



impact *J***ASPER** comprehensive plan

Dubois County Economic Resiliency Study
Adopted 08/21/2019

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Executive Summary

The Dubois County Economic Resiliency Study examines the existing economic conditions in Dubois County in order to assess the area's strengths, weaknesses, and opportunities for growth. This assessment is designed to lay the foundation for uncovering new ways to diversify the economy by providing potential target industries for business attraction and expansion aimed at sustaining long-term economic growth.

The following executive summary highlights the key findings from the study, including a snapshot of the current economic composition of the county, industry and workforce trends, existing community assets, community benchmarking, and a diversification analysis.

Economic Profile

Dubois County's economy is growing, with 7% employment increase since 2013. Manufacturing is a key component of the Dubois County industry makeup with 11,947 jobs representing 38.4% of the total employment in the county. This intense industry concentration is unique in the United States. Out of all 3,142 U.S. counties, Dubois County ranks 2,507th for industry diversity.¹ This means that its industry activity is more concentrated than nearly 80% of all U.S. counties.

Dubois County Economic Profile

Total Employment: 31,082

- 7% growth since 2013
- 3% projected growth to 2023

Manufacturing Employment: 11,947

- 38.4% of total employment
- 9% growth since 2013
- 1% projected growth to 2023
- \$55,761 average earnings

Source: Economic Modeling Specialists International, 2018.2.

Industry Trends

Within the manufacturing sector, there are a few key industries that represent a large proportion of the total employment. The top ten industries make up 12,843 or 41.3% of total jobs in Dubois County.

Many of these top industries are related to furniture manufacturing. The furniture cluster in Dubois County employs 7,320 people.

Top 10 Industries in Dubois County

- Wood Kitchen Cabinet and Countertop Manufacturing
- Wood Office Furniture Manufacturing
- General Medical and Surgical Hospitals
- Upholstered Household Furniture Manufacturing
- Elementary and Secondary Schools (Local Government)
- Motor Vehicle Transmission and Power Train Parts Manufacturing
- Rubber Product Manufacturing for Mechanical Use
- Poultry Processing
- Local Government, Excluding Education and Hospitals
- Limited-Service Restaurants

Not only does the furniture cluster contribute significantly to employment in Dubois County, the cluster also supports other local businesses. Five industries outside of the furniture cluster in Dubois County owe at least 50% of their sales to Dubois County furniture manufacturers.

However, there are some supply chain gaps in the county, and thus, the potential for attracting new industries to supply products to the existing furniture cluster. Overall, across all industries, Dubois County's furniture cluster gets just 27.2% of its \$725 million of inputs from other Dubois County businesses. This means there is an opportunity to fill in supply chain gaps and attract new businesses that could provide products to the existing furniture cluster.

Top Selling Industries to Furniture Cluster

- Hardwood Veneer and Plywood Manufacturing
- Sawmills
- Reconstituted Wood Product Manufacturing
- Other Millwork (including Flooring)
- Industrial Design Services

1. *Economic Modeling Specialists International, 2018.2*

Workforce Trends

The manufacturing presence in Dubois County affects the top occupations for workers. Four of the top five occupations are related to manufacturing, production, or logistics. The fifth top occupation, Retail Salespersons, is the only one of the top five to have seen employment loss over the last ten years. Within the top ten occupations, Registered Nurses, saw the most growth.

Manufacturing also plays a role in the top job postings in the county, with Production Workers, All Other (a classification that includes non-specified production workers); Non Meat, Poultry, and Fish Cutters and Trimmers; First-Line Supervisors of Production and Operating Workers, and Upholsterers in the top five occupations posted. Registered Nurses is the other top five occupation.

Within the broader region, Dubois County acts as a large employment hub. Only 59%, or 15,233, of the county's workers live within the county. In total, 10,580 people commute into Dubois County for work, indicating a large daytime presence with 25,813 workers.

Peer and Aspirational Communities

In order to understand Dubois County in context, peer and aspirational communities were identified to determine how the county ranks with other counties of similar size, and also how the county could chart a course for future growth.

Peer Communities

- Muscatine County, IA
- Holmes County, OH
- Alexander County, NC
- Claiborne County, TN

This benchmarking process highlighted how Dubois County's economy is quite a bit larger than its population might suggest. In comparison to the peer communities, Dubois County ranks in the middle in population and population growth but has significantly more jobs than any other peer county. It trails only Muscatine County in average earnings but has the highest cost of living.

The identified aspirational communities are counties that were very similar to Dubois County in 2003 but have seen significant population growth in the last fifteen years. Additionally, these communities have reduced the proportion of total employment in the manufacturing sector and now rank in the top 50% of U.S. counties for economic diversity – despite starting out in 2003 with levels of manufacturing dependence approaching what Dubois County has currently.

Aspirational Communities

- Hamblen County, TN
- Lee County, NC
- Barren County, KY
- Gilmer County, GA

Diversification Analysis

In order to identify potential target industries to aid diversification in Dubois County, three approaches were used. The first looked at industries that could fill supply chain gap, or industries for which Dubois County relies upon imports for a significant proportion of its needs. Of course, a region will never be able to get 100% of its needs from inside its own boundaries, but significant gaps imply that the presence of a local supplier could fill a missing link within the local economy.

Approach 1 Industries

- Corporate, Subsidiary, and Regional Managing Offices
- Animal Production
- Wired Telecommunications Carriers
- Wholesale Trade Agents and Brokers
- Offices of Lawyers
- Direct Property and Casualty Insurance Carriers
- Machine Shops
- Colleges, Universities, and Professional Schools
- Custom Computer Programming Services
- All Other Plastics Product Manufacturing

For the second approach, the goal was to identify industries that could thrive with the same resources as Dubois County's current furniture industry, but that are not currently strong or present within the county. These industries were identified by isolating industries with similar inputs to production as those required by the furniture industry.

Approach 2 Industries

- Engineered Wood Member (except Truss) Manufacturing
- Softwood Veneer and Plywood Manufacturing
- Truss Manufacturing
- Other Millwork (including Flooring)
- Wood Window and Door Manufacturing
- Prefabricated Wood Building Manufacturing
- Manufactured Home (Mobile Home) Manufacturing
- Wood Preservation
- Pulp Mills
- Mattress Manufacturing

The third approach analyzed supply chains to identify industries that could benefit from Dubois County’s current strengths. For this analysis, strength industries were defined as those for which Dubois County had at least ten times the national average for employment concentration. In total, 24 industries fit this criterion. The recommended industries are those that rely significantly on these 24 strength industries and are not already present within Dubois County.

Approach 3 Industries

- Ice Cream and Frozen Dessert Manufacturing
- Light Truck and Utility Vehicle Manufacturing
- Electronic Computer Manufacturing
- Automobile Manufacturing
- Heavy Duty Truck Manufacturing
- Dry, Condensed, and Evaporated Dairy Product Manufacturing
- Services for the Elderly and Persons with Disabilities
- Motor Vehicle Seating and Interior Trim Manufacturing
- Frozen Specialty Food Manufacturing
- Cheese Manufacturing

The final approach presents two alternatives for diversifying Dubois County’s economy based on lessons learned from the identified aspirational communities. For each alternative, industry changes are first analyzed based on aggregating data from all four aspirational communities; then, key insights are applied to Dubois County.

Approach 4 Industries

- Home Health Care Services
- General Medical and Surgical Hospitals
- Individual and Family Services
- Support Activities for Crop Production
- Other Support Services
- Local Government, Excluding Education and Hospitals
- State Government, Excluding Education and Hospitals
- Child Day Care Services
- Religious Organizations
- Grocery and Related Product Merchant Wholesalers
- Employment Services
- Restaurants and Other Eating Places
- Education and Hospitals (Local Government)
- Education and Hospitals (State Government)
- Colleges, Universities, and Professional Schools
- State Government, Excluding Education and Hospitals
- Computer Systems Design and Related Services
- Individual and Family Services
- Local Government, Excluding Education and Hospitals
- Management, Scientific, and Technical Consulting Services

The industries identified through these approaches represent potential areas for industry diversification. The full report provides additional insights into the potential challenges, opportunities, and the planning needs represented by the identified industries. Although not all of the industries may be feasible or practical for Dubois County to attract, this analysis acts a first step in identifying the need and potential solutions for industry diversification in the county.

For individual communities in the county, an understanding of the feasibility of attracting the targeted industries is necessary. Through planning and an assessment of existing capacity and resources available, communities will be able to identify the target industries that make sense in their communities and the steps needed to attract those particular companies.

Introduction

In recent years, economic development efforts at the local and regional level have evolved. Rather than focusing strictly on job creation and business attraction, communities are looking to build complete and resilient economies with all the necessary ingredients to sustain long-term growth. This resiliency study looks at how new industries could potentially complement the existing employers in Dubois County to ensure that the economy is able to adapt to global and national trends.

This report examines the existing conditions in the local economy in order gain assessment of the area's local strengths and opportunities for growth. This base understanding lays the foundation for the following economic diversification study that looks to identify potential target industries that could complement the existing industry composition. The study will also examine national industry trends that could impact both the existing industries and potential target industries and the workforce needs of the existing employers.

Current Economic Assessment

The following section examines the current state of the economy in Dubois County, including current employment, previous and projected growth, and the existing level of industry concentration. This will provide an initial assessment of the strengths and weaknesses of the economy and the opportunities for growth.

Economic Profile

There are 31,082 total jobs in Dubois County.² The overall economy in Dubois County is strong with 7% growth since 2013. This is compared to 5.6% at the state level and 6.9% at the national level over the same time period. The county has a low unemployment rate of only 2.3% and 23,849 people in the workforce as of May 2018.³ Over the past two years, there have been approximately 2,729 active job openings, with the most common occupations being Production Workers, All Other, Meat, Poultry, and Fish Cutters and Trimmers, and First-Line Supervisors of Production and Operating Workers.⁴

The manufacturing industry in the county is the main driver of the economy, representing 11,947 jobs or 38.4% of the county's total jobs. The manufacturing sector has grown about 9% since 2013 and is projected to grow another 1% by 2023. This slower projected growth follows overall national trends suggesting a slowdown for manufacturing employment. External factors including automation and global competition will likely cause manufacturing employment to decline slightly in the US over the next five years. Overall, the county has 101 manufacturing business locations and average earnings of \$55,761.

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- \$55,761 average earnings

Source: Economic Modeling Specialists International, 2018.2.

2. All employment and economic data cited from Economic Modeling Specialists International, 2018.2 except where otherwise noted.

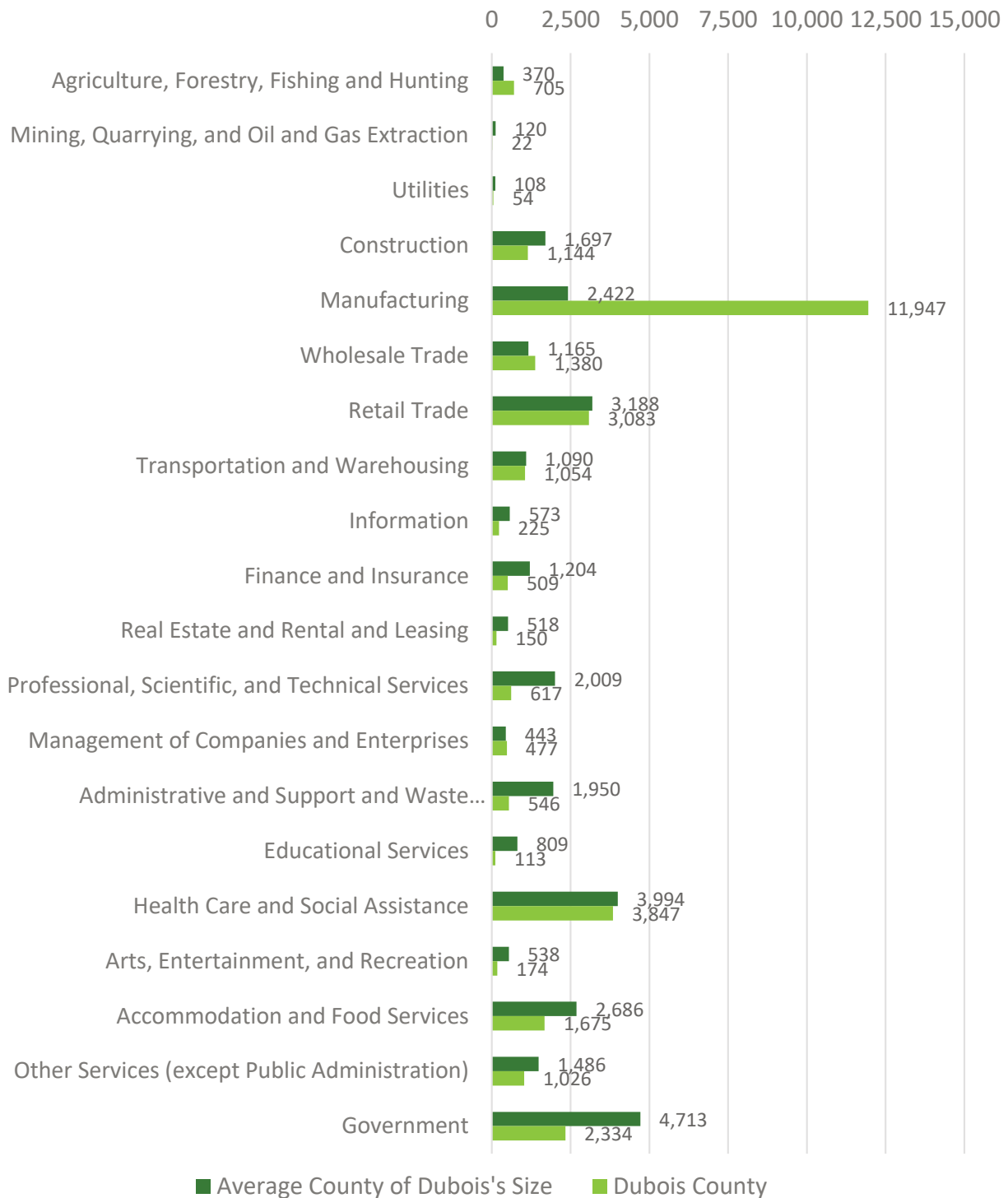
3. U.S. Bureau of Labor Statistics, Local Area Unemployment Statistics, May 2018.

4. Grow Southwest Indiana Workforce, Postings between December 1, 2016 and December 1, 2018.

Industry Employment Concentration

Out of all 3,142 U.S. counties, Dubois County ranks 2,507th for industry diversity.⁵ This means that its industry activity is more concentrated than nearly 80% of all U.S. counties. A snapshot of this industry concentration is provided in Figure 1, which compares employment distribution across 2-digit NAICS⁶ super-sectors in Dubois County, with those of the average county of Dubois's employment size. As the chart demonstrates, Dubois County's employment is uniquely concentrated in manufacturing, which means that it has less than its share of employment in most other industries.

