OHIO
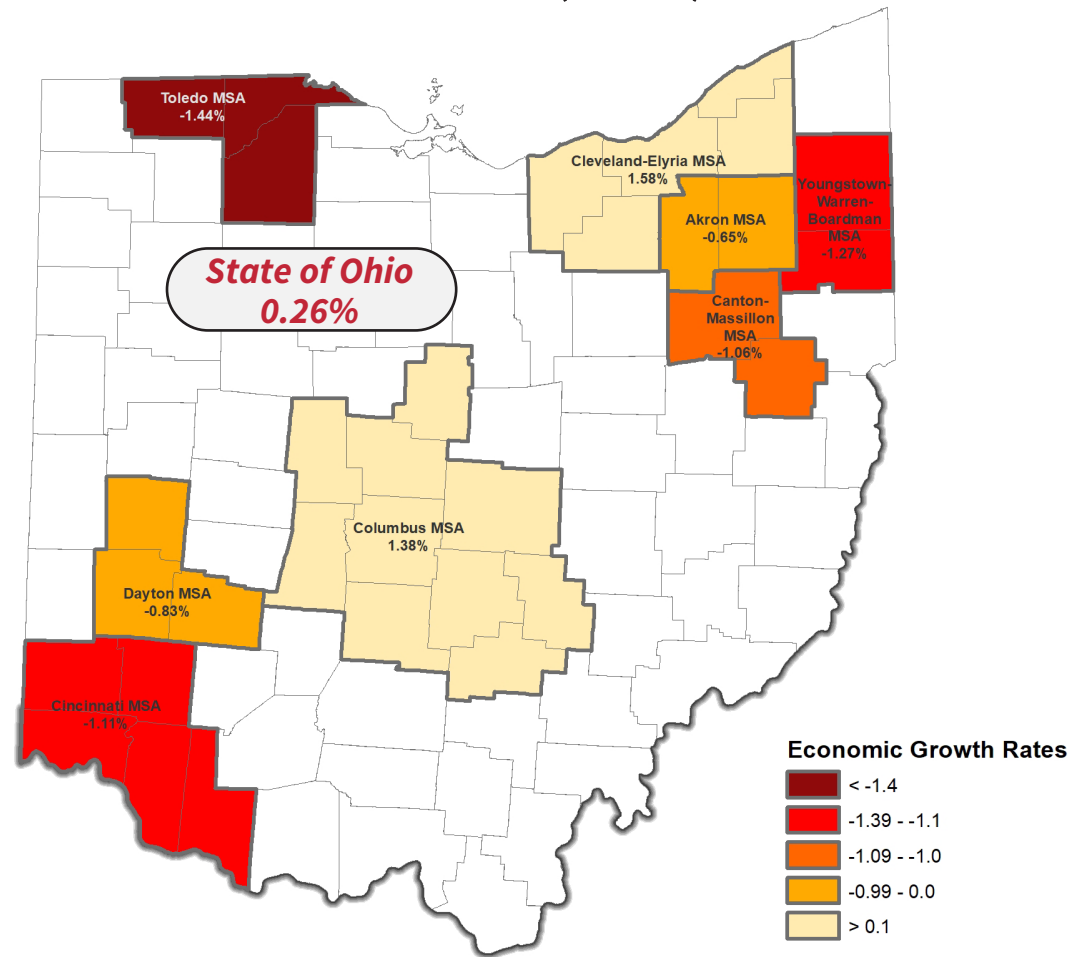## LEADING INDICATORS
DECEMBER 2024

PREDICTED ANNUALIZED GROWTH RATES FOR OHIO AND SELECT METROPOLITAN STATISTICAL AREAS (MSAs)

The Ohio Leading Indicators report uses an annualized growth rate to forecast employment growth for Ohio and its eight largest MSAs for the next six months. The model examines seasonally adjusted total nonfarm employment. These data are seasonally adjusted by the leading indicators model and should not be compared to other seasonally adjusted data.

Total employment is predicted to increase at an annual rate of 0.26% for the next six months in Ohio. The following MSAs are also predicted to increase: the Cleveland-Elyria MSA at 1.58%; and the Columbus MSA at 1.38%. The following MSAs are predicted to decrease: the Akron MSA at -0.65%; the Dayton MSA at -0.83%; the Canton-Massillon MSA at -1.06%; the Cincinnati MSA at -1.11%; the Youngstown-Warren-Boardman MSA at -1.27%; and the Toledo MSA at -1.44%.

Map labels:
- Toledo MSA -1.44%
- Cleveland-Elyria MSA 1.58%
- Akron MSA -0.65%
- Youngstown-Warren-Boardman MSA -1.27%
- State of Ohio 0.26%
- Canton-Massillon MSA -1.06%
- Columbus MSA 1.38%
- Dayton MSA -0.83%
- Cincinnati MSA -1.11%

Economic Growth Rates
- < -1.4
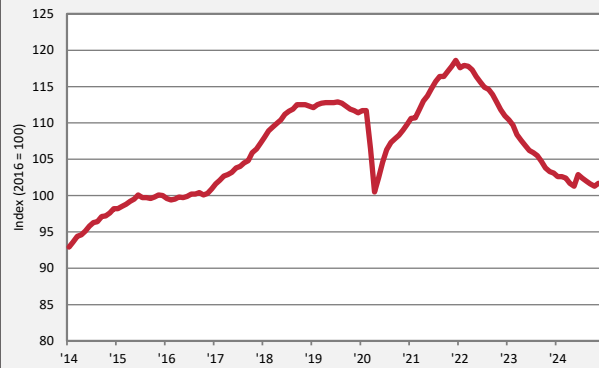- -1.39 - -1.1
- -1.09 - -1.0
- -0.99 - 0.0
- > 0.1

Leading Indicators and Components

UNITED STATES

The U.S. Leading Economic Index decreased 0.1% from November and decreased 1.5% from December 2023. The U.S. industrial production in manufacturing increased 0.6% over the month and 0.1% over the year.
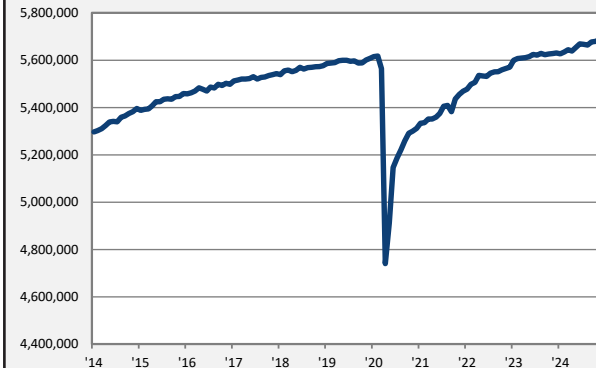
OHIO

