


NORTHWEST FLORIDA FORWARD

A REGIONAL STRATEGY FOR ECONOMIC TRANSFORMATION

TECHNICAL REPORT

UNIVERSITY of WEST FLORIDA | Haas Center

Executive Summary

PROJECT BACKGROUND

In July 2016, the Haas Center at the University of West Florida, in partnership with Florida's Great Northwest, was awarded a grant from the U.S. Economic Development Administration to develop a regional strategy for economic transformation for thirteen counties in Northwest Florida[1].

The Haas Center began compiling and analyzing data from a variety of sources including an exhaustive literature review of previous studies throughout the region in order to more fully understand and quantify the region's economy. In September, the Haas Center contracted TIP Strategies, a consultant based in Austin, Texas, to develop an actionable strategic plan for the thirteen county region. The strategy was refined over the course of four months using input from three primary components:

- The Haas Center's research and analysis of the region's economy;
- Roundtable discussions and interviews with over 860 stakeholders throughout the region; and
- TIP Strategies' extensive knowledge and expertise of national best practices in economic development gained from similar projects throughout the United States.

The final strategy, *Northwest Florida Forward: A Regional Strategy for Economic Transformation*, (the "NWFF Strategy") under separate cover, represents the result of this process. This Technical Report presents some of the data upon which the NWFF Strategy is based.

[1] Escambia, Santa Rosa, Okaloosa, Walton, Bay, Gulf, Washington, Holmes, Jackson, Calhoun, Liberty, Franklin, and Wakulla County.

KEY FINDINGS

Demographic and Economic Indicators

- Population in the region grew 6.5% from 2010-2015, which is 59% higher than the national population growth of 4.1% over the same period. The population of residents age 0-17 grew by 3.4% in the region over the same period that the national population age group decreased by 0.7%. Likewise, the working age population (18-64) in the region grew 4.1% while the same population segment nationally grew only 2.9%.
    - The population of the region's largest five counties has grown by 8.0% from 2010-2015, which exceeds Florida's 7.8% growth. These counties' population aged 0-17 grew 4.9%, which is significantly higher than Florida (3.8%) and the US (-0.7%).
    - The population of the region's smallest eight counties has declined by 0.7% from 2010-2015, primarily because of a decrease in children (-4.5%) and working age adults (-2.2%).
- The primary cause of the population growth has been domestic migration, i.e. residents who moved into the region from another U.S. county. Domestic migration generally accounts for ten to fifteen thousand net-new residents in the region each year.
    - The region has also seen a significant increase in international migration, which for the most recent data added 2,572 net-new residents.
- The most recent median household income for the region ($48,567[2]) is slightly higher than state level ($47,212) but lower than the national median household income ($53,482); yet, average earnings in 2016 ($47,943) are significantly lower than state ($53,376) and national average earnings ($61,389).
- The percentage of the region's population with a bachelor's degree or higher (23.0%) lags percentages for both Florida (26.8%) and the nation (29.3%).
    - However, there are relatively more Associate degree holders in the region (10.3%), than the state (9.2%) and nation (7.9%).
- Between 2009 and 2016, job growth was slower in the 13-county region (6.6%) compared to state (14.1%) and national growth rates (9.0%); however, the regional unemployment rate (4.6%) was lower than state (4.9%) and national rates (5.0%).

[2] Weighted average of each county's median

- Between 2009 and 2016, jobs grew by 8.0% in the region's five most populated counties. Over this same period, the eight least populated counties experienced job loss of 4.7%.

- The cumulative defense contract dollar amount for contract with a place of performance in the counties with large military population (Escambia, Santa Rosa, Okaloosa, Walton, and Bay) has been steadily decreasing since 2008. The total value of defense contracts in the region in 2015 ($890M) is the lowest since 2002, and is approximately half of the value as recently as 2008.

Commuting Patterns

- In 2014, the 13-county region experienced a small net inflow of workers into the region compared to net outflows during the periods of 2004-2008 and 2011-2013.
  - Escambia, Okaloosa, Walton, and Bay counties experienced a net inflow of workers. The remaining nine counties each have a net outflow.
  - Regional residents who commute outside the region for the work are mostly employed in "Public Administration," "Transportation & Warehousing," and "Manufacturing."
  - Non-residents who commute into the region for work are mostly employed in "Retail Trade" and "Accommodation & Food Services."
  - 21% of the region's workers commute more than 50 miles to work in 2014 compared to only 13% in 2006.
- Labor is largely drawn towards three areas within the 13-county region: Pensacola, Fort Walton Beach, and Panama City. The main commuting destination outside the 13-county region is Tallahassee in Leon County.

Industry Analysis

- Federal Government Services (including military) (55,340 workers), Business Services (21,295), and Hospitality and Tourism (12,189) are the largest industry clusters in terms of total employment within the 13-county region.
- Several of the high performing industry clusters are essentially a single firm or single location:
  - 70% of employment in the Textile Manufacturing cluster is Ascend Performance Materials LLC in Escambia County
  - 60% of employment in the Financial Services cluster is Navy Federal Credit Union in Escambia County
  - 50% of employment in the Water Transportation cluster is Eastern Shipbuilding Group in Bay County

Occupational Analysis

- Within the 13-county region, the Military Occupations (35,708 workers) and Public Safety and Domestic Security (11,098 workers) occupational clusters have more than 20% higher concentration than the national average.
- Occupations that require minimal on-the-job training and education comprise 53% of total regional employment, which is the same percentage as the US but lower than Florida (56%).
- All six of the Purdue "Tech Clusters"[3] lost competitiveness between 2009 and 2015 (based upon shift-share analysis) and generate significantly lower median hourly earnings compared to Florida[4] and the U.S.

