

BGWIB

BLUEGRASS WORKFORCE INVESTMENT BOARD

"Connecting employers with employees"



BLUEGRASS ECONOMIC PROFILE 2013

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INTRODUCTION

In a time of profound global economic change, it is our belief we cannot simply continue with the same strategies that led to 20th century economic success. The Bluegrass Workforce Investment Board is business led and sector focused. We believe a key ingredient to future economic prosperity is understanding and solving the workforce challenges of the businesses in our region. We must be market driven.

Part of our quest to meet the needs of the private sector lies in in-depth data mining and analysis to uncover growth industries, emerging job opportunities and the key skill sets and education that will be needed to enable businesses to prosper and aid residents to obtain quality 21st century career opportunities.

The BGWIB Economic Profile is a tool that sets the stage for strategy formation, collaboration and the concrete action steps we will take to help prepare our current and future workforce and propel our businesses to success in the global marketplace. We invite you to review this regional economic profile. It gives an overview of the region and focuses on our sector focus areas of advanced manufacturing, healthcare, information technology, and transportation, logistics and distribution. It also gives a detailed synopsis of the economic landscape in each county in the BGWIB Region. We look forward to engaging business, education, community and political leaders in deep conversations and collaborative strategic action as an outgrowth of this regional profile.

The purpose of this profile is to explore the current trends in employment by industry over the last five years in the Bluegrass Workforce Investment Board (BGWIB) Region. Specifically, the profile includes data describing jobs by industry, job growth from 2008 to 2013, average earnings by industry, expected number of jobs in 2020 and the current location quotient for each industry. The data suggest that certain industries have potential for quality job growth in the future. These industries include healthcare and professional and technical services. While manufacturing has not fared well recently nationwide, there does appear to be potential for growth for these relatively well paying positions.

EXECUTIVE SUMMARY

The Bluegrass Region continued to see moderate improvements in the economy. At the end of December 2012, unemployment in the region was 6.6%. By the end of 2013, unemployment had fallen to 6.3%. Total employment in the region grew by approximately 13,000 jobs. In total, there were just over 480,000 individuals working in the 17-county region in 2013.

The table on the next page provides an overview of the number of jobs in each general industry (2 digit-NAICS code)*. Government and retail trade continue to be the two largest industries in the region. While manufacturing used to rank as third largest industry, in 2013 it slipped to fourth place; healthcare is now the third largest industry in the region. The fastest growing industries between 2012 and 2013 was management of companies, transportation and warehousing, and arts, entertainment, and recreation. The three fastest declining industries were information, professional, scientific and technical services, and private educational services. This should be somewhat concerning as the wages for the two fastest declining industries are well above average.

In the full report, we use location quotients and z-scores* to measure the relative concentration and an index of economic viability, respectively for each industry. From 2012 to 2013, the Location Quotient for two industries (Information and professional services) declined from above 1 ("export-industry") to below 1 ("import-industry"). While the location quotient is a static measure, the interpretation of this change suggests that these two industries are not keeping pace with national trends. As the Information cluster is one that the Bluegrass WIB is targeting, this is an important finding. In addition, over the last decade the Bluegrass Region has taken pride in the large number of individuals who work in the professional services sector. This sector includes lawyers, accountants, and financial advisors, all occupations that earn relatively high incomes.

Commuting patterns in the Bluegrass Region have remained the same for the last several years. The Region is a net importer of jobs, meaning more individuals come in to the region to work that reside outside the region than those who reside in the region and commute outside the 17-county region to work. Toyota is still one of the leading companies that attracts a significant number of workers from outside the region.

** See description of terms of on page 7.*



EXECUTIVE SUMMARY

Table 1 Jobs by Industry 2012-2013, Bluegrass WIB Region

Industry Description	Complete Employment 2012	Complete Employment 2013	% Change	QCEW + Self-Employed 2012	QCEW + Self-Employed 2013	% Change
Agriculture, Forestry, Fishing and Hunting	19,099	18,846	-1.3%	7,655	7,305	-4.6%
Government	83,680	89,437	6.9%	75,019	76,943	2.6%
Manufacturing	44,931	44,575	-0.8%	43,949	43,733	-0.5%
Accommodation and Food Services	33,499	36,252	8.2%	32,469	34,979	7.7%
Arts, Entertainment, and Recreation	9,796	10,902	11.3%	5,481	7,250	32.3%
Retail Trade	48,256	48,511	0.5%	41,306	42,239	2.3%
Administrative and Support and Waste Management and Remediation Services	28,450	28,889	1.5%	24,083	23,699	-1.6%
Information	8,693	8,071	-7.2%	4,477	4,617	3.1%
Construction	21,133	21,660	2.5%	17,058	17,022	-0.2%
Management of Companies and Enterprises	3,858	5,288	37.1%	2,910	5,080	74.6%
Transportation and Warehousing	11,768	13,447	14.3%	9,892	11,142	12.6%
Health Care and Social Assistance	44,916	45,625	1.6%	41,211	41,705	1.2%
Real Estate and Rental and Leasing	18,364	18,604	1.3%	4,477	4,617	3.1%
Other Services (except Public Administration)	25,044	24,807	-0.9%	11,642	11,493	-1.3%
Educational Services (Private)	10,351	9,970	-3.7%	5,429	5,084	-6.4%
Wholesale Trade	11,740	12,298	4.8%	11,529	11,699	1.5%
Professional, Scientific, and Technical Services	25,151	24,076	-4.3%	17,210	17,403	1.1%
Utilities	1,015	1,029	1.4%	948	1,002	5.7%
Finance and Insurance	16,336	16,523	1.1%	9,596	9,788	2.0%
Mining, Quarrying, and Oil and Gas Extraction	1,131	1,345	18.9%	805	928	15.3%
Total	467,211	480,155	2.8%	367,146	377,728	2.9%

Complete Employment includes BLS QCEW (Quarterly Census of Employment and Wages) data, Non-QCEW Employment which includes the major types of employment covered in this set include military jobs, railroad jobs, many nonprofit and religious workers, certain salespersons, miscellaneous Federal Government and some other government workers, Self-Employed, and Extended Proprietors which represents miscellaneous labor income for persons who do not consider it a primary job.



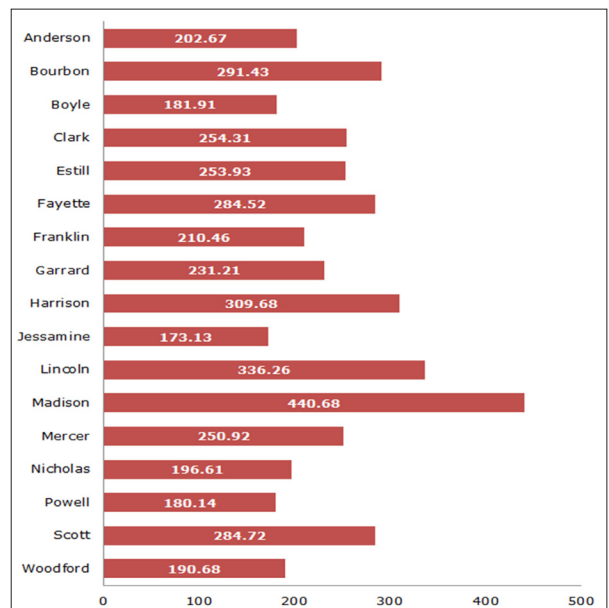
OVERVIEW OF REGION



The area included in this study is known as the Bluegrass Region. Geographically, the Bluegrass Region is one of ten WIB regions in the state. It contains seventeen counties in Central Kentucky, including Anderson, Bourbon, Boyle, Clark, Estill, Fayette, Franklin, Garrard, Harrison, Jessamine, Lincoln, Madison, Mercer, Nicholas, Powell, Scott and Woodford counties. The map to the left illustrates the size relative and location of these seventeen

I. Land Area

The Bluegrass Region consists of 4,273 square miles (2,734,720 acres) of land area, extending approximately 80 miles from east to west and 95 miles from north to south. The smallest county, Jessamine, contains 173 square miles of land area and the largest county Madison, contains 440 square miles. As a means of comparison, in total the Bluegrass Region is an area larger than the entire state of Delaware, or more than twice the size of Rhode Island.



II. Location

The Bluegrass Region is located within 500 miles of over 70 percent of the U.S. population. This strategic location allows the Bluegrass to be marketable for goods, services, and manufacturing facilities. The region is in close proximity to many major U.S. urban areas, including Louisville, Kentucky (72 miles west); Cincinnati, Ohio (81 miles north); Detroit, Michigan (269 miles north); Chicago, Illinois (373 miles northwest); Indianapolis, Indiana (192 miles northwest); Knoxville, Tennessee (172 miles south); St. Louis, Missouri (344 miles west); Nashville, Tennessee (209 miles southwest); Columbus, Ohio (190 miles north east), Memphis, Tennessee (410 miles southwest); Charleston, West Virginia (182 miles east); and Atlanta, Georgia (366 miles south). These distances are based from downtown Lexington in Fayette County.

MARKET DRIVEN APPROACH

With the Bluegrass Workforce Investment Board's new emphasis on a market driven and employer-led regional workforce approach, certain underlying metrics must be tracked and constantly evaluated to ensure that changes in economic variables do not negatively impact anticipated outcomes. In today's workforce development efforts, data analysis is imperative. Accurate, real-time data provides insight into what has occurred and what is currently happening, as well as projects potential outcomes with a much higher degree of certainty. The BGWIB has employed several key indicators to track relevant data within the operational footprint of the seventeen-county area. These indicators include:

- Unemployment Data
- Jobs Per Industry Data
- Percentage Change In Jobs
- Average Earnings
- Z Score
- Commuting Patterns
- Change in Employment 2008 - 2013
- Location Quotient Cluster Bubble Chart
- Top Occupations within an Industry
- Location Quotient (LQ) or Industry Concentration
- Projected Job Growth
- Shift Share Analysis or Industry Competitive Effects

Unemployment Data: This data, compiled by state and federal sources and underscored by US Census data, is significant by allowing comparisons between numbers employed versus those not employed. Taking into account those who have stopped searching for work, BGWIB unemployment data provides baseline and comparison data between industries, locals, etc.

Jobs per Industry Data: This data, compiled by state and federal sources and underscored by US Census data, is significant by allowing comparisons between industries, showing significance in job losses and gains.

Percentage Change in Jobs: Provided by state and federal sources, this data allows insight into historical growth of industries, sectors, and whole economies. A percentage change in jobs can be projected forward, providing a reasonable assumption of how a cluster will perform in the future.

Average Earnings: This metric is calculated on the wages of occupations typically employed in an industry. This provides a perspective on the quality of jobs within a given industry, answering the question of whether the industry typically provides family-sustaining wages.

Location Quotient (LQ) or Industry Concentration: The location quotient variable is a comparative statistic used to calculate relative employment concentration of a given industry against the average employment of the industry in a larger geography (e.g., nation). Industries with a higher location quotient (usually greater than 1.2) indicate that a region/state has a comparative advantage or specialization in the production of that good or service.

Projected Job Growth: A derivative of percentage change in jobs, this statistic provides a relatively safe assumption of future openings within a given industry or cluster.

Z Score: The Z score is an index measure based on percentage change in jobs, average earnings, LQ, and expected jobs. The Z score tells us how each industry compares to the "average industry" in the region. Industries above zero are above average.

Commuting Patterns: A measure derived from US Census data detailing discrepancies between where individuals work and where they reside, commuting patterns provide insight into where jobs are geographically and the distances travelled by commuters to these jobs. Commuting patterns represent an employment "sphere of influence" by showing an overabundance of jobs, or lack-there-of, and also an adequately trained workforce within a designated area.

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

MARKET DRIVEN APPROACH

Shift Share Analysis or Industry Competitive Effects: Shift Share Analysis is a standard method of regional economic analysis that attempts to separate regional job growth into its component causes. The three main causes identified are the "national growth effect," which is regional growth that can be attributed to the overall growth of the entire U.S. economy; the "industrial mix effect," which is regional growth that can be attributed to positive trends in the specific industry or occupation at a national level; and the "regional competitiveness effect," which is growth that cannot be explained by either overall or industry-specific trends. A positive value indicates that a local industry has a competitive advantage compared to the nation. Note: Positive shift share values do not explain why an industry has a competitive advantage, only that there are potential factors that contribute to the industry's ability to outperform the national average rate of growth/decline.

Change in Employment 2008 -2013: This data sheds insight into undercurrents within industries from a historical five year data set. The change in employment over the most recent five years per industry provides some insight into potential employment going forward. A retraction each year for the last five years provides an emphasis to project further retraction within an industry, holding all other variables current within the current year.

LQ Cluster Bubble Chart: This graphically illustrates a location quotient over time for a given industry within an economy. With Location Quotient plotted against the Percentage Change in Location Quotient over a five year time period, emphasis is illustrated showing those industries that are in the upper right hand quadrant are industries with a promising future. Bubble charts show the most important clusters in a state or region as measured by total employment size (the bigger the bubble, the better), recent job growth (the further up in the graph, the better), and high-paying jobs (the further to the right in the graph, the better). Depending on the economic development objective – that is, whether the goal is to create more jobs or better-paying jobs, or both – the agency responsible for economic development might choose to concentrate on industries with large bubbles or industries located in the right-hand side of the graph.

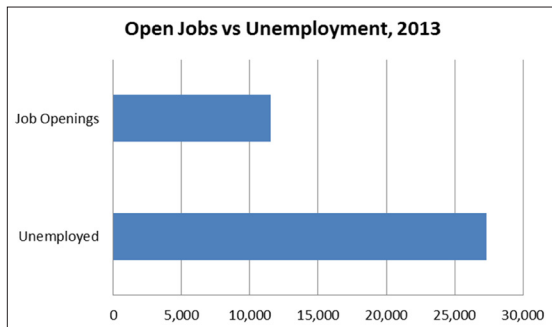
Top Occupations within an Industry: A measure of the top occupations within a given industry uses measured variables such as average earnings, available positions, predicted job growth, and educational requirements. This measure can depict the positive positions experiencing growth within an industry which might be experiencing retraction.

Actively utilizing these key indicators to monitor changes allows us the opportunity to react to the market more quickly and effectively, thereby ensuring that we are market driven and better equipped to meet the changing needs of business.

9.3%
Jobs in Bluegrass are
Manufacturing
& pay an average of
\$70,000
per year

REGIONAL ECONOMIC PROFILE

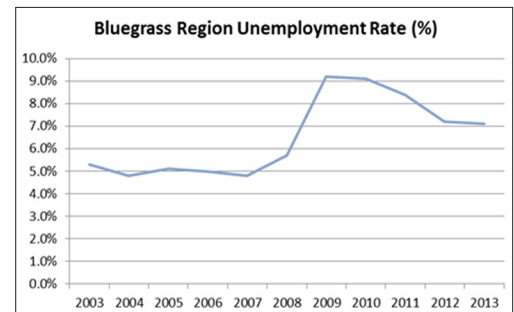
I. Jobs



Source: BLS & KLMI

Over the last 12 years, the Bluegrass Area saw its lowest unemployment rate in 2001, and its highest unemployment rate in 2009, with a drastic increase between 2008 and 2009. The unemployment rate began dropping slowly in 2010, and has seen a fairly steady decline in the last two years. As the Bluegrass Area seeks to again realize the much lower unemployment rate of 2001, we see that the unemployment level of 2012 is more than double the

number of open jobs in the Bluegrass Area. There are about 25,000 individuals who are unemployed in the region and there are approximately 10,000 jobs available. This shows a mismatch in terms of filling those available jobs with those who are unemployed. We could conclude that the unemployed job seekers don't necessarily have the skills to fill those jobs. Even if they did, they simply won't be able to find jobs because there is no capacity for those jobs. The BGWIB will use this data to develop creative solutions for affecting increased employment opportunities in the Region.



II. Industry Data

The industries listed below will serve as a key throughout the regional economic profile. These 20 industry sectors are comprised of over 480,000 jobs in the Bluegrass Region. Government, manufacturing, and

Key	Industry	Jobs	Percent	Ranking
1	Agriculture, Forestry, Fishing and Hunting	18,846	3.9%	10
2	Mining, Quarrying, and Oil and Gas Extraction	1,345	0.3%	19
3	Utilities	1,029	0.2%	20
4	Construction	21,660	4.5%	9
5	Manufacturing	44,575	9.3%	4
6	Wholesale Trade	12,298	2.6%	14
7	Retail Trade	48,511	10.1%	2
8	Transportation and Warehousing	13,447	2.8%	13
9	Information	8,071	1.7%	17
10	Finance and Insurance	16,523	3.4%	12
11	Real Estate and Rental and Leasing	18,604	3.9%	11
12	Professional, Scientific, and Technical Services	24,076	5.0%	8
13	Management of Companies and Enterprises	5,288	1.1%	18
14	Administrative and Support and Waste Management and Remediation Services	28,889	6.0%	6
15	Educational Services (Private)	9,970	2.1%	16
16	Health Care and Social Assistance	45,625	9.5%	3
17	Arts, Entertainment, and Recreation	10,902	2.3%	15
18	Accommodation and Food Services	36,252	7.6%	5
19	Other Services (except Public Administration)	24,807	5.2%	7
20	Government	89,437	18.6%	1

retail trade industries represent the majority of jobs, responsible for 18.6%, 9.3%, and 10.1% of all jobs in the region, respectively. Conversely, the mining, utilities, and management industries are responsible for less than 2% of all jobs in the region.

