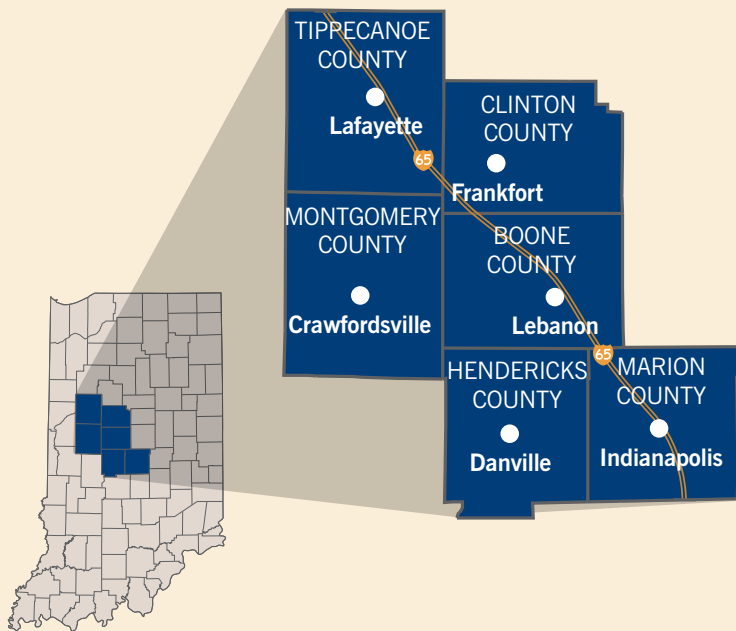


CLUSTER ANALYSIS OF KEY SECTORS

Boone County

AND SURROUNDING AREAS



SELECTION

Selection of the key sectors is based on their high volume of activity and employment as well as their competitiveness factor. Input-output tables provide the cluster analyses while the tool used to measure a sector's competitiveness is the Location Quotient.

LOCATION QUOTIENT (LQ)

$$LQ = \frac{(\text{Regional Industry Output} / \text{Regional Total Output})}{(\text{National Industry Output} / \text{National Total Output})}$$

CLUSTERS

Clusters are determined by purchasing and sales volume within the region surrounding each key sector.

DATA SOURCE

IMPLAN 2006. Input-output tables. www.implan.com

Foreword

The 2008 Boone County Strategic Economic Development Plan calls for identification of strong and emerging industry clusters to help guide development. The Boone County Economic Development Corporation engaged Ball State University through the Building Better Communities and the Center for Business and Economic Research to conduct an industry cluster analysis for Boone County and the six-county region that includes Boone, Marion, Tippecanoe, Hendricks, Montgomery and Clinton counties. Linda Williamson, a private consultant, began the first phase of the project with interviews of local elected officials and business leaders to explain cluster analysis and to record observations about economic development in Boone County. The comments and observations centered on 4 general questions as summarized here.

QUESTION 1: OPPORTUNITIES FOR NEW BUSINESS DEVELOPMENT

What do you see as the greatest opportunity for new business development in Boone County?

Respondents mentioned the assets of Boone County such as outstanding infrastructure that includes access to I-65 and the improved SR 32, US 421 and Ronald Reagan Parkway. Additionally, they view the proximity to Purdue University, IUPUI and Butler University as an asset as well as the public/private partnership with Duke Realty Corporation. Opportunities exist with farmland for agribusiness development. They encourage the focus on entrepreneurial assistance and incentives.

QUESTION 2: PREMIUM JOBS

The Boone County Strategic Economic Development Plan identifies premium jobs as a target – what do you think is meant by the term “premium jobs”?

Respondents specifically referred to higher wage jobs and those that require higher education as being “premium jobs” with a general view that they are jobs that support the lifestyles of Boone County residents so that they can live and work in the community.

QUESTION 3: CONCERNS ABOUT INDUSTRY AND THE ECONOMY

What, if any, concerns do you have about the current mix of business and industry in Boone County or about the local economy?

