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 2.82% for the next six months in Ohio. The following MSAs are also predicted to grow: the Cincinnati MSA at 1.78%; the Canton-Massillon MSA at 2.37%; the Akron MSA at 2.41%; the Youngstown-Warren-Boardman MSA at 3.22%; the Toledo MSA at 3.32%; the Columbus MSA at 4.56%; and the Dayton MSA at 8.38%. The Cleveland-Elyria MSA is predicted to decline at -2.32%.
**United States**

The U.S. Composite of Leading Indicators increased 1.6% from March and 16.9% from April 2020. The U.S. industrial production in manufacturing increased 0.4% over the month and 23.3% over the year.

**Ohio**

Ohio’s seasonally adjusted total nonfarm employment was 5,313,700 in April 2021, down 0.01% over the month but up 12.2% over the year. Initial unemployment claims decreased 74.1% from March and 80.9% from April 2020. Ohio’s average weekly manufacturing hours were 42.1 in April, unchanged from March. Housing permit valuations increased 1.0% from the previous month and 61.5% from the previous year.
## Leading Indicators and Components

### United States

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<tr>
<td>U.S. Composite Index of Leading Indicators</td>
<td>96.9</td>
<td>99.8</td>
<td>102.8</td>
<td>104.9</td>
<td>106.5</td>
<td>107.5</td>
<td>108.2</td>
<td>109.2</td>
<td>109.6</td>
<td>110.2</td>
<td>110.1</td>
<td>111.5</td>
<td>113.3</td>
<td>1.6% 16.9%</td>
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<tr>
<td>(Seasonally Adjusted)</td>
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<tr>
<td>U.S. Industrial Production: Manufacturing</td>
<td>84.8</td>
<td>88.1</td>
<td>95.0</td>
<td>99.0</td>
<td>100.7</td>
<td>100.6</td>
<td>102.1</td>
<td>103.1</td>
<td>104.0</td>
<td>105.2</td>
<td>100.9</td>
<td>104.2</td>
<td>104.6</td>
<td>0.4% 23.3%</td>
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<td>(2012 = 100)</td>
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### Ohio

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<tr>
<td>Nonagricultural Wage and Salary Employment</td>
<td>4,734.1</td>
<td>4,898.6</td>
<td>5,135.8</td>
<td>5,199.8</td>
<td>5,223.2</td>
<td>5,251.3</td>
<td>5,266.0</td>
<td>5,274.8</td>
<td>5,271.3</td>
<td>5,291.5</td>
<td>5,302.5</td>
<td>5,314.1</td>
<td>5,313.7</td>
<td>0.0% 12.2%</td>
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<td>(Seasonally Adjusted in Thousands)</td>
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<tr>
<td>Initial Claims for Unemployment Insurance</td>
<td>609,874</td>
<td>192,568</td>
<td>168,444</td>
<td>120,736</td>
<td>103,432</td>
<td>92,195</td>
<td>88,877</td>
<td>94,400</td>
<td>83,268</td>
<td>113,008</td>
<td>525,885</td>
<td>450,938</td>
<td>116,699</td>
<td>-74.1% -80.9%</td>
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<td>(Seasonally Adjusted)</td>
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<tr>
<td>Average Weekly Hours for Manufacturing</td>
<td>39.2</td>
<td>40.5</td>
<td>40.9</td>
<td>41.3</td>
<td>41.5</td>
<td>41.1</td>
<td>41.7</td>
<td>41.8</td>
<td>42.5</td>
<td>42.1</td>
<td>41.6</td>
<td>42.1</td>
<td>42.1</td>
<td>0.0% 74%</td>
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<tr>
<td>(Seasonally Adjusted)</td>
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<tr>
<td>Valuation of Housing Permits</td>
<td>$405.2</td>
<td>$420.6</td>
<td>$435.3</td>
<td>$537.1</td>
<td>$544.3</td>
<td>$562.1</td>
<td>$621.2</td>
<td>$547.6</td>
<td>$723.9</td>
<td>$647.7</td>
<td>$684.2</td>
<td>$647.8</td>
<td>$654.6</td>
<td>1.0% 61.5%</td>
</tr>
</tbody>
</table>
The leading indicator for the Akron metropolitan area for April 2021 forecasts employment growth at an annual rate of 2.41% for the next six months. Seasonally adjusted nonfarm payroll employment was 321,800 in April, down 0.1% from March.

The number of initial claims for unemployment insurance in April was 6,299 claims, 79.3% less than the number of claims filed last month and 83.2% less than last year. The valuation of permits for new housing construction in April was $34.4 million, a 0.6% decrease from March but a 78.2% increase from April 2020.
The leading indicator for the Canton-Massillon metropolitan area for April 2021 forecasts employment growth at an annual rate of 2.37% for the next six months. Seasonally adjusted nonfarm payroll employment was 167,600 in April, up 1.9% from March.

The number of initial claims for unemployment insurance in April was 3,244, down 78.3% from the number of claims filed last month and down 84.1% from last year. The valuation of permits for new housing construction in April was $19.6 million, a 24.8% increase from one month ago and a 110.8% increase from one year ago.

### Canton-Massillon Metropolitan Statistical Area

Carroll and Stark Counties

The leading indicator for the Canton-Massillon metropolitan area for April 2021 forecasts employment growth at an annual rate of 2.37% for the next six months. Seasonally adjusted nonfarm payroll employment was 167,600 in April, up 1.9% from March.