Ohio's seasonally adjusted total nonfarm employment was 5,694,900 in December 2024, up 0.2% over the month and 1.1% over the year. Initial unemployment claims increased 8.4% from November and 0.3% from December 2023. Ohio's average weekly manufacturing hours decreased to 40.7 in December. Housing permit valuations increased 21.6% from the previous month and 28.9% from the previous year. *Building permit valuations for Ohio were higher than normal for October 2022, primarily driven by a larger-than-normal increase in the Akron MSA valuations.*

U.S. Leading Economic Index
(Seasonally Adjusted)

Source: The Conference Board

U.S. Industrial Production: Manufacturing
(Seasonally Adjusted)

Source: Board of Governors of the Federal Reserve System

Ohio Total Nonfarm Employment
(Seasonally Adjusted)

Ohio Initial Claims for Unemployment Insurance
(Seasonally Adjusted)

Ohio Manufacturing Hours
(Seasonally Adjusted)
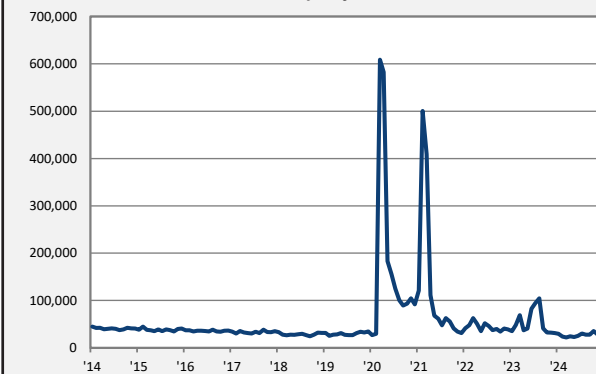
Ohio Valuation of Housing Permits
(Seasonally Adjusted)
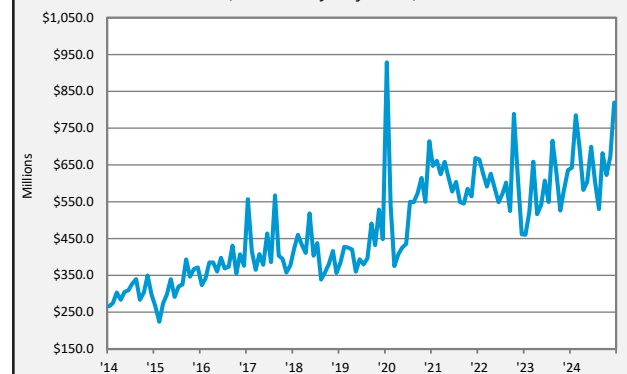
Leading Indicators and Components

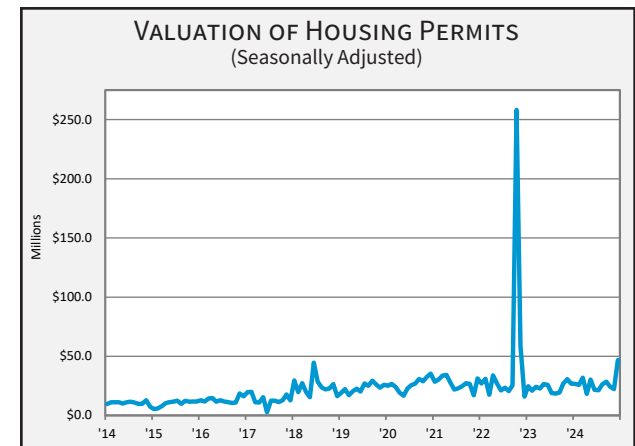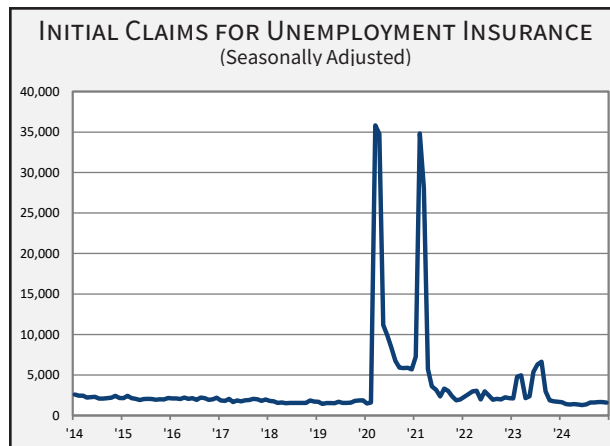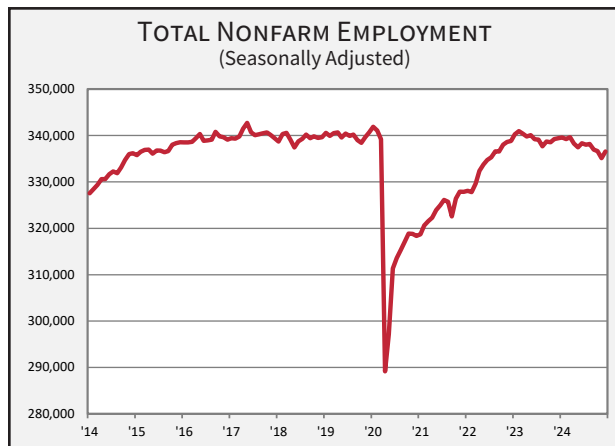| United States	Dec 2023	Jan 2024	Feb 2024	Mar 2024	Apr 2024	May 2024	Jun 2024	Jul 2024	Aug 2024	Sep 2024	Oct 2024	Nov 2024	Dec 2024	Percent Change	
														Month	Year
U.S. Leading Economic Index (2016 = 100) (Seasonally Adjusted)	103.1	102.6	102.6	102.4	101.7	101.3	102.9	102.4	102.0	101.6	101.3	101.7	101.6	-0.1%	-1.5%
U.S. Industrial Production: Manufacturing (2017 = 100) (Seasonally Adjusted)	99.8	98.4	99.8	100.1	99.4	100.0	100.0	99.4	99.9	99.6	98.9	99.3	99.9	0.6%	0.1%

Ohio	Dec 2023	Jan 2024	Feb 2024	Mar 2024	Apr 2024	May 2024	Jun 2024	Jul 2024	Aug 2024	Sep 2024	Oct 2024	Nov 2024	Dec 2024	Percent Change	
														Month	Year
Nonagricultural Wage and Salary Employment (Seasonally Adjusted in Thousands)	5,630.8	5,626.5	5,634.5	5,643.7	5,638.6	5,654.5	5,668.9	5,666.7	5,664.3	5,676.9	5,679.4	5,686.0	5,694.9	0.2%	1.1%
Initial Claims for Unemployment Insurance (Seasonally Adjusted)	30,825	29,673	23,732	21,728	24,078	22,771	24,950	30,273	27,785	27,903	35,803	28,529	30,927	8.4%	0.3%
Average Weekly Hours for Manufacturing (Seasonally Adjusted)	40.2	40.1	40.8	41.1	40.8	41.1	40.9	41.0	41.5	41.3	40.9	41.0	40.7	-0.7%	1.2%
Valuation of Housing Permits (Seasonally Adjusted in Millions)	$636.2	$641.8	$785.3	$694.5	$581.9	$604.0	$699.4	$604.7	$529.9	$681.7	$623.0	$674.0	$819.9	21.6%	28.9%

AKRON METROPOLITAN STATISTICAL AREA
Portage and Summit Counties

The leading indicator for the Akron metropolitan area for December 2024 forecasts negative employment growth at an annual rate of -0.65% for the next six months. Seasonally adjusted nonfarm payroll employment was 336,500 in December, up 0.4% from November.

