ECONOMIC REVIEW OF PENNSYLVANIA
2022

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PREFACE

Pennsylvania's future depends upon the development of a workforce able to compete in today's global economy. Understanding the obstacles confronting the workforce is necessary for Pennsylvania to develop policies and strategies to remain economically competitive.

At the close of 2021, Pennsylvania's economy and labor market had recovered most, but not all, of the ground lost during the downturn in 2020. The fiscal stimulus measures that had been undertaken which contributed to this improvement came with the cost of higher inflation. This, in turn, led to uncertainty regarding when and by how much the Federal Reserve would raise interest rates to fight the specter of rising inflation. While the Federal Reserve refrained from raising rates in 2021, it cut back on its asset purchases thereby cutting back on its stimulatory policy of quantitative easing. At year end, most indications were for continued improvement, but the risk was whether monetary policy could generate a "soft landing" and avoid a recession.

The Federal Reserve lowered the federal funds target rate to 0.25 percent in March 2020, and kept it there until March 2022, when it was raised to 0.50 percent. This initial small increase of 25 basis points was the first of seven increases that the Federal Reserve instituted throughout 2022. Due to an aggressive pace of increases, the federal funds target rate stood at 4.50 percent at year end. Despite the Federal Reserve's attempts to stifle inflation by cooling the economy and labor market, 2022 was a fairly good year by most statistical measures.

As 2022 drew to a close, the monthly inflation rate had fallen, but was still above the Fed's goal of inflation not in excess of 2.0 percent. Pennsylvania's labor market still appeared robust (as did the nation's) as employment was at a record high, the unemployment rate was the lowest in over two decades and nonfarm jobs were slightly below the record high set in February 2020. There were some warning signs that the expansion was slowing and fears that the economy could be headed to a recession. Since the Federal Reserve had not achieved its inflation goal, it was expected that more rate increases were coming. Given that monetary policy operates with a long (usually 6 to 9 months) and variable lag, the fear was that instead of getting a "soft landing", the Fed might raise rates too far. However, even if they were successful in the short run, Pennsylvania faces long-term challenges as well.

Pennsylvania's aging population and slow population growth will continue to be a long-term demographic challenge to its labor force. The continuing large wave of retirements from the baby-boom generation will cause a loss of key skills that will not be replaced by fewer youth replacing them. Other long-term challenges include structural changes such as the desire for teleworking and changes in the industry mix from evolving consumer demands and from the continued evolution to an information economy. Technology, potential in-migration, and global competition may help alleviate the need for workers, but a shortage of workers may still remain. The labor market has been and will continue to be challenged to create and maintain jobs with high and growing real wage rates in this new environment.

LABOR FORCE STATISTICS

Employment

Pennsylvania's average employment was 6,196,000 in 2022, an increase of 137,000, or 2.3 percent from its level in 2021. In comparison, the U.S. average employment in 2022 was at a record high of 158,291,000, up 5,710,000 or 3.7 percent from 2021. Despite the improvement in Pennsylvania labor markets, average employment was still 1.5 percent below the record high achieved in 2019.

Unemployment Rate

Pennsylvania's average annual unemployment rate fell by 1.6 percentage points to 4.4 percent in 2022, after falling by 2.9 percentage points in 2021. The unemployment rate in 2022 was the lowest since 2000, when it was 4.2 percent. The seasonally adjusted monthly unemployment rates ranged from a high of 4.5 percent in January to a low of 4.3 percent in various months including December. The U.S. average unemployment rate in 2022 fell by 1.8 percentage points to 3.6 percent.

PA Employment and the Unemployment Rate
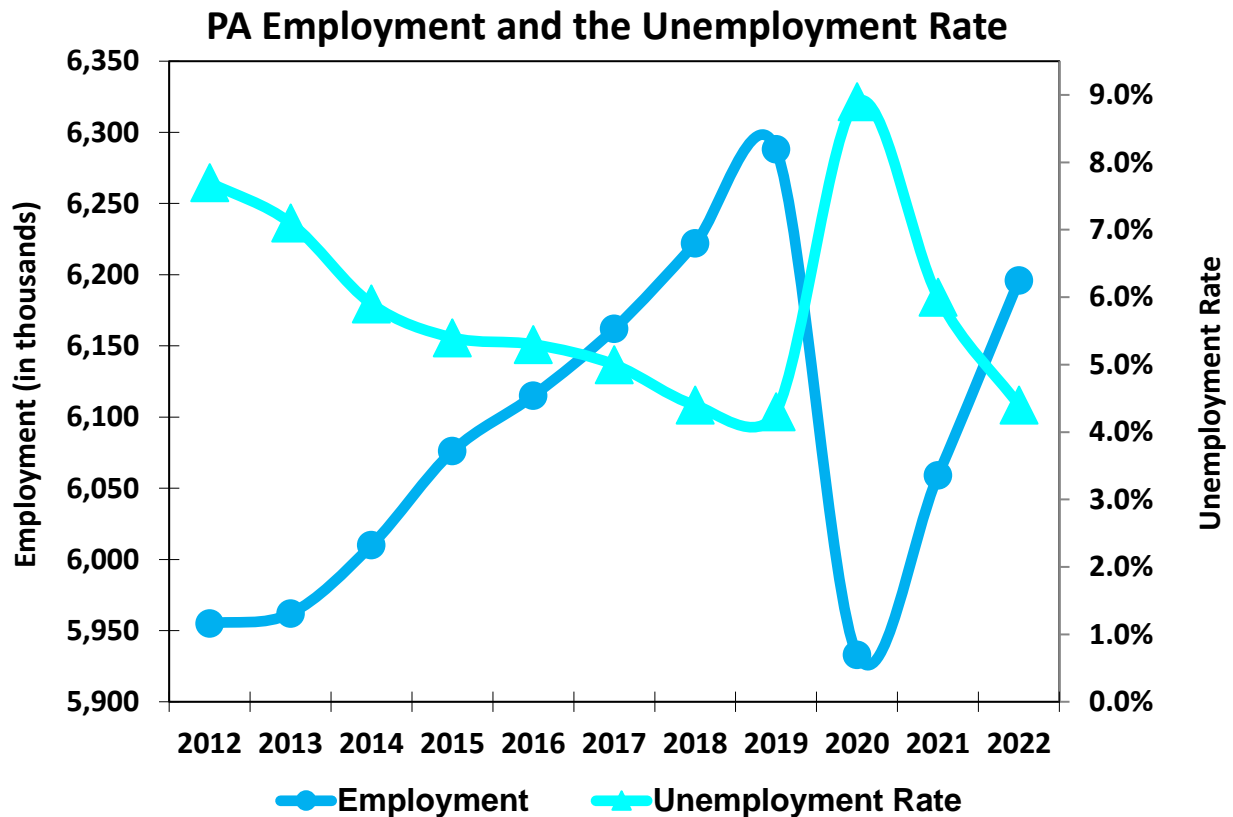
Source: Bureau of Labor Statistics, Local Area Unemployment Statistics

Unemployed

The average number of unemployed Pennsylvanians in 2022 decreased by 103,000, or 26.7 percent, to 283,000. The annual average volume of unemployment declined for the second consecutive year after increasing in 2020. Prior to that, it had decreased each year beginning with 2011. The Pennsylvania volume of unemployment was the lowest it has been since 2000 when it was 258,000. The U.S. unemployment level in 2022 was 5,996,000, down 2,627,000 or 30.5 percent from 2021. The nation's volume of unemployment was also the lowest it has been since 2000.

Labor Force

Pennsylvania's average labor force was 6,479,000 in 2022, up 34,000 from 2021, or 0.5 percent. This was the first increase after two annual decreases in the labor force but was still below its peak level of 6,574,000 in 2019. The increase in the number of employed exceeded the decrease in the number of the unemployed. This indicates that the labor market is improving, as entrants or re-entrants to the labor force were becoming employed. The U.S. labor force was at a record high of 164,287,000 in 2022, up 3,083,000 from 2021, or 1.9 percent.

PA Labor Force and Unemployment
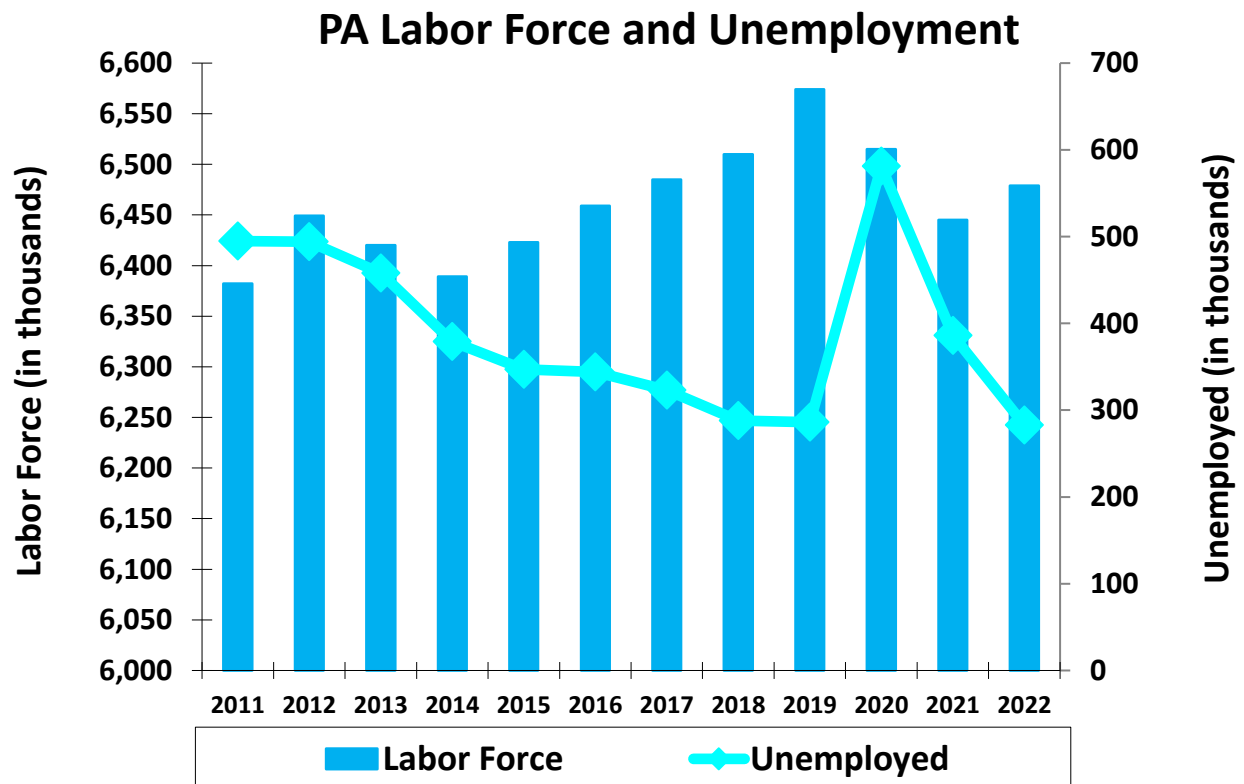
Source: Bureau of Labor Statistics, Local Area Unemployment Statistics

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 in periods immediately thereafter. In non-recessionary times, the level of unemployment is low and consists mostly of the short-term unemployed such as entrants to the labor market or job leavers looking for better opportunities, while a smaller percentage are structurally unemployed people who tend to have longer durations. The long-term ratio, the percentage of the unemployed who are classified as long-term, tends to increase in recessions and shortly thereafter, and with a lag to decrease during recoveries.