[3] Information Technology; Engineering and Related Sciences; Health Care and Medical Science (Medical Practitioners and Scientists); Mathematics, Statistics, Data and Accounting; Natural Sciences and Environmental Management; and Postsecondary Education and Knowledge Creation

[4] One exception - the Engineering and Related Sciences cluster in the region has higher earnings than the state, but not the nation.

How to use the Technical Report

The Technical Report is intended to be a reference presenting the primary indicators of the region's economy, along with explanations of how to interpret the data where appropriate. There are four main sections of this report along an appendix:

- Economic and Demographic assessment of the region
- Regional Commuting Patterns
- Industry and Occupation Cluster Analysis
- County Snapshots for each county in the region[5]

Appendix A presents data with respect to the cybersecurity sector, which is one of the four target industries in the NWFF Strategy. Cybersecurity is not a traditional industry that can be measured using NAICS codes and the analytical tools that are used to measure the other target industries are not able to measure the cybersecurity industry. As such, the analysis presented in Appendix A is an effort to quantify the target industry in the region.

Appendix B presents data reflecting the "innovation" within the region using data from the Innovation Index 2.0 project[6]. Although primarily an effort to quantify innovation, the Innovation Index 2.0 includes many data points that are useful for the other goals stated in the NWFF Strategy: Talent ("Human Capital and Knowledge Creation"); Business Vitality ("Business Profile" and "Business Dynamics"); and Quality of Place ("Economic Well-Being").

To enable easier access to the document, the table of contents includes each major section and subsection, as well as the tables and figures presented throughout the report[7]. Info boxes explain specific terminology and economic concepts used within the various charts and graphs using, whenever possible, non-technical terms and examples.

[5] The County Snapshots are distributed as a separate document. Each snapshot consists of a three page summary of economic and demographic data for each of the thirteen counties in the region
[6] Indiana Business Research Center (IBRC) via StatsAmerica
[7] The digital form of this report includes hyperlinks to aid in navigation

UNIVERSITY of WEST FLORIDA | Haas Center

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About us

The Haas Center is a research and consulting arm of the University of West Florida that engages in applied research and strategy development in economics and across the social sciences. The Haas Center has played a prominent role in economic development efforts across the Northwest Florida Region and around the state for the past two decades.

Our staff is composed of economists, political scientists, industrial organizational psychologists, multi-media specialists and GIS analysts, as well as database and IT experts. The Haas Center staff's extensive knowledge of regional and state economic and workforce issues allows us to engage in a wide variety of research projects, which include economic and tax impact studies, workforce development studies, industry cluster analyses, market and feasibility analyses, economic and demographic profiles, and custom database and analytics work.

Haas Center staff also work closely with regional economic development entities to provide data to cities, counties and states in efforts designed to attract business and industries to the region. We specialize in studies tailored to meet our clients' specific needs in a timely and cost effective manner, while adhering to the highest standards of excellence.

ACKNOWLEDGEMENTS

This was an ambitious project in scope - thirteen economically diverse counties - but even more so because of the condensed timeframe with which to complete the project. The successful completion of this project would not have occurred but for the tireless efforts of the Project Steering Committee and Consulting Team.

We are grateful to TIP Strategies for taking a chance on such a bold project and working through the holiday season to deliver a much needed strategy to diversify and transform our region's economy.

We would also like to recognize our partners at Gulf Power Company and Florida's Great Northwest who generously gave time far in excess of their in-kind commitments.

Special thanks to each of the project sponsors, and particularly to the U.S. Economic Development Administration for awarding the grant that made this work possible.

Finally, thank you to the over 860 stakeholders throughout the region who freely shared their insight and expertise as we formed and refined the strategy.

--The Haas Center

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Project Sponsors

U.S. Economic Development Administration

University of West Florida, Office of Economic Development and Engagement

Florida's Great Northwest

Gulf Power Company (in-kind contributions)