The number of initial claims for unemployment insurance in April was 3,244, down 78.3% from the number of claims filed last month and down 84.1% from last year. The valuation of permits for new housing construction in April was $19.6 million, a 24.8% increase from one month ago and a 110.8% increase from one year ago.
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 April 2021 forecasts employment growth at an annual rate of 1.78% for the next six months. Seasonally adjusted nonfarm payroll employment was 1,074,400 in April, up 0.4% from March.

The number of initial claims for unemployment insurance in April was 10,419 claims, 58.9% less than last month and 86.0% less than last year. The valuation of permits for new housing construction in April was $149.0 million, a 1.6% decrease from March but a 69.9% increase from April 2020.
The leading indicator for the Cleveland-Elyria metropolitan area for April 2021 forecasts negative employment growth at an annual rate of -2.32% for the next six months. Seasonally adjusted nonfarm payroll employment was 1,012,500 in April, a 0.3% increase from March.

The number of initial claims for unemployment insurance in April was 21,526, 76.9% less than the number of claims filed last month and 78.6% less than last year. The valuation of permits for new housing construction in April was $75.8 million, a 21.1% decrease from March and a 14.8% increase from April 2020.

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</thead>
<tbody>
<tr>
<td>Nonagricultural Wage and Salary Employment (Seasonally Adjusted in Thousands)</td>
<td>918.2</td>
<td>945.1</td>
<td>978.5</td>
<td>984.1</td>
<td>988.5</td>
<td>997.0</td>
<td>999.3</td>
<td>1,002.4</td>
<td>1,001.5</td>
<td>1,004.3</td>
<td>1,005.7</td>
<td>1,009.8</td>
<td>1,012.5</td>
<td>0.3%</td>
<td>10.3%</td>
</tr>
<tr>
<td>Initial Claims for Unemployment Insurance (Seasonally Adjusted)</td>
<td>100,360</td>
<td>37,638</td>
<td>31,945</td>
<td>27,215</td>
<td>21,831</td>
<td>19,440</td>
<td>17,599</td>
<td>17,319</td>
<td>16,178</td>
<td>25,399</td>
<td>116,083</td>
<td>93,306</td>
<td>21,526</td>
<td>-76.9%</td>
<td>-78.6%</td>
</tr>
<tr>
<td>Average Weekly Hours for Manufacturing* (Seasonally Adjusted)</td>
<td>36.5</td>
<td>38.5</td>
<td>38.3</td>
<td>38.6</td>
<td>38.6</td>
<td>38.8</td>
<td>39.2</td>
<td>39.9</td>
<td>40.5</td>
<td>40.5</td>
<td>40.3</td>
<td>41.3</td>
<td>40.2</td>
<td>-2.7%</td>
<td>10.1%</td>
</tr>
<tr>
<td>Valuation of Housing Permits (Seasonally Adjusted in Millions)</td>
<td>$66.0</td>
<td>$49.3</td>
<td>$59.1</td>
<td>$60.1</td>
<td>$78.1</td>
<td>$98.6</td>
<td>$73.2</td>
<td>$82.6</td>
<td>$95.7</td>
<td>$103.3</td>
<td>$89.9</td>
<td>$96.1</td>
<td>$75.8</td>
<td>-21.1%</td>
<td>14.8%</td>
</tr>
</tbody>
</table>
The leading indicator for the Columbus metropolitan area for April 2021 forecasts employment growth at an annual rate of 4.56% for the next six months. Seasonally adjusted nonfarm payroll employment was 1,082,900 in April, down 0.1% from March.

The number of initial claims for unemployment insurance in April was 18,027 claims, 81.3% less than the number of claims filed last month and 82.1% less than last year. The valuation of permits for new housing construction in April was $260.2 million, 9.6% more than March and 84.3% more than April 2020.
The leading indicator for the Dayton metropolitan area for April 2021 forecasts employment growth at an annual rate of 8.38% for the next six months. Seasonally adjusted nonfarm payroll employment was 374,700 in April, down 100 jobs from March.

The number of initial claims for unemployment insurance in April was 6,832 claims, 78.4% less than the number of claims filed last month and 84.0% less than last year. The valuation of permits for new housing construction in April was $32.7 million, a 32.3% decrease from March and a 42.8% increase from April 2020.
TOLeDO MeTROPOliTAN StAtiStiCAL ArEa
Fulton, Lucas, and Wood Counties

The leading indicator for the Toledo metropolitan area for April 2021 forecasts employment growth at an annual rate of 3.32% for the next six months. Seasonally adjusted nonfarm payroll employment was 287,300 in April, down 0.8% from March.

The number of initial claims for unemployment insurance in April was 6,859 claims, 72.6% less than the number of claims filed last month and 80.9% less than last year. The valuation of permits for new housing construction in April was $34.3 million, a 21.2% increase from March and a 138.2% increase from April 2020.
The leading indicator for the Youngstown-Warren-Boardman metropolitan area for April 2021 forecasts employment growth at an annual rate of 3.22% for the next six months. Seasonally adjusted nonfarm payroll employment was 199,300 in April, a 0.5% decrease from March.

The number of initial claims for unemployment insurance in April was 3,212 claims, 85.4% less than the number of claims filed last month and 86.7% less than last year. The valuation of permits for new housing construction in April was $5.0 million, a 35.9% decrease from March but a 56.3% increase from April 2020.

*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
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 five inputs. The inputs are statistically significant predictors of Ohio total nonfarm growth rates at the 90 percent confidence level.

The five inputs are:
- 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/)

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 new time point. Some of these revisions could be substantial.
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 Coretta Pettway. For further information, visit http://OhioLMI.com or call the Ohio Bureau of Labor Market Information at 1-888-296-7541 option 6, or (614) 752-9494.

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Bureau of Labor Market Information
http://OhioLMI.com

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