Typically, as an economy starts to recover from a recession, jobs become more plentiful and the level of unemployment decreases primarily due to the decrease in the number of short-term unemployed, while the long-term unemployment decreases by a smaller percentage. The result during the recovery year of 2021 was different, as the number of long-term unemployed increased in Pennsylvania and the nation, possibly indicating a structural change in the labor market. This anomaly disappeared in 2022, as the annual average volume of long-term unemployed in 2022 decreased by 62.7 percent to 57,200 in Pennsylvania and by 60.6 percent to 1,314,000 in the nation. Consequently, the long-term ratio fell to 21.7 percent in Pennsylvania and to 21.9 percent of the unemployed in the nation.

**PA Long-Term Unemployment:
Volume and as a Percent of Total Unemployment**
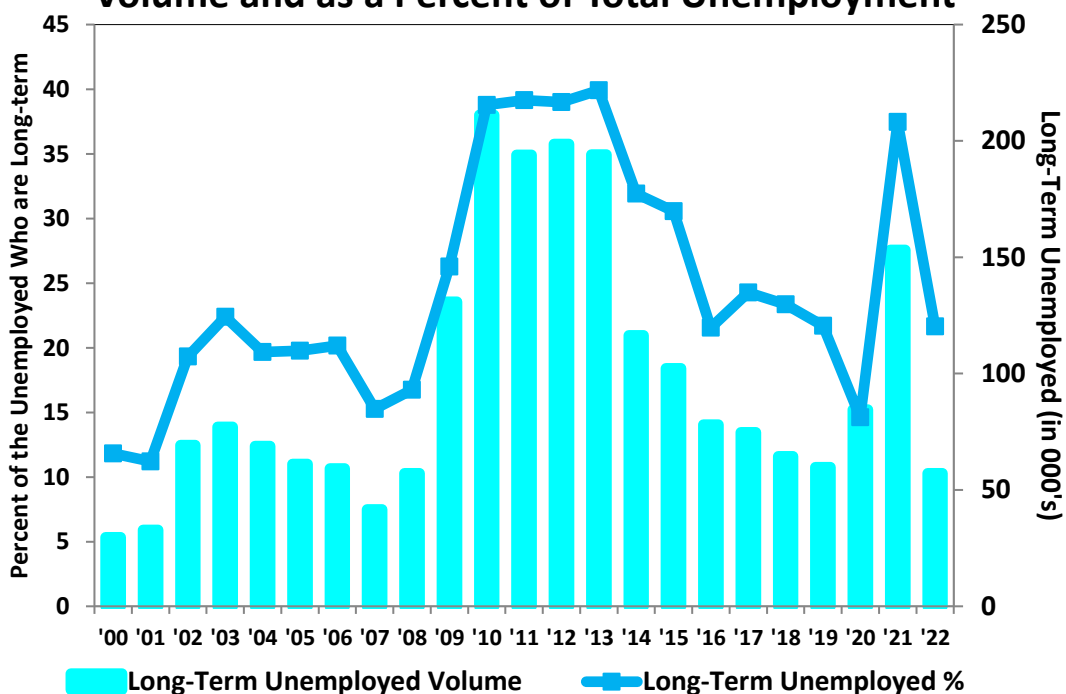
Source: U.S. Census Bureau, Current Population Survey
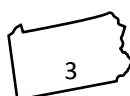
Alternative Measures of Labor Underutilization

The official unemployment rate discussed earlier (which is termed U3) is one of six measures of labor underutilization reported monthly by the Bureau of Labor Statistics (BLS). 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 consider people who are working part-time for economic reasons but would prefer to work full-time (i.e., they are involuntarily part-time) and marginally attached workers, who want and are available for work and have looked for a job in the prior year (though not in the previous four weeks). The involuntary part-time employees count as employed, while the marginally attached workers are not in the labor force. The broadest measure of labor underutilization (termed U6) is significantly larger than U3 since it accounts for both groups. Another related measure of labor demand slack is the Involuntary Part-Time Rate, IPTR, which is the percentage of the employed who are involuntarily part-time. All three rates tend to move together, indicating that the labor market is improving as the rates decrease. In 2022, both the U3 and U6 rates continued to fall as in 2021, while the IPTR rose slightly from 2.2 percent to 2.4 percent. The U6 rate fell by 2.2 percentage points to 7.4 percent while the U3 rate fell by 2.4 percentage points. While decreases in the number of unemployed workers and those who are marginally attached are positive signs for the labor market, the increase in those working part time for economic reasons may portend a slowdown in the labor market going forward as employers may be reducing hours (instead of employees) in anticipation of decreased demand.

### Measures of Labor Underutilization in PA: U6, U3, and IPTR

Source: U.S. Census Bureau, Current Population Survey

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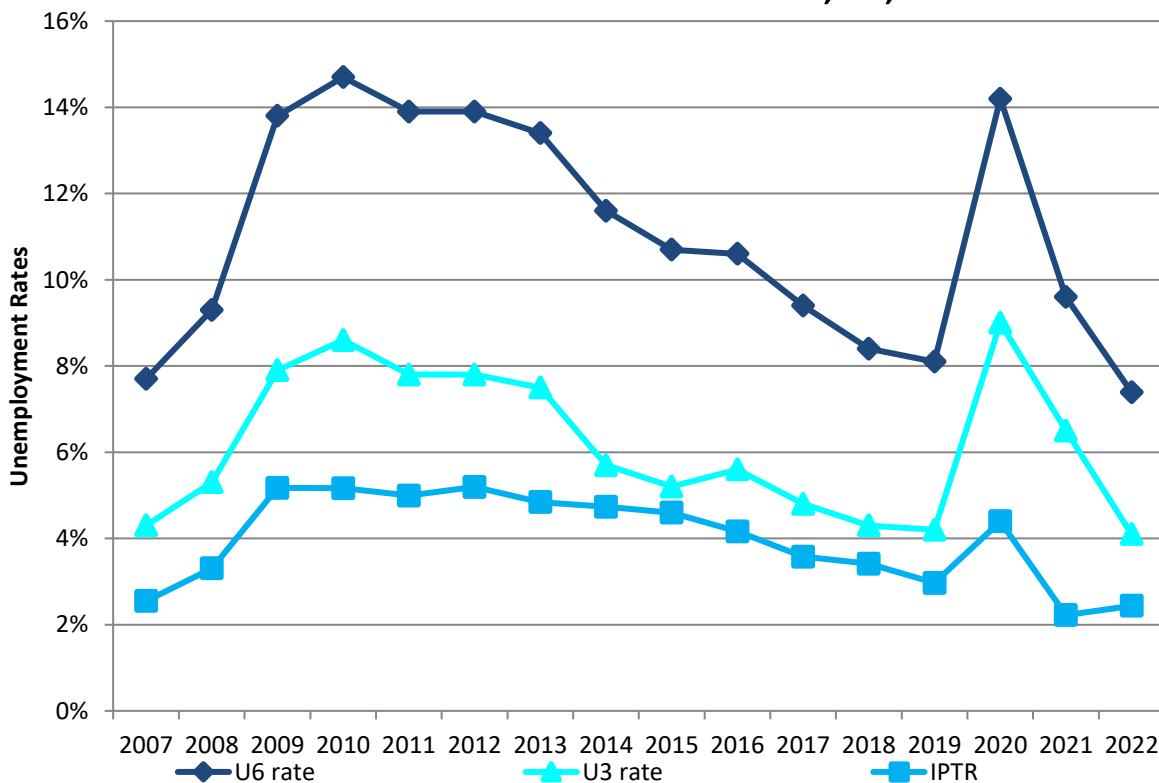
Labor Force Participation

