

Raider Country Creative Industries Economic Impact Analysis



Findings

This study estimates direct, indirect, and induced output (sales), employment, and labor income impact of the *creative industries employment* on the Raider Country sixteen-county regional economy — Allen, Auglaize, Butler, Champaign, Clark, Clinton, Darke, Greene, Logan, Mercer, Miami, Montgomery, Preble, Shelby, Van Wert, and Warren Counties in Ohio. This study also estimates state and local tax revenues generated as a result of these impacts.

For this study, CUPA used EMSI to estimate complete employment for the 16-county region in 2013 and IMPLAN, a tool for economic impact assessment, to estimate the direct, indirect, and induced impacts of the estimated 10,331¹ employees on the regional economy. While the 2011 version of IMPLAN was used, the software adjusted the 2011 estimates to 2013.

Creative Industries employment on the sixteen-county regional economy is estimated to generate a total of \$2.4 billion in sales and 18 thousand jobs, which produce an estimated \$799 million in labor income, just over \$22 million in state and local income tax revenues and sales and other tax revenues, and \$66 million in indirect business tax² in 2013.

| | Direct Effect | Impact on Supporting Industries | Impact on Other Industries Due to Household Spending | Total Impact |
|-------------------------------------|-----------------|---------------------------------|--|-----------------|
| Employment | 10,331 | 3,589 | 4,191 | 18,111 |
| Labor Income | \$461,575,000 | \$174,264,200 | \$163,270,000 | \$799,109,200 |
| Value Added³ | \$684,090,300 | \$257,871,800 | \$292,472,700 | \$1,234,435,000 |
| Output (Sales)⁴ | \$1,531,049,000 | \$453,729,500 | \$483,585,200 | \$2,468,364,000 |
| State & Local Income Tax | | | | \$22,292,337 |
| Indirect Business Tax | | | | \$65,887,488 |

¹Economic Modeling (EMSI), complete employment, 2013.

² Indirect Business Taxes (IBTs) consist of tax and nontax liabilities that are chargeable to business expenses when calculating profit-type incomes and of certain other business liabilities to government agencies that are treated like taxes. IBT includes taxes on sales, property, and production, but it excludes employer contributions for social insurance and taxes on income. In more general terms, IBT can currently be considered the combination of excise, sales and property taxes, as well as, fees, fines, licenses and permits.

³ Value added is often referred to as Gross Regional Product (GRP).

⁴ Labor Income is a subset of Value Added and Value Added is a subset of Output.

Appendix A: Project Methodology

This study utilizes the IMpact analysis for PLANning (IMPLAN) economic modeling software and 2009 IMPLAN Social Accounting Matrices (SAMs) data sets for Allen, Auglaize, Butler, Champaign, Clark, Clinton, Darke, Greene, Logan, Mercer, Miami, Montgomery, Preble, Shelby, Van Wert, and Warren Counties in Ohio by the Minnesota IMPLAN Group Inc. (MIG), of Stillwater, Minnesota. The Social Accounting Matrices describe the structure and function of a specific economy, so that IMPLAN can create a highly localized model to investigate the consequences of projected economic transactions of a specific geographic region.⁵

The software can measure current economic impacts, as well as impacts that will occur in the future. The models help analysts understand how a local economy works and, in this case, what economic impact a project or action can have on the local economy. The software can also help predict the effect of economic growth and contraction.

IMPLAN makes certain assumptions about organizations within a region. These assumptions include:

- An organization will purchase its goods locally based on BEA averages, if the goods are available in a sector
 - The amount of locally purchased goods can be edited if the amount is known
- If a region has goods available, there will be enough goods to meet increased demand
- When a region is used, instead of a single area, results may differ due to:
 - Average pay within the area
 - Average output per employee
 - Trade flow differences between areas
- The model is a snapshot of organizational activities, it cannot predict trends
 - Events can take place in different years
 - Deflators are used to put the events occurring in future or past years in current dollars
- IMPLAN uses its own industry sector codes
 - Some sector codes have been added and combined for the 2009 data
- All employees will come from the region being analyzed

The IMPLAN software generates the model or multipliers that analysts use to report the total impact an industry, project, or one-time event may have on the local economy. All businesses

⁵ Minnesota IMPLAN Group, Inc.

and events have “direct,” “indirect,” and “induced” impacts on the local economy. IMPLAN modeling software uses Bureau of Economic Analysis (BEA) statistics to build multipliers by economic sector and to identify the *direct, indirect, and induced* impact economic actions have on the study area.

