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FACTS ABOUT THE ECONOMIC
IMPACT OF OHIO MANUFACTURING

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FACTS ABOUT THE ECONOMIC IMPACT OF OHIO MANUFACTURING

Ohio is powered by manufacturing. Ohio manufacturing is responsible for almost **17%** of Ohio's Gross Domestic Product (GDP) and contributes to the quality of life in Ohio by providing:

- About **700,000 jobs** for Ohio workers
- An annual payroll of **\$40 billion**, the highest total annual wages of any Ohio industry sector
- More than **\$50 billion** in exported products to 213 countries and territories
- A **safer environment** through decreased emissions and increased recycling

Manufacturing is the **largest of the 20 sectors** of Ohio's economy, including government, with **16.94% of total output** in 2016 of which 9.48% were durable goods and 7.46% were non-durable goods.

Ohio's manufacturing sector GDP was **\$106.0 billion** in 2016, ranking it **third** in the nation after California and Texas.

The average annual earnings of Ohio workers on manufacturing payrolls in 2016 were **\$58,765**.

The Ohio Manufacturers' Association has prepared these data to provide Ohioans with an understanding of the importance of manufacturing to the economic future of the state. The data in this publication were the most current available as of June 2018.

For printed copies of this information, contact the OMA at **(800) 662-4463** or **oma@ohiomfg.com**.

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BIBLIOGRAPHY:

2016 County Business Patterns

Manufacturing & Distribution USA: Industry Analyses Statistics and Leading Companies,
edited by Joyce P. Simkin, 9th ed., vols. 1 & 2

Ohio Department of Job and Family Services, Office of Workforce Development, Bureau of
Labor Market Information, <http://ohiolmi.com/ces/lmr.htm>

Ohio Department of Job and Family Services, Ohio Labor Market Information, Employment
and Wages by Industry, <http://ohiolmi.com/>

Ohio Development Services Agency, Research Office, Ohio County Indicators, June 2018
(U.S. Bureau of Economic Analysis)

Ohio Development Services Agency, Research Office, Ohio Exports Report 2017, Origin of
Movement Series, February 2018

Ohio Development Services Agency, Research Office, Ohio Major Employers – Section 1,
May 2018

Ohio Development Services Agency, Research Office, Ohio Private Investment Survey, 2015,
2016, 2017, March 2018

Ohio Development Services Agency, Research Office, a State Affiliate of the U.S. Census
Bureau, Gross Domestic Product from Ohio, September 2017

Ohio Environmental Protection Agency: multiple sources

Site Selection Magazine, March 2018, <http://siteselection.com/issues/2018/mar/cover.cfm>

State Rankings 2018, A Statistical View of America, Editors Kathleen O'Leary Morgan and
Scott Morgan



Site Selection 2013-2017

Top Ten states

(ranked by number of qualifying projects)

FACT:

Ohio ranked second nationally in the number of new site selections in the past 5 years, bested only by Texas.

To be listed, projects must meet one of three criteria:

1. Investment minimum of \$1,000,000, or
2. Square footage of 20,000 or more, or
3. Job creation of 20 or more (50 or more prior to 2014).

Projects are generally credited to the year first announced.

Manufacturing projects as a percent of all new qualifying Ohio projects

FACT:

Typically about one-half of Ohio's new site selection projects are manufacturing projects.

2017		2016		2015		2014		2013	
State	# Sites	State	# Sites	State	# Sites	State	# Sites	State	# Sites
TX	594	TX	642	TX	702	TX	689	TX	657
OH	467	OH	515	OH	517	OH	582	OH	480
IL	419	IL	434	IL	413	IL	394	IL	383
GA	281	NC	289	NC	300	NC	313	PA	348
NC	274	GA	271	KY	285	GA	311	MI	312
CA	262	CA	250	MI	217	KY	258	GA	299
KY	248	KY	231	GA	211	MI	230	NC	223
PA	185	VA	222	PA	202	PA	227	VA	208
VA	164	PA	219	VA	167	LA	200	FL	193
IN	162	MI	184	IN	166	TN	195	TN	187

Source: Site Selection Magazine, March 2018, <http://siteselection.com/issues/2018/mar/cover.cfm>

Year	# Manufacturing Projects	# Total Ohio Qualifying Projects	% Manufacturing Projects
2017	206	392	53%
2016	240	498	48%
2015	232	469	49%
2014	257	490	52%
2013	212	409	52%

Source: Ohio Development Services Agency, Research Office, Ohio Private Investment Survey 2015, 2016, 2017, March 2018

*Manufacturing sector
investment projects
2013 – 2017*

Sector	2017	2016	2015	2014	2013
Transportation Equipment	35	45	40	44	39
Rubber & Plastics	30	30	29	20	24
Fabricated Metals	27	31	34	37	31
Chemicals	23	19	29	21	19
Food & Beverage	21	33	20	36	16
Machinery	19	19	34	37	22
Electronics & Appliances	15	16	11	10	16
Primary Metals	12	6	7	12	14
Stone, Clay, Glass	9	10	10	8	2
Paper Products	8	12	10	10	3
Miscellaneous	7	11	12	5	10
Furniture	4	4	4	5	4
Textiles/ Apparel	3	2	3	2	2
Lumber and Wood	2	8	3	3	4
Petroleum	1	7	2	5	11
Printing	1	3	5	6	4

Source: Ohio Development Services Agency, Research Office, Ohio Private Investment Survey, 2015, 2016, 2017, March 2018

FACT:

Transportation equipment projects perennially lead Ohio manufacturing investment projects.



Manufacturing GDP ranking
by state (2014 – 2016
and pre-Great Recession
benchmark year, 2008)

Rank	2016			2015		
	State	Mfg. GDP (billions)	% of U.S.	State	Mfg. GDP (billions)	% of U.S.
1	CA	\$289.0	13.28%	CA	\$278.6	12.85%
2	TX	\$225.8	10.38%	TX	\$227.5	10.49%
3	OH	\$106.0	4.87%	OH	\$108.1	4.99%
4	IL	\$100.4	4.62%	IL	\$103.8	4.79%
5	NC	\$99.8	4.59%	NC	\$100.1	4.62%
6	IN	\$98.4	4.52%	IN	\$100.0	4.61%
7	MI	\$93.5	4.30%	MI	\$92.5	4.27%
8	PA	\$85.0	3.91%	PA	\$85.1	3.93%
9	NY	\$71.3	3.28%	NY	\$74.6	3.44%
10	WA	\$58.4	2.69%	WA	\$58.2	2.69%

Rank	2014			2008		
	State	Mfg. GDP (billions)	% of U.S.	State	Mfg. GDP (billions)	% of U.S.
1	CA	\$255.5	12.22%	CA	\$181.1	11.06%
2	TX	\$238.4	11.40%	TX	\$158.8	9.70%
3	IL	\$99.7	4.77%	OH	\$84.1	5.13%
4	OH	\$98.7	4.72%	IL	\$78.8	4.81%
5	NC	\$95.8	4.58%	NC	\$78.0	4.76%
6	IN	\$93.6	4.48%	PA	\$75.5	4.61%
7	MI	\$90.7	4.34%	NY	\$69.1	4.22%
8	PA	\$79.6	3.81%	IN	\$63.8	3.89%
9	NY	\$69.1	3.31%	MI	\$61.8	3.77%
10	WA	\$57.8	2.76%	WI	\$48.9	2.98%

Total 2016 U.S. Manufacturing GDP: \$2,175.2 (billion)

Source: Ohio Development Services Agency, Research Office, a State Affiliate of the U.S. Census Bureau, Gross Domestic Product from Ohio, September 2017

FACT:

In 2015, Ohio regained its pre-Great Recession position as the third most productive manufacturing state in the nation, from fourth. Ohio held on to its third place in 2016.