Utilizing these data, and future data, the BGWIB will periodically review its designation of target industry sectors for the local area – keeping in mind all things to be considered, including geographical location of jobs, average wage, etc.

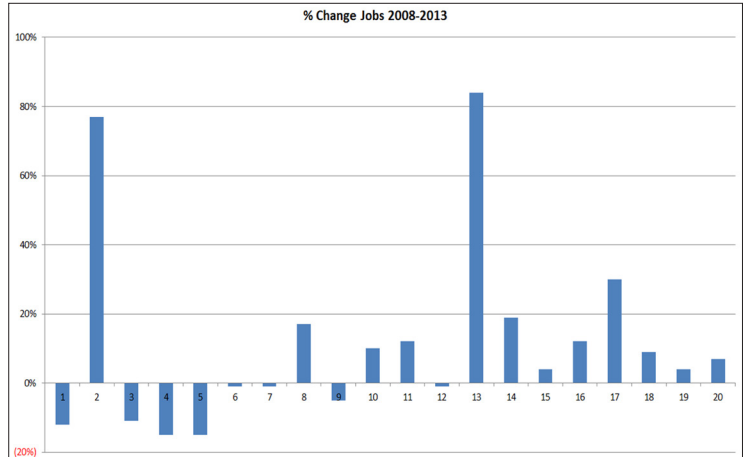
Note: The target industry sectors the BGWIB focuses on rank as follows:
 - Manufacturing – 4th
 - Healthcare – 3rd
 - Information Technology – 17th
 - Transportation – 13th

REGIONAL ECONOMIC PROFILE

III. Analysis

"Impact from the Recession"

By looking at the percentage change in jobs from 2008-2013, you quickly see the impact the recession has had on the Bluegrass Region. Some of the largest industries (agriculture, manufacturing, and retail trade) have all seen a decrease in jobs in the past five years. At first glance you will notice that the largest positive percentage change is in the management of companies and mining sectors. However, both of these sectors represent a very small percentage of total jobs (5,288 and 1,345 respectively), in the Bluegrass Region. With the exception of manufacturing, each of the BGWIB's priority sectors shows a positive percentage change in jobs.

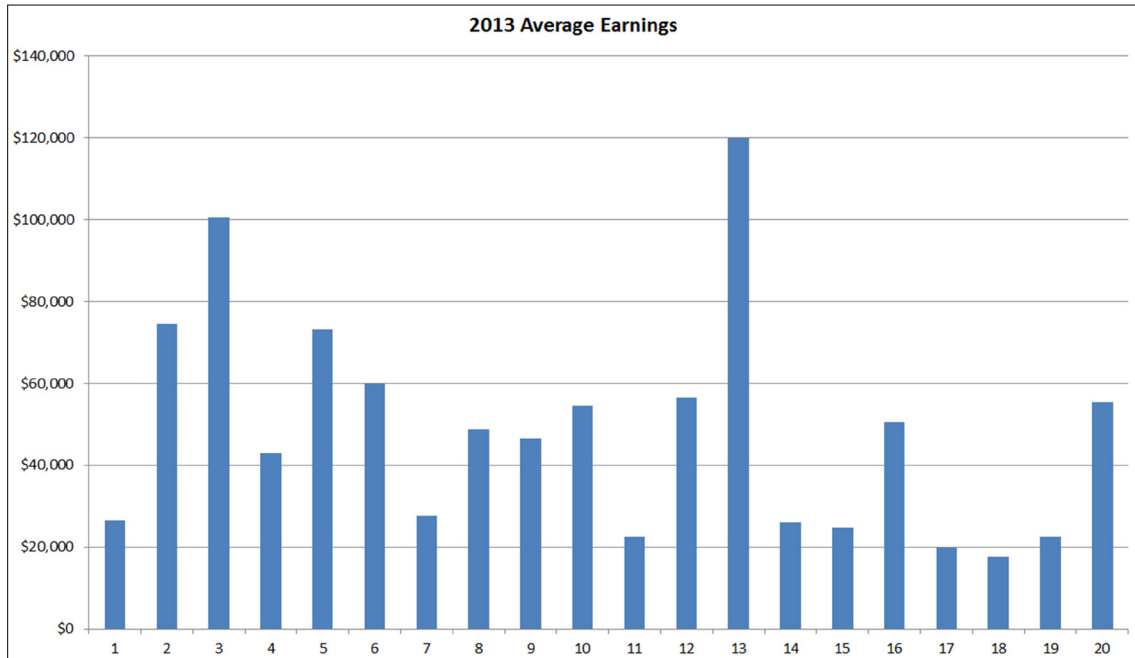


(Refer to Key on Page 9)

Source: EMSI, 2013

"SHOW ME THE MONEY"

The utilities, mining, manufacturing, and management of companies industries all pay, on average, over \$70,000 per worker, though utilities is not a significant employer. Conversely, the real estate, arts, entertainment and recreation services, and food and accommodation services industries pay, on average, around \$20,000 per worker.



Source: EMSI, 2013

(Refer to Key on Page 9)

REGIONAL ECONOMIC PROFILE

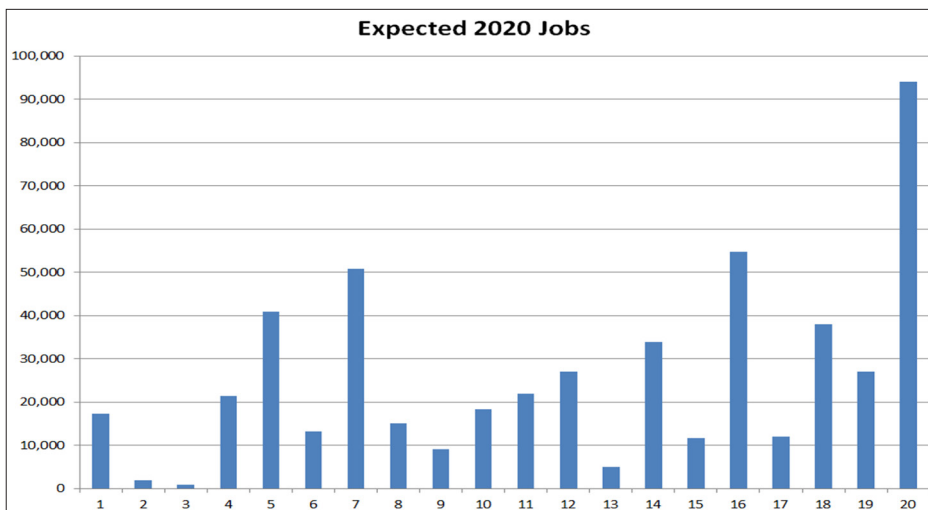
III. Analysis

"CONCENTRATION FACTORS"

The Location Quotient (LQ) describes how concentrated an industry is. Traditionally an LQ that is greater than 1 is considered an export industry. Export industries bring money into the region, rather than simply circulating money that is already in the region. Agriculture, manufacturing and government are heavily concentrated in the Bluegrass Region. Location Quotients less than one indicates the region is not producing enough to meet local needs, such as in transportation and healthcare.



"VISION 20/20"



Source: EMSI, 2013

(Refer to Key on Page 9)

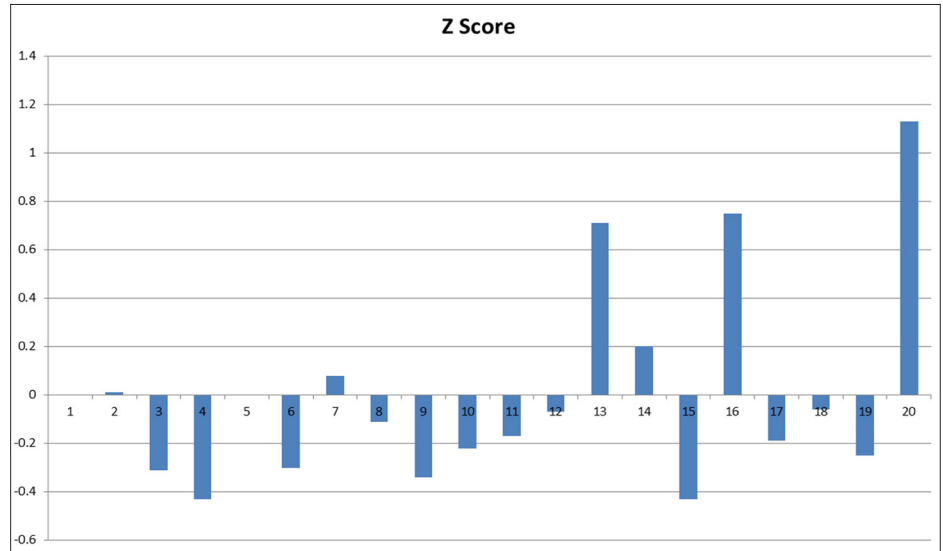
Relative to industry jobs in 2013, there is an expected increase in the majority of industries in the region. There were notable increases in the priority sectors of health care and manufacturing.

REGIONAL ECONOMIC PROFILE

III. Analysis

"SECTOR MOVEMENT"

The Z score is an index measure based on percentage change in jobs, earnings, LQ, and expected jobs. The Z score tells us how each industry compares to the "average industry" in the region. Industries above zero, especially government, management of companies, healthcare are above average.

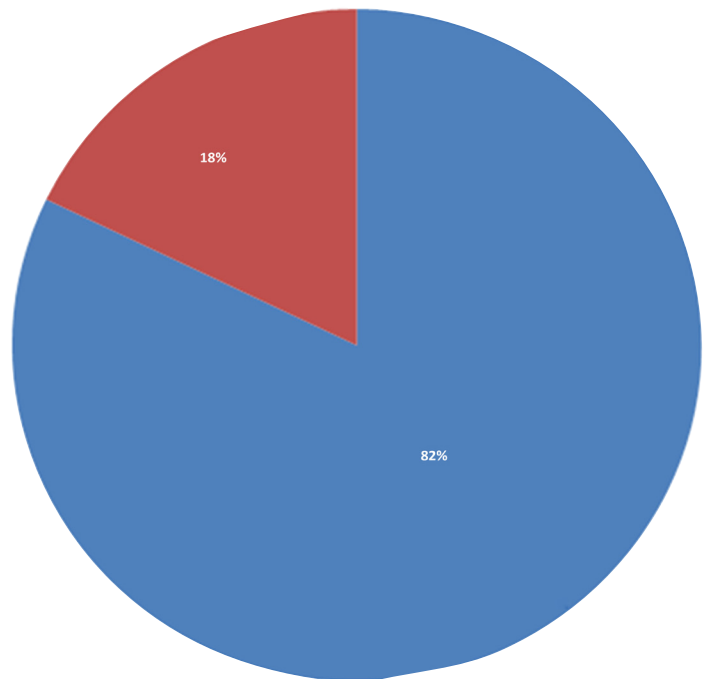


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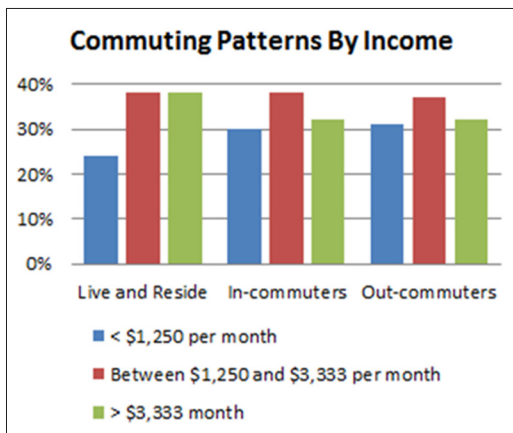
Source: Authors' calculations from EMSI and Bureau of Labor Statistics

"COMMUTING PATTERNS"

One can infer from Bluegrass Region commuting pattern data that a healthy economic balance exists within the Region. The smallest subset represents those living within the Region but employed outside, representing the Region's workforce drain. Furthermore, 82% not only live within the Bluegrass but are also employed here. Although any increase in this number is a bonus, it represents a healthy job and workforce pool. With only 18% of residents leaving the Bluegrass Region for employment, and a higher 25% of non-residents entering the region for work, a net gain of workers are entering the region and showing evidence that the Bluegrass Region is a workforce attractor.



■ Live and Reside in Bluegrass Region
■ Commute into Bluegrass Region



SECTORS

I. Sector Creation

In June 2011, the Office of Employment and Training held Sector Strategies Institute entitled: "Sector Strategies – A Path to a Better Future." This institute allowed the Bluegrass Workforce Investment Board to bring together teams of local colleagues from the workforce investment system, economic development, private business, and educational communities. The Bluegrass Workforce Investment Board team included the following leaders and decision-makers:

- Local Workforce Investment Board Chair
- Local Workforce Investment Board Director
- Community college system representatives
- Economic development representatives
- K-12 education system representatives
- Business advocates in the region
- One-Stop Career Center representatives
- Four-year college/university representatives
- Regional representatives of the state workforce investment system

The team was provided with multiple viewpoints of historical and projected industry performance that project partner Economics Modeling Specialists, Inc gathered, developed, or calculated metrics, describing the following industry characteristics:

- Job Multiplier Effects
- Earning Multiplier Effects
- Industry Average Wage
- Excess Demand
- Workforce Compatibility
- Historical Growth
- Future Growth Projection
- Industry Concentration (Location Quotient)
- Industry Competitive Effects (Shifts Share Analysis)
- Export Orientation

Each characteristic provides a different perspective of industry performance, regional fit, or economic ripple effects for 1079 six-digit industry codes, as classified by North American Industry Classification System category.

After reviewing this information, the team discussed local perception and identified the following as target sectors: Advanced Manufacturing, Healthcare, Information Technology and Transportation, Distribution and Logistics.

II. Advanced Manufacturing

At a high-level, the manufacturing industry appears to have lost jobs. However, at a more granular level, certain sectors within manufacturing have experienced significant growth. In fact, the top 60 fastest-growing manufacturing sectors in the region are projected to add over 2,100 new jobs to the region's economy in the next five years.

- **Computer, Software, and Electronic Equipment Manufacturing:** Industries in these subsectors include establishments that manufacture computers, computer peripherals, communications equipment, and similar electronic products. They also include establishments that manufacture components for such products. The design and use of integrated circuits and the application of highly specialized technologies are common elements in the production technologies of the computer and electronic subsector. They also include industries that manufacture products that generate, distribute and use electrical power, such as devices for storing electrical power (e.g., batteries), for transmitting electricity (e.g., insulated wire), and wiring devices (e.g., electrical outlets, fuse boxes, and light switches).
- **Auto & Other Transportation Equipment Manufacturing:** These industries produce equipment for transporting people and goods. Production processes are similar to other machinery manufacturing establishments, and include making components and finished products by bending, forming, welding, machining, and assembling metal or plastic parts.

SECTORS

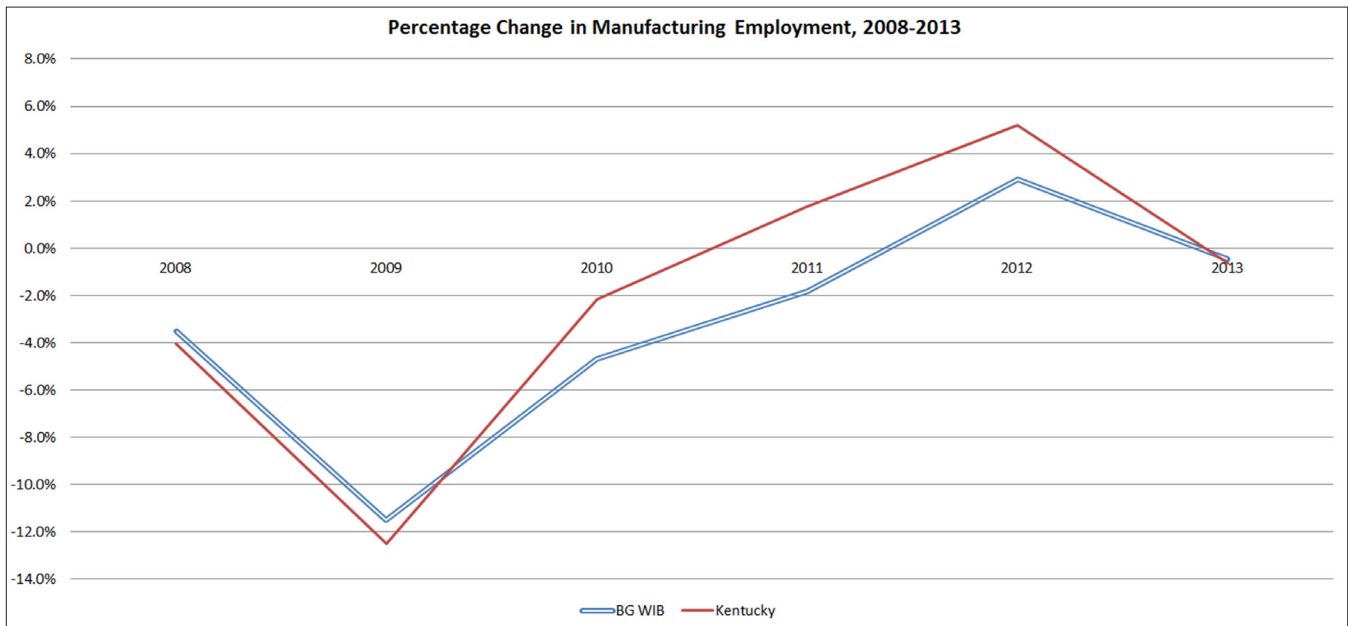
II. Advanced Manufacturing

- Metal & Machine Manufacturing:** Industries in these subsectors include smelt and/or refine ferrous and nonferrous metals from ore, pig or scrap, using electrometallurgical and other process metallurgical techniques. Establishments in this subsector also manufacture metal alloys by introducing other chemical elements to pure metals. These industries transform metal into intermediate or end products, and create products that apply mechanical force to perform work, for example gears and levers.
- Food Manufacturing:** Comprises industries involved in the transformation of livestock, agricultural products and other consumable natural resources into products for immediate and final consumption.
- Wood & Paper Manufacturing:** Industries in these subsectors manufacture wood products, such as wood containers and furniture, as well as paper products, such pulp, paper, or converted paper products.
- Chemical & Plastics Manufacturing:** Industries in these subsectors transform organic and inorganic raw materials by a chemical process, and process plastics materials and raw rubber.

