

OHIO'S CREATIVE ECONOMY: THE ECONOMIC IMPACT OF THE ARTS AND CREATIVE INDUSTRIES 2018



CENTER FOR REGIONAL DEVELOPMENT
BOWLING GREEN STATE UNIVERSITY

SPRING 2018

EXECUTIVE SUMMARY

The creative industries are much more than a regional amenity; they have become significant economic engines. As technology and outsourcing continues to displace manufacturing workers, the technology, service, and creative sectors have emerged as drivers of regional economies. The educated, highly-skilled workforce propelling these emerging sectors has become an increasingly important factor in regional economic development strategies. Creativity, innovation and knowledge creation are now central to economic prosperity.

The creative industries in Ohio have experienced significant growth in the past few years. They now account for more than \$41 billion in economic activity and they support 289,000 jobs annually. Independent artists and performers enjoyed a 60 percent increase in output since 2015. Architecture, performing arts companies, media reproduction and museums all enjoyed significant increases in output.

Results in Brief:

- Creative industries contribute more than \$41.4 billion to Ohio's economy annually
- Creative industries support 289,321 jobs in Ohio's economy annually
- Creative industries generate \$1.57 billion in state and local tax revenue annually
- Creative industries generate \$3.05 billion in federal tax revenues annually
- 70% of the creative industries' impact was located in Ohio's six metropolitan areas (Cleveland, Columbus, Cincinnati, Toledo, Akron and Youngstown)

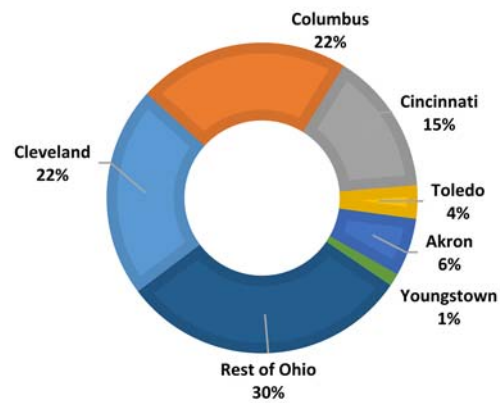
Six Categories of the Creative Industries

- Museums and Collections;
- Performing Arts;
- Visual Arts/Photography;
- Film, Radio, and Television;
- Design and Publishing;
- Schools and Services.

Much has been written as to which industries should be labeled "creative." To simplify the analysis and give the study a sense of continuity, the industries selected are those identified by the *Americans for the Arts*. The creative industries can be assembled into six categories. (See box) The six primary sectors are comprised of more than fifty subsectors of the local economy. Some of the sectors, such as museums and performing arts, are associated with the fine arts and others have more commercial applications such as graphic design and advertising.

Columbus and Cleveland have the largest concentration of creative activity. Each enjoy more than \$9.1 billion in annual economic impact from the creative industries. Cincinnati receives \$6.1 billion, Akron \$2.4 billion, Toledo \$1.4 billion and Youngstown \$0.5 billion.

Location of the Creative Activity



The economic impact of the creative industries is not just in urban areas. Rural counties make up nearly thirty percent of the creative economy with more than \$12 billion in annual economic activity.

This defies popular perception that creative activity is primarily an urban phenomenon. Many creative industries do require relatively high levels of population density to be economically viable. Museums and performing arts centers are examples of these industries. They are highly dependent on visitor attendance revenue to be successful. However, advances in technology has allowed rural regions to support once urban-centric industries. For example, recording studios can now be set up in homes of musicians and sound engineers and do not require access to large urban populations.

	Output	Employment	Labor Income
State of Ohio	\$41,413,670,041	289,321	\$13,874,981,076
Columbus (MSA)	\$9,141,516,710	60,011	\$3,026,626,377
Cleveland (MSA)	\$9,112,194,964	62,499	\$3,377,249,570
Cincinnati (MSA)	\$6,161,386,559	38,659	\$2,059,959,611
Akron (MSA)	\$2,495,806,409	17,608	\$768,331,202
Toledo (MSA)	\$1,440,087,245	12,065	\$466,756,532
Youngstown (MSA)	\$549,081,749	4,794	\$143,965,046

The creative economy’s influence extends beyond firms and individuals in the creative industries. The urban landscape and how the region is perceived by others across the nation is also impacted. This process drives the formation of new cultural districts and influences the retention and attraction of an educated, highly skilled workforce. A region’s creative “buzz” plays a large role in the decision making process of firms looking to expand or relocate.

Introduction

A city buzzing with creativity during the day that offers plenty of entertainment options at night attracts not only those who work in the creative economy, but an educated, highly-skilled labor pool working in a broad cross-section of industries who want to embrace a creative lifestyle when not on the clock.¹ The attraction of this growing workforce, plus retention of the existing one, drives a region's economy by creating new firms, fueling the expansion of existing firms, or attracting firms from outside the region.² The wealth of internationally-recognized art museums and performance venues, an unending string of critically acclaimed bands and music festivals, the plethora of designers, photographers, and filmmakers creating cutting-edge promotional work for national brands – these are just some of the things continuing to elevate the perception of Ohio as a hub of creativity, attracting both employees and firms.

Methodology

This section outlines the general methodology used to calculate the economic impact. A brief discussion of the models employed is followed by a description of the pertinent data used in the economic calculations. The primary data which includes industry employment levels and local demographic characteristics is taken from state and national data sources.

General Economic Forecasting Model Specification

This study employed an Input/Output model to make the primary economic forecasts. Input/Output methodology allows the examination of forward and backward linkages that are present in any regional economy. The model measures the total annual economic activity that results from inter- and intra-industry transactions. The model breaks the economy into approximately 500 separate sectors with each sector representing an individual industry. It then uses a sectoring scheme developed by the IMPLAN Group and is closely related to the Bureau of Economic Analysis (BEA) REIS model. The model is an approximate 500 by 500 (row x column) matrix that shows all the economic activity between the individual sectors. The entries in the matrix are based on the dollar amount that each industry sells to (and purchases from) other industries in the Ohio economy. It measures the amount of final consumption by the residents of the region, as well as how much each industry exports from the area. The model uses data collected at the county level, which are obtained from the IMPLAN Group and the BEA. County data is in turn aggregated or

¹ Currid, E. (2009). Bohemia as Subculture; “Bohemia” as Industry: Art, Culture, and Economic Development. *Journal of Planning Literature*, 23 (4), 368–382.

² Florida, R. (2002). 2002. *The Rise of the Creative Class: And How It's Transforming Work, Leisure, Community and Everyday Life*. New York, NY: Basic Books.

“rolled-up” to form service areas such as local areas, states or larger geographic regions such as the Midwest. Input/Output models estimate economic impacts by taking advantage of the relatively stable patterns in the flow of goods and services within the economy. Predictions can be made of an industry’s total economic impact by examining the purchasing patterns of the individual sectors. The BEA collects extensive data on these regional trade flows and reports their findings annually.

Primary Data

Once the primary (direct) impact is identified, it is necessary to estimate the ultimate impact on the economy. This study’s forecasting model utilizes variables from a variety of national data sets. To reduce potential confusion, a specific definition of the major variables may be of use. The primary data in this study is 2017 data that has been adjusted to 2018 price levels.

Industry Output

Industry output represents the value of the industry’s total production. Industry output can be thought of as the value of industry sales plus or minus inventory changes. It should be emphasized that industry output is not a measure of an industry’s income and therefore, cannot be directly compared to the Gross State Product (GSP) numbers reported by the BEA. The value of industry output is typically higher than GSP. It is a more comprehensive measure and therefore, is a better measure of true economic impacts. The IMPLAN model estimates the industry output data, which is derived from the U.S. Census Bureaus’ Economic Census, the Annual Survey of Manufacturers, and the Bureau of Labor Statistics growth model.

Employment

Employment is the total number of full-time wage and salary employees, plus the number of self-employed workers within a particular industry. Part-time workers’ hours are aggregated into full-time equivalents (2,080 hours) and reported with the full-time workers.

Industries Selected

The region's creative economy is comprised of everyone who works for creative firms and enterprises – e.g., advertising agencies, museums, music studios – whether or not they are directly engaged in the process of developing creative content or products, as well as those who perform creative work on a contractual basis for firms in other industries. For example, the region's creative economy includes a graphic designer employed full-time at the large advertising firm and a principal dancer for a ballet theater. Further, it also includes a videographer who is working freelance on the weekend, completing a corporate training video for Nationwide Insurance. Prior work by Americans for the Arts, a national research and advocacy group, the New England Foundation for the Arts, and data from the Bureau of Labor Statistics, the U.S. Census, and the Bureau of

Museums and Collections	Visual Arts/Photography
Museums	Stone, Clay, and Glass
Zoos and Botanical	Jewelry
Historical Society	Stained Glass
Planetarium	Textiles
	Home Furnishing Crafts
Performing Arts	Artist Studios
Music Groups	Art Galleries
Orchestras	Studios
Composing and Arranging	Commercial Photography
Recording/Playback Equipment	Photo Finishing Labs
Recorded Music Sales	Photography Equipment
Studios	Retail Stores
Concert Management	Services and Supplies
Instruments (mfg/distribution)	
Professional Companies	Film, Radio, and Television
Amateur Companies	Production
Dance Companies	Distribution
Opera Companies	Services
Costume/Scenery Rental	Equipment
Theatrical Productions	Theaters
Casting and Booking Agents	Video Tape Rentals
Ticket Agencies	Television Stations
Performing Arts Centers	Radio Stations
Dance Halls and Studios	Producers
Theatrical Equipment	Disk Jockeys
Entertainers	
Actors	Schools and Services
	Arts Councils
Design and Publishing	Art Schools
Architects	Arts and Crafts Instruction
Architecture Supplies	Dance Schools and Instruction
Commercial and Industrial	Music and Drama Schools
Interior	Agents and Brokers
House	Patents and Licensing
Art Periodicals	
Arts Publishing	
Books	
Book Clubs	
Advertising Agencies	
Display Products	

Economic Analysis were used to help model which industries are in Ohio's creative economy. To simplify the analysis and give the study a sense of continuity, the industries selected are those identified by the Americans for The Arts. (See Table 1 for Industry Detail)

This study uses the IMPLAN model to calculate the economic impacts. IMPLAN breaks the economy into 536 sectors each representing a group of industrial classifications. Most of the IMPLAN sectors contain a number of sub categories. All of the Americans for the Arts industries listed in Table 1 are contained in the IMPLAN sectors shown in Table 2.