Respondents were specifically concerned about the low educational attainment within Boone County. They also believe that property tax is too dependent upon the residential sector and that the current focus on distribution and logistics needs to be broadened to other sectors. They recommend that agribusiness be incorporated into development discussions. Additionally, the lack of housing stock available for downsizing households and retirees was viewed as a problem. They would like to see contiguous growth in order to leverage investments in infrastructure.

QUESTION 4: POTENTIAL INCENTIVES AND PROGRAMS

Are you aware of any developments, incentives, programs, etc. in other areas that might be useful or appropriate for Boone County?

The respondents suggested specific initiatives for Boone County including: Common zoning standards and definitions, assistance to entrepreneurs, partnerships with Purdue University, Indiana University and Butler, local funding source for job training, special districts for development such as medical districts or biotech zones and a technology park design incorporating amenities such as recreation, walking/biking trails as well as commercial facilities. They also suggest development of initiatives to encourage grass roots support for business and industry and to enhance communication about economic development and opportunities in Boone County.

Introduction

This report illustrates the economic strengths and synergies that exist between the most viable sectors within the geographic region under study. The intent is to assist and perhaps guide profitable discussions of development initiatives. The graphics depict the strength of contributions of each county in the cluster, which, in turn, can point to development opportunities or current heavy saturation. This report can help you to do the following:

- Identify current key sectors (the core of the industry clusters) that produce the highest volume of activity and are competitive relative to national indicators.
- Identify all major members of the industrial clusters—both those upstream and downstream.
- Locate potential markets and suppliers within the sector by county.
- Become aware of industries repeatedly contributing to multiple clusters, which may help identify the industries mostly likely to benefit from enhancement.

Considerations

When promoting a cluster, there is always a structural risk, i.e. a cluster of industries that are facing a permanent decline due to the loss of its competitiveness or technological changes such as the automobile-related industries in the Midwest that can bring down the whole region. Furthermore, specialization in one industry may impede the development of other sectors in the region or even drive out firms, preventing the diversification of the regional economy. When public funds are allocated according to the importance of regional industries so that clusters receive a larger share, there is risk of becoming a greater problem if the cluster decline increases. Additionally, a region dominated by one or more clusters is exposed to an increased risk of cyclical variations in economic activities. It is therefore important to promote constant adaptation of the cluster, to keep it open to new entrants, and to avoid negative externalities transmitted by the cluster which block structural change.

Critical Questions

1. How can we gain new technology and encourage more technology transfer/sharing?
2. What are the social and cultural versus economic issues (which industries benefit the region economically but not socially)?
3. Is the geographic proximity more beneficial than the organizational proximity? (Technology transfers are easiest between same size and same industry regardless of location.)
4. Should policy interventions back only the winners; should regional government give subsidies to attract new companies for existing clusters?
5. What are the implications of targeted development policies; do these policies doom regions or rural areas that are not attractive to clusters?

How to Promote Industry Clusters

1. Establish the framework conditions (e.g. infrastructure development, general technology policies) necessary for a new cluster or to draw the key sector to the region.
2. Create a network of initiatives and business development for firms.
3. Help manage scarce resources among cluster and non-cluster industries (e.g. skilled labor).
4. Help create economic spillover from existing clusters to improve the competitiveness of the region (e.g. knowledge and technology sharing/transfer from large companies to small companies, or new entrants).
5. Focus the regional development policy on the most beneficial cluster segments, particularly those that deserve special attention to retain production in the face of overall cluster declines.
6. Focus on missing or underrepresented cluster segments that would value existing comparative advantage of the region.
7. Consider trade connections among all sectors of the regional trade cluster; attend to industries or suppliers that link clusters -- they may spur dramatic economic transformation in the future.
8. Design policies to allow a continually changing mix of industries distributed across segments of several trade clusters.

Note: This report is ordered by value of sales of key sectors.

The cluster that includes the key sector with the highest sales is listed first.