The number of initial claims for unemployment insurance in December was 1,581 claims, 5.5% less than the number of claims filed last month and 7.1% less than last year. The valuation of permits for new housing construction in December was $46.7 million, a 110.4% increase from November and a 74.3% increase from December 2023. *The Akron MSA reported an extremely high number of housing permits and valuations for October 2022, giving the permit data a stronger-than-normal effect on the October 2022 leading indicators for the Akron MSA.*

TOTAL NONFARM EMPLOYMENT
(Seasonally Adjusted)

INITIAL CLAIMS FOR UNEMPLOYMENT INSURANCE
(Seasonally Adjusted)

VALUATION OF HOUSING PERMITS
(Seasonally Adjusted)

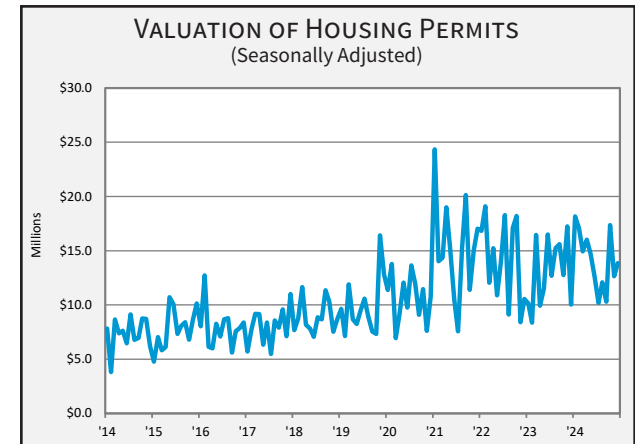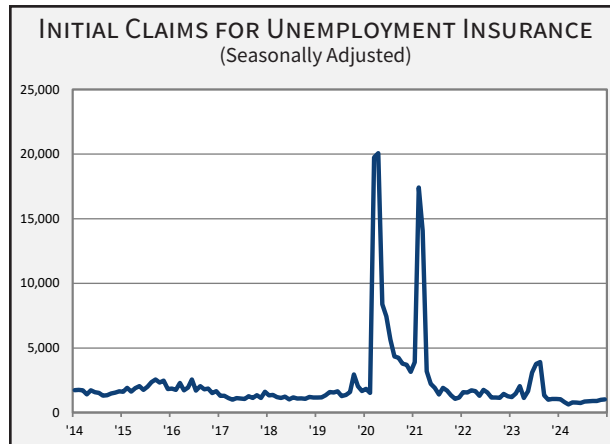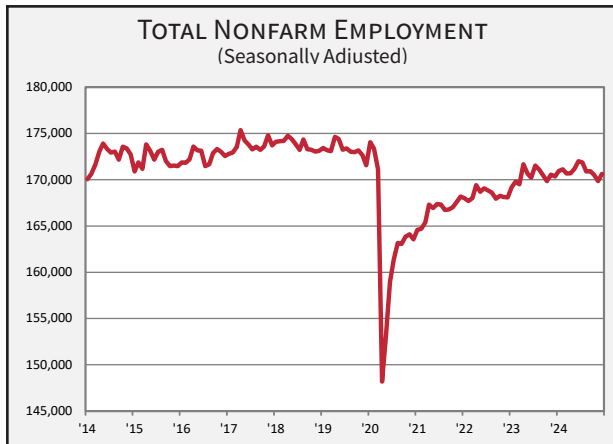| **AKRON**	Dec 2023	Jan 2024	Feb 2024	Mar 2024	Apr 2024	May 2024	Jun 2024	Jul 2024	Aug 2024	Sep 2024	Oct 2024	Nov 2024	Dec 2024	Percent Change	
														Month	Year
Nonagricultural Wage and Salary Employment (Seasonally Adjusted in Thousands)	339.4	339.5	339.2	339.6	338.3	337.5	338.3	338.0	338.2	337.0	336.6	335.1	336.5	0.4%	-0.9%
Initial Claims for Unemployment Insurance (Seasonally Adjusted)	1,702	1,646	1,400	1,358	1,411	1,362	1,282	1,394	1,613	1,615	1,678	1,672	1,581	-5.5%	-7.1%
Average Weekly Hours for Manufacturing* (Seasonally Adjusted)	40.2	40.1	40.8	41.1	40.8	41.1	40.9	41.0	41.5	41.3	40.9	41.0	40.7	-0.7%	1.2%
Valuation of Housing Permits (Seasonally Adjusted in Millions)	$26.8	$26.6	$25.7	$31.9	$18.2	$30.2	$21.6	$21.3	$26.3	$28.5	$24.3	$22.2	$46.7	110.4%	74.3%

*In 2005, the BLS stopped producing manufacturing hours for Akron, Canton, Dayton, Toledo, and Youngstown. Starting in February 2005, data for the manufacturing hours for those MSAs are the state values.

Canton-Massillon Metropolitan Statistical Area
Carroll and Stark Counties

The leading indicator for the Canton-Massillon metropolitan area for December 2024 forecasts negative employment growth at an annual rate of -1.06% for the next six months. Seasonally adjusted nonfarm payroll employment was 170,600 in December, up 0.5% from November.

The number of initial claims for unemployment insurance in December was 1,013, up 3.5% from the number of claims filed last month but down 3.9% from last year. The valuation of permits for new housing construction in December was $13.9 million, a 10.3% increase from one month ago and a 39.0% inrease from one year ago.

TOTAL NONFARM EMPLOYMENT
(Seasonally Adjusted)

INITIAL CLAIMS FOR UNEMPLOYMENT INSURANCE
(Seasonally Adjusted)

VALUATION OF HOUSING PERMITS
(Seasonally Adjusted)

CANTON	Dec 2023	Jan 2024	Feb 2024	Mar 2024	Apr 2024	May 2024	Jun 2024	Jul 2024	Aug 2024	Sep 2024	Oct 2024	Nov 2024	Dec 2024	Percent Change	
														Month	Year
Nonagricultural Wage and Salary Employment (Seasonally Adjusted in Thousands)	170.3	170.9	171.1	170.7	170.7	171.2	172.0	171.9	170.9	170.9	170.5	169.8	170.6	0.5%	0.2%
Initial Claims for Unemployment Insurance (Seasonally Adjusted)	1,054	1,023	804	629	787	771	743	845	874	892	897	979	1,013	3.5%	-3.9%
Average Weekly Hours for Manufacturing* (Seasonally Adjusted)	40.2	40.1	40.8	41.1	40.8	41.1	40.9	41.0	41.5	41.3	40.9	41.0	40.7	-0.7%	1.2%
Valuation of Housing Permits (Seasonally Adjusted in Millions)	$10.0	$18.2	$17.1	$14.9	$16.0	$14.7	$12.6	$10.2	$12.1	$10.3	$17.4	$12.6	$13.9	10.3%	39.0%

*In 2005, the BLS stopped producing manufacturing hours for Akron, Canton, Dayton, Toledo, and Youngstown. Starting in February 2005, data for the manufacturing hours for those MSAs are the state values.

