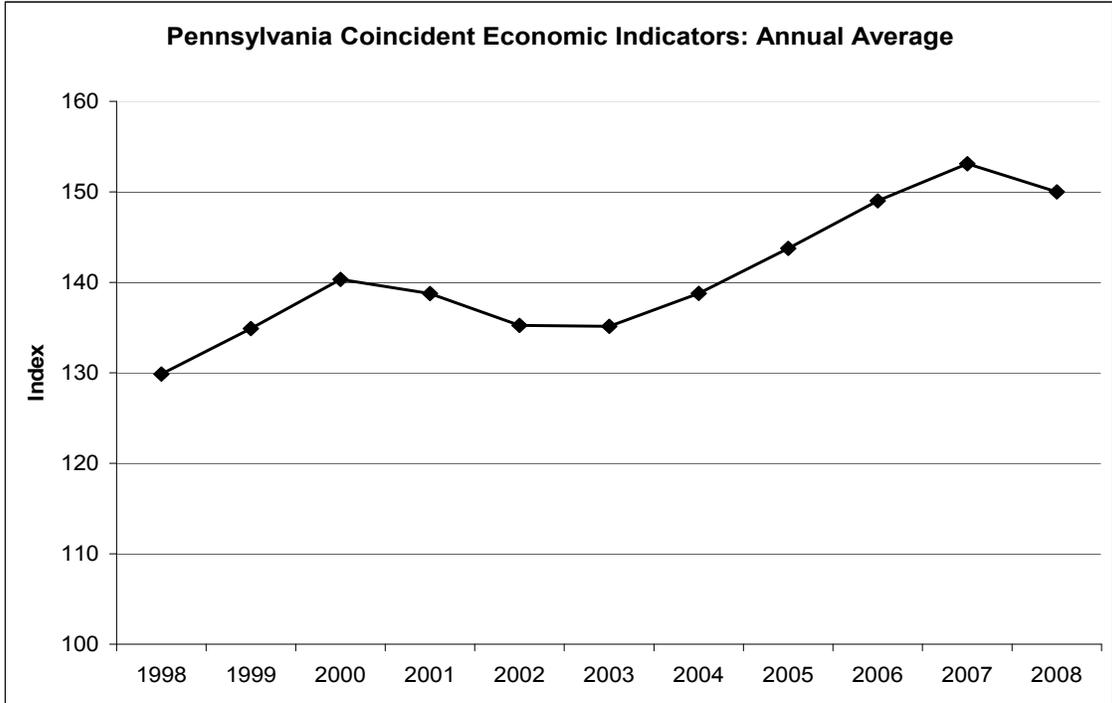
The Diffusion Index is a measure of the proportion of industries that have higher or lower employment levels over a year period. A value over 50 indicates that the number of industries having higher employment levels is greater than the number of industries having lower employment levels as compared to the previous year. Pennsylvania's diffusion index was 40 in 2008, its lowest reading since 1991 and down from 55 in 2007. It is likely that the index will continue to trend down as the current recession deepens. A reading below 50 denotes that the number of

industries having lower employment levels is greater than the number of industries having higher employment levels as compared to the previous year.