Some of the pandemic's labor force impacts have continued even as businesses have reopened. Many people who initially left the labor force did not return. Even as some returned, there was a new preference for telework and a reluctance to work on site. Early on, industries that found it difficult to telework had a hard time attracting workers. The labor force participation rate is a measure of people who are working or who want to work as a percentage of the relevant population. Pennsylvania's labor force participation rate in 2022 increased 0.4 percentage points to 61.7 percent from 2021. In 2022, the male labor force participation rate also increased by 0.4 percentage points to 66.5 percent and the female rate was 57.1 percent, also up 0.4 percentage points**.** The nation's average labor force participation rate in 2022 was 62.2 percent an increase of 0.5 percentage points from 2021. The long-term trend in the rate tends to be dominated by demographic factors, such as the aging of the population (which would tend to decrease the rate) and various sociological factors, while cyclical factors such as an improvement in the prospects of employment can increase the rate in the short run. Notwithstanding the increases in the state's and the nation's rate, the long-term trend is for the rate to continue to decrease. The lower rate in Pennsylvania is likely due to the older age distribution in the state relative to the nation.
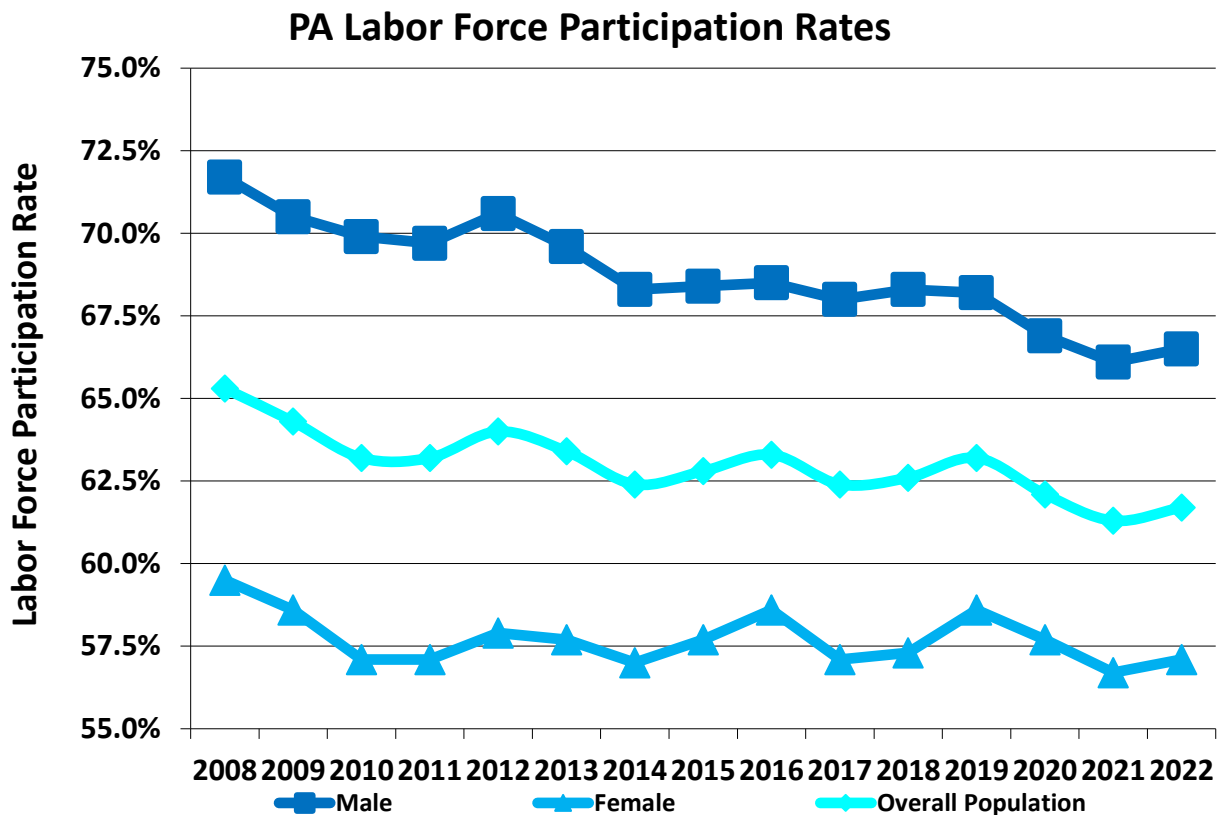

Source: U.S. Census Bureau, Current Population Survey
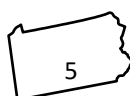
Nominal and Real Wage Rates

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 by holding prices at their levels 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, employment and real and nominal wages usually increase. In 2022, the real wage decreased by 3.7 percent despite a 4.0 percent increase in nominal wages as price inflation rose by a greater percentage (8.0 percent). The 2022 inflation accelerated from the 4.7 percent rate in 2021 as consumers used some of their extra purchasing power from prior federal stimulus measures to alleviate their pent-up demand. Nominal wage rates tend to be rigid downward and usually increase (but by less) even during labor market downturns, while real wage rates tend to fall during such periods. However, even in times of increasing demand, when inflation accelerates real wages may fall since nominal wage rates tend to lag inflation.

### PA Real and Nominal Average Weekly Wage Rates
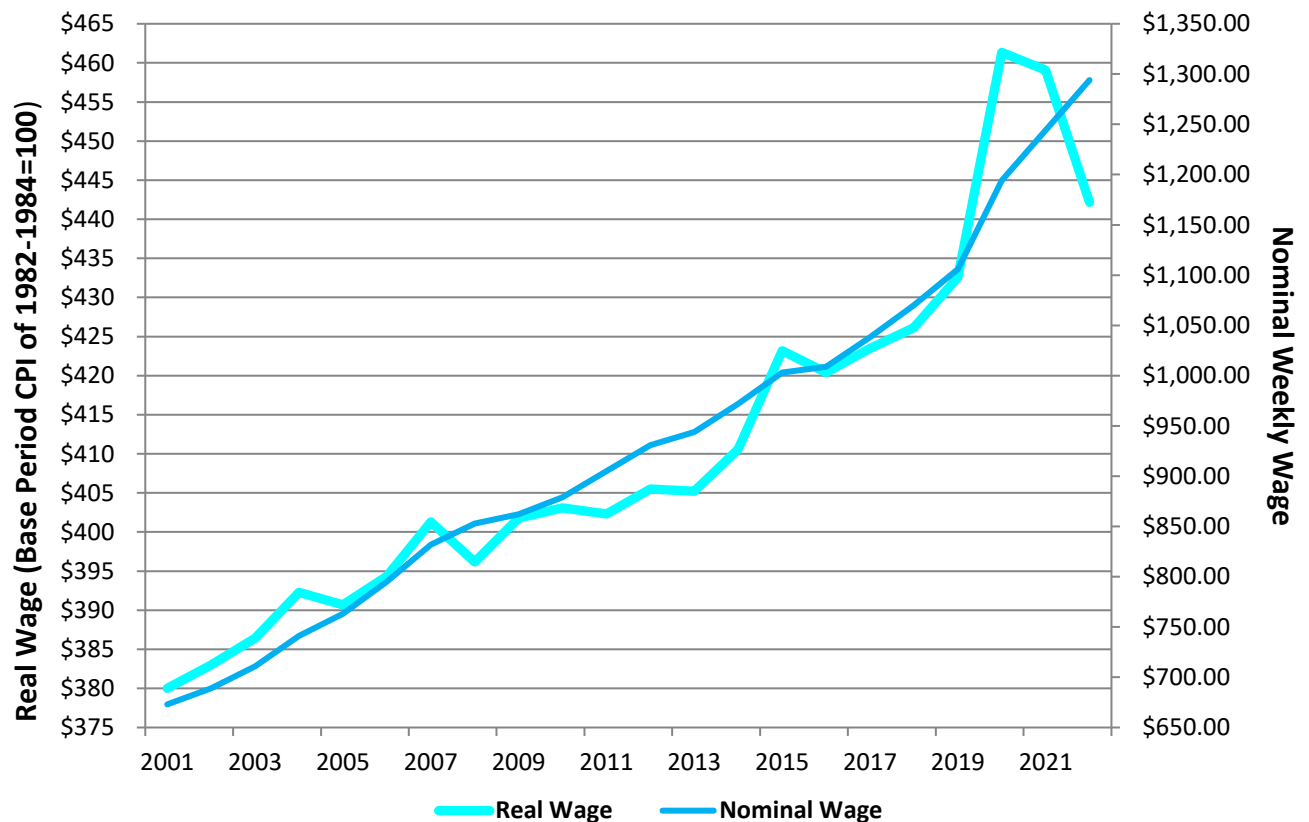
Sources: Quarterly Census of Employment and Wages, Bureau of Labor Statistics, and Center for Workforce Information & Analysis
The real wage was calculated by deflating the nominal wage by the annual value of the broadest CPI-U not seasonally adjusted (U.S. City Average for all items), with base period of 1982-1984 = 100. Wage data for 2022 was preliminary.

INDUSTRY EMPLOYMENT

Jobs

By December 2022, total nonfarm jobs rebounded to 6,071,000, or 99.7 percent of the previous high of 6,087,900 in February 2020, only 16,900 below that record. Jobs increased by 184,800 (3.1 percent) over the year (OTY) and were up 1,113,200 (22.5 percent) since the most recent jobs low in April 2020. U.S. nonfarm jobs were at 154.5 million in December 2022, up 4.8 million jobs from one year prior or 3.2 percent. In Pennsylvania, despite a secular trend of decreasing government jobs, government jobs grew by 0.8 percent in 2022 from a year earlier, but still remained 4.0 percent below their February 2020 level. Government jobs also grew nationwide in 2022 but remained 2.4 percent below their February 2020 level. Private sector jobs increased in both Pennsylvania and the nation since February 2020 and over the year. Since February 2020, the performance of private and public sector jobs in the nation was superior to that in Pennsylvania. Since private sector jobs constitute a much higher percentage of total jobs than do public sector jobs, the performance of private jobs will disproportionately affect total jobs. Despite that, in Pennsylvania, the percentage decrease in government jobs was so much greater than the increase in private jobs, causing total jobs to decrease. In the nation, on the other hand, the percentage increase was close to the percentage decrease so that total jobs increased.