CINCINNATI METROPOLITAN STATISTICAL AREA
Brown, Butler, Clermont, Hamilton, and Warren Counties
This MSA also includes counties in Indiana and Kentucky (see page 12)

The leading indicator for the Cincinnati metropolitan area for December 2024 forecasts negative employment growth at an annual rate of -1.11% for the next six months. Seasonally adjusted nonfarm payroll employment was 1,160,900 in December, up 0.1% from November.

The number of initial claims for unemployment insurance in December was 3,152 claims, 0.4% more than last month but 10.7% less than last year. Average weekly manufacturing hours increased to 38.2 in December. The valuation of permits for new housing construction in December was $131.8 million, a 7.4% decrease from November and an 9.7% decrease from December 2023.

TOTAL NONFARM EMPLOYMENT
(Seasonally Adjusted)

INITIAL CLAIMS FOR UNEMPLOYMENT INSURANCE
(Seasonally Adjusted)

VALUATION OF HOUSING PERMITS
(Seasonally Adjusted)
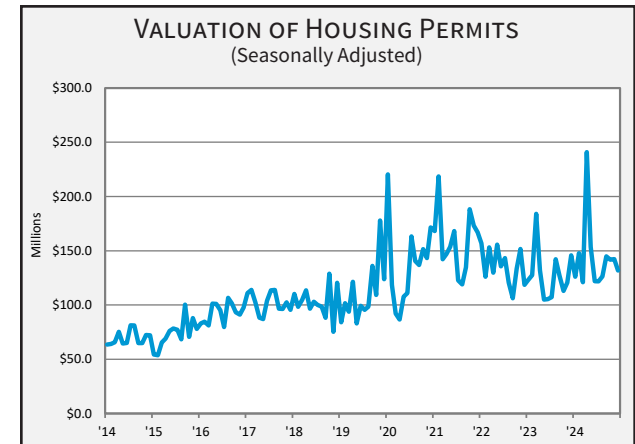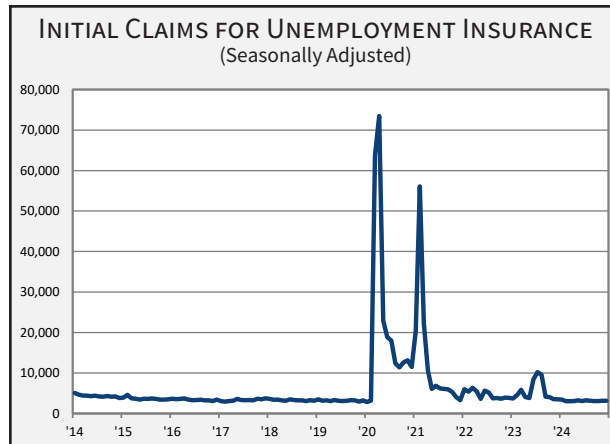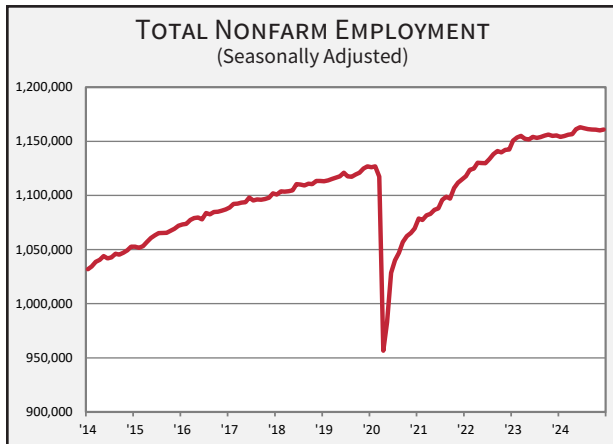
CINCINNATI	Dec 2023	Jan 2024	Feb 2024	Mar 2024	Apr 2024	May 2024	Jun 2024	Jul 2024	Aug 2024	Sep 2024	Oct 2024	Nov 2024	Dec 2024	Percent Change	
														Month	Year
Nonagricultural Wage and Salary Employment (Seasonally Adjusted in Thousands)	1,155.4	1,154.1	1,154.7	1,156.0	1,156.7	1,161.1	1,163.0	1,162.2	1,161.3	1,160.9	1,160.6	1,160.1	1,160.9	0.1%	0.5%
Initial Claims for Unemployment Insurance (Seasonally Adjusted)	3,529	3,445	3,025	3,030	3,066	3,252	3,063	3,249	3,151	3,104	3,104	3,140	3,152	0.4%	-10.7%
Average Weekly Hours for Manufacturing (Seasonally Adjusted)	30.7	32.6	33.5	33.9	32.2	33.5	35.1	34.5	35.1	36.2	36.0	36.5	38.2	4.7%	24.4%
Valuation of Housing Permits (Seasonally Adjusted in Millions)	$145.9	$126.2	$147.8	$121.1	$241.0	$153.4	$122.0	$121.7	$126.3	$144.8	$141.8	$142.4	$131.8	-7.4%	-9.7%

Cleveland-Elyria Metropolitan Statistical Area
Cuyahoga, Geauga, Lake, Lorain, and Medina Counties

The leading indicator for the Cleveland-Elyria metropolitan area for December 2024 forecasts positive employment growth at an annual rate of 1.58% for the next six months. Seasonally adjusted nonfarm payroll employment was 1,071,200 in December, down 0.1% from November.

The number of initial claims for unemployment insurance in December was 5,286, up 19.0% from the number of claims filed last month but down 0.8% from last year. Average weekly manufacturing hours decreased to 41.3 in December. The valuation of permits for new housing construction in December was $93.4 million, a 5.1% decrease from November and a 7.6% decrease from December 2023.