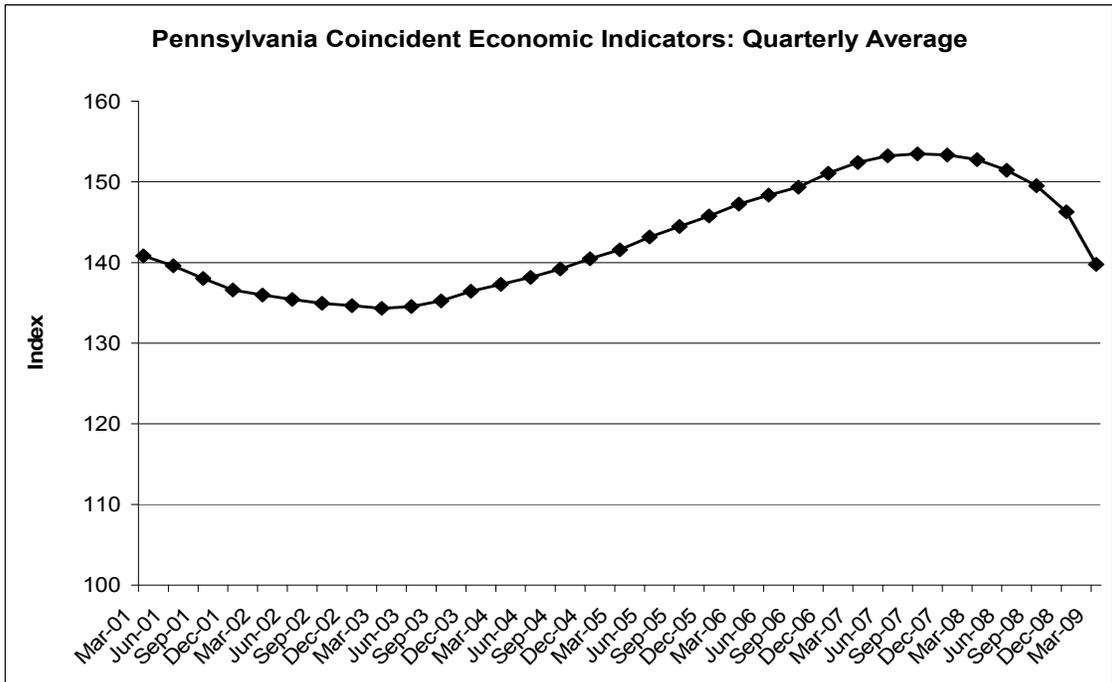
Coincident Index

Pennsylvania's coincident index is a measure of current economic activity. Individual economic indicators often produce conflicting signals on the health of the economy. For example, one indicator can be showing a gain while another reflects a loss. The purpose of the coincident index is to suppress these conflicting signals by combining a set of key measures to reflect the overall economic trend. The index is constructed from three monthly data series (payroll employment, average hours worked in manufacturing, and the unemployment rate) and one quarterly series (wage and salary disbursements). A decline in the index signals a slowdown or possibly a recession. Pennsylvania's annual average coincident index has shown a steady increase in recent years, reflecting economic health and growth. However, in 2008 the index decreased for the first time since the 2002-2003 timeframe, signifying the beginning of a period of contracting economic activity.



Source: Federal Reserve Bank of Philadelphia

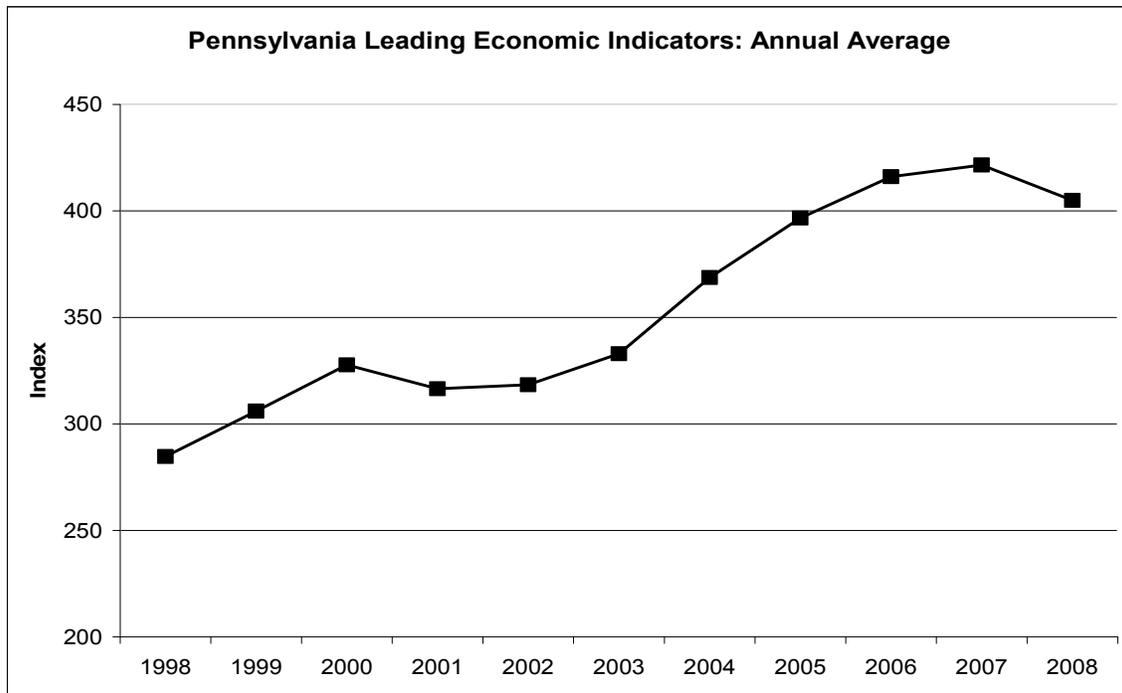
The quarterly average of the coincident index, a more timely reading of the measure, shows the index actually declined in the fourth quarter of 2007, thus confirming that the current recession began in December 2007. The last time this measure declined after a period of trending up was in the first quarter of 2001, right before the beginning of the 2001 recession.