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ECONOMIC SECTION

Employment and Growth

FIGURE 1 ANNUAL PERCENTAGE CHANGE IN EMPLOYMENT

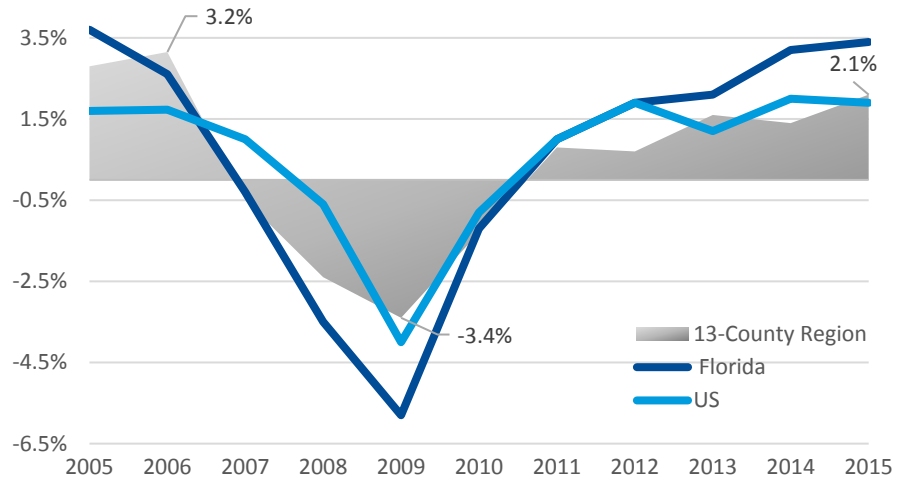
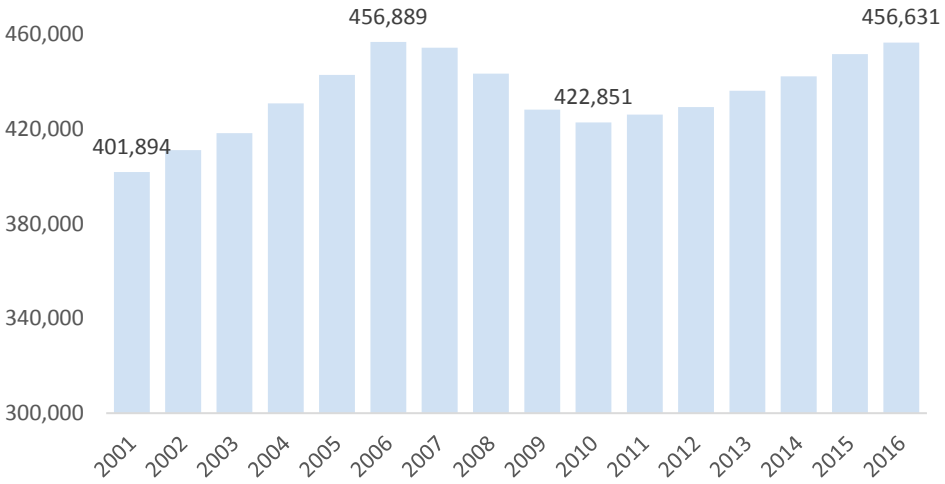


FIGURE 2 TOTAL EMPLOYMENT, 13-COUNTY REGION



Source: Emsi, 2016.4, QCEW Employees, Non-QCEW Employees, and Self-Employed

EMPLOYMENT DATA

Throughout this report, employment statistics cite "QCEW," "Non-QCEW," and "Self-Employed.".

QCEW is an acronym for the Quarterly Census of Employment and Wages. As its title indicates, this is a Census of all "covered workers" (i.e. those who may be subject to unemployment insurance) and includes data for almost 98% of wage and salary based jobs as reported by employers to the Bureau of Labor Statistics (BLS).

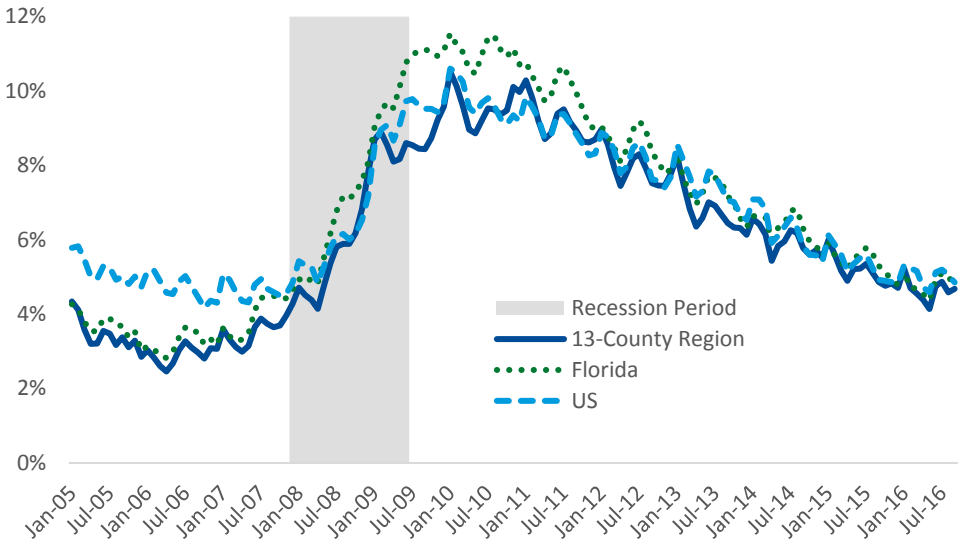
Non-QCEW employees work for employers not included in the QCEW such as military and railroad jobs as well as farm jobs and certain non-profit, religious, and government occupations.

Self-Employed workers are those whose primary source of income is self-employment.

A variety of sources are analyzed in order to estimate Non-QCEW and Self-Employed workers, including data compiled from the American Community Survey (ACS) Bureau of Economic Analysis (BEA), County Business Patterns and Nonemployer Statistics.