TOTAL NONFARM EMPLOYMENT
(Seasonally Adjusted)

INITIAL CLAIMS FOR UNEMPLOYMENT INSURANCE
(Seasonally Adjusted)

VALUATION OF HOUSING PERMITS
(Seasonally Adjusted)
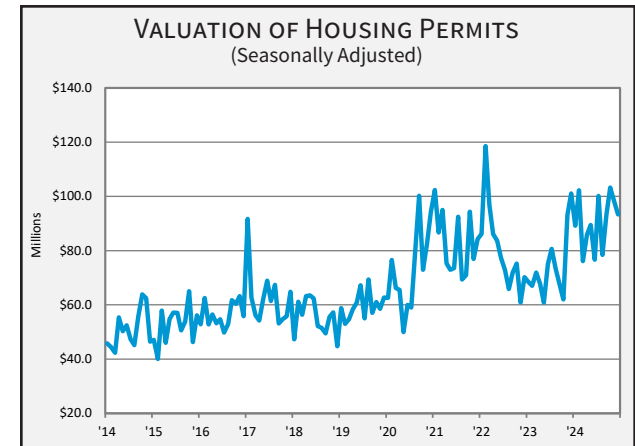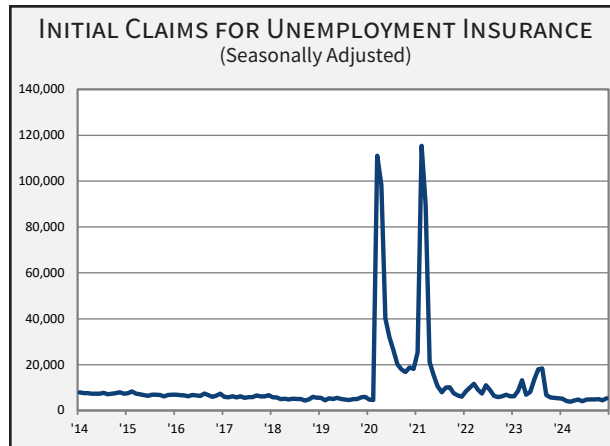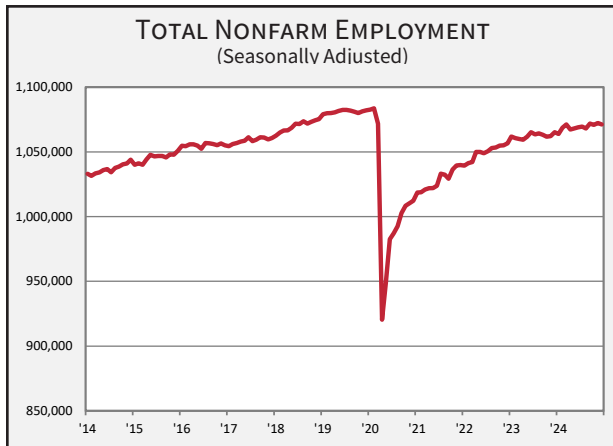
CLEVELAND	Dec 2023	Jan 2024	Feb 2024	Mar 2024	Apr 2024	May 2024	Jun 2024	Jul 2024	Aug 2024	Sep 2024	Oct 2024	Nov 2024	Dec 2024	Percent Change	
														Month	Year
Nonagricultural Wage and Salary Employment (Seasonally Adjusted in Thousands)	1,065.1	1,063.9	1,068.5	1,071.2	1,067.2	1,068.1	1,069.0	1,069.5	1,068.1	1,071.8	1,070.8	1,072.3	1,071.2	-0.1%	0.6%
Initial Claims for Unemployment Insurance (Seasonally Adjusted)	5,326	5,111	4,159	3,857	4,393	4,752	3,998	4,726	4,808	4,841	4,960	4,440	5,286	19.0%	-0.8%
Average Weekly Hours for Manufacturing (Seasonally Adjusted)	41.2	41.5	41.2	41.8	40.5	40.8	40.4	40.3	40.5	40.1	40.4	41.5	41.3	-0.5%	0.2%
Valuation of Housing Permits (Seasonally Adjusted in Millions)	$101.1	$89.2	$102.2	$76.1	$85.8	$89.4	$76.7	$100.2	$78.5	$93.5	$103.3	$98.4	$93.4	-5.1%	-7.6%

Columbus Metropolitan Statistical Area
Delaware, Fairfield, Franklin, Hocking, Licking, Madison, Morrow, Perry, Pickaway, and Union Counties

The leading indicator for the Columbus metropolitan area for December 2024 forecasts positive employment growth at an annual rate of 1.38% for the next six months. Seasonally adjusted nonfarm payroll employment was 1,150,900 in December, a 0.02% increase from November.

The number of initial claims for unemployment insurance in December was 3,780, up 3.2% from the number of claims filed last month but down 12.7% from last year. Average weekly manufacturing hours increased to 31.8 for December. The valuation of permits for new housing construction in December was $393.7 million, 74.2% more than November and 65.8% more than December 2023.

Total Nonfarm Employment
(Seasonally Adjusted)

Initial Claims for Unemployment Insurance
(Seasonally Adjusted)