Source: Federal Reserve Bank of Philadelphia

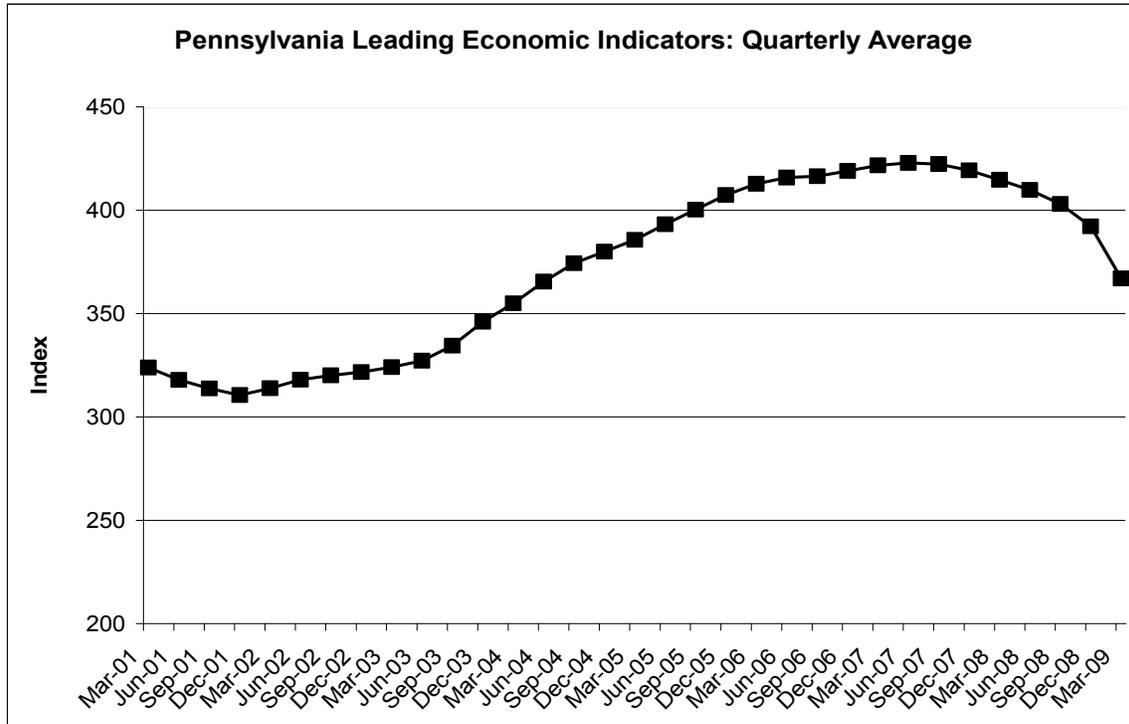
Leading Index

Pennsylvania's leading index is a forecast of economic activity. The purpose of the index is similar to that of the coincident index (see above) with an added emphasis on reflecting where the economy is headed. The leading index is constructed from the state's current economic activity index, housing permits, initial unemployment claims, the index of vendor delivery time from the Philadelphia Fed's *Business Outlook Survey*, and the spread between the yields on 10-year Treasury bonds and the fed funds rate. In 2002, Pennsylvania's annual average leading index turned up, signaling that an economic recovery was beginning. However, in 2008 the index turned down for the first time since 2001, denoting the beginning of a period of economic contraction.



Source: Federal Reserve Bank of Philadelphia

The quarterly average of the leading index, a more timely reading of the measure, shows the index declined in the fourth quarter of 2007, thus also confirming that the current recession began in December 2007. The last time this measure declined after a period of trending up was in the third quarter of 2000, again just before the beginning of the 2001 recession.



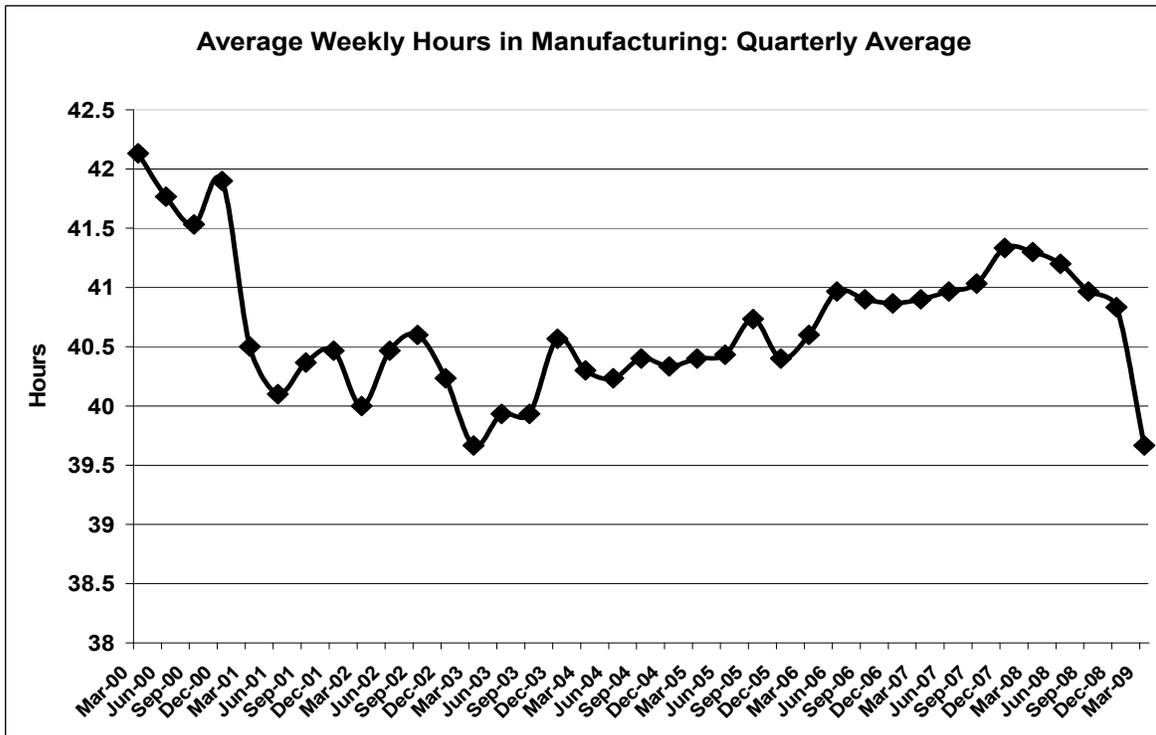
Source: Federal Reserve Bank of Philadelphia