Understanding Multipliers

Once the analytical framework is established and the scale and scope of the creative economy quantified in terms of workforce by industrial sector, it is possible to estimate its economic impacts on the region by using IMPLAN input-output economic modeling software.

IMPLAN is an industry standard tool used to calculate the direct,

indirect, and induced impacts of spending and employment. To better understand this process, a brief look at how impacts for a creative firm's operations are calculated is helpful. When an advertising agency spends money to pay employee salaries, buy supplies, and cover other operating expenses, it is creating the direct effect. When the businesses that supply the advertising agency with goods or services (e.g., accounting firm) pay their employees or purchase supplies, they create the indirect effect. When employees of the advertising agency and its supporting businesses spend their income, this causes the induced effect. When combined, the activity from the direct, indirect, and induced impacts is referred to as the "multiplier effect."

Radio and television broadcasting	Promoters of performing arts
Advertising and related services	Independent artists, writers, and performers
Specialized design services	Performing arts companies
Ornamental and architectural metal work manufacturing	Sound recording industries
Motion picture and video industries	Book publishers and newspapers
Museums	Custom architectural woodwork and millwork
Photographic services	Musical instrument manufacturing
Video tape and disc retail	Cable networks and program distribution
Sign manufacturing	Audio and video media reproduction

Creative Industries as an Economic Engine

The economic impact of Ohio's creative economy is substantial. In 2017 the creative enterprises and individuals generated \$41 billion of economic activity that supported 289,321 jobs. The activity also generated \$1.6 billion in state and local taxes and more than \$3 billion in Federal taxes. The creative industries generated \$13.9 billion in labor income.

Impact Type	Employment	Labor Income	Value Added	Output
Direct Effect	143,360	\$7,065,692,627	\$10,664,765,472	\$21,438,256,535
Indirect Effect	72,954	\$3,628,095,888	\$5,626,374,718	\$9,826,308,581
Induced Effect	73,006	\$3,181,192,561	\$5,834,429,213	\$10,149,104,925
Total Effect	289,321	\$13,874,981,076	\$22,125,569,403	\$41,413,670,041

The creative economy generated \$13.8 billion in labor income (employee wages and proprietor income). Total employment in the creative sector is 289,321 with 143,360 being directly employed in the creative

Description	State and Local	Federal
Employee Compensation	\$31,896,627	\$1,247,434,806
Proprietor Income	N/A ³	\$126,936,558
Tax on Production and Imports	\$1,143,743,846	\$154,514,470
Households	\$387,619,189	\$975,660,579
Corporations	\$14,387,746	\$547,940,275
Total:	\$1,577,647,408	\$3,052,486,688

sectors and 72,954 employed in the supply chain (indirect). An additional 73,006 jobs are created through the consumer spending of the direct and indirect employees.

The creative industries generate considerable tax revenues for federal and local governments. Employee compensation generates \$31 million in state and local tax

revenues and more than \$1.2 billion in Federal revenue annually. The largest portion of state and local revenues come from taxes on production and imports. Taxes on production includes sales and excise taxes, customs duties, property taxes, severance taxes, and special assessments. Also, households pay significantly more state and local taxes than corporations. Households generate \$388 million and corporations only \$14 million. This is likely due to the labor intensity of the creative industries.

While creative activity varies across regions, the advertising and public relations sector generated the most economic impact (see Table 5) in Ohio generating more than \$4.9 billion dollars across the state. Other prominent industries include internet publishing, book publishing and radio and television broadcasting. It is also interesting to see museums and historical sites generating a significant (\$541 million; 7,213 jobs) economic impact. This suggests that despite the impact of digital technologies for the consumption of the arts as *physical* products, there is increasing demand for the arts as *experiential* products.

Description	Direct (\$)	Indirect (\$)	Induced (\$)	Total (\$)
Advertising, public relations, and related services	\$4,414,180,532	\$498,022,885	\$44,806,158	\$4,957,009,575
Internet publishing and broadcasting and web services	\$2,619,387,387	\$317,523,197	\$28,244,572	\$2,965,155,156
Book publishers	\$1,892,837,021	\$26,111,294	\$19,931,094	\$1,938,879,409
Radio and television broadcasting	\$1,693,215,789	\$313,219,056	\$16,200,168	\$2,022,635,013
Specialized design services	\$1,559,057,923	\$109,629,911	\$10,178,475	\$1,678,866,309
Newspaper publishers	\$1,214,424,859	\$107,191,896	\$14,403,728	\$1,336,020,483
Promoters of performing arts and sports and agents	\$1,152,999,432	\$261,096,231	\$18,599,380	\$1,432,695,043

³ State and local proprietor income taxes are captured in the other categories.

Architectural, engineering, and related services	\$1,148,438,309	\$126,085,254	\$36,746,539	\$1,311,270,101
Motion picture and video industries	\$1,148,201,728	\$106,213,493	\$10,946,378	\$1,265,361,599
Independent artists, writers, and performers	\$931,033,780	\$332,966,759	\$10,619,848	\$1,274,620,387
Performing arts companies	\$766,852,094	\$6,494,004	\$14,013,759	\$787,359,858
Sign manufacturing	\$570,385,191	\$21,855,798	\$1,565,610	\$593,806,599
Museums, historical sites, zoos, and parks	\$532,470,014	\$0	\$9,464,045	\$541,934,059
Photographic services	\$485,148,400	\$43,570,659	\$8,500,807	\$537,219,866
Ornamental and architectural metal work manufacturing	\$371,550,296	\$1,001,315	\$409,610	\$372,961,220

In terms of total employment (see Table 6) independent artists, writers, and performers led the state in employment. This sector has 27,506 directly employed and a total of 37,656 in total jobs supported.

Description	Direct	Indirect	Induced	Total
Independent artists, writers, and performers	27,506	9,837	314	37,656
Advertising, public relations, and related services	21,570	2,434	219	24,223
Specialized design services	14,161	996	92	15,249
Newspaper publishers	8,787	776	104	9,666
Promoters of performing arts and sports and agents	8,733	1,978	141	10,851
Photographic services	8,230	739	144	9,113
Radio and television broadcasting	7,783	1,449	75	9,307
Architectural, engineering, and related serv...	7,232	794	231	8,257
Museums, historical sites, zoos, and parks	7,087	0	126	7,213
Motion picture and video industries	6,768	638	66	7,471
Performing arts companies	6,485	55	119	6,659
Internet publishing and broadcasting and web services	5,247	636	57	5,940
Sign manufacturing	5,119	196	14	5,329
Book publishers	2,936	41	31	3,008
Ornamental and architectural metal work manufacturing	1,754	5	2	1,760

One surprise is to see employment in newspaper publishers fourth on the list in Table 6 with 9,666 jobs. Employment in this sector has significantly decreased (-20%) in recent years yet it remains a strong driver in the Ohio economy.

Regional Impacts

The creative industries are distributed across the Ohio economy. Columbus and Cleveland have the largest concentration of creative activity. Each enjoy more than \$9.1 billion in annual economic impact from the creative industries. Cincinnati receives \$6.1 billion, Akron \$2.4 billion, Toledo \$1.4 billion and Youngstown \$0.5 billion.

The economic impact of the creative industries is not just in urban areas. Rural counties make up nearly thirty percent of the creative economy with more than \$12 billion in annual economic activity. This defies popular perception that creative activity is primarily an urban phenomenon. Many creative industries do require relatively high levels of population density to be economically viable. Museums and performing arts centers are examples of these industries. They are highly dependent on visitor attendance revenue to be successful. However, advances in technology has allowed rural regions to support once urban-centric industries. For example, recording studios can now be set up in homes of musicians and sound engineers and do not require access to large urban populations.

Location of the Creative Activity

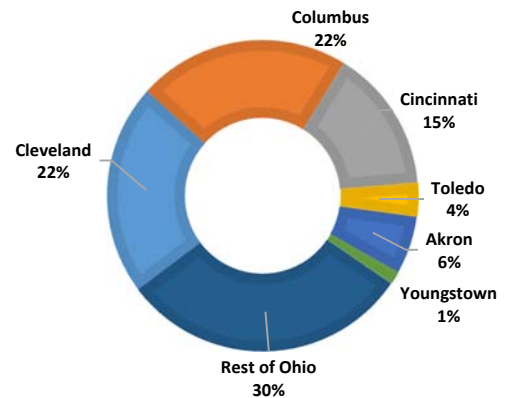


Table 7

Regional Economic Impacts			
	Output	Employment	Labor Income
State of Ohio	\$41,413,670,041	289,321	\$13,874,981,076
Columbus (MSA)	\$9,141,516,710	60,011	\$3,026,626,377
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Akron (MSA)	\$2,495,806,409	17,608	\$768,331,202
Toledo (MSA)	\$1,440,087,245	12,065	\$466,756,532
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The following sections will provide detail on the creative economics of six of the MSAs in Ohio. All have unique characteristics and a different industrial mix. While most have strengths in traditional creative drivers such as advertising and public relations, other excel in some of the smaller creative sectors. For example, Cincinnati has a high concentration of book publishers and specialized design services. Toledo is strong in Ornamental and architectural metal work manufacturing and Youngstown has musical instrument manufacturing in their top industries.