CHANGE

Though the decline in the number of manufacturing jobs has been great in the last 5 years, manufacturing remains one of the largest industries and highest paying occupations in the Bluegrass Region.

Total Gross Regional Product (2011)	\$5.5 Billion
Imports (2011)	\$11.4 Billion
Exports (2011)	\$17.5 Billion



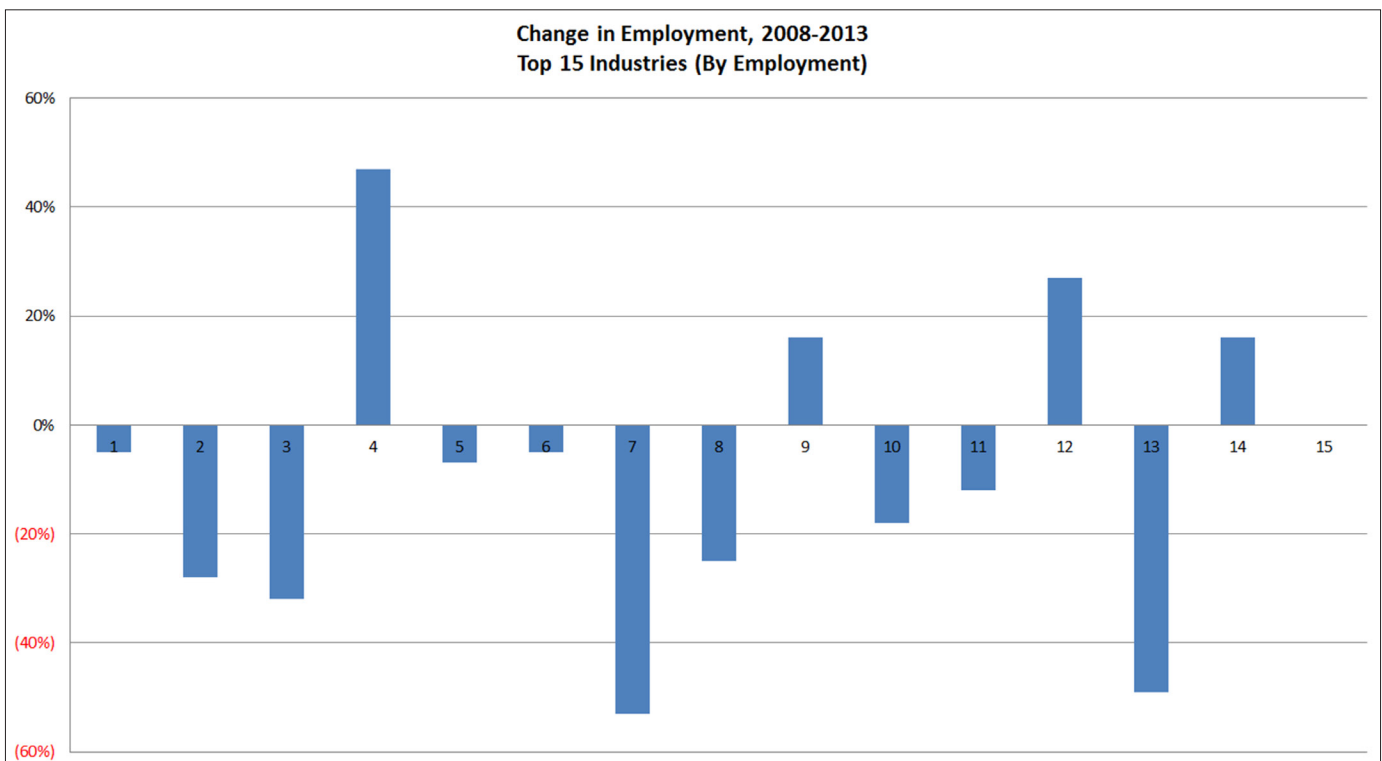
Industry profiles created by the Community and Economic Development Initiative of Kentucky (CEDIK) for the Bluegrass Workforce Investment Board. Latest version 1/13. CEDIK Website: <http://www.ca.uky.edu/cedik>; Bluegrass WIB Website: <http://www.bgwib.com>

SECTORS

II. Advanced Manufacturing

EMPLOYMENT

Key	Advanced Manufacturing Cluster Top Employing Industries	Jobs
1	Automobile Manufacturing	7,004
2	Other Computer Peripheral Equipment Manufacturing	2,019
3	All Other Motor Vehicle Parts Manufacturing	1,664
4	Motor Vehicle Steering and Suspension Components (except Spring) Manufacturing	1,287
5	Motor Vehicle Metal Stamping	1,241
6	Electric Lamp Bulb and Part Manufacturing	903
7	Aircraft Manufacturing	813
8	Air-Conditioning and Warm Air Heating Equipment and Commercial and Industrial Refrigeration Equipment Manufacturing	786
9	Construction Machinery Manufacturing	761
10	Motor Vehicle Seating and Interior Trim Manufacturing	656
11	Industrial Truck, Tractor, Trailer, and Stacker Machinery Manufacturing	638
12	Storage Battery Manufacturing	583
13	Other Motor Vehicle Electrical and Electronic Equipment Manufacturing	562
14	Electronic Computer Manufacturing	526
15	Iron and Steel Forging	513



(See key above)

Source: EMSI 2013 and Author's Calculations

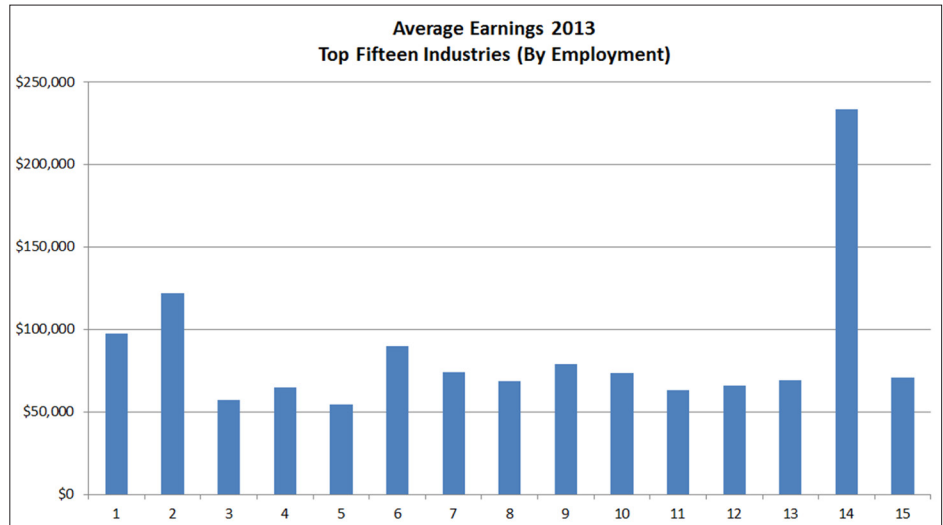
The Advanced Manufacturing cluster includes all industries related to computer, software, and electronic equipment manufacturing, auto and other transportation equipment manufacturing, metal and machine manufacturing, food manufacturing, wood and paper manufacturing, and chemical and plastics manufacturing.

SECTORS

II. Advanced Manufacturing

EMPLOYMENT

Manufacturing as a whole has not fared well throughout the recession. Overall employment in advanced manufacturing continues to decline but not at the same rapid rate as was observed in the early 2000's. The table on the previous page provides an overview of the top 15 advanced manufacturing industries (by total employment) within the Bluegrass WIB Region. Automobile manufacturing continues to be the largest manufacturing sector within the cluster; there was a slight decrease in employment from 2012 to 2013. Ten of the fifteen largest industries lost employment between 2008 and 2013. Two industries increased employment by more than 20% (motor vehicle steering and storage battery manufacturing).



For the most part, manufacturing industries that support automobile manufacturing continue to grow. For example, support industries that include "All other motor vehicle parts manufacturing," "motor vehicle steering and suspension components," and "motor vehicle stamping" increased employment by a total of 350 jobs. The advanced manufacturing sectors pays well. The average annual earnings for the top 15 industries is greater than \$50,000.

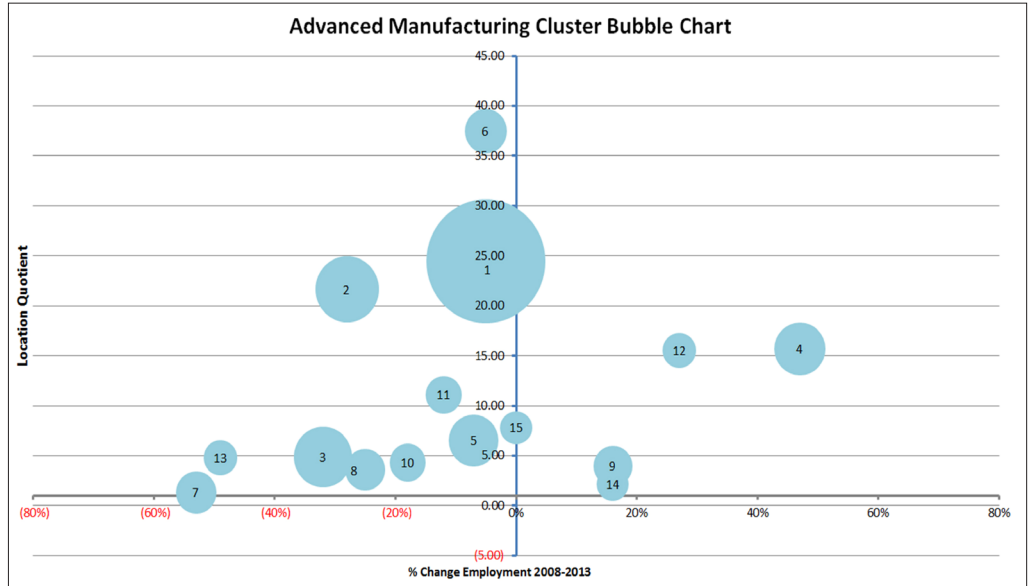
LOCATION QUOTIENT

Key	Advanced Manufacturing Industry	LQ
1	Automobile Manufacturing	24.45
2	Other Computer Peripheral Equipment Manufacturing	21.64
3	All Other Motor Vehicle Parts Manufacturing	4.89
4	Motor Vehicle Steering and Suspension Components (except Spring) Manufacturing	15.68
5	Motor Vehicle Metal Stamping	6.51
6	Electric Lamp Bulb and Part Manufacturing	37.50
7	Aircraft Manufacturing	1.31
8	Air-Conditioning and Warm Air Heating Equipment and Commercial and Industrial Refrigeration Equipment Manufacturing	3.62
9	Construction Machinery Manufacturing	3.95
10	Motor Vehicle Seating and Interior Trim Manufacturing	4.32
11	Industrial Truck, Tractor, Trailer, and Stacker Machinery Manufacturing	11.11
12	Storage Battery Manufacturing	15.52
13	Other Motor Vehicle Electrical and Electronic Equipment Manufacturing	4.79
14	Electronic Computer Manufacturing	2.15
15	Iron and Steel Forging	7.80

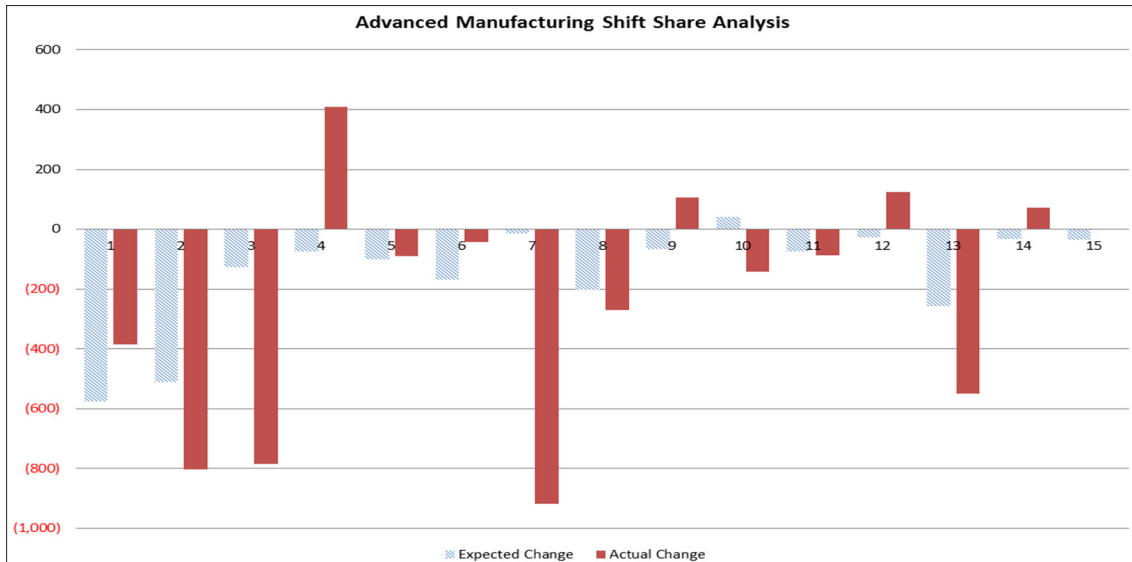
SECTORS

II. Advanced Manufacturing

Between 2012 and 2013, the location quotient for two of the top fifteen industries increased: "electronic lamp bulb and part manufacturing" and "iron and steel forging." This suggests that these two industries have become more concentrated in the region compared to the rest of the nation. Shift share analysis measures the competitive strength of the region for a particular industry. There are six industries that continue to decline relative to national and industrial trends:



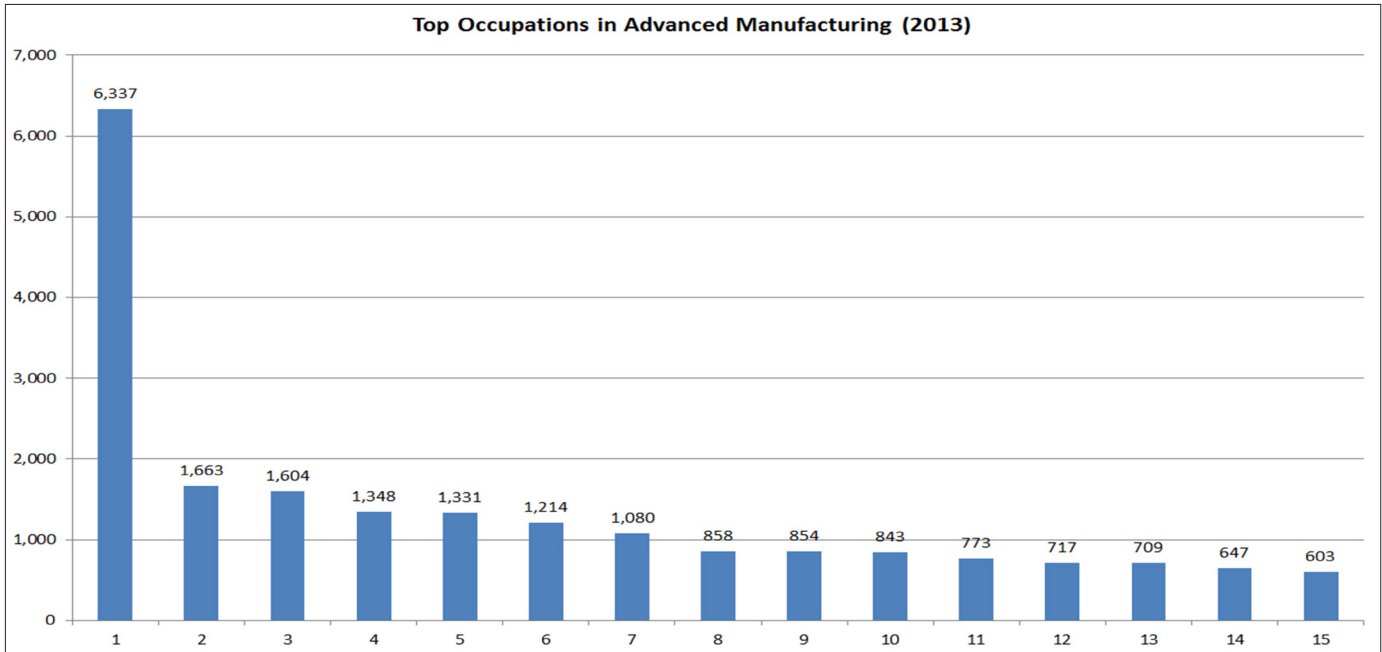
relative to national and industrial trends: "other computer peripheral equipment manufacturing," "aircraft," "motor vehicle seating and interior trim," "all other motor vehicle parts," "air-conditioning" and "other motor vehicle electrical and electronic equipment" manufacturing.