Average Weekly Hours in Manufacturing

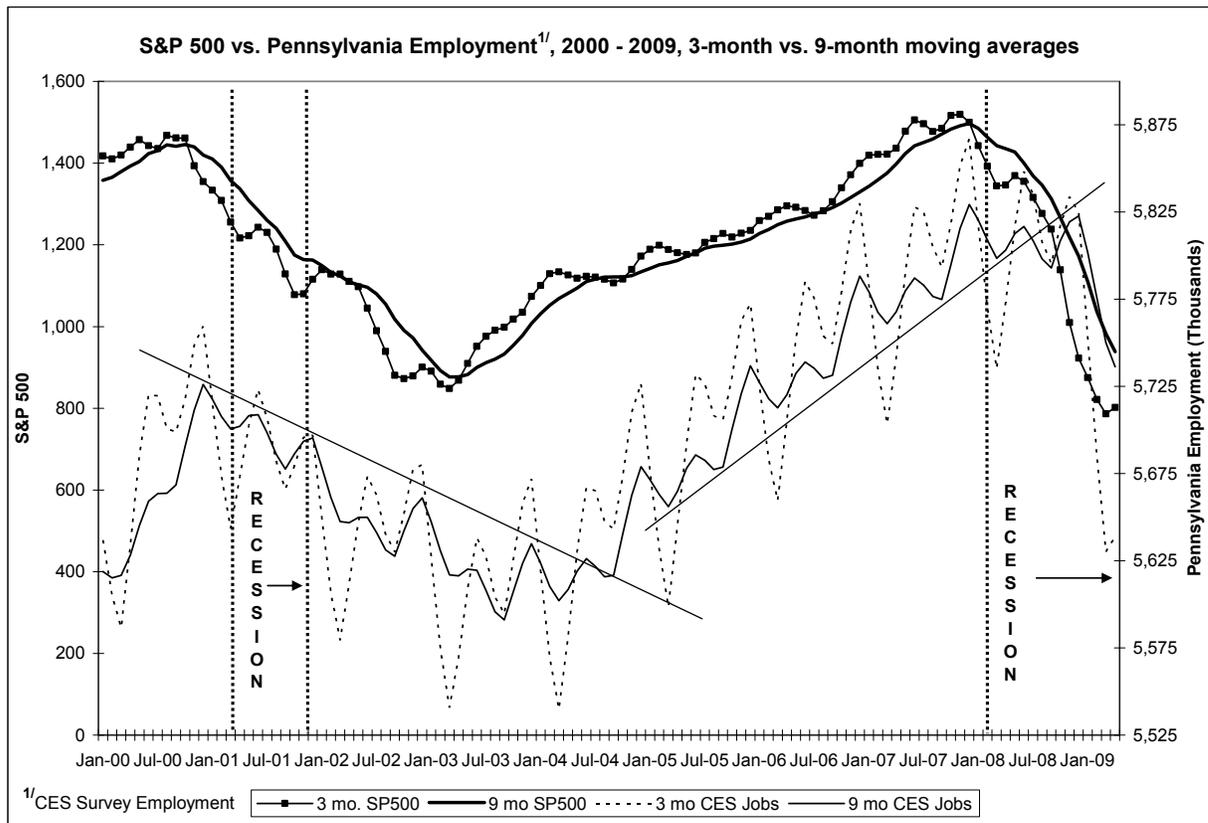
Average weekly hours is a leading indicator, often providing the direction of the state’s economy. As the economy begins to grow out of a recession (in 2004), employers will tend to hold off on hiring new workers until they are more confident that economic growth is improving and will instead have their existing employees work more hours. As the economy continues to improve, eventually businesses will be forced to add more workers, and this increase in employment will reinforce the positive trend in economic growth (in 2005 to 2006). In contrast, if 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 (in 2001). If the slowdown deepens, then eventually businesses are forced to lay off workers, which reinforces the negative trend in economic growth (in 2002 to 2003). The annual average of weekly hours in manufacturing turned down in 2008, signaling employers are reducing hours most likely because of the growing economic slowdown.



The quarterly average of the weekly hours in manufacturing index, a more timely reading of the measure, shows the index declined in the first quarter of 2008. The last time this measure declined after a period of trending up was in the third quarter of 2000, before the beginning of the 2001 recession. As of first quarter 2009, the index plunged to its lowest level since the beginning of 2003.