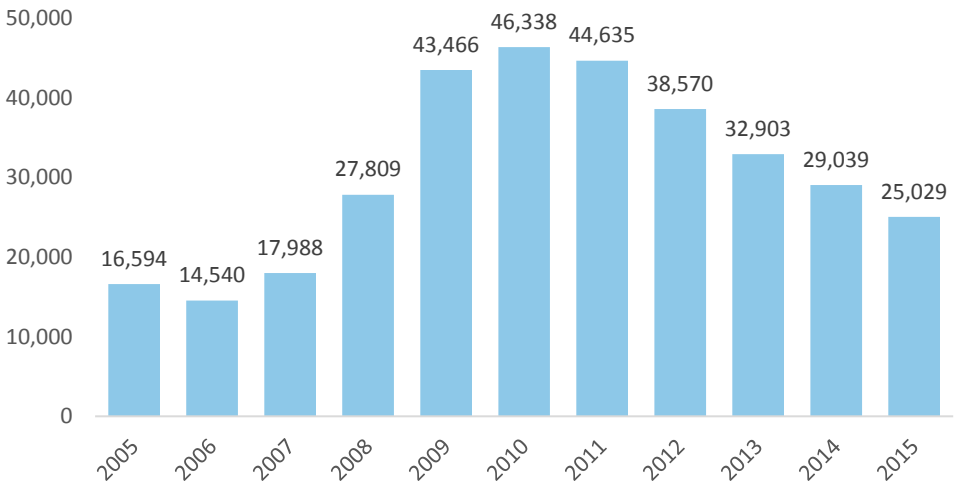
Unemployment

FIGURE 3 UNEMPLOYMENT RATE (NOT SEASONALLY ADJ.)



Source: US Bureau of Labor Statistics via JobsEQ

FIGURE 4 TOTAL UNEMPLOYED, 2005-2015



Source: U.S. Bureau of Labor Statistics via StatsAmerica.org

UNEMPLOYMENT AND THE LABOR FORCE*

The Bureau of Labor Statistics regards workers as "employed" if that person is working either full time or part time. A person is "unemployed" if the individual currently is not employed but is available for work *and is looking for work*. A region's "Labor Force" is the total of all employed and unemployed individuals.

The most commonly reported Unemployment Rate (a.k.a. the U-3) is the percentage of unemployed workers in the region's Labor Force.

Notably, the Labor Force does not include those individuals who are not looking for work, such as students, retirees, spouses in single-earner households, as well as "discouraged" workers who have stopped looking for a job.

The Labor Force Participation Rate reports the share of a region's total population over the age of 15 that is in the Labor Force.

*These definitions are summarized and simplified for clarity. The precise definitions of these terms can be found at bls.gov/bls/glossary.htm

Underemployment

Labor Shortage / Surplus

What is a *labor shortage / surplus* and how does it affect the economy?

Imagine a hypothetical labor market in which there are 100,000 jobs categorized as low skill, 100,000 in medium skill and 100,000 in high skill.

Labor Shortage. In the hypothetical labor market, assume that there are only 85,000 residents in the region who are high skill (i.e. a four year degree or higher). In this case, there would be a labor shortage of 15%, which would be classified as "Strong Shortage" because demand exceeds supply by more than 10 percent. In this case, employers looking for high skill labor may have to search outside the region for workers. Alternatively, they may employ a medium skill worker in the high skill job and probably pay a lower wage to accommodate the difference in skill set.

Labor Surplus. In the same hypothetical, also assume that there are 105,000 residents who possess medium skills and 110,000 with low skills – Labor Surpluses of 5% and 10% respectively. In this case, an individual with a two-year degree may have difficulty finding a medium skill job because there are 105,000 medium skill workers, but only 100,000 medium skill jobs. In some occupations, the medium skill worker may fill a job that would typically require high skill. However, the more likely situation in the case of Labor Surplus is underemployment.
Underemployment would apply to a medium skill worker:

- who is working less than full time at a medium skill job;
- who is working in a low skill job;
- who is unemployed because of the Labor Surplus.

TABLE 1 LABOR SHORTAGE / SURPLUS

	Supply and Demand of Educational Attainment (2015 Q4)		
	Low Skill	Medium Skill	High Skill
Escambia County	Equilibrium	Surplus	Shortage
Santa Rosa County	Shortage	Surplus	Shortage
Okaloosa County	Equilibrium	Surplus	Shortage
Walton County	Equilibrium	Equilibrium	Shortage
Bay County	Surplus	Surplus	Shortage
Gulf County	Strong Surplus	Equilibrium	Strong Shortage
Washington County	Strong Surplus	Equilibrium	Strong Shortage
Holmes County	Strong Surplus	Equilibrium	Strong Shortage
Jackson County	Strong Surplus	Equilibrium	Strong Shortage
Calhoun County	Strong Surplus	Equilibrium	Strong Shortage
Liberty County	Strong Surplus	Shortage	Strong Shortage
Franklin County	Strong Surplus	Equilibrium	Strong Shortage
Wakulla County	Surplus	Surplus	Strong Shortage

Source: JobsEQ®, Chmura's underemployment analysis[8]

Educational Attainment

Low skill:
High school diploma, equivalent or lower.

Medium skill:
2-year college degree, certificate, or some college.

High skill:
Bachelor's degree or higher.