Pharmaceutical and Medicine Manufacturing

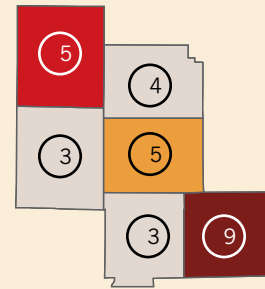
These maps show the cluster analysis of output sectors in Boone, Clinton, Hendricks, Marion, Montgomery, and Tippecanoe counties in Indiana, as measured in sales (\$M).

At right: The circled number within a county represents the number of times these sectors registered a value within that county.

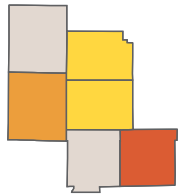
SALES (\$M)



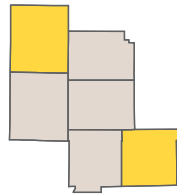
TOP PERFORMING KEY SECTOR IN SALES (\$M)



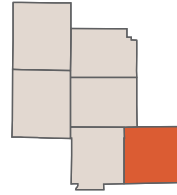
160 PHARMACEUTICAL AND MEDICINE MANUFACTURING



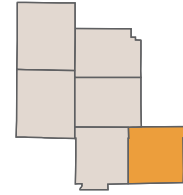
126 PAPERBOARD CONTAINER MANUFACTURING



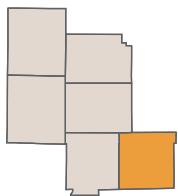
150 OTHER BASIC INORGANIC CHEMICAL MANUFACTURING



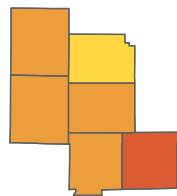
151 OTHER BASIC ORGANIC CHEMICAL MANUFACTURING



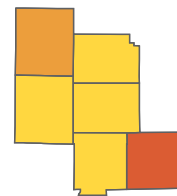
171 OTHER MISC. CHEMICAL PRODUCT MANUFACTURING



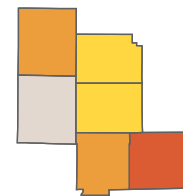
172 PLASTICS, PACKAGING MATERIALS, FILM AND SHEET



177 PLASTICS, PLUMBING FIXTURES AND ALL OTHER PLASTIC PRODUCTS



446 SCIENTIFIC RESEARCH AND DEVELOPMENT SERVICES



450 ALL OTHER MISC. PROFESSIONAL AND TECHNICAL SERVICES

Sample Companies

Largest company in the region: Lilly

Boone County companies: Interpack, Inc., CD Venture Inc., MEDCO

Motor Vehicle Related Manufacturing

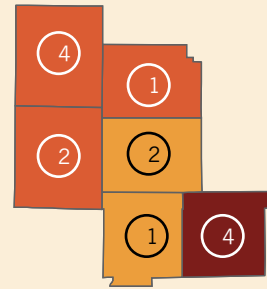
These maps show the cluster analysis of output sectors in Boone, Clinton, Hendricks, Marion, Montgomery, and Tippecanoe counties in Indiana, as measured in sales (\$M).

At right: The circled number within a county represents the number of times these sectors registered a value within that county.

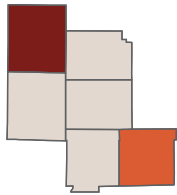
SALES (\$M)



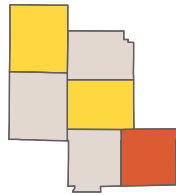
TOP PERFORMING KEY SECTOR IN SALES (\$M)



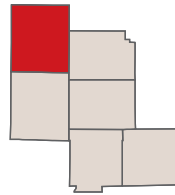
350 MOTOR VEHICLE PARTS MANUFACTURING



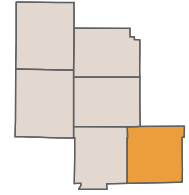
344 AUTOMOBILE AND LIGHT TRUCK MANUFACTURING