S&P 500 Index versus Employment



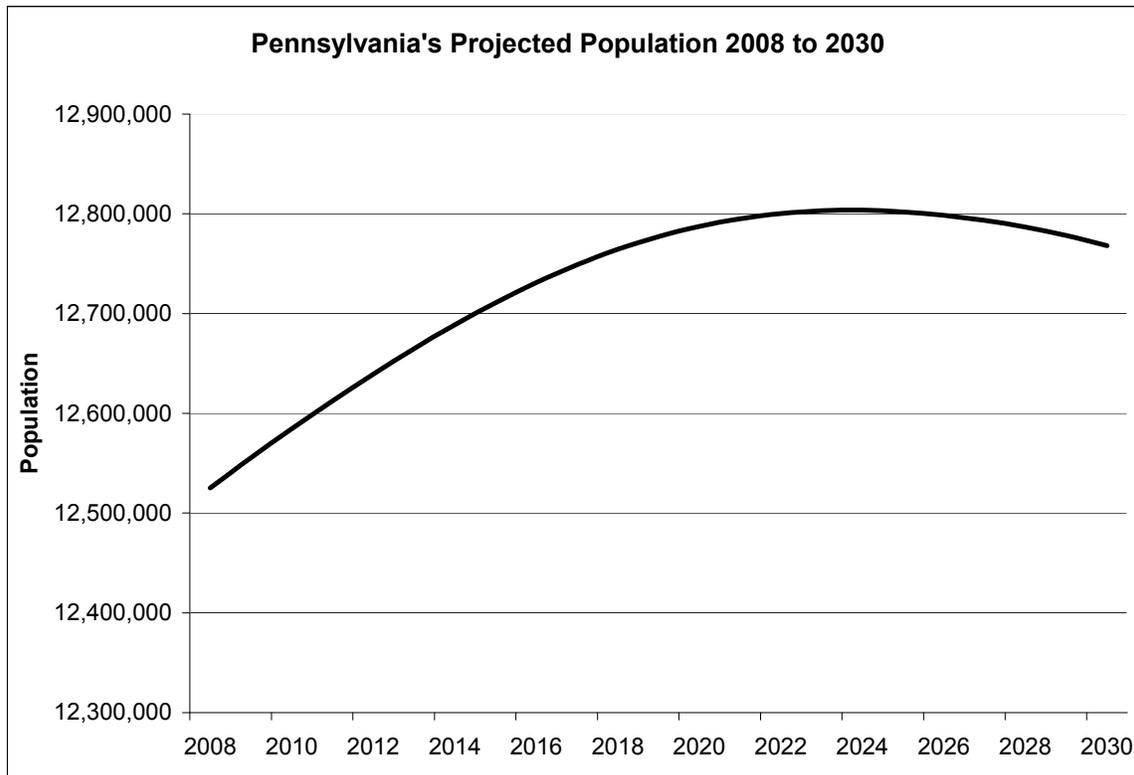
The Standard and Poor's 500 (S&P 500) is a composite index of the common stock prices of 500 large publicly held companies traded in the United States. The S&P 500 index is an excellent leading indicator as to the direction of the economy and thus employment. Plotting the index's three month simple moving average (SMA) versus the nine month SMA shows interesting results. When the three month SMA crosses the nine month SMA a prediction can be made as to the direction of the economy and employment. For example, when the index's three month SMA crossed the nine month SMA going down in November 2000, a decline in jobs soon followed in early 2001. Afterwards, a recession was declared to have begun in March 2001 by the National Bureau of Economic Research (NBER). Next, when the S&P 500's three month SMA crossed the nine month SMA going up in May 2003, employment rebounded the following year. More recently, the S&P 500's three month SMA crossed the nine month SMA going down in January 2008, signaling a change in direction of the economy. Shortly thereafter in the second half of 2008 employment began to rapidly decline. Once again afterwards, the NBER declared that a recession began in December 2007. Most likely the economy will not emerge from the current recession until the S&P 500's three month SMA definitively crosses upward its nine month SMA. Whereas, no one can predict the direction of the S&P 500 index, the measure quite often indicates the direction of the economy and employment.

Long-term Trends and Outlook

Demographics

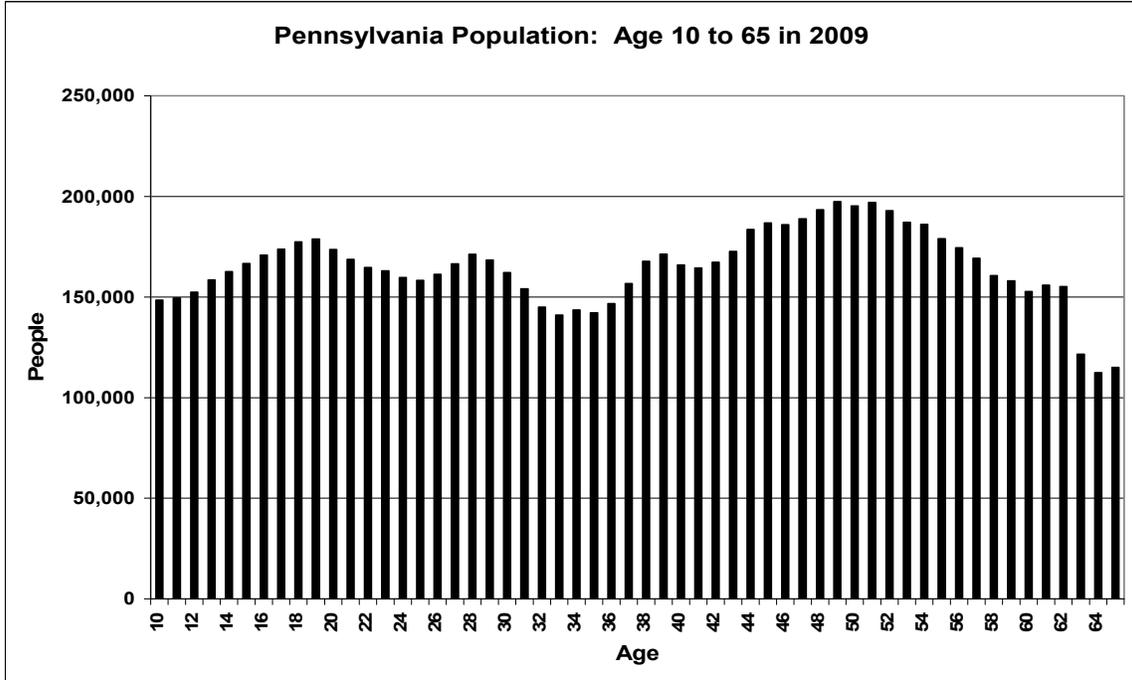
Population

Population change is the underlying force that moves the economy. Over the next ten years, Pennsylvania's population is projected to grow by just two percent. In comparison, the nation's population will grow by nearly nine percent. While the state's population growth will be relatively static in the years to come, the demographic changes within Pennsylvania's population will be dynamic.