Strong shortage:	Job demand exceeds supply by at least 10%
Shortage:	Job demand exceeds supply by 2.5% up to 10%
Equilibrium:	Job demand matches supply (within 2.5%)
Surplus:	Job supply exceeds demand by 2.5% up to 10%
Strong Surplus:	Job supply exceeds demand by more than 10%

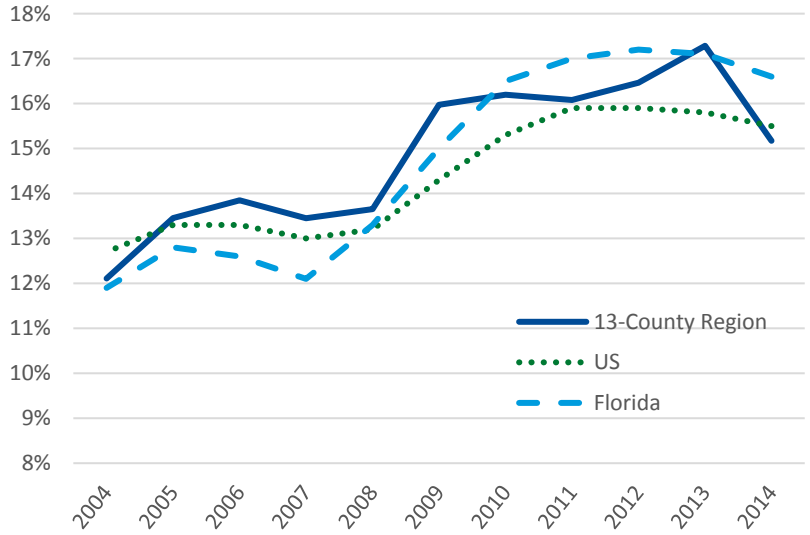
[8] Chmura's underemployment analysis results in percentages that generally range from -20% to +20%. For simplicity, the Haas Center has grouped these percentages into five categories. The full data and methodology can be found at http://www.chmuraecon.com/interactive/underemployment-in-the-united-states/

Income and Poverty Rates

FIGURE 5 MEDIAN HOUSEHOLD INCOME (2014)

Source: U.S. Census Bureau, 2010-2014 ACS, via JobsEQ®

FIGURE 6 POPULATION IN POVERTY (2004-2014)



Source: U.S. Census Bureau, Small Area Income and Poverty Estimates

MEDIAN HOUSEHOLD INCOME

Household Income is defined by all income (past 12 months) of the householder and all other household members 15 years and older – including persons residing in the house who are unrelated to the householder. The median household income is the income at which half of the region's households earn more and half earn less. Therefore, unlike the average household income, it is not unduly influenced by a relatively small number of high income households.

POVERTY RATE

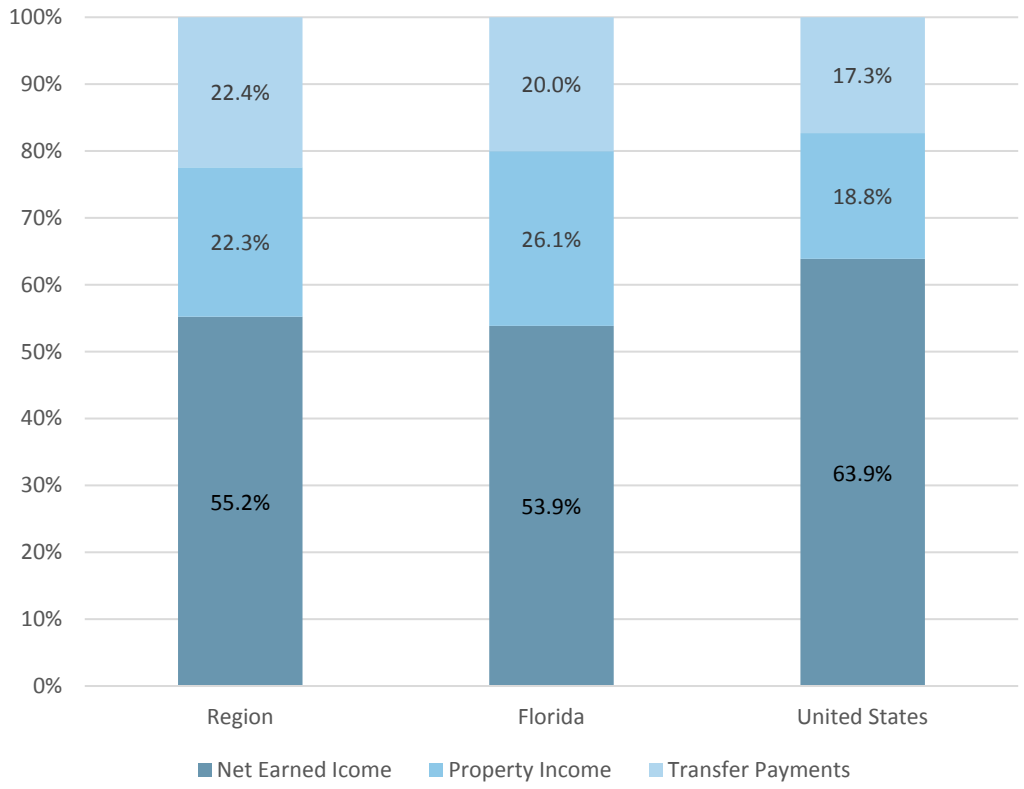
The U.S. Census Bureau calculates the official poverty rate by measuring the cost of a minimum food diet and making adjustments for family size. Therefore, the so-called "poverty line" is different for a family of five than it would be for a family of two. In 2015, the poverty line for a family of three with two adults and one child under 18 years was $19,078, regardless of place of residence.