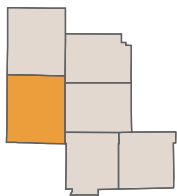
346 MOTOR VEHICLE BODY MANUFACTURING



347 TRUCK TRAILER MANUFACTURING



348 MOTOR HOME MANUFACTURING



349 TRAVEL TRAILER AND CAMPER MANUFACTURING

Sample Companies

Largest company in the region: SIA

Boone County companies: Boler Co., Models LLC, General Foam Plastics Corp., Power Train Services Inc., Hendrickson Suspension Systems

Engine Equipment Manufacturing

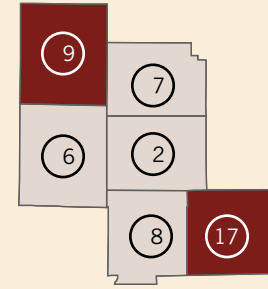
These maps show the cluster analysis of output sectors in Boone, Clinton, Hendricks, Marion, Montgomery, and Tippecanoe counties in Indiana, as measured in sales (\$M).

At right: The circled number within a county represents the number of times these sectors registered a value within that county.

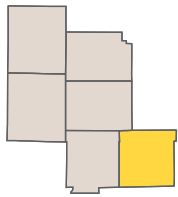
SALES (\$M)



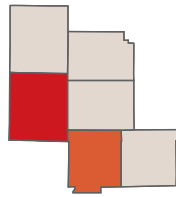
TOP PERFORMING KEY SECTOR IN SALES (\$M)



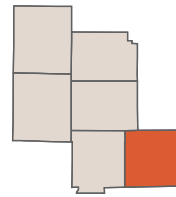
286 OTHER ENGINE EQUIPMENT MANUFACTURING



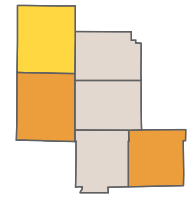
180 RUBBER AND PLASTICS HOSE AND BELT MANUFACTURING



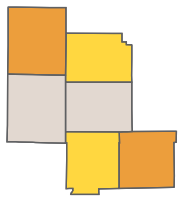
203 IRON AND STEEL MILLS



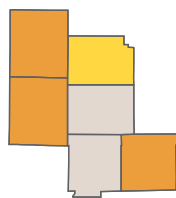
221 FERROUS METAL FOUNDRIES



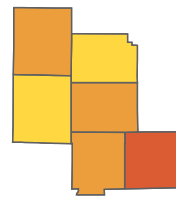
227 ALL OTHER FORGING AND STAMPING



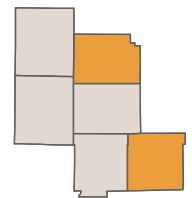
233 FABRICATED STRUCTURAL METAL MANUFACTURING



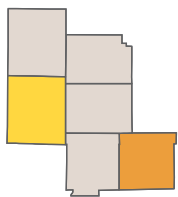
242 POWER BOILER AND HEAT EXCHANGER MANUFACTURING



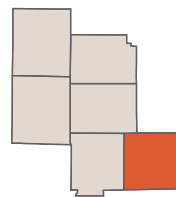
243 MACHINE SHOPS



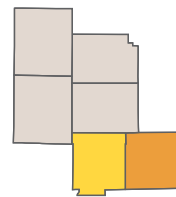
244 TURNED PRODUCT AND SCREW, NUT, AND BOLT MANUFACTURING



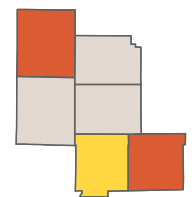
248 METAL VALVE MANUFACTURING



249 BALL AND ROLLER BEARING MANUFACTURING



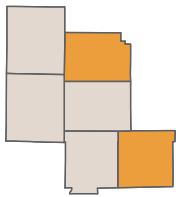
283 CUTTING TOOL AND MACHINE TOOL ACCESSORY MANUFACTURING



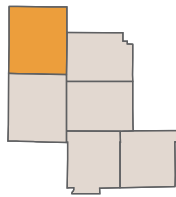
287 SPEED CHANGERS AND MECHANICAL POWER TRANSMISSION EQUIPMENT

Engine Equipment Manufacturing, Continued

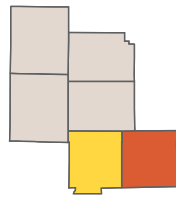
SALES (\$M)



