

OHIO

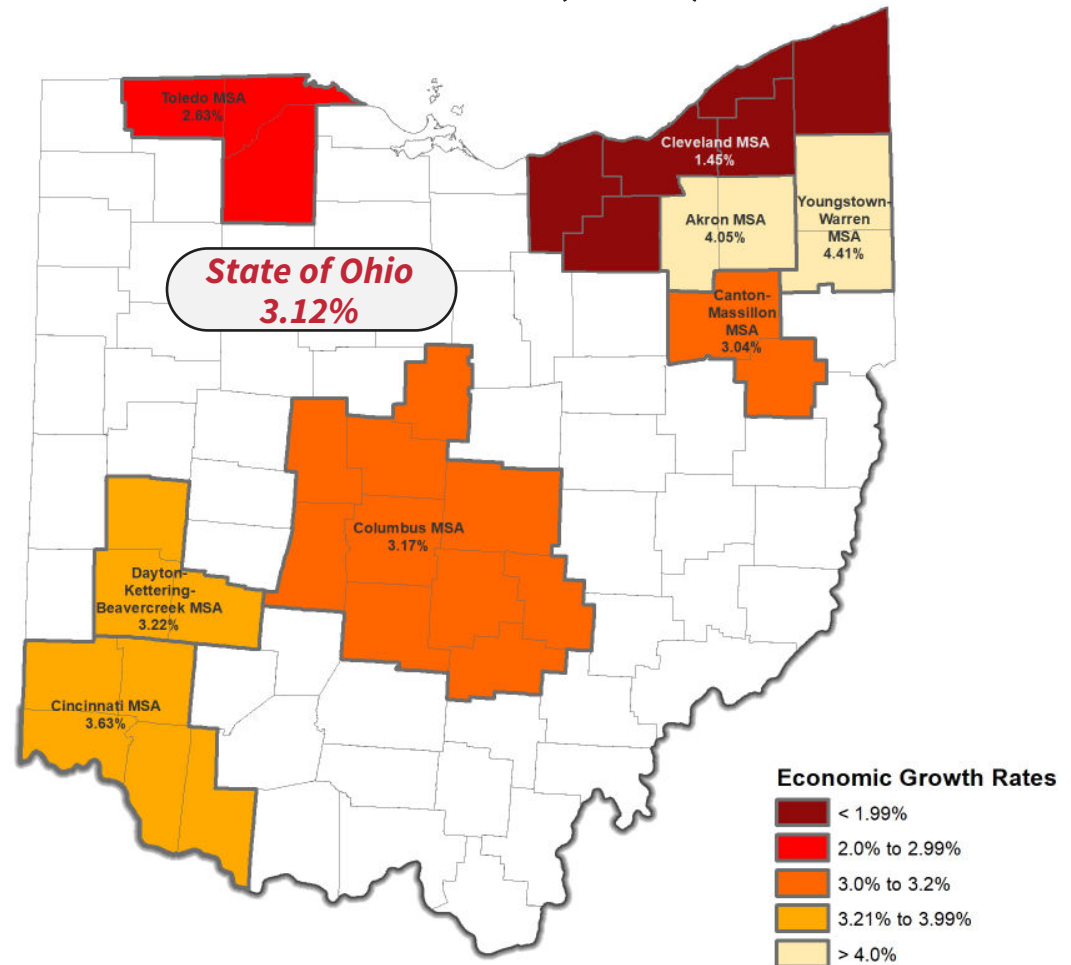
LEADING INDICATORS

MAY 2025

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 3.12% for the next six months in Ohio. The following MSAs are also predicted to increase: the Cleveland MSA at 1.45%; the Toledo MSA at 2.63%; the Canton-Massillon MSA at 3.04%; the Columbus MSA at 3.17%; the Dayton-Kettering-Beavercreek MSA at 3.22%; the Cincinnati MSA at 3.63%; the Akron MSA at 4.05%; and the Youngstown-Warren MSA at 4.41%.

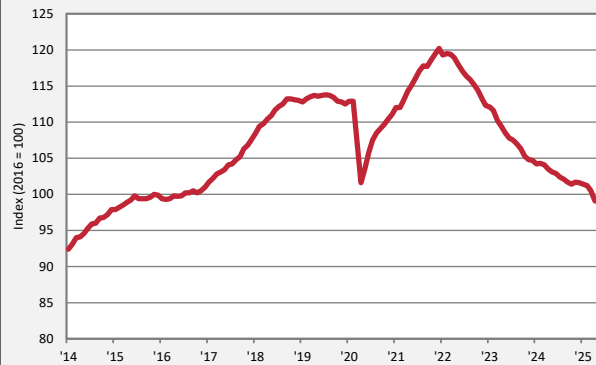


LEADING INDICATORS AND COMPONENTS

UNITED STATES

The U.S. Leading Economic Index decreased 0.1% from April and decreased 4.0% from May 2024. The U.S. industrial production in manufacturing increased 0.1% over the month and increased 0.7% over the year.

U.S. LEADING ECONOMIC INDEX
(Seasonally Adjusted)



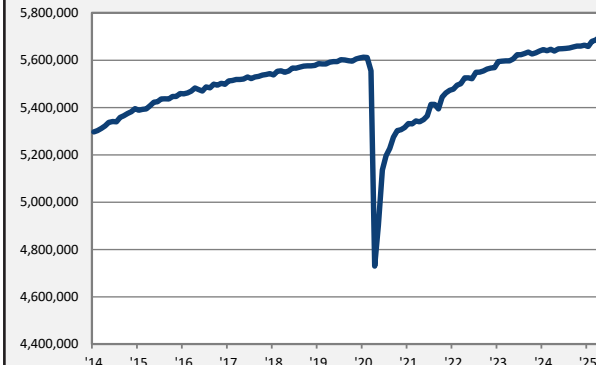
U.S. INDUSTRIAL PRODUCTION: MANUFACTURING
(Seasonally Adjusted)



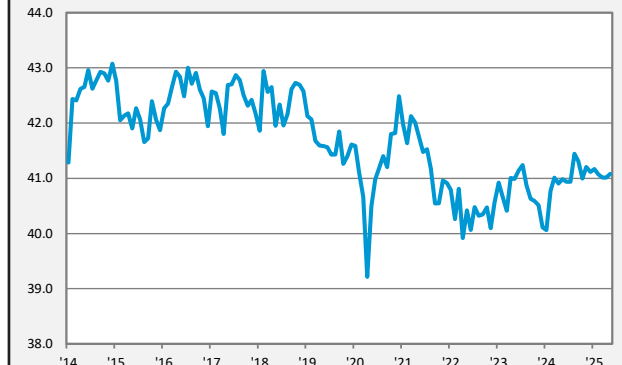
OHIO

Ohio's seasonally adjusted total nonfarm employment was 5,698,300 in May 2025, up 0.02% over the month and up 0.9% over the year. Initial unemployment claims decreased 6.2% from April but increased 8.2% from May 2024. Ohio's average weekly manufacturing hours increased 0.2% from April. Housing permit valuations increased 28.7% from the previous month and increased 36.9% 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.*