Valuation of Housing Permits
(Seasonally Adjusted)
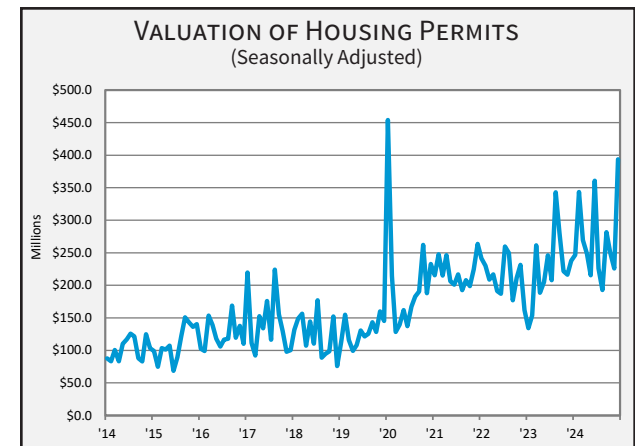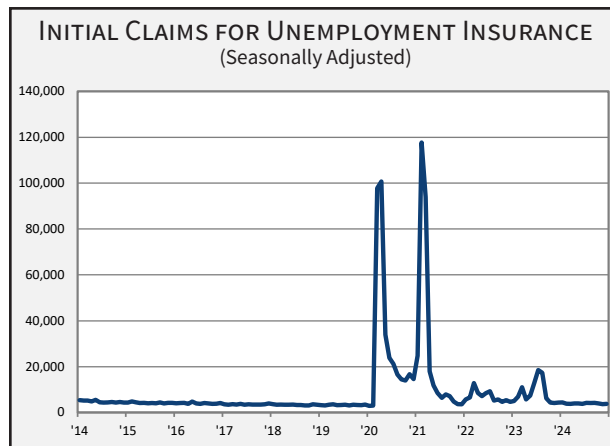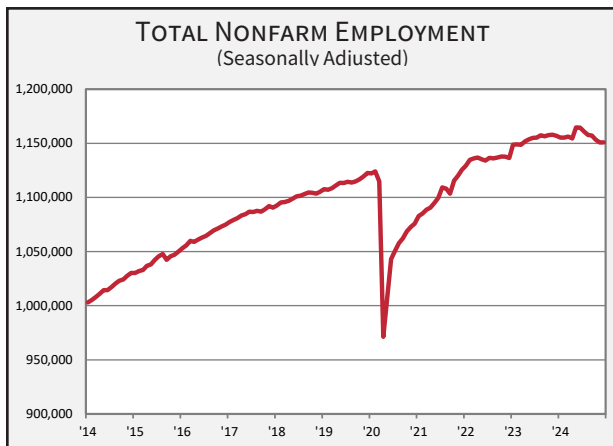
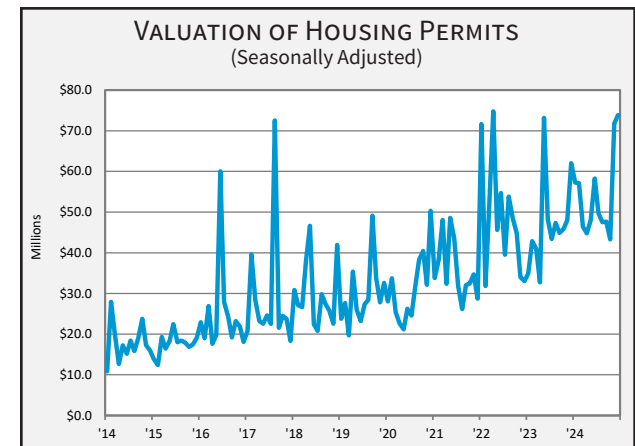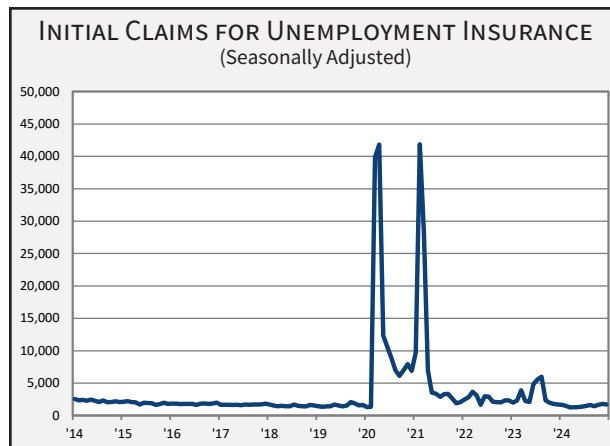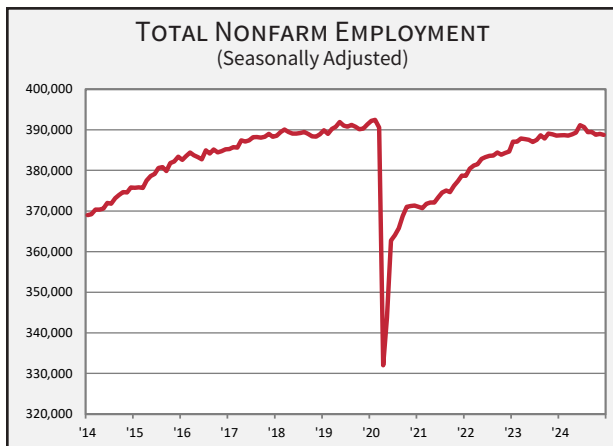| Columbus	Dec 2023	Jan 2024	Feb 2024	Mar 2024	Apr 2024	May 2024	Jun 2024	Jul 2024	Aug 2024	Sep 2024	Oct 2024	Nov 2024	Dec 2024	Percent Change	
														Month	Year
Nonagricultural Wage and Salary Employment (Seasonally Adjusted in Thousands)	1,156.9	1,155.2	1,155.1	1,156.3	1,154.5	1,164.5	1,164.4	1,161.0	1,157.7	1,157.2	1,153.2	1,150.7	1,150.9	0.02%	-0.5%
Initial Claims for Unemployment Insurance (Seasonally Adjusted)	4,332	4,363	3,875	3,722	3,954	3,910	3,725	4,213	4,088	4,194	3,944	3,663	3,780	3.2%	-12.7%
Average Weekly Hours for Manufacturing (Seasonally Adjusted)	27.9	29.0	29.2	29.3	28.9	29.8	31.5	32.0	30.6	32.2	31.7	31.1	31.8	2.3%	14.0%
Valuation of Housing Permits (Seasonally Adjusted in Millions)	$237.4	$246.6	$343.6	$269.5	$248.5	$215.4	$360.8	$225.9	$192.9	$281.6	$250.4	$226.0	$393.7	74.2%	65.8%

DAYTON METROPOLITAN STATISTICAL AREA
Greene, Miami, and Montgomery Counties

The leading indicator for the Dayton metropolitan area for December 2024 forecasts negative employment growth at an annual rate of -0.83% for the next six months. Seasonally adjusted nonfarm payroll employment was 388,800 in December, down 0.1% from November.

The number of initial claims for unemployment insurance in December was 1,694, down 5.0% from the number of claims filed last month and down 0.2% from last year. The valuation of permits for new housing construction in December was $73.8 million, a 2.8% increase from November and a 19.0% increase from December 2023.

TOTAL NONFARM EMPLOYMENT
(Seasonally Adjusted)

INITIAL CLAIMS FOR UNEMPLOYMENT INSURANCE
(Seasonally Adjusted)

VALUATION OF HOUSING PERMITS
(Seasonally Adjusted)