Columbus MSA⁴

The creative economy generates \$9.1 billion in the Columbus MSA. It supports 60,011 jobs and supplies more than \$3 billion in wages and proprietor income. Advertising and public relations lead the creative industries. The sector is responsible for \$1.1 billion dollars and supports 5,338 jobs in the Columbus MSA.

Columbus MSA	Employment	Labor Income	Value Added	Output
Impact Type				
Direct Effect	29,217	\$1,555,190,693	\$2,630,521,109	\$4,898,313,185
Indirect Effect	15,922	\$798,943,846	\$1,277,075,895	\$2,167,120,985
Induced Effect	14,872	\$672,491,838	\$1,239,525,452	\$2,076,082,540
Total Effect	60,011	\$3,026,626,377	\$5,147,122,456	\$9,141,516,710

	Direct	Indirect	Induced	Total
Advertising, public relations, and related services	\$1,017,133,894	\$124,026,225	\$10,826,363	\$1,151,986,481
Book publishers	\$725,459,584	\$10,960,451	\$4,836,499	\$741,256,534
Internet publishing and broadcasting and web services	\$565,078,955	\$74,288,483	\$6,342,785	\$645,710,224
Specialized design services	\$467,314,911	\$26,484,795	\$2,336,703	\$496,136,409
Radio and television broadcasting	\$304,973,561	\$60,196,292	\$3,154,143	\$368,323,995
Motion picture and video industries	\$286,256,185	\$34,354,282	\$3,193,056	\$323,803,523
Architectural, engineering, and related services	\$238,648,020	\$31,914,447	\$9,055,165	\$279,617,631
Newspaper publishers	\$223,626,283	\$21,299,598	\$2,857,524	\$247,783,404
Promoters of performing arts and sports and agents	\$163,289,814	\$41,832,901	\$3,203,941	\$208,326,656
Independent artists, writers, and performers	\$145,815,325	\$56,137,746	\$1,955,356	\$203,908,427
Periodical publishers	\$141,376,388	\$10,040,518	\$2,015,846	\$153,432,752
Museums, historical sites, zoos, and parks	\$115,667,514	\$0	\$1,977,266	\$117,644,780
Performing arts companies	\$108,217,659	\$1,067,809	\$2,328,299	\$111,613,767
Sign manufacturing	\$90,042,891	\$3,314,920	\$255,974	\$93,613,785
Photographic services	\$78,149,974	\$8,296,848	\$1,578,974	\$88,025,796

⁴ Columbus MSA includes the counties of Delaware, Fairfield, Franklin, Hocking, Licking, Madison, Morrow, Perry, Pickaway, and Union.

Table 10				
Top 15 Creative Industries in Columbus by Employment				
	Direct	Indirect	Induced	Total
Independent artists, writers, and performers	5,334	2,054	72	7,459
Advertising, public relations, and related s...	4,713	575	50	5,338
Specialized design services	3,559	202	18	3,779
Motion picture and video industries	1,622	195	18	1,835
Promoters of performing arts and sports and ...	1,595	409	31	2,035
Museums, historical sites, zoos, and parks	1,570	0	27	1,597
Architectural, engineering, and related serv...	1,469	196	56	1,722
Newspaper publishers	1,436	137	18	1,591
Radio and television broadcasting	1,359	268	14	1,641
Photographic services	1,277	136	26	1,438
Internet publishing and broadcasting and web...	1,137	149	13	1,299
Performing arts companies	1,003	10	22	1,034
Book publishers	996	15	7	1,018
Sign manufacturing	862	32	2	896
Periodical publishers	372	26	5	404

The mix of creative industries reflects the region’s service sector economic core. Publishing and design services are well represented as is architectural services, performing arts and museums. Manufacturing related sectors are not large drivers in the Columbus economy. Only sign manufacturing made the top fifteen list and it is a relatively small sector.

Cleveland MSA⁵

The creative economy generates \$9.1 billion in the Cleveland MSA. It supports 62,499 jobs and supplies more than \$3.3 billion in wages and proprietor income. Advertising and public relations lead the creative industries. The sector is responsible for \$1.0 billion dollars and supports 4,716 jobs in the Cleveland MSA.

Table 11

Cleveland MSA				
Impact Type	Employment	Labor Income	Value Added	Output
Direct Effect	31,248	\$1,783,900,463	\$2,499,393,462	\$4,740,521,449
Indirect Effect	15,473	\$863,498,804	\$1,331,638,787	\$2,178,821,381
Induced Effect	15,778	\$729,850,303	\$1,327,305,042	\$2,192,852,134
Total Effect	62,499	\$3,377,249,570	\$5,158,337,291	\$9,112,194,964

Table 12

Top 15 Creative Industries in Cleveland by Output

	Direct	Indirect	Induced	Total
Advertising, public relations, and related services	\$935,286,864	\$100,304,895	\$10,525,599	\$1,046,117,357
Promoters of performing arts and sports and agents	\$580,273,984	\$83,843,907	\$6,620,141	\$670,738,032
Periodical publishers	\$429,757,929	\$26,867,260	\$5,212,832	\$461,838,021
Radio and television broadcasting	\$388,803,517	\$77,878,405	\$4,224,089	\$470,906,012
Specialized design services	\$304,858,670	\$24,145,754	\$2,445,613	\$331,450,038
Independent artists, writers, and performers	\$274,655,969	\$94,498,993	\$2,849,424	\$372,004,386
Architectural, engineering, and related services	\$249,011,177	\$32,074,787	\$9,295,401	\$290,381,364
Internet publishing and broadcasting and web services	\$245,672,905	\$24,644,959	\$2,951,233	\$273,269,097
Performing arts companies	\$208,587,849	\$1,459,679	\$3,709,427	\$213,756,954
Book publishers	\$191,181,713	\$2,012,516	\$3,034,531	\$196,228,760
Motion picture and video industries	\$182,653,704	\$15,590,038	\$2,115,572	\$200,359,313
Newspaper publishers	\$179,973,988	\$15,053,871	\$2,568,973	\$197,596,832
Photographic services	\$118,000,382	\$9,289,160	\$2,064,672	\$129,354,214
Museums, historical sites, zoos, and parks	\$106,516,101	\$0	\$2,175,562	\$108,691,663
Sign manufacturing	\$99,167,736	\$3,042,468	\$286,995	\$102,497,200

⁵ Cleveland MSA includes the counties of Cuyahoga County, Geauga County, Lake County, Lorain County, and Medina County.

Top 15 Creative Industries in Cleveland by Employment				
	Direct	Indirect	Induced	Total
Independent artists, writers, and performers	6,795	2,338	70	9,203
Advertising, public relations, and related services	4,216	452	47	4,716
Promoters of performing arts and sports and agents	3,011	435	34	3,480
Specialized design services	2,931	232	24	3,187
Radio and television broadcasting	1,806	362	20	2,187
Architectural, engineering, and related serv...	1,502	193	56	1,752
Periodical publishers	1,461	91	18	1,570
Performing arts companies	1,432	10	25	1,467
Photographic services	1,365	107	24	1,496
Newspaper publishers	1,334	112	19	1,465
Museums, historical sites, zoos, and parks	1,277	0	26	1,303
Motion picture and video industries	1,149	98	13	1,260
Sign manufacturing	898	28	3	928
Internet publishing and broadcasting and web services	529	53	6	588
Book publishers	381	4	6	391

Cleveland is in a virtual tie with Columbus for creative economy output with both regions producing \$9.1 billion. However, Cleveland generates 62,499 jobs whereas Columbus generates 60,011. This higher employment level creates higher labor income. Cleveland's creative industries generates \$3.4 billion in wages and proprietor income. Independent artists, writers, and performers are the largest employment sector with 9,203 jobs supported. Promoters of performing arts and sports agents are a large industry in the Cleveland region. They generate \$670 million in economic impact and support 3,480 jobs.

Cincinnati MSA⁶

The creative economy generates \$6.1 billion in the Cincinnati MSA. It supports 38,659 jobs and supplies more than \$2 billion in wages and proprietor income. Advertising and public relations lead the creative industries. The sector is responsible for \$996 million dollars and supports 4,534 jobs in the Cincinnati MSA.