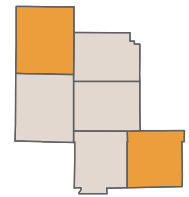
301 SCALES, BALANCES, AND MISC. GENERAL PURPOSE MACHINERY



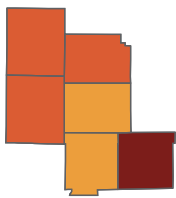
311 SEMICONDUCTORS AND RELATED DEVICE MANUFACTURING



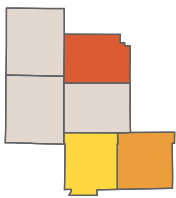
312 OTHER ELECTRONIC COMPONENT MANUFACTURING



334 MOTOR AND GENERATOR MANUFACTURING



350 MOTOR VEHICLE PARTS MANUFACTURING



385 GASKET, PACKING AND SEALING DEVICE MANUFACTURING

Sample Companies

Largest company in the region: Allison Transmission

Boone County companies: Williams Tool & Machine, P&H Engineering, Centerion Intl., K&M Tool & Die Inc., Kauffman Engineering, Models LLC, Midwest Metal Fabrication, Dart Controls Inc., Air System Components

Transportation and Warehousing

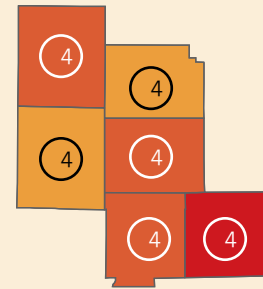
These maps show the cluster analysis of output sectors in Boone, Clinton, Hendricks, Marion, Montgomery, and Tippecanoe counties in Indiana, as measured in sales (\$M).

At right: The circled number within a county represents the number of times these sectors registered a value within that county.

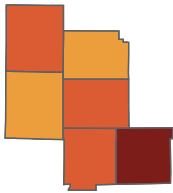
SALES (\$M)



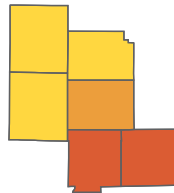
TOP PERFORMING KEY SECTOR IN SALES (\$M)



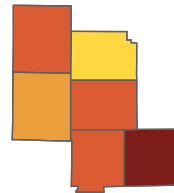
394 TRUCK TRANSPORTATION



390 WHOLESALE TRADE



400 WAREHOUSING AND STORAGE



431 REAL ESTATE

Sample Companies

Largest company in the region: Federal Express

Boone County companies: Duke, Gander Mountain, MEDCO

Aircraft Engine and Engine Parts Manufacturing

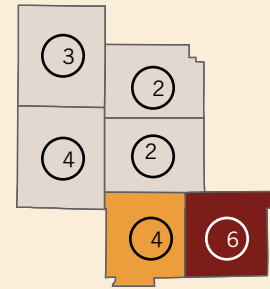
These maps show the cluster analysis of output sectors in Boone, Clinton, Hendricks, Marion, Montgomery, and Tippecanoe counties in Indiana, as measured in sales (\$M).

At right: The circled number within a county represents the number of times these sectors registered a value within that county.