Manufacturing leads Ohio industries in contribution to Gross Domestic Product (initial figures for 2016)

FACT:

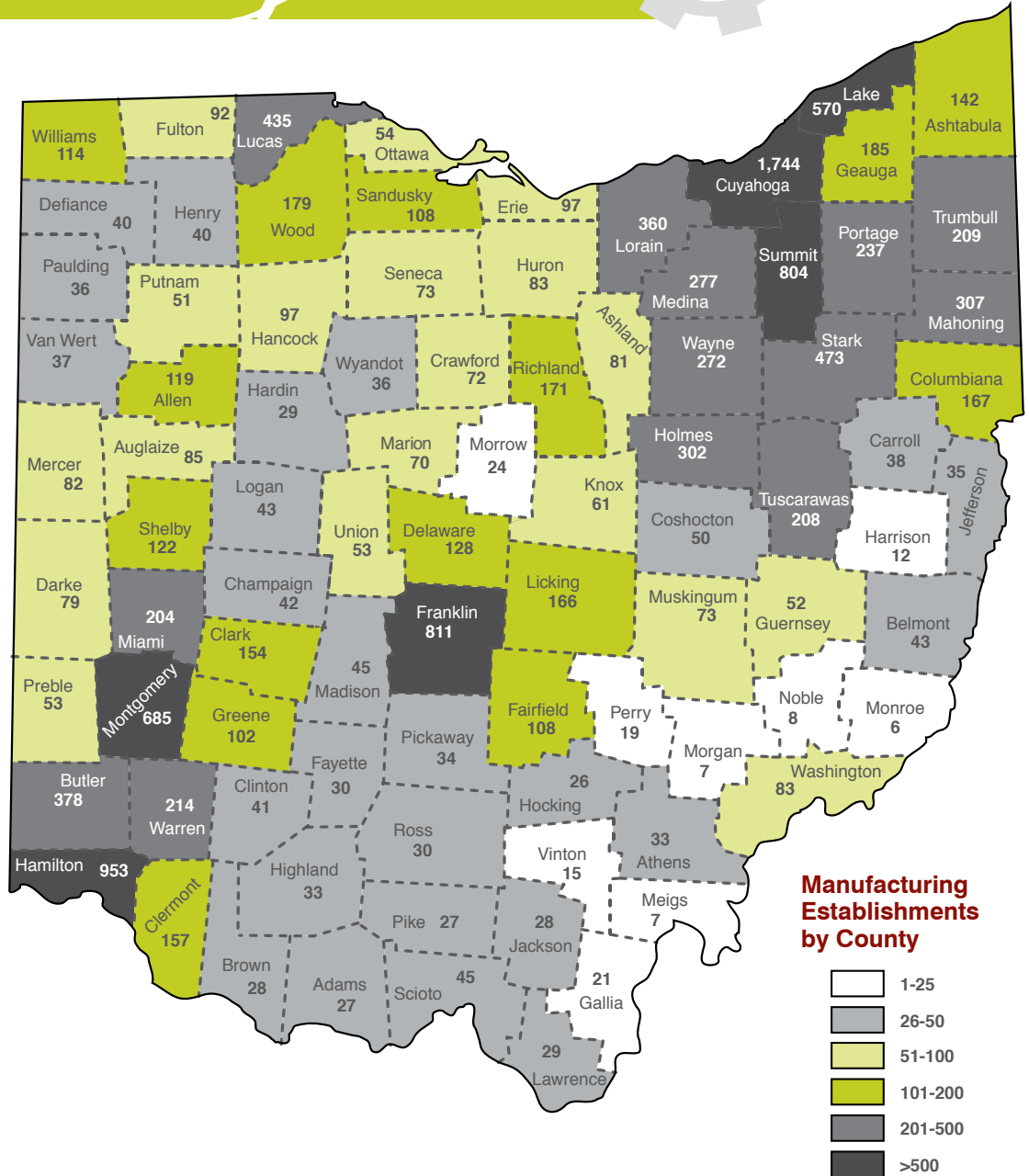
At almost 17%, manufacturing's contribution to Ohio's GDP is greater than that of any other industry sector.

Industry Sector	\$ Contributed to Ohio GDP (in billions)			% of Ohio GDP		
	2016	2015	2014	2016	2015	2014
Manufacturing	\$106.00	\$108.09	\$98.69	16.94%	17.77%	16.92%
Government	\$69.19	\$67.75	\$64.16	11.06%	11.14%	11.35%
Real estate, rental and leasing	\$68.62	\$68.21	\$65.55	10.97%	11.22%	11.24%
Finance and insurance	\$54.47	\$51.00	\$49.70	8.71%	8.39%	8.52%
Health care and social assistance	\$53.36	\$51.36	\$50.24	8.53%	8.45%	8.61%
Retail trade	\$38.13	\$36.73	\$34.88	6.09%	6.04%	5.98%
Wholesale trade	\$37.87	\$37.16	\$36.91	6.05%	6.11%	6.33%
Professional and technical services	\$32.25	\$30.71	\$30.62	5.15%	5.05%	5.52%
Construction	\$23.26	\$21.67	\$19.01	3.72%	3.56%	2.30%
Management	\$20.99	\$20.87	\$22.06	3.35%	3.43%	3.78%
Administrative support & waste management	\$20.69	\$20.25	\$19.35	3.31%	3.33%	3.32%
Transportation and warehousing	\$18.91	\$17.31	\$16.94	3.02%	2.85%	2.90%
Information	\$17.06	\$15.74	\$14.62	2.73%	2.59%	2.51%
Accommodation and food services	\$15.28	\$14.53	\$13.37	2.44%	2.39%	2.29%
Other	\$13.61	NA	NA	2.17%	NA	NA
Utilities	\$11.34	\$13.30	\$13.44	1.81%	2.19%	2.30%
Mining	\$9.78	NA	NA	1.56%	NA	NA
Arts, entertainment & recreation	\$6.44	NA	NA	1.03%	NA	NA
Education	\$5.17	NA	NA	0.83%	NA	NA
Agriculture, forestry, fishing & hunting	\$3.30	\$3.95	\$4.26	0.53%	0.65%	0.73%

Source: Ohio Development Services Agency, Research Office, a State Affiliate of the U.S. Census Bureau, Gross Domestic Product from Ohio, September 2017

Ohio's Economy

Manufacturing density in Ohio (2016)



Source: 2016 County Business Patterns

FACT:

Of Ohio's 14,000 manufacturing establishments in 2016, 40% were in just six counties: Cuyahoga, Hamilton, Summit, Franklin, Montgomery, and Lake. Cuyahoga County had the most manufacturing establishments at 1,744.



Ohio manufacturing:
A leader in U.S.
manufacturing jobs (2017)

FACT:

In 2017, Ohio again ranked third in manufacturing employment nationally, with 5.6% of U.S. manufacturing jobs. According to this source, Ohio had 9,200 more manufacturing employees in 2017 than in 2016. And, the U.S. total of employees in manufacturing increased by 264,000 over the same period.