PA Total Nonfarm Jobs December 2007 to December 2022 (Seasonally Adjusted)
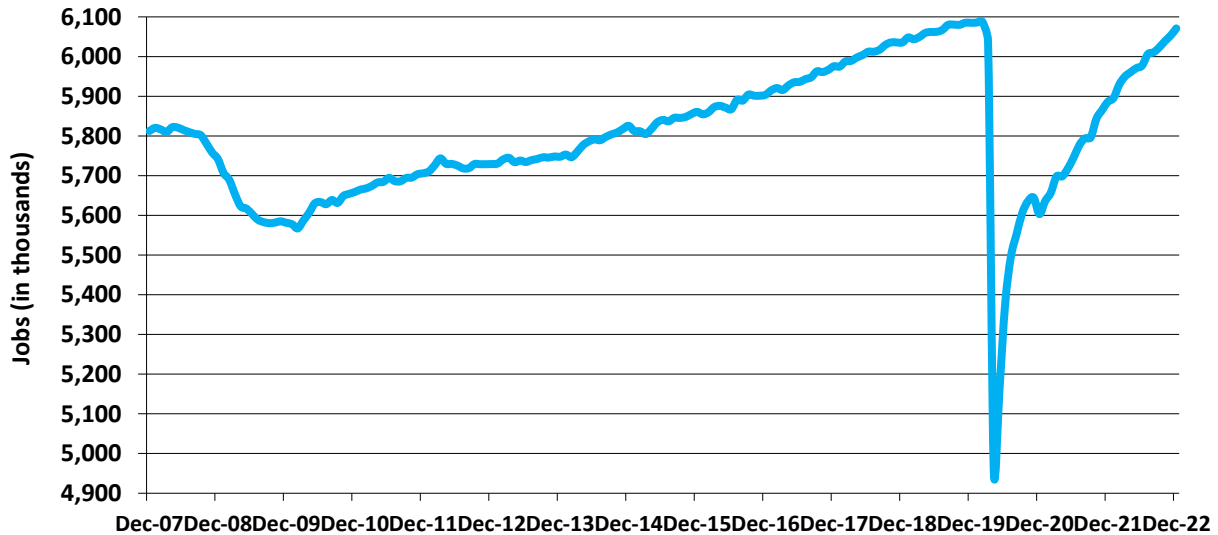
	December 2022	OTY Change	PA Change from February 2020		US Change from February 2020
			Volume	Percent	Percent
Total Nonfarm Jobs	6,071,000	184,800	-16,900	-0.3%	1.4%
Total Private Jobs	5,389,700	179,400	11,300	0.2%	2.1%
Government Jobs	681,300	5,400	-28,200	-4.0%	-2.4%

Source: Bureau of Labor Statistics, Current Employment Statistics

Goods-Producing Jobs

Pennsylvania's goods-producing jobs in December 2022 were up 16,900 (2.0 percent) from one year prior, but were 10,300 or 1.2 percent below the level of February 2020. The strength in job growth was widespread as all goods-producing sectors and supersectors gained jobs in 2022. Manufacturing accounted for 74.0 percent of the volume gains while mining & logging had the largest percentage increase in jobs over the year (5.5 percent). Despite the one-year increase in goods-producing jobs, all sectors except for nondurable goods manufacturing had fewer jobs in December 2022 than they had in February 2020, when total jobs were at a record high. Goods-producing jobs since February 2020 increased in the nation by 1.8 percent, led by a 3.3 percent increase in construction jobs, which accounted for 65.7 percent of the increase in that interval, while mining & logging was the only sector in which jobs fell. Mining & logging, the smallest sector, had the largest percentage increases over the year and the largest percentage decreases since February 2020 in both Pennsylvania and the nation. The disparity in goods-producing job performance between Pennsylvania and the nation may be partially due to Pennsylvania's greater reliance on heavy industry.

Pennsylvania Goods-Producing Industries Nonfarm Wage & Salary Employment (Seasonally Adjusted)

Industry	December 2022	OTY Change	PA Change from February 2020		US Change from February 2020
			Volume	Percent	
Goods-Producing Industries	**852,100**	**16,900**	**-10,300**	**-1.2%**	**1.8%**
Mining & Logging	23,100	1,200	-3,000	-11.5%	-8.5%
Construction	262,400	3,200	-3,500	-1.3%	3.3%
Manufacturing	566,600	12,500	-3,800	-0.7%	1.5%
Durable Goods	334,600	7,400	-6,600	-1.9%	1.2%
Nondurable Goods	232,000	5,100	2,800	1.2%	2.0%

Source: Bureau of Labor Statistics, Current Employment Statistics

Service-Providing Jobs

In December 2022, Pennsylvania's service-providing jobs were up 167,900 (3.3 percent) from one year prior, but 6,600 jobs or 0.1 percent lower since February 2020. Jobs in all the service-providing sectors rose in 2022 after most sectors had increases in the prior year. The largest increase in the volume of jobs over the year was in education & health services, led by the health care & social assistance industry group. The decrease in service-providing jobs in Pennsylvania since February 2020 was due to a large decrease in government jobs, while private service-providing jobs increased by 0.5 percent over that interval.

Service-providing jobs outperformed goods-producing jobs in Pennsylvania in 2022 and since February 2020, while the reverse was true in the nation. Pennsylvania's best performing service-providing industry sectors (measured by percent increase) since February 2020 were transportation, warehousing & utilities; management of companies; professional & technical services; and information. Of the service-providing sectors, management of companies &

enterprises and real estate & rental & leasing were the only two sectors to outperform their U.S. counterparts. Government jobs in both Pennsylvania and the nation decreased since February 2020, led by state government jobs which decreased the most in volume and in percentage terms, despite increasing in 2022. This reflects the long-term secular decline in government jobs. In Pennsylvania, the worst performing sector since February 2020 was leisure & hospitality. The growth in jobs in transportation, warehousing & utilities [which had the largest percentage increases in Pennsylvania (12.2 percent) and the nation (14.6 percent)] reflects a long-term trend away from brick-and-mortar retail toward on-line purchasing.

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

Industry	December 2022	OTY Change	PA Change from February 2020		US Change from February 2020
			Volume	Percent	
Service-Providing Industries	**5,218,900**	**167,900**	**-6,600**	**-0.1%**	**1.4%**
Trade, Transportation & Utilities	1,155,700	31,100	34,600	3.1%	3.7%
Wholesale Trade	217,500	8,900	1,200	0.6%	2.3%
Retail Trade	596,700	4,000	-3,600	-0.6%	-0.3%
Transportation, Warehousing & Utilities	341,500	18,200	37,000	12.2%	14.6%
Information	95,300	4,900	5,600	6.2%	7.3%
Financial Activities	337,900	6,200	3,800	1.1%	2.6%
Finance & Insurance	269,500	3,900	2,100	0.8%	2.9%
Real Estate & Rental & Leasing	68,400	2,300	1,700	2.5%	1.9%
Professional & Business Services	857,000	32,100	44,400	5.5%	6.4%
Professional & Technical Services	397,100	18,100	31,500	8.6%	10.5%
Management of Companies &	147,500	6,400	13,900	10.4%	1.3%
Administrative & Waste Services	312,400	7,600	-1,000	-0.3%	3.6%
Education & Health Services	1,288,300	48,300	-20,400	-1.6%	1.0%
Educational Services	235,200	10,700	-3,300	-1.4%	1.5%
Health Care & Social Assistance	1,053,100	37,600	-17,100	-1.6%	0.9%
Leisure & Hospitality	548,300	28,700	-36,800	-6.3%	-3.7%
Arts, Entertainment & Recreation	95,500	4,800	-5,600	-5.5%	-3.8%
Accommodations & Food Services	452,800	23,900	-31,200	-6.4%	-3.7%
Other Services	255,100	11,200	-9,600	-3.6%	-2.4%
Government	681,300	5,400	-28,200	-4.0%	-2.4%
Federal Government	99,100	500	0	0.0%	0.7%
State Government	144,900	200	-11,300	-7.2%	-4.3%
Local Government	437,300	4,700	-16,900	-3.7%	-2.2%

Source: Bureau of Labor Statistics, Current Employment Statistics

OTHER ECONOMIC INDICATORS

Quits and the Quits Rate

Quits are a subset of total separations compiled monthly in the Job Openings and Labor Turnover Survey (JOLTS) by the Bureau of Labor Statistics (BLS). Quits are defined as employees who left voluntarily except for retirements or transfers to other locations. The quits rate is the ratio of quits to total employment.

When the labor market is strong, with plentiful jobs and rising wage rates, workers perceiving this are willing to voluntarily leave their jobs in the expectation that they can easily get jobs elsewhere that are better (in pecuniary and nonpecuniary terms). As such, quits tend to rise when labor market conditions are improving and remain high when the labor market remains strong. A decreasing volume of quits indicates that the labor market is weakening, and a low volume of quits implies that workers perceive that the outlook of the labor market is weak. The quits rate behaves similarly but because it adjusts for the level of employment, it makes possible longer term comparisons where employment levels may vary greatly.

Following the brief recession in 2020, when both the level and rate of quits decreased precipitously, there was a strong increase in both. While both monthly series are volatile, they both stabilized at a relatively high level during 2021 and 2022. During 2022, quits ranged from 109,000 in June to 155,000 in May and ended the year at 124,000. The quits rate ranged from 1.8 in June to 2.4 in August and was at 2.1 at year end. The sustained high level of each indicates that although the labor market was not improving in 2022, it was still perceived by workers as a strong labor market.