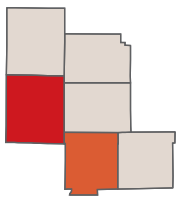
SALES (\$M)



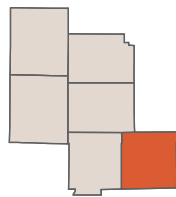
TOP PERFORMING KEY SECTOR IN SALES (\$M)



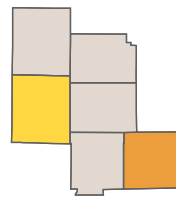
352 AIRCRAFT ENGINE AND ENGINE PARTS MANUFACTURING



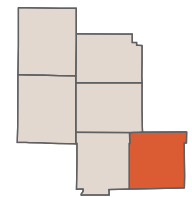
203 IRON AND STEEL MILLS



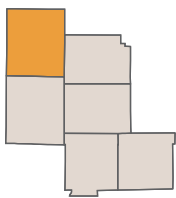
221 FERROUS METAL FOUNDRIES



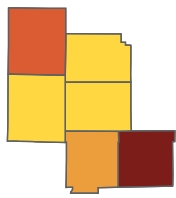
248 METAL VALVE MANUFACTURING



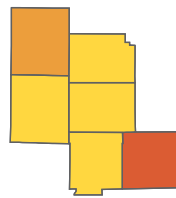
249 BALL AND ROLLER BEARING MANUFACTURING



311 SEMICONDUCTORS AND RELATED DEVICE MANUFACTURING



439 ARCHITECTURAL AND ENGINEERING SERVICES



446 SCIENTIFIC RESEARCH AND DEVELOPMENT SERVICES

Sample Companies

Largest company in the region: Rolls Royce

Boone County companies: IAT Manufacturing LLC, Bel-Mar Products Corp., Midwest Metal Fabrication

Electronic Computer Manufacturing

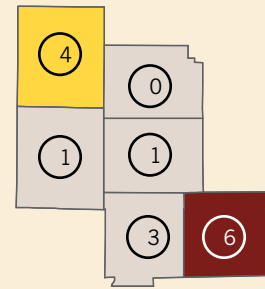
These maps show the cluster analysis of output sectors in Boone, Clinton, Hendricks, Marion, Montgomery, and Tippecanoe counties in Indiana, as measured in sales (\$M).

At right: The circled number within a county represents the number of times these sectors registered a value within that county.

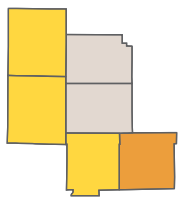
SALES (\$M)



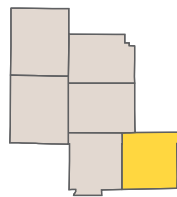
TOP PERFORMING KEY SECTOR IN SALES (\$M)



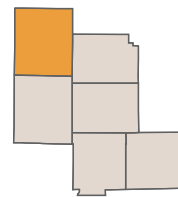
302 ELECTRONIC COMPUTER MANUFACTURING



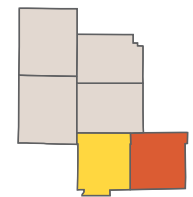
255 MISCELLANEOUS FABRICATED METAL PRODUCT MANUFACTURING



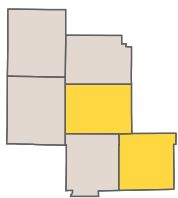
305 OTHER COMPUTER PERIPHERAL EQUIPMENT MANUFACTURING



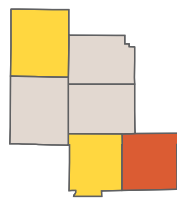
311 SEMICONDUCTORS AND RELATED DEVICE MANUFACTURING



312 OTHER ELECTRONIC COMPONENT MANUFACTURING



322 SOFTWARE REPRODUCING



417 SOFTWARE PUBLISHERS

Sample Companies

Largest company in the region: Landis & Gyr Inc.

Boone County companies: Intertech Resources Inc.

Agricultural Chemical Manufacturing

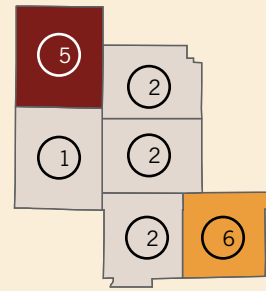
These maps show the cluster analysis of output sectors in Boone, Clinton, Hendricks, Marion, Montgomery, and Tippecanoe counties in Indiana, as measured in sales (\$M).