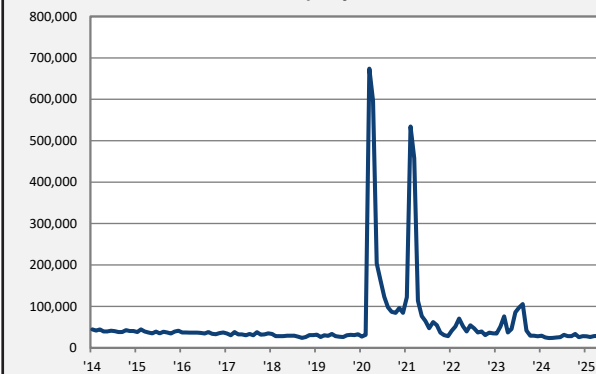
OHIO TOTAL NONFARM EMPLOYMENT
(Seasonally Adjusted)



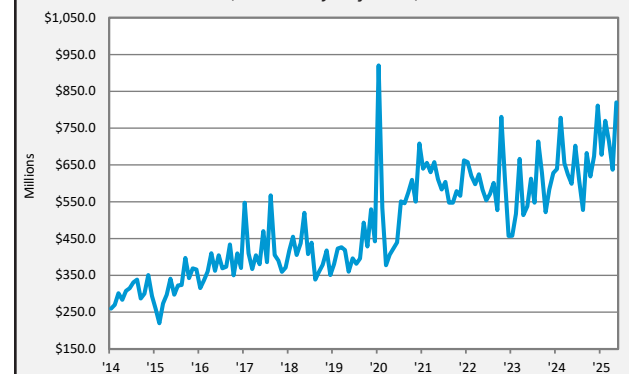
OHIO MANUFACTURING HOURS
(Seasonally Adjusted)



OHIO INITIAL CLAIMS FOR UNEMPLOYMENT INSURANCE
(Seasonally Adjusted)



OHIO VALUATION OF HOUSING PERMITS
(Seasonally Adjusted)



LEADING INDICATORS AND COMPONENTS

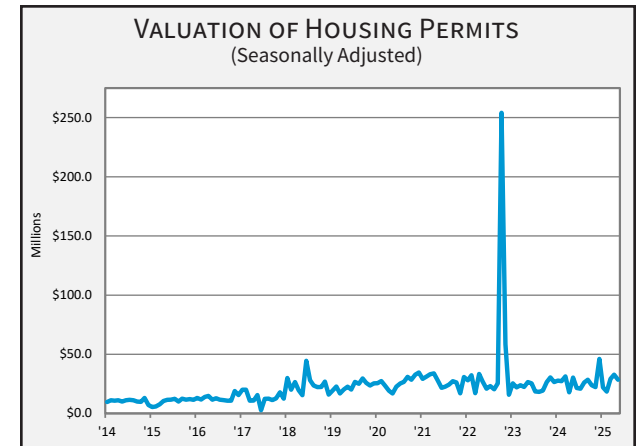
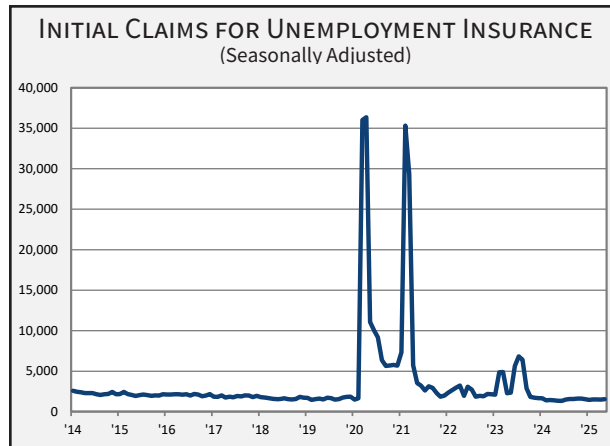
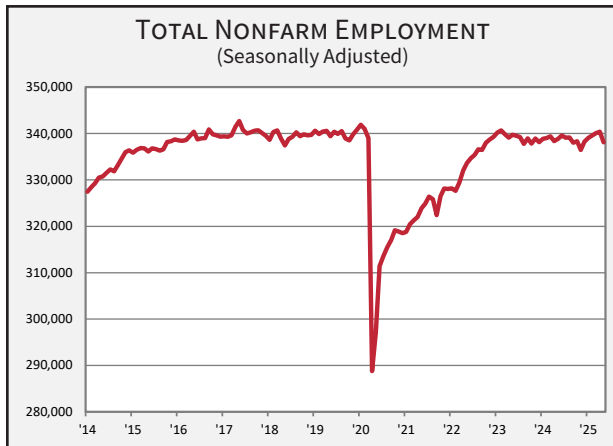
UNITED STATES	May 2024	Jun 2024	Jul 2024	Aug 2024	Sep 2024	Oct 2024	Nov 2024	Dec 2024	Jan 2025	Feb 2025	Mar 2025	Apr 2025	May 2025	Percent Change	
														Month	Year
U.S. Leading Economic Index (2016 = 100) (Seasonally Adjusted)	103.1	102.9	102.4	102.1	101.7	101.4	101.7	101.6	101.4	101.2	100.5	99.1	99.0	-0.1%	-4.0%
U.S. Industrial Production: Manufacturing (2017 = 100) (Seasonally Adjusted)	100.0	100.0	99.4	99.9	99.6	99.0	99.2	99.6	99.2	100.4	101.0	100.6	100.7	0.1%	0.7%
OHIO	May 2024	Jun 2024	Jul 2024	Aug 2024	Sep 2024	Oct 2024	Nov 2024	Dec 2024	Jan 2025	Feb 2025	Mar 2025	Apr 2025	May 2025	Percent Change	
														Month	Year
Nonagricultural Wage and Salary Employment (Seasonally Adjusted in Thousands)	5,647.7	5,648.6	5,649.3	5,651.2	5,655.7	5,659.9	5,659.8	5,663.3	5,657.4	5,679.6	5,684.6	5,696.9	5,698.3	0.02%	0.9%
Initial Claims for Unemployment Insurance (Seasonally Adjusted)	24,940	25,814	31,355	28,077	28,376	33,181	25,748	28,077	27,924	26,055	28,138	28,750	26,980	-6.2%	8.2%
Average Weekly Hours for Manufacturing (Seasonally Adjusted)	41.0	40.9	40.9	41.4	41.3	41.0	41.2	41.1	41.2	41.1	41.0	41.0	41.1	0.2%	0.2%
Valuation of Housing Permits (Seasonally Adjusted in Millions)	\$599.0	\$702.2	\$605.2	\$527.5	\$682.5	\$618.8	\$673.5	\$811.4	\$677.5	\$770.3	\$714.2	\$637.1	\$820.2	28.7%	36.9%

AKRON METROPOLITAN STATISTICAL AREA

Portage and Summit Counties

The leading indicator for the Akron metropolitan area for May 2025 forecasts employment growth at an annual rate of 4.05% for the next six months. Seasonally adjusted nonfarm payroll employment was 338,100 in May, down 0.7% from April.