Figure 1: Employment Job Distribution Dubois County



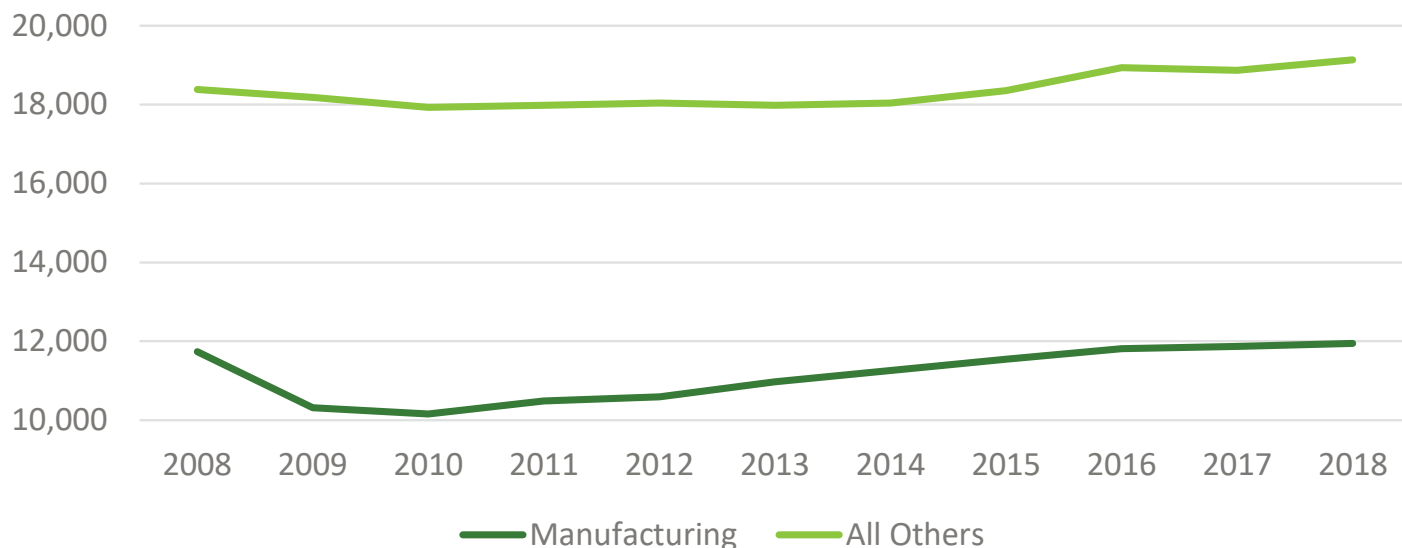
Source: Economic Modeling Specialists International, 2018.2.

5. Economic Modeling Specialists International, 2018.2

6. NAICS (North American Industry Classification System) is the standard system for identifying business types. The system a six-digit code to identify detailed business activities. The first 2-digits of the NAICS identify the businesses super-sector, allowing for the most general level of business level aggregation. Additional digits allow for more detailed business type identification.

Over time, as shown in Figure 2, employment concentration in manufacturing has remained relatively constant. In 2008, manufacturing provided 39.0% of the 30,123 jobs in Dubois County. This percentage dropped significantly during the recession and has only just recently recovered, hovering currently at around 38.4% or 11,947 jobs.

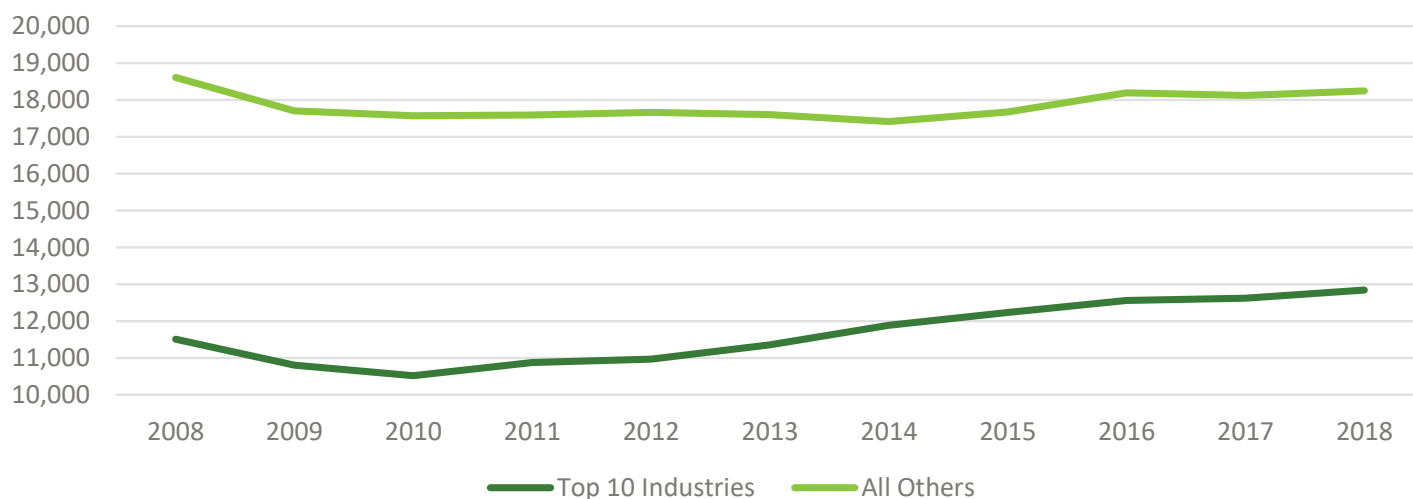
Figure 2: Employment Concentration in Dubois County, Manufacturing



Source: Economic Modeling Specialists International, 2018.2.

However, the percentage of jobs within the top ten industries in Dubois County has been rising. As shown in Figure 3, the share of Dubois County employment captured by its top 10 largest industries by employment (shown in Table 2) has grown from 38.2% in 2008 to 41.3% in 2018. In 2008, these industries employed 11,513 of the 30,123 Dubois County employees; in 2018, this has risen to 12,843 out of 31,082 or 41.3% of all jobs.

Figure 3: Employment Concentration in Dubois County, Top 10 Industries



Source: Economic Modeling Specialists International, 2018.2.

An industry's Location Quotient (LQ) is a measure of concentration within a given geographic boundary in comparison to the rest of the US. A LQ of one (1) signifies that a particular industry is equally as concentrated in the area as the rest of the US. A LQ higher than one (1) would indicate that an industry is more concentrated in a particular area than would be expected at the national level.

Table 1 shows the top ten industry groups by employment in Dubois County as represented by four-digit NAICS codes. Furniture manufacturing represents the top two industry groups with over 7,000 total jobs. Both Household and Institutional Furniture and Kitchen Cabinet Manufacturing and Office Furniture (including Fixtures) Manufacturing are heavily concentrated in Dubois County as compared to the US, with Location Quotients near or over 100. Both industries have seen growth over the last five years. However, employment in the Office Furniture Manufacturing sector is projected to decrease over the next five years. Other top industry groups in Dubois County include General Medical and Surgical Hospitals, Restaurants and Other Eating Places, and Education and Hospitals (Local Government). In order to examine industry trends at a more detailed level,

Table 1: Top 10 Industry Groups by Total Employment in Dubois County

Description	2018 Jobs	2018 Location Quotient (LQ)	2013-2018 Percent Change	2018-2023 Percent Change
Household and Institutional Furniture and Kitchen Cabinet Manufacturing	4,688	94.03	16.5%	6.0%
Office Furniture (including Fixtures) Manufacturing	2,692	127.80	2.4%	-5.8%
General Medical and Surgical Hospitals	1,644	1.86	18.4%	9.4%
Restaurants and Other Eating Places	1,432	0.71	1.3%	0.4%
Education and Hospitals (Local Government)	1,064	0.65	-4.1%	1.1%
Motor Vehicle Parts Manufacturing	908	8.03	15.4%	-0.8%
Animal Slaughtering and Processing	849	8.79	-3.4%	3.2%
Rubber Product Manufacturing	833	32.98	13.9%	0.8%
Local Government, Excluding Education and Hospitals	805	0.75	8.9%	6.5%
General Freight Trucking	652	2.89	-1.2%	-4.1%

Table 2 shows the top industries by employment in Dubois County. Six of the industries are manufacturing industries. However, the list also includes General Medical and Surgical Hospitals, Elementary and Secondary Schools (Local Government), Local Government, Excluding Education and Hospitals, and Limited-Service Restaurants. While these industries have high employment in the county, some of them do not have a high number of jobs compared to national industry averages.

As shown in Table 2, the top manufacturing industries represent specialized industries in Dubois County based on their Location Quotient. Additionally, the employment in General Medical and Surgical Hospitals is slightly specialized. However, Elementary and Secondary Schools (Local Government), Local Government, excluding Education and Hospitals, and Limited-Service Restaurants all have lower than expected employment despite being in the top ten employment industries.

Overall, this analysis shows the intense level of industry concentration within manufacturing in Dubois County. While the percentage of jobs within manufacturing in Dubois County has been steady, the level of concentration within the top industries has been growing. These top industries mostly represent manufacturing strengths, and most of the highest employment industries outside of manufacturing actually have fewer jobs than would be expected based on national industry trends. This represents a concern for continued economic resilience within Dubois County as this intense industry concentration could leave the county susceptible to national trends and economic downturns.

Table 2: Top 10 Industries by Total Employment in Dubois County

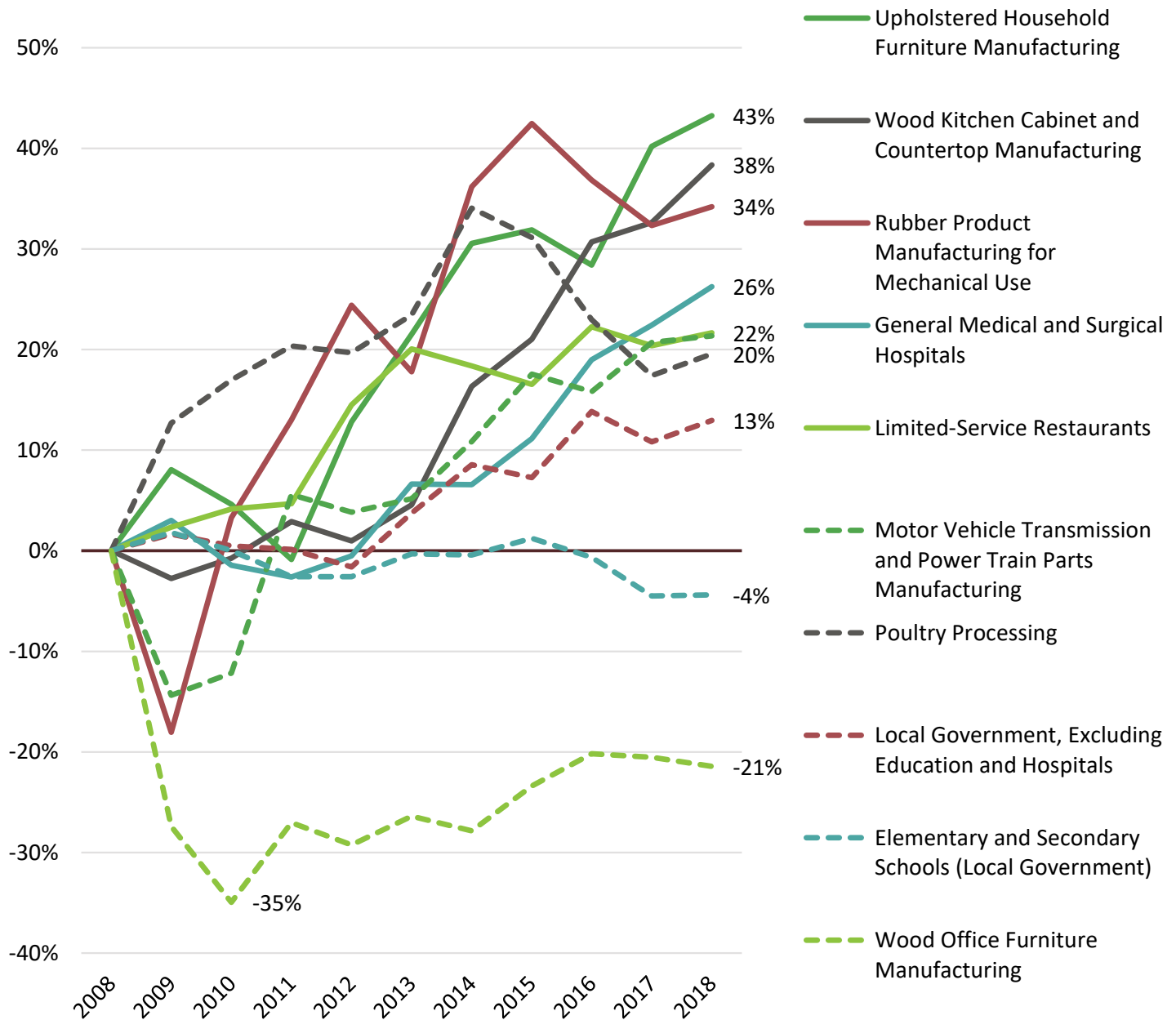
Description	2018 Jobs	2018 Location Quotient (LQ)	5-YR Job Change	5-YR Job Projections
Wood Kitchen Cabinet and Countertop Manufacturing	2,901	117.14	32.3%	13.8%
Wood Office Furniture Manufacturing	2,059	581.48	6.7%	-4.8%
General Medical and Surgical Hospitals	1,644	1.82	18.4%	9.4%
Upholstered Household Furniture Manufacturing	1,096	90.58	17.9%	4.3%
Elementary and Secondary Schools (Local Government)	1,064	0.77	-4.1%	1.1%
Motor Vehicle Transmission and Power Train Parts Manufacturing	908	56.76	15.4%	-0.8%
Rubber Product Manufacturing for Mechanical Use	833	143.58	13.9%	0.8%
Poultry Processing	812	18.02	-3.1%	4.3%
Local Government, Excluding Education and Hospitals	805	0.74	8.9%	6.5%
Limited-Service Restaurants	720	0.84	1.4%	2.4%

Source: Economic Modeling Specialists International, 2018.2.

Growth Trends

Figure 4 shows the cumulative percentage job growth since 2008 for the top ten industries, indicating the total percentage increase or decrease since 2008 for each year. Among Dubois County's top ten largest employment industries, the majority have been growing jobs since 2008. The only two exceptions to this trend are Elementary and Secondary Schools, and Wood Office Furniture Manufacturing. Employment in the Wood Office Furniture Manufacturing industry declined significantly during the recession and has been growing slowly since 2010 but has still seen a 21% decline over the past ten years. Overall, the industry with the largest growth has been Upholstered Household Furniture Manufacturing, at a 43% increase since 2008.

Figure 4: Cumulative Job Growth Since 2008



Source: Economic Modeling Specialists International, 2018.2.

Figure 5 shows employment for the industries with the largest employment decline since 2008. Wood Office Furniture Manufacturing, while one of the top ten industries by employment is also on the list of industries with the largest job declines since 2008, having lost 562 jobs within Dubois County. The remainder of the County's declining industries had less than 1,000 jobs in 2008. Among these, the largest declines were experienced within Nonupholstered Wood Household Furniture Manufacturing, with 351 jobs lost, and Commercial Printing (except Screen and Books), with 314 jobs lost.

While this analysis shows that most of the top ten industries have recovered jobs since the 2008 recession, there are some reasons for concern. While many of the industries seeing sharp employment declines are small, many are within the manufacturing industry, and many are related to wood and/or furniture manufacturing industries. The below analysis will examine the furniture cluster in-depth. However, some of the employment decline could be explained by companies transitioning from Wood Office Furniture Manufacturing to Upholstered Household Furniture Manufacturing or the consolidation of companies that manufactured primarily wood products with companies manufacturing more diverse types of furniture products. The complex nature by which companies are categorized under different industries makes understanding the dynamics of shifting industry employment difficult, especially among closely related industries.