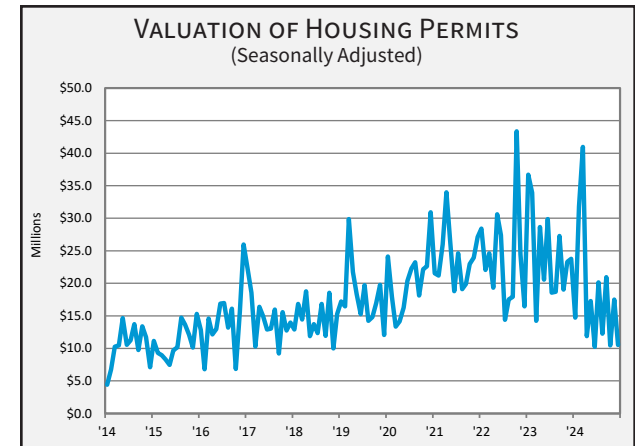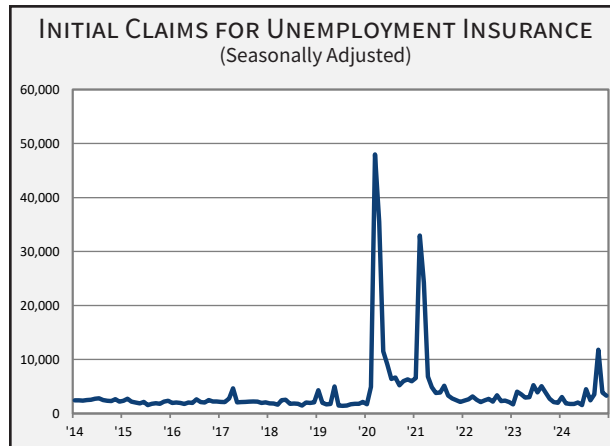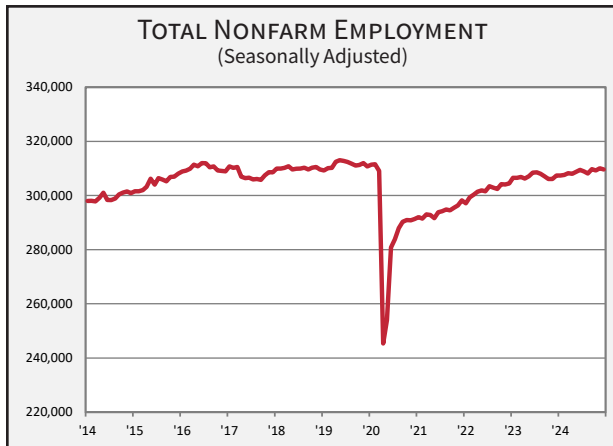| **DAYTON**	Dec 2023	Jan 2024	Feb 2024	Mar 2024	Apr 2024	May 2024	Jun 2024	Jul 2024	Aug 2024	Sep 2024	Oct 2024	Nov 2024	Dec 2024	Percent Change	
														Month	Year
Nonagricultural Wage and Salary Employment (Seasonally Adjusted in Thousands)	388.6	388.6	388.7	388.6	388.9	389.3	391.1	390.7	389.4	389.5	388.8	389.0	388.8	-0.1%	0.1%
Initial Claims for Unemployment Insurance (Seasonally Adjusted)	1,698	1,670	1,481	1,266	1,280	1,296	1,368	1,475	1,641	1,436	1,658	1,784	1,694	-5.0%	-0.2%
Average Weekly Hours for Manufacturing* (Seasonally Adjusted)	40.2	40.1	40.8	41.1	40.8	41.1	40.9	41.0	41.5	41.3	40.9	41.0	40.7	-0.7%	1.2%
Valuation of Housing Permits (Seasonally Adjusted in Millions)	$62.0	$57.3	$57.1	$46.4	$44.8	$48.0	$58.3	$49.7	$47.5	$47.6	$43.3	$71.8	$73.8	2.8%	19.0%

*In 2005, the BLS stopped producing manufacturing hours for Akron, Canton, Dayton, Toledo, and Youngstown. Starting in February 2005, data for the manufacturing hours for those MSAs are the state values.

TOLEDO METROPOLITAN STATISTICAL AREA
Fulton, Lucas, and Wood Counties

The leading indicator for the Toledo metropolitan area for December 2024 forecasts negative employment growth at an annual rate of -1.44% for the next six months. Seasonally adjusted nonfarm payroll employment was 309,700 in December, down 0.1% from November.

The number of initial claims for unemployment insurance in December was 3,315, down 14.5% from the number of claims filed last month but up 66.0% from last year. The valuation of permits for new housing construction in December was $10.5 million, a 40.0% decrease from November and a 55.9% decrease from December 2023.

TOTAL NONFARM EMPLOYMENT
(Seasonally Adjusted)

INITIAL CLAIMS FOR UNEMPLOYMENT INSURANCE
(Seasonally Adjusted)

VALUATION OF HOUSING PERMITS
(Seasonally Adjusted)

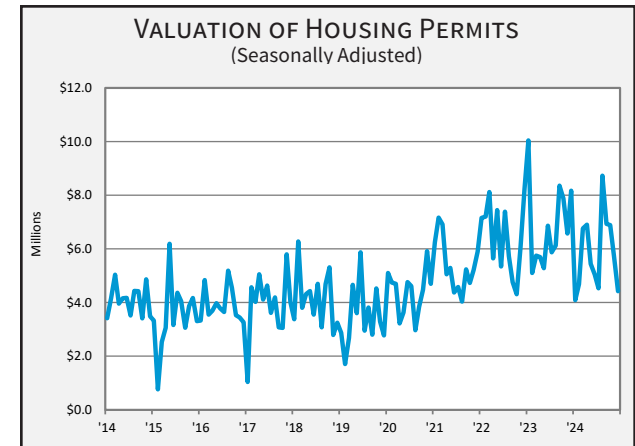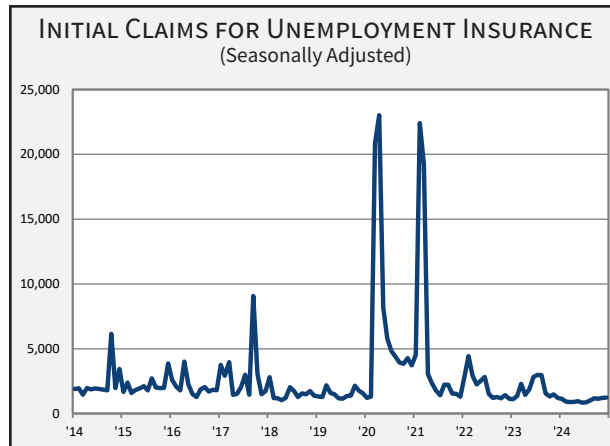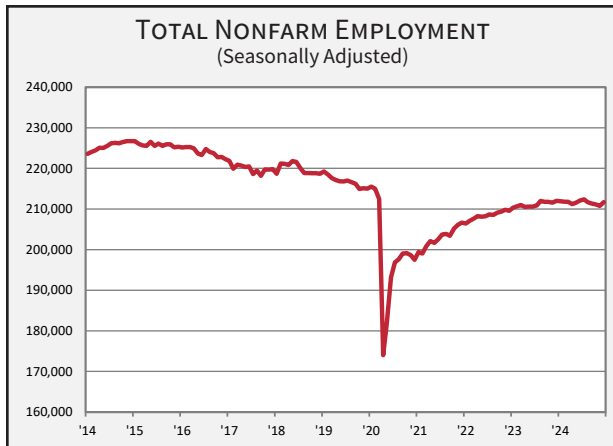| TOLEDO	Dec 2023	Jan 2024	Feb 2024	Mar 2024	Apr 2024	May 2024	Jun 2024	Jul 2024	Aug 2024	Sep 2024	Oct 2024	Nov 2024	Dec 2024	Percent Change	
														Month	Year
Nonagricultural Wage and Salary Employment (Seasonally Adjusted in Thousands)	307.4	307.4	307.6	308.2	308.0	308.7	309.5	308.8	308.1	309.7	309.2	310.0	309.7	-0.1%	0.7%
Initial Claims for Unemployment Insurance (Seasonally Adjusted)	1,997	3,059	1,897	1,755	1,769	2,025	1,569	4,518	2,443	3,550	11,828	3,876	3,315	-14.5%	66.0%
Average Weekly Hours for Manufacturing* (Seasonally Adjusted)	40.2	40.1	40.8	41.1	40.8	41.1	40.9	41.0	41.5	41.3	40.9	41.0	40.7	-0.7%	1.2%
Valuation of Housing Permits (Seasonally Adjusted in Millions)	$23.8	$14.7	$31.8	$41.0	$11.9	$17.3	$10.2	$20.1	$12.3	$20.9	$10.5	$17.5	$10.5	-40.0%	-55.9%

*In 2005, the BLS stopped producing manufacturing hours for Akron, Canton, Dayton, Toledo, and Youngstown. Starting in February 2005, data for the manufacturing hours for those MSAs are the state values.