The number of initial claims for unemployment insurance in May was 1,526 claims, 2.1% more than the number of claims filed last month and 12.4% more than last year. The valuation of permits for new housing construction in May was \$28.4 million, a 13.1% decrease from April and a 6.3% decrease from May 2024. *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.*



AKRON	May 2024	Jun 2024	Jul 2024	Aug 2024	Sep 2024	Oct 2024	Nov 2024	Dec 2024	Jan 2025	Feb 2025	Mar 2025	Apr 2025	May 2025	Percent Change	
														Month	Year
Nonagricultural Wage and Salary Employment (Seasonally Adjusted in Thousands)	338.9	339.6	339.1	339.2	338.0	338.3	336.4	338.3	339.1	339.6	340.1	340.4	338.1	-0.7%	-0.2%
Initial Claims for Unemployment Insurance (Seasonally Adjusted)	1,357	1,333	1,486	1,557	1,559	1,619	1,625	1,550	1,454	1,509	1,515	1,494	1,526	2.1%	12.4%
Average Weekly Hours for Manufacturing* (Seasonally Adjusted)	41.0	40.9	40.9	41.4	41.3	41.0	41.2	41.1	41.2	41.1	41.0	41.0	41.1	0.2%	0.2%
Valuation of Housing Permits (Seasonally Adjusted in Millions)	\$30.3	\$21.4	\$20.8	\$26.1	\$28.4	\$23.8	\$22.1	\$46.0	\$21.9	\$18.4	\$29.1	\$32.7	\$28.4	-13.1%	-6.3%

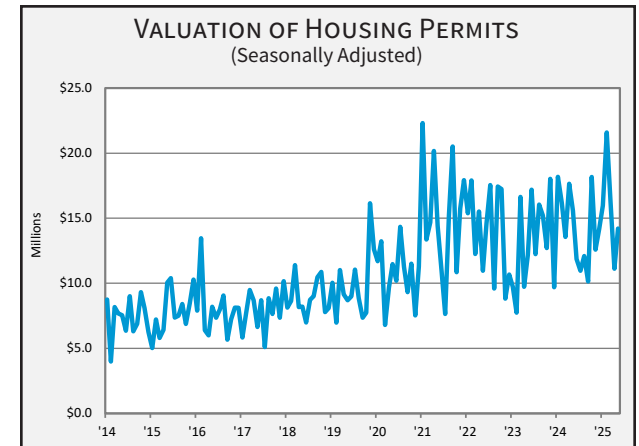
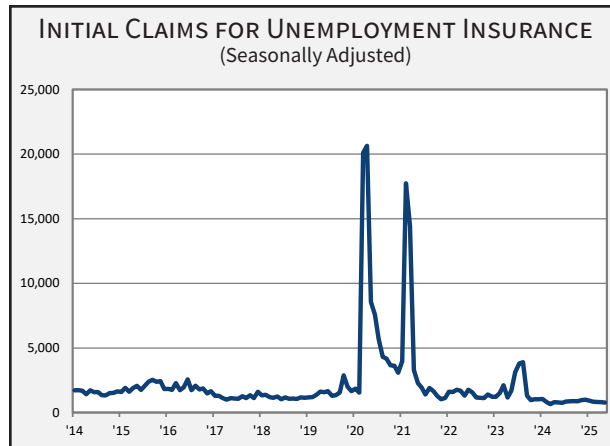
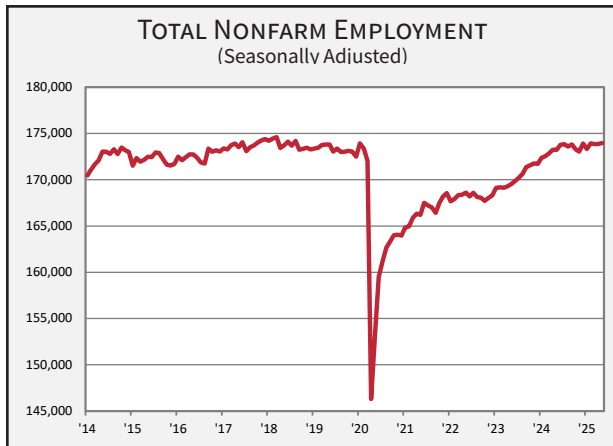
*In 2005, the BLS stopped producing manufacturing hours for Akron, Canton, Dayton, Toledo, and Youngstown. Starting in February 2005, data for the manufacturing hours for those MSAs are the state values.

CANTON-MASSILLON METROPOLITAN STATISTICAL AREA

Carroll and Stark Counties

The leading indicator for the Canton-Massillon metropolitan area for May 2025 forecasts employment growth at an annual rate of 3.04% for the next six months. Seasonally adjusted nonfarm payroll employment was 173,900 in May, unchanged from April.

The number of initial claims for unemployment insurance in May was 768, down 3.1% from the number of claims filed last month and down 2.1% from last year. The valuation of permits for new housing construction in May was \$14.2 million, a 27.9% increase from one month ago but a 9.0% decrease from one year ago.



CANTON	May 2024	Jun 2024	Jul 2024	Aug 2024	Sep 2024	Oct 2024	Nov 2024	Dec 2024	Jan 2025	Feb 2025	Mar 2025	Apr 2025	May 2025	Percent Change	
														Month	Year
Nonagricultural Wage and Salary Employment (Seasonally Adjusted in Thousands)	173.2	173.8	173.8	173.6	173.8	173.3	173.0	173.9	173.3	173.9	173.8	173.9	173.9	0.0%	0.4%
Initial Claims for Unemployment Insurance (Seasonally Adjusted)	785	749	849	871	884	862	958	996	914	827	811	793	768	-3.1%	-2.1%
Average Weekly Hours for Manufacturing* (Seasonally Adjusted)	41.0	40.9	40.9	41.4	41.3	41.0	41.2	41.1	41.2	41.1	41.0	41.0	41.1	0.2%	0.2%
Valuation of Housing Permits (Seasonally Adjusted in Millions)	\$15.6	\$11.9	\$11.0	\$12.1	\$10.1	\$18.2	\$12.6	\$14.2	\$16.0	\$21.6	\$16.3	\$11.1	\$14.2	27.9%	-9.0%

*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.