Largest Clusters

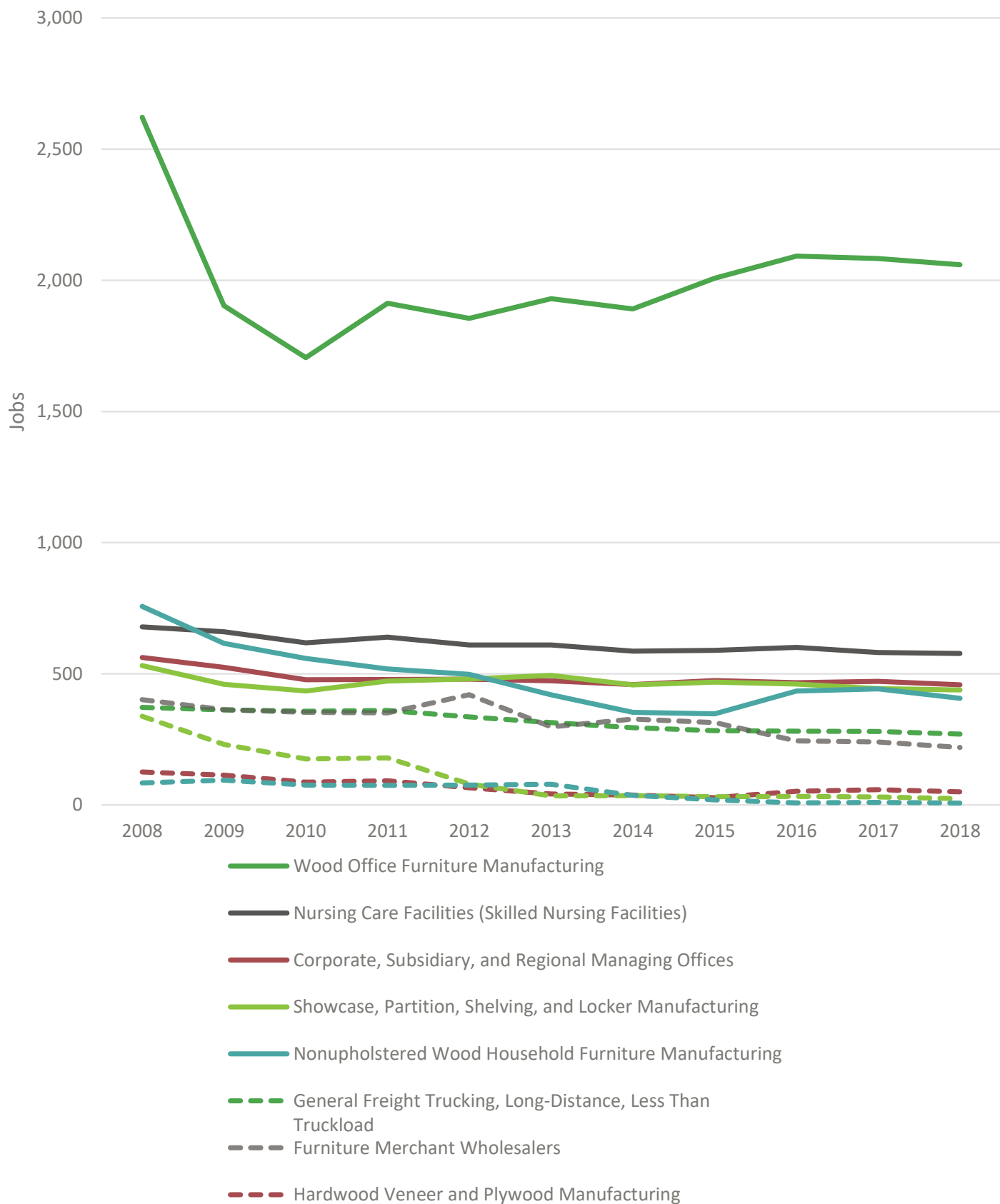
Dubois County's industries are particularly concentrated in a few specific clusters—collections of industries that produce similar types of goods and benefit from proximity to each other. These clusters are defined based on NAICS codes, but not all industries within a cluster are present in any given community. Its top industry cluster is Furniture production, followed by Information Technology & Analytical Instruments, Vulcanized and Fired Materials, Local Health Services, and Automotive. Top industry clusters are chosen based on Specialization Level. This is an index of location quotient, contribution to GRP, relative strength of job growth, overall job growth, and wage levels. By identifying clusters with these characteristics, the top clusters are not only those that are highly concentrated in the region, but also those that have a high impact on the economy, income levels, and overall growth in the county. The top clusters are described in Table 3.

Table 3: Largest Clusters in Dubois County

Cluster	Description	Total Jobs	Specialization Level
Furniture	Includes household furniture, wood cabinets, office/institutional furniture, and manufactured homes	7,320	61
Information Technology & Analytical Instruments	Includes computers, software, lab instruments, and precision electronics (such as circuit boards)	665	42
Vulcanized and Fired Materials	Includes manufacturing of materials from earthen substances at high temperatures, such as rubber, glass, and brick	822	31
Local Health Services	Includes hospitals, healthcare, pharmacies, nursing care, and related services	3,432	27
Automotive	Includes automotive (or other motorized land transportation) manufacturing as well as associated inputs, such as transmissions	903	24

Source: Economic Modeling Specialists International, 2018.2.

Figure 5: Ten Industries with Largest Job Declines, 2008-2018



Source: Economic Modeling Specialists International, 2018.2.

National Industry Trends for Existing Industries

While Dubois County's top industries have continued to grow post-recession, an understanding of what is driving that growth from a national perspective will help the county prepare for future changes. Table 4 provides a summary of the overall national outlook for growth, potential for automation, and key external demand factors that could impact the industries in Dubois County.⁷

Many of the top industries in the county are dependent on some of the same key external demand factors. External demand factors are events or changes outside of Dubois County that could impact demand for a product within Dubois County. Potential fluctuations in per capital disposable income for example could impact Household Furniture Manufacturing, Hospitals, Animal Slaughtering and Processing, Rubber Product Manufacturing, and General Freight Trucking. Meanwhile, both Motor Vehicle Parts Manufacturing and Rubber Product Manufacturing could be tied to overall automobile sales trends. Additionally, many of these industries are competing more heavily on cost with imports.

Dubois County's existing concentration in manufacturing also means that the potential for automation could have an impact on economic growth in the future. However, many of the industries within Dubois County's key cluster furniture manufacturing have a low potential for automation at the national level. This is somewhat due to the custom nature of the product, particularly in Furniture Manufacturing, where US manufacturers produce more custom furniture in order to compete with foreign imports.

While this might indicate continued positive growth when it comes to employment, it also presents workforce challenges, particularly in Dubois County where there is already a low unemployment rate. As the labor market in the United States tightens, rising wages could reduce profits and put additional pressure on US manufacturers from foreign imports. Understanding the skilled workforce and capital needs for industries that could potentially automate activities is important to helping those industries continue to grow and ensuring they have the right resources in Dubois County.

7. All national industry trend data is from IBIS World unless otherwise noted.

Table 4: National Industry Trends for Existing Industry Strengths

Industry	Outlook for Growth	Potential for Automation	Key Internal Demand Factors
Household Furniture Manufacturing	Modest – Due to competition from rising imports	Low	<ul style="list-style-type: none"> • Growth in foreign imports into the manufacturing sector • Per capita disposable income • Housing construction starts • Trade-weighted index • Price of sawmill lumber
Office Furniture Manufacturing	Modest – Due to competition from rising imports	Low	<ul style="list-style-type: none"> • National unemployment rate • Corporate profit • Number of businesses • Trade-weighted index • Private investment in computers and software • Price of steel
Hospitals	Positive – Due to growing demand for healthcare services	Low	<ul style="list-style-type: none"> • Number of people with private health insurance • Federal funding for Medicare and Medicaid • Number of adults aged 65 and older • Per capita disposable income
Restaurants	Positive – Due to growing consumer spending	Low	<ul style="list-style-type: none"> • Consumer spending • Households earning more than \$100,000 • Consumer Confidence Index • Healthy eating index
Education	Modest – for public institutions, due to tightening government spending; for private institutions, due to increasing competition	Low	<ul style="list-style-type: none"> • Number of K-12 students • Government funds for primary and secondary education • Households earning more than \$100,000 • Population • High school retention rate
Motor Vehicle Parts Manufacturing	Strong – Due to high consumer confidence	High	<ul style="list-style-type: none"> • New car sales • Trade-weighted Index • Consumer Confidence Index • US oil and gas production index
Animal Slaughtering and Processing	Modest – Due to decreasing consumer demand and unpredictable weather patterns	High	<ul style="list-style-type: none"> • Price of feed • Per capita disposable income • Demand from wholesale, nondurable goods • Per capital meat consumption • Price of poultry meat • Price of red meat • Trade-weighted index
Rubber Product Manufacturing	Modest – Due to competition from rising imports and declining revenues from the price drop in natural and synthetic rubber inputs	High	<ul style="list-style-type: none"> • Demand from car and automobile manufacturing • Trade-weighted index • World price of rubber • Value of construction • Per capita disposable income
General Freight Trucking	Modest – due to lowering manufacturing volumes and fluctuating fuel prices	Low	<ul style="list-style-type: none"> • Industrial production index • Freight transportation services index • Per capita disposable income • Price of diesel • Total trade value

Supply Chain Linkages

By far, Dubois County's most significant industry cluster is based around the production of furniture. Thus, the furniture cluster's supply chain⁸ provides significant support to the rest of Dubois County's economy. For example, the local industries shown in Table 5 (none of which are part of the furniture cluster), are all highly dependent upon Dubois County's furniture manufacturers for their sales. All of them owe at least 35% of their sales to Dubois County furniture manufacturers. Therefore, the success of these businesses relies on the success of the furniture cluster businesses.

Table 5: Local Industry Inputs to Dubois County's Furniture Cluster

NAICS	Description	Portion of Sales to Dubois Furniture	Total Sales to Dubois Furniture	Est. Total Sales
321211	Hardwood Veneer and Plywood Manufacturing	100.0%	\$12,530,082	\$12,530,082
321113	Sawmills	69.9%	\$20,585,314	\$29,289,506
321219	Reconstituted Wood Product Manufacturing	67.4%	\$7,624,517	\$11,269,103
321918	Other Millwork (including Flooring)	63.1%	\$265,431	\$419,898
541420	Industrial Design Services	55.8%	\$33,681	\$60,240
541430	Graphic Design Services	47.5%	\$163,227	\$342,757
541930	Translation and Interpretation Services	45.2%	\$46,628	\$103,019
541990	All Other Professional, Scientific, and Technical Services	40.6%	\$921,301	\$2,265,581
541410	Interior Design Services	37.4%	\$410,859	\$1,096,352
424210	Drugs and Druggists' Sundries Merchant Wholesalers	37.3%	\$26,467	\$70,507

Source: Economic Modeling Specialists International, 2018.2.

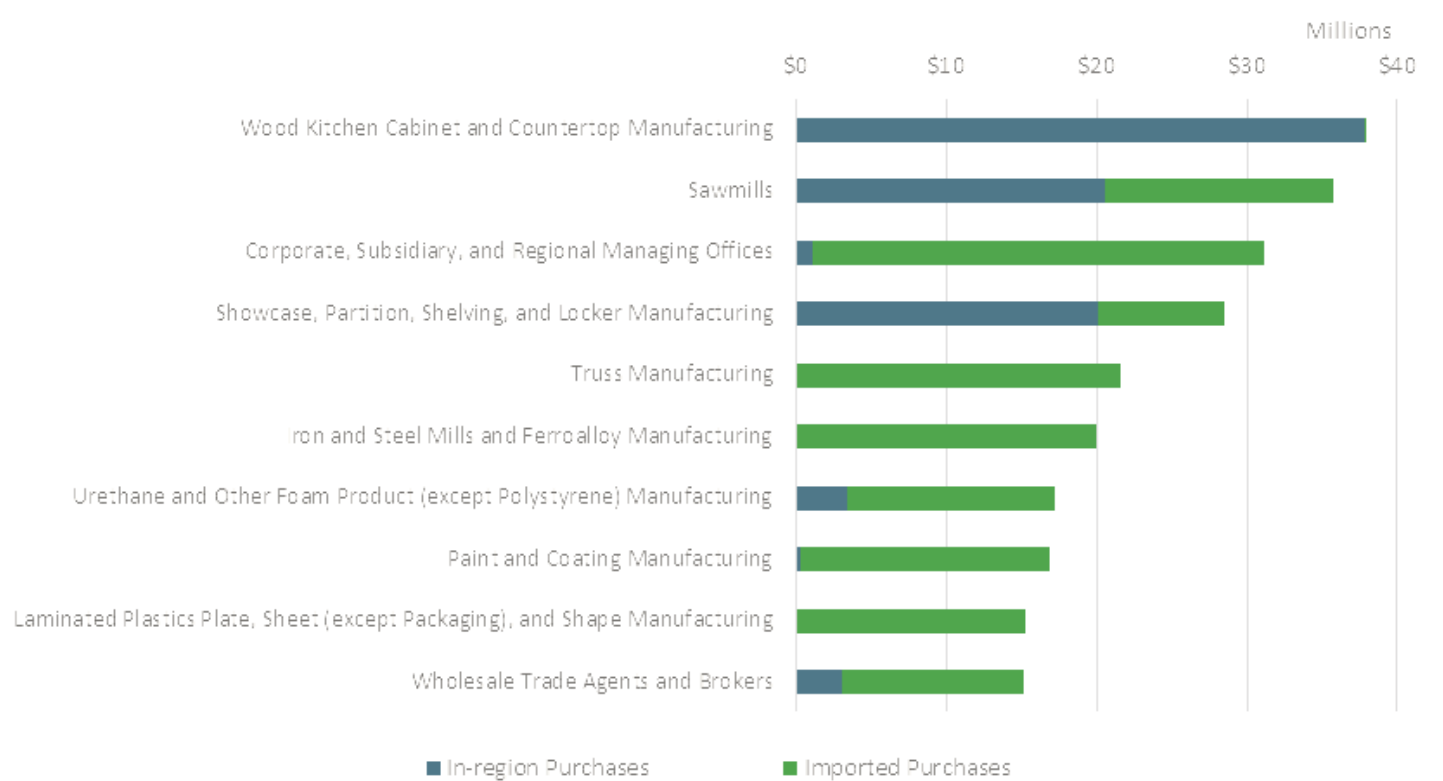
8. An industry's supply chain includes the products or services it purchases in order to manufacture a product or provide a service. Supply chain analysis looks at the links between industry through purchases to understand how industries interact within a region and outside a region. These supply chain linkages are based on national data that is modeled at the regional level based on local data. However, due to the complex nature of the models, some discrepancies may be found at small levels of geography.

Supply Chain Gaps

The furniture cluster businesses also need a certain set of supplies in order to maintain their businesses. Figure 6 below shows the top industry inputs to the Furniture cluster in Dubois County and the amount the cluster purchases from each industry. The amount of the purchases coming from in-region versus the amount imported is also indicated. For some industry inputs, like Wood Kitchen Cabinet and Countertops and Sawmills, the Furniture cluster purchases the majority from within Dubois County. However, in the cases of Corporate, Subsidiary, and Regional Managing Offices; Truss Manufacturing; and Iron and Steel Mills, Dubois County manufacturers are looking elsewhere to procure their supplies.

The presence of Corporate, Subsidiary, and Regional Managing Offices on this list is an indication that many local businesses are either single-location businesses or are headquartered in other locations. Overall, across all industries, Dubois County’s furniture cluster gets just 27.2% of its \$725 million of inputs from other Dubois County businesses. This means there is an opportunity to fill in supply chain gaps and attract new businesses that could provide products to the existing furniture cluster.

Figure 6: Top Inputs to Furniture Cluster



Source: Economic Modeling Specialists International, 2018.2.

Existing Workforce

Table 6 identifies the top occupations for 2018 by number of individuals. Among these ten occupations, all were also among the top ten occupations in 2008 except for Registered Nurses which replaced Cabinetmakers and Bench Carpenters. Seven of the top occupations earn below the average hourly earnings for Dubois County. The three that earn above this average include First-Line Supervisors of Production and Operating Workers, Heavy and Tractor-Trailer Truck Drivers, and Registered Nurses. Additionally, all except three occupations have grown since 2008. Several occupations have a location quotient (LQ) below one which would indicate that these occupations are less concentrated in Dubois County than at the national level.

With a total of 1,491 jobs Assemblers and Fabricators, All Other, Including Team Assemblers was the most common occupation in Dubois County. In addition to modest growth in number of jobs from 2008, this occupation has further concentrated in Dubois County. The highest growth since 2008 has been in Registered Nurses, by a total of 146. This profession, however, is still slightly less concentrated in Dubois than at the national level.