Total Personal Income

TOTAL PERSONAL INCOME

- **Net Earned Income** – Wages, salaries, and employer contributed benefits earned by employees, as well as proprietors' income
- **Property Income** – Income from assets including rents from real property, royalties, and dividends
- **Transfer Payments** – Income transferred to individuals that is not wages or income from property. The most common type are government social benefits like welfare, social security, unemployment, and

FIGURE 7 COMPONENTS OF TOTAL PERSONAL INCOME, (2015)



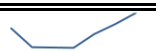
Source: Bureau of Economic Analysis via StatsAmerica.org

Establishments by Employment Size and Industry

TABLE 2 NUMBER OF ESTABLISHMENTS BY FIRM SIZE (13-COUNTY REGION)

Firm Size	2008	2009	2010	2011	2012	2013	2014	% Change 2008-2014	Trend
1 to 19 employees	21,183	20,497	20,473	20,074	20,100	20,187	20,570	-2.9%	
20 to 99 employees	2,370	2,275	2,189	2,248	2,370	2,418	2,447	3.2%	
100 to 499 employees	373	344	349	365	381	379	376	0.8%	
500 employees or more	34	27	25	25	32	24	28	-17.6%	
Total	**23,960**	**23,143**	**23,036**	**22,712**	**22,883**	**23,008**	**23,421**	**-2.2%**	

TABLE 3 NUMBER OF ESTABLISHMENTS BY FIRM SIZE (FLORIDA)

Firm Size	2008	2009	2010	2011	2012	2013	2014	% Change 2008-2014	Trend
1 to 19 employees	448,794	436,646	438,508	437,057	446,237	452,802	460,340	2.6%	
20 to 99 employees	47,787	45,290	43,493	44,593	46,457	47,658	49,286	3.1%	
100 to 499 employees	9,364	8,316	8,208	8,221	8,711	8,871	9,140	-2.4%	
500 employees or more	1,082	997	941	980	1,009	1,058	1,109	2.5%	
Total	**507,027**	**491,249**	**491,150**	**490,851**	**502,414**	**510,389**	**519,875**	**2.5%**	

Source: U.S. Census Bureau, County Business Patterns.

TABLE 4 NUMBER OF ESTABLISHMENTS BY FIRM SIZE (UNITED STATES)

Firm Size	2008	2009	2010	2011	2012	2013	2014	% Change 2008-2014	Trend
1 to 19 employees	6,528,426	6,412,557	6,407,787	6,351,767	6,406,642	6,439,892	6,491,954	-0.6%	
20 to 99 employees	889,822	852,316	823,778	835,255	853,519	873,267	890,701	0.1%	
100 to 499 employees	163,747	150,536	147,750	149,102	153,262	156,254	160,987	-1.7%	
500 employees or more	19,174	18,056	17,313	17,919	18,385	18,940	19,443	1.4%	
Total	**7,601,169**	**7,433,465**	**7,396,628**	**7,354,043**	**7,431,808**	**7,488,353**	**7,563,085**	**-0.5%**	

TABLE 5 NUMBER OF ESTABLISHMENTS BY INDUSTRY (13-COUNTY REGION)

NAICS	Industry	2008	2009	2010	2011	2012	2013	2014	% Change 2008-2014	Trend
11	Agriculture, forestry, fishing and hunting	124	115	112	115	119	116	114	-8.1%	
21	Mining, quarrying, and oil and gas extraction	28	31	33	29	26	26	28	0.0%	
22	Utilities	94	98	91	90	94	94	93	-1.1%	
23	Construction	3,093	2,720	2,634	2,520	2,466	2,502	2,526	-18.3%	
31-33	Manufacturing	564	512	507	496	509	506	499	-11.5%	
42	Wholesale trade	890	871	848	830	863	838	826	-7.2%	
44-45	Retail trade	4,206	4,057	4,018	3,987	4,003	4,051	4,135	-1.7%	
48-49	Transportation and warehousing	577	566	547	548	531	542	533	-7.6%	
51	Information	352	326	339	317	331	326	337	-4.3%	
52	Finance and insurance	1,521	1,441	1,390	1,346	1,351	1,324	1,319	-13.3%	
53	Real estate and rental and leasing	1,499	1,398	1,401	1,385	1,375	1,451	1,460	-2.6%	
54	Professional, scientific, and technical services	2,421	2,426	2,470	2,399	2,470	2,513	2,671	10.3%	
55	Management of companies and enterprises	117	111	99	99	93	85	90	-23.1%	
56	Administrative and support and waste management	1,231	1,226	1,242	1,224	1,220	1,246	1,267	2.9%	
61	Educational services	212	207	205	204	217	221	223	5.2%	
62	Health care and social assistance	2,329	2,348	2,357	2,384	2,443	2,443	2,470	6.1%	
71	Arts, entertainment, and recreation	316	311	320	320	313	326	331	4.7%	
72	Accommodation and food services	2,044	2,042	2,056	2,087	2,165	2,115	2,207	8.0%	
81	Other services (except public administration)	2,323	2,317	2,336	2,297	2,287	2,261	2,255	-2.9%	
99	Industries not classified	19	20	31	35	7	22	37	94.7%	
Total		**23,960**	**23,143**	**23,036**	**22,712**	**22,883**	**23,008**	**23,421**	**-2.2%**	

Source: U.S. Census Bureau, County Business Patterns.