- **Direct effects** refer to the actual jobs and income created in the local economy from businesses that can come about by investments and any purchase of goods and services needed for the initial investment. The direct effect is measured by output, the value of production by industry; employment, the number of employees; labor income, the sum of employee compensation and proprietor income; and total value added, the payments made by a company to workers, interest, profits and indirect business taxes.
- **Indirect effects** are measured by output, which are the goods and services used in the operation of the company in the direct effect; employment, the number of employees needed to produce the goods or services being purchased by the company making the initial investment; labor income, the sum of employee compensation and proprietor income; and total value added, the payments made by a company to workers, interest, profits and indirect business taxes.
- **Induced effects** are changes or impacts generated in the local economy by the increased sales of goods and services in the local economy from spending by employees (households) due to the changes in direct and indirect production.

The total impact on the local economy by each industrial sector can be calculated through an economic model known as a “multiplier.” The multiplier expresses the number of additional jobs or amount of additional income created by each new job or each dollar earned. For example, every dollar spent on arts materials or services necessary in the regional economy will generate additional dollars in other sectors of the local economy. Another way of expressing these impacts is that every dollar the artist uses to purchase materials for a project from a local supplier generates income for the local proprietor. The local proprietor saves or invests some of the revenue and purchases additional goods or services from another local vendor with the remainder of the funds, which becomes income for a third establishment and this activity continues to ripple through the local economy.

Another way to look at multipliers is the impact economic activities have on the workforce. For example, if a performing arts center brings 100 new jobs to the local economy, which creates an additional 30 local jobs to support the center’s activities, the multiplier would be 1.3. For each new job generated in the local economy, an additional 0.3 jobs ($1 + 0.3 = 1.3$) would be created in existing industries in the local economy.

The industries studied in this report were derived from the *Creative Industries* and interpreted in the 2009 Bowling Green State University Center for Regional Development Study, *Ohio's Arts: A Foundation of Innovation, Creativity and Economic Strength*. The North American Industry Classification System (NAICS) code and the associated IMPLAN sectors are listed in the table below.

The Industries based on the *Ohio's Arts Study*⁶

| NAICS | Description | IMPLAN Industry |
|--------|---|-----------------|
| 325992 | Computer printer toner cartridges manufacturing | 141 |
| 327112 | Architectural sculptures, clay, manufacturing | 153 |
| 327212 | Ashtrays, glass, made in glass making plants | 157 |
| 332323 | Acoustical suspension systems, metal, manufacturing | 187 |
| 334612 | Cassette tapes, pre-recorded audio, mass reproducing | 257 |
| 337212 | Architectural woodwork and fixtures (i.e., custom designed interiors) manufacturing | 301 |
| 339911 | Bracelets, precious metal, manufacturing | 310 |
| 339913 | Diamond cutting and polishing | 310 |
| 339942 | Artist's paint manufacturing | 313 |
| 339950 | Billboards manufacturing | 314 |
| 339992 | Accordions and parts manufacturing | 316 |
| 423410 | Camera equipment and supplies, photographic, merchant wholesalers | 319 |
| 443130 | Camera shops, photographic | 322 |
| 451140 | Music stores (i.e., instrument) | 328 |
| 451220 | Music stores (e.g., cassette, compact disc, record, tape) | 328 |
| 453920 | Art auctions | 330 |
| 511110 | Newspaper branch offices | 341 |
| 511120 | Advertising periodical publishers (except exclusive Internet publishing) | 342 |
| 511130 | Almanac publishers (except exclusive Internet publishing) | 344 |
| 512110 | Animated cartoon production | 346 |
| 512120 | Animated cartoon distribution | 346 |
| 512131 | Cinemas | 346 |
| 512132 | Drive-in motion picture theaters | 346 |
| 512191 | Closed captioning services, taped material | 346 |
| 512199 | Booking agencies, motion picture | 346 |
| 512210 | Master recording leasing and licensing | 347 |
| 512220 | Integrated record companies (i.e., releasing, promoting, distributing) | 347 |
| 512230 | Music book (i.e., bound sheet music) publishers | 347 |