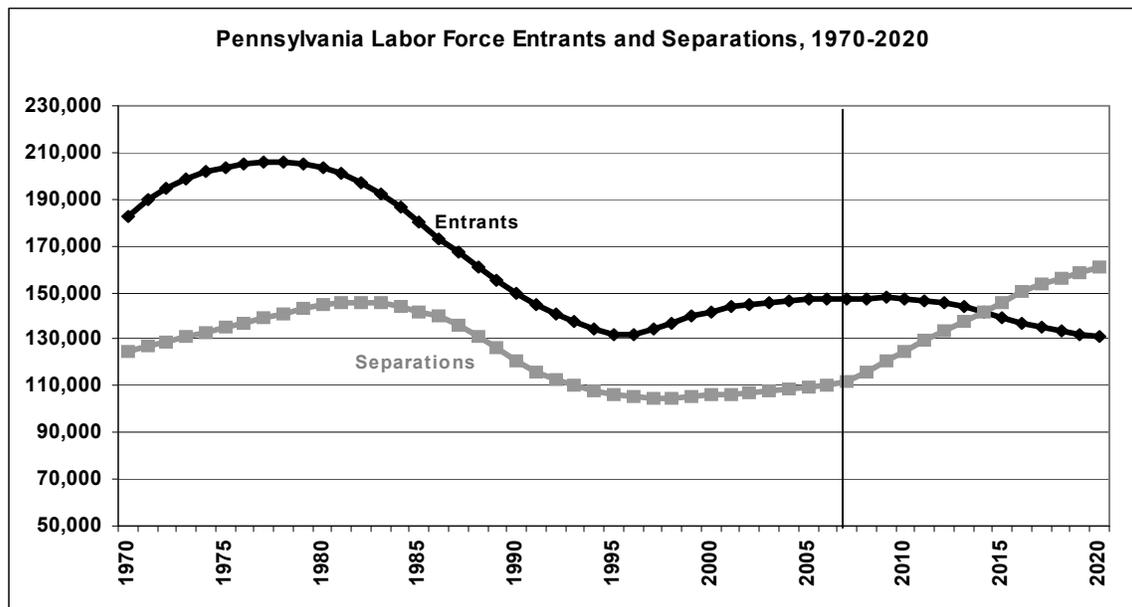


Age

Pennsylvania's population is growing older. The number of Pennsylvanians age 65 and over was 1.9 million in 2007. In fact, the state's percentage of those ages 65 and over is the second highest in the nation (15.4 percent). 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 will turn 65 in 2011 (now age 63) and the youngest will turn 65 in 2029 (now age 45). Thus, a large wave of Baby Boomers will be leaving the workforce over the next few decades. Unfortunately, from the mid-1960s until the mid-1980s, the number of births was less than that during the Baby Boom years.



Due to this decline in the population, there will not be enough workers (entrants) to replace the Baby Boomers as they leave the workforce (separations). Beginning around 2015, the total working age population (age 25 to 64) will be less than the year before until at least 2029. Therefore, there will be worker shortages in the coming years and some areas, industries, and occupations will be affected sooner and harder than others. However, with the stock market crash of 2008, many Baby Boomers who lost significant wealth may elect to stay in the job market and thus make up some of the coming shortfall of younger workers.



Race

The proportion of minorities in the labor force will grow because of immigration and higher labor force participation rates. By 2014, the share of minorities in the labor force is expected to grow by approximately three percent, while the white portion will decline by three percent. This is not surprising since, historically, white labor force participants have been older than the rest of the labor force. Hispanics are projected to comprise nearly five percent of the labor force by 2014. The growth in the Hispanic and minority sections in the labor force can largely be attributed to the facts that they are both younger and have higher fertility rates than whites.