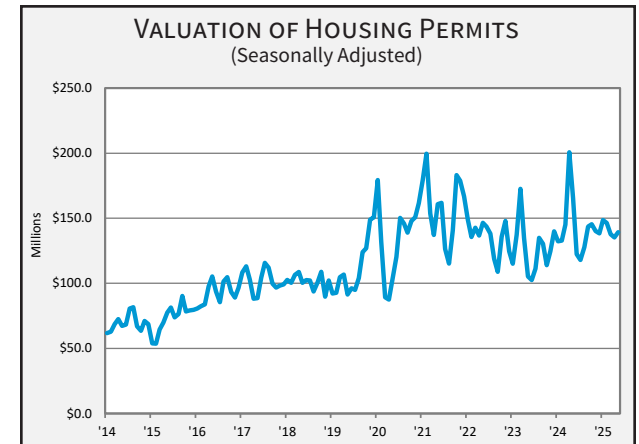
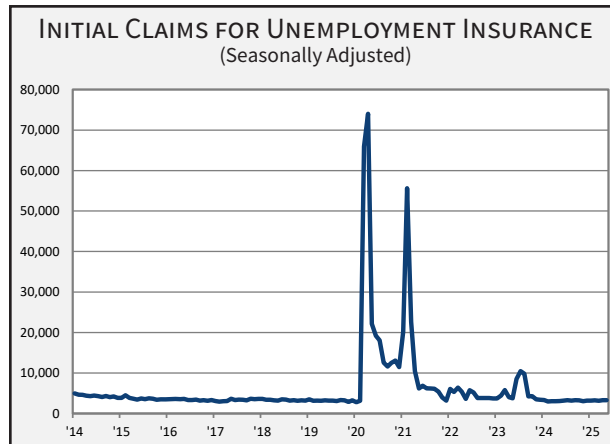
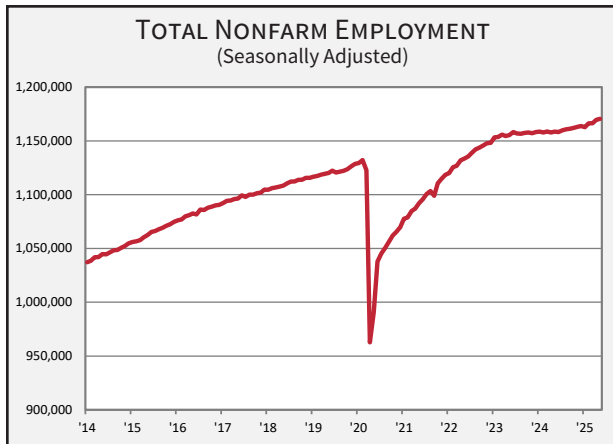
CINCINNATI METROPOLITAN STATISTICAL AREA

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 May 2025 forecasts employment growth at an annual rate of 3.63% for the next six months. Seasonally adjusted nonfarm payroll employment was 1,170,400 in May, up 0.1% from April.

The number of initial claims for unemployment insurance in May was 3,311 claims, 0.7% more than last month and 6.9% more than last year. Average weekly manufacturing hours increased to 40.8 in May. The valuation of permits for new housing construction in May was \$139.2 million, a 3.0% increase from April but a 15.9% decrease from May 2024.



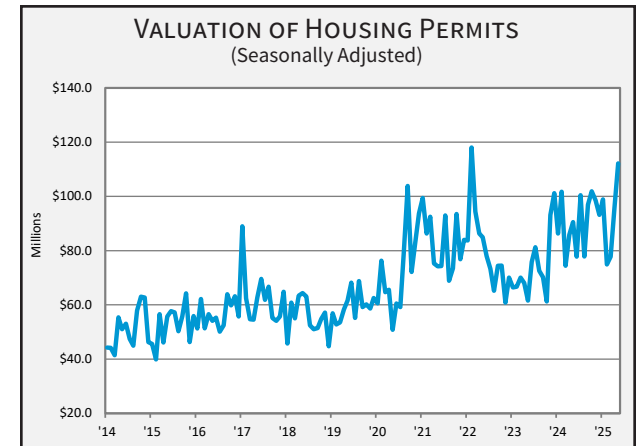
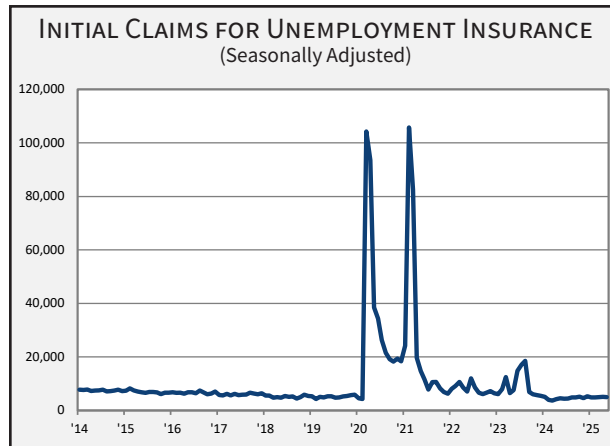
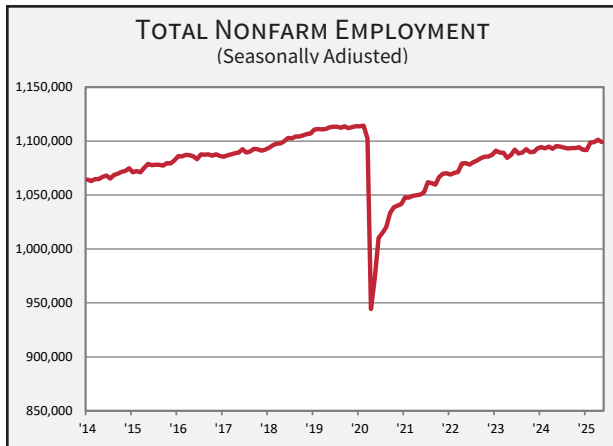
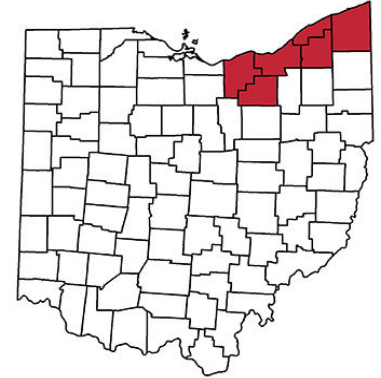
CINCINNATI	May 2024	Jun 2024	Jul 2024	Aug 2024	Sep 2024	Oct 2024	Nov 2024	Dec 2024	Jan 2025	Feb 2025	Mar 2025	Apr 2025	May 2025	Percent Change	
														Month	Year
Nonagricultural Wage and Salary Employment (Seasonally Adjusted in Thousands)	1,158.6	1,158.1	1,159.7	1,160.6	1,161.4	1,162.0	1,163.0	1,163.8	1,162.6	1,166.3	1,166.3	1,169.6	1,170.4	0.1%	1.0%
Initial Claims for Unemployment Insurance (Seasonally Adjusted)	3,098	3,184	3,310	3,168	3,286	3,248	3,048	3,176	3,202	3,253	3,159	3,288	3,311	0.7%	6.9%
Average Weekly Hours for Manufacturing (Seasonally Adjusted)	33.3	35.1	34.1	35.2	36.5	36.0	37.2	38.6	36.4	38.5	40.2	40.6	40.8	0.5%	22.5%
Valuation of Housing Permits (Seasonally Adjusted in Millions)	\$165.5	\$122.3	\$117.9	\$127.7	\$143.5	\$145.4	\$140.1	\$138.4	\$148.5	\$146.4	\$137.7	\$135.2	\$139.2	3.0%	-15.9%