- | | | | |
|---|---|----|---|
| 1 | Automobile Manufacturing | 9 | Construction Machinery Manufacturing |
| 2 | Other Computer Peripheral Equipment Manufacturing | 10 | Motor Vehicle Seating and Interior Trim Manufacturing |
| 3 | All Other Motor Vehicle Parts Manufacturing | 11 | Industrial Truck, Tractor, Trailer, and Stacker Machinery Manufacturing |
| 4 | Motor Vehicle Steering and Suspension Components (except Spring) Manufacturing | 12 | Storage Battery Manufacturing |
| 5 | Motor Vehicle Metal Stamping | 13 | Other Motor Vehicle Electrical and Electronic Equipment Manufacturing |
| 6 | Electric Lamp Bulb and Part Manufacturing | 14 | Electronic Computer Manufacturing |
| 7 | Aircraft Manufacturing | 15 | Iron and Steel Forging |
| 8 | Air-Conditioning and Warm Air Heating Equipment and Commercial and Industrial Refrigeration Equipment Manufacturing | | |

SECTORS

II. Advanced Manufacturing



The top occupations in advanced manufacturing continue to be team assemblers, assemblers and fabricators, and first-line supervisors. These wages range between \$11 and \$23 per hour.

Key	Top Occupations	Median Hourly Earnings	Education Level
1	Team Assemblers	\$13.44	Moderate-term on-the-job training
2	Assemblers and Fabricators, All Other	\$11.75	Moderate-term on-the-job training
3	First-Line Supervisors of Production and Operating Workers	\$22.31	Work experience in a related occupation
4	Machinists	\$18.15	Long-term on-the-job training
5	Inspectors, Testers, Sorters, Samplers, and Weighers	\$15.35	Moderate-term on-the-job training
6	Helpers--Production Workers	\$9.76	Short-term on-the-job training
7	Laborers and Freight, Stock, and Material Movers, Hand	\$10.16	Short-term on-the-job training
8	General and Operations Managers	\$36.97	Bachelor's or higher degree, plus work experience
9	Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic	\$14.40	Moderate-term on-the-job training
10	Industrial Machinery Mechanics	\$22.07	Long-term on-the-job training
11	Welders, Cutters, Solderers, and Brazers	\$16.64	Postsecondary non-degree award
12	Industrial Engineers	\$29.23	Bachelor's degree
13	Industrial Truck and Tractor Operators	\$14.56	Short-term on-the-job training
14	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	\$20.52	Moderate-term on-the-job training
15	Maintenance and Repair Workers, General	\$15.62	Moderate-term on-the-job training

Data Sources: EMSI (Economic Modeling Specialists International), Bureau of Labor Statistics, O*net, Author's calculations (See Appendix A for O*Net listings)

SECTORS

II. Advanced Manufacturing

RECENT TRENDS

In 2013, there were an estimated 28,000 workers employed in the advanced manufacturing cluster. The list of all industries included in this cluster are provided in the appendix R. The majority of the jobs are associated with Toyota and manufacturers that support Toyota. In addition, there are also a significant number of jobs associated with Lexmark and aircraft manufacturing.

There was a 14.9% decline in employment between 2008 and 2013, this was a larger decline compared to the nation (11.2%). Of the unemployed in the region, it is projected that 15% had worked in manufacturing. There are a few specific industries that have fared well through the recession. The automobile manufacturing cluster declined in employment over the last five years but appears to be recovering to its 2008 level. Some of the industries that support Toyota are likely to follow that trend.

The top occupations that support advanced manufacturing have fallen over the last five years. There are significantly more production workers versus managers and other white-collar professionals associated with this cluster. Earnings remain higher than other industries but have fallen relatively due to competition from other countries.

Advanced Manufacturing Industry Comparison (2012 - 2013)

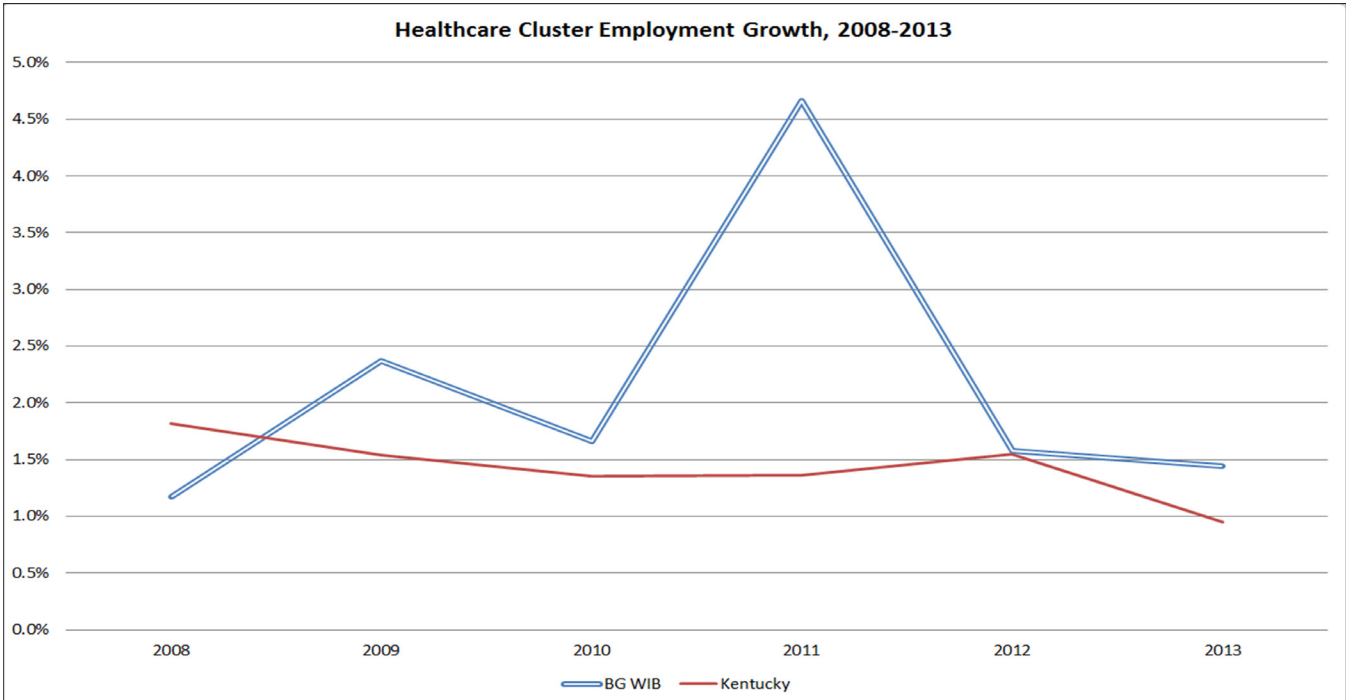
Industry	Jobs 2012	Jobs 2013	% Change
Automobile Manufacturing	7,166	7,004	-2.3%
Other Computer Peripheral Equipment Manufacturing	2,266	2,019	-10.9%
All Other Motor Vehicle Parts Manufacturing	1,378	1,664	20.8%
Motor Vehicle Steering and Suspension Components (except Spring) Manufacturing	1,234	1,287	4.3%
Motor Vehicle Metal Stamping	1,230	1,241	0.9%
Electric Lamp Bulb and Part Manufacturing	1,110	903	-18.6%
Aircraft Manufacturing	936	813	-13.1%
Air-Conditioning and Warm Air Heating Equipment and Commercial and Industrial Refrigeration Equipment Manufacturing	846	786	-7.1%
Construction Machinery Manufacturing	789	761	-3.5%
Motor Vehicle Seating and Interior Trim Manufacturing	726	656	-9.6%
Industrial Truck, Tractor, Trailer, and Stacker Machinery Manufacturing	706	638	-9.6%
Storage Battery Manufacturing	624	583	-6.6%
Other Motor Vehicle Electrical and Electronic Equipment Manufacturing	585	562	-3.9%
Electronic Computer Manufacturing	437	526	20.4%
Iron and Steel Forging	429	513	19.6%

SECTORS

III. Healthcare

These industries are comprised of establishments providing health care and social assistance for individuals. Some establishments exclusively provide medical care or social assistance, while others provide both. Trained professionals deliver the services of the establishments, and many of the industries are defined based on the educational degree held by the industry practitioners.

CHANGE



Industry profiles created by the Community and Economic Development Initiative of Kentucky (CEDIK) for the Bluegrass Workforce Investment Board. Latest version 1/13. CEDIK Website: <http://www.ca.uky.edu/cedik>; Bluegrass WIB Website: <http://www.bgwib.com>

Total Gross Regional Product (2011)	\$2.4 Billion
Imports (2011)	\$1.2 Billion
Exports (2011)	\$1.29 Billion

Overall employment in the healthcare industry grew between 2008 - 2013. There was a noticeable spike in employment between 2010 and 2011 due to a large increase in employment in the private hospital sector in Fayette County.

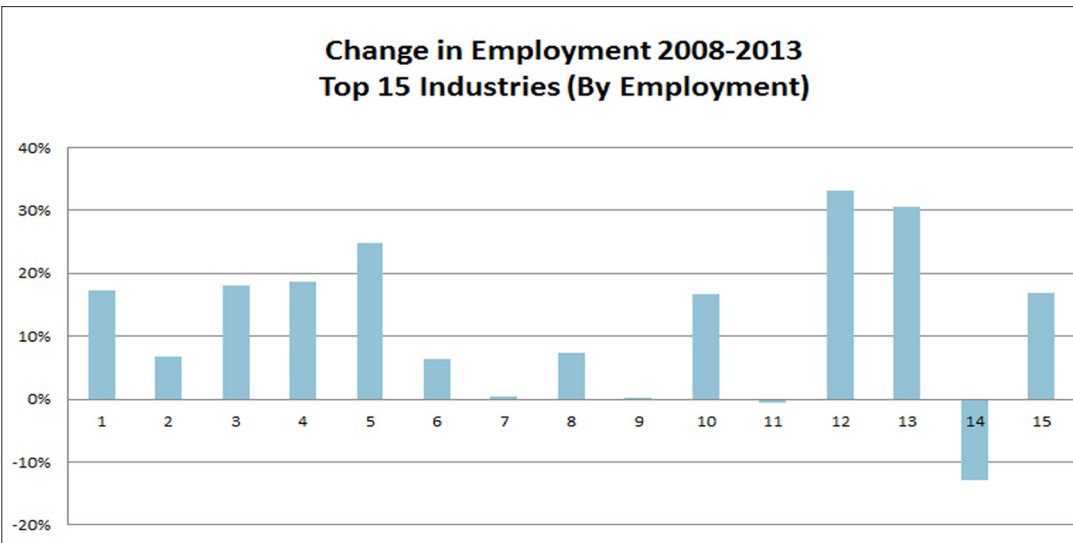
SECTORS

III. Healthcare

EMPLOYMENT

Key	Healthcare Cluster Top Employing Industries	2013
1	General Medical and Surgical Hospitals (Private)	10,730
2	Offices of Physicians (except Mental Health Specialists)	7,271
3	Hospitals (State Government)	6,516
4	Nursing Care Facilities	4,147
5	Home Health Care Services	2,372
6	Offices of Dentists	2,327
7	Offices of Physical, Occupational and Speech Therapists, and Audiologists	1,089
8	Specialty (except Psychiatric and Substance Abuse) Hospitals (Private)	921
9	Psychiatric and Substance Abuse Hospitals (Private)	735
10	Offices of All Other Miscellaneous Health Practitioners	651
11	Residential Mental Retardation Facilities	542
12	Medical Laboratories	501
13	Freestanding Ambulatory Surgical and Emergency Centers	461
14	Outpatient Mental Health and Substance Abuse Centers	404
15	Offices of Optometrists	376

Overall employment in healthcare continues to increase but at a moderate rate (1.7%). The national growth rate is only slightly higher at 1.9%. Healthcare is a net exporter of economic activity by approximately \$90 million. There are roughly 42,000 employed within the healthcare sector. While employment in private hospitals has increased over the last five years, there was a 4% decrease in jobs from 2012 –



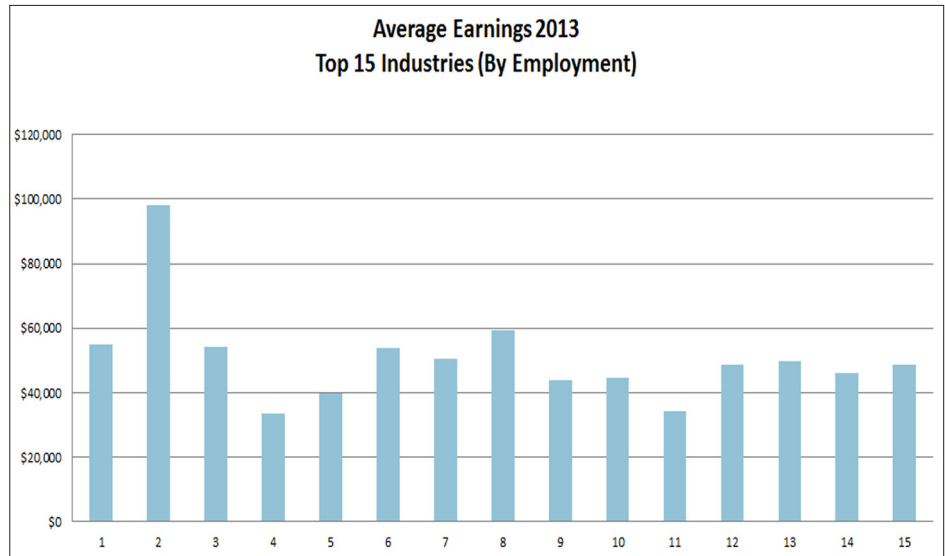
Source: EMSI 2013 and Author's Calculations

2013. The industries that have fared the best over the last year include: "home health care services," "medical laboratories," and "freestanding ambulatory surgical and emergency centers." Industries that have fared the worst include: "psychiatric and substance abuse centers," "private hospitals," and "specialty hospitals."

SECTORS

III. Healthcare

Typically, the healthcare sector pays relatively high earnings to its workers. Of the top fifteen industries, seven paid on average roughly \$50,000 or more per worker. The highest paying industries are physicians offices, private, general and specialty hospitals. The lowest paying industries are nursing care facilities, residential mental retardation facilities and home health services.