Rank	2017			2016		
	State	Manufacturing Employment	% of Total U.S. Mfg. Jobs	State	Manufacturing Employment	% of Total U.S. Mfg. Jobs
1	CA	1,302,300	10.4%	CA	1,282,800	10.5%
2	TX	878,200	7.0%	TX	844,000	6.9%
3	OH	698,900	5.6%	OH	689,700	5.6%
4	MI	607,100	4.8%	MI	596,100	4.9%
5	IL	577,600	4.6%	PA	567,100	4.6%
6	PA	553,000	4.4%	IL	565,400	4.6%
7	IN	534,500	4.3%	IN	519,000	4.2%
8	WI	479,900	3.8%	WI	474,000	3.9%
9	NC	467,500	3.7%	NC	463,000	3.8%
10	NY	435,300	3.5%	NY	443,300	3.6%

Rank	2015			2014		
	State	Manufacturing Employment	% of Total U.S. Mfg. Jobs	State	Manufacturing Employment	% of Total U.S. Mfg. Jobs
1	CA	1,269,200	10.3%	CA	1,254,300	10.2%
2	TX	849,300	6.9%	TX	890,200	7.3%
3	OH	691,700	5.6%	OH	682,600	5.6%
4	MI	603,500	4.9%	IL	579,600	4.7%
5	PA	567,200	4.6%	MI	574,500	4.7%
6	IL	567,000	4.6%	PA	565,200	4.6%
7	IN	519,700	4.2%	IN	523,200	4.3%
8	WI	473,500	3.8%	WI	474,900	3.9%
9	NC	459,900	3.7%	NC	451,600	3.7%
10	NY	448,500	3.6%	NY	444,300	3.6%

Total U.S. Manufacturing Jobs 2017: 12,539,000

Total U.S. Manufacturing Jobs 2016: 12,275,000

Total U.S. Manufacturing Jobs 2015: 12,331,000

Total U.S. Manufacturing Jobs 2014: 12,239,000

Source: State Rankings 2018, A Statistical View of America, Editors Kathleen O'Leary Morgan and Scott Morgan



Manufacturing near top of Ohio private sector employment (2017)

Rank	Industry Sector	Employment	% of total Ohio jobs
	Total (covered) Ohio employment	5,525,900	100%
1	Health care and social assistance	806,800	14.6%
2	Government	782,200	14.2%
3	Manufacturing	686,800	12.4%
4	Retail trade	574,500	10.4%
5	Accommodation and food services	480,900	8.7%
6	Administrative, support and waste services	322,000	5.8%
7	Professional and technical services	258,100	4.7%
8	Finance and insurance	242,700	4.4%
9	Wholesale trade	236,200	4.3%
10	Construction	216,300	3.9%
11	Other services	216,200	3.9%
12	Transportation and warehousing	194,300	3.5%
13	Management	142,100	2.6%
14	Education services	121,800	2.2%
15	Arts, entertainment and recreation	79,100	1.4%
16	Information	71,600	1.3%
17	Real estate, rental and leasing	63,800	1.2%
18	Utilities	19,200	0.3%
19	Mining and logging	11,400	0.2%

Source: Ohio Department of Job and Family Services, Office of Workforce Development, Ohio Labor Market Information, <http://ohiolmi.com/ces/lmr.htm>

FACT:

12.4% of all (unemployment insurance covered) Ohio workers were employed in manufacturing in 2017; only the health care & social assistance and government sectors had greater employment.

Ohio's leading
manufacturing employers

FACT:

Large, global industrial enterprises employ large numbers of Ohioans; many have Ohio headquarters.

Rank	Company	Ohio Employment Estimate: Headcount	Headquarters	Product
1	Honda Motor Co., Ltd.	15,000	Tokyo, Japan	Motor vehicles
2	General Electric Company	14,100	Boston, MA	Aerospace and electrical equipment
3	Berkshire Hathaway, Inc.	11,900	Omaha, NE	Machinery and fiberglass products
4	Procter & Gamble Company	11,000	Cincinnati, OH	Soap and consumer goods
5	Whirlpool Corporation	9,800	Benton Harbor, MI	Consumer products
6	Marathon Petroleum Corporation	8,850	Findlay, OH	Petroleum
7	Fiat Chrysler Automobiles N.V.	6,900	Onbekend, The Netherlands	Motor vehicles
8	General Motors Corporation	6,800	Detroit, MI	Motor vehicles
9	Ford Motor Company	6,150	Dearborn, MI	Motor vehicles
10	Sherwin-Williams Company	5,000	Cleveland, OH	Paints
11	Crown Equipment Corporation	4,500	New Bremen, OH	Lift trucks
12	Swagelok Company	4,150	Solon, OH	Fluid systems
13	Nestlé S.A.	3,600	Vevey, Switzerland	Frozen foods
14	Worthington Industries	3,560	Worthington, OH	Metal products
15	AK Steel Holding Corporation	3,460	West Chester, OH	Steel
16	Goodyear Tire & Rubber Company	3,300	Akron, OH	Rubber products
17	ArcelorMittal SA	3,000	Luxembourg, Luxembourg	Steel
18	Emerson Electric Co.	2,960	St. Louis, MO	Electrical products
19	Parker Hannifin Corporation	2,900	Cleveland, OH	Industrial equipment
20	Lincoln Electric Holdings, Inc.	2,750	Cleveland, OH	Arc welding equipment
21	TimkenSteel Corporation	2,670	Canton, OH	Steel
22	Bridgestone Corporation	2,650	Tokyo, Japan	Rubber products
23	Avery Dennison Corp.	2,625	Glendale, CA	Adhesive papers
24	Owens Corning	2,400	Toledo, OH	Home products
25	Eaton Corporation plc	2,360	Dublin, Ireland	Motor vehicle parts

Source: Ohio Development Services Agency, Research Office, Ohio Major Employers – Section 1, May 2018



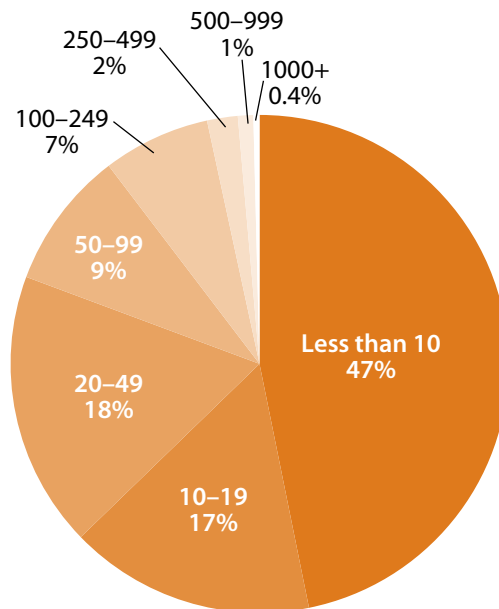
Manufacturing means large and small businesses in Ohio

Number of Ohio manufacturing firms by number of employees

Number of Employees	Number of Firms (2016)	Number of Firms (2015)	Number of Firms (2014)	Number of Firms (2013)
Fewer than 10	6,510	6,612	6,743	6,811
10-19	2,320	2,314	2,281	2,285
20-49	2,462	2,484	2,495	2,454
50-99	1,246	1,240	1,233	1,254
100-249	957	994	982	958
250-499	331	322	311	322
500-999	122	121	112	105
1000+	52	52	51	48
Total	14,000	14,139	14,208	14,237

Source: 2016 County Business Patterns

Distribution of Ohio manufacturing firms by number of employees (2016)



FACT:

Almost 50% of Ohio manufacturing firms employ fewer than 10 people, while 0.4% of firms employ more than 1,000.