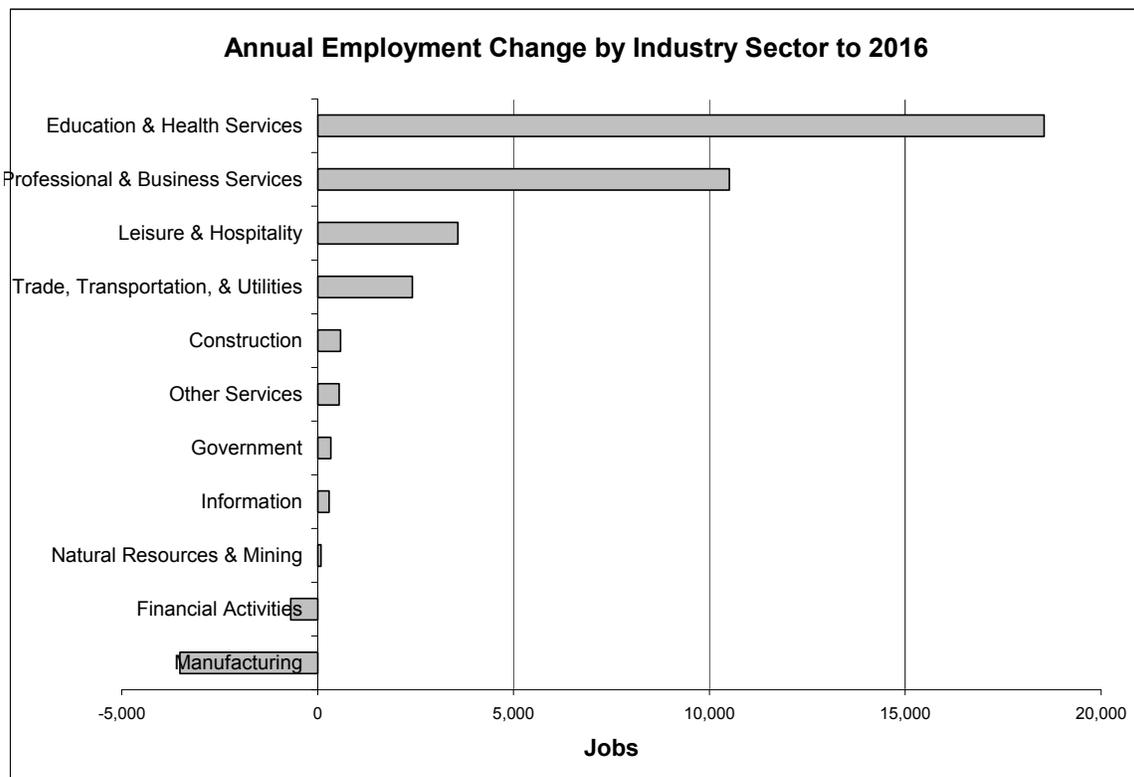
Gender

Women will dominate Pennsylvania's labor force growth through 2014. The presence of women in the labor force will grow by over eight percent. However, men's participation in the labor force will remain essentially unchanged. The faster expansion of women into the labor force will also reduce the gap between male and female labor force participation.

Projections

Industry

Pennsylvania's Education & Health Services, Professional & Business Services, and Leisure & Hospitality industry sectors will account for nearly 90 percent of all annual employment growth through 2016. The Manufacturing industry sector is forecast to lose over 3,000 jobs annually. These sectors reflect 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, and the continued transformation of the state's economy from that of a goods producer to a service provider.



Growing Industries

The list of growing industries is dominated by health care and social assistance. Other industries forecast to grow are in professional services, business services, leisure, and hospitality.

Top 25 Growing Industries in Pennsylvania through 2016	
Industry	Annual Employment Growth
Community Care Facilities For The Elderly	2,800
Individual & Family Services	2,700
Management Of Companies & Enterprises	2,500
General Medical & Surgical Hospitals	2,500
Offices Of Physicians	2,500
Management & Technical Consulting Services	2,100
Colleges, Universities & Professional Schools	1,900
Warehousing & Storage	1,900
Home Health Care Services	1,700
Services To Buildings & Dwellings	1,600
Full-Service Restaurants	1,100
Business Support Services	1,100
Other General Merchandise Stores	1,000
Child Day Care Services	900
Residential Mental Health Facilities	900
Offices Of Other Health Practitioners	800
Limited-Service Eating Places	700
Offices Of Dentists	700
Investigation & Security Services	700
Local Gov't, Except Education & Hospitals	700
Other Amusement & Recreation Industries	600
Computer Systems Design & Rel. Services	600
Nursing Care Facilities	500
Outpatient Care Centers	500
Other Financial Investment Activities	500

Declining Industries

The list of declining industries is dominated by manufacturing and financial activities. Other industries forecast to decline are in education and trade.

Top 25 Declining Industries in Pennsylvania through 2016	
Industry	Annual Employment Loss
Elementary & Secondary Schools	-1,600
Department Stores	-1,000
Depository Credit Intermediation	-1,000
Religious Organizations	-800
Printing & Related Support Activities	-500
Nondepository Credit Intermediation	-500
Grocery Stores	-400
Federal, Except USPS	-400
Iron & Steel Mills & Ferroalloys	-400
Shoe Stores	-400
Newspaper, Book & Directory Publishers	-400
Lessors Of Real Estate	-300
Electronic Instrument Mfg	-300
Cut & Sew Apparel Mfg	-300
Insurance Carriers	-300
Power Generation & Supply	-200
Glass & Glass Product Mfg	-200
Purchased Steel Product Mfg	-200
Bakeries & Tortilla Mfg	-200
Foundries	-200
Other Chemical Preparation Mfg	-100
Rubber Product Mfg	-100
Motor Vehicle Parts Mfg	-100
Automobile Dealers	-100
Plastics Product Mfg	-100

Emerging Industries

Pennsylvania has forecast a number of emerging industries through 2016. An emerging industry is defined as having statewide employment less than 15,000 and projected to have at least 100 annual openings through 2016. The emerging industries are found mainly in financial activities, health care, and information.