PA Quits and Quits Rate
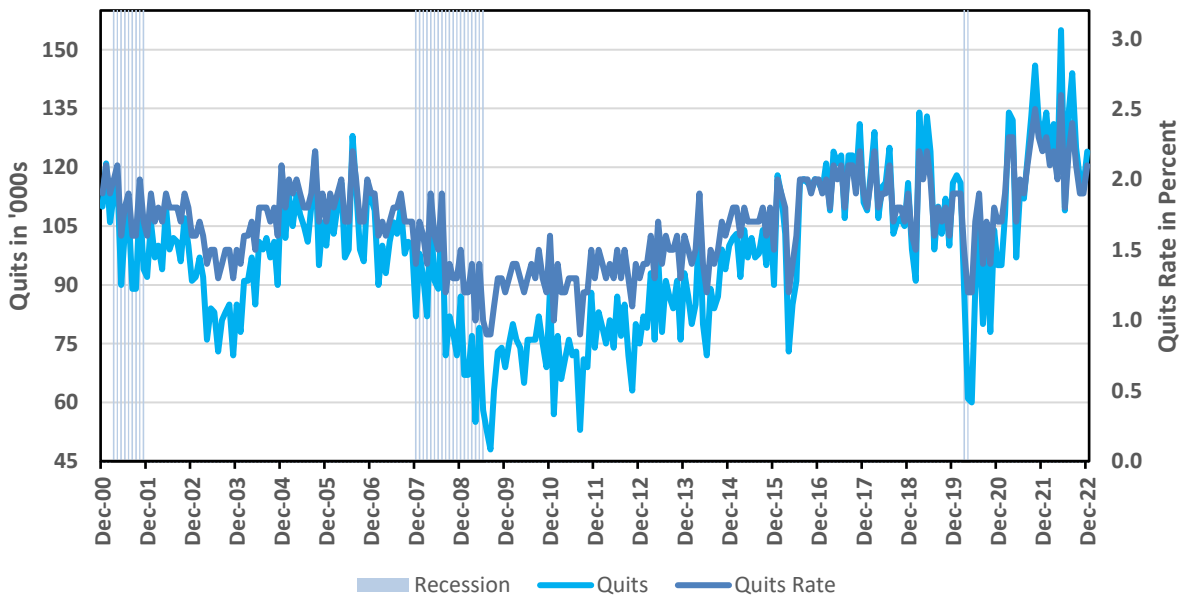
Source: Bureau of Labor Statistics, Job Openings and Labor Turnover Survey
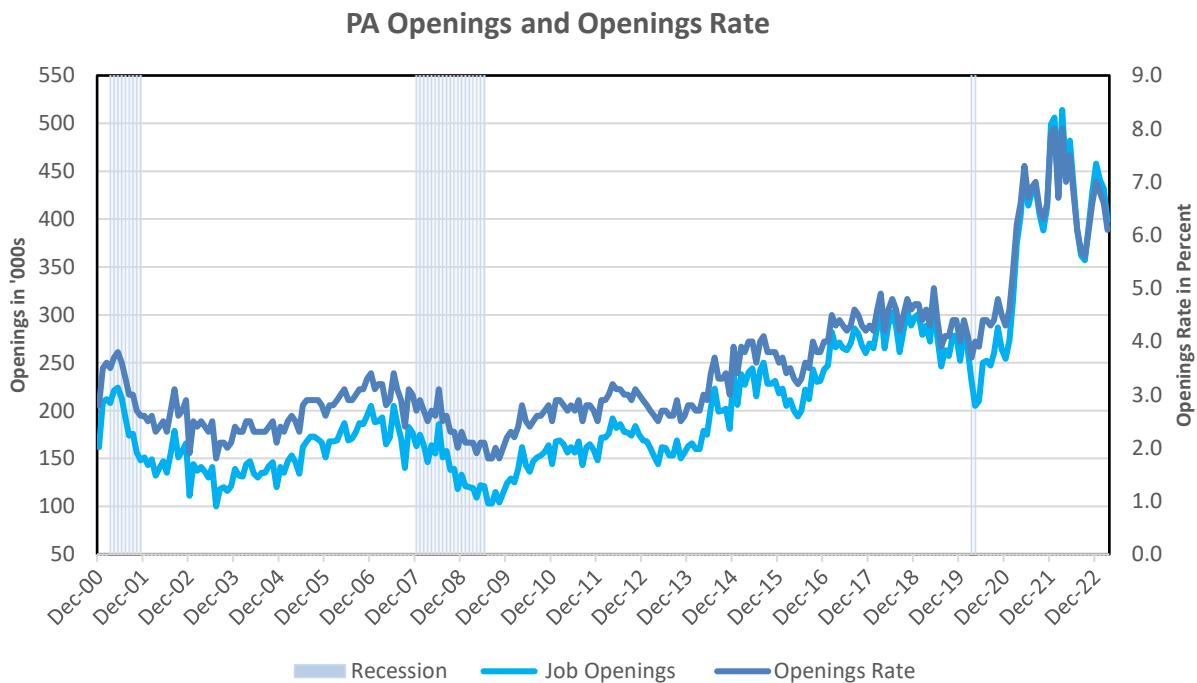
Job Openings and the Openings Rate

As part of the monthly Job Openings and Labor Turnover Survey, the BLS defines openings as vacancies including all positions that are open on the last business day of the reference month. An opening may be full-time or part-time and it can be permanent, short-term, or seasonal, but must meet three conditions:

- A specific position exists and there is work available for that position;
- The job could start within 30 days, whether or not the employer can find a suitable candidate during that time; and
- The employer is actively recruiting workers from outside the establishment to fill the position.

The openings rate is the ratio of job openings to employment.

Job openings may be generated by increased demand for labor, by churn (workers changing positions), or by other separations like retirements. In any event, increasing openings are generally a sign that the labor market is strengthening, while a high level of openings indicates that the labor market (and the economy) remains strong. A similar analysis holds for the openings rate.

In the recession year of 2020, the average level of openings was 250,300, which rose to 399,600 in 2021 and to 433,300 in 2022. The average openings rate during this period went from 4.3 in 2020 to 6.5 in 2021 and 6.8 in 2022. The increases in each indicate an improving labor market, although the improvement is slowing. The relatively high level of each is indicative of a strong labor market,

PA Openings and Openings Rate

Source: Bureau of Labor Statistics, Job Openings and Labor Turnover Survey

Ratio of Unemployed to Job Openings ("Supply/Demand" Analysis)

One measure of the supply of labor is the labor force which is the sum of the employed and the unemployed. Similarly, a measure of labor demand is the sum of the employed plus vacancies or job openings. Subtracting the volume of the employed from both sides yields that the unemployed are the part of labor supply that is not already employed and that job openings are the part of labor demand not already employed. The ratio of the unemployed to job openings is a rough measure of whether at the macroeconomic level supply exceeds demand or vice versa. It does not address the issue that not all unemployed workers are qualified to fill all the open positions or that some workers may be underemployed.

When the ratio of the unemployed to job openings equals one, the number of the unemployed equals the number of job openings so "supply" equals "demand" and the economy is at "full-employment", with all unemployment consisting of frictional and some structural unemployment. When the ratio exceeds one, there are more people looking and available for work than there are openings available. During and following recessions, as cyclical unemployment is high, the ratio increases and remains high as more slack exists in the labor market. Tight labor markets where jobs are plentiful may be characterized by ratios less than one, where frictional unemployment is lower than normal and much of the unemployment is structural.

From May 2021 through December 2022, the ratio has been under one, indicating that there were more job openings than there were workers willing to fill those positions. This is sometimes referred to as an economy that is "over full-employment".

Ratio of Unemployed to Job Openings
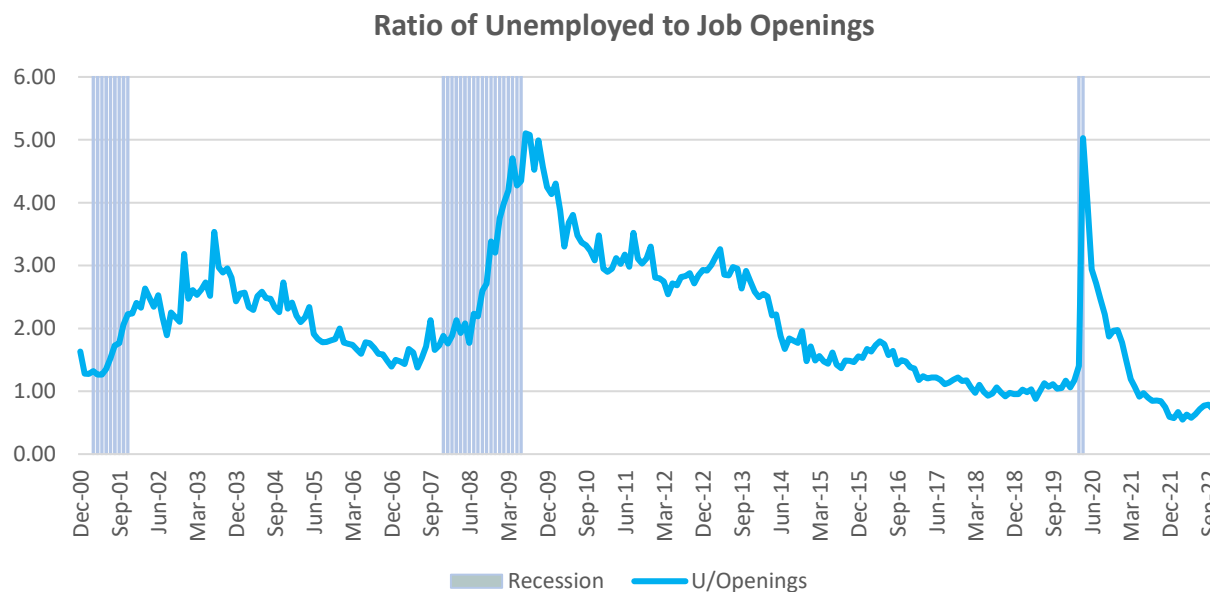
Source: Bureau of Labor Statistics, Job Openings and Labor Turnover Survey and Local Area Unemployment Statistics

New Hires

The number of New Hires reflects people hired as replacements for job leavers as well as expansions in the firm's complement. Typically, the number of New Hires will rise when labor markets tighten and fall (overall or at the industry level) during a less robust labor market. The number of reported New Hires decreased by 46,600 or 10 percent in the fourth quarter of 2022, from the same quarter in 2021. New Hires in goods-producing industries decreased by 14 percent (7,600), and by 9 percent (39,400) in the service-providing industries. In contrast to the prior year changes where New Hires increased in all sectors, decreases in 2022 were pervasive among most sectors with few exceptions. Within the goods-producing industries, manufacturing had the largest volume decrease (5,700) and percentage decrease (16 percent). Among the service-providing industries, the largest volume decrease was in trade, transportation & utilities (14,700), while information had the largest percentage decrease (26.5 percent). The decreases in new hires in 2022 may be a retracing of the large increases of new hires in 2021. Alternatively, it may foreshadow a deterioration of the labor market.