CLEVELAND METROPOLITAN STATISTICAL AREA

Ashtabula, Cuyahoga, Geauga, Lake, Lorain, and Medina Counties

The leading indicator for the Cleveland metropolitan area for May 2025 forecasts employment growth at an annual rate of 1.45% for the next six months. Seasonally adjusted nonfarm payroll employment was 1,099,200 in May, down 0.18% from April.

The number of initial claims for unemployment insurance in May was 5,022, down 1.5% from the number of claims filed last month but up 10.7% from last year. Average weekly manufacturing hours decreased to 42.5 in May. The valuation of permits for new housing construction in May was \$112.2 million, a 17.5% increase from April and a 23.8% increase from May 2024.



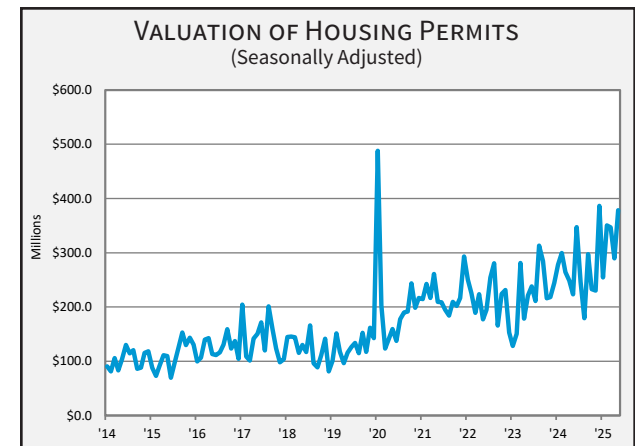
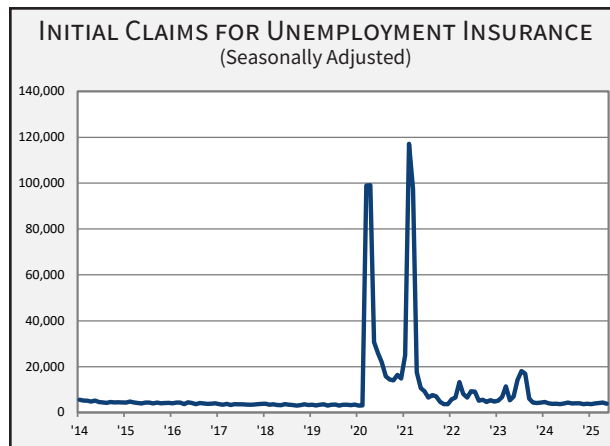
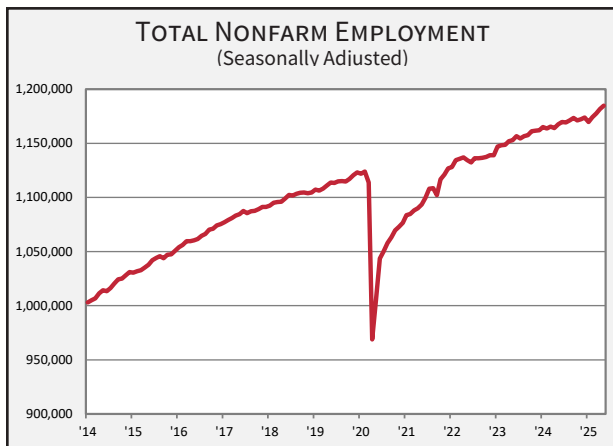
CLEVELAND	May 2024	Jun 2024	Jul 2024	Aug 2024	Sep 2024	Oct 2024	Nov 2024	Dec 2024	Jan 2025	Feb 2025	Mar 2025	Apr 2025	May 2025	Percent Change	
														Month	Year
Nonagricultural Wage and Salary Employment (Seasonally Adjusted in Thousands)	1,095.5	1,094.9	1,093.9	1,093.1	1,093.4	1,093.5	1,094.3	1,092.1	1,091.8	1,098.6	1,099.2	1,101.2	1,099.2	-0.18%	0.3%
Initial Claims for Unemployment Insurance (Seasonally Adjusted)	4,535	4,408	4,504	4,837	4,899	5,209	4,641	5,370	4,877	4,886	4,989	5,098	5,022	-1.5%	10.7%
Average Weekly Hours for Manufacturing (Seasonally Adjusted)	40.8	40.4	40.4	40.6	40.1	40.5	41.4	41.4	41.1	42.7	42.8	43.5	42.5	-2.3%	4.2%
Valuation of Housing Permits (Seasonally Adjusted in Millions)	\$90.6	\$77.8	\$100.5	\$77.9	\$97.0	\$101.9	\$98.5	\$93.2	\$98.9	\$74.9	\$77.8	\$95.5	\$112.2	17.5%	23.8%

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 May 2025 forecasts employment growth at an annual rate of 3.17% for the next six months. Seasonally adjusted nonfarm payroll employment was 1,184,800 in May, a 0.3% increase from April.

The number of initial claims for unemployment insurance in May was 3,830, down 11.6% from the number of claims filed last month but up 4.2% from last year. Average weekly manufacturing hours increased to 34.2 in May. The valuation of permits for new housing construction in May was \$378.5 million, 30.6% more than April and 69.6% more than May 2024.