At right: The circled number within a county represents the number of times these sectors registered a value within that county.

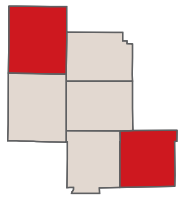
SALES (\$M)



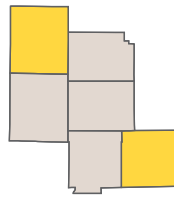
TOP PERFORMING KEY SECTOR IN SALES (\$M)



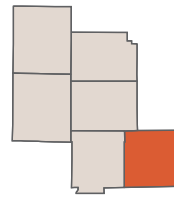
159 PESTICIDE AND OTHER AGRICULTURAL CHEMICAL MANUFACTURING



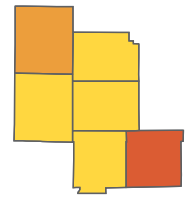
51 WET CORN MILLING



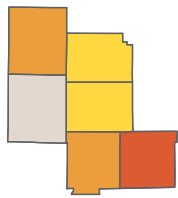
150 OTHER BASIC INORGANIC CHEMICAL MANUFACTURING



151 OTHER BASIC ORGANIC CHEMICAL MANUFACTURING



446 SCIENTIFIC RESEARCH AND DEVELOPMENT SERVICES



450 ALL OTHER MISC. PROFESSIONAL AND TECHNICAL SERVICES

Sample Companies

Largest company in the region: Dow Agrosiences LLC

Boone County companies: Monsanto, Crop Production Service Inc., Frontier Co-op Inc., AgReliant Genetics

Surgical and Medical Instrument Manufacturing

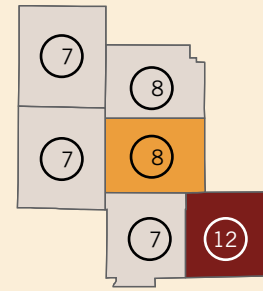
These maps show the cluster analysis of output sectors in Boone, Clinton, Hendricks, Marion, Montgomery, and Tippecanoe counties in Indiana, as measured in sales (\$M).

At right: The circled number within a county represents the number of times these sectors registered a value within that county.

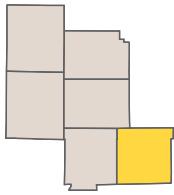
SALES (\$M)



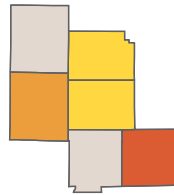
TOP PERFORMING KEY SECTOR IN SALES (\$M)



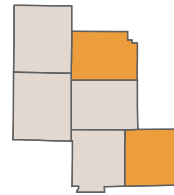
375 SURGICAL AND MEDICAL INSTRUMENT MANUFACTURING OUTPUT



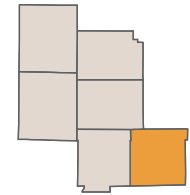
97 TEXTILE AND FINISHING MILLS



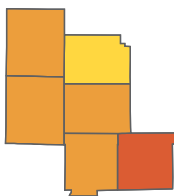
126 PAPERBOARD CONTAINER MANUFACTURING



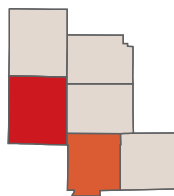
152 PLASTICS MATERIAL AND RESIN MANUFACTURING



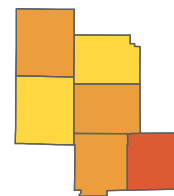
172 PLASTICS, PACKAGING MATERIALS, FILM AND SHEET