Source: EMSI, 2013

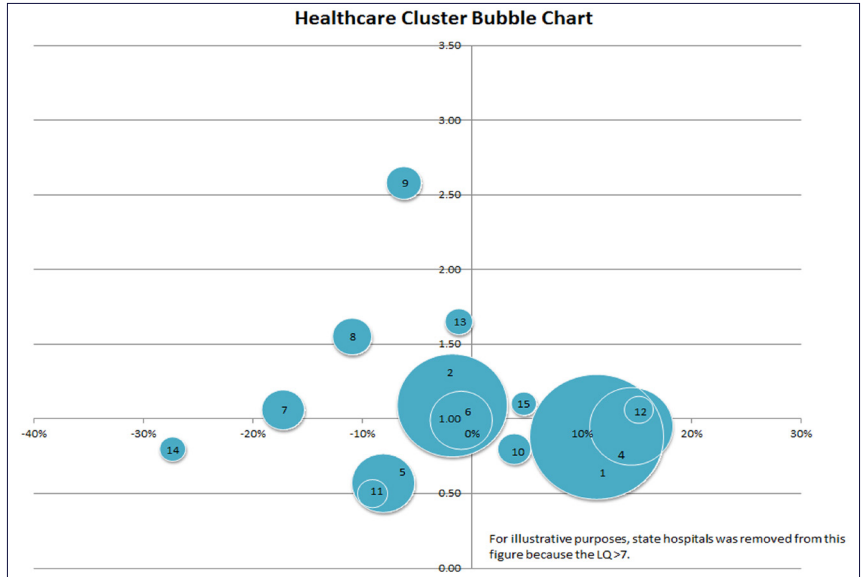
LOCATION QUOTIENT

Key	Healthcare Industry	LQ
1	General Medical and Surgical Hospitals (Private)	0.88
2	Offices of Physicians (except Mental Health Specialists)	1.09
3	Hospitals (State Government)	7.59
4	Nursing Care Facilities	0.95
5	Home Health Care Services	0.57
6	Offices of Dentists	0.99
7	Offices of Physical, Occupational and Speech Therapists, and Audiologists	1.06
8	Specialty (except Psychiatric and Substance Abuse) Hospitals (Private)	1.55
9	Psychiatric and Substance Abuse Hospitals (Private)	2.58
10	Offices of All Other Miscellaneous Health Practitioners	0.80
11	Residential Mental Retardation Facilities	0.50
12	Medical Laboratories	1.06
13	Freestanding Ambulatory Surgical and Emergency Centers	1.65
14	Outpatient Mental Health and Substance Abuse Centers	0.80
15	Offices of Optometrists	1.10

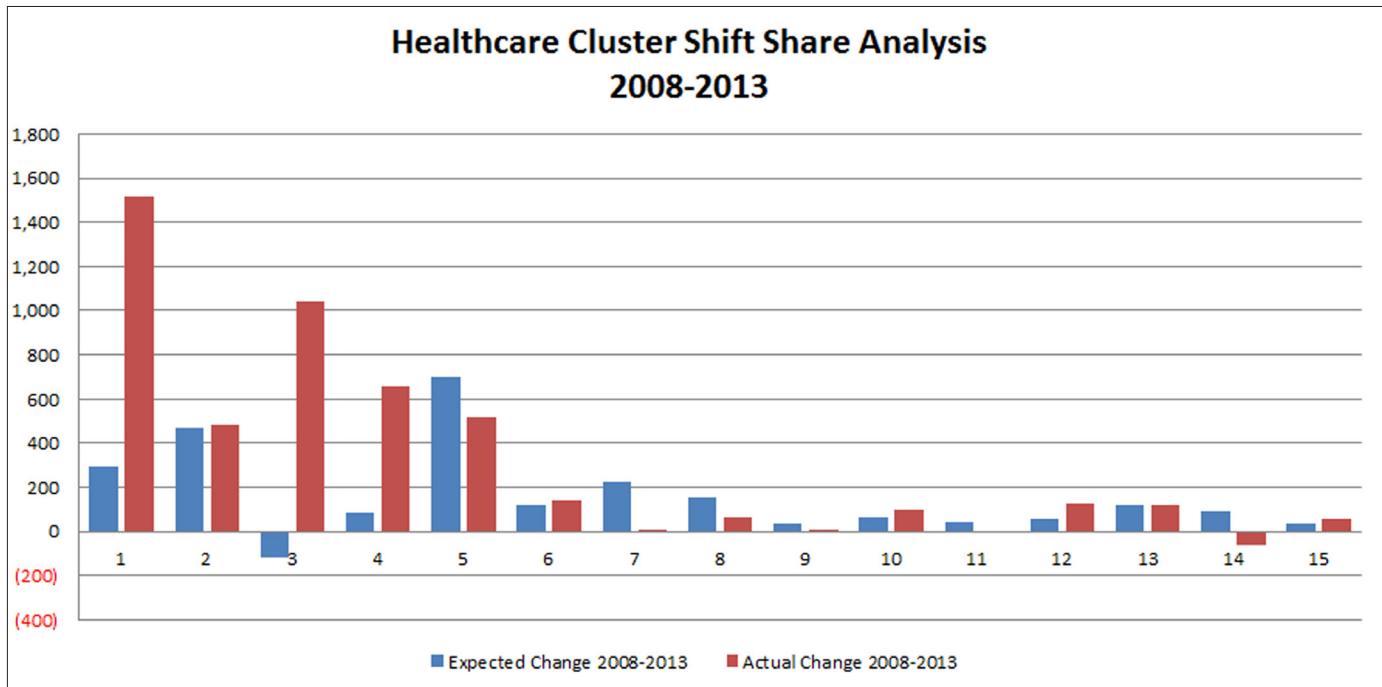
SECTORS

III. Healthcare

Even though healthcare is an important component of the Bluegrass WIB region's economy, the location quotients for the majority of the healthcare related industries remain small. Between 2008 and 2013, the location quotient for the majority of industries increased by a small amount with the exception of any sector designed to address substance abuse and mental health. This suggests that the region is making progress towards national trends. Shift share analysis suggests that five industries fared better than expected when taking into consideration national and industrial trends: Both public and private hospitals, nursing care facilities, dentists offices, and medical laboratories.



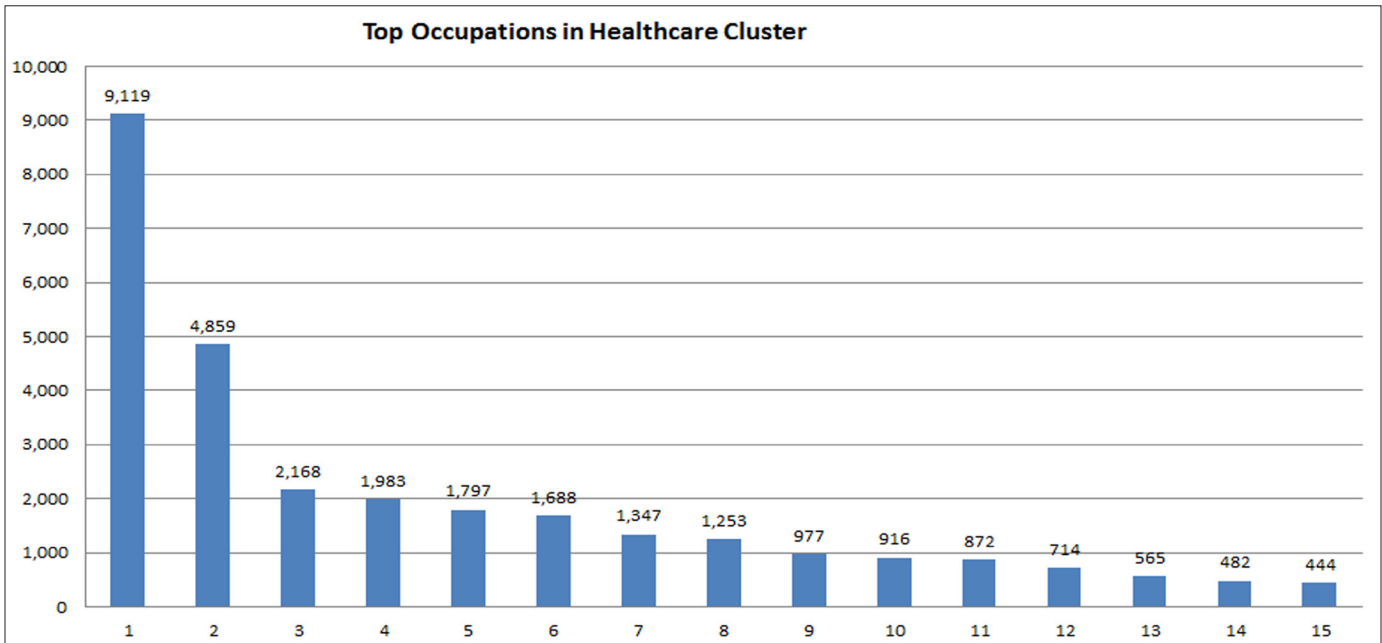
Source: Author's calculation of EMSI Data



- | | | | |
|---|---|----|---|
| 1 | General Medical and Surgical Hospitals (Private) | 9 | Psychiatric and Substance Abuse Hospitals (Private) |
| 2 | Offices of Physicians (except Mental Health Specialists) | 10 | Offices of All Other Miscellaneous Health Practitioners |
| 3 | Hospitals (State Government) | 11 | Residential Mental Retardation Facilities |
| 4 | Nursing Care Facilities | 12 | Medical Laboratories |
| 5 | Home Health Care Services | 13 | Freestanding Ambulatory Surgical and Emergency Centers |
| 6 | Offices of Dentists | 14 | Outpatient Mental Health and Substance Abuse Centers |
| 7 | Offices of Physical, Occupational and Speech Therapists, and Audiologists | 15 | Offices of Optometrists |
| 8 | Specialty (except Psychiatric and Substance Abuse) Hospitals (Private) | | |

SECTORS

III. Healthcare



The top occupations in the healthcare sector continue to be registered nurses, nursing assistants, and personal care aides. These wages range between \$8 and \$27 per hour.

The shift share analysis on the next page includes those occupations that have fared much better than expected (from registered nurses through home health aides) as well as the one industry that fared worse than expected by only a little (physical therapist). The figure reveals that the region has a competitive advantage in RNs, nursing assistants, and personal care aides. Overall there were 800

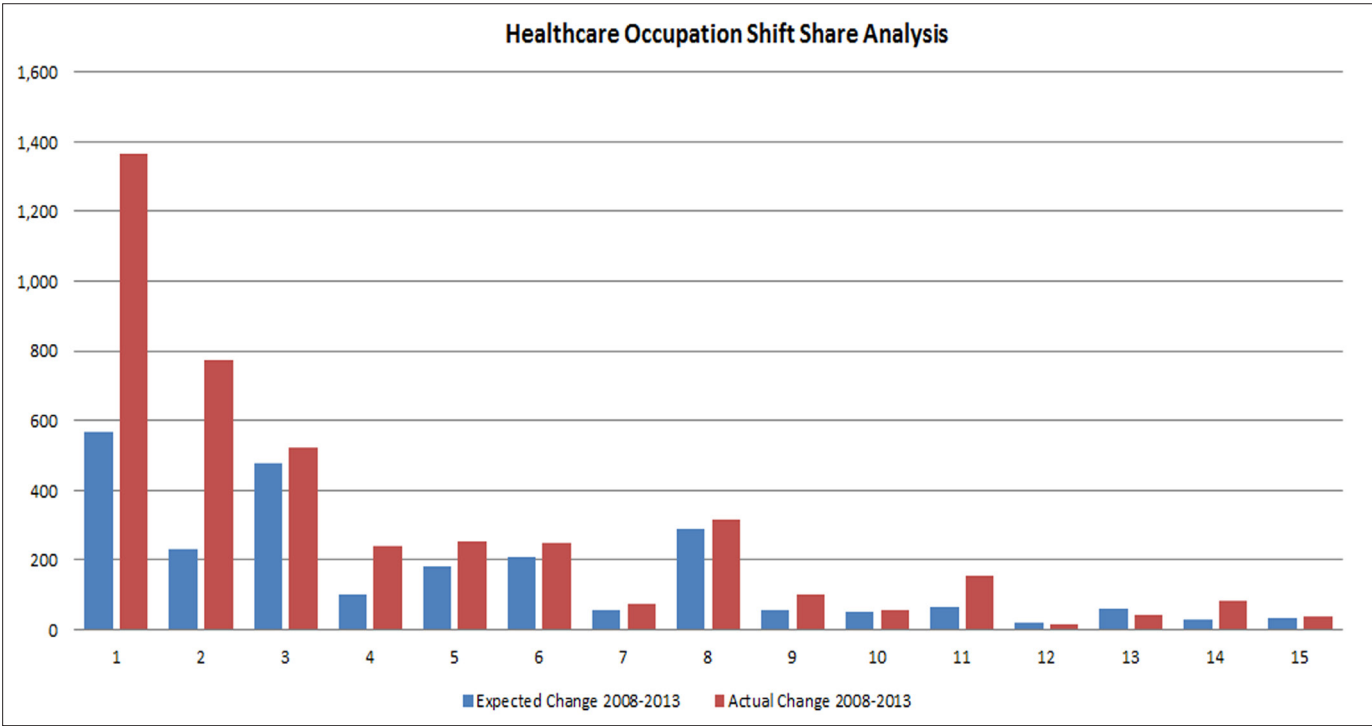
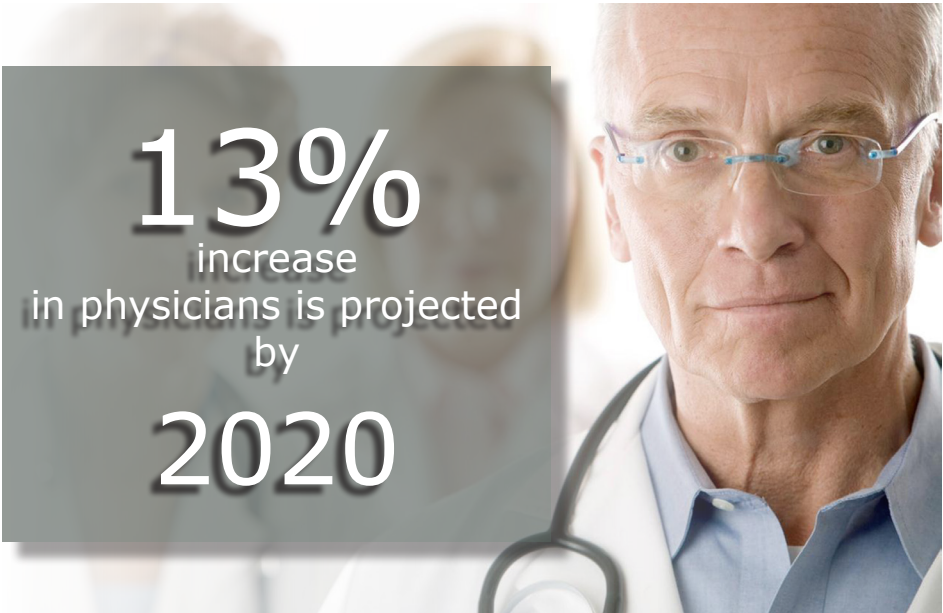
Key	Top Occupations	Median Hourly Earnings	Education Level
1	Registered Nurses	\$26.92	Associate's degree
2	Nursing Assistants	\$10.91	Postsecondary non-degree award
3	Personal Care Aides	\$8.67	Less than high school
4	Licensed Practical and Licensed Vocational Nurses	\$18.68	Postsecondary non-degree award
5	Physicians and Surgeons, All Other	\$95.81	Doctoral or professional degree
6	Medical Secretaries	\$13.31	High school diploma or equivalent
7	Medical Assistants	\$13.46	High school diploma or equivalent
8	Home Health Aides	\$9.56	Less than high school
9	Medical and Health Services Managers	\$36.28	Bachelor's degree
10	Dental Assistants	\$14.41	Postsecondary non-degree award
11	Radiologic Technologists	\$23.33	Associate's degree
12	Clinical, Counseling, and School Psychologists	\$30.60	Doctoral or professional degree
13	Physical Therapists	\$38.55	Doctoral or professional degree
14	Respiratory Therapists	\$20.62	Associate's degree
15	Dental Hygienists	\$28.34	Associate's degree

SECTORS

III. Healthcare

more new filled RN positions than expected and nearly 540 more filled nursing assistant positions than expected.

Future Growth: There is a very large expected increase in home health aides (roughly 41%) by 2020. These are not necessarily high paying positions but they serve a vital role in the delivery of care. There are currently 1,797 total physicians and surgeons working in the Bluegrass Workforce Investment Board’s coverage area. On average, a physician earns \$96/hour. It is projected that by 2020, there will be a 13% increase in the number of physicians.



SECTORS

III. Healthcare

RECENT TRENDS

The Biomedical/Healthcare cluster is comprised of medical manufacturing, research and design, and the provision of health care. (A full list of the industries included is provided in the appendix S). In 2013, there were an estimated 42,000 individuals employed in this cluster. Not surprisingly, hospitals (both private and public) are the largest employers in the Bluegrass WIB region. Office of physicians, nursing home facilities and home health services are the next largest industries. The region is a net exporter of healthcare by approximately \$90 million.

There was a 13.3% increase in the number of jobs in the Bluegrass Region between 2008 and 2013. This compared to a 6.8% and 8.4% growth rate in Kentucky and the nation, respectively. Of the unemployed in the region, it is projected that 7% (2,052) had worked in the healthcare field. While it appears that healthcare is a large component of the BGWIB region, the cluster has not kept up with the rest of the nation in certain industries. The mandates associated with the Patient Protection and Affordable Care Act suggest that there will be an increased demand for healthcare services in the near future. Thus, the region will need to focus its efforts on creating a strong workforce to meet this increased demand.