Cincinnati MSA				
Impact Type	Employment	Labor Income	Value Added	Output
Direct Effect	19,442	\$1,113,320,005	\$1,974,630,589	\$3,469,491,475
Indirect Effect	9,663	\$503,397,640	\$825,280,355	\$1,349,188,413
Induced Effect	9,553	\$443,241,966	\$824,500,810	\$1,342,706,672
Total Effect	38,659	\$2,059,959,611	\$3,624,411,755	\$6,161,386,559

Top 15 Creative Industries in Cincinnati by Output				
	Direct	Indirect	Induced	Total
Advertising, public relations, and related services	\$888,217,019	\$99,288,040	\$8,879,307	\$996,384,367
Book publishers	\$398,233,457	\$3,975,831	\$2,685,779	\$404,895,068
Radio and television broadcasting	\$297,340,932	\$59,315,283	\$2,990,492	\$359,646,707
Specialized design services	\$270,334,408	\$17,920,739	\$1,589,584	\$289,844,731
Motion picture and video industries	\$242,946,607	\$22,674,532	\$1,895,649	\$267,516,787
Newspaper publishers	\$231,197,165	\$13,652,384	\$1,835,239	\$246,684,788
Periodical publishers	\$202,587,601	\$10,802,678	\$2,262,790	\$215,653,069
Internet publishing and broadcasting and web services	\$157,042,323	\$11,449,730	\$1,263,060	\$169,755,112
Performing arts companies	\$139,444,695	\$1,025,371	\$2,388,964	\$142,859,030
Sign manufacturing	\$131,961,583	\$2,870,092	\$210,779	\$135,042,454
Promoters of performing arts and sports and agents	\$127,312,121	\$23,821,744	\$2,040,325	\$153,174,189
Museums, historical sites, zoos, and parks	\$99,571,019	\$0	\$1,387,726	\$100,958,746
Custom architectural woodwork and millwork	\$63,413,020	\$58,211	\$964	\$63,472,195
Ornamental and architectural metal work manufacturing	\$49,581,332	\$81,896	\$30,893	\$49,694,121
Photographic services	\$42,856,404	\$6,451,671	\$1,126,936	\$50,435,011

⁶ Cincinnati MSA includes the counties of Brown County, Ohio; Butler County, Ohio; Clermont County, Ohio; Clinton County, Ohio; Hamilton County, Ohio; Warren County, Ohio; Boone County, Kentucky; Bracken County, Kentucky; Campbell County, Kentucky; Gallatin County, Kentucky; Grant County, Kentucky; Kenton County, Kentucky; Mason County, Kentucky; Pendleton County, Kentucky; Dearborn County, Indiana; Franklin County, Indiana; Ohio County, Indiana.

Top 15 Creative Industries in Cincinnati by Employment				
	Direct	Indirect	Induced	Total
Advertising, public relations, and related services	4,042	452	40	4,534
Specialized design services	2,345	155	14	2,514
Independent artists, writers, and performers	1,758	1,446	43	3,248
Motion picture and video industries	1,424	133	11	1,568
Museums, historical sites, zoos, and parks	1,180	0	16	1,196
Promoters of performing arts and sports and agents	1,138	213	18	1,369
Radio and television broadcasting	1,049	209	11	1,269
Newspaper publishers	1,026	61	8	1,095
Performing arts companies	992	7	17	1,016
Sign manufacturing	975	21	2	998
Photographic services	717	108	19	844
Periodical publishers	683	36	8	727
Book publishers	678	7	5	689
Custom architectural woodwork and millwork	377	0	0	377
Internet publishing and broadcasting and web services	347	25	3	375

Independent artists, writers and performers have a strong employment influence in the MSA supporting 3,248 jobs annually. The participation in the industry must be fairly small operations as they did not make the top fifteen list in terms of output. The same is true for museums. They support 1,196 jobs annually but also failed to make the top fifteen in terms of output. The top output producers were advertising, book publishing and radio and television broadcasting. The region does excel in the architectural and building areas with strong custom architectural woodwork and ornamental and architectural metal work manufacturing.

Akron MSA⁷

The creative economy generates \$1.4 billion in the Akron MSA. It supports 17,608 jobs and supplies more than \$768 million in wages and proprietor income. Advertising and public relations lead the creative industries. The sector is responsible for \$339 million dollars and supports 1,766 jobs in the Akron MSA.

Akron MSA				
Impact Type	Employment	Labor Income	Value Added	Output
Direct Effect	9,502	\$423,158,529	\$721,703,094	\$1,467,505,987
Indirect Effect	4,454	\$190,348,805	\$299,969,896	\$543,090,491
Induced Effect	3,653	\$154,823,869	\$281,007,049	\$485,209,930
Total Effect	17,608	\$768,331,202	\$1,302,680,039	\$2,495,806,409

	Direct	Indirect	Induced	Total
Advertising, public relations, and related services	\$305,076,018	\$31,951,234	\$2,275,669	\$339,302,920
Periodical publishers	\$189,746,287	\$11,666,061	\$1,397,703	\$202,810,051
Internet publishing and broadcasting and web services	\$152,260,608	\$17,321,328	\$1,238,189	\$170,820,126
Book publishers	\$149,890,081	\$1,971,699	\$1,155,047	\$153,016,828
Architectural, engineering, and related services	\$79,061,184	\$9,409,923	\$2,046,767	\$90,517,875
Sign manufacturing	\$65,943,722	\$1,995,562	\$129,825	\$68,069,109
Newspaper publishers	\$65,930,354	\$5,418,587	\$638,256	\$71,987,197
Radio and television broadcasting	\$65,822,247	\$10,030,207	\$478,440	\$76,330,894
Independent artists, writers, and performers	\$63,884,138	\$21,421,098	\$581,976	\$85,887,212
Specialized design services	\$62,484,681	\$6,066,345	\$414,603	\$68,965,630
Motion picture and video industries	\$57,896,384	\$5,685,105	\$498,022	\$64,079,511
Performing arts companies	\$37,821,414	\$330,341	\$585,666	\$38,737,421
Museums, historical sites, zoos, and parks	\$31,476,281	\$0	\$484,474	\$31,960,755
Ornamental and architectural metal work manufacturing	\$28,937,748	\$25,159	\$5,190	\$28,968,097
Promoters of performing arts and sports and agents	\$17,584,038	\$3,907,358	\$251,226	\$21,742,621

⁷ Akron MSA includes the counties of Portage County, Summit County.

Table 19				
Top 15 Creative Industries in Akron Employment				
	Direct	Indirect	Induced	Total
Independent artists, writers, and performers	2,037	683	19	2,738
Advertising, public relations, and related services	1,588	166	12	1,766
Specialized design services	777	75	5	857
Periodical publishers	549	34	4	587
Newspaper publishers	547	45	5	598
Sign manufacturing	538	16	1	555
Architectural, engineering, and related services	499	59	13	571
Museums, historical sites, zoos, and parks	435	0	7	442
Performing arts companies	403	4	6	413
Motion picture and video industries	380	37	3	421
Radio and television broadcasting	320	49	2	371
Internet publishing and broadcasting and web services	316	36	3	355
Photographic services	298	30	5	333
Book publishers	181	2	1	185
Promoters of performing arts and sports and agents	174	39	2	215

Akron is a relatively small MSA but it still has a strong creative economy. Independent artists, writers, and performers is the largest employment block with 2,738 jobs. Publishing related industries are strong in Akron. Book publishing, internet publishing and periodical publishing have large output and employment impacts in Akron. Akron also has a significant manufacturing presence with large impacts in sign manufacturing and ornamental and architectural metal work manufacturing.

Toledo MSA⁸

The creative economy generates \$831 million in the Toledo MSA. It supports 12,065 jobs and supplies more than \$466 million in wages and proprietor income. Advertising and public relations lead the creative industries. The sector is responsible for \$183 million dollars and supports 944 jobs in the Toledo MSA.

Table 20

Toledo MSA				
Impact Type	Employment	Labor Income	Value Added	Output
Direct Effect	7,160	\$269,154,651	\$355,154,027	\$831,091,893
Indirect Effect	2,720	\$109,409,854	\$188,302,762	\$326,114,670
Induced Effect	2,185	\$88,192,027	\$164,761,922	\$282,880,682
Total Effect	12,065	\$466,756,532	\$708,218,711	\$1,440,087,245

Table 21

Top 15 Creative Industries in Toledo by Output

	Direct	Indirect	Induced	Total
Advertising, public relations, and related services	\$168,061,865	\$14,589,703	\$972,071	\$183,623,639
Radio and television broadcasting	\$83,383,707	\$13,593,902	\$458,051	\$97,435,660
Newspaper publishers	\$82,434,555	\$5,579,047	\$524,506	\$88,538,108
Museums, historical sites, zoos, and parks	\$79,210,422	\$0	\$346,107	\$79,556,529
Architectural, engineering, and related services	\$69,484,703	\$6,971,174	\$1,174,324	\$77,630,201
Motion picture and video industries	\$45,821,434	\$3,461,660	\$270,178	\$49,553,272
Ornamental and architectural metal work manufacturing	\$39,911,247	\$20,988	\$3,399	\$39,935,634
Specialized design services	\$38,660,629	\$2,585,865	\$163,753	\$41,410,247
Internet publishing and broadcasting and web...	\$35,609,577	\$2,747,880	\$228,331	\$38,585,788
Performing arts companies	\$35,285,152	\$234,368	\$383,617	\$35,903,136
Photographic services	\$30,464,747	\$1,722,447	\$265,583	\$32,452,777
Independent artists, writers, and performers	\$27,508,446	\$8,687,465	\$194,411	\$36,390,322
Promoters of performing arts and sports and agents	\$21,724,981	\$4,528,950	\$232,404	\$26,486,336
Sign manufacturing	\$18,411,074	\$430,923	\$27,957	\$18,869,953
Periodical publishers	\$15,956,274	\$770,054	\$127,337	\$16,853,665

⁸ Toledo MSA include the counties of Fulton, Lucas, and Wood.