Traditional industries continue to be Ohio's manufacturing job producers

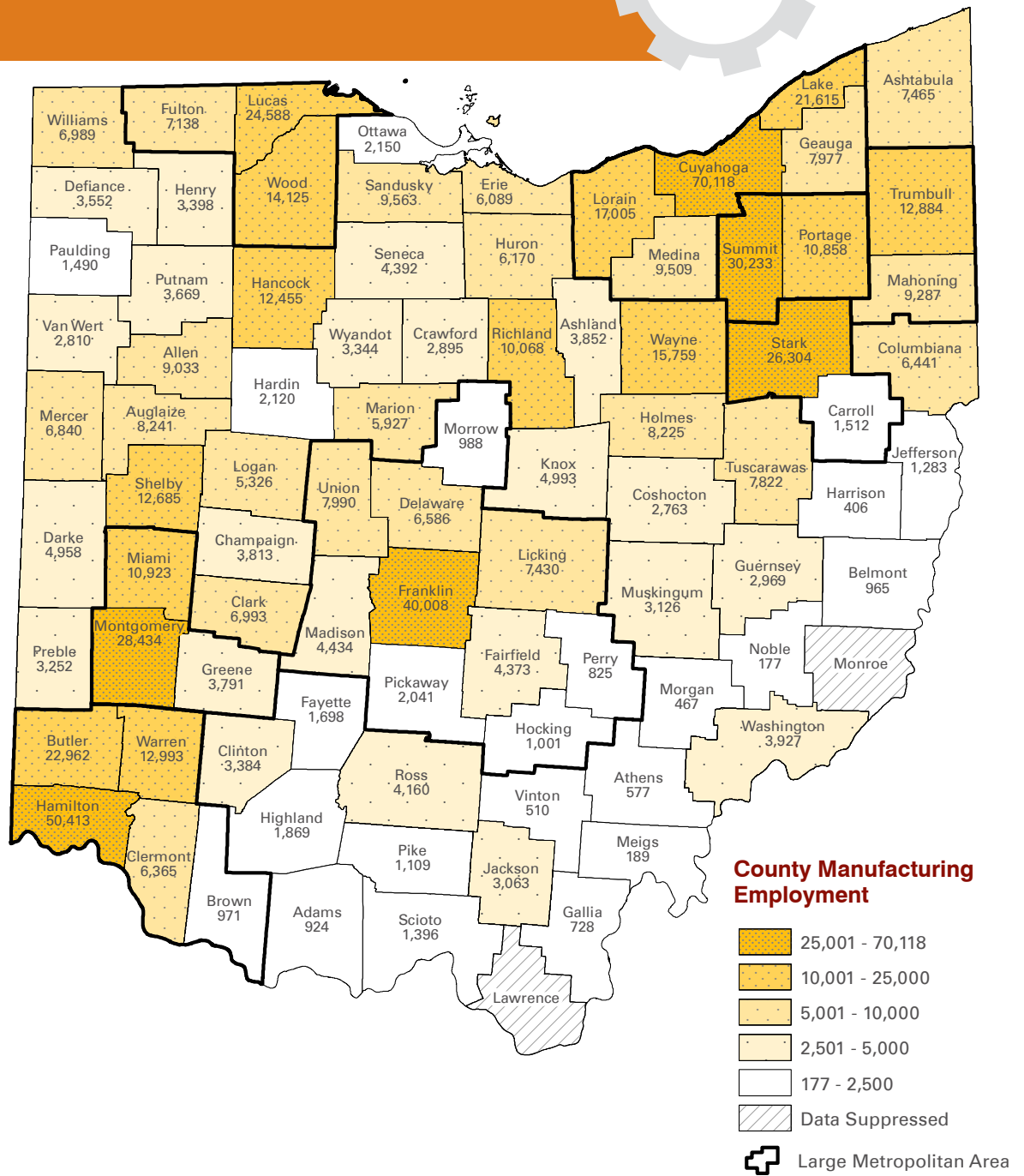
FACT:

Traditional industries are foundational to the state's economy. According to this source, the greatest year-over-year growth from 2016 to 2017 occurred in Furniture and Related Products (4%). The biggest job contraction was in Primary Metals, down 3%.

Manufacturing industry	Number of jobs (2017)	Number of jobs (2016)	Number of jobs (2015)
Durable Goods			
Transportation equipment	124,500	125,300	122,600
Fabricated metal products	99,000	98,100	103,200
Machinery	77,800	76,900	79,000
Primary metals	35,900	36,800	38,700
Nonmetallic mineral products	27,200	27,100	25,500
Electrical equipment & appliances	26,800	27,400	28,300
Computer and Electronic Products	20,300	20,500	21,100
Furniture and related products	16,100	15,500	14,900
Nondurable Goods			
Food manufacturing	60,700	60,000	58,400
Plastics & rubber products	57,400	56,700	56,000
Chemical manufacturing	44,500	44,300	43,600
Printing and related support activities	21,600	21,600	21,500

Source: Ohio Department of Job & Family Services, Office of Workforce Development, Ohio Labor Market Information, <http://ohiolmi.com/ces/lmr.htm>

Manufacturing employment is 714,829 (2016)



Source: Ohio Development Services Agency, Research Office, Ohio County Indicators, June 2018 (U.S. Bureau of Economic Analysis)

FACT:

According to this source, the state’s manufacturing employment in 2016 was just under 715,000 and comparable to 2015 (715,200). Cuyahoga County had the greatest manufacturing employment at 70,118.

Note: Employment estimates are made for full-time and part-time jobs where the jobs are located, not where the job-holders reside. People holding more than one job are counted in each job.

Earnings and Wages



Ohio annual payroll by industry sector (in thousands) (2016)

Industry sector	Total all wages (in thousands)	Average annual wage
Manufacturing	\$40,258,652	\$58,765
Health care and social assistance	\$35,895,790	\$45,227
Professional and technical services	\$18,651,347	\$72,542
Finance and insurance	\$16,060,084	\$73,253
Wholesale trade	\$15,731,518	\$66,872
Retail trade	\$15,611,693	\$27,124
Management of companies and enterprises	\$14,622,669	\$105,738
Construction	\$11,741,097	\$57,029
Administrative and waste services	\$10,745,302	\$32,797
Transportation and warehousing	\$8,733,524	\$47,402
Accommodation and food services	\$7,540,770	\$15,937
Other services, except public administration	\$4,813,163	\$30,910
Information	\$4,744,578	\$66,142
Educational services	\$3,374,452	\$35,420
Real estate and rental and leasing	\$2,877,112	\$45,523
Arts, entertainment and recreation	\$2,521,661	\$32,284
Utilities	\$1,792,357	\$92,990
Mining, quarrying, and oil & gas extraction	\$761,524	\$68,779
Agriculture, forestry, fishing and hunting	\$532,784	\$32,505

Source: Ohio Department of Job and Family Services, Ohio Labor Market Information, Employment and Wages by Industry, <http://ohiolmi.com/>

FACT:

Year after year, Ohio manufacturing continues to lead all industry sectors in total state payroll.



*Average annual earnings
within selected manufacturing
subsectors (2016)*

Rank	Industrial sector	Average annual wage
1	Chemical manufacturing	\$84,834
2	Transportation equipment	\$67,000
3	Computer & electronic products	\$66,246
4	Primary metal	\$65,560
5	Machinery	\$61,157
6	Paper manufacturing	\$58,642
7	Electrical equipment & appliances	\$58,175
8	Nonmetallic, mineral products	\$56,159
9	Fabricated metal products	\$53,377
10	Food manufacturing	\$49,967
11	Plastics & rubber products	\$48,641
12	Miscellaneous manufacturing	\$46,310
13	Printing and related support activities	\$45,198
14	Furniture and related product manufacturing	\$43,301

Source: Ohio Department of Job and Family Services, Ohio Labor Market Information, Employment and Wages by Industry, <http://ohiolmi.com/>

FACT:

Chemical, transportation equipment, and computer & electronic products manufacturing support the highest average annual manufacturing wages in the state.



State exports to the world (2017)

FACT:

In 2017 Ohio was the ninth largest exporting state, down from eighth in 2015 and 2016.