Employment and Growth by Major Industry

TABLE 6 INDUSTRY TABLE

NAICS	Industry	Total Employment (2009)	Total Employment (2016)	Employment Change (2009-2016)	Regional % Change (2009-2016)*	National % Change (2009-2016)
90	Government	110,454	111,229	775	0.7%	-1.0%
44	Retail Trade	51,366	56,043	4,677	9.1%	9.0%
72	Accommodation and Food Services	44,547	55,301	10,754	24.1%	19.0%
62	Health Care and Social Assistance	47,459	53,219	5,760	12.1%	18.0%
56	Administrative & Support & Waste Management Services	22,981	28,066	5,085	22.1%	23.0%
23	Construction	29,308	26,311	-2,997	-10.2%	4.0%
54	Professional, Scientific, and Technical Services	19,967	22,974	3,007	15.1%	17.0%
81	Other Services (except Public Administration)	20,607	21,429	822	4.0%	2.0%
31	Manufacturing	15,602	15,471	-131	-0.8%	4.0%
52	Finance and Insurance	13,511	14,916	1,405	10.4%	4.0%
53	Real Estate and Rental and Leasing	9,343	10,579	1,236	13.2%	4.0%
42	Wholesale Trade	9,820	8,657	-1,163	-11.8%	6.0%
48	Transportation and Warehousing	7,705	7,407	-298	-3.9%	15.0%
61	Educational Services	6,618	7,231	613	9.3%	16.0%
71	Arts, Entertainment, and Recreation	6,158	6,260	102	1.7%	15.0%
51	Information	7,084	4,490	-2,594	-36.6%	-1.0%
22	Utilities	1,598	2,437	839	52.5%	1.0%
11	Crop and Animal Production	2,138	2,288	150	7.0%	4.0%
55	Management of Companies and Enterprises	1,707	1,804	97	5.7%	21.0%
21	Mining, Quarrying, and Oil and Gas Extraction	287	327	40	13.9%	-3.0%
Total		**428,260**	**456,439**	**28,179**	**6.6%**	**9.0%**

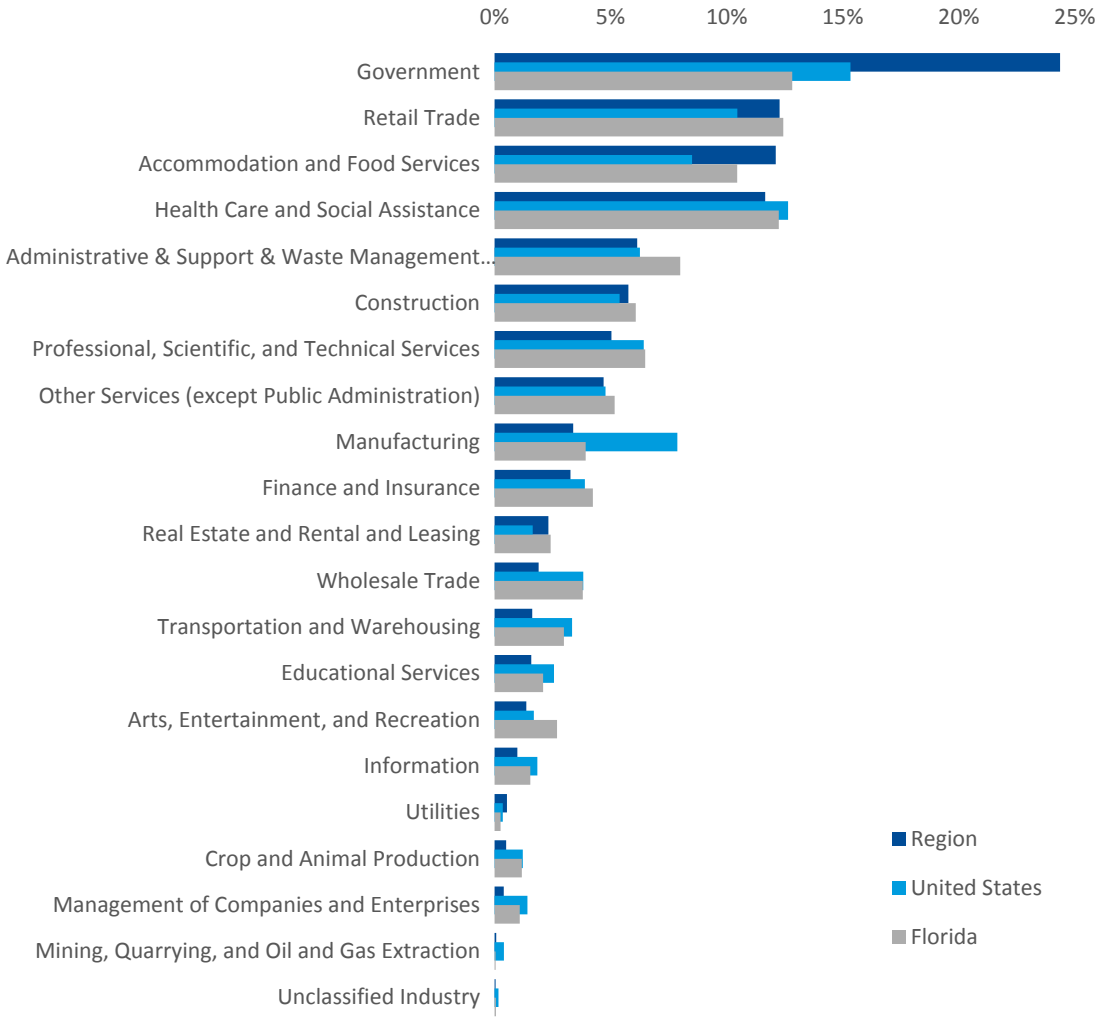
Source: Emsi, 2016.4, QCEW Employees, Non-QCEW Employees, and Self-Employed