	Direct	Indirect	Induced	Total
Museums, historical sites, zoos, and parks	1,168	0	5	1,173
Independent artists, writers, and performers	1,106	349	8	1,463
Advertising, public relations, and related services	864	75	5	944
Newspaper publishers	578	39	4	621
Photographic services	540	31	5	575
Architectural, engineering, and related services	448	45	8	500
Specialized design services	447	30	2	478
Radio and television broadcasting	435	71	2	508
Performing arts companies	354	2	4	360
Motion picture and video industries	313	24	2	339
Promoters of performing arts and sports and agents	230	48	2	280
Ornamental and architectural metal work manufacturing	192	0	0	192
Sign manufacturing	167	4	0	171
Internet publishing and broadcasting and web...	83	6	1	90
Periodical publishers	75	4	1	79

It is interesting to note that museums led the employment category employing 1,173 people. Independent artists, writers, and performers was also a leading employer in the Toledo economy. Toledo also has strong design, architectural and photographic service sectors. Toledo also has a significant manufacturing presence with the sign manufacturing and ornamental and architectural metal work sector. Finally, Toledo's motion picture and video industries is a significant driver. It directly employs 339 people and generates more than \$49.5 million in economic activity.

Youngstown MSA⁹

The creative economy generates \$341 million in the Youngstown MSA. It supports 4,794 jobs and supplies more than \$143 million in wages and proprietor income. Radio and television broadcasting leads the creative industries. The sector is responsible for \$8 million dollars and supports 376 jobs in the Youngstown MSA.

Table 23

Youngstown MSA	Employment	Labor Income	Value Added	Output
Impact Type				
Direct Effect	2,880	\$82,724,012	\$130,163,470	\$341,127,516
Indirect Effect	1,188	\$35,097,153	\$57,941,739	\$123,132,252
Induced Effect	726	\$26,143,881	\$48,108,167	\$84,821,981
Total Effect	4,794	\$143,965,046	\$236,213,376	\$549,081,749

Table 24

Top 15 Creative Industries in Youngstown by Output				
	Direct	Indirect	Induced	Total
Radio and television broadcasting	\$72,425,201	\$11,598,559	\$238,468	\$84,262,229
Advertising, public relations, and related services	\$36,845,007	\$5,076,975	\$254,810	\$42,176,793
Promoters of performing arts and sports and agents	\$29,019,579	\$5,881,461	\$191,642	\$35,092,682
Newspaper publishers	\$28,803,554	\$1,421,330	\$108,553	\$30,333,437
Motion picture and video industries	\$26,202,391	\$1,705,650	\$69,785	\$27,977,826
Sign manufacturing	\$24,430,739	\$329,626	\$15,788	\$24,776,153
Periodical publishers	\$19,515,209	\$556,924	\$64,493	\$20,136,626
Book publishers	\$15,260,337	\$41,241	\$35,803	\$15,337,381
Internet publishing and broadcasting and web services	\$10,230,978	\$788,957	\$51,227	\$11,071,162
Performing arts companies	\$9,736,393	\$50,138	\$57,939	\$9,844,470
Retail - musical instruments	\$9,669,118	\$30,745	\$292,815	\$9,992,678
Ornamental and architectural metal work manufacturing	\$7,750,971	\$1,807	\$400	\$7,753,178
Photographic services	\$6,861,505	\$424,895	\$82,801	\$7,369,201
Specialized design services	\$6,170,849	\$205,294	\$19,072	\$6,395,215
Musical instrument manufacturing	\$6,086,974	\$31,606	\$949	\$6,119,529

⁹ The Youngstown MSA includes Mahoning and Trumbull counties in Ohio and Mercer County in Pennsylvania.

Table 25				
Top 15 Creative Industries in Youngstown by Employment				
	Direct	Indirect	Induced	Total
Radio and television broadcasting	323	52	1	376
Promoters of performing arts and sports and agents	315	64	2	381
Newspaper publishers	301	15	1	317
Independent artists, writers, and performers	271	132	2	405
Advertising, public relations, and related services	242	33	2	277
Motion picture and video industries	197	13	1	210
Sign manufacturing	183	2	0	186
Retail - hobby, musical instruments	174	1	5	180
Photographic services	132	8	2	142
Other educational services	123	19	7	149
Performing arts companies	121	1	1	122
Specialized design services	94	3	0	97
Periodical publishers	89	3	0	92
Museums, historical sites, zoos, and parks	67	0	0	67
Ornamental and architectural metal work manufacturing	40	0	0	40

Youngstown has the smallest creative impact of the all the MSAs in this report. It does however have a unique niche not seen in the other MSAs. Youngstown has a strong musical instrument sector. It has a musical instrument manufacturing sector as well as a strong musical instrument retail sector. The mix of the other creative industries is about what we see in the larger MSAs. Advertising is significant as is promoters and performing arts companies.

Appendix

Economic Impact by Industry

**Industries Impacted by Ohio's Creative Economy
2018**

Sector	Description	Total (\$)	Employment
1	Oilseed farming	\$689,022	2
2	Grain farming	\$2,813,674	18
3	Vegetable and melon farming	\$2,096,320	16
4	Fruit farming	\$532,854	10
5	Tree nut farming	\$1,614	0
6	Greenhouse, nursery, and floriculture produc...	\$3,141,569	31
7	Tobacco farming	\$2,000	0
8	Cotton farming	\$0	0
9	Sugarcane and sugar beet farming	\$2,553	0
10	All other crop farming	\$1,858,365	72
11	Beef cattle ranching and farming, including ...	\$3,626,464	57
12	Dairy cattle and milk production	\$5,099,758	18
13	Poultry and egg production	\$7,228,548	18
14	Animal production, except cattle and poultry...	\$3,852,883	72
15	Forestry, forest products, and timber tract ...	\$22,195	0
16	Commercial logging	\$2,183,138	27
17	Commercial fishing	\$43,509	4
18	Commercial hunting and trapping	\$423,303	9
19	Support activities for agriculture and fores...	\$886,563	18
20	Extraction of natural gas and crude petroleu...	\$17,626,536	158
21	Extraction of natural gas liquids	\$9,893,785	13
22	Coal mining	\$1,448,275	2
23	Iron ore mining	\$51,463	0
24	Gold ore mining	\$0	0
25	Silver ore mining	\$0	0
26	Lead and zinc ore mining	\$0	0
27	Copper ore mining	\$0	0
28	Uranium-radium-vanadium ore mining	\$0	0
29	Other metal ore mining	\$0	0
30	Stone mining and quarrying	\$3,664,462	11
31	Sand and gravel mining	\$1,950,663	6
32	Other clay, ceramic, refractory minerals min...	\$41,788	0
33	Potash, soda, and borate mineral mining	\$0	0
34	Phosphate rock mining	\$0	0
35	Other chemical and fertilizer mineral mining	\$50,557	0
36	Other nonmetallic minerals	\$25,077	0
37	Drilling oil and gas wells	\$32,788	0
38	Support activities for oil and gas operation...	\$4,731,625	32
39	Metal mining services	\$29,641	0
40	Other nonmetallic minerals services	\$194,091	1
41	Electric power generation - Hydroelectric	\$41,149	0
42	Electric power generation - Fossil fuel	\$108,454,716	57
43	Electric power generation - Nuclear	\$24,702,099	21
44	Electric power generation - Solar	\$155,534	1
45	Electric power generation - Wind	\$1,598,807	0
46	Electric power generation - Geothermal	\$0	0
47	Electric power generation - Biomass	\$709,694	1
48	Electric power generation - All other	\$327,123	1
49	Electric power transmission and distribution	\$272,404,859	161
50	Natural gas distribution	\$45,455,778	54
51	Water, sewage and other systems	\$11,109,552	37
52	Construction of new health care structures	\$0	0
53	Construction of new manufacturing structures	\$0	0
54	Construction of new power and communication ...	\$0	0
55	Construction of new educational and vocation...	\$0	0

**Industries Impacted by Ohio's Creative Economy
2018**

Sector	Description	Total (\$)	Employment
56	Construction of new highways and streets	\$0	0
57	Construction of new commercial structures, i...	\$0	0
58	Construction of other new nonresidential str...	\$0	0
59	Construction of new single-family residentia...	\$0	0
60	Construction of new multifamily residential ...	\$0	0
61	Construction of other new residential struct...	\$0	0
62	Maintenance and repair construction of nonre...	\$159,876,359	1,026
63	Maintenance and repair construction of resid...	\$75,161,826	449
64	Maintenance and repair construction of highw...	\$0	0
65	Dog and cat food manufacturing	\$4,186,060	2
66	Other animal food manufacturing	\$6,783,816	5
67	Flour milling	\$2,697,250	2
68	Rice milling	\$0	0
69	Malt manufacturing	\$0	0
70	Wet corn milling	\$1,948,465	1
71	Soybean and other oilseed processing	\$1,614,790	0
72	Fats and oils refining and blending	\$612,384	0
73	Breakfast cereal manufacturing	\$1,320,788	1
74	Beet sugar manufacturing	\$255,837	0
75	Sugar cane mills and refining	\$84,826	0
76	Nonchocolate confectionery manufacturing	\$669,366	2
77	Chocolate and confectionery manufacturing fr...	\$80,659	0
78	Confectionery manufacturing from purchased c...	\$1,034,326	3
79	Frozen fruits, juices and vegetables manufac...	\$448,486	1
80	Frozen specialties manufacturing	\$10,200,150	26
81	Canned fruits and vegetables manufacturing	\$4,847,486	9
82	Canned specialties	\$3,398,202	4
83	Dehydrated food products manufacturing	\$0	0
84	Fluid milk manufacturing	\$14,628,246	17
85	Creamery butter manufacturing	\$239,875	0
86	Cheese manufacturing	\$3,400,577	3
87	Dry, condensed, and evaporated dairy product...	\$11,652,788	6
88	Ice cream and frozen dessert manufacturing	\$2,120,229	5
89	Animal, except poultry, slaughtering	\$5,093,318	7
90	Meat processed from carcasses	\$20,242,366	35
91	Rendering and meat byproduct processing	\$216,966	0
92	Poultry processing	\$10,670,943	34
93	Seafood product preparation and packaging	\$233,421	1
94	Bread and bakery product, except frozen, man...	\$10,593,017	81
95	Frozen cakes and other pastries manufacturin...	\$519,301	2
96	Cookie and cracker manufacturing	\$5,650,280	14
97	Dry pasta, mixes, and dough manufacturing	\$1,509,688	2
98	Tortilla manufacturing	\$80,236	0
99	Roasted nuts and peanut butter manufacturing	\$6,536,956	8
100	Other snack food manufacturing	\$10,720,958	14
101	Coffee and tea manufacturing	\$181,260	0
102	Flavoring syrup and concentrate manufacturin...	\$2,252,119	1
103	Mayonnaise, dressing, and sauce manufacturin...	\$1,382,202	2
104	Spice and extract manufacturing	\$1,038,979	2
105	All other food manufacturing	\$3,135,732	9
106	Bottled and canned soft drinks & water	\$36,313,758	43
107	Manufactured ice	\$531,215	4
108	Breweries	\$27,948,359	23
109	Wineries	\$1,370,163	5
110	Distilleries	\$151,842	0