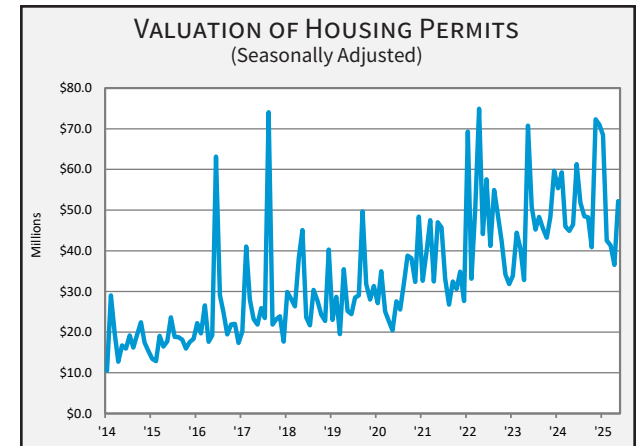
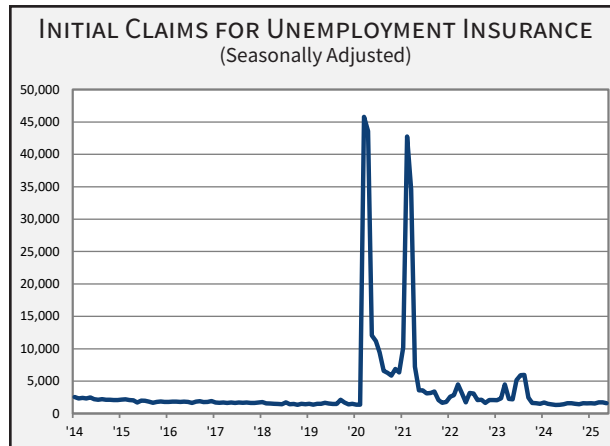
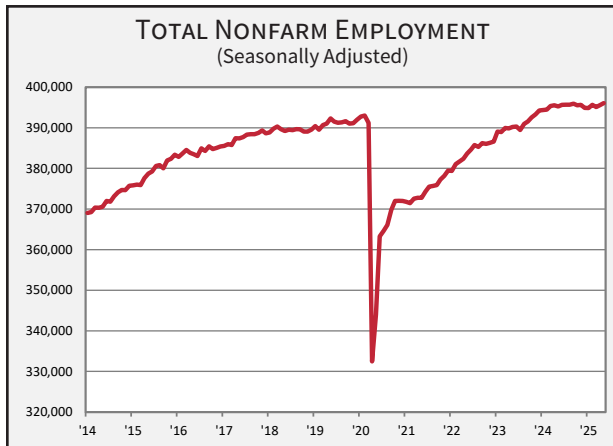
COLUMBUS	May 2024	Jun 2024	Jul 2024	Aug 2024	Sep 2024	Oct 2024	Nov 2024	Dec 2024	Jan 2025	Feb 2025	Mar 2025	Apr 2025	May 2025	Percent Change	
														Month	Year
Nonagricultural Wage and Salary Employment (Seasonally Adjusted in Thousands)	1,167.6	1,169.7	1,169.3	1,171.1	1,173.5	1,171.2	1,172.2	1,173.8	1,169.7	1,174.0	1,177.5	1,181.7	1,184.8	0.3%	1.5%
Initial Claims for Unemployment Insurance (Seasonally Adjusted)	3,677	3,945	4,274	3,933	4,047	4,038	3,641	3,813	3,640	3,902	4,098	4,333	3,830	-11.6%	4.2%
Average Weekly Hours for Manufacturing (Seasonally Adjusted)	29.6	31.5	31.7	30.6	32.4	31.9	33.8	34.4	36.3	37.3	35.7	34.0	34.2	0.6%	15.5%
Valuation of Housing Permits (Seasonally Adjusted in Millions)	\$223.2	\$347.1	\$246.5	\$179.5	\$297.6	\$233.1	\$230.2	\$386.2	\$254.4	\$350.2	\$346.8	\$289.8	\$378.5	30.6%	69.6%

DAYTON-KETTERING-BEAVERCREEK METROPOLITAN STATISTICAL AREA

Greene, Miami, and Montgomery Counties

The leading indicator for the Dayton-Kettering-Beavercreek metropolitan area for May 2025 forecasts employment growth at an annual rate of 3.22% for the next six months. Seasonally adjusted nonfarm payroll employment was 396,100 in May, up 0.1% from April.

The number of initial claims for unemployment insurance in May was 1,610, down 6.6% from the number of claims filed last month but up 20.3% from last year. The valuation of permits for new housing construction in May was \$52.2 million, a 42.6% increase from April and a 12.3% increase from May 2024.



DAYTON-KETTERING-BEAVERCREEK	May 2024	Jun 2024	Jul 2024	Aug 2024	Sep 2024	Oct 2024	Nov 2024	Dec 2024	Jan 2025	Feb 2025	Mar 2025	Apr 2025	May 2025	Percent Change	
														Month	Year
Nonagricultural Wage and Salary Employment (Seasonally Adjusted in Thousands)	395.3	395.6	395.7	395.7	396.0	395.5	395.6	394.9	394.8	395.7	395.1	395.6	396.1	0.1%	0.2%
Initial Claims for Unemployment Insurance (Seasonally Adjusted)	1,338	1,444	1,591	1,605	1,495	1,438	1,593	1,569	1,600	1,533	1,742	1,724	1,610	-6.6%	20.3%
Average Weekly Hours for Manufacturing* (Seasonally Adjusted)	41.0	40.9	40.9	41.4	41.3	41.0	41.2	41.1	41.2	41.1	41.0	41.0	41.1	0.2%	0.2%
Valuation of Housing Permits (Seasonally Adjusted in Millions)	\$46.5	\$61.3	\$51.8	\$48.5	\$48.2	\$40.9	\$72.3	\$71.0	\$68.4	\$42.5	\$41.3	\$36.6	\$52.2	42.6%	12.3%

*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.