Healthcare Industry Employment Comparison (2012 - 2013)

Industry	Jobs 2012	Jobs 2013	% Change
General Medical and Surgical Hospitals (Private)	10,730	10,343	-3.6%
Offices of Physicians (except Mental Health Specialists)	7,271	7,482	2.9%
Hospitals (State Government)	6,516	6,813	4.6%
Nursing Care Facilities	4,147	4,165	0.4%
Home Health Care Services	2,372	2,602	9.7%
Offices of Dentists	2,327	2,408	3.5%
Offices of Physical, Occupational and Speech Therapists, and Audiologists	1,089	1,150	5.6%
Specialty (except Psychiatric and Substance Abuse) Hospitals (Private)	921	898	-2.5%
Psychiatric and Substance Abuse Hospitals (Private)	735	708	-3.7%
Offices of All Other Miscellaneous Health Practitioners	651	689	5.8%
Residential Mental Retardation Facilities	542	566	4.4%
Medical Laboratories	501	519	3.6%
Freestanding Ambulatory Surgical and Emergency Centers	461	504	9.3%
Outpatient Mental Health and Substance Abuse Centers	404	444	9.9%
Offices of Optometrists	376	396	5.3%

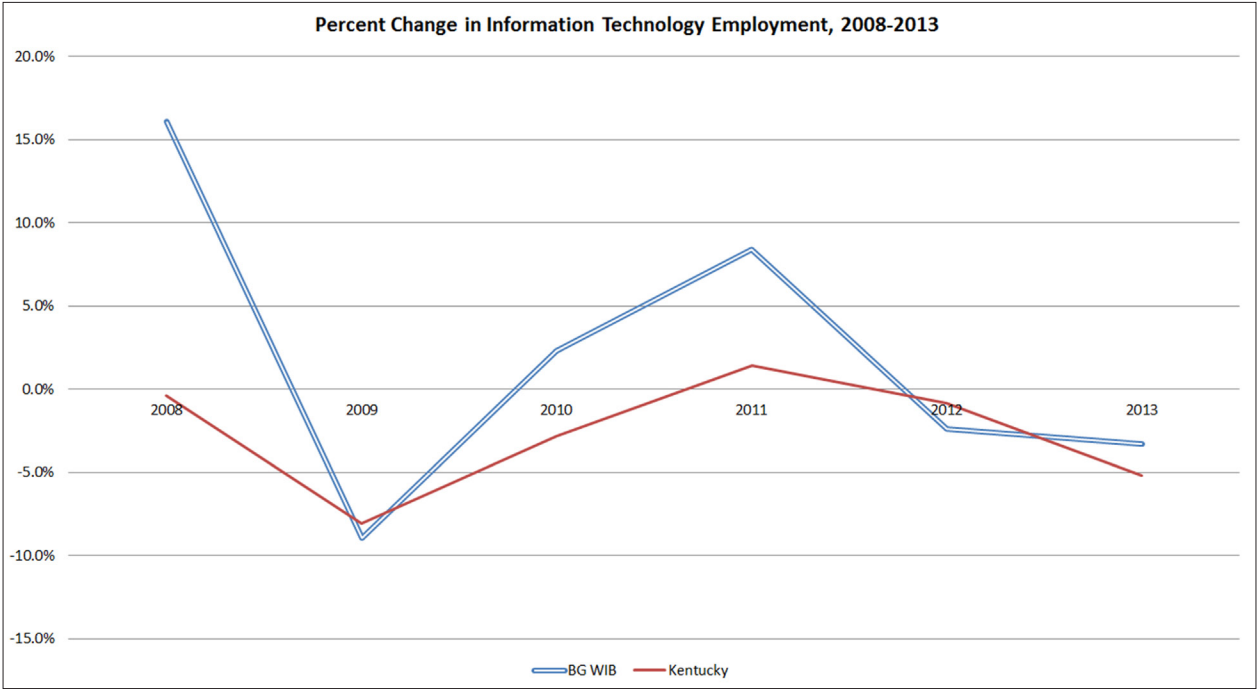
SECTORS

IV. Information Technology

These industries are comprised of information technology (IT) firms that focus on software development, computer equipment production and code composition. Specific occupations within the information technology field include but are not limited to software developers, systems administrators, computer support specialists, computer systems analysts, software developers, etc. The information technology sector represents ancillary occupations as well such as sales reps, security analysts, assemblers and telecommunications representatives. Ultimately, the information technology sector is comprised of communications, manufacturing related to computers, communications and research and development in the physical and life sciences.

Overall employment in the information technology cluster continues to decline. Between 2012 and 2013, there was a 3.3% decline in jobs within the Bluegrass WIB region. The national growth rate was positive but very small (0.7%). IT is a net importer of economic activity by approximately \$587 million. There are roughly 8,000 employed within the IT cluster. The four largest employing industries saw at least a 4.7% decline in employment between 2012 and 2013. Certain industries within IT have seen moderate increases in employment. For example, custom computer programming services and electronic manufacturing both increased employment by approximately 10% over the last year.

CHANGE

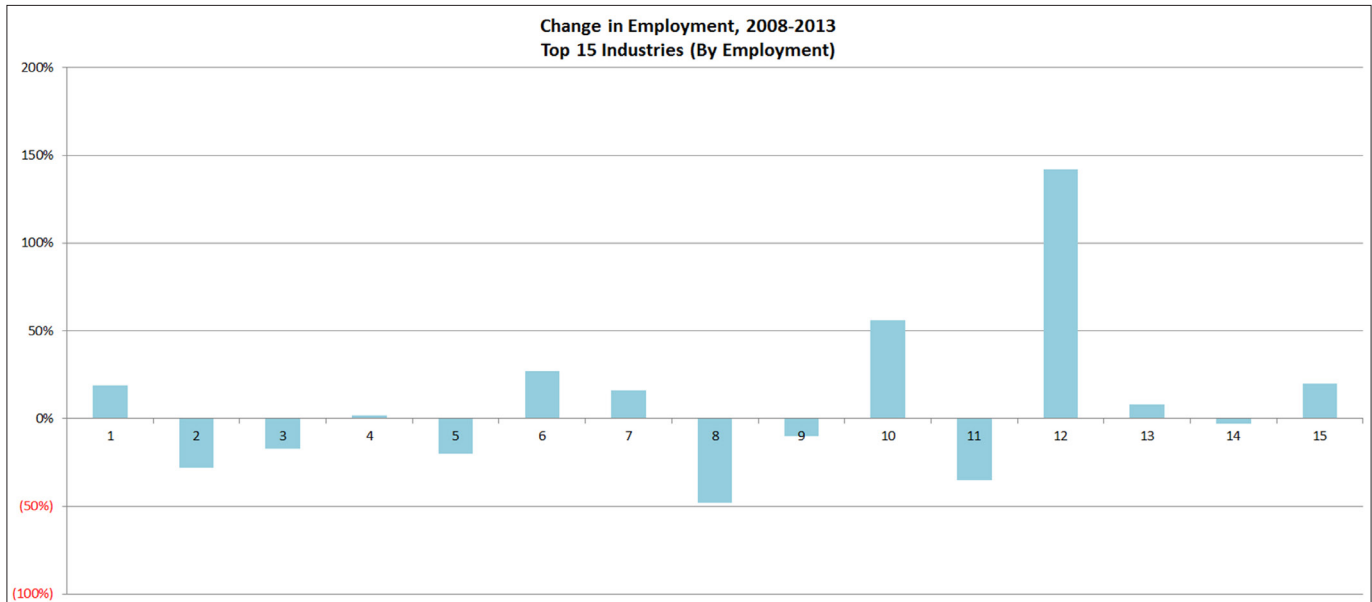


(Source: Author's calculations using EMSI data, 2013)
Industry profiles created by the Community and Economic Development Initiative of Kentucky (CEDIK) for the Bluegrass Workforce Investment Board. Latest version 1/13. CEDIK Website: <http://www.ca.uky.edu/cedik>; Bluegrass WIB Website: <http://www.bgwib.com>

SECTORS

IV. Information Technology

EMPLOYMENT



Source: EMSI 2013 and Author's Calculations

Typically the IT cluster pays, in general, the highest earnings across all sectors. The graph on the next page suggests that three industries pay on average over \$100,000 per worker while only two of the fifteen largest industries pay less than \$50,000 per worker.

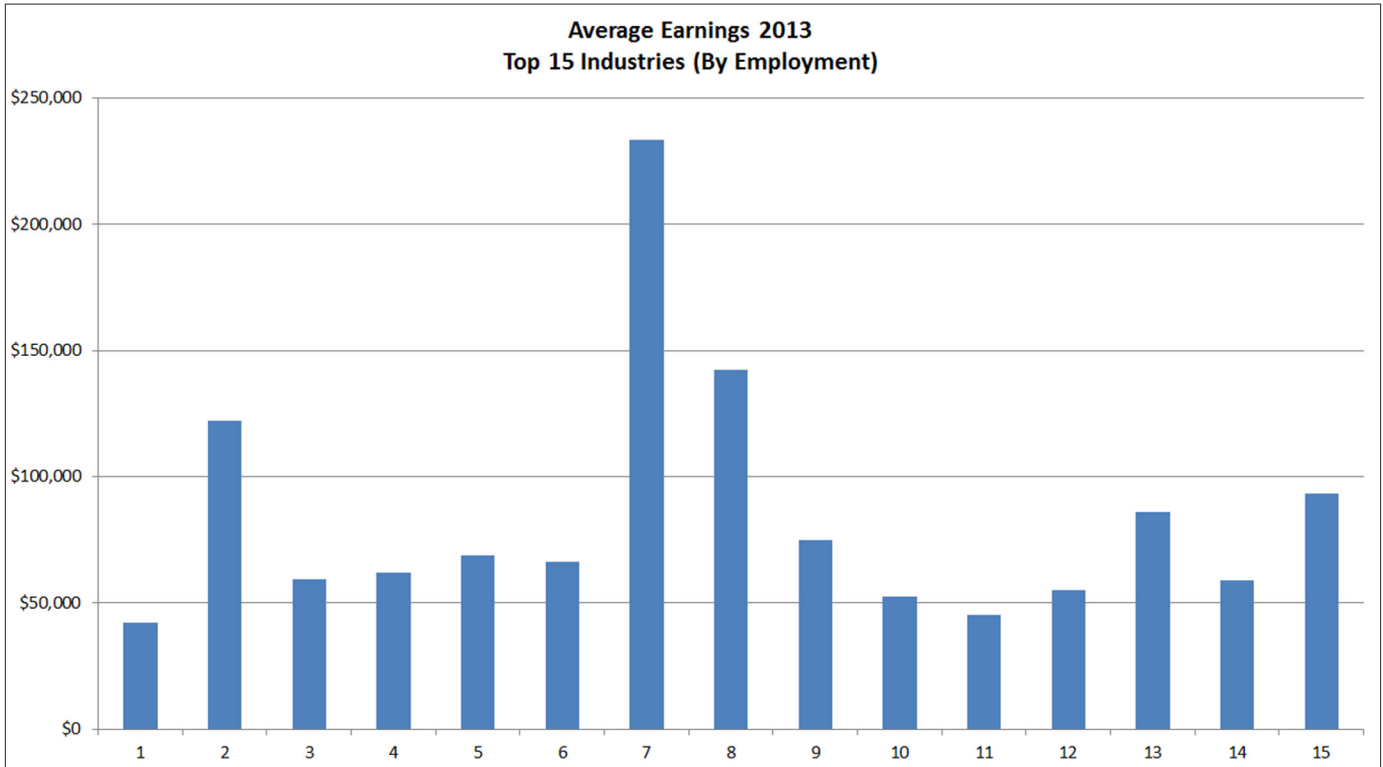
Unfortunately, some of the industries that pay the highest wages have also been hardest hit throughout the recession and have seen an overall decline in the number of jobs, i.e. Computer facilities management and other computer peripheral equipment manufacturing.

Legend	Information Technology Cluster Top Employing Industries	Jobs
1	Data Processing, Hosting, and Related Services	3,524
2	Other Computer Peripheral Equipment Manufacturing	2,019
3	Wired Telecommunications Carriers	1,514
4	Computer Systems Design Services	1,184
5	Custom Computer Programming Services	1,085
6	Storage Battery Manufacturing	583
7	Electronic Computer Manufacturing	526
8	Computer Facilities Management Services	438
9	Switchgear and Switchboard Apparatus Manufacturing	414
10	Research and Development in the Physical, Engineering, and Life Sciences (except Biotechnology)	410
11	Printed Circuit Assembly (Electronic Assembly) Manufacturing	332
12	Motor and Generator Manufacturing	300
13	Other Computer Related Services	298
14	Electron Tube Manufacturing	275
15	Computer and Computer Peripheral Equipment and Software Merchant Wholesalers	253

Data Sources: EMSI (Economic Modeling Specialists International, Bureau of Labor Statistics, O*net, Author's calculations)

SECTORS

IV. Information Technology



- | | | | |
|---|--|----|---|
| 1 | <i>Data Processing, Hosting Services</i> | 9 | <i>Switchgear and Switchboard Mfg</i> |
| 2 | <i>Other Computer Peripheral Equip Mfg</i> | 10 | <i>R&D Physical, Engineering & Life Sciences</i> |
| 3 | <i>Wired Telecommunications Carriers</i> | 11 | <i>Printed Circuit Assembly Mfg</i> |
| 4 | <i>Computer Systems Design Services</i> | 12 | <i>Motor and Generator Mfg</i> |
| 5 | <i>Custom Computer Programming Services</i> | 13 | <i>Other Computer Related Services</i> |
| 6 | <i>Storage Battery Mfg</i> | 14 | <i>Electron Tube Mfg</i> |
| 7 | <i>Electronic Computer Mfg</i> | 15 | <i>Computer, Computer Peripheral Equip, Software Wholesaler</i> |
| 8 | <i>Computer Facilities Management Services</i> | | |

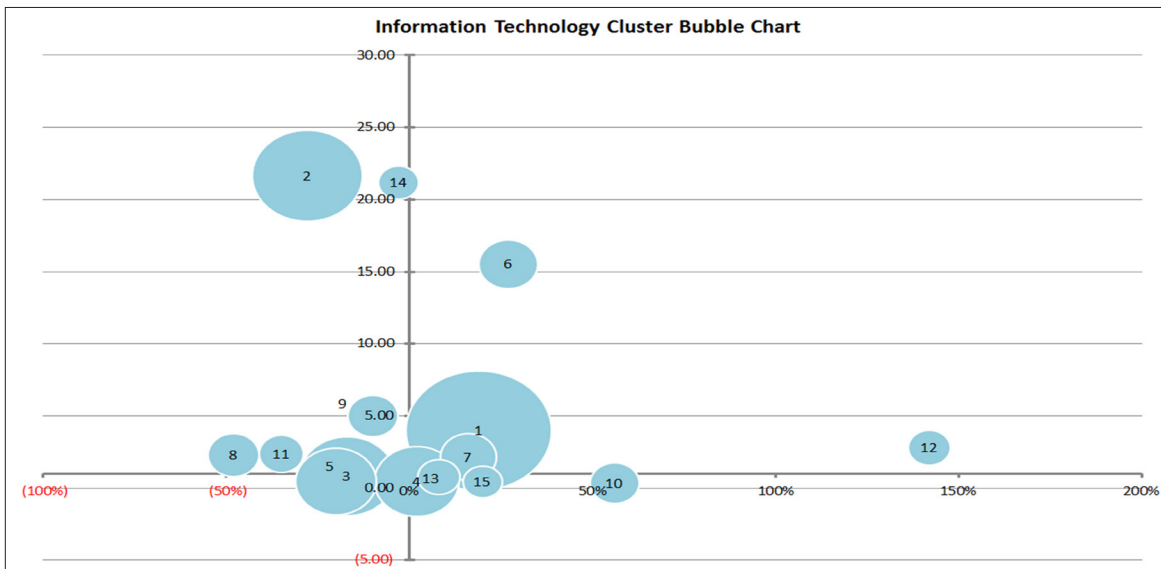


SECTORS

IV. Information Technology

LOCATION QUOTIENT

Between 2012 and 2013, the location quotients for the majority of the largest industries that make up the cluster did not significantly change. Only one industry, "motor and generator manufacturing" saw a decline in LQ from greater than 4 to 2.8. The bubble chart below suggests that two industries (storage battery manufacturing, R&D, and motor and generator manufacturing) have increased in employment over the last five years and the LQ is greater than 2.5 These industries could have promise for the future. In addition, R&D, while a small LQ, grew in employment by over 50% and could be considered an emerging industry.