Table 6: Top Occupations in Dubois County

Description	2018 Jobs	10 Year Job Change	2008 Location Quotient	2018 Location Quotient	Avg. Hourly Earnings
Assemblers and Fabricators, All Other, Including Team Assemblers	1,491	38	5.27	5.96	\$18.93
Laborers and Freight, Stock, and Material Movers, Hand	983	74	1.97	1.83	\$18.30
Woodworking Machine Setters, Operators, and Tenders, Except Sawing	844	107	43.81	55.16	\$14.54
First-Line Supervisors of Production and Operating Workers	833	52	5.89	6.90	\$27.36
Retail Salespersons	726	-50	0.87	0.84	\$13.18
Heavy and Tractor-Trailer Truck Drivers	679	-35	1.90	1.76	\$21.61
Combined Food Preparation and Serving Workers, Including Fast Food	604	86	0.96	0.87	\$9.13
Office Clerks, General	564	39	0.81	0.87	\$14.38
Registered Nurses	549	146	0.82	0.96	\$28.83
Cashiers	476	-33	0.72	0.70	\$9.62

Job Postings

Between December 1, 2016 and December 1, 2018, there were 2,226 job postings in Dubois County posted through the Grow Southwest Indiana Workforce Center. Sixty-two of the postings were in 2016, 1,305 were in 2017, and 1,362 were in 2018. Kimball International had the most open positions with 636; Kimball Electronics had 383; and Indiana Furniture had 260. The most common occupations posted are highlighted in Table 7.⁹ With the exception of Meat, Poultry, and Fish Cutters and Trimmers, Registered Nurses, and Licensed Practical and Licensed Vocational Nurses, all of the top open positions are related to manufacturing with key occupations, including Upholsterers and Electrical and Electronic Equipment Assemblers being tied to the Furniture and IT and Analytical Instruments cluster in the county.

Table 7: Jobs Postings by Occupation

Occupation	Number of Open Positions
Production Workers, All Other	354
Meat, Poultry, and Fish Cutters and Trimmers	180
First-Line Supervisors of Production and Operating Workers	146
Registered Nurses	108
Upholsterers	93
Assemblers and Fabricators, All Other	87
Helpers--Production Workers	85
Licensed Practical and Licensed Vocational Nurses	62
Laborers and Freight, Stock, and Material Movers, Hand	60
Machinists	59
Electrical and Electronic Equipment Assemblers	56
Packers and Packagers, Hand	48

9. *Grow Southwest Indiana Workforce, Postings between December 1, 2016 and December 1, 2018.*

Workforce & Commuting

Dubois County pulls a large number of workers from the surrounding counties. A total of 10,580 total workers commute into Dubois County for work. Only 59%, or 15,233, of the county’s employees live within the county. An additional 6,568 residents leave Dubois County to work in other surrounding counties. This indicates that the county is supplying a large number of jobs to residents outside of the county and acting as a major economic hub.

Table 8: Where Workers in Dubois County Live

Home County	Total employed in Dubois County	Share of all Dubois County Workers
Dubois	15,233	59.00%
Spencer	1,519	5.90%
Perry	1,000	3.90%
Pike	940	3.60%
Orange	692	2.70%
Daviess	663	2.60%
Martin	641	2.50%
Crawford	565	2.20%
Vanderburgh	535	2.10%
Warrick	416	1.60%

41,889

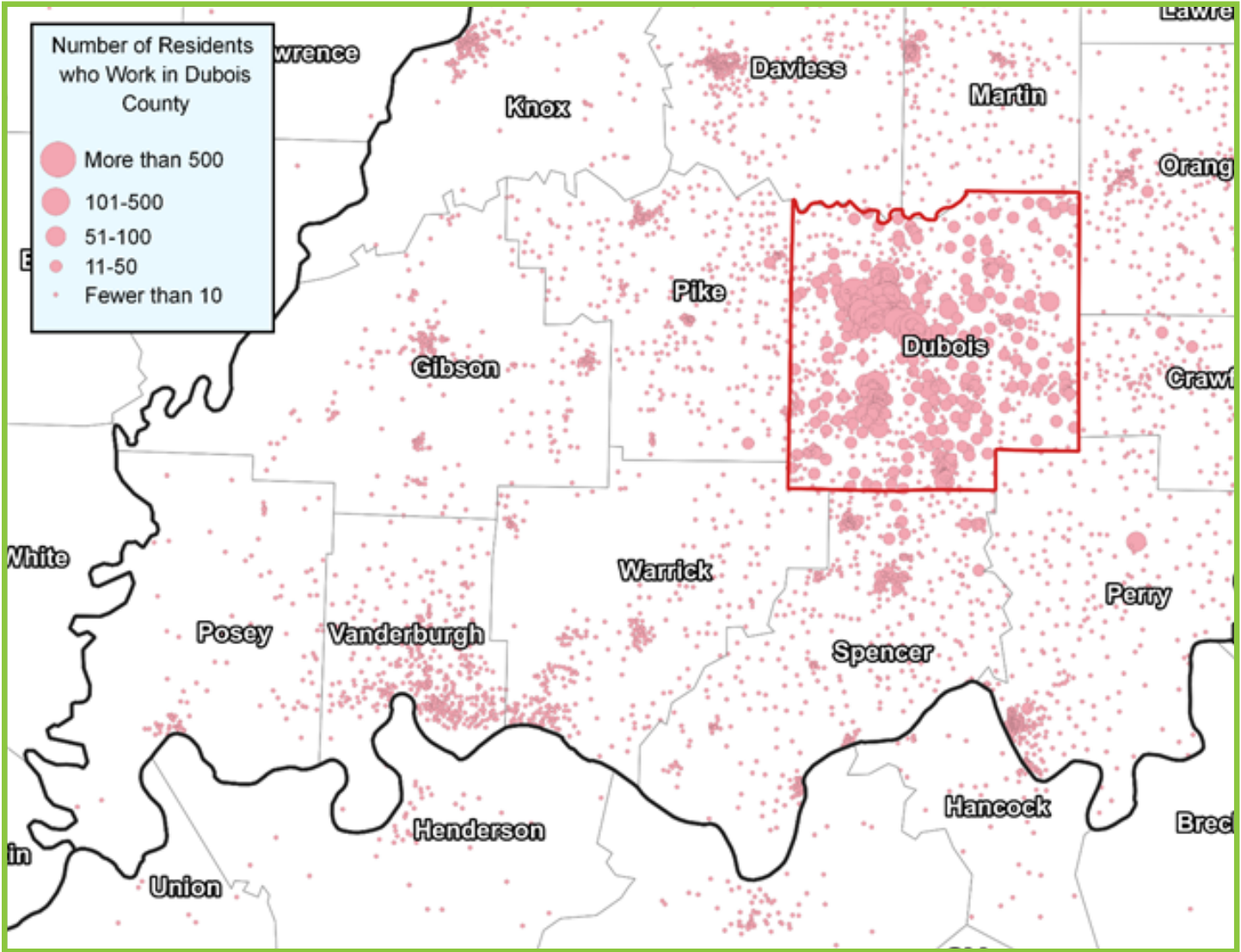
Dubois County Population¹⁰

10,580

Commuting to Dubois County¹¹

Total Employed in Dubois County: 25,813

Figure 7: Where Dubois County Workers Live



10. Source: U.S. Census Bureau, Population Division, Annual Estimates of the Resident Population: April 1, 2010 to July 1, 2017.
11. All employment data from U.S. Census Bureau, LEHD Origin-Destination Employment Statistics (2015).

Dubois County Economic Resiliency Study 19

Workforce Gaps

One trend that is evident from demographic analysis of Dubois County is that there is a significant discrepancy between the total number of jobs available within the county and the number of workers who actually live in Dubois County. There are ten occupations in the county for which there are at least 100 more jobs than there are residents who work in those occupations. These occupations are listed in the Table 9 below:

Table 9: Top Job Occupations in Which Workers Commute Into Dubois County

Description	Median Hourly Earnings	2018 Jobs	2018 Resident Workers	Net Commuters
Assemblers and Fabricators, All Other, Including Team Assemblers	\$17.31	1,491	1,081	410
Woodworking Machine Setters, Operators, and Tenders, Except Sawing	\$14.36	844	500	344
First-Line Supervisors of Production and Operating Workers	\$26.74	833	562	272
Laborers and Freight, Stock, and Material Movers, Hand	\$15.80	983	772	211
Cabinetmakers and Bench Carpenters	\$16.17	447	265	182
Furniture Finishers	\$14.34	439	291	148
Upholsterers	\$17.48	312	195	117
Carpenters	\$19.47	314	196	117
Helpers--Production Workers	\$14.01	343	233	110
Inspectors, Testers, Sorters, Samplers, and Weighers	\$13.95	378	274	105

Source: Economic Modeling Specialists International, 2018.2.

For these occupations, there are not enough residents within Dubois County who are qualified or willing to meet the needs of current employers. By analyzing the knowledge, skills, and abilities needed to perform these occupations, the gaps in current workforce capabilities can be identified.

The top types of knowledge required for these occupations include:

- Production and Processing
- Mechanical
- Mathematics
- Education and Training
- English Language

The top skills required are:

- Critical Thinking
- Operation Monitoring
- Monitoring
- Active Listening
- Speaking
- Coordination

These are followed closely by Quality Control Analysis and Reading Comprehension. There is a high degree of correlation between the importance of these skills, and the level of skill required for each occupation. On the other end of the spectrum, Science, Programming, Installation, and Technology Design are less needed in these types of occupations.

Lastly, in comparison to the other categories of needs, abilities are grouped much more closely together. Among in-demand occupations, a high level of Oral Comprehension is needed, while Near Vision is very important. Additional important abilities are Manual Dexterity, Control Precision, Finger Dexterity, and Oral Expression. Some abilities that are considered to be less useful in these occupations are Dynamic Flexibility, Explosive Strength, and Night Vision.

Community Assets

In addition to the key manufacturing strengths in Dubois County, there are a number of other key community assets that strengthen the economy and present unique opportunities for growth. These assets include the Giga City infrastructure, the healthcare industry, and other industry strengths.

Giga City

In 2015, the City of Jasper in Dubois County was announced as the first city in Indiana to have a full and complete gigabit fiber network. The approximately \$7 million fiber infrastructure investment from Smithville Telecom, is a major asset for the community for residents and businesses alike.¹² Many areas of the City currently have installed access to the fiber network, with the project scheduled to be complete by the second quarter of 2020.¹³

This investment opens up a number of new opportunities for the City of Jasper to grow industry and population. In today's economy, access to quick and reliable internet is vital for people and business. The infrastructure currently present in Jasper will allow for new and growing business types. Existing manufacturers can use this infrastructure to invest in new innovative machinery that can improve efficiencies in processes. The banking industry, which is reliant on a strong cybersecurity infrastructure can use fiber to connect quickly to cloud based data. Perhaps most importantly, a growing number of industries in the computer and technology related fields are fundamentally supported by quick internet access and will be able to look at Jasper as a potential location for operations when they might have previously only considered major metropolitan areas.

In addition to the business opportunities, fiber improves the quality of life for residents, perhaps alleviating some of the challenges of attracting residents to a smaller community. It can allow residents with certain careers to work from home, a much more common practice in today's economy. Strengthening career opportunities for existing residents and luring potential newcomers that rely on a speedy internet. Marketing this asset to potential residents and businesses will help ensure it is fully leveraged to help grow Jasper and Dubois County's economy in the future.

Healthcare

Dubois County is home to Memorial Hospital and Health Care Center located in Jasper. Opened in 1951, the hospital has been a key community asset for Jasper and the surrounding County, providing much needed health services to the broader community. The Center has expanded with

offices in Huntingburg, Ferdinand, and Holland in Dubois County and a number of other locations in surrounding counties becoming a key healthcare provider for an eight-county region in southwestern Indiana.

The hospital has made a number of improvements and renovations over its 60-year history, investing in new services. Today, the hospital has psychiatric, medical/surgical, emergency, kidney care, heart and vascular, radiology, perinatal, oncology, outpatient, senior, women's services, and many others, all with a Level III Trauma Center.

Healthcare institutions like Memorial Hospital have a big impact on the local community. Not only do they provide much needed services to residents, they provide jobs and capital investment. Leveraging the hospital and its economic impact can help drive growth in Dubois County. Many healthcare-adjacent industries, involving biotechnology research can be lured by the proximity of major healthcare organizations. The importance of information technology in healthcare is growing, with the need for advanced cybersecurity and data management services. Additionally, an aging population in much of the country and particularly smaller counties, like Dubois, means a need for increased, specialized services for seniors. Understanding Memorial Hospital's future plans for growth and industry needs will help the county leverage the investment and community impact for additional economic growth.

Other Industries

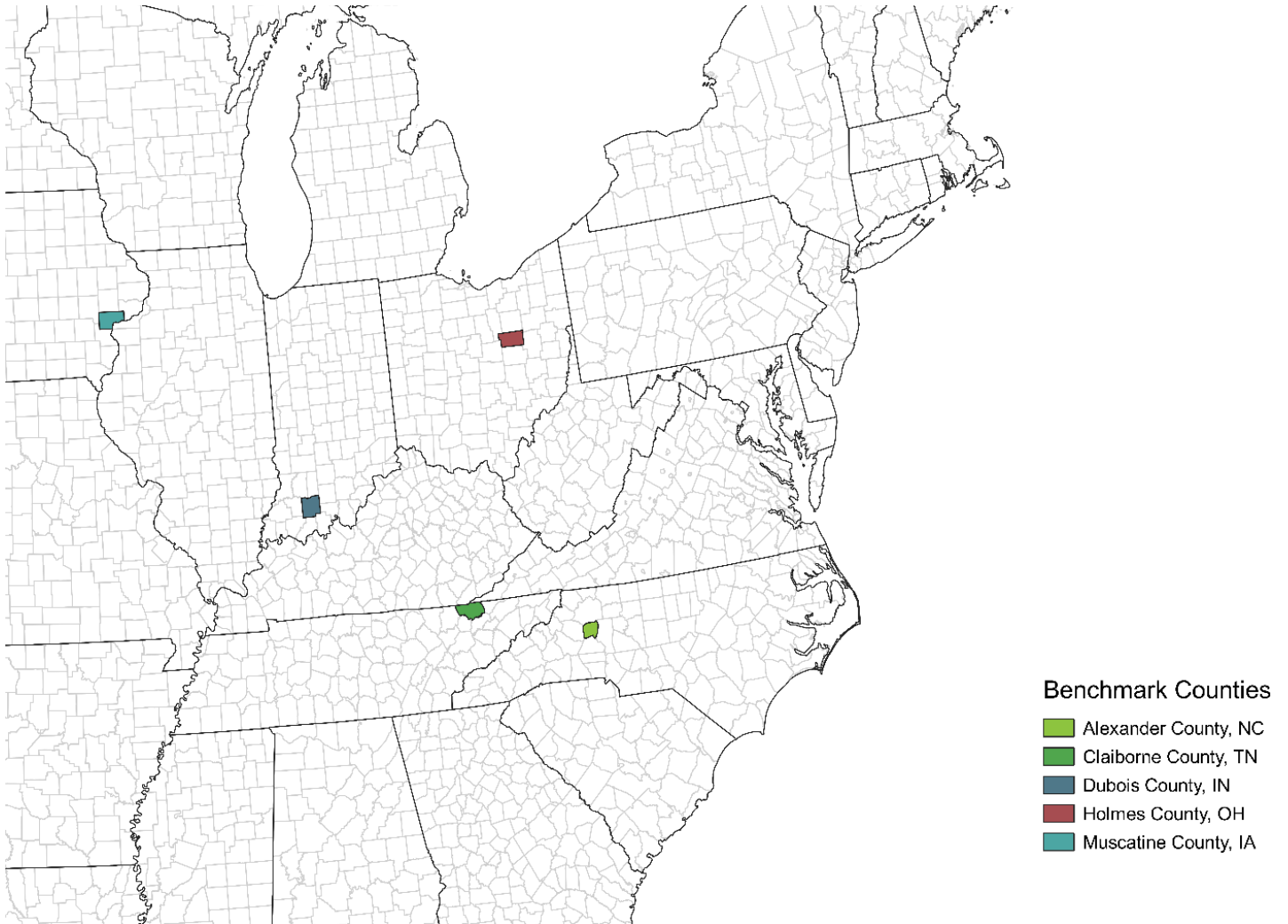
In addition to the major manufacturing industry, Dubois County also has a strong presence of transportation and logistics companies. Nancy Baer Trucking, Kimball Logistics, and Meyer Distributing all have operations in the county. This sector has generally been strong in Dubois County, supporting a high number of employees. However, in recent years, employment in General Freight Trucking, one of the top ten industry groups in Dubois County has gone down.

While Dubois County is not necessarily known for having a robust finance industry, the presence of the headquarters for German American Bank presents an opportunity to grow this sector. The bank has grown its presence outside of Jasper, with 65 offices in areas of southern Indiana and Kentucky.¹⁴ Overall, the finance industry in Dubois County is quite small. Leveraging this key asset could help attract additional financial services companies to the county.