Reported Pennsylvania New Hires, 2021 to 2022, 4ᵗʰ Quarter

| Industry Sector	2022 Q4	2021 Q4	Change from 2021 Q4	
			Volume	Percent
Total New Hires	**432,600**	**479,100**	**-46,600**	**-10%**
Goods-producing Industries	**46,200**	**53,900**	**-7,600**	**-14%**
Agriculture, Forestry, Fishing, Hunting	1,900	1,700	200	8%
Mining, Quarrying & Oil & Gas Extraction	800	800	0	-4%
Construction	13,300	15,300	-2,100	-14%
Manufacturing	30,300	36,000	-5,700	-16%
Service-providing Industries	**382,400**	**421,800**	**-39,400**	**-9%**
Trade, Transportation & Utilities	75,700	90,300	-14,700	-16%
Wholesale Trade	10,600	13,700	-3100	-23%
Retail Trade	40,900	48,800	-7,800	-16%
Transportation, Warehousing & Utilities	24,200	27,900	-3,700	-13%
Information	2,700	3,600	-1000	-27%
Financial Activities	13,600	15,000	-1,300	-9%
Finance & Insurance	9,600	10,200	-600	-6%
Real Estate & Rental & Leasing	4,000	4,800	-700	-15%
Professional & Business Services	64,600	77,700	-13,100	-17%
Professional & Technical Services	18,200	22,200	-4,000	-18%
Management of Companies & Enterprises	4,100	3,700	500	12%
Administrative & Waste Services	42,200	51,800	-9,600	-19%
Education & Health Services	133,700	133,200	500	0%
Educational Services	22,000	22,100	-100	0%
Health Care & Social Assistance	111,600	111,000	600	1%
Leisure & Hospitality	73,300	82,700	-9,400	-11%
Arts, Entertainment & Recreation	12,500	12,500	0	0%
Accommodations & Food Services	60,700	70,200	-9,400	-14%
Other Services	14,900	15,600	-700	-4%
Government	4,000	3,700	300	8%
Unclassified Industry	4,000	3,500	500	14%

Computations are performed on unrounded data and the results are rounded, which may not agree with computations on the rounded data. The data from 2021 on refer only to newly hired Pennsylvania residents whose place of work was also Pennsylvania. This differs from data in reports prior to the 2021 report.
Source: Pennsylvania New Hire Reporting Program

Weekly Claims for Unemployment Compensation

The data below refer only to the regular unemployment compensation claimants and do not include claimants in supplementary programs such as the Pandemic Emergency Unemployment Compensation or the Pandemic Unemployment Assistance programs. Initial claims generally reflect the level of layoffs, while continued claims reflect unemployed individuals remaining out of work for longer periods. Pennsylvania's average weekly number of initial claims were at a maximum in 2020, but only two years later, in 2022, they were at an all-time low. The state's average weekly number of continued claims behaved similarly during the same period. Both the average of initial claims and continued claims decreased by over 58 percent in 2022, indicating that Pennsylvania's labor market at least by this measure had recovered and was fairly strong.

PA Average Weekly Initial and Continued Claims for Unemployment Compensation
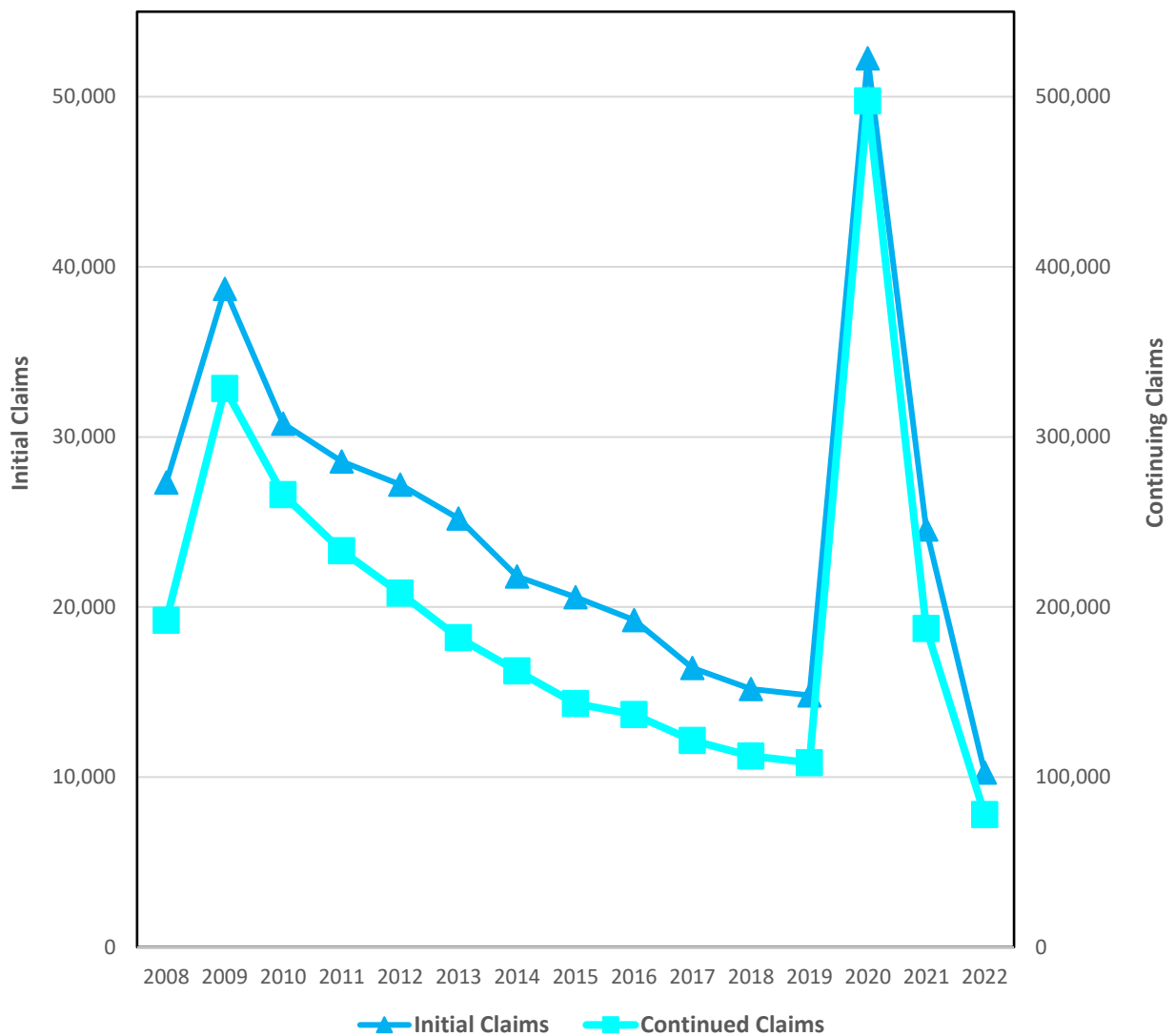
Source: Pennsylvania Unemployment Compensation System

Average Weekly Hours in Manufacturing

Average weekly hours are a leading indicator, often correctly forecasting the direction of the economy. As the economy begins to grow out of a recession (e.g., in 2004), employers will tend to delay hiring new workers until they are more confident that economic growth is improving and sustainable, and instead will have their existing employees work more hours. Eventually, as the economy continues to improve, businesses will 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 or is expected to do so, employers wishing to maintain employee loyalty will retain workers (labor hoarding) by reducing hours worked, rather than immediately laying off workers (e.g., in 2001). If the slowdown deepens, businesses may need 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 2019 and continued to fall in 2020, while jobs didn't fall until 2020. Both rebounded in 2021 and nonfarm jobs continued to increase in 2022, while average weekly hours fell slightly in 2022. While it might be a statistical aberration, average weekly hours also fell (and by more) in the nation. It is also possible (and more likely) that employers are less sure of growth in the future and are hiring more part-time workers. Of course, as a leading indicator, it may portend an expectation of a downturn. Given that the longer-term trend in employment in manufacturing has been decreasing (although not in 2022), the value of average weekly manufacturing hours as an economic indicator may be diminishing.

PA Average Weekly Hours in Manufacturing, Annual Average
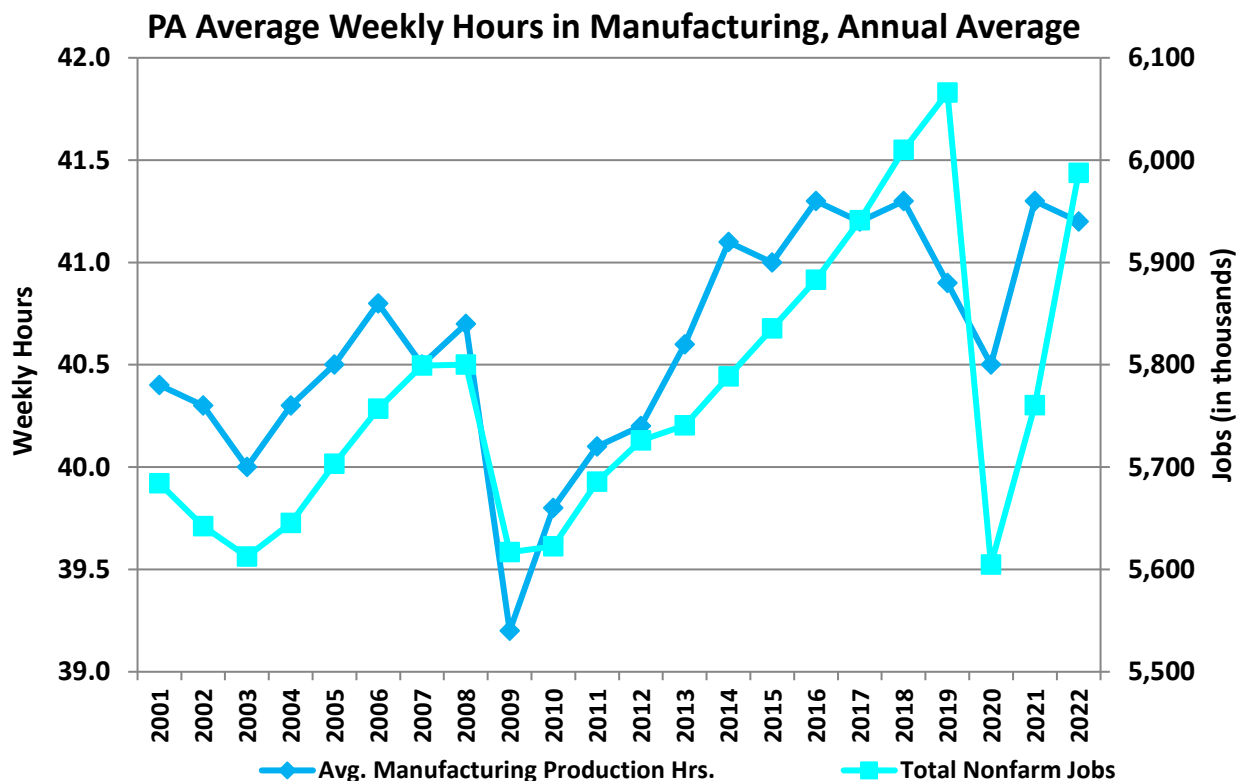
Source: Bureau of Labor Statistics, Current Employment Statistics