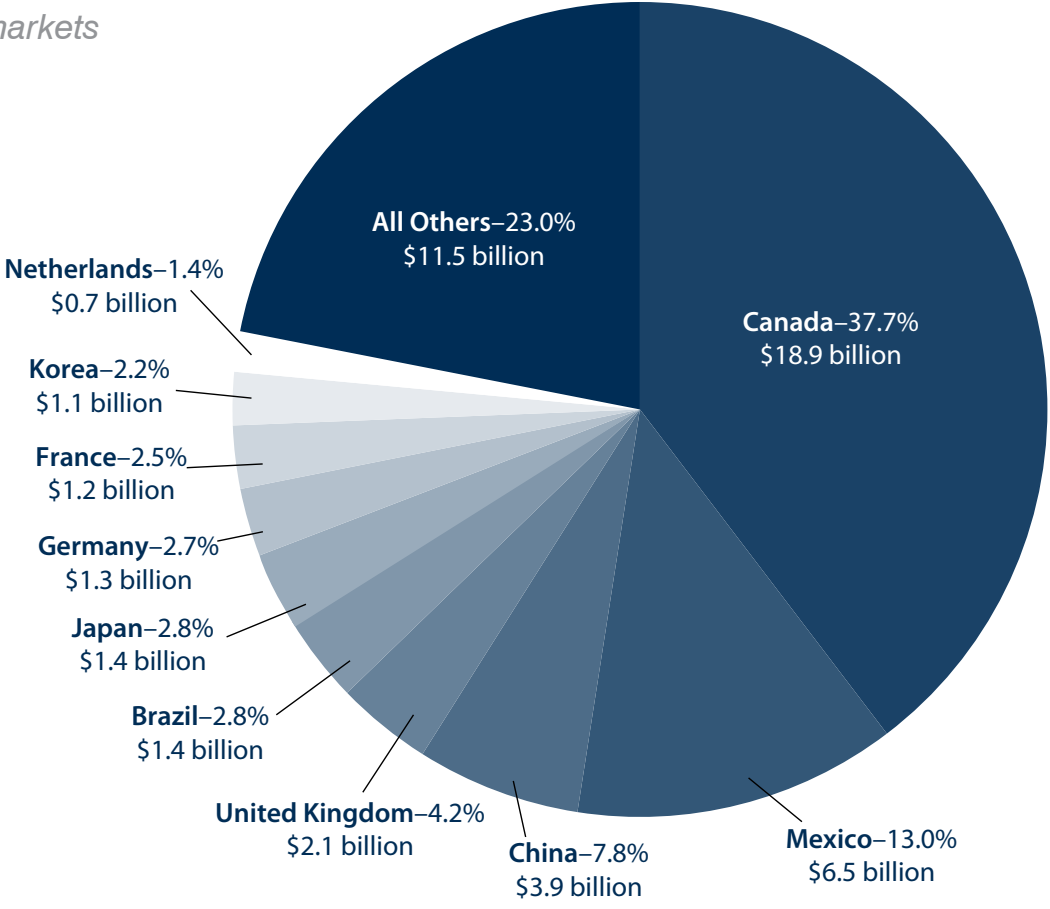
Rank	2017		Top Export
	State	Exports (\$ in billions)	
1	TX	\$264	Mineral fuel, oil, etc.
2	CA	\$172	Electric machinery
3	WA	\$80	Aircraft and parts
4	NY	\$75	Prec. stones; jewelry
5	IL	\$65	Industrial machinery
6	MI	\$60	Vehicles and parts
7	LA	\$56	Mineral fuel, oil, etc.
8	FL	\$55	Electric machinery
9	OH	\$50	Industrial machinery
10	PA	\$39	Industrial machinery

Rank	2016		2015	
	State	Exports (\$ in billions)	State	Exports (\$ in billions)
1	TX	\$233	TX	\$251
2	CA	\$164	CA	\$165
3	WA	\$80	WA	\$86
4	NY	\$74	NY	\$81
5	IL	\$60	IL	\$63
6	MI	\$54	FL	\$54
7	FL	\$52	MI	\$53
8	OH	\$49	OH	\$51
9	LA	\$49	LA	\$49
10	PA	\$37	PA	\$39

Source: Ohio Development Services Agency, Research Office, Ohio Exports Report 2017, Origin of Movement Series, February 2018



Ohio's Top 10 export markets
(2017)



Source: Ohio Development Services Agency, Research Office, Ohio Exports Report 2017, Origin of Movement Series, February 2018

FACT:
In 2017, Ohio exported \$50.1B in goods to 213 countries and territories. This is a \$1B or 1.6% increase over 2016.

FACT:
Nine countries received more than \$1 billion in Ohio exports in 2017.

OHIO MANUFACTURING AND THE *Global Economy*



Top export industries (2017)

FACT:

Ohio supplies the world with both durable and non-durable goods. These leading export industries account for 72% – or \$36.2B – of the state’s total exports of \$50.1B.

FACT:

Machinery continues to be Ohio’s leading export in 2017 (\$9.0 billion). Ohio was fourth among the 50 states in this category with 5% of the U.S. total.

Industries	Exported goods (\$ in billions) 2017	% of Ohio exports 2017	Ohio’s State Ranking 2017	Exported goods (\$ in billions) 2016	% of Ohio exports 2016	Exported goods (\$ in billions) 2015	% of Ohio exports 2015
Machinery (including computers)	\$9.0	18.0%	4	\$9.1	18.4%	\$9.1	18.0%
Vehicles & parts	\$7.6	15.2%	7	\$7.5	15.2%	\$8.0	15.8%
Aircraft, spacecraft & parts	\$4.8	9.6%	9	\$4.7	9.6%	\$5.0	9.8%
Electrical machinery	\$3.4	6.7%	11	\$3.2	6.5%	\$3.4	6.8%
Plastics & articles thereof	\$3.0	6.1%	3	\$2.9	5.8%	\$2.9	5.7%
Optic, photo; medical instruments	\$1.7	3.3%	15	\$1.7	3.5%	\$1.8	3.5%
Iron & steel products	\$1.4	2.7%	5	\$1.3	2.7%	\$1.4	2.8%
Perfumery, cosmetic, etc.	\$1.1	2.3%	5	\$1.0	2.1%	\$0.9	NA
Rubber & articles thereof	\$1.1	2.3%	3	\$1.2	2.4%	\$1.4	2.7%
Iron & steel	\$1.2	2.3%	5	\$1.1	2.2%	\$1.2	2.4%
Misc. chemical products	\$1.0	NA	8	\$0.8	NA	\$0.9	1.8%
Soap, waxes, etc.; dental preparations	\$0.9	NA	2	\$0.9	NA	\$0.9	NA

Source: Ohio Development Services Agency, Research Office, Ohio Exports Report 2017, Origin of Movement Series, February 2018



The North American Industry Classification System (NAICS) is the standard used by the Federal statistical agencies in classifying business establishments for the purpose of collecting, analyzing, and publishing statistical data related to the U.S. business economy.

FACT:

Ohio is first, second or third among states in **106 NAICS categories** of manufacturing.