*Highlighted cell denotes an industry where regional growth has outpaced national growth since 2009.

Share of Total Employment by Major Industry

- The 13-county region has a much higher share of its workers in Government (24%) than the nation (13%) and state (15%).
- Tourism related industry sectors represent another quarter of the region's employment, specifically Retail Trade (12%), and Accommodation & Food Services (12%). The region's share of workers in the tourism sectors (24%) exceeds the state (23%) and nation (19%).
- Altogether, Government and the tourism industries comprise 50 percent of all employment in the region, which is considerably higher than the nation (34%) and even Florida (36%).
- Both Florida (3.9%) and the region (3.3%) lag the nation (7.9%) in Manufacturing employment share.

FIGURE 8 SHARE OF TOTAL EMPLOYMENT BY MAJOR INDUSTRY, 2016



Source: Emsi, 2016.4, QCEW Employees, Non-QCEW Employees, and Self-Employed

Average Earnings by Major Industry

FIGURE 9 AVERAGE EARNINGS, 2016

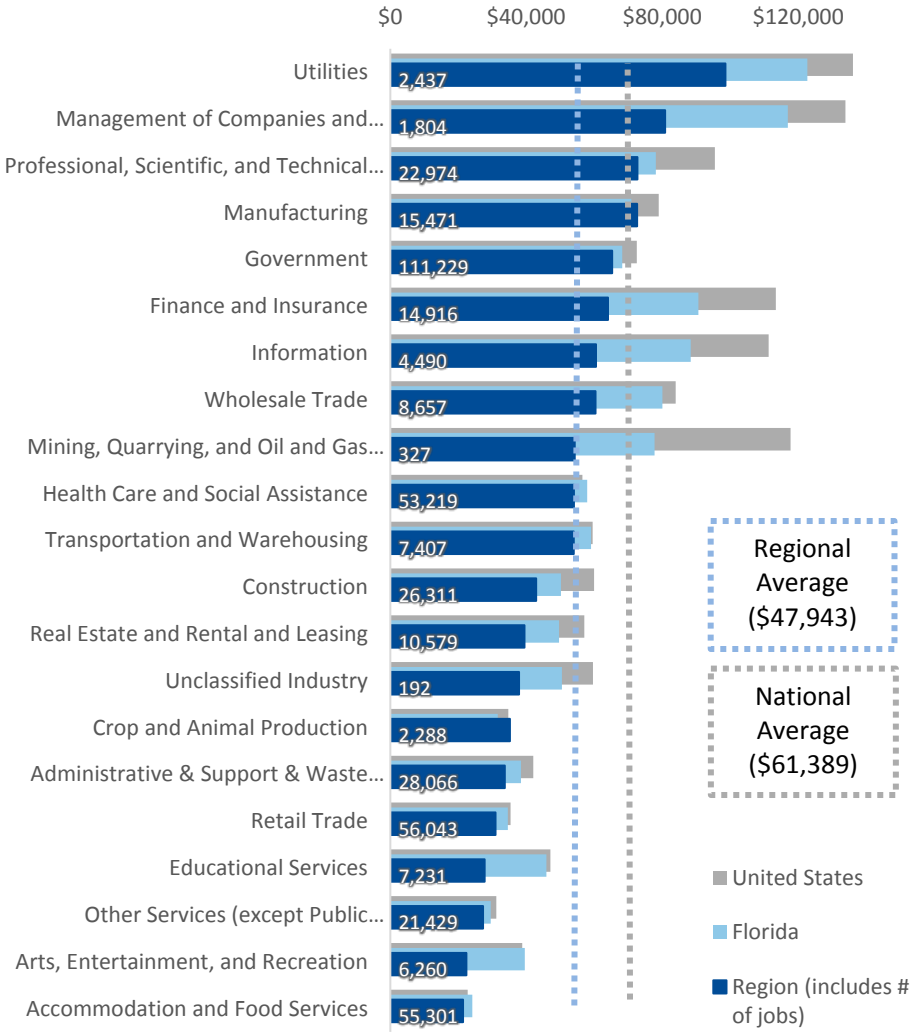