Source: Author's calculation of EMSI Data

LQ < 1

- Wired Telecommunications Carriers
- Computer Systems Design Services
- Custom Computer Programming Services
- R & D in the Physical, Engineering, and Life Sciences
- Other Computer Related Services
- Computer and Computer Peripheral Equipment Wholesalers

LQ between 1 and 2.5

- Electronic Computer Manufacturing
- Computer Facilities Management Services
- Printed Circuit Assembly (Electronic Assembly) Manufacturing

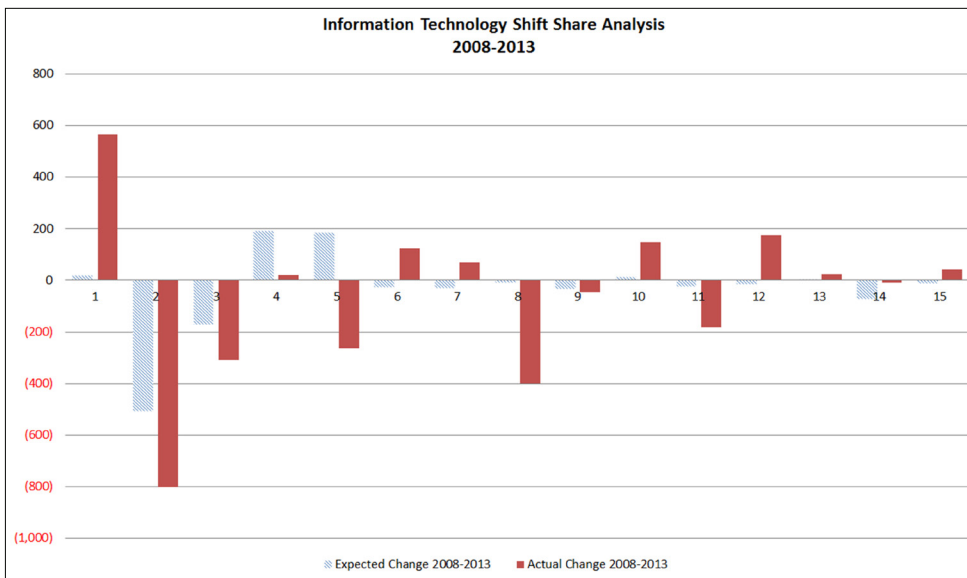
LQ > 2.5

- Data Processing, Hosting, and Related Services
- Other Computer Peripheral Equipment Manufacturing
- Storage Battery Manufacturing
- Motor and Generator Manufacturing
- Electron Tube Manufacturing
- Switchgear and Switchboard Apparatus Manufacturing

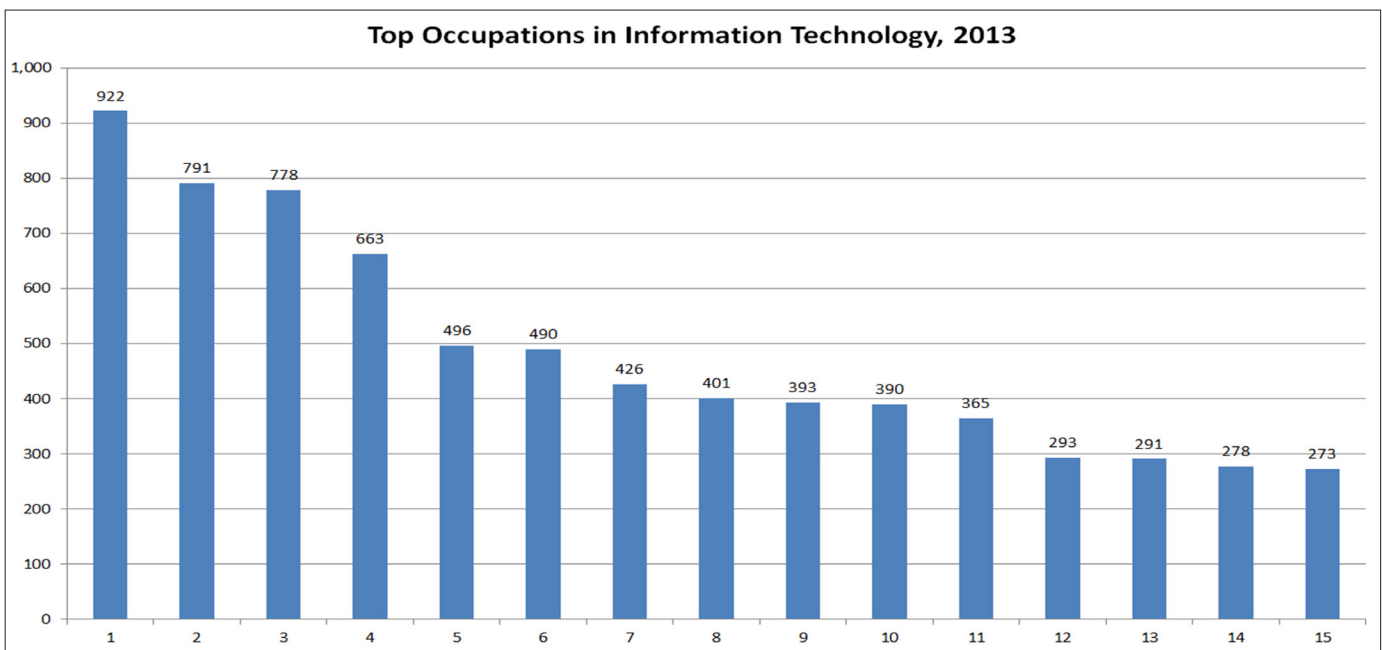
SECTORS

IV. Information Technology

- | | | | |
|---|---|----|--|
| 1 | Data Processing, Hosting, Services | 9 | Switchgear and Switchboard Apparatus Mfg |
| 2 | Other Computer Peripheral Equip Mfg | 10 | R&D Physical, Engineering, & Life Sciences |
| 3 | Wired Telecommunications Carriers | 11 | Printed Circuit Assembly Mfg |
| 4 | Computer Systems Design Services | 12 | Motor and Generator Mfg |
| 5 | Custom Computer Programming Services | 13 | Other Computer Related Services |
| 6 | Storage Battery Mfg | 14 | Electron Tube Mfg |
| 7 | Electronic Computer Mfg | 15 | Computer, Computer Peripheral Equip and Software Wholesalers |
| 8 | Computer Facilities Management Services | | |



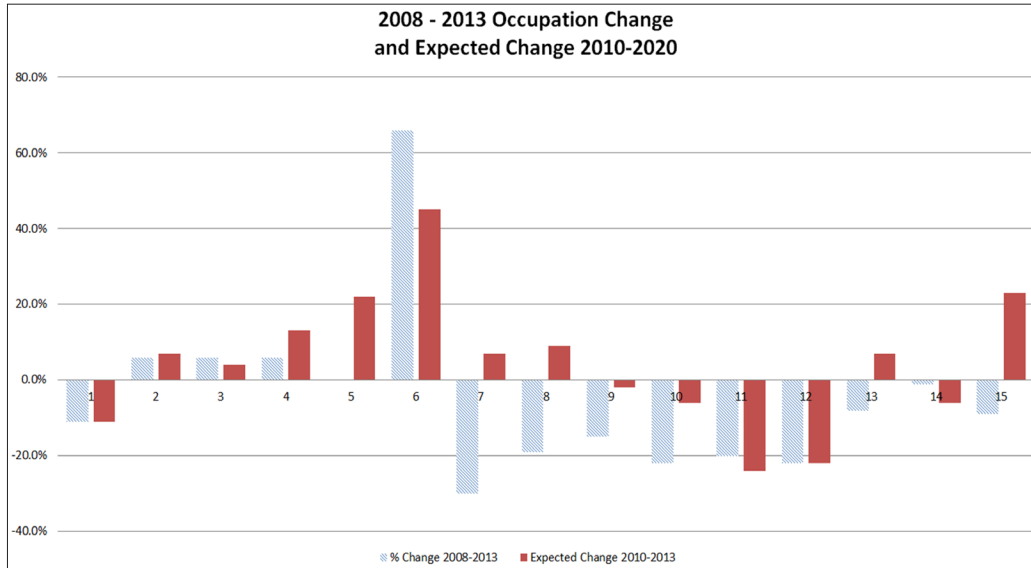
Shift share analysis measures the competitive strength of the region for a particular industry. From 2008-2013 only a few industries fared better than expected including data processing (hosting services), storage battery manufacturing, R&D, and motor and generator manufacturing. However, over the last year, there was a significant decline in employment or no change in employment for each of those industries with the exception of the R&D sector.



SECTORS

IV. Information Technology

The top occupations in the information technology cluster continue to be software developers, computer user support specialists and electricians. These wages range between \$15 and \$35 per hour. One of the top paying occupations, software developers, declined in number between 2012 and 2013 by approximately 8%.



Source: EMSI, 2013

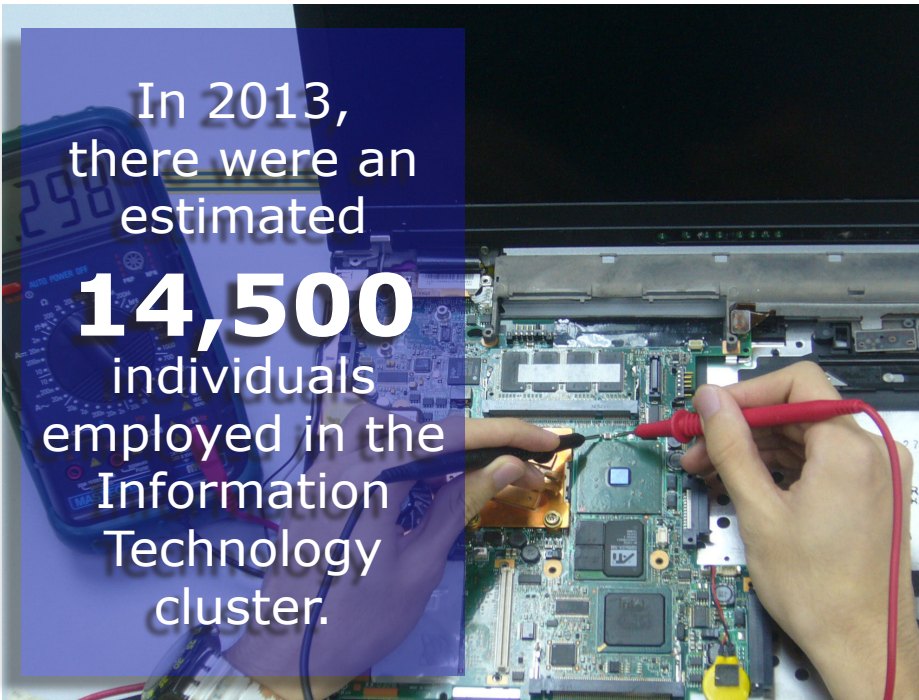
SOC	Occupation	Median Hourly Earnings	Education Level
1	Software Developers, Systems Software	\$35.86	Bachelor's degree
2	Computer User Support Specialists	\$15.35	Associate's degree
3	Electricians	\$18.34	Long-term on-the-job training
4	Customer Service Representatives	\$11.57	Short-term on-the-job training
5	Computer Systems Analysts	\$32.62	Bachelor's degree
6	Unclassified Occupation	\$14.73	N/A
7	General and Operations Managers	\$36.97	Bachelor's or higher degree, plus work experience
8	Software Developers, Applications	\$36.23	Bachelor's degree
9	Computer Programmers	\$26.11	Bachelor's degree
10	Sales Representatives, Services, All Other	\$18.50	Short-term on-the-job training
11	Telecommunications Equipment Installers and Repairers, Except Line Installers	\$22.25	Postsecondary non-degree award
12	Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products	\$32.92	Bachelor's degree
13	Computer and Information Systems Managers	\$39.97	Bachelor's or higher degree, plus work experience
14	Team Assemblers	\$13.44	Moderate-term on-the-job training
15	Network and Computer Systems Administrators	\$23.99	Bachelor's degree

SECTORS

IV. Information Technology

RECENT TRENDS

The Information Technology (IT) cluster is comprised of communications, manufacturing related to computers communications and research and development in the physical and life sciences (A full list of the industries included is provided in appendix T). In 2013 there were an estimated 13,100 individuals employed in this cluster. The largest industry in the region is data processing, hosting and related services (3,524 jobs). Lexmark is the second largest employer.



In 2013,
there were an
estimated
14,500
individuals
employed in the
Information
Technology
cluster.

The IT sector in the Bluegrass Region declined during the recession but is almost back to 2008 numbers. The most promising industries within the IT cluster appear to be Custom Computer Programming Services, Electronic Computer Manufacturing and Research and Development. Although over the last year these industries declined in employment or remained at the same level the IT cluster is one of the top paying clusters and the top occupations typically require at least a bachelor's degree. The top occupations in terms of projected growth and earnings are software developers and computer support specialists.

Information Technology Industry Comparison (2012 - 2013)

Information Technology Sub-Industries	2012	2013	Percent Change
Data Processing, Hosting, and Related Services	3,786	3,524	-6.9%
Other Computer Peripheral Equipment Manufacturing	2,266	2,019	-10.9%
Wired Telecommunications Carriers	1,588	1,514	-4.7%
Computer Systems Design Services	1,249	1,184	-5.2%
Custom Computer Programming Services	983	1,085	10.4%
Storage Battery Manufacturing	624	583	-6.6%
Electronic Computer Manufacturing	478	526	10.0%
Computer Facilities Management Services	422	438	3.8%
Switchgear and Switchboard Apparatus Manufacturing	406	414	2.0%
Research and Development in the Physical, Engineering, and Life Sciences (except Biotechnology)	390	410	5.1%
Printed Circuit Assembly (Electronic Assembly) Manufacturing	365	332	-9.0%
Motor and Generator Manufacturing	300	300	0.0%
Other Computer Related Services	290	298	2.8%
Electron Tube Manufacturing	264	275	4.2%
Computer and Computer Peripheral Equipment and Software Merchant Wholesalers	263	253	-3.8%

SECTORS

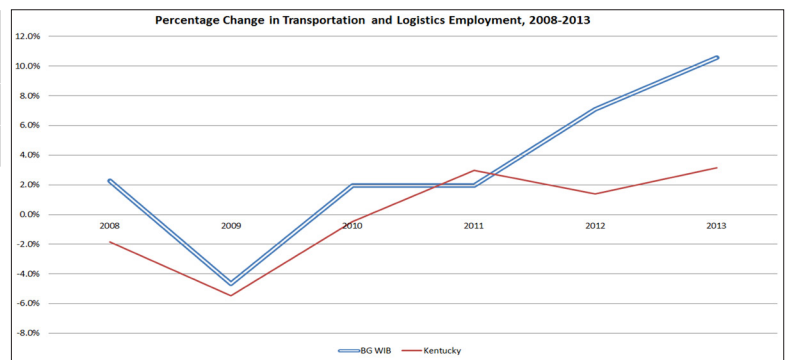
V. Transportation, Distribution and Logistics

These industries focus on the movement and storage of goods and support activities related to different modes of transportation of goods and services. Specific modes of transportation include water, rail, road and air. Specific occupations within the transportation, distribution and logistics sectors include but are not limited to engineers, drivers, captains and couriers as well as general warehousing and storage employees, logistics consultants, messengers and specialized freight and rigging specialists. As the world places more and more emphasis on transporting goods and services faster and more efficiently, the transportation, distribution and logistics sector becomes more emphasized and important within a region's economy.

Overall employment in this cluster continues to increase at a more rapid rate (10.4%) than the national growth rate (1.1%) between 2012 and 2013. The transportation, distribution and logistics cluster is a net importer of economic activity by approximately \$345 million. There are roughly 13,000 employed within the transportation, distribution, and logistics cluster. Certain industries within this cluster have seen significant increases in employment. Specifically employment within the "general warehousing and storage" sector increased by 38% over the last year. In addition, "support activities for rail," "couriers and express delivery services," and "long distance freight trucking (both general and specialized)" fared well between 2012 and 2013.

CHANGE

Total Gross Regional Product (2011)	\$729 Million
Imports (2011)	\$1.2 Billion
Exports (2011)	\$855 Million



Industry profiles created by the Community and Economic Development Initiative of Kentucky (CEDIK) for the Bluegrass Workforce Investment Board. Latest version 2/4. CEDIK Website: <http://www.ca.uky.edu/cedik>; Bluegrass WIB Website: <http://www.bgwib.com>

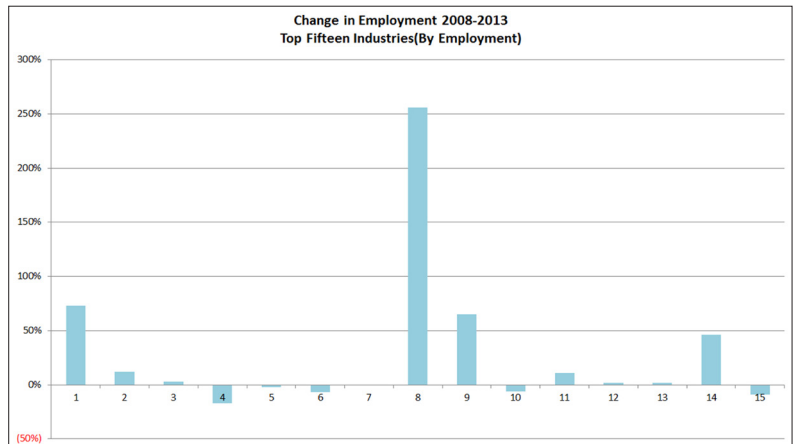
EMPLOYMENT

Key	Transportation/Logistics Cluster Top Employing Industries	Jobs
1	General Warehousing and Storage	3,427
2	Couriers and Express Delivery Services	2,141
3	General Freight Trucking, Long-Distance, Truckload	1,605
4	General Freight Trucking, Local	1,239
5	General Freight Trucking, Long-Distance, Less Than Truckload	802
6	Specialized Freight (except Used Goods) Trucking, Local	564
7	Rail Transportation	467
8	Support Activities for Rail Transportation	360
9	Process, Physical Distribution, and Logistics Consulting Services	339
10	Specialized Freight (except Used Goods) Trucking, Long-Distance	306
11	Freight Transportation Arrangement	273
12	Local Messengers and Local Delivery	269
13	Other Warehousing and Storage	231
14	Used Household and Office Goods Moving	216
15	Motor Vehicle Towing	136

SECTORS

V. Transportation, Distribution and Logistics

Five industries fared well through the recession. Of particular interest is the dramatic increase in the support activities for rail transportation. Between 2008 and 2013 this industry grew by 256%. This industry is largely comprised of stockyards and CSX Transportation. In addition, process, physical distribution and logistics consulting services grew by 65% over the last five years. General warehousing, courier and express delivery services, and trucking. lead the cluster in employment.