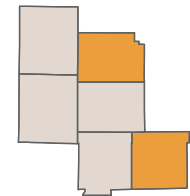
177 PLASTICS, PLUMBING FIXTURES, AND ALL OTHER PLASTIC PRODUCTS



203 IRON AND STEEL MILLS



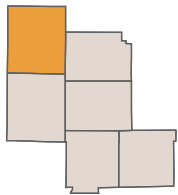
243 MACHINE SHOPS



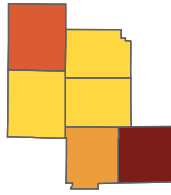
244 TURNED PRODUCT AND SCREW, NUT, AND BOLT MANUFACTURING

Surgical and Medical Instrument Manufacturing, Continued

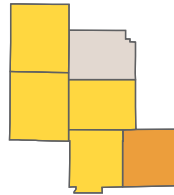
SALES (\$M)



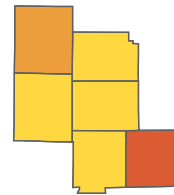
311 SEMICONDUCTORS AND RELATED DEVICE MANUFACTURING



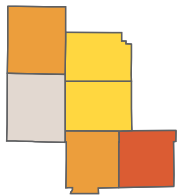
439 ARCHITECTURAL AND ENGINEERING SERVICES



440 SPECIALIZED DESIGN SERVICES



446 SCIENTIFIC RESEARCH AND DEVELOPMENT SERVICES



450 ALL OTHER MISC. PROFESSIONAL AND TECHNICAL SERVICES

Sample Companies

Largest company in the region: Roche Diagnostics

Boone County companies: UV Aetec Systems, ASI Limited, BLD & Associates, Somer Inc., Lebanon Corp.

BUILDING BETTER COMMUNITIES

Building Better Communities at Ball State University addresses local economic and community development challenges by developing customized solutions. To this end, Building Better Communities offers direct access to Ball State's range of resources that support economic and community development in Indiana. These resources include university faculty and staff, specialized training for businesses and organizations, and on-going organizational, professional, and personal development. Ball State offers Indiana's only accredited Basic Economic Development Course, a Community Development Course at its Indianapolis Center, and a series of workshops and educational programs around the state targeted to community leaders involved in economic and community development. Through Building Better Communities, Ball State also offers professional development programs such as Six Sigma, Society for Human Resource Management (SHRM) certification preparation, Certified Training Consultant Institute, and Project Management Professional certification preparation. Building Better Communities Fellows gathers teams of students led by Ball State faculty members to partner with communities, businesses, and government agencies in developing real-world solutions to real-world problems.

Additional resources through Building Better Communities include the Toolbox Guide to Development Funds –an online searchable database for funding sources, and specialized trainings and workshops for businesses, organizations, and individuals. Through Building Better Communities, Ball State also provides direct strategic planning, customized projects, and applied research to support economic and community development strategy execution.

OFFICE OF BUILDING BETTER COMMUNITIES

Ball State University
CA 109 | Muncie, IN 47306
Phone: 765-285-2773 | E-mail: bbc@bsu.edu
www.bsu.edu/bbc

CENTER FOR BUSINESS AND ECONOMIC RESEARCH

The Center for Business and Economic Research, formerly the Bureau of Business Research, is a premier economic policy and forecasting research center housed within the Miller College of Business. CBER research encompasses health care, public finance, regional economics, transportation, and energy sector studies. Some of the recent studies have been on the Economic Impact of the Super Bowl in Indianapolis and the Kernan-Shepard Commission and Local Government Expenditures. The center publishes the *American Journal of Business*—a peer-reviewed scholarly journal—and the *Indiana Business Bulletin*—a Web site with weekly commentary, analysis, and data on economic, business, and demographic trends in Indiana. In addition to research, the center serves as the forecasting element in the Muncie area—holding five state and federal economic forecasting roundtables.

In the past two years, the center has won four AUBER awards for excellence in publications in the categories of Electronic Publication (2008), Special/Contract Report (2009), Self-Promotion (2009), and Website (2009).

CENTER FOR BUSINESS AND ECONOMIC RESEARCH

Ball State University
WB 149 | Muncie, IN 47306
Phone: 765-285-5926 | E-mail: cber@bsu.edu
www.bsu.edu/cber

AUTHOR

Nalitra Thaiprasert, PhD
Research Economist
E-mail: nthaiprasert@bsu.edu