Nominal and Real Gross Domestic Product (GDP)

The Bureau of Economic Analysis (BEA) produces estimates of each state's gross domestic product (GDP), both nominally and in "real" terms on a quarterly and annual basis. Nominal GDP is the market value of goods and services produced by the labor and property located in a state valued in the prices of the period when the transactions occurred—that is, at "market value." Real GDP, on the other hand, excludes the effects of price changes and are inflation-adjusted values that ideally reflect changes in actual output over time. Typically, although not always, labor markets and output markets move together, although labor markets tend to lag output markets. After falling by 4.5 percent in 2020, real GDP in Pennsylvania grew by 4.4 percent in 2021. While real GDP growth continued in 2022, it slowed to 2.1 percent and equaled the nation's growth rate which also was lower than in 2021. Pennsylvania's 2022 percentage growth rate in real GDP ranked 19th in the country. The other states' growth rates in output over this period ranged from a decrease of 2.4 percent to an increase of 4.9 percent. The faster growth in Pennsylvania's nominal GDP was due to a surge in price inflation since 2020.

Pennsylvania Nominal and Real GDP: 2005 - 2022
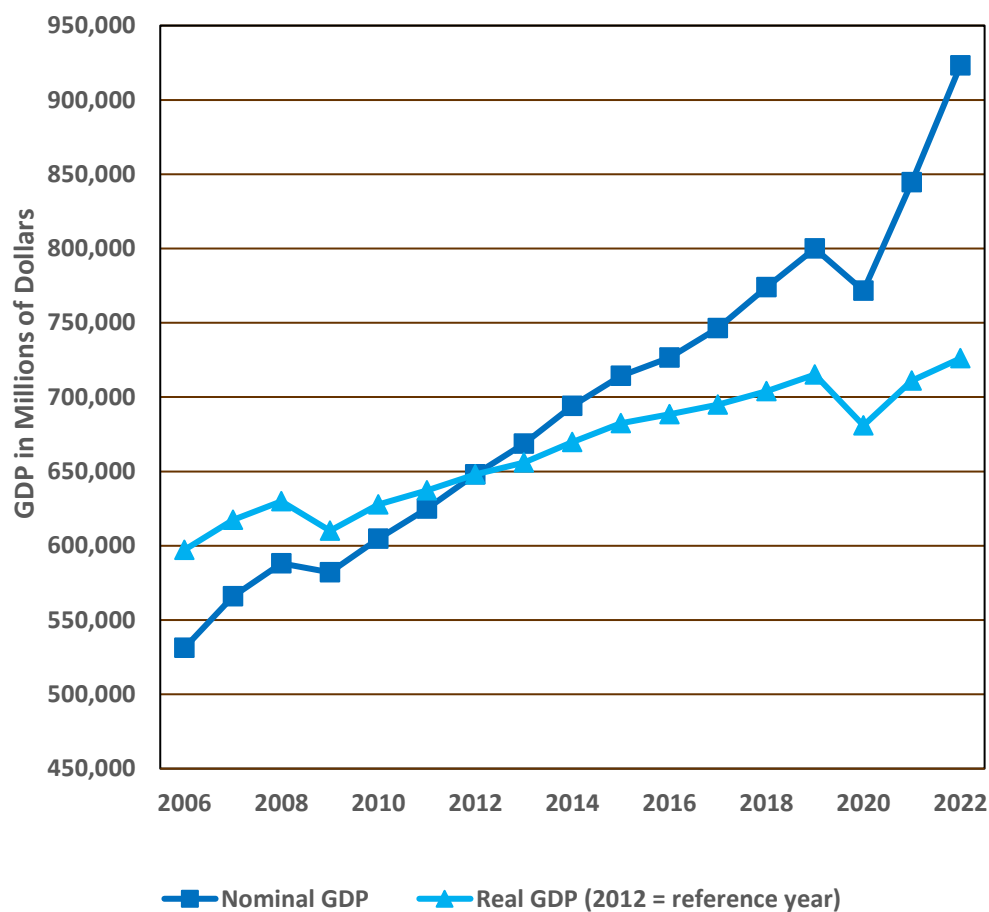
Source: Bureau of Economic Analysis
The BEA utilizes chain-weighted quantity indexes to covert nominal values into real values. The reference year is currently 2012.

Coincident and Leading Economic Indexes[1]

The Federal Reserve Bank of Philadelphia produces a coincident economic index (CEI) and a leading economic index (LEI) for Pennsylvania monthly. The CEI 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 LEI for each state predicts the six-month growth rate of the state's CEI. In addition to the CEI, 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. The sudden and extreme impact of the pandemic on initial claims led to the continuing indefinite suspension of the release of state LEIs that began in March 2020.
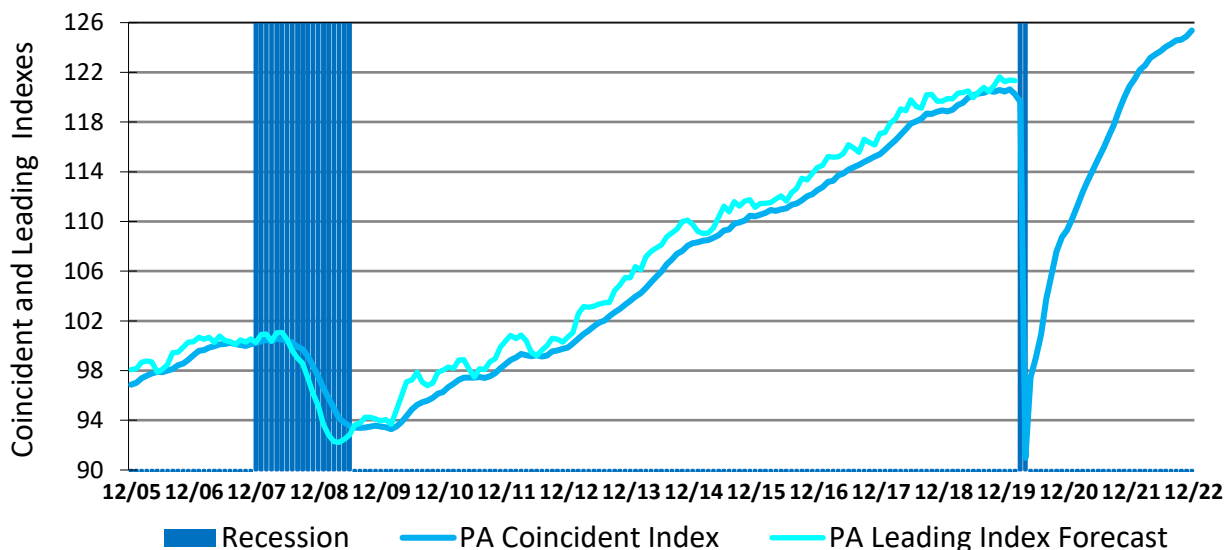
Sustained rises in the CEI indicate recoveries and expansions while sustained decreases indicate contractions. When the leading index forecast exceeds the CEI, growth over the following six months is projected. Such was the case prior to the downturn in March and April 2020, signaling that Pennsylvania was still in a recovery which was anticipated to continue. Following the rapid and severe decline in the economy and the CEI in those two months, the CEI started rebounding in May and continued increasing throughout 2022. The increase was rapid at first but started to level off toward the end of 2022. This indicates that while the economy was growing its rate of growth was slowing.

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[1] Material for this section was taken from the Philadelphia Federal Reserve Website. More information on the indexes can be found at http://www.philadelphiafed.org/surveys-and-data /regional-economic-analysis/ /state-coincident-indexes and http://www.philadelphiafed.org/research-and-data/regional-economy/indexes/leading/.

DEMOGRAPHICS

Population

Population change is the underlying force that moves the economy. From 2022 to 2032, Pennsylvania's population is projected to grow by 0.6 percent. In comparison, the nation's population is projected to grow by 5.1 percent by 2032 and continue growing through 2052. After a small initial decrease, Pennsylvania's population is expected to grow slowly through 2036 and then decline at least through 2052. Its age distribution, however, is expected to change more dramatically.