FACT:

The leading Ohio industries in terms of dollars of product shipped include:

NAICS Category	Shipments (\$ MIL)
Petroleum refineries	\$24,824.4
Iron & steel mills and ferroalloy manufacturing	\$13,797.9
Plastics product manufacturing NEC	\$7,799.6
Aircraft engine and engine parts manufacturing	\$7,472.3
Soap and other detergent manufacturing	\$6,644.1

FACT:

Ohio ships more than 20% of all U.S. production in at least these five product categories:

NAICS Category	% of U.S. Shipments
Welding and Soldering Equipment Manufacturing	30.0%
Rubber Product Manufacturing for Mechanical Use	29.2%
Custom Roll Forming	26.2%
Nonferrous Forging	25.4%
Soap and Other Detergent Manufacturing	23.9%

FACT:

Ohio has a lot of manufacturing establishments in these categories:

NAICS Category	# of Establishments
Machine Shops	1,289
Commercial Printing	887
Plastics Product Manufacturing NEC	432
Precision Turned Product Manufacturing	293
Special Die and Tool, Die Set, Jig and Fixture Manufacturing	252

Source: *Manufacturing & Distribution USA: Industry Analyses, Statistics and Leading Companies*, edited by Joyce P. Simkin, 9th ed., vols. 1 & 2

NEC = Not elsewhere classified

**OHIO RANKS FIRST AMONG STATES IN:**

NAICS category	NAICS	Description
311 - Food Manufacturing	311412	Frozen Specialty Food Manufacturing
322 - Paper Manufacturing	322230	Stationery Product Manufacturing
325 - Chemical Manufacturing	325130	Synthetic Dye and Pigment Manufacturing
	325199	Basic Organic Chemical Manufacturing NEC
	325314	Fertilizer (Mixing Only) Manufacturing
	325510	Paint and Coating Manufacturing
	325520	Adhesive Manufacturing
	325611	Soap and Other Detergent Manufacturing
326 - Plastics & Rubber Products Manufacturing	326130	Laminated Plastics Plate, Sheet, and Shape Manufacturing
	326160	Plastics Bottle Manufacturing
	326199	Plastics Product Manufacturing nec
	326212	Tire Retreading
	326220	Rubber and Plastics Hoses and Belting Manufacturing
	326291	Rubber Product Manufacturing for Mechanical USE
	326299	Rubber Product Manufacturing nec
327 - Nonmetallic Mineral Product Manufacturing	327110	Pottery, Ceramics, and Plumbing Fixture Manufacturing
	327120	Clay Building Material and Refractories Manufacturing
	327993	Mineral Wool Manufacturing
331 - Primary Metal Manufacturing	331210	Iron and Steel Pipe and Tube Manufacturing
	331221	Rolled Steel Shape Manufacturing
	331313	Alumina Refining and Primary Aluminum Production
	331512	Steel Investment Foundries
	331523	Nonferrous Metal Die-Casting Foundries
	331529	Nonferrous Metal Foundries (Except Die-Casting) nec
332 - Fabricated Metal Product Manufacturing	332112	Nonferrous Forging
	332114	Custom Roll Forming
	332216	Saw Blade and Handtool Manufacturing
	332321	Metal Window and Door Manufacturing
	332439	Metal Container Manufacturing nec
	332510	Hardware Manufacturing
	332812	Metal Coating, Engraving (Except Jewelry and Silverware) and Allied Services to Manufacturers
	332912	Fluid Power Valve and Hose Fitting Manufacturing
333 - Machinery Manufacturing	333241	Food Product Machinery Manufacturing
	333992	Welding and Soldering Equipment Manufacturing
	333994	Industrial Process Furnace and Oven Manufacturing
335 - Electrical Equipment, Appliance, and Component Manufacturing	335224	Household Laundry Equipment Manufacturing
	335991	Carbon and Graphite Product Manufacturing
	335999	Electrical Equipment and Component Manufacturing nec
336 - Transportation Equipment Manufacturing	336120	Heavy Duty Truck Manufacturing
	336320	Motor Vehicle Electrical and Electronic Equipment Manufacturing
	336340	Motor Vehicle Brake System Manufacturing
	336412	Aircraft Engine and Engine Parts Manufacturing
339 - Miscellaneous Manufacturing	339994	Broom, Brush, and Mop Manufacturing



	# Ohio Establishments	Shipments (\$ mil)	% of U.S. shipments	Total Ohio employment	% of U.S. employment	Wages (\$/hour)
	19	\$2,567.5	14.3	7,196	12.9	\$16.56
	34	\$834.2	12.1	1,872	8.8	\$18.21
	23	\$1,358.2	15	1,669	18.2	\$34.40
	56	\$3,093.1	3.5	2,919	4.3	\$31.09
	22	\$921.9	18	837	11.5	\$26.07
	75	\$3,139.1	12.9	4,574	13.5	\$25.66
	46	\$1,710.3	14.6	2,171	11.4	\$22.32
	34	\$6,644.1	23.9	2,910	12.5	\$27.33
	27	\$454.8	12.6	1,517	13.6	\$19.79
	28	\$1,469.7	11.9	3,368	10.2	\$20.50
	432	\$7,799.6	9.6	30,559	9.3	\$16.49
	21	\$89.2	5.9	400	6.1	\$16.00
	19	\$745.7	14.7	1,454	8	\$24.36
	81	\$2,234.4	29.2	6,245	21.6	\$17.94
	73	\$1,193.5	11.2	3,563	11.8	\$17.77
	42	\$264.8	12.3	1,592	12.3	\$16.91
	70	\$742.0	14.5	2,964	14	\$20.75
	18	\$588.7	12.2	1,729	12.6	\$27.22
	20	\$2,110.8	14.4	3,625	13.9	\$28.88
	12	\$837.3	14.3	863	12.4	\$23.74
	6	\$819.6	12.6	1,391	15.9	\$27.03
	14	\$575.6	16.8	1,380	9.8	\$18.83
	36	\$1,018.7	13.2	3,206	10.6	\$20.29
	29	\$451.2	18.6	1,265	12.9	\$19.48
	5	\$766.3	25.4	1,416	20.1	\$23.82
	33	\$2,181.5	26.2	2,490	11.8	\$25.23
	67	\$926.9	15.2	3,011	10.7	\$19.67
	47	\$1,229.7	12.5	3,837	8.5	\$19.36
	28	\$256.9	7.3	912	7.9	\$17.77
	32	\$553.5	7.8	1,717	6.7	\$18.84
	154	\$2,358.4	18	3,608	7.2	\$20.75
	40	\$1,819.1	17.4	7,312	20.4	\$21.74
	26	\$617.5	13.7	1,595	10.2	\$22.39
	33	\$1,706.7	30	3,896	25.3	\$32.51
	38	\$481.4	17.7	1,682	15.2	\$20.54
	3	NA	NA	5000-9999	NA	NA
	14	\$91.1	2.6	419	4.7	\$20.30
	38	\$677.5	6.4	1,392	4.8	\$18.40
	9	NA	NA	3,352	11.1	\$35.80
	27	\$3,655.7	18.8	7,944	16	\$29.91
	21	\$1,673.4	15.6	2,364	10.1	\$18.70
	41	\$7,472.3	19.3	12,468	15.9	\$32.00
	20	\$199.1	7.5	1,067	11.8	\$16.33

OHIO MANUFACTURING COMPARED TO *U.S. Manufacturing*



OHIO RANKS SECOND AMONG STATES IN:

NAICS category	NAICS	Description
311 - Food Manufacturing	311941	Mayonnaise, Dressing and Other Prepared Sauce Manufacturing
322 - Paper Manufacturing	322219	Paperboard Container Manufacturing NEC
325 - Chemical Manufacturing	325120	Industrial Gas Manufacturing
	325194	Cyclic Crude, Intermediate, and Gum and Wood Chemical Manufacturing
	325998	Chemical Product and Preparation Manufacturing
326 - Plastics & Rubber Products Manufacturing	326112	Plastics Packaging Film and Sheet Manufacturing
331 - Primary Metal Manufacturing	331222	Steel Wire Drawing
	331513	Steel Foundries (Except Investment)
	331524	Aluminum Foundries (Except Die-Casting)
332 - Fabricated Metal Product Manufacturing	332111	Iron and Steel Forging
	332119	Metal Crown, Closure and Other Metal Stamping Manufacturing (Except Automotive)
	332215	Metal Kitchen Cookware, Utensil, Cutlery, and Flatware (Except Precious) Manufacturing
	332431	Metal Can Manufacturing
	332811	Metal Heat Treating
333 - Machinery Manufacturing	333249	Industrial Machinery Manufacturing nec
	333511	Industrial Mold Manufacturing
	333514	Special Die and Tool, Die Set, Jig, and Fixture Manufacturing
	333517	Machine Tool Manufacturing
	333519	Rolling Mill and Other Metalworking Machinery Manufacturing
	333612	Speed Changer, Industrial High-Speed Drive, and Gear Manufacturing
	333922	Conveyor and Conveying Equipment Manufacturing
	333924	Industrial Truck, Tractor, Trailer, and Stacker Machinery Manufacturing
	333993	Packaging Machinery Manufacturing
333996	Fluid Power Pump and Motor Manufacturing	
334 - Computer & Electronic Product Manufacturing	334514	Totalizing Fluid Meter and Counting Device Manufacturing
335 - Electrical Equipment, Appliance, and Component Manufacturing	335222	Household Refrigerator and Home Freezer Manufacturing
	335931	Current-Carrying Wiring Device Manufacturing
336 - Transportation Equipment Manufacturing	336360	Motor Vehicle Seating and Interior Trim Manufacturing
	336370	Motor Vehicle Metal Stamping
	336390	Motor Vehicle Parts Manufacturing nec
337 - Furniture & Related Product Manufacturing	337122	Nonupholstered Wood Household Furniture Manufacturing
	337127	Institutional Furniture Manufacturing
339 - Miscellaneous Manufacturing	339930	Doll, Toy, and Game Manufacturing

	# Ohio Establishments	Shipments (\$ mil)	% of U.S. shipments	Total Ohio employment	% of U.S. employment	Wages (\$/hour)
	12	\$678.4	6.8	1,174	8.1	\$18.98
	30	\$495.5	6.5	1,680	8	\$17.11
	23	\$189.2	2.5	415	4.2	\$29.45
	6	\$555.5	5.8	234	4.1	NA
	82	\$1,481.7	7	2,295	6.9	\$23.74
	28	\$742.3	5.9	1,613	5.4	\$19.83
	20	\$389.9	7	920	6.5	\$18.70
	16	\$432.1	9.6	1,507	8.5	\$20.08
	47	\$332.5	11.9	2,071	13.4	\$16.81
	26	\$1,208.9	12.8	3,199	14.5	\$19.79
	141	\$1,294.3	11.1	4,953	9.4	\$18.71
	11	\$189.7	5	565	7.6	\$17.05
	13	\$1,560.7	10.3	2,247	13	\$26.40
	98	\$775.3	12.4	2,357	10.9	\$18.03
	157	\$1,212.9	9.6	4,996	10.7	\$20.85
	177	\$730.7	11.9	3,634	10.2	\$22.06
	252	\$829.2	11.1	4,169	9.7	\$26.65
	64	\$1,103.7	14.6	4,513	18.5	\$22.57
	44	\$498.1	15	1,379	11.8	\$25.97
	25	\$235.8	4.8	728	4.6	\$24.54
	60	\$567.6	6.7	2,417	7.4	\$17.75
	19	\$1,072.4	9.6	3,667	16.5	\$22.31
	31	\$499.2	8.8	1,554	7.9	\$23.96
	15	\$439.5	11.3	1,389	13.6	\$29.04
	18	\$401.1	6	949	6.6	\$20.66
	3	NA	NA	250-499	NA	NA
	25	\$463.3	6.7	1,609	6.2	\$18.04
	33	\$2,726.7	13.2	7,176	14.1	\$17.26
	140	\$5,132.6	17.7	14,353	17.5	\$22.02
	106	\$5,292.3	9.2	10,316	8.5	\$19.39
	151	\$510.3	12.4	3,147	10	\$16.40
	23	\$441.7	9.3	1,700	6.5	\$18.46
	23	\$321.4	19.7	840	12.7	\$17.75

**OHIO RANKS THIRD AMONG STATES IN:**

NAICS category	NAICS	Description
312 - Beverage & Tobacco Product Manufacturing	312120	Breweries
322 - Paper Manufacturing	322220	Paper Bag and Coated and Treated Paper Manufacturing
324 - Petroleum and Coal Products Manufacturing	324122	Asphalt Shingle and Coating Materials Manufacturing
325 - Chemical Manufacturing	325211	Plastics Material and Resin Manufacturing
	325212	Synthetic Rubber Manufacturing NEC
	325992	Photographic Film, Paper, Plate, and Chemical Manufacturing
326 - Plastics & Rubber Products Manufacturing	326113	Unlaminated Plastics Film and Sheet (Except Packaging) Manufacturing
	326121	Unsupported Plastics Profile Shape Manufacturing
	326211	Tire Manufacturing (Except Retreading)
331 - Primary Metal Manufacturing	331110	Iron and Steel Mills and Ferroalloy Manufacturing
	331410	Nonferrous Metal (Except Aluminum) Smelting and Refining
332 - Fabricated Metal Product Manufacturing	332117	Powder Metallurgy Parts Manufacturing
	332710	Machine Shops
	332721	Precision Turned Product Manufacturing
333 - Machinery Manufacturing	333131	Mining Machinery and Equipment Manufacturing
	333318	Commercial and Service Industry Machinery Manufacturing nec
	333413	Industrial and Commercial Fan and Blower and Air Purification Equipment Manufacturing
	333414	Heating Equipment Manufacturing
	333515	Cutting Tool and Machine Tool Accessory Manufacturing
	333611	Turbine and Turbine Generator Set Unit Manufacturing
	333613	Mechanical Power Transmission Equipment Manufacturing
	333995	Fluid Power Cylinder and Actuator Manufacturing
333997	Scale and Balance Manufacturing	
334 - Computer & Electronic Product Manufacturing	334519	Measuring and Controlling Device Manufacturing
335 - Electrical Equipment, Appliance, and Component Manufacturing	335110	Electric Lamp Bulb and Parts Manufacturing
	335129	Lighting Equipment Manufacturing nec
336 - Transportation Equipment Manufacturing	336310	Motor Vehicle Gasoline Engine and Engine Parts Manufacturing
	336350	Motor Vehicle Transmission and Power Train Parts
	336413	Aircraft Parts and Auxiliary Equipment Manufacturing nec
337 - Furniture & Related Product Manufacturing	337212	Custom Architectural Woodwork and Millwork Manufacturing

	# Ohio Establishments	Shipments (\$ mil)	% of U.S. shipments	Total Ohio employment	% of U.S. employment	Wages (\$/hour)
	18	\$2,735.8	9.7	1,402	5.4	NA
	66	\$1,724.8	7.9	4,037	7.9	\$21.61
	19	\$1,017.7	9.4	804	8.8	\$27.33
	82	\$4,008.4	4.4	4,655	7	\$25.35
	12	\$393.6	4.2	308	4.3	\$23.38
	11	\$93.6	1.1	410	2.9	\$19.63
	42	\$1,095.7	6.3	2,204	6.1	\$22.61
	34	\$319.8	5.2	1,470	7.8	\$18.47
	8	\$1,128.9	5.6	2,976	6.9	\$24.47
	52	\$13,797.9	12.3	13,386	13.1	\$31.52
	11	\$476.9	3.1	848	7.8	\$28.51
	4	\$26.7	1.3	228	2.8	\$14.83
	1,289	\$2,656.4	6.8	16,999	6.9	\$21.62
	293	\$1,641.3	9.1	9,688	9.3	\$20.46
	10	\$321.6	4.5	575	3.3	\$26.29
	76	\$1,210.6	6.7	3,515	6	\$17.94
	29	\$388.7	6.5	1,534	6.3	\$17.52
	21	\$314.6	6	825	4.3	\$13.70
	150	\$545.8	10.3	2,834	9.8	\$23.19
	7	\$708.2	4.4	1,653	4.7	\$23.43
	18	\$303.6	6.8	1,047	6.9	\$19.86
	29	\$448.4	7.1	1,682	7.1	\$22.26
	6	NA	NA	397	11.9	\$24.33
	47	\$1,473.6	12.4	3,505	9.6	\$25.40
	10	NA	NA	1000-2499	NA	NA
	16	\$357.6	9.1	923	7.3	\$20.54
	49	\$3,141.6	10.4	4,847	9.8	\$32.98
	30	\$4,643.7	13.4	9,046	15.2	\$31.49
	27	\$1,160.2	3.4	2,794	2.6	\$25.70
	93	\$357.7	6	1,964	5.3	\$19.34