Youngstown-Warren-Boardman Metropolitan Statistical Area
Mahoning and Trumbull Counties in Ohio and Mercer County in Pennsylvania

The leading indicator for the Youngstown-Warren-Boardman metropolitan area for December 2024 forecasts negative employment growth at an annual rate of -1.27% for the next six months. Seasonally adjusted nonfarm payroll employment was 211,700 in December, up 0.4% from November.

The number of initial claims for unemployment insurance in December was 1,234, up 2.5% from the number of claims filed last month and up 3.5% from last year. The valuation of permits for new housing construction in December was $4.4 million, a 22.8% decrease from November and a 46.3% decrease from December 2023.

Total Nonfarm Employment
(Seasonally Adjusted)

Initial Claims for Unemployment Insurance
(Seasonally Adjusted)

Valuation of Housing Permits
(Seasonally Adjusted)

Youngstown	Dec 2023	Jan 2024	Feb 2024	Mar 2024	Apr 2024	May 2024	Jun 2024	Jul 2024	Aug 2024	Sep 2024	Oct 2024	Nov 2024	Dec 2024	Percent Change	
														Month	Year
Nonagricultural Wage and Salary Employment (Seasonally Adjusted in Thousands)	212.0	211.9	211.8	211.8	211.2	211.5	212.1	212.4	211.6	211.3	211.2	210.8	211.7	0.4%	-0.1%
Initial Claims for Unemployment Insurance (Seasonally Adjusted)	1,192	1,126	917	883	900	953	845	861	1,009	1,172	1,152	1,204	1,234	2.5%	3.5%
Average Weekly Hours for Manufacturing* (Seasonally Adjusted)	40.2	40.1	40.8	41.1	40.8	41.1	40.9	41.0	41.5	41.3	40.9	41.0	40.7	-0.7%	1.2%
Valuation of Housing Permits (Seasonally Adjusted in Millions)	$8.2	$4.1	$4.7	$6.8	$6.9	$5.4	$5.0	$4.5	$8.7	$6.9	$6.9	$5.7	$4.4	-22.8%	-46.3%

*In 2005, the BLS stopped producing manufacturing hours for Akron, Canton, Dayton, Toledo, and Youngstown. Starting in February 2005, data for the manufacturing hours for those MSAs are the state values.

Ohio Metropolitan Statistical Areas (MSAs)

Developed by the U.S. Office of Management and Budget, Metropolitan Statistical Areas are integrated geographic regions comprised of at least one city or urban area (with a population of at least 50,000) and adjacent communities. Metropolitan Statistical Areas make it possible for federal statistical agencies to utilize the same boundaries when publishing statistical data. These are definitions based on analysis of 2010 Census data.

A. Akron: Portage and Summit counties

B. Canton-Massillon: Carroll and Stark counties

C. Cincinnati: Brown, Butler, Clermont, Hamilton, and Warren counties in Ohio; Dearborn, Ohio, and Union counties in Indiana; Boone, Bracken, Campbell, Gallatin, Grant, Kenton, and Pendleton counties in Kentucky

D. Cleveland-Elyria: Cuyahoga, Geauga, Lake, Lorain, and Medina counties

E. Columbus: Delaware, Fairfield, Franklin, Hocking, Licking, Madison, Morrow, Perry, Pickaway, and Union counties

F. Dayton: Greene, Miami, and Montgomery counties

G. Huntington-Ashland: Lawrence County in Ohio; Boyd and Greenup counties in Kentucky; Cabell, Lincoln, Putnam, and Wayne counties in West Virginia

H. Lima: Allen County

I. Mansfield: Richland County

J. Springfield: Clark County

K. Toledo: Fulton, Lucas, and Wood counties

L. Weirton-Steubenville: Jefferson County in Ohio; Brooke and Hancock counties in West Virginia

M. Wheeling: Belmont County in Ohio; Marshall and Ohio counties in West Virginia

N. Youngstown-Warren-Boardman: Mahoning and Trumbull counties in Ohio; Mercer County in Pennsylvania

Technical Notes

The leading economic indicators for Ohio and the eight largest Metropolitan Statistical Areas (MSAs) are designed to anticipate changes in area economies. The Gross National Product is the accepted measure of economic activity at the national level, but there are no monthly measures of the dollar value of goods and services at the state and metropolitan levels. Instead, the Ohio leading indicators forecast the growth rates of total nonfarm employment for each area.

The leading indicators are generated with vector auto regression models using six inputs. The inputs are statistically significant predictors of Ohio total nonfarm growth rates at the 90 percent confidence level.

The six inputs are:
- U.S. Leading Indicator (Source: The Conference Board, https://www.conference-board.org/data/bcicountry.cfm?cid=1)
- U.S. Industrial Production in the Manufacturing Sector (Source: Federal Reserve Bank of St. Louis, https://fred.stlouisfed.org/series/IPMAN)
- Unemployment Insurance Claims (Source: Ohio Department of Job and Family Services, https://ohiolmi.com/home/UIclaims)
- Housing Valuations (Source: U.S. Census Bureau, https://www.census.gov/construction/bps/)
- Manufacturing Hours (Source: Current Employment Statistics program, https://ohiolmi.com/portals/206/CES/LMR.pdf)
- Job Openings and Labor Turnover Survey (Source: U.S. Bureau of Labor Statistics, Job Openings and Labor Turnover Survey Home Page (bls.gov))

The models forecast growth rates for six time-horizons (one to six months); the published forecast is an annualized average of those forecasts. The models use rolling 120-month windows of data. Each month, a new month of data is added (the most current available) and the oldest month is dropped. This approach allows for possible structural changes in the economy over time. All data series are converted monthly growth rates using the first difference of the natural logarithms multiplied by 100. Seasonal adjustments are made within the models using the U.S. Census' X-13ARIMA-SEATS program; seasonally adjusted data from the leading indicator models will not match data from original sources.

The forecasting models for the Ohio leading indicators are 'real time' processes that do not build on previous forecasts. For this reason, the Ohio leading indicators should not be used as a time series. The models use data as they are available each month, including revisions to older data. For example, monthly data releases may be preliminary and later revised, other series are revised during annual 'benchmarking' and occasionally a series may be reindexed to a new time point. Some of these revisions could be substantial.

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Bureau of Labor Market Information
Business Principles for Workforce Development

- Partner with the workforce and economic development community.

- Develop and deploy new information solution tools and systems for the workforce and economic development community.

- Provide products and services that are customer- and demand-driven.

- Be known as an important and reliable source for information solutions that support workforce development goals and outcomes.

This periodical is published under the direction of Bureau Chief, Nick Wallace. For further information, visit OhioLMI.com or call the Ohio Bureau of Labor Market Information at (614) 752-9494.

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