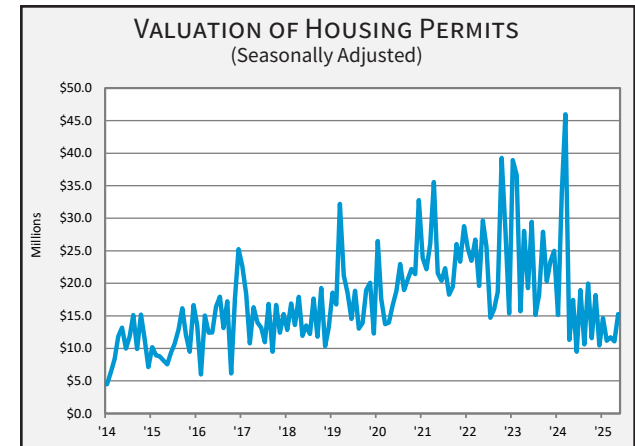
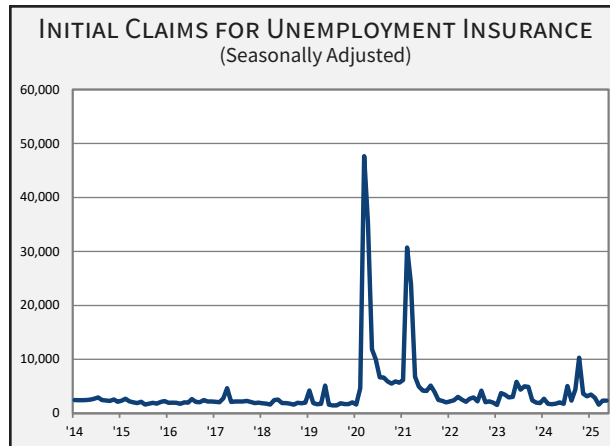
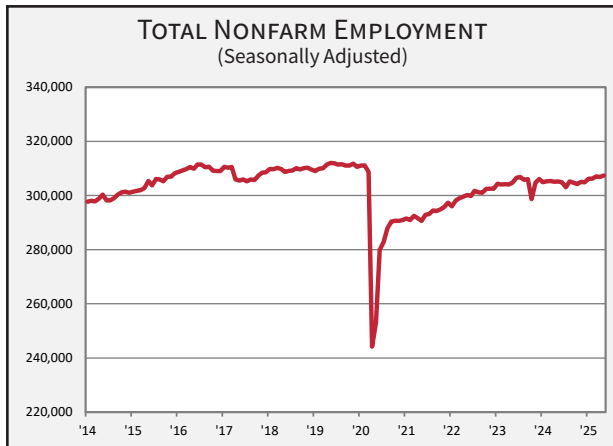
TOLEDO METROPOLITAN STATISTICAL AREA

Fulton, Lucas, and Wood Counties



The leading indicator for the Toledo metropolitan area for May 2025 forecasts employment growth at an annual rate of 2.63% for the next six months. Seasonally adjusted nonfarm payroll employment was 307,300 in May, up 0.2% from April.

The number of initial claims for unemployment insurance in May was 2,369, up 1.0% from the number of claims filed last month and up 16.0% from last year. The valuation of permits for new housing construction in May was \$15.3 million, a 37.8% increase from April but a 12.6% decrease from May 2024.



TOLEDO	May 2024	Jun 2024	Jul 2024	Aug 2024	Sep 2024	Oct 2024	Nov 2024	Dec 2024	Jan 2025	Feb 2025	Mar 2025	Apr 2025	May 2025	Percent Change	
														Month	Year
Nonagricultural Wage and Salary Employment (Seasonally Adjusted in Thousands)	305.1	304.9	303.0	305.2	304.7	304.2	305.0	304.9	306.2	306.2	307.0	306.8	307.3	0.2%	0.7%
Initial Claims for Unemployment Insurance (Seasonally Adjusted)	2,042	1,743	5,058	2,353	4,424	10,311	3,651	3,191	3,507	2,889	1,609	2,345	2,369	1.0%	16.0%
Average Weekly Hours for Manufacturing* (Seasonally Adjusted)	41.0	40.9	40.9	41.4	41.3	41.0	41.2	41.1	41.2	41.1	41.0	41.0	41.1	0.2%	0.2%
Valuation of Housing Permits (Seasonally Adjusted in Millions)	\$17.5	\$9.5	\$19.0	\$10.6	\$20.0	\$11.6	\$18.2	\$10.5	\$14.7	\$11.2	\$11.7	\$11.1	\$15.3	37.8%	-12.6%

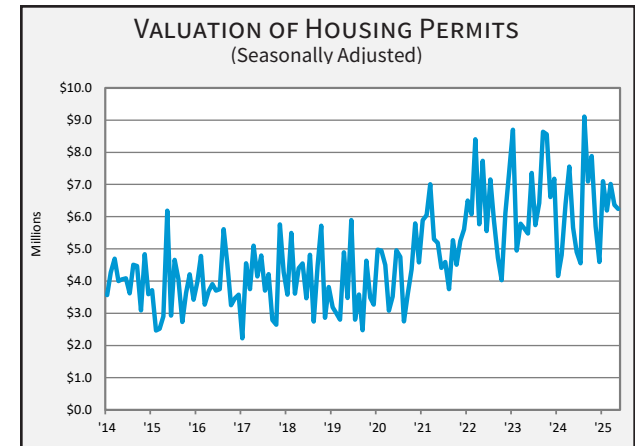
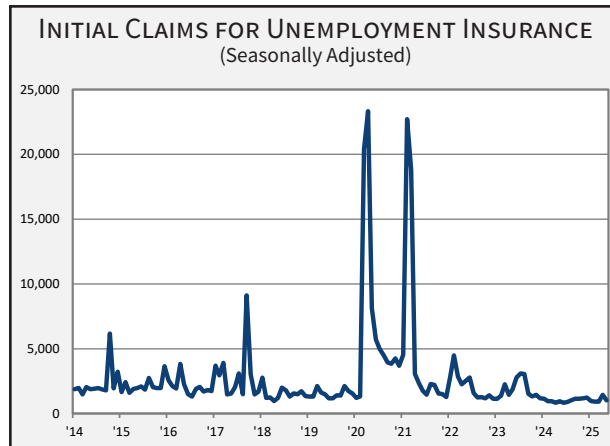
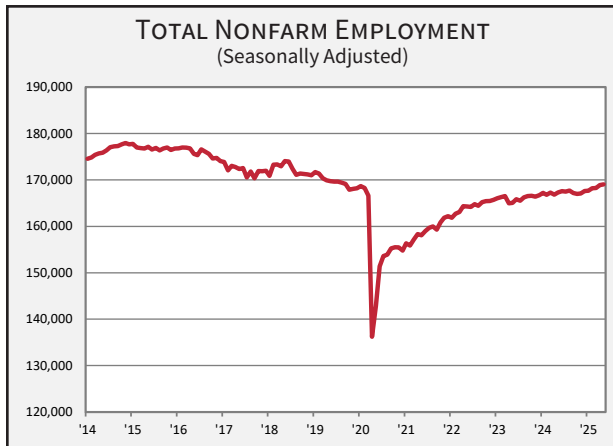
*In 2005, the BLS stopped producing manufacturing hours for Akron, Canton, Dayton, Toledo, and Youngstown. Starting in February 2005, data for the manufacturing hours for those MSAs are the state values.

YOUNGSTOWN-WARREN METROPOLITAN STATISTICAL AREA

Mahoning and Trumbull Counties

The leading indicator for the Youngstown-Warren metropolitan area for May 2025 forecasts employment growth at an annual rate of 4.41% for the next six months. Seasonally adjusted nonfarm payroll employment was 169,000 in May, up 0.1% from April.