Top Emerging Industries in Pennsylvania through 2016	
Industry	Annual Employment Gain
Other Financial Investment Activities	500
Security & Commodity Investment Activity	400
Cable & Other Program Distribution	400
Gambling Industries	300
Other Residential Care Facilities	200
Activities Related To Real Estate	200
Medical & Diagnostic Laboratories	200
Activities Related To Credit Intermediation	200
Data Processing, Hosting & Related Services	200
Other Personal Services	100
Social Advocacy Organizations	100
Office Administrative Services	100
Other Support Services	100
Software Publishers	100
Emergency & Other Relief Services	100

Occupations

While the current economic environment remains challenging, jobs in most major occupational groups will be plentiful in the years to come for current and future labor market participants. Modest economic growth coupled with an aging workforce will create opportunities for anyone seeking a job. However, the best paying jobs will go to those achieving more than a high school education. Major occupational groups seeing the best total opportunities will be in: Office & Administrative Support; Sales & Related Occupations; Food Preparation & Serving Related; Production; Transportation & Material Moving; Management, and Education, Training, & Library. Major occupational groups not already mentioned and having the best opportunities due to growth will be Personal Care & Service and Healthcare Practitioners & Technical Occupations. Major occupational groups not already listed and having the best opportunities due to replacements (mainly those leaving due to retirement) will be: Construction & Extraction; Installation, Maintenance & Repair; and Business & Financial Operations Occupations.

Occupational Title	Annual Change		
	Total	Due to Replacements	Due to Growth
Office & Administrative Support Occupations	2,700	2,200	500
Sales & Related Occupations	2,200	2,000	200
Food Preparation & Serving Related Occupations	2,000	1,600	300
Production Occupations	1,300	700	600
Transportation & Material Moving Occupations	1,200	1,000	200
Management Occupations	1,100	1,000	100
Education, Training, & Library Occupations	900	800	200
Healthcare Practitioners & Technical Occupations	800	400	300
Construction & Extraction Occupations	700	500	200
Installation, Maintenance, & Repair Occupations	700	500	100
Personal Care & Service Occupations	600	200	400
Building & Grounds Cleaning & Maintenance Occupations	600	400	200
Business & Financial Operations Occupations	600	500	100
Healthcare Support Occupations	500	400	100
Protective Service Occupations	500	300	200
Computer & Mathematical Occupations	400	200	200
Community & Social Services Occupations	400	300	100
Architecture & Engineering Occupations	300	200	100
Arts, Design, Entertainment, Sports, & Media Occupations	300	200	0
Life, Physical, & Social Science Occupations	200	100	100
Farming, Fishing, & Forestry Occupations	100	100	0
Legal Occupations	100	100	0

Occupations Detail

There will be job opportunities in many different occupations across all industries over the next decade as Baby Boomers retire. Seventy-six percent of all annual job openings will be due to replacements for workers leaving the workforce. Labor market participants will have opportunities to have their pick of jobs and in what occupations they wish to begin or change careers.

Occupational Title	Annual Change		
	Total	Due to Replacements	Due to Growth
Office and Administrative Support Occupations	2,700	2,200	500
Sales and Related Occupations	2,200	2,000	200
Food Preparation and Serving Related Occupations	2,000	1,600	300
Retail Sales Workers	1,500	1,500	100
Healthcare Practitioners and Technical Occupations	1,300	700	600
Food and Beverage Serving Workers	1,200	1,000	200
Transportation and Material Moving Occupations	1,200	1,000	200
Production Occupations	1,100	1,000	100
Education, Training, and Library Occupations	900	800	200
Information and Record Clerks	900	600	300
Health Diagnosing and Treating Practitioners	800	400	400
Personal Care and Service Occupations	800	400	300
Business and Financial Operations Occupations	700	500	200
Management Occupations	700	500	100
Healthcare Support Occupations	600	200	400
Material Moving Workers	600	600	0
Building and Grounds Cleaning and Maintenance Occupations	600	400	200
Construction and Extraction Occupations	600	500	100
Other Office and Administrative Support Workers	500	500	100
Installation, Maintenance, and Repair Occupations	500	400	100
Primary, Secondary, and Special Education School Teachers	500	500	0
Health Technologists and Technicians	500	300	200
Computer and Mathematical Occupations	500	300	200
Computer Specialists	500	300	200
Financial Clerks	500	400	100

Conclusion

While Pennsylvania's employment reached an all-time high in 2008, the unemployment rate increased to 5.4 percent, its highest level since 2004. Over-the-year, the rate increased by one percentage point, its largest one year increase since 1991. In addition, key economic indicators show a continued slowing of the state's economy heading into 2009. As further proof of these difficult economic times, the National Bureau of Economic Research declared that a national recession began in December 2007. However, amidst this recessionary environment, the Pennsylvania economy continues to adapt and transform itself from one of goods-producing to service-providing.

Workers from the baby-boom generation are moving into their 60s and will be retiring in large numbers. They will take with them key skills. Beginning around 2015, Pennsylvania's total working age population (age 25 to 64) will be less than the year before until at least 2029. Far fewer youth will be available to enter the labor market, forcing greater efficiencies and competition for key skills. Therefore, there will be workers shortages in the coming years and some areas, industries, and occupations will be affected sooner and harder than others. However, with the stock market crash of 2008, many Baby Boomers who lost significant wealth may elect to stay in the job market and thus make up some of the coming shortfall of younger workers.

Once the current recession comes to an end, jobs in most major occupational groups will be plentiful for current and future labor market participants. 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.