Community Benchmarking

Peer Communities

In order to assess Dubois County's strength and assets, peer communities were identified across the United States. These communities were then compared to Dubois County across a variety of factors.



12. Dubois County Herald. <https://duboiscountyherald.com/b/jasper-poised-to-become-giga-city-by-2018v>

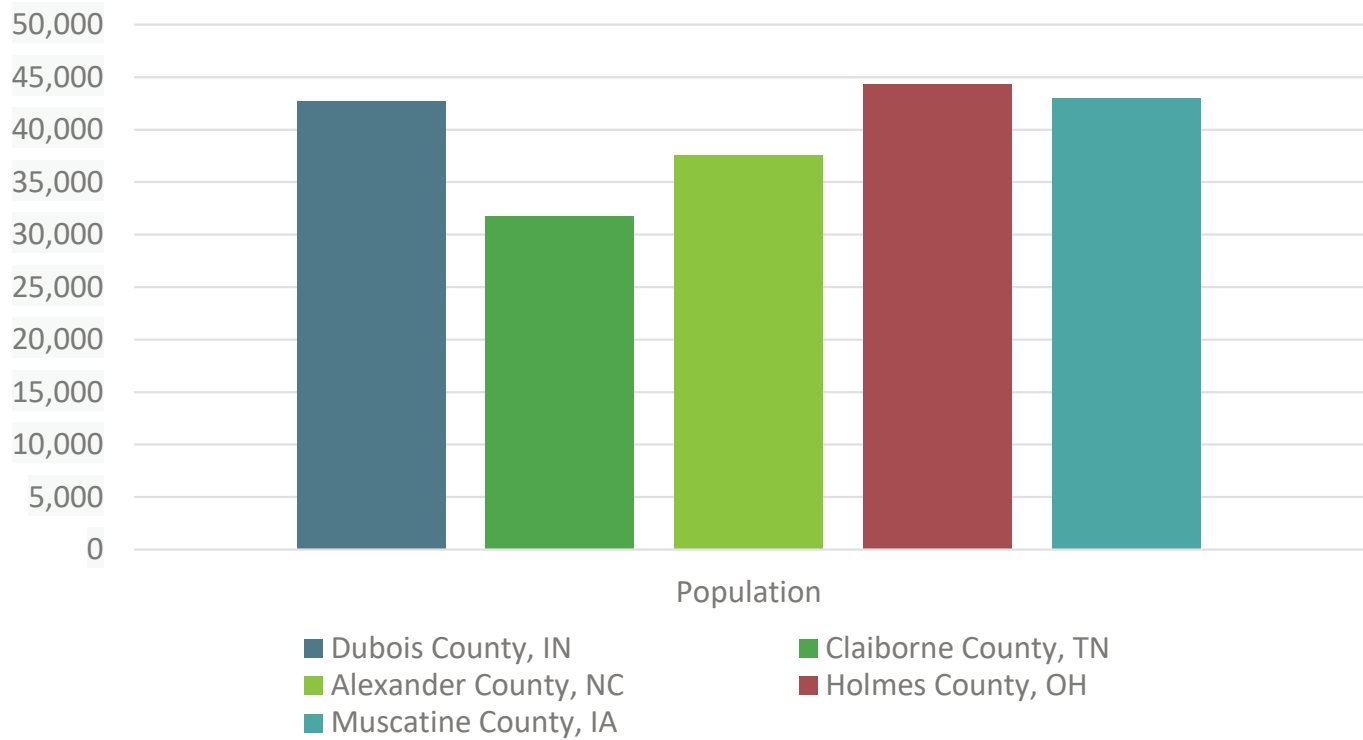
13. <https://jasper.smithville.com/is-your-fiberhood-in-the-race/>

14. German American Bank, <https://germanamerican.com/about/history/>

Methodology

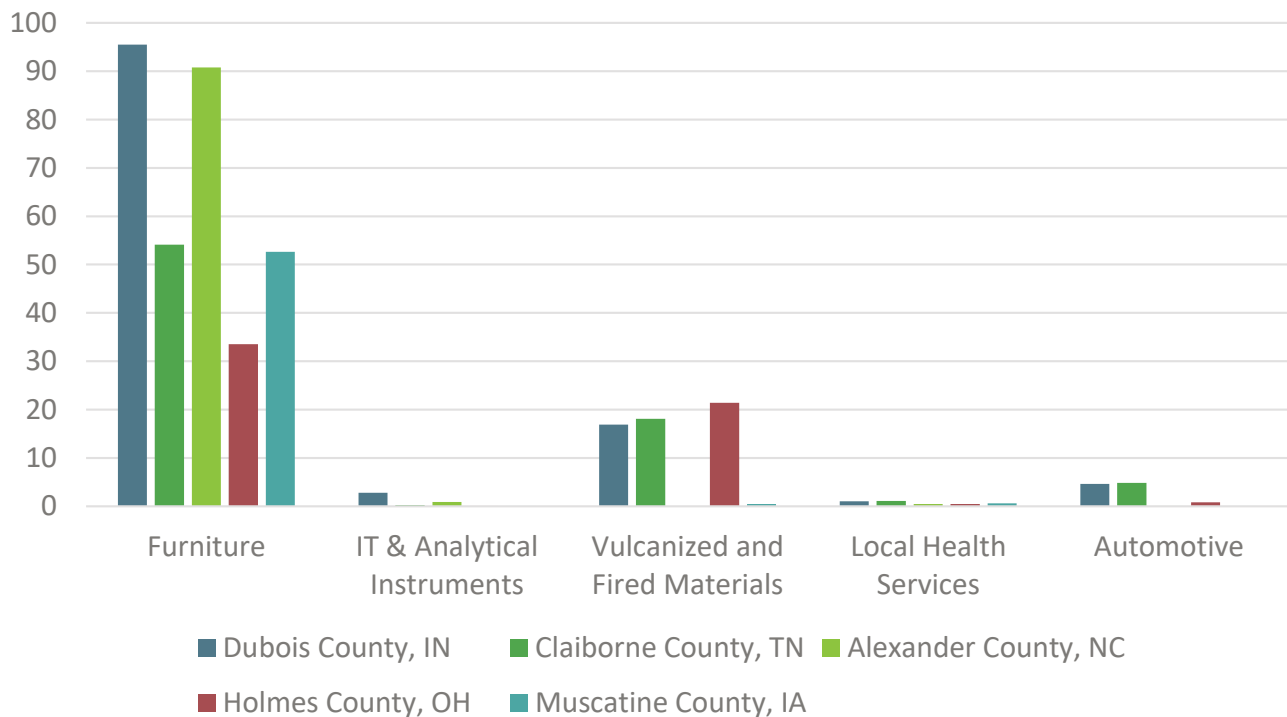
The criteria for selecting these peer communities included population level, income levels, and location quotients in each of Dubois County’s five specialized clusters. Depictions of a few of these metrics are provided below. From a population standpoint, Dubois County is larger than the benchmark counties with similar specialties. However, both Holmes County and Muscatine County are, like Dubois, between 40,000 and 45,000 in population.

Figure 8: Population: Dubois vs. Benchmark Counties



Source: Economic Modeling Specialists International, 2018.2.

Figure 9: Location Quotients in Top Clusters: Dubois vs. Benchmarks



Source: Economic Modeling Specialists International, 2018.2.

Though no county precisely matched Dubois’s distribution of employment concentration, a few shared its specialization in Furniture, Vulcanized and Fired Materials, and Automotive production. Figure 9 shows the specialization (as shown by location quotient) of employment for Dubois County and benchmark counties for the top clusters in Dubois County. Dubois County has the highest location quotient in the Furniture and IT & Analytical Instruments clusters, but slightly lower concentration in the Vulcanized and Fired Materials and Automotive clusters.

Additionally, all counties have some form of higher educational institution. In Dubois County, Vincennes University – Jasper offers a variety of Associate Degree programs with a focus on business, computer and electronics technology, law enforcement, nursing, and pharmacy technology programs.¹⁵ The Alexander Center at Catawba Valley Community College is located in Alexander County, North Carolina. The Alexander Center for Education and Applied Technology and the Alexander Furniture Academy are housed at this location.¹⁶

Mucastine Community College in Mucastine County, Iowa offers programs in agriculture, architecture, arts, information technology, hospitality, education, finance, public administration, health science, human services, law, manufacturing, marketing, engineering, transportation and the liberal arts. The Muscatine Learning Consortium is a business partnership between several companies looking to provide specific training and professional development opportunities for their employees. Member companies include Allsteel, Bridgestone, Carver, HNI, Hoffman, KraftHeinz, Monsanto, and others.¹⁷

The Claiborne County campus of Walters State Community College in Tennessee offers academic classes as well as non-credit training classes. Many classes are web-based or video streamed to allow for a variety of programs to be offered in the rural area.¹⁸

University of Akron – Millersburg in Holmes County, Ohio offers introductory classes in economic analysis, English, mathematics, politics, sociology, computer applications, biology, healthcare office finance and management, and criminology. Non-credit classes in computer programs, such as Excel and PowerPoint are also offered.¹⁹

15. Vincennes University – Jasper, <https://www.vinu.edu/web/jasper-campus>.
 16. Alexander Center at Catawba Valley Community College, http://www.cvcc.edu/about_us/buildings_centers/alexander_Center/index.cfm.
 17. Eastern Iowa Community Colleges, <https://www.eicc.edu/>

18. Claiborne County Campus, Walters State Community College, <https://www.ws.edu/campuses/claiborne/>
 19. University of Akron – Millersburg Schedule of Classes, https://wayne.uakron.edu/courses/2019/Millersburg_Spring_2019_Schedule_of_Classes.pdf.

Comparisons

Table 10 provides a comparison of key indicators between Dubois County to the benchmark counties. Columns within a row shaded green represent higher values for the given indicator. In comparison to each of these communities, Dubois County fares relatively well. It ranks in the middle in population and population growth but has significantly more jobs than any other peer county. It trails only Muscatine County in average earnings but has the highest cost of living of any peer county. It also ranks second in educational attainment (bachelor's degrees), GRP²⁰, Exports²¹, and Imports.²² In addition, it outpaces its peers in labor force participation and employment figures, with the lowest unemployment rate among the five counties. Lastly, it has a relatively high median household income, low crime rates, and a high number of veterans. Muscatine County—with a Fortune 1,000 company (HNI Corp), larger population, and higher income—has higher unemployment and higher crime rates than Dubois County.

Overall, this comparison indicates that Dubois County has a much larger economy and industry than would be suggested by its population. The county has a large number of jobs, but population growth may be needed to support those jobs. This is highlighted by the low unemployment rate. Overall, the data would indicate that quality of life in Dubois County is high, with low crime rates. However, the high cost of living is a concern, especially relative to the county's average earnings.²³ While the economy in Dubois County is strong with a number of major employers, the county's absence of a Fortune 1000 company indicates it may still have challenges with attracting new major employers.

Table 10: Comparison of Benchmark Regions to Dubois County

Regional Overview	Muscatine County, IA	Holmes County, OH	Dubois County, IN	Alexander County, NC	Claiborne County, TN
Population (2008)	42,514	42,030	41,956	36,840	32,007
Population (2018)	43,046	44,371	42,770	37,596	31,739
Population Change %	1%	6%	2%	2%	-1%
Total Industry Jobs (2008)	25,083	19,656	30,123	11,539	10,578
Total Industry Jobs (2018)	25,719	22,878	31,082	10,696	10,321
Total Industry Jobs Change %	3%	16%	3%	-7%	-2%
Current Average Earnings	\$58,249	\$43,228	\$49,307	\$44,300	\$43,213
Cost of Living Index	95.4	94.9	99.7	95.1	90.4
Cost of Living Adjusted Current Average Earnings	\$61,315	\$45,503	\$49,307	\$46,632	\$48,015
Bachelor's Degree or Higher	5,951	2,045	5,507	3,563	3,205
Bachelor's Degree or Higher %	20.80%	7.90%	19.00%	13.10%	14.10%
GRP (in billions)	\$3.13	\$2.01	\$2.78	\$0.85	\$0.89
Exports (in billions)	\$5.32	\$3.08	\$4.14	\$1.94	\$1.15
Imports (in billions)	\$4.17	\$2.94	\$3.86	\$2.20	\$1.51
Labor Force (Dec 2017)	22,216	20,104	22,609	17,805	12,803
Participation Rate (Dec 2017)	65.40%	61.70%	65.90%	56.90%	47.80%
Unemployment (Dec 2017)	632	631	489	654	498
Unemployment Rate (Dec 2017)	2.80%	3.10%	2.20%	3.70%	3.90%
Number of Fortune 1,000 Businesses	1	0	0	0	0
Median Household Income (2016)	\$55,971	\$53,619	\$55,154	\$40,404	\$33,428
Violent Crimes per 1,000 people	3.93	0.39	1.3	1.66	3.66
Property Crimes per 1,000 people	17.51	4.69	6.27	16.86	19.06
Veterans	2,399	1,618	2,545	2,325	1,816

Source: Economic Modeling Specialists International, 2018.2

20. Gross Regional Product measures the final market value of all goods and services produced in the region.
21. Exports measure the market value of all goods and services produced in the region and purchased by residents or businesses outside of the region.
22. Imports measure the market value of all goods and services produced outside of the region and purchased by residents or business inside of the region.
23. The Cost of Living Index from the Council for Community and Economic Research is a measure of consumer expenditures across six categories of purchases: grocery items, housing, utilities, transportation, health care, and miscellaneous goods and services.

Aspirational Communities

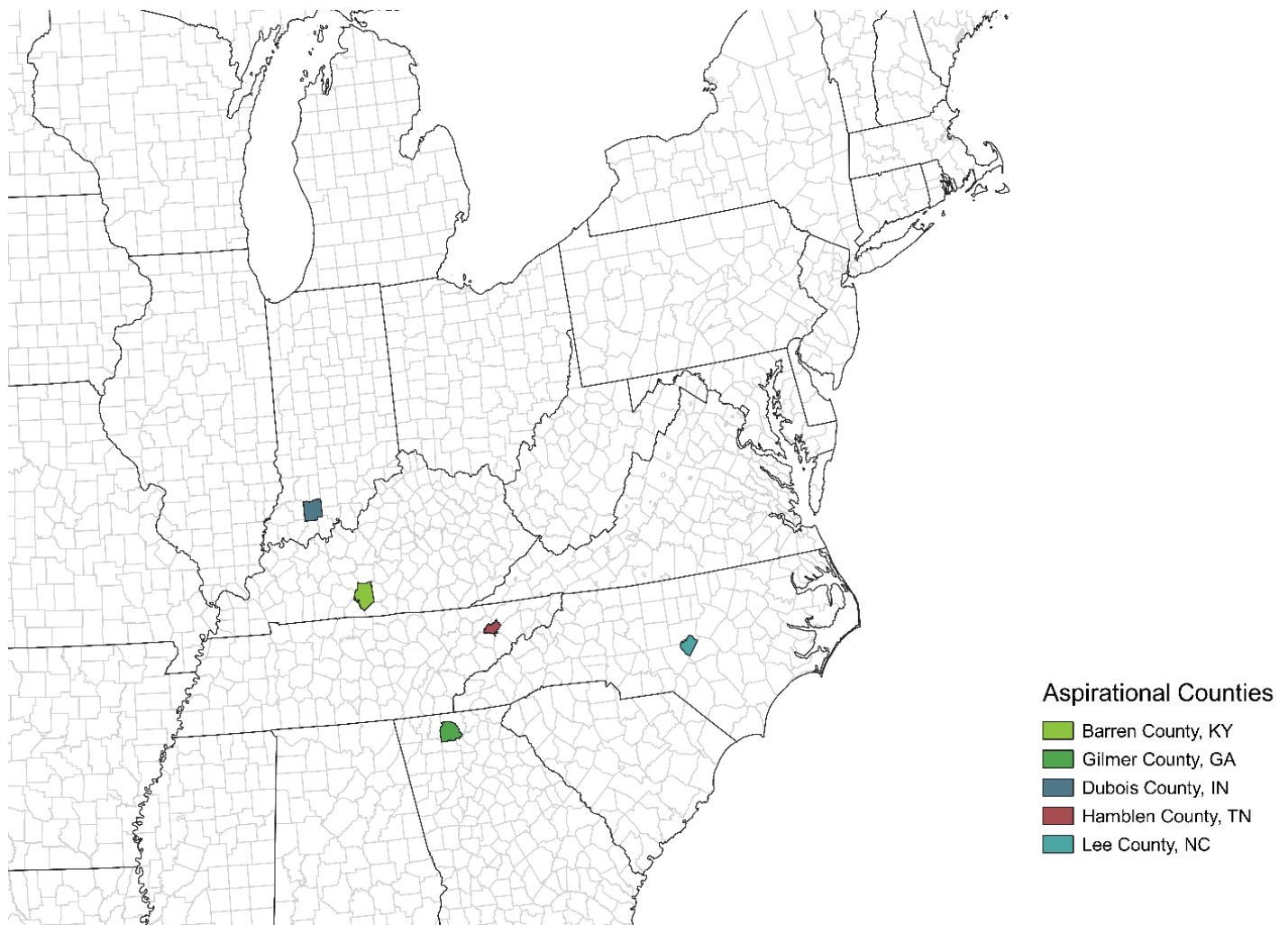
In many ways, Dubois County is doing better than its closest peers. In order to seek improvement, then, Dubois County must look to aspirational alternatives: communities that may not be as similar currently but provide models for the growth and improvements that are needed in Dubois County. These improvements center around two main needs: population growth and economic diversification.