Source: EMSI, 2013

The transportation and logistics cluster pays on average annual earnings between \$20,000 and \$85,000 depending on the industry. Earnings in this cluster are lower compared to other clusters. Earnings are highest for rail transportation and support activities for rail. Earnings are lowest for local messengers and used household and office goods moving. Earnings are highest for support activities for rail.

- | | | | |
|---|--|----|---|
| 1 | General Warehousing and Storage | 9 | Process, Physical Distribution, and Logistics Consulting Services |
| 2 | Couriers and Express Delivery Services | 10 | Specialized Freight (except Used Goods) Trucking, Long-Distance |
| 3 | General Freight Trucking, Long-Distance, Truckload | 11 | Freight Transportation Arrangement |
| 4 | General Freight Trucking, Local | 12 | Local Messengers and Local Delivery |
| 5 | General Freight Trucking, Long-Distance, Less Than Truckload | 13 | Other Warehousing and Storage |
| 6 | Specialized Freight (except Used Goods) Trucking, Local | 14 | Used Household and Office Goods Moving |
| 7 | Rail Transportation | 15 | Motor Vehicle Towing |
| 8 | Support Activities for Rail Transportation | | |

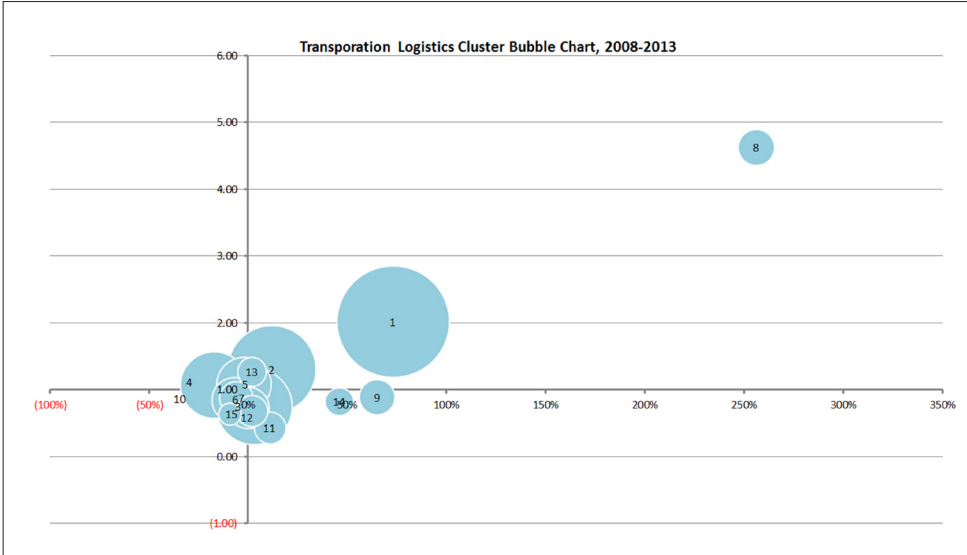
LOCATION QUOTIENT

Industry	LQ
General Warehousing and Storage	2.02
Couriers and Express Delivery Services	1.39
General Freight Trucking, Long-Distance, Truckload	0.75
General Freight Trucking, Local	1.07
General Freight Trucking, Long-Distance, Less Than Truckload	1.08
Specialized Freight (except Used Goods) Trucking, Local	0.85
Rail Transportation	0.73
Support Activities for Rail Transportation	4.63
Process, Physical Distribution, and Logistics Consulting Services	0.89
Specialized Freight (except Used Goods) Trucking, Long-Distance	0.87
Freight Transportation Arrangement	0.43
Local Messengers and Local Delivery	0.68
Other Warehousing and Storage	1.27
Used Household and Office Goods Moving	0.82
Motor Vehicle Towing	0.64

SECTORS

V. Transportation, Distribution and Logistics

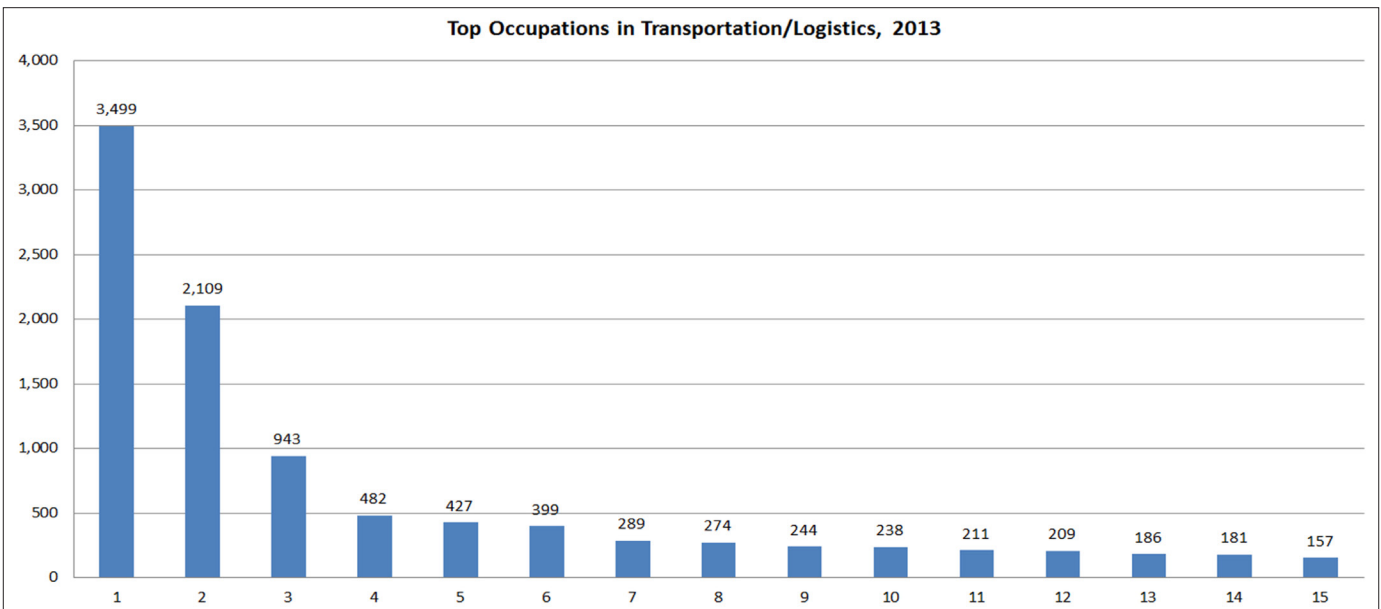
LOCATION QUOTIENT



The blue circle (Support for Rail Transportation grew by 348% thus its position on the bubble chart is not to scale)
Source: Author's calculation of EMSI Data

Between 2012 and 2013, the location quotient for eight of the top fifteen industries within the cluster increased. This suggests that these industries have become more concentrated in the region compared to the rest of the nation which is not surprising given the relative growth rate in employment within the cluster. The location quotient for "support activities for rail" increased from 2.36 in 2012 to 4.63 in 2013. The two industries that stand out from the bubble chart are general warehousing and support activities for rail transportation.

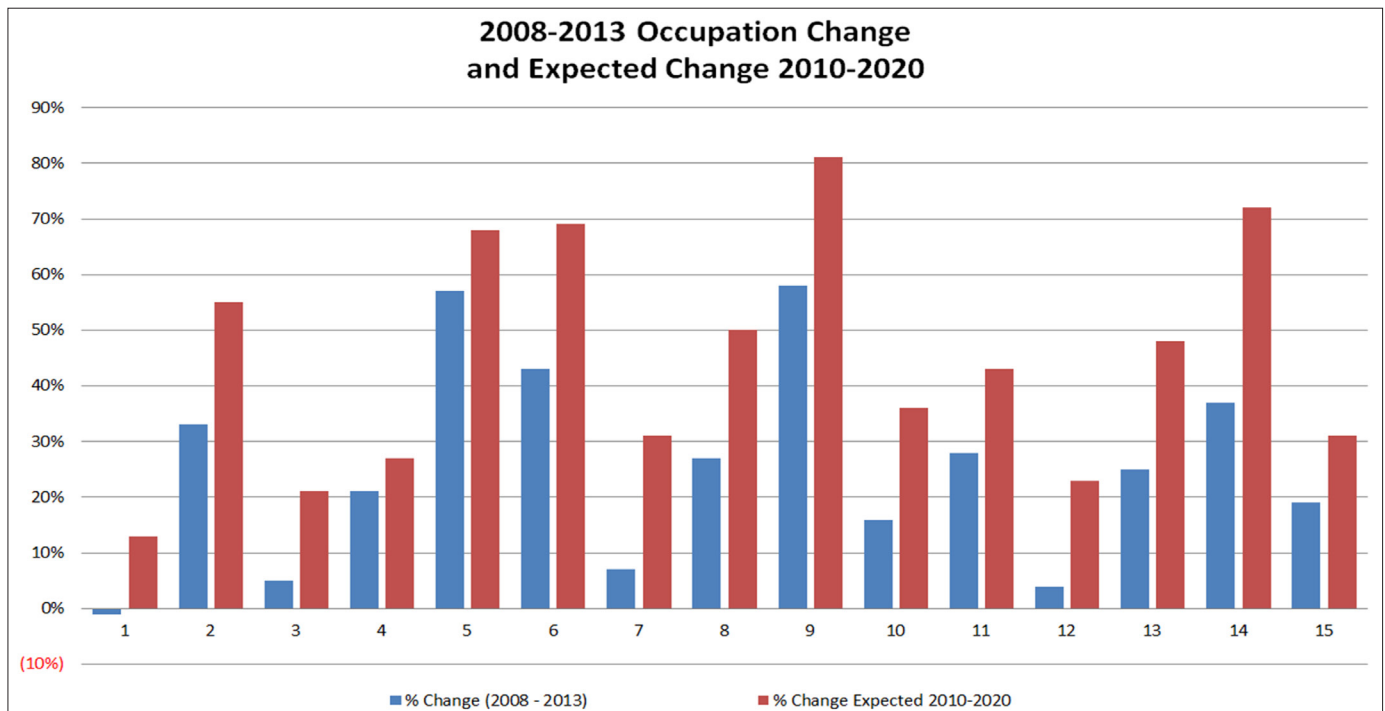
- | | |
|--|---|
| 1 Heavy and Tractor-Trailer Truck Drivers | 9 Packers and Packagers, Hand |
| 2 Laborers and Freight, Stock, and Material Movers, Hand | 10 First-Line Supervisors of Transportation and Material-Moving Machine and Vehicle Operators |
| 3 Light Truck or Delivery Services Drivers | 11 Managers, All Other |
| 4 Couriers and Messengers | 12 Bus and Truck Mechanics and Diesel Engine Specialists |
| 5 Stock Clerks and Order Fillers | 13 Customer Service Representatives |
| 6 Industrial Truck and Tractor Operators | 14 First-Line Supervisors of Helpers, Laborers, and Material Movers, Hand |
| 7 Taxi Drivers and Chauffeurs | 15 General and Operations Managers |
| 8 Shipping, Receiving, and Traffic Clerks | |



SECTORS

V. Transportation, Distribution and Logistics

Key	Top Occupations	Median Hourly Earnings	Education Level
1	Heavy and Tractor-Trailer Truck Drivers	\$15.15	Short-term on-the-job training
2	Laborers and Freight, Stock, and Material Movers, Hand	\$10.16	Short-term on-the-job training
3	Light Truck or Delivery Services Drivers	\$14.11	Short-term on-the-job training
4	Couriers and Messengers	\$12.47	Short-term on-the-job training
5	Stock Clerks and Order Fillers	\$12.03	Short-term on-the-job training
6	Industrial Truck and Tractor Operators	\$14.56	Short-term on-the-job training
7	Taxi Drivers and Chauffeurs	\$9.87	Short-term on-the-job training
8	Shipping, Receiving, and Traffic Clerks	\$14.17	Short-term on-the-job training
9	Packers and Packagers, Hand	\$9.92	Short-term on-the-job training
10	First-Line Supervisors of Transportation and Material-Moving Machine and Vehicle Operators	\$22.24	Work experience in a related occupation
11	Managers, All Other	\$21.09	Work experience in a related occupation
12	Bus and Truck Mechanics and Diesel Engine Specialists	\$17.07	Postsecondary non-degree award
13	Customer Service Representatives	\$11.57	Short-term on-the-job training
14	First-Line Supervisors of Helpers, Laborers, and Material Movers, Hand	\$18.85	Work experience in a related occupation
15	General and Operations Managers	\$36.97	Bachelor's or higher degree, plus work experience



The occupations employing the most individuals in the transportation, distribution, and logistics cluster continues to be heavy and tractor-trailer truck drivers, laborers, light truck or delivery services drivers, and couriers and messengers. These wages range between \$10 and \$16 per hour.

SECTORS

V. Transportation, Distribution and Logistics

RECENT TRENDS



The transportation and logistics cluster is comprised of all trucking, rail, and air transportation industries as well as warehousing and distribution services (A full list of industries included in this cluster is provided in the appendix U). In 2013 there were an estimated 13,360 individuals employed in this cluster in the Bluegrass WIB region. The largest industries in the region in transportation and logistics is general warehousing and storage and couriers and express deliver services (UPS and FedEx). By far the largest single employer is UPS. Overall, the cluster is a net importer (\$1.2 billion imports versus \$855 million exports).

The transportation and logistics cluster has fared relatively well during the recession. The only decline in employment occurred in 2009 but currently employment has increased a total of 17% between 2008 and 2013. The most promising industries within this cluster appear to be 1) General warehousing, 2) Support activities for rail, and 3) Couriers and Express Delivery Services.

Truck drivers and laborers lead the types of occupations working for this cluster. Overall, the occupations that support the transportation and logistics cluster are lower paying than other occupations. In addition, these occupations require relatively short-term training and in some instances specific driving licenses to operate tractor-trailers (CDL).

Transportation Industry Comparison (2012 - 2013)

Transportation, Distribution, and Logistics Sub-Industries	2012	2013	Percent Change
General Warehousing and Storage	2482	3,427	38.1%
Couriers and Express Delivery Services	1902	2,141	12.6%
General Freight Trucking, Long-Distance, Truckload	1473	1,605	9.0%
General Freight Trucking, Local	1244	1,239	-0.4%
General Freight Trucking, Long-Distance, Less Than Truckload	729	802	10.0%
Specialized Freight Trucking, Local	546	564	3.3%
Rail Transportation	454	467	2.9%
Process, Physical Distribution, and Logistics Consulting Services	353	339	-4.0%
Freight Transportation Arrangement	290	273	-5.9%
Specialized Freight Trucking, Long-Distance	279	306	9.7%
Support activities for Rail Transportation	270	360	33.3%
Local Messengers and Local Delivery	254	269	5.9%
Other Warehousing and Storage	227	231	1.8%
Used Household and Office Goods Moving	192	216	12.5%
Motor Vehicle Towing	152	136	-10.5%

IN CONCLUSION

The Bluegrass Workforce Investment Board's emphasis on manufacturing, healthcare, transportation/logistics/ distribution, and information technology is well positioned evidenced by the total number of jobs within each sector. Even with jobs in manufacturing having decreased within the last five years, stemming from poor economic conditions, overall, the sector still represents 9.3% of total jobs within the Bluegrass Region. This fact, compounded by an average wage within the sector over \$70,000 per year, provides significant incentive to focus BGWIB resources within the sector. Similarly, the healthcare sector represents 9.5% of total jobs within Bluegrass, with average annual wages approaching \$50,000 per year.

While not as robust, information jobs represent significant job creating opportunities within the Bluegrass Region. The information sector represents 1.7% of total jobs within the region. While representing a significantly lower percentage of the total Bluegrass workforce, opportunity is illustrated by an average annual wage of \$46,000 per year and a location quotient greater than 1.25, identifying it as an export industry and thus bringing new monies into the Bluegrass Region. Transportation jobs represent 2.8% of total jobs within the Bluegrass Region with an annual wage approaching \$49,000 per year. Furthermore, the transportation sector has seen a substantial increase in total jobs over the past five years, representing significant additions to the labor force when compared to their significance to the total job number for the region.

After careful analysis, the Bluegrass Workforce Investment Board's emphasis on manufacturing, healthcare, transportation/logistics/distribution and information technology seems well founded, relying primarily on each sector's representation as a percentage of the total region's workforce. These percentages, when compounded by data for higher annual wages, historical growth over the last five years, and their respective location quotient, all represent the most efficient and effective deployment of BGWIB assets and resources within the region's industries. Any one regression might lead to a different conclusion, but when taken as a whole, these industries are well positioned to provide job growth within the Bluegrass Region.



Compiled: 2013 Released: 2014