Industry leads statewide reduction/recycling of Ohio-generated waste

Year	Tons Reduced/Recycled			Percentage of Total Reduced/Recycled		
	Residential/Commercial	Industrial	Total	Residential/Commercial	Industrial	Total
1990	2,260,000	2,186,000	4,446,000	19.4	38.2	25.6
1995	1,942,000	6,523,000	8,465,000	17.0	42.8	31.7
2000	2,712,535	12,199,869	14,912,404	20.0	65.6	46.3
2005	3,745,758	9,474,260	13,220,018	25.7	56.9	42.3
2010	3,500,240	8,985,171	12,485,411	27.4	51.4	41.3
2015	3,728,582	8,546,359	12,274,941	27.3	53.5	41.4
2016	3,808,046	9,158,229	12,966,275	28.4	56.7	43.9

Source: Ohio Environmental Protection Agency

Note: Ohio EPA attributes some year-to-year variations to changes in economic activity/output: “Ohio’s industrial reduction/recycling rates tend to rise and fall in correlation with Ohio’s economic output. Ohio EPA would expect industrial recycling to correspond to manufacturing activity. Thus, all else being equal, the greater manufacturing output, the more recycling and vice versa.”

FACT:

Industry leads the way in solid waste reduction and recycling. Reduction and recycling include source reduction activities, reuse, recycling, composting and incineration. Industry is an enormous consumer of recycled materials, such as metals, glass, paper and plastics; thus, manufacturers are strong advocates for improving recycling systems in Ohio and the U.S.

Each year, Ohio’s 52 local solid waste management districts survey businesses in their districts about the amounts and types of materials being recycled. This provides a statewide picture of recycling activities, trends and opportunities. While reporting is voluntary, measuring and reporting recycling efforts is valuable for all of Ohio’s audiences.

Ohio EPA offers grants, technical assistance and recognition to businesses who want to increase recycling or develop markets for recycled products.

Ohio EPA has an online platform whereby Ohio businesses can advertise and acquire scrap and by-product materials that might otherwise be destined for disposal in landfills. The **Ohio Materials Marketplace** is a free online platform allowing organizations to connect and find solutions to material reuse and recycling needs, thereby, facilitating the shift towards a circular, closed-loop economy.



Emissions data

¹The 2010 and more recent summarized point source emissions are calculated from information provided to Ohio EPA from Title V and Synthetic Minor permitted facilities. Those two files are posted on the Ohio EPA Emission Inventory System (EIS) website: <http://www.epa.state.oh.us/dapc/aqmp/eiu/eis.aspx>.

The 1980 emissions data are derived from a 1995 Ohio EPA publication, "Emission Trends Report for Stationary Air Contaminant Sources within the State of Ohio 1980-1990."

Percent reductions are calculated based on the formula: $((\text{Old value} - \text{new value}) / \text{Old value}) * 100$

It is difficult to compare the historical figures to the current figures due to changes in how the emissions data are reported.

PM emissions in 1980 accounted for filterable particulate matter only. PM emissions in 2010 and after accounted for filterable and condensable particulate matter. The PM reduction from the 1980 emissions would have been significantly larger if the condensable fraction was inventoried.

For 2015 and 2016, PM emissions = PE condensable + PE filterable.

Only Volatile Hydrocarbon Compounds (VOCs) were included in the 1980 inventory. Both VOCs and Organic Compounds (OC) were inventoried in 2010 and after. VOCs are a fraction of OCs. For illustration purposes, the 1980 report assumed VOC=OC emissions. The OC reduction from the 1980 emissions would have been significantly larger if the OC emissions were inventoried besides the VOC emissions.

The number of facilities included in EIS varies from 1980 to 2010 and beyond. In 1980, only large emission units were inventoried. In 2010 and after, emission units with greater than one ton for any of the criteria pollutants were inventoried.

	1980 (tons)	2010 (tons)	% reduction 1980:2010	2016 (tons)	% change 2010:2016
SO ₂	2,659,612	619,267	77%	144,199	-77%
NO _x	690,195	150,891	78%	103,638	-31%
Particulate Matter	174,250	66,303	62%	30,594	-54%
Organic Compounds	169,515	36,284	79%	36,479	1%
Carbon Monoxide	329,700	243,864	26%	168,086	-31%

	1982 (PPB)	2012 (PPB)	% reduction 1982:2012	2017 (PPB)	% reduction 2012:2017
Highest average eight-hour ozone concentration in Ohio	115	89	22.6%	84	5.6%
	1983 (PPB)	2012 (PPB)	% reduction 1983:2012	2017 (BBP)	% reduction 2012:2017
Highest annual average Sulphur dioxide (SO ₂) concentration in Ohio	24.07	5.25	78.2%	1.87	64.4%
	2000 μ/m ³	2012 μ/m ³	% reduction 2000: 2012	2017 μ/m ³	% reduction 2012:2017
Highest annual average Particulate Matter (2.5 μ or smaller) concentration in Ohio	19.7	12.6	36%	11.2	11.1%

Source: Ohio Environmental Protection Agency

FACT:

Manufacturers have invested billions of dollars in environmental control technologies and more efficient processes, which has significantly reduced emissions.¹

OHIO MANUFACTURING AND THE *Environment*



Toxic releases to the environment (millions of pounds per year): multi-year trend for core chemicals at base years 1988 and 2001, all industries

Year	Total air emissions	Surface water discharges	Total underground injection	Total on-site releases to land	Total on- and off-site disposal or other releases
<i>1988 core chemicals</i>					
1988	104,341,351	1,043,905	11,538,544	29,291,941	189,527,160
1999	37,672,554	458,895	12,077,836	19,036,238	113,789,099
2012	15,482,908	289,042	5,616,093	9,926,725	54,487,155
2013	15,143,776	340,435	5,364,564	12,091,641	54,648,321
2014	14,914,256	180,686	5,321,927	9,562,936	51,599,527
2015	13,588,808	227,876	5,248,999	9,176,050	49,554,584
2016	15,427,726	141,097	5,404,594	7,412,245	47,915,855
% change 1988-2016	-85.21	-86.53	-53.16	-74.70	-74.72
% change 1999-2016	-59.05	-69.25	-55.25	-61.06	-57.89


<i>2001 core chemicals</i>					
2001	119,894,999	10,006,806	31,985,954	66,020,183	282,121,624
2012	48,171,332	7,561,780	14,737,033	21,896,232	121,279,847
2013	47,401,249	6,616,444	17,093,435	25,535,646	121,909,364
2014	46,362,469	6,898,981	16,188,049	21,665,375	114,847,455
2015	37,277,407	7,444,780	18,539,317	20,997,223	106,264,956
2016	32,618,308	6,983,870	17,598,832	18,280,008	96,439,504
% change 2001-2016	-72.79	-30.21	-44.98	-72.31	-65.82

Source: Ohio Environmental Protection Agency

Note: U.S. EPA requires an annual Toxic Release Inventory from facilities. Chemicals in the annual inventory are added or delisted in any year. Thus, base year core chemical amounts vary.

FACT:

Ohio manufacturers have made tremendous progress in reducing toxic releases to the environment.



**The mission of
The Ohio Manufacturers'
Association is to protect and
grow Ohio manufacturing**

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