The number of initial claims for unemployment insurance in May was 1,008, down 29.8% from the number of claims filed last month but up 5.7% from last year. The valuation of permits for new housing construction in May was \$6.2 million, a 3.1% decrease from April but an 8.8% increase from May 2024.



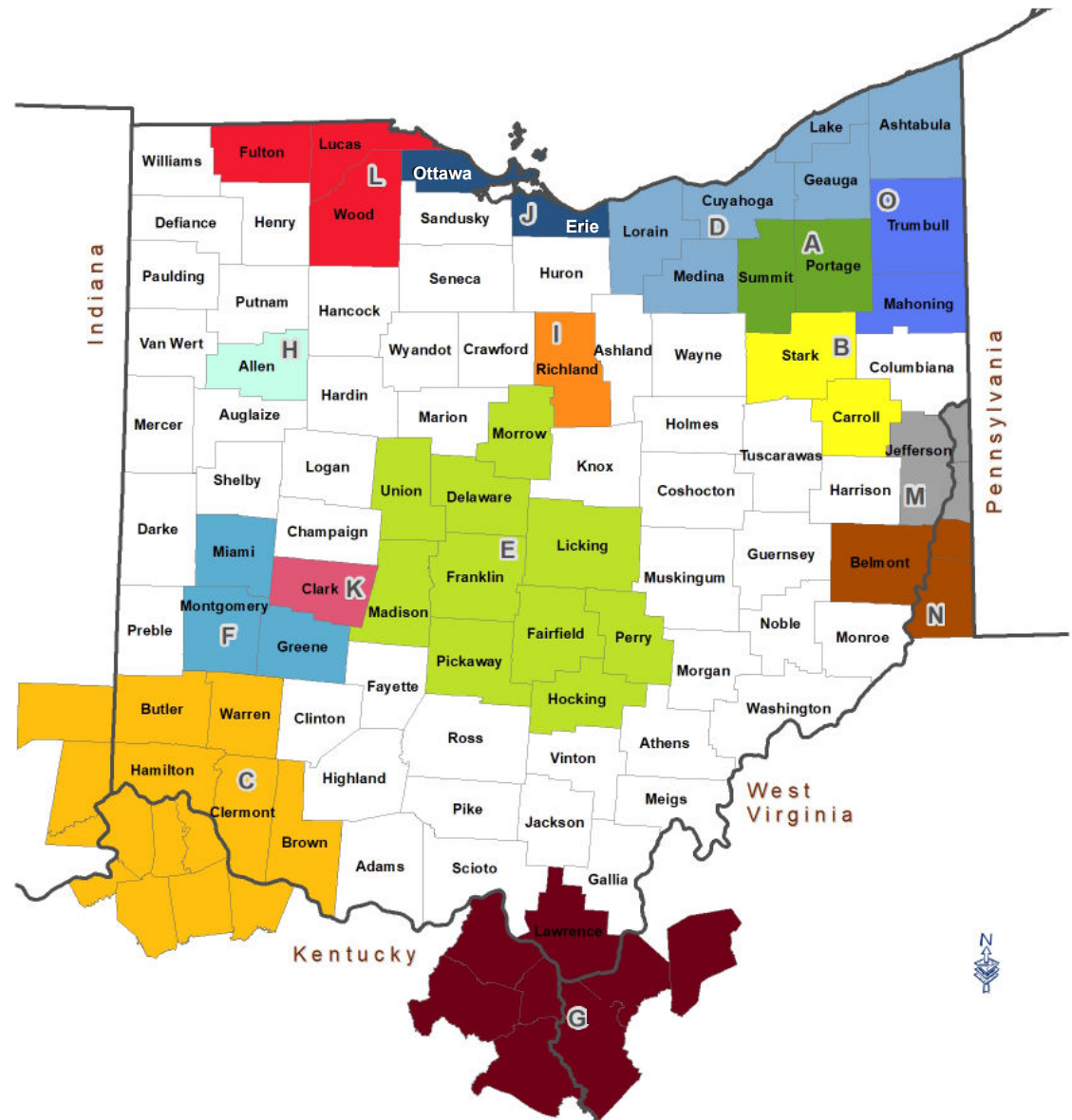
YOUNGSTOWN-WARREN	May 2024	Jun 2024	Jul 2024	Aug 2024	Sep 2024	Oct 2024	Nov 2024	Dec 2024	Jan 2025	Feb 2025	Mar 2025	Apr 2025	May 2025	Percent Change	
														Month	Year
Nonagricultural Wage and Salary Employment (Seasonally Adjusted in Thousands)	167.3	167.6	167.5	167.7	167.2	167.0	167.1	167.6	167.7	168.2	168.3	168.9	169.0	0.1%	1.0%
Initial Claims for Unemployment Insurance (Seasonally Adjusted)	953	837	893	1,032	1,153	1,144	1,181	1,222	959	910	911	1,436	1,008	-29.8%	5.7%
Average Weekly Hours for Manufacturing* (Seasonally Adjusted)	41.0	40.9	40.9	41.4	41.3	41.0	41.2	41.1	41.2	41.1	41.0	41.0	41.1	0.2%	0.2%
Valuation of Housing Permits (Seasonally Adjusted in Millions)	\$5.7	\$4.9	\$4.6	\$9.1	\$7.1	\$7.9	\$5.7	\$4.6	\$7.1	\$6.2	\$7.0	\$6.4	\$6.2	-3.1%	8.8%

*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 2020 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, Franklin, and Ohio counties in Indiana; Boone, Bracken, Campbell, Gallatin, Grant, Kenton, and Pendleton counties in Kentucky
- D. Cleveland: Ashtabula, Cuyahoga, Geauga, Lake, Lorain, and Medina counties
- E. Columbus: Delaware, Fairfield, Franklin, Hocking, Licking, Madison, Morrow, Perry, Pickaway, and Union counties
- F. Dayton-Kettering-Beavercreek: Greene, Miami, and Montgomery counties
- G. Huntington-Ashland: Lawrence County in Ohio; Boyd, Carter, Greenup, and Lawrence counties in Kentucky; Cabell, Putnam, and Wayne counties in West Virginia
- H. Lima: Allen County
- I. Mansfield: Richland County
- J. Sandusky: Erie and Ottawa counties
- K. Springfield: Clark County
- L. Toledo: Fulton, Lucas, and Wood counties
- M. Weirton-Steubenville: Jefferson County in Ohio; Brooke and Hancock counties in West Virginia
- N. Wheeling: Belmont County in Ohio; Marshall and Ohio counties in West Virginia
- O. Youngstown-Warren: Mahoning and Trumbull counties



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 \(bls.gov\)](https://www.bls.gov/jolts/))

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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