**Industries Impacted by Ohio's Creative Economy
2018**

Sector	Description	Total (\$)	Employment
111	Tobacco product manufacturing	\$0	0
112	Fiber, yarn, and thread mills	\$9,705	0
113	Broadwoven fabric mills	\$54,524	0
114	Narrow fabric mills and schiffli machine emb...	\$23,781	0
115	Nonwoven fabric mills	\$145,320	0
116	Knit fabric mills	\$0	0
117	Textile and fabric finishing mills	\$191,296	1
118	Fabric coating mills	\$73,034	0
119	Carpet and rug mills	\$6,807	0
120	Curtain and linen mills	\$240,317	1
121	Textile bag and canvas mills	\$243,722	1
122	Rope, cordage, twine, tire cord and tire fab...	\$24,969	0
123	Other textile product mills	\$241,170	2
124	Hosiery and sock mills	\$0	0
125	Other apparel knitting mills	\$0	0
126	Cut and sew apparel contractors	\$42,847	1
127	Mens and boys cut and sew apparel manufactur...	\$283,287	2
128	Womens and girls cut and sew apparel manufac...	\$129,566	1
129	Other cut and sew apparel manufacturing	\$139,493	1
130	Apparel accessories and other apparel manufa...	\$37,167	0
131	Leather and hide tanning and finishing	\$6,524	0
132	Footwear manufacturing	\$1,695	0
133	Other leather and allied product manufacturi...	\$34,186	0
134	Sawmills	\$7,262,583	27
135	Wood preservation	\$1,001,285	2
136	Veneer and plywood manufacturing	\$2,567,266	9
137	Engineered wood member and truss manufacturi...	\$1,989,581	9
138	Reconstituted wood product manufacturing	\$759,014	2
139	Wood windows and door manufacturing	\$6,281,118	29
140	Cut stock, resawing lumber, and planing	\$1,840,096	7
141	Other millwork, including flooring	\$4,620,482	22
142	Wood container and pallet manufacturing	\$3,171,050	22
143	Manufactured home (mobile home) manufacturin...	\$1,156	0
144	Prefabricated wood building manufacturing	\$271,726	1
145	All other miscellaneous wood product manufac...	\$1,609,947	10
146	Pulp mills	\$39,690	0
147	Paper mills	\$11,869,721	15
148	Paperboard mills	\$3,488,589	4
149	Paperboard container manufacturing	\$27,730,138	60
150	Paper bag and coated and treated paper manuf...	\$9,935,154	20
151	Stationery product manufacturing	\$2,011,867	5
152	Sanitary paper product manufacturing	\$3,230,887	4
153	All other converted paper product manufactur...	\$545,280	2
154	Printing	\$276,339,672	1,612
155	Support activities for printing	\$12,187,105	91
156	Petroleum refineries	\$145,673,936	17
157	Asphalt paving mixture and block manufacturi...	\$2,736,978	2
158	Asphalt shingle and coating materials manufa...	\$3,501,846	2
159	Petroleum lubricating oil and grease manufac...	\$7,510,323	3
160	All other petroleum and coal products manufa...	\$3,125,274	1
161	Petrochemical manufacturing	\$371,013	0
162	Industrial gas manufacturing	\$8,034,822	8
163	Synthetic dye and pigment manufacturing	\$2,281,324	2
164	Other basic inorganic chemical manufacturing	\$2,059,096	2
165	Other basic organic chemical manufacturing	\$2,376,528	1

**Industries Impacted by Ohio's Creative Economy
2018**

Sector	Description	Total (\$)	Employment
166	Plastics material and resin manufacturing	\$3,985,558	2
167	Synthetic rubber manufacturing	\$614,794	1
168	Artificial and synthetic fibers and filament...	\$28,640	0
169	Nitrogenous fertilizer manufacturing	\$9,563,023	6
170	Phosphatic fertilizer manufacturing	\$770,230	0
171	Fertilizer mixing	\$1,976,160	3
172	Pesticide and other agricultural chemical ma...	\$176,090	0
173	Medicinal and botanical manufacturing	\$54,490	0
174	Pharmaceutical preparation manufacturing	\$37,058,205	24
175	In-vitro diagnostic substance manufacturing	\$284,887	1
176	Biological product (except diagnostic) manuf...	\$70,609	0
177	Paint and coating manufacturing	\$14,432,691	17
178	Adhesive manufacturing	\$2,164,898	3
179	Soap and other detergent manufacturing	\$17,819,894	12
180	Polish and other sanitation good manufacturi...	\$4,308,727	7
181	Surface active agent manufacturing	\$218,430	0
182	Toilet preparation manufacturing	\$6,998,310	8
183	Printing ink manufacturing	\$5,549,627	11
184	Explosives manufacturing	\$66,954	0
185	Custom compounding of purchased resins	\$2,743,346	4
186	Photographic film and chemical manufacturing	\$4,329,745	6
187	Other miscellaneous chemical product manufac...	\$7,260,322	10
188	Plastics packaging materials and unlaminated...	\$7,544,485	14
189	Unlaminated plastics profile shape manufactu...	\$3,624,008	10
190	Plastics pipe and pipe fitting manufacturing	\$2,542,652	5
191	Laminated plastics plate, sheet (except pack...	\$3,097,372	8
192	Polystyrene foam product manufacturing	\$1,747,535	4
193	Urethane and other foam product (except poly...	\$1,721,925	5
194	Plastics bottle manufacturing	\$2,791,955	6
195	Other plastics product manufacturing	\$18,149,457	68
196	Tire manufacturing	\$3,315,682	7
197	Rubber and plastics hoses and belting manufa...	\$713,320	2
198	Other rubber product manufacturing	\$3,693,758	11
199	Pottery, ceramics, and plumbing fixture manu...	\$324,228	2
200	Brick, tile, and other structural clay produ...	\$2,114,078	8
201	Flat glass manufacturing	\$160,012	0
202	Other pressed and blown glass and glassware ...	\$3,933,732	14
203	Glass container manufacturing	\$805,007	2
204	Glass product manufacturing made of purchase...	\$2,370,399	9
205	Cement manufacturing	\$869,501	2
206	Ready-mix concrete manufacturing	\$6,303,034	18
207	Concrete block and brick manufacturing	\$2,301,896	8
208	Concrete pipe manufacturing	\$61,971	0
209	Other concrete product manufacturing	\$2,507,554	11
210	Lime manufacturing	\$471,161	1
211	Gypsum product manufacturing	\$1,472,388	3
212	Abrasive product manufacturing	\$4,259,643	10
213	Cut stone and stone product manufacturing	\$1,356,249	10
214	Ground or treated mineral and earth manufact...	\$265,204	0
215	Mineral wool manufacturing	\$1,428,113	3
216	Miscellaneous nonmetallic mineral products m...	\$415,201	1
217	Iron and steel mills and ferroalloy manufact...	\$20,534,438	19
218	Iron, steel pipe and tube manufacturing from...	\$3,423,610	6
219	Rolled steel shape manufacturing	\$7,163,311	8
220	Steel wire drawing	\$228,191	1