Pennsylvania Population Projection 2022 - 2052
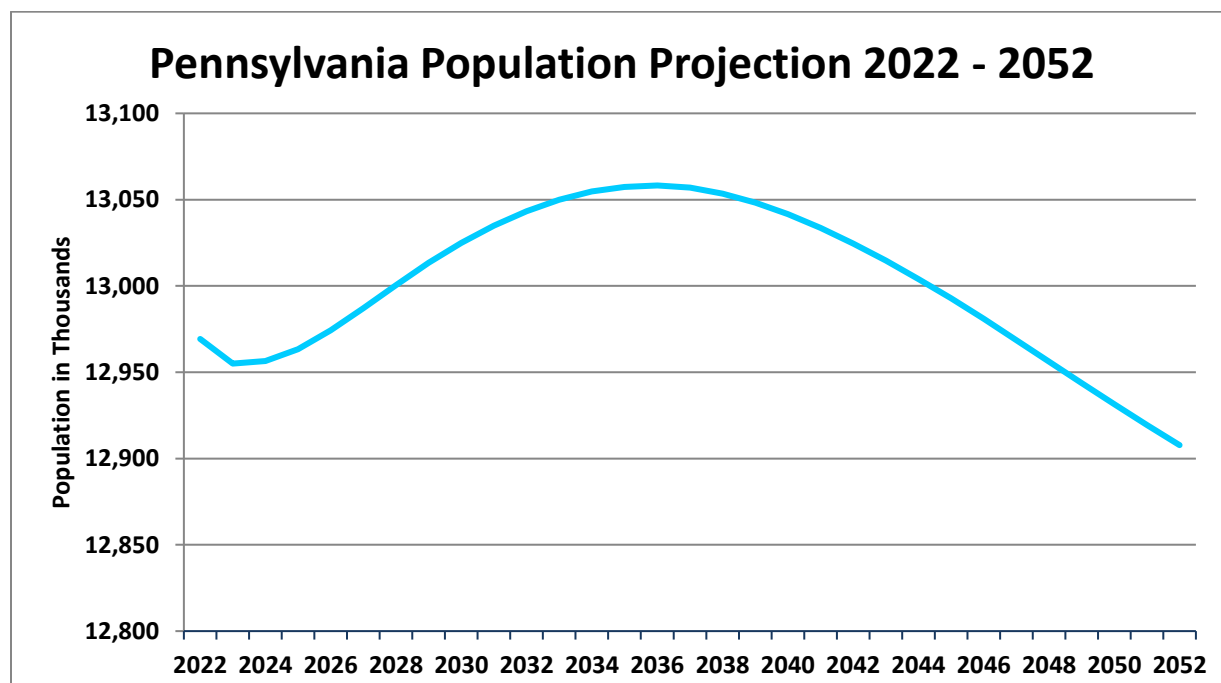
Sources: IHS Economics based on Census Bureau estimates

Age

With a median age of 40.9 years, Pennsylvania tied for the seventh highest ranking in the nation. The state's percentage of those aged 65 and over (19.60%) is the ninth highest in the nation– Maine (22.55%), Florida (21.61%), Vermont (21.56%), West Virginia (21.19%), Hawaii (21.04%), Delaware (20.87%), New Hampshire (20.18%), and Montana (20.11%) are higher. The number of Pennsylvanians aged 65 and older was over 2.54 million in 2022 and the number and proportion of that age cohort are projected to increase at least through 2052. This is largely a by-product of the aging of those 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 76) and the youngest will turn 65 in 2029 (now age 58). Thus, a large wave of baby boomers will be leaving the workforce over the next two decades. Since the rate of births from the mid-1960s through the 1990s 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). This will have profound effects on the future distribution of workers across industries and occupations.

**Pennsylvania Population: Age 10 to 65 in 2022**
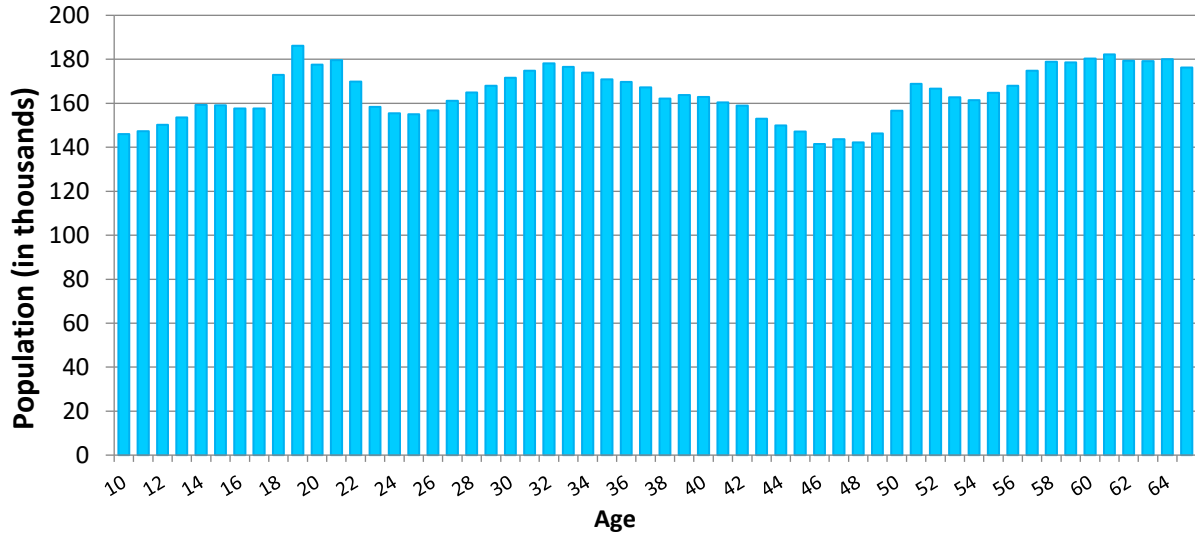
Source: U.S. Census Bureau

The modest overall population increase is expected to be accompanied by a greater proportion aged 65 and above and a declining volume of the traditional working age population (25 to 64). From 2022 through 2052, the total working age population is projected to decline annually, except for small increases from 2031 to 2038. The labor force will increase rapidly through 2026 when it peaks, and then, except for increases in 2037 to 2039, decline through 2052. This probably will result in worker shortages in the coming years with some areas, industries, and occupations being affected sooner and harder than others. From 2022 through 2052, the labor force is projected to decrease by 0.7 percent while the working age population is expected to decline by 3.6 percent. The smaller decline in the labor force could be due to a substantial international in-migration of workers offsetting other factors such as the expected decline in the labor force participation rate. The overall labor force participation rate is expected to reach a peak in 2024 and decrease annually for the remainder of the period, except for small increases from 2037 to 2039.

Pennsylvania's Projected Labor Force 2022 to 2052
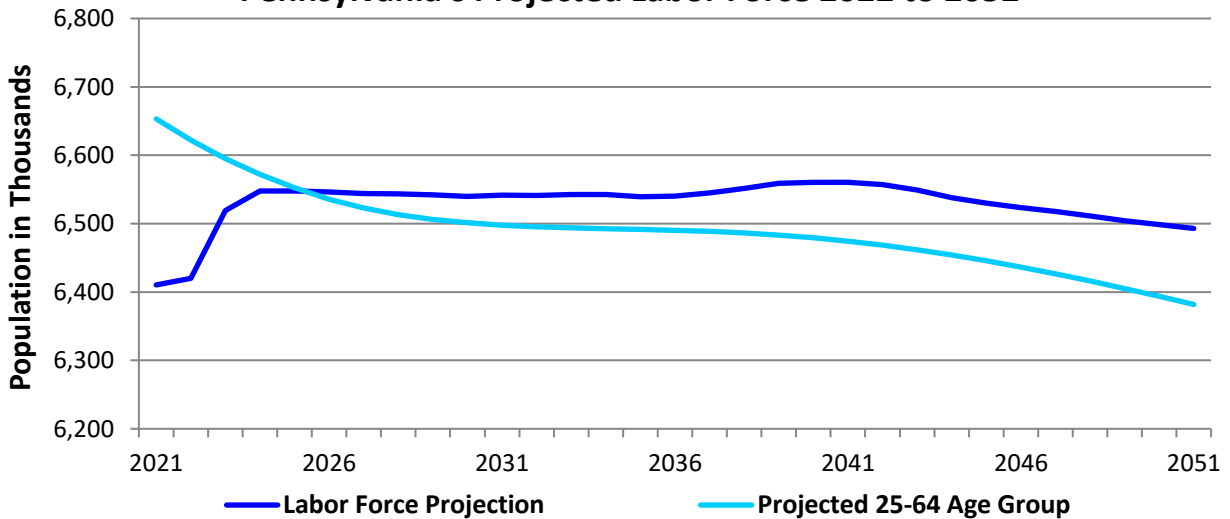
Sources: U.S. Census Bureau, Bureau of Labor Statistics and IHS Economics

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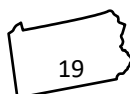
Conclusion

As measured by its headline economic statistics, Pennsylvania's labor markets had a fairly good year in 2022. The volume of unemployment and the unemployment rate fell to levels not seen since 2000. Average employment rose by 2.3 percent over the year and was only 1.5 percent below its record high achieved in 2019. December nonfarm payrolls increased by 3.1 percent from the prior December as all goods-producing and service-providing sectors improved and stood at 99.7 percent of the all-time record high set in February 2020. Relative to their levels in February 2020, private sector jobs exceeded that level by 0.2 percent while government jobs fell. However, the markets were beset by uncertainty caused by Federal Reserve policy and Pennsylvania's continued recovery lagged behind the nation's, probably due to the state's industry mix and its age profile.

In response to rising inflation in 2021, the Federal Reserve cut asset purchases as a first step in tightening monetary policy but refrained from actually raising rates. However, as inflation accelerated in 2022, the Federal Reserve raised its target rate seven times, cumulatively by 4.25 percent. Despite these rate increases, most economic indicators signaled that the economy and labor market were still improving. Weekly initial and continued unemployment claims were at record lows. Nominal and real GDP both increased, as did the state's coincident economic index. The average labor force increased over the year as the labor force participation rate increased despite the rate's longer-term decreasing trend (due to demographics). The volume of long-term unemployment and its percentage of total unemployment fell, indicating that duration was decreasing. Quits, a measure of workers' confidence in the labor market, and the quits rate remained high, indicating that workers expected the labor market to remain strong. Average job openings and the average openings rate were high and increased, showing that demand for labor improved and remained strong. The ratio of the unemployed to openings was less than one, indicating that there were more jobs available than unemployed workers to fill them. However, there were other indicators that the economy and labor market was or would soon be slowing. The IPTR rose although U6 decreased. New Hires fell as did average manufacturing hours of production workers. The real wage rate fell as price inflation increased by more than nominal wage inflation.

Notwithstanding the generally positive economic performance in 2022, Pennsylvania faces both short-term and long-term challenges. The most immediate challenge to the economy is the Fed's reaction to inflation and whether it will be able to generate a "soft landing" or whether its aggressive tightening might go too far. Longer term, the economy and labor market will continue to adjust to the recent upheaval in the labor market which caused structural changes in the economy, as some industries and occupations continue to get transformed because of it. In addition, demographic trends such as the aging of the population and slow population growth will cause Pennsylvania's projected working age population (age 25 to 64) to decline annually taking key skills with them. Ultimately, the challenge that needs to be met is to create high-paying jobs by adapting to all of those changes.