Methodology

Following these needs, aspirational communities were identified that have exhibited significant population growth and reduced their reliance on manufacturing over the past 15 years. Currently, Dubois County has a population of 42,770, and 38.4% of its jobs are in manufacturing. Based on these two benchmarks, four counties were identified that started in similar positions in 2003 and have improved significantly over the past 15 years.²⁴

Each of the four aspirational communities, shown on either side of Dubois County in Table 11, experienced at least 10% population growth between 2003 and 2018. This was at least twice the rate of Dubois County's growth. At the same time, these counties reduced their manufacturing dependence (the portion of total employment in the manufacturing sector) and reduced their reliance on commuters to fill open jobs—shown in changes between 2003 and 2018 Net Commuters. Perhaps most importantly, however, each of these four aspirational communities currently ranks in the top 50% of all U.S. counties for economic diversity—despite starting out in 2003 with levels of manufacturing dependence approaching what Dubois County has currently.

Though these counties are far from perfect, they do provide models for economic and population growth in a similar context to Dubois County. They are examples of relatively rural, manufacturing communities that have made strides towards diversity and economic stability in recent years.



24. Improvement was judged by factors shown in Table 11, including population growth, change in manufacturing dependence, and overall economic diversity.

Table 11: Comparison of Aspirational Communities to Dubois County

Regional Overview	Hamblen County, TN	Lee County, NC	Dubois County, IN	Barren County, KY	Gilmer County, GA
Population (2003)	58,618	49,372	40,547	39,164	25,575
Population (2018)	64,493	60,575	42,770	44,106	31,040
Population Change %	10%	23%	5%	13%	21%
Total Jobs (2003)	36,094	29,001	29,615	19,340	9,267
Total Jobs (2018)	33,706	28,466	31,082	18,551	8,158
Total Jobs Change %	-7%	-2%	5%	-4%	-12%
Manufacturing Dependence, 2003	34.50%	35.30%	40.00%	29.00%	31.60%
Manufacturing Dependence, 2018	27.90%	28.00%	38.40%	16.60%	17.10%
Mfg. Dependence Change %	-6.60%	-7.30%	-1.60%	-12.40%	-14.50%
Current Economic Diversity	58.40%	64.60%	20.20%	63.80%	55.80%
2003 Net Commuters	6,094	3,297	6,011	2,054	124
2018 Net Commuters	4,978	-4,994	4,810	-233	-1,595

Source: Economic Modeling Specialists International, 2018.2 & 2018.4

County Profiles

A picture of how population change has occurred in each of these counties is provided in Table 12, which breaks down the causes of population change in each place since 2010. The key segments of population change are natural increases (defined as the difference between total births and total deaths), international migration, and domestic migration. The latter category is where Dubois County has done most poorly, but many of the aspirational communities have really shined. More detailed descriptions of the changes that have occurred in each community are provided below.

Table 12: Estimates of the Components of Population Change: 2010-2017

	Total Change	Natural Increase (Births - Deaths)	International Migration	Domestic Migration
Lee County, North Carolina	2,572	1,810	546	233
Gilmer County, Georgia	2,393	334	476	1,569
Hamblen County, Tennessee	1,744	313	765	719
Barren County, Kentucky	1,628	480	215	955
Dubois County, Indiana	669	1,052	383	-749

Source: U.S. Census Bureau (2017). Estimates of the Components of Residential Population Change: 2010-2017.

Hamblen County, TN

Located in Northeast Tennessee between Knoxville and Kingsport, Hamblen County is in close proximity to the Great Smoky Mountains and two large lakes. The county's seat is Morristown, a growing city that recently ranked as one of the top five U.S. cities for per capita income growth.²⁵ Recently, Hamblen County's population growth has been driven by international²⁶ and domestic migration; the county has had around 750 net migrants in each category since 2010.²⁷ In addition, its economy has diversified. Since 2003, the county has added jobs in some manufacturing industries (such as engine parts manufacturing), but also added employment in restaurants, retail, and health care. At the same time, the county has significantly reduced its employment in furniture manufacturing, fibers and filaments manufacturing, and freight trucking.²⁸

Lee County, NC

Located in the center of the state, Lee County is about an hour's drive from Raleigh. Its largest city is Sanford, with about 29,000 residents. The Sanford tourism board takes pride in a diversifying economy, a rejuvenated downtown, and an active entertainment scene.²⁹ Recently, Lee County's population growth has been driven by natural increases; the county has had positive migration, but added twice as many people through natural population growth 2010.³⁰ Since 2003, the county has added jobs in some manufacturing industries (such as construction machinery manufacturing), but also added employment in temporary help services, restaurants, and skilled care facilities. At the same time, the county has significantly reduced its employment in plastic manufacturing, animal slaughtering, and motor vehicle parts manufacturing.³¹

Barren County, KY

Barren County is located in southern Kentucky, near Mammoth Cave National Park and Barren River Lake. Its county seat is Glasgow, a city of approximately 15,000 residents. The city prides itself on quality of life, Scottish heritage, and its level of telecommunication connectivity.³² Recently, Barren County's population growth has been driven by domestic migration, adding 955 net domestic migrants since 2010.³³ Since 2003, the county has added jobs primarily in non-manufacturing industries, such as business support services, restaurants, and retail. At the same time, the county has significantly reduced its employment in motor vehicle parts manufacturing, foundries and metal product manufacturing, and office furniture production.³⁴

Gilmer County, GA

Located in Northern Georgia, Gilmer County is home to Rich Mountain Wilderness and neighbors the Chattahoochee National Forest. Its county seat of Ellijay is approximately 1.5 hours north of Atlanta. Recently, Gilmer County's population growth has been driven by domestic migration, adding 1,569 net domestic migrants since 2010.³⁵ According to 2016 Census Estimates, the majority of residents coming to Gilmer County are from elsewhere in Georgia, followed by North Carolina, South Carolina, and California.³⁶ Since 2003, the county has added jobs primarily in non-manufacturing industries, such as restaurants, retail, and accommodations. At the same time, the county has significantly reduced its employment in slaughterhouses, textile mills, and wood product manufacturing.³⁷

Insights into the elements of growth in these aspirational communities will be elaborated upon in Approach 4 of the following diversification analysis to identify ways Dubois County can learn from growth in these communities.

25. Stebbins, S., Comen, E., & Sauter, M. B. (2018). *U.S. Cities Where Incomes Are Growing at the Fastest Pace*. *USA Today*. Retrieved from: <https://www.usatoday.com/story/money/economy/2018/08/07/us-cities-where-incomes-growing-fastest/37263277/>

26. In fact, there are signs that some of the county's growth has been driven by illegal immigration. A large 2017 ICE raid in Morristown was profiled by the *New York Times*: <https://www.nytimes.com/interactive/2018/06/11/us/tennessee-immigration-trump.html>

27. U.S. Census Bureau (2017). *Estimates of the Components of Residential Population Change: 2010-2017*.

28. Emsi (2018.4)

29. *Welcome to Sanford*. (2018). *Sanford – Lee County History*. Retrieved from: <http://welcometosanford.com/index.php/history/>

30. U.S. Census Bureau (2017). *Estimates of the Components of Residential Population Change: 2010-2017*.

31. Emsi (2018.4)

32. IDEA (2018). *Our Community*. Retrieved from: <http://glasgowbarrenidea.com/our-community/>

33. U.S. Census Bureau (2017). *Estimates of the Components of Residential Population Change: 2010-2017*.

34. Emsi (2018.4)

35. U.S. Census Bureau (2017). *Estimates of the Components of Residential Population Change: 2010-2017*.

36. U.S. Census Bureau (2016). *County-to-County Migration Flows: 2012-2016*.

37. Emsi (2018.4)

Diversification Analysis

In order to assess possibilities for industry diversification, four possibilities were considered:

- Industries that would fill gaps in Dubois County's current supply chain,
- Industries that are similar to furniture producers, and
- Industries that would leverage Dubois County's unique strengths.
- Industries insights gathered from aspirational communities

Approach 1: Filling in Supply Chain Gaps

Supply chain gaps are defined as industries for which a region is relying upon imports for a significant portion of its needs. Of course, a region will never be able to get 100% of its needs from inside its own boundaries, but significant gaps imply that the presence of a local supplier could fill a missing link within the local economy.

For Dubois County, potential supply chain in-fill industries are determined based on two criteria: the estimated dollars of current demand that is met by imports, and the presence of current economic activity within the region in that industry. The first criterion is the most important; the second is used only to ensure that any recommended industries are viable possibilities for growth or attraction to Dubois County.

Given these criteria, the top recommendations for industries to fill Dubois County's supply chain gaps are listed in the Table 13 along with the total demand for each industry's products or services and the amount and percent met by companies in region versus imported from out of the region. The top industries are Corporate, Subsidiary, and Regional Managing Offices; and Animal Production. Both of these, according to Economic Modeling Specialists International, are presently imported to the county in excess of at least \$100m in economic activity. The remainder of the recommended industries are comprised primarily of professional and technical services, but also include wholesale trade, machine shops, and higher education.³⁸

With the exception of Animal Production, Machine Shops, and All Other Plastics Product Manufacturing, most of the target industries in this category are office type functions of business, which showcases the heavy manufacturing nature of the overall industry structure in Dubois County.

Attracting additional Corporate, Subsidiary, and Regional Managing Offices could take two approaches: 1) new businesses without an existing connection to the area, and 2) corporate or regional offices of firms with existing operations in the region. Research has shown that corporate headquarters rarely move, especially without an existing connection to the target community, so the second approach is most likely to yield positive results. Efforts in this area should consist of strategically targeting businesses with a large current presence, understanding their potential expansion plans, and using local contacts to leverage corporate connections. These initial conversations with existing businesses will also help gather data on what types of facilities a corporate office might need. Some corporate offices might be standalone office buildings, while others might house some production related activities (assuming manufacturing is the primary industry). For some businesses the most efficient means might be expansion of existing facilities to include corporate offices in the current building or campus.

Wholesale Trade Agents and Brokers, Offices of Lawyers, and Direct Property and Casualty Insurance Carriers represent service industries for offices (often corporate or regional) of major industry currently present in Dubois County. Attracting these industries to the region might provide some foundation for bringing in additional corporate offices. These industries tend to have smaller office space requirements and employ an average of between four (Wholesale Trade Agents and Brokers) and 43 (Direct Property and Casualty Insurance Carriers) people.³⁹ Based on the national average of 180 square foot per employee, the space needs should be between 1,000 and 10,000 square feet.⁴⁰

38. *On the point of higher education, Dubois County is home to the Jasper campus of Vincennes University. In this case, the model's estimates likely underestimate the contribution of the University to other industries within the county. However, this result does emphasize the need for increased presence from higher education institutions within the county.*

39. *Economic Modeling Specialists International, 2018.3, Employment per Payrolled Business Location for the United States.*

40. *NAIOP, <https://www.naiop.org/en/Magazine/2017/Fall-2017/Marketing-Leasing/Trends-in-Square-Feet-per-Office-Employee-An-Update>, Accessed December 1, 2018.*

The targeted technology services of Wired Telecommunications Carriers⁴¹ and Custom Computer Programming Services average around 29 employees and 8 employees, respectively. These businesses also require smaller office space facilities, ranging around 5,500 feet and 1,500 square feet, respectively.

Animal Production, Machine Shops, and All Other Plastics Product Manufacturing⁴² average between 14 and 50 employees per location.⁴³ Animal Production likely requires a large facility in more rural agricultural areas of the County. Machine Shops require an average facility size of 44,000 square feet and All Other Plastics Product Manufacturing companies require an average size of 117,000 square feet.⁴⁴

Colleges, Universities, and Professional Schools indicate the need for additional or added workforce and educational services in Dubois County. The presence of Vincennes University – Jasper is a strong resource for the County, but an added understanding of the technical training needs for employers in the area is will help the County build these educational resources.

Table 13: Industries that fill Dubois County Supply Chain Gaps

NAICS	Demand for	Demand met In-region	Demand met by Imports	% Demand met by Imports	Total Demand
551114	Corporate, Subsidiary, and Regional Managing Offices	\$6,212,364	\$152,189,448	96.1%	\$158,401,812
112000	Animal Production	\$60,210,350	\$122,114,508	67.0%	\$182,324,859
517311	Wired Telecommunications Carriers	\$6,033,530	\$52,995,581	89.8%	\$59,029,112
425120	Wholesale Trade Agents and Brokers	\$13,518,886	\$47,999,032	78.0%	\$61,517,917
541110	Offices of Lawyers	\$4,821,584	\$39,872,947	89.2%	\$44,694,531
524126	Direct Property and Casualty Insurance Carriers	\$4,331,230	\$31,434,001	87.9%	\$35,765,231
332710	Machine Shops	\$464,242	\$27,284,365	98.3%	\$27,748,606
611310	Colleges, Universities, and Professional Schools	\$2,683	\$27,114,459	100.0%	\$27,117,141
541511	Custom Computer Programming Services	\$219,966	\$25,603,204	99.1%	\$25,823,170
326199	All Other Plastics Product Manufacturing	\$1,168,097	\$24,825,779	95.5%	\$25,993,877

Source: Economic Modeling Specialists International, 2018.2

41. The attraction of Wired Telecommunications Carriers may not be feasible due to established service territory requirements for existing companies. The presence and access to these services for companies regardless of headquarter location is likely primary concern.

42. Examples include dinnerware, clothes hangers, air mattresses, resilient floor covering, siding, gloves, cups, bowls, inflatable swimming pool rafts and similar flotation devices, trash containers, and hardware.

43. Economic Modeling Specialists International, 2018.3, Employment per Payrolled Business Location for the United States.

44. U.S. Energy Information Administration, Manufacturing Energy Consumption Survey (MECS), 2014.

Approach 2: Industries that are Similar to Furniture Production

For the second approach, the goal was to identify industries that could thrive with the same resources as Dubois County's current furniture industry, but that are not currently strong or present within the county.

These industries were identified by isolating industries with similar inputs to production as those required by the furniture industry. This process is explained more in Appendix 2. The results, unsurprisingly, have many similarities to furniture manufacturing as shown in Table 14. They include Engineered Wood Member Manufacturing; Softwood Veneer and Plywood Manufacturing; and Truss Manufacturing. While only one of the ten industries in the list is currently present in Dubois County, it is likely that many of the others could be strong candidates for recruitment or startups—given the county's present strengths in furniture manufacturing.