**Industries Impacted by Ohio's Creative Economy
2018**

Sector	Description	Total (\$)	Employment
221	Alumina refining and primary aluminum produc...	\$241,522	0
222	Secondary smelting and alloying of aluminum	\$184,124	0
223	Aluminum sheet, plate, and foil manufacturin...	\$587,076	1
224	Other aluminum rolling, drawing and extrudin...	\$1,049,215	2
225	Nonferrous metal (exc aluminum) smelting and...	\$122,207	0
226	Copper rolling, drawing, extruding and alloy...	\$501,529	0
227	Nonferrous metal, except copper and aluminum...	\$499,286	1
228	Secondary processing of other nonferrous met...	\$345,446	0
229	Ferrous metal foundries	\$1,386,491	4
230	Nonferrous metal foundries	\$524,284	2
231	Iron and steel forging	\$705,901	2
232	Nonferrous forging	\$337,714	1
233	Custom roll forming	\$2,343,518	4
234	Crown and closure manufacturing and metal st...	\$1,795,067	8
235	Cutlery, utensil, pot, and pan manufacturing	\$234,924	0
236	Handtool manufacturing	\$458,050	2
237	Prefabricated metal buildings and components...	\$212,993	1
238	Fabricated structural metal manufacturing	\$2,440,757	7
239	Plate work manufacturing	\$532,726	2
240	Metal window and door manufacturing	\$2,004,920	8
241	Sheet metal work manufacturing	\$2,035,242	9
242	Ornamental and architectural metal work manu...	\$372,961,220	1,760
243	Power boiler and heat exchanger manufacturin...	\$101,102	0
244	Metal tank (heavy gauge) manufacturing	\$176,872	1
245	Metal cans manufacturing	\$2,625,425	3
246	Metal barrels, drums and pails manufacturing	\$325,833	1
247	Hardware manufacturing	\$1,129,675	3
248	Spring and wire product manufacturing	\$1,188,834	5
249	Machine shops	\$10,527,260	68
250	Turned product and screw, nut, and bolt manu...	\$3,785,334	15
251	Metal heat treating	\$1,999,839	6
252	Metal coating and nonprecious engraving	\$3,502,924	13
253	Electroplating, anodizing, and coloring meta...	\$2,170,526	15
254	Valve and fittings, other than plumbing, man...	\$2,754,152	8
255	Plumbing fixture fitting and trim manufactur...	\$1,641,097	3
256	Ball and roller bearing manufacturing	\$819,631	2
257	Small arms ammunition manufacturing	\$1,073,120	3
258	Ammunition, except for small arms, manufactu...	\$4,942	0
259	Small arms, ordnance, and accessories manufa...	\$44,297	0
260	Fabricated pipe and pipe fitting manufacturi...	\$1,025,355	4
261	Other fabricated metal manufacturing	\$3,103,177	14
262	Farm machinery and equipment manufacturing	\$264,915	0
263	Lawn and garden equipment manufacturing	\$548,071	1
264	Construction machinery manufacturing	\$241,684	0
265	Mining machinery and equipment manufacturing	\$27,443	0
266	Oil and gas field machinery and equipment ma...	\$26,734	0
267	Food product machinery manufacturing	\$85,802	0
268	Semiconductor machinery manufacturing	\$37,894	0
269	Sawmill, woodworking, and paper machinery	\$28,987	0
270	Printing machinery and equipment manufacturi...	\$878,211	4
271	All other industrial machinery manufacturing	\$203,511	1
272	Optical instrument and lens manufacturing	\$1,759	0
273	Photographic and photocopying equipment manu...	\$57,845	0
274	Other commercial service industry machinery ...	\$1,096,401	3
275	Air purification and ventilation equipment m...	\$343,677	1

**Industries Impacted by Ohio's Creative Economy
2018**

Sector	Description	Total (\$)	Employment
276	Heating equipment (except warm air furnaces)...	\$460,156	2
277	Air conditioning, refrigeration, and warm ai...	\$2,311,969	5
278	Industrial mold manufacturing	\$235,261	1
279	Special tool, die, jig, and fixture manufact...	\$140,586	1
280	Cutting tool and machine tool accessory manu...	\$397,162	2
281	Machine tool manufacturing	\$205,936	1
282	Rolling mill and other metalworking machiner...	\$48,513	0
283	Turbine and turbine generator set units manu...	\$13,475	0
284	Speed changer, industrial high-speed drive, ...	\$53,710	0
285	Mechanical power transmission equipment manu...	\$45,543	0
286	Other engine equipment manufacturing	\$200,227	0
287	Pump and pumping equipment manufacturing	\$258,939	1
288	Air and gas compressor manufacturing	\$137,649	0
289	Measuring and dispensing pump manufacturing	\$4,650	0
290	Elevator and moving stairway manufacturing	\$8,930	0
291	Conveyor and conveying equipment manufacturi...	\$162,923	1
292	Overhead cranes, hoists, and monorail system...	\$17,282	0
293	Industrial truck, trailer, and stacker manuf...	\$761,922	2
294	Power-driven handtool manufacturing	\$47,992	0
295	Welding and soldering equipment manufacturin...	\$256,427	1
296	Packaging machinery manufacturing	\$37,987	0
297	Industrial process furnace and oven manufact...	\$16,419	0
298	Fluid power cylinder and actuator manufactur...	\$123,171	0
299	Fluid power pump and motor manufacturing	\$36,103	0
300	Scales, balances, and miscellaneous general ...	\$90,355	0
301	Electronic computer manufacturing	\$816,525	1
302	Computer storage device manufacturing	\$25,157	0
303	Computer terminals and other computer periph...	\$1,731,640	3
304	Telephone apparatus manufacturing	\$136,322	0
305	Broadcast and wireless communications equipm...	\$213,981	1
306	Other communications equipment manufacturing	\$714,609	2
307	Audio and video equipment manufacturing	\$54,789	0
308	Bare printed circuit board manufacturing	\$58,518	0
309	Semiconductor and related device manufacturi...	\$3,992,534	8
310	Capacitor, resistor, coil, transformer, and ...	\$28,249	0
311	Electronic connector manufacturing	\$39,887	0
312	Printed circuit assembly (electronic assembl...	\$742,493	3
313	Other electronic component manufacturing	\$204,928	1
314	Electromedical and electrotherapeutic appara...	\$97,680	0
315	Search, detection, and navigation instrument...	\$10,439	0
316	Automatic environmental control manufacturin...	\$81,039	0
317	Industrial process variable instruments manu...	\$273,075	1
318	Totalizing fluid meter and counting device m...	\$34,203	0
319	Electricity and signal testing instruments m...	\$4,324	0
320	Analytical laboratory instrument manufacturi...	\$65,132	0
321	Irradiation apparatus manufacturing	\$7,364	0
322	Watch, clock, and other measuring and contro...	\$67,938	0
323	Blank magnetic and optical recording media m...	\$16,590	0
324	Software and other prerecorded and record re...	\$91,326,921	277
325	Electric lamp bulb and part manufacturing	\$826,094	2
326	Lighting fixture manufacturing	\$282,313	1
327	Small electrical appliance manufacturing	\$198,357	0
328	Household cooking appliance manufacturing	\$130,111	0
329	Household refrigerator and home freezer manu...	\$3,186,948	6
330	Household laundry equipment manufacturing	\$5,753,913	9

**Industries Impacted by Ohio's Creative Economy
2018**

Sector	Description	Total (\$)	Employment
331	Other major household appliance manufacturin...	\$879,493	2
332	Power, distribution, and specialty transform...	\$732,368	2
333	Motor and generator manufacturing	\$662,337	2
334	Switchgear and switchboard apparatus manufac...	\$650,922	2
335	Relay and industrial control manufacturing	\$864,237	2
336	Storage battery manufacturing	\$1,867,118	5
337	Primary battery manufacturing	\$267,730	1
338	Fiber optic cable manufacturing	\$850,369	2
339	Other communication and energy wire manufact...	\$322,043	1
340	Wiring device manufacturing	\$1,577,671	5
341	Carbon and graphite product manufacturing	\$575,576	1
342	All other miscellaneous electrical equipment...	\$95,621	0
343	Automobile manufacturing	\$22,754,612	15
344	Light truck and utility vehicle manufacturin...	\$20,618,945	10
345	Heavy duty truck manufacturing	\$124,528	0
346	Motor vehicle body manufacturing	\$157,752	1
347	Truck trailer manufacturing	\$16,615	0
348	Motor home manufacturing	\$920,165	2
349	Travel trailer and camper manufacturing	\$1,785,078	6
350	Motor vehicle gasoline engine and engine par...	\$2,145,355	3
351	Motor vehicle electrical and electronic equi...	\$4,539,160	11
352	Motor vehicle steering, suspension component...	\$3,088,339	6
353	Motor vehicle transmission and power train p...	\$2,293,063	4
354	Motor vehicle seating and interior trim manu...	\$609,774	1
355	Motor vehicle metal stamping	\$748,482	2
356	Other motor vehicle parts manufacturing	\$8,466,398	17
357	Aircraft manufacturing	\$5,395	0
358	Aircraft engine and engine parts manufacturi...	\$256,950	0
359	Other aircraft parts and auxiliary equipment...	\$275,277	1
360	Guided missile and space vehicle manufacturi...	\$0	0
361	Propulsion units and parts for space vehicle...	\$425	0
362	Railroad rolling stock manufacturing	\$57,001	0
363	Ship building and repairing	\$5,758	0
364	Boat building	\$296,625	1
365	Motorcycle, bicycle, and parts manufacturing	\$164,366	0
366	Military armored vehicle, tank, and tank com...	\$8,457	0
367	All other transportation equipment manufactu...	\$218,496	0
368	Wood kitchen cabinet and countertop manufact...	\$1,914,114	14
369	Upholstered household furniture manufacturin...	\$279,476	1
370	Nonupholstered wood household furniture manu...	\$1,116,119	9
371	Other household nonupholstered furniture man...	\$498,930	2
372	Institutional furniture manufacturing	\$81,324	0
373	Wood office furniture manufacturing	\$8,620	0
374	Custom architectural woodwork and millwork	\$167,350,913	1,061
375	Office furniture, except wood, manufacturing	\$8,750	0
376	Showcase, partition, shelving, and locker ma...	\$3,471,856	17
377	Mattress manufacturing	\$866,455	2
378	Blind and shade manufacturing	\$57,764	0
379	Surgical and medical instrument manufacturin...	\$606,541	1
380	Surgical appliance and supplies manufacturin...	\$1,684,220	5
381	Dental equipment and supplies manufacturing	\$206,298	1
382	Ophthalmic goods manufacturing	\$303,829	1
383	Dental laboratories	\$252,208	3
384	Jewelry and silverware manufacturing	\$211,695	1
385	Sporting and athletic goods manufacturing	\$938,038	4