⁶ The methodology in the 2009 report excluded Architectural services and retail from the analysis. "Given the limitations in the available data, Architectural services and retail were not included in this study. There was no appropriate way of separating the subcategories and hence were eliminated from the study." *Ohio's Arts: A Foundation of Innovation, Creativity and Economic Strength*, 2009. Carroll, Michael C., Center for Regional Development, Bowling Green State University.

| NAICS | Description | IMPLAN Industry |
|--------------|--|------------------------|
| 512240 | Audio recording post-production services | 347 |
| 512290 | Audio recording of meetings or conferences | 347 |
| 515111 | Broadcasting networks, radio | 348 |
| 515112 | AM radio stations | 348 |
| 515120 | Broadcasting networks, television | 348 |
| 515210 | Cable broadcasting networks | 349 |
| 532230 | Cassette, prerecorded video, rental | 364 |
| 541410 | Decorating consulting services, interior | 370 |
| 541420 | Automobile industrial design services | 370 |
| 541430 | Art services, commercial | 370 |
| 541490 | Clothing design services | 370 |
| 541810 | Advertising agencies | 377 |
| 541830 | Media buying agencies | 377 |
| 541840 | Advertising media representatives (i.e., independent of media owners) | 377 |
| 541850 | Advertising services, indoor or outdoor display | 377 |
| 541860 | Advertising material preparation services for mailing or other direct distribution | 377 |
| 541870 | Advertising material (e.g., coupons, flyers, samples) direct distribution services | 377 |
| 541890 | Advertising specialty (e.g., keychain, magnet, pen) distribution services | 377 |
| 541921 | Passport photography services | 378 |
| 541922 | Commercial photography services | 378 |
| 611610 | Art (except commercial or graphic) instruction | 393 |
| 711110 | Broadway theaters | 402 |
| 711120 | Ballet companies | 402 |
| 711130 | Bands | 402 |
| 711190 | Carnival traveling shows | 402 |
| 711310 | Air show managers with facilities | 404 |
| 711320 | Agricultural fair managers without facilities | 404 |
| 711410 | Agents, artists' | 404 |
| 711510 | Actors, independent | 405 |
| 712110 | Art galleries (except retail) | 406 |
| 712120 | Archeological sites (i.e., public display) | 406 |
| 712130 | Animal exhibits, live | 406 |
| 812921 | Film developing and printing (except motion picture, one-hour) | 422 |
| 812922 | Film developing and printing, one hour | 422 |
| 813219 | Community chests | 424 |

Data Issues and Future Research Needs

For this impact study, Wright State University researchers endeavored to replicate a study performed by Michael C. Carroll, Ph.D., of Bowling Green State University for Northwest Ohio. The Northwest Ohio impact study used the following sectors which were translated into 63 North American Industry Classifications:

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

Some sectors are certainly not driven by the arts and culture industry, such as newspaper publishers. However, Wright State identified several other communities that included a broad set of industries (including newspaper publishers) in their studies of the impact of arts and culture—North Carolina, Colorado, and Alabama, for example.

Researchers have noted the difficulty of identifying the proper industries for analysis of the arts and culture industry (Markusen et al., 2008; Tepper, 2002). Americans for the Arts uses a more confined list of 43 industries in its National Arts Index Report (see Appendix A in that report for a listing of industries included). Future research of Ohio's arts and culture industry should consider including the industries specified by the Americans for the Arts, which would provide a more targeted analysis as well as a relative comparison to the National Arts Index benchmark report.