These industries typically employ between 22 (Wood Preservation) and 122 (Softwood Veneer and Plywood Manufacturing) people.⁴⁵ The target industries below have the following average facility sizes:

- Veneer, Plywood and Engineered Woods manufacturers, including Engineered Wood Member (except Truss) Manufacturing, Softwood Veneer and Plywood Manufacturing, and Truss Manufacturing: 100,000 square feet.
- Other Wood Products, including Other Millwork (including Flooring), Wood Window and Door Manufacturing, Prefabricated Wood Building Manufacturing, and Manufactured Home (Mobile Home) Manufacturing: 67,000 square feet.
- Wood Preservation and Pulp Mills: 71,000 square feet
- Mattress Manufacturing: 70,000 square feet⁴⁶

Attracting these industries would have minor impacts on the workforce depending on the number of firms attracted due their small average employment. However, due to their relation to the Furniture cluster and the alignment with Wood manufacturing, these industries could likely rely on a similar workforce to existing industry. In the United States, the top five occupations in these industries include:

- Assemblers and Fabricators, All Other, Including Team Assemblers
- Woodworking Machine Setters, Operators, and Tenders, Except Sawing
- Sawing Machine Setters, Operations and Tenders, Wood
- Laborers and Freight, Stock and Material Movers, Hand
- First-Line Supervisors of Production and Operating Workers

Three of these occupations (Assemblers and Fabricators, All Other, Including Team Assemblers, Laborers and Freight, Stock, and Material Movers, Hand, and Woodwork Machine Setters, Operators, and Tenders, Except Sawing are the top three occupations by employment in Dubois County.⁴⁷

45. *Economic Modeling Specialists International, 2018.3, Employment per Payrolled Business Location for the United States.*

46. *U.S. Energy Information Administration, Manufacturing Energy Consumption Survey (MECS), 2014.*

47. *Economic Modeling Specialists International 2018.3.*

48. *This is the proportion of each industry's inputs that are from top ten specialized industries selling to the furniture industry.*

Table 14: Industries that are Similar to Furniture Production

NAICS	Description	Portion of Industry Inputs from Furniture Suppliers ⁴⁸	In Furniture Cluster?	Dubois County LQ
321213	Engineered Wood Member (except Truss) Manufacturing	23.2%	No	0.00
321212	Softwood Veneer and Plywood Manufacturing	23.2%	No	0.00
321214	Truss Manufacturing	23.2%	No	0.00
321918	Other Millwork (including Flooring)	18.3%	No	0.25
321911	Wood Window and Door Manufacturing	18.3%	No	0.00
321992	Prefabricated Wood Building Manufacturing	18.3%	No	0.00
321991	Manufactured Home (Mobile Home) Manufacturing	18.3%	Yes	0.00
321114	Wood Preservation	16.1%	No	0.00
322110	Pulp Mills	14.1%	No	0.00
337910	Mattress Manufacturing	12.5%	Yes	0.00

Approach 3: Industries that Use Dubois County's Strengths

For the last category of analysis, supply chains were analyzed to identify industries that could benefit from Dubois County's current strengths. For this analysis, strength industries were defined as those for which Dubois County had at least 10 times the national average for employment concentration. In total, 24 industries fit this criterion. The recommended industries listed in Table 15 are those that rely significantly on these 24 strength industries and are not already present within Dubois County.

The most prominent alternative appears to be Ice Cream and Frozen Dessert Manufacturing, followed by Light Truck and Utility Vehicle Manufacturing; Electronic Computer Manufacturing; and Automobile Manufacturing.

With the exception of Services for the Elderly and Persons with Disabilities, all the target industries below are manufacturing. The presence of Services for the Elderly and Persons with Disabilities likely indicates the County's healthcare and social service presence and potentially the need to serve an aging population. The County should look to quantify the need for activity, adult day care, senior citizen, and other community centers for this population in order to identify what is needed and the most appropriate location for this type of service.

The targeted manufacturing industries employ on average between 35 (Ice Cream and Frozen Dessert Manufacturing) and 879 (Light Truck and Utility Vehicle Manufacturing).⁴⁹ The industries below have the following average facility sizes.

- Food Manufacturing, including Ice Cream and Frozen Dessert Manufacturing, Dry, Condensed, and Evaporated Dairy Product Manufacturing, Frozen Specialty Food Manufacturing, and Cheese Manufacturing: 107,000 square feet
- Light Truck and Utility Vehicle Manufacturing: 773,000 square feet
- Electronic Computer Manufacturing: 80,000 square feet
- Automobile Manufacturing: 705,000 square feet
- Heavy Duty Truck Manufacturing: Not Available⁵⁰
- Motor Vehicle Seating and Interior Trim Manufacturing: 225,000 square feet

For the large-scale manufacturing activities in Transportation (Automobile Manufacturing, Light Truck and Utility Vehicle Manufacturing, and Heavy Duty Truck Manufacturing), attracting these companies would require a very large increase in the available workforce, with each company requiring an additional 200 and 900 employees. Smaller-scale production in the Food sector could be attracted with a smaller additional workforce. Each company in this sector would require between 35 and 100 employees.

Table 15: Industries that Use Dubois County's Strengths

NAICS	Description	Portion of inputs from Unique Industries ⁵¹	Dubois County LQ
311520	Ice Cream and Frozen Dessert Manufacturing	13.7%	0.00
336112	Light Truck and Utility Vehicle Manufacturing	7.6%	0.00
334111	Electronic Computer Manufacturing	7.3%	0.00
336111	Automobile Manufacturing	6.6%	0.00
336120	Heavy Duty Truck Manufacturing	6.3%	0.00
311514	Dry, Condensed, and Evaporated Dairy Product Manufacturing	5.8%	0.00
624120	Services for the Elderly and Persons with Disabilities	5.7%	0.29
336360	Motor Vehicle Seating and Interior Trim Manufacturing	5.5%	0.07
311412	Frozen Specialty Food Manufacturing	5.2%	0.00
311513	Cheese Manufacturing	4.6%	0.00

Source: Economic Modeling Specialists International, 2018.2

49. Economic Modeling Specialists International, 2018.3, *Employment per Payrolled Business Location for the United States*.

50. The square footage for Heavy Duty Truck Manufacturing is not distinguished from all Transportation Equipment Manufacturing. The average of approximately 225,000 square feet for Transportation Equipment is likely not accurate based on averages provided for Automobile Manufacturing and Light Truck and Utility Vehicle Manufacturing. That average is used for Motor Vehicle Seating and Interior Trim Manufacturing; U.S. Energy Information Administration, *Manufacturing Energy Consumption Survey (MECS)*, 2014.

51. This is the proportion of each industry's inputs that are from Dubois County's unique and specialized industries.

Approach 4: Industry Insights from Aspirational Communities

As discussed in the Aspirational Communities section of the report, several U.S. counties in similar positions to Dubois County have realized success in diversifying their economies and growing their populations over the past 15 years. Approach 4 presents two alternatives for diversifying Dubois County's economy based on lessons learned from these communities. For each alternative, industry changes are first analyzed based on aggregating data from all four Aspirational Communities; then, key insights are applied to Dubois County. Because these insights are drawn from just four counties, rather than the nation as a whole, data in this section was aggregated to the 4-digit NAICS level.

Leveraging Emerging Growth Trends

Table 16 below analyzes trends in these four counties as a whole, identifying the top five industries in which these Aspirational Communities grew based on their unique strengths. Unique strengths are measured by the "Job Change Against National Trends" column in Table 16.⁵² Within aspirational communities, none of these five industries started out in 2003 as areas of extreme industry concentration (location quotient above 2.5), but each of them ended 2018 with above-average levels of industry concentration (location quotient above 1.0). The most unique growth occurred in Business Support Services, which moved from a location quotient of 0.38 to one of 2.07, and added 870 more jobs than national trends would predict. Conversely, Dubois County had either no activity or job losses in each of these five industries.

One opportunity for Dubois County to diversify, then, is by leveraging its strengths in industries that are still emerging. In line with this thinking, Table 17 shows the top 10 industries for which Dubois County has uniquely grown in the past five years, but it is not already extremely concentrated. These may represent emerging unique strengths of Dubois County which can be leveraged for future growth.

Some of the industries below are related to the health care industry, while others represent general support services for the population, including local government services. The growth in an aging population had generated the need for home health care services, while an increasing number of women in the workforce has spurred demand for child day care services.

Interestingly, none of these industries are within manufacturing, indicating that Dubois County is already in the process of increasing its employment in non-manufacturing industries that provide general services for the broader community.

52. This differentiates between growth that would have been expected given national trends, and growth that was unique to Aspirational Communities. For example, Business Support Services grew by 909 jobs in these communities from 2003 to 2018. However, this industry grew slightly across the country, and these counties could have expected to grow by 39 jobs if they were simply following national trends. The difference, "Job Change Against National Trends," represents job growth that is unique to these Aspirational Communities, and is directly attributable to their policy and/or economic circumstances.

Table 16: Top 5 Unique Growth Industries in Aspirational Communities

NAICS	Description	Job Change Against National Trends	2003 Jobs	2018 Jobs	2003 LQ	2018 LQ	'03 - '18 % Change	'03 - '18 % Change, Dubois County
5614	Business Support Services	870	202	1,111	0.38	2.07	450%	-31%
3331	Agriculture, Construction, and Mining Machinery Manufacturing	755	292	1,073	2.38	9.48	267%	0%
3259	Other Chemical Product and Preparation Manufacturing	673	134	774	1.85	16.75	478%	0%
3256	Soap, Cleaning Compound, and Toilet Preparation Manufacturing	593	134	717	1.73	11.87	435%	0%
6231	Nursing Care Facilities (Skilled Nursing Facilities)	554	923	1,505	0.9	1.69	63%	-6%

Source: Economic Modeling Specialists International, 2018.2

Table 17: Top 10 Unique Growth Industries in Dubois County

NAICS	Description	Job Change Against National Trends	2013 Jobs	2018 Jobs	2013 LQ	2018 LQ	'13 - '18 % Change
6216	Home Health Care Services	190	37	232	0.15	0.81	527%
6221	General Medical and Surgical Hospitals	149	1,389	1,614	1.63	1.81	16%
6241	Individual and Family Services	53	94	170	0.24	0.35	81%
1151	Support Activities for Crop Production	47	48	100	0.54	1.04	108%
5619	Other Support Services (for business)	46	32	80	0.54	1.29	150%
9039	Local Government, Excluding Education and Hospitals	42	739	805	0.70	0.74	9%
9029	State Government, Excluding Education and Hospitals	39	43	82	0.10	0.19	91%
6244	Child Day Care Services	38	99	140	0.43	0.59	41%
8131	Religious Organizations	26	334	374	1.02	1.11	12%
4244	Grocery and Related Product Merchant Wholesalers	25	18	44	0.13	0.29	144%

Source: Economic Modeling Specialists International, 2018.2

Strengthening Weak Industries

One other strength demonstrated by aspirational communities was their ability to reduce deficiencies in weak industries that are typically expected by residents of most U.S. communities. “Job gaps” are defined as the difference between total employment in a certain community and the number of jobs in that industry that would be expected for an average U.S. county of the same size. Over the past 15 years, the aspirational communities collectively reduced job gaps of at least 200 jobs in five different industries, including two local government job groupings, state government, Business Support Services, and Private Households (which includes household-hired custodians, gardeners, cooks, and other similar employees).

Table 18: Top 5 Industries for Which Aspirational Communities Reduced Gaps from National Averages

NAICS	Description	2003 Job Gap in All Counties Total	2018 Job Gap	Jobs Added	2003 Jobs	2018 Jobs	2003 LQ	2018 LQ
9036	Education and Hospitals (Local Government)	(1,443)	(203)	1,240	3,954	4,527	0.73	0.96
9039	Local Government, Excluding Education and Hospitals	(674)	74	748	2,803	3,191	0.81	1.02
9029	State Government, Excluding Education and Hospitals	(723)	(337)	385	822	928	0.53	0.74
5614	Business Support Services	(329)	606	935	202	1,111	0.38	2.07
8141	Private Households	(288)	(65)	222	336	438	0.54	0.88

Source: Economic Modeling Specialists International, 2018.2

Based on job gaps in Dubois County, there are a number of industries that are typically present in a community but lacking in Dubois County. The top ten non-federal industries with the largest job gaps are shown in Table 19. Employment growth in these types of industries may not be as likely to make headlines, but each of them provides useful services that are necessary for a community's quality of life. Among the top potential industries are Employment Services; Restaurants and Other Eating Places; and a variety of education-related industries.

The prominence of both educational institutions and employment services below represents the need for an increased focus on skills growth in Dubois County and the challenge of placing workers in appropriate jobs. While as shown in the previous analysis, Dubois County has been increasing its employment in government services, the county still remains weak in this area.

Computer Systems Design and Related Services and Management, Scientific, and Technical Consulting services represent the need for additional services aimed at businesses outside of traditional manufacturing support and/or production.

Table 19: Top 10 Industries for Which Dubois County Has Gaps from National Averages

NAICS	Description	Job Gap	2003 Jobs	2018 Jobs	2003 LQ	2018 LQ
5613	Employment Services	(626)	81	58	0.12	0.09
7225	Restaurants and Other Eating Places	(620)	1,318	1,413	0.83	0.69
9036	Education and Hospitals (Local Government)	(561)	1,027	1,077	0.60	0.66
9026	Education and Hospitals (State Government)	(440)	111	153	0.20	0.26
6113	Colleges, Universities, and Professional Schools	(383)	-	-	-	-
9029	State Government, Excluding Education and Hospitals	(351)	66	82	0.13	0.19
5415	Computer Systems Design and Related Services	(327)	18	98	0.07	0.23
6241	Individual and Family Services	(317)	33	170	0.17	0.35
9039	Local Government, Excluding Education and Hospitals	(277)	667	805	0.61	0.74
5416	Management, Scientific, and Technical Consulting Services	(266)	58	71	0.30	0.21

Source: Economic Modeling Specialists International, 2018.2

National Industry Trends for Potential Target Industries

When considering how Dubois County might diversify its economy, it is also important to understand the national trends in the potential targeted industries. For example, many of the potential computer and computer-related industries that might complement the existing supply chain have a poor overall outlook due to the competition from imports.

Industries such as Automobile Interior Manufacturing, Mattress Manufacturing, SUV & Light Truck Manufacturing, and Wood Paneling Manufacturing offer a positive outlook. However, many of the potential target industries rely on Consumer Confidence Index as an external demand factor, a few rely on the value of residential construction, and a few rely on the world price of crude oil, indicating that any changes in these factors might impact multiple target industries for Dubois County. A full evaluation of the national trends and overall outlook for all potential target industries can be found in Appendix A.

Conclusion

Dubois County's existing economy is heavily concentrated in the manufacturing industry and within manufacturing is heavily concentrated in a few key industries. Many of these industries have a connected supply chain related to the strong cluster of Furniture. Moving forward, this represents a key area of strength for Dubois County, but also an opportunity to diversify in order to increase the county's resilience in the face of economic fluctuations.

The diversification analysis identified four areas of potential industry targets for diversification:

1. Industries that fill supply chain gaps
2. Industries that are similar to furniture manufacturing
3. Industries that rely on Dubois County's strengths
4. Industries that helped the aspirational communities grow and diversify

A list of top occupations needed for industries identified in each of these strategies is provided in Appendix C. The identified industries highlighted in the study represent potential opportunities for communities in Dubois County to diversify their economies, but additional planning is needed.

For each community, an understanding of the feasibility of attracting the targeted industries is necessary. Through planning and an assessment of existing capacity and resources available, communities will be able to identify the particular target industries that make sense in their communities and the steps needed to attract those particular companies.

APPENDIX A

National Industry Trends for Target Industries

The below table highlights detailed national industry trends for the target industries for diversification. The tables show the overall industry outlook, the potential for automation, and key external demand factors.

Potential Target Industry Trends:

Industry	Outlook	Potential for Automation	Key External Demand Factors
Animal Production	Strong – Due to consumer demand with some fluctuation depending on type of meat produced	Low	<ul style="list-style-type: none"> • Demand from product (i.e. red meat, chicken, milk, etc.) processing and production • Price of final product (i.e. red meat, chicken, milk, etc.) • Per capita consumption of product (i.e. red meat, chicken, milk, etc.)
Wired Telecommunications Carriers	Modest – Depending on service type, competition is strong and consumer demand for cable is down	Low	<ul style="list-style-type: none"> • Number of cable TV subscriptions • Number of broadband connections • Number of households • Per capital disposable income • Consumer Confidence Index
Wholesale Trade Agents and Brokers	Modest – E-commerce transaction are eliminating the need for trade agents	Low	<ul style="list-style-type: none"> • Industrial production index • Per capita disposable income • Corporate profit • E-commerce sales
Offices of Lawyers	Strong – Growing consumer confidence, increase in corporate profit, and estate and trust planning will drive growth	Low	<ul style="list-style-type: none"> • Corporate profit • Initial public offerings • Number of businesses • Crime rate
Direct Property and Casualty Insurance Carriers	Strong – Rising premiums and interest rates will improve revenues	Low	<ul style="list-style-type: none"> • Number of motor vehicle registrations • Homeownership rate • Yield on 10-year Treasury note • Natural disaster index
Machine Shops	Strong – High demand from manufacturers, particularly in medical devices.	High	<ul style="list-style-type: none"> • Industrial production index • Demand from metal stamping and forging • Demand from machinery manufacturing • Demand from car and automobile manufacturing • World price of steel • Aggregate private investment • Federal funding for defense
Colleges, Universities, and Professional Schools	Strong – Demand is expected to remain high, adaptation to online will allow more access	Low	<ul style="list-style-type: none"> • Number of college students • S&P 500 • Government funding for universities • National unemployment rate • High school retention rate
Custom Computer Programming Services	Strong – Growth in demand from finance and insurance industry and cloud computing will drive growth	Low	<ul style="list-style-type: none"> • Private investment in computers and software • Corporate profit • Government consumption and investment • Demand from finance and insurance

Industry	Outlook	Potential for Automation	Key External Demand Factors
All Other Plastics Product Manufacturing	Modest – due to competition from overseas imports	High	<ul style="list-style-type: none"> • Demand from car and automobile manufacturing • Demand from tool and hardware wholesaling • Demand from electrical equipment manufacturing • Price of plastics materials and resin • Value of construction • Trade-weighted index
Engineered Wood Member (except Truss) Manufacturing	Strong – due to demand for residential construction	High	<ul style="list-style-type: none"> • Value of residential construction • Demand from household furniture manufacturing • Trade-weighted index • Housing starts • Value of private nonresidential construction • Price of sawmill lumber
Softwood Veneer and Plywood Manufacturing	Strong- due to demand for residential construction	High	<ul style="list-style-type: none"> • Value of residential construction • Demand from household furniture manufacturing • Trade-weighted index • Housing starts • Value of private nonresidential construction • Price of sawmill lumber
Truss Manufacturing	Strong- due to demand for residential construction	High	<ul style="list-style-type: none"> • Value of residential construction • Demand from household furniture manufacturing • Trade-weighted index • Housing starts • Value of private nonresidential construction • Price of sawmill lumber
Other Millwork (including Flooring)	Strong – due to demand for redeveloped housing	High	<ul style="list-style-type: none"> • Value of residential construction • Demand from household furniture manufacturing • Trade-weighted index • Housing starts • Value of private nonresidential construction • Price of sawmill lumber
Wood Window and Door Manufacturing	Strong – due to demand for redeveloped housing	High	<ul style="list-style-type: none"> • Value of residential construction • Demand from household furniture manufacturing • Trade-weighted index • Housing starts • Value of private nonresidential construction • Price of sawmill lumber
Prefabricated Wood Building Manufacturing	Strong – due to demand for redeveloped housing	High	<ul style="list-style-type: none"> • Value of residential construction • Demand from household furniture manufacturing • Trade-weighted index • Housing starts • Value of private nonresidential construction • Price of sawmill lumber
Manufactured Home (Mobile Home) Manufacturing	Modest- due to demand for new residential construction	Medium	<ul style="list-style-type: none"> • Number of households • National unemployment rate • House price index • Value of residential construction • 30-year conventional mortgage rate

Industry	Outlook	Potential for Automation	Key External Demand Factors
Wood Preservation	Strong – due to demand for redeveloped housing	High	<ul style="list-style-type: none"> • Value of residential construction • Demand from household furniture manufacturing • Trade-weighted index • Housing starts • Value of private nonresidential construction • Price of sawmill lumber
Pulp Mills	Strong – due to demand for redeveloped housing	High	<ul style="list-style-type: none"> • Value of residential construction • Demand from household furniture manufacturing • Trade-weighted index • Housing starts • Value of private nonresidential construction • Price of sawmill lumber
Mattress Manufacturing	Strong – Home sales will drive demand for new furniture	High	<ul style="list-style-type: none"> • Per capita disposable income • Demand from furniture stores • Import penetration into the manufacturing sector • Value of residential construction • Industrial Production Index
Ice Cream and Frozen Dessert Manufacturing	Modest- Growth in demand for healthier foods may limit outlook	High	<ul style="list-style-type: none"> • Price of milk • Per capita sugar and sweetener consumption • Per capita disposable income • Price of sugar • Healthy eating index
Light Truck and Utility Vehicle Manufacturing	Strong – Innovations in fuel efficiencies will drive growth for new vehicles	High	<ul style="list-style-type: none"> • Regulation for the Automotive Sector • Per capita disposable income • World price of crude oil • Trade-weighted index • Yield on 10-year Treasury note
Electronic Computer Manufacturing	Poor – Decreasing prices for end products will temper revenues	Low	<ul style="list-style-type: none"> • Import penetration into the manufacturing sector • Price of computer and peripheral equipment • Demand from data processing and hosting services • Trade-weighted index • Consumer Confidence Index • Corporate Profit
Automobile Manufacturing	Modest – Impact of declining car sales may be tempered by new product innovation	High	<ul style="list-style-type: none"> • Consumer Confidence Index • Demand for new car dealers • World price of crude oil • World price of steel • Yield on a 10-year Treasury note • Trade-weighted index
Heavy Duty Truck Manufacturing	Strong- innovations in fuel efficiencies will drive growth for new vehicles	High	<ul style="list-style-type: none"> • Regulation for the Automotive Sector • Per capita disposable income • World price of crude oil • Trade-weighted index • Yield on 10-year Treasury note
Dry, Condensed, and Evaporated Dairy Product Manufacturing	Strong – Growth in disposable income is expected to boost demand	High	<ul style="list-style-type: none"> • Demand from supermarkets and grocery stores • Price of milk • Demand from dairy wholesaling • Price of feed • Demand from food services and drinking places • Per capita dairy consumption

Industry	Outlook	Potential for Automation	Key External Demand Factors
Services for the Elderly and Persons with Disabilities	Strong – due to continued aging of the population	Low	<ul style="list-style-type: none"> • Number of adults ages 65 and older • Federal funding for Medicare and Medicaid • Per capita disposable income • Number of people with private health insurance • External competition for the Elderly and Disabled Services Industries
Motor Vehicle Seating and Interior Trim Manufacturing	Strong – due to demand for new automobiles	High	<ul style="list-style-type: none"> • Demand from car and automobile manufacturing • Number of motor vehicle registrations • Consumer Confidence Index • Trade-weighted index
Frozen Specialty Food Manufacturing	Modest – Demand for healthier, fresher products may temper growth	High	<ul style="list-style-type: none"> • Agricultural price index • Per capital fruit and vegetable consumption • Time spent on leisure and sports • Per capita disposable income • Trade-weighted index
Cheese Manufacturing	Strong – Innovative products will adapt to changing consumer tastes	Low	<ul style="list-style-type: none"> • Demand from supermarkets and grocery stores • Price of milk • Demand from dairy wholesaling • Price of feed • Demand from food services and drinking places • Per capita dairy consumption
Home Health Care Services	Strong – demand will remain high despite potential funding cuts	Low	<ul style="list-style-type: none"> • Number of adults aged 65 and older • Federal funding for Medicare and Medicaid • Number of people with private health insurance • Per capita disposable income
Individual and Family Services	Strong – due to continued aging of the population and strong demand	Low	<ul style="list-style-type: none"> • Federal funding for social services • National unemployment rate • Per capital disposable income • Poverty rate • Crime rate
Support Activities for Crop Production	Poor – Decrease in crop production will limit demand	Low	<ul style="list-style-type: none"> • Demand from crop production • Agricultural price index • Price of fertilizer • Prime rate
Other Support Services – Packaging and Labeling Services and Trade Show and Conference Planning	Strong – Consumer demand will drive growth in printing and labeling and conference planning	Low	<ul style="list-style-type: none"> • Domestic trips by US residents • Per capital disposable income • Corporate profit • Inbound trips by non-US residents • Consumer spending • E-commerce sales • Trade-weighted index • Demand from generic pharmaceutical manufacturing
Child Day Care Services	Strong – Demand will grow with rising per capita disposable income	Low	<ul style="list-style-type: none"> • Per capita disposable income • Government consumption and investment • Labor force participation rate of women • Number of children aged nine and younger

Industry	Outlook	Potential for Automation	Key External Demand Factors
Employment Services	Strong – Growing workforce needs will encourage innovative placement models	Low	<ul style="list-style-type: none"> • National unemployment rate • Corporate profit • Number of businesses • External competition for the Employment and Recruiting Agencies Industry
Computer Systems Design and Related Services	Strong – Growth in demand from finance and insurance industry and cloud computing will drive growth	Low	<ul style="list-style-type: none"> • Private investment in computers and software • Corporate profit • Government consumption and investment • Demand from finance and insurance
Management, Scientific, and Technical Consulting Services (Primarily security services)	Strong – Growing demand for security services by corporate businesses	Low	<ul style="list-style-type: none"> • Corporate profit • Number of businesses • Crime rate • Value of private nonresidential construction

APPENDIX B

Methodology for Approach 2: Industries that are Similar to Furniture Production

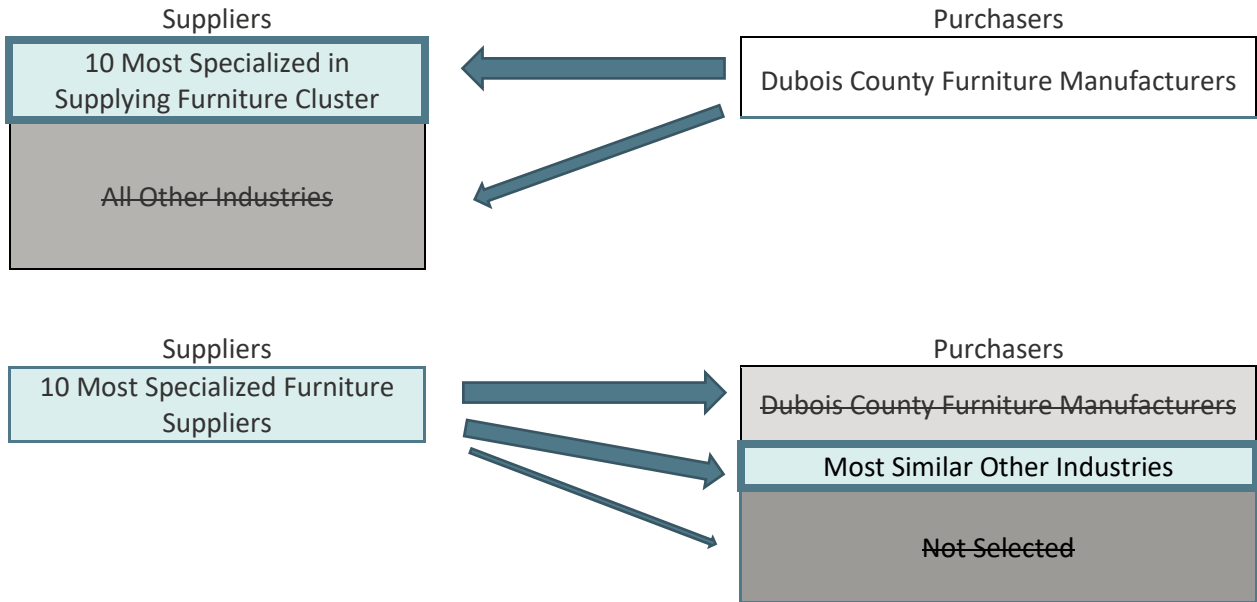
The goal of approach two was to determine industries that use the same inputs as furniture industries. This process was multi-phased. First, all suppliers to the Dubois County furniture industry were identified based on total sales.



Next, sales to the Dubois County furniture cluster were divided by total U.S. sales for each industry, in order to determine which industries are most-dependent upon Dubois County furniture production. The list of all supplier industries was then sorted by reliance on Dubois County, and the Top 10 reliant industries were selected for the next phase of analysis.



This resulted in a list of the top 10 industries, among all those that sell goods or services to the furniture cluster, whose products are most tailored to the specific needs of furniture companies within Dubois County. Once this list was compiled, its contributions to the supply chains of other industries was analyzed. The theory behind this, as shown below, is that industries that are buying the same inputs as Dubois County’s furniture cluster should thrive under the same conditions.



Once the sales were mapped from these furniture supplier industries to others within the U.S., the resulting list of industries was ranked in order of the strength of its association with the 10 selected furniture suppliers. The result was a list of all industries that use the same inputs as Dubois County’s furniture industries. Lastly, to ensure that the recommendations were new or different from what is already present in Dubois County, the list was filtered to remove any industries for which Dubois County was already relatively strong compared to the national average (based on location quotient).

APPENDIX C

Needed Occupations for Each Industry Diversification Approach

Approach 1: Filling in Supply Chain Gaps

SOC	Occupation
23-1011	Lawyers
25-1099	Postsecondary Teachers
43-6014	Secretaries and Administrative Assistants, Except Legal, Medical, and Executive
43-9061	Office Clerks, General
43-4051	Customer Service Representatives
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products
23-2011	Paralegals and Legal Assistants
15-1132	Software Developers, Applications
11-1021	General and Operations Managers
11-9013	Farmers, Ranchers, and Other Agricultural Managers

Approach 2: Industries that are Similar to Furniture

SOC	Occupation
51-2098	Assemblers and Fabricators, All Other, Including Team Assemblers
51-7042	Woodworking Machine Setters, Operators, and Tenders, Except Sawing
51-7041	Sawing Machine Setters, Operators, and Tenders, Wood
53-7062	Laborers and Freight, Stock, and Material Movers, Hand
51-1011	First-Line Supervisors of Production and Operating Workers
53-7051	Industrial Truck and Tractor Operators
51-7011	Cabinetmakers and Bench Carpenters
47-2031	Carpenters
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products
53-3032	Heavy and Tractor-Trailer Truck Drivers

Approach 3: Industries that Use Dubois County's Strengths

SOC	Occupation
39-9021	Personal Care Aides
31-1011	Home Health Aides
51-2098	Assemblers and Fabricators, All Other, Including Team Assemblers
21-1093	Social and Human Service Assistants
31-1014	Nursing Assistants
11-9151	Social and Community Service Managers
39-1021	First-Line Supervisors of Personal Service Workers
43-9061	Office Clerks, General
43-6014	Secretaries and Administrative Assistants, Except Legal, Medical, and Executive
51-9111	Packaging and Filling Machine Operators and Tenders

Approach 4.1: Leveraging Emerging Growth Trends

SOC	Occupation
29-1141	Registered Nurses
39-9021	Personal Care Aides
39-9011	Childcare Workers
31-1011	Home Health Aides
33-3051	Police and Sheriff's Patrol Officers
43-9061	Office Clerks, General
31-1014	Nursing Assistants
43-6014	Secretaries and Administrative Assistants, Except Legal, Medical, and Executive
25-2011	Preschool Teachers, Except Special Education
33-3012	Correctional Officers and Jailers

Approach 4.2: Strengthening Weak Industries

SOC	Occupation
35-3021	Combined Food Preparation and Serving Workers, Including Fast Food
35-3031	Waiters and Waitresses
25-1099	Postsecondary Teachers
39-9021	Personal Care Aides
25-2021	Elementary School Teachers, Except Special Education
43-9061	Office Clerks, General
35-2014	Cooks, Restaurant
25-9041	Teacher Assistants
43-6014	Secretaries and Administrative Assistants, Except Legal, Medical, and Executive
25-2031	Secondary School Teachers, Except Special and Career/Technical Education