**Industries Impacted by Ohio's Creative Economy
2018**

Sector	Description	Total (\$)	Employment
386	Doll, toy, and game manufacturing	\$992,797	4
387	Office supplies (except paper) manufacturing	\$456,978	2
388	Sign manufacturing	\$593,806,599	5,329
389	Gasket, packing, and sealing device manufact...	\$975,867	4
390	Musical instrument manufacturing	\$88,589,369	701
391	Fasteners, buttons, needles, and pins manufa...	\$76,193	0
392	Broom, brush, and mop manufacturing	\$1,494,776	6
393	Burial casket manufacturing	\$186,574	1
394	All other miscellaneous manufacturing	\$5,085,372	31
395	Wholesale trade	\$746,166,773	3,141
396	Retail - Motor vehicle and parts dealers	\$125,231,684	1,112
397	Retail - Furniture and home furnishings stor...	\$32,604,522	319
398	Retail - Electronics and appliance stores	\$20,684,988	333
399	Retail - Building material and garden equipm...	\$93,502,704	965
400	Retail - Food and beverage stores	\$136,742,054	2,128
401	Retail - Health and personal care stores	\$71,781,732	831
402	Retail - Gasoline stores	\$43,056,649	716
403	Retail - Clothing and clothing accessories s...	\$76,321,208	917
404	Retail - Sporting goods, hobby, musical inst...	\$28,758,100	539
405	Retail - General merchandise stores	\$167,909,121	2,405
406	Retail - Miscellaneous store retailers	\$42,591,882	1,123
407	Retail - Nonstore retailers	\$170,909,342	1,388
408	Air transportation	\$117,400,563	288
409	Rail transportation	\$20,228,933	51
410	Water transportation	\$4,766,073	6
411	Truck transportation	\$213,665,856	1,255
412	Transit and ground passenger transportation	\$59,859,115	941
413	Pipeline transportation	\$6,096,886	13
414	Scenic and sightseeing transportation and su...	\$156,532,979	939
415	Couriers and messengers	\$160,381,652	1,627
416	Warehousing and storage	\$115,009,833	1,140
417	Newspaper publishers	\$1,336,020,483	9,666
418	Periodical publishers	\$105,380,679	337
419	Book publishers	\$1,938,879,409	3,008
420	Directory, mailing list, and other publisher...	\$72,687,249	187
421	Greeting card publishing	\$1,734,817	6
422	Software publishers	\$39,791,743	132
423	Motion picture and video industries	\$1,265,361,599	7,471
424	Sound recording industries	\$157,702,955	666
425	Radio and television broadcasting	\$2,022,635,013	9,307
426	Cable and other subscription programming	\$204,420,617	227
427	Wired telecommunications carriers	\$339,997,137	748
428	Wireless telecommunications carriers (except...	\$165,995,842	86
429	Satellite, telecommunications resellers, and...	\$13,001,391	109
430	Data processing, hosting, and related servic...	\$108,822,740	399
431	News syndicates, libraries, archives and all...	\$40,330,818	47
432	Internet publishing and broadcasting and web...	\$2,965,155,156	5,940
433	Monetary authorities and depository credit i...	\$536,994,802	1,208
434	Nondepository credit intermediation and rela...	\$161,520,577	966
435	Securities and commodity contracts intermedi...	\$64,629,222	494
436	Other financial investment activities	\$195,915,015	1,316
437	Insurance carriers	\$579,059,077	1,233
438	Insurance agencies, brokerages, and related ...	\$287,283,467	1,579
439	Funds, trusts, and other financial vehicles	\$108,978,918	404
440	Real estate	\$1,502,571,685	6,724

**Industries Impacted by Ohio's Creative Economy
2018**

Sector	Description	Total (\$)	Employment
441	Owner-occupied dwellings	\$1,181,068,544	0
442	Automotive equipment rental and leasing	\$79,227,095	290
443	General and consumer goods rental except vid...	\$23,668,241	268
444	Video tape and disc rental	\$266,560,777	1,140
445	Commercial and industrial machinery and equi...	\$191,437,932	701
446	Lessors of nonfinancial intangible assets	\$132,655,948	98
447	Legal services	\$248,086,158	1,581
448	Accounting, tax preparation, bookkeeping, an...	\$219,813,410	2,191
449	Architectural, engineering, and related serv...	\$1,311,270,101	8,257
450	Specialized design services	\$1,678,866,309	15,249
451	Custom computer programming services	\$24,603,705	132
452	Computer systems design services	\$101,566,227	793
453	Other computer related services, including f...	\$115,749,184	707
454	Management consulting services	\$312,125,363	2,666
455	Environmental and other technical consulting...	\$47,496,233	579
456	Scientific research and development services	\$9,586,186	39
457	Advertising, public relations, and related s...	\$4,957,009,575	24,223
458	Photographic services	\$537,219,866	9,113
459	Veterinary services	\$27,358,455	269
460	Marketing research and all other miscellaneo...	\$131,582,171	1,810
461	Management of companies and enterprises	\$490,149,075	2,056
462	Office administrative services	\$158,626,485	1,807
463	Facilities support services	\$23,638,474	143
464	Employment services	\$557,093,790	8,120
465	Business support services	\$91,506,490	1,461
466	Travel arrangement and reservation services	\$30,601,743	172
467	Investigation and security services	\$49,991,696	1,029
468	Services to buildings	\$116,407,306	2,700
469	Landscape and horticultural services	\$71,675,062	1,172
470	Other support services	\$51,045,896	571
471	Waste management and remediation services	\$64,656,180	299
472	Elementary and secondary schools	\$43,795,767	886
473	Junior colleges, colleges, universities, and...	\$88,296,847	822
474	Other educational services	\$65,097,903	1,904
475	Offices of physicians	\$310,285,993	2,069
476	Offices of dentists	\$100,120,423	763
477	Offices of other health practitioners	\$84,384,592	992
478	Outpatient care centers	\$107,882,240	646
479	Medical and diagnostic laboratories	\$21,031,171	191
480	Home health care services	\$64,117,691	1,527
481	Other ambulatory health care services	\$26,277,978	288
482	Hospitals	\$610,096,988	4,179
483	Nursing and community care facilities	\$102,787,728	1,632
484	Residential mental retardation, mental healt...	\$25,043,912	606
485	Individual and family services	\$51,505,745	1,375
486	Community food, housing, and other relief se...	\$29,892,366	367
487	Child day care services	\$46,580,239	1,201
488	Performing arts companies	\$787,359,858	6,659
489	Commercial Sports Except Racing	\$315,990,867	2,425
490	Racing and Track Operation	\$1,224,869	40
491	Promoters of performing arts and sports and ...	\$1,432,695,043	10,851
492	Independent artists, writers, and performers	\$1,274,620,387	37,656
493	Museums, historical sites, zoos, and parks	\$541,934,059	7,213
494	Amusement parks and arcades	\$5,747,011	91
495	Gambling industries (except casino hotels)	\$56,367,102	328

**Industries Impacted by Ohio's Creative Economy
2018**

Sector	Description	Total (\$)	Employment
496	Other amusement and recreation industries	\$32,478,139	626
497	Fitness and recreational sports centers	\$22,127,618	575
498	Bowling centers	\$3,613,737	84
499	Hotels and motels, including casino hotels	\$10,076,434	103
500	Other accommodations	\$208,206	4
501	Full-service restaurants	\$252,486,070	5,605
502	Limited-service restaurants	\$369,023,368	4,939
503	All other food and drinking places	\$81,650,717	2,215
504	Automotive repair and maintenance, except ca...	\$140,859,195	1,499
505	Car washes	\$11,371,428	198
506	Electronic and precision equipment repair an...	\$30,323,621	214
507	Commercial and industrial machinery and equi...	\$63,455,873	441
508	Personal and household goods repair and main...	\$42,655,112	505
509	Personal care services	\$48,049,904	1,448
510	Death care services	\$10,380,646	105
511	Dry-cleaning and laundry services	\$16,816,339	250
512	Other personal services	\$64,496,141	1,910
513	Religious organizations	\$208,951,795	1,418
514	Grantmaking, giving, and social advocacy org...	\$38,704,073	239
515	Business and professional associations	\$51,065,219	253
516	Labor and civic organizations	\$49,288,983	677
517	Private households	\$7,209,069	583
518	Postal service	\$109,197,303	1,005
519	Federal electric utilities	\$0	0
520	Other federal government enterprises	\$425,420	8
521	State government passenger transit	\$0	0
522	State government electric utilities	\$0	0
523	Other state government enterprises	\$0	0
524	Local government passenger transit	\$18,107,187	411
525	Local government electric utilities	\$10,079,823	18
526	Other local government enterprises	\$115,668,098	395
527	* Not an industry (Used and secondhand goods...	\$0	0
528	* Not an industry (Scrap)	\$0	0
529	* Not an industry (Rest of world adjustment)	\$0	0
530	* Not an industry (Noncomparable foreign imp...	\$0	0
531	* Employment and payroll of state govt, non-...	\$0	0
532	* Employment and payroll of state govt, educ...	\$0	0
533	* Employment and payroll of local govt, non-...	\$0	0
534	* Employment and payroll of local govt, educ...	\$0	0
535	* Employment and payroll of federal govt, no...	\$0	0
536	* Employment and payroll of federal govt, mi...	\$0	0
	Total	\$41,413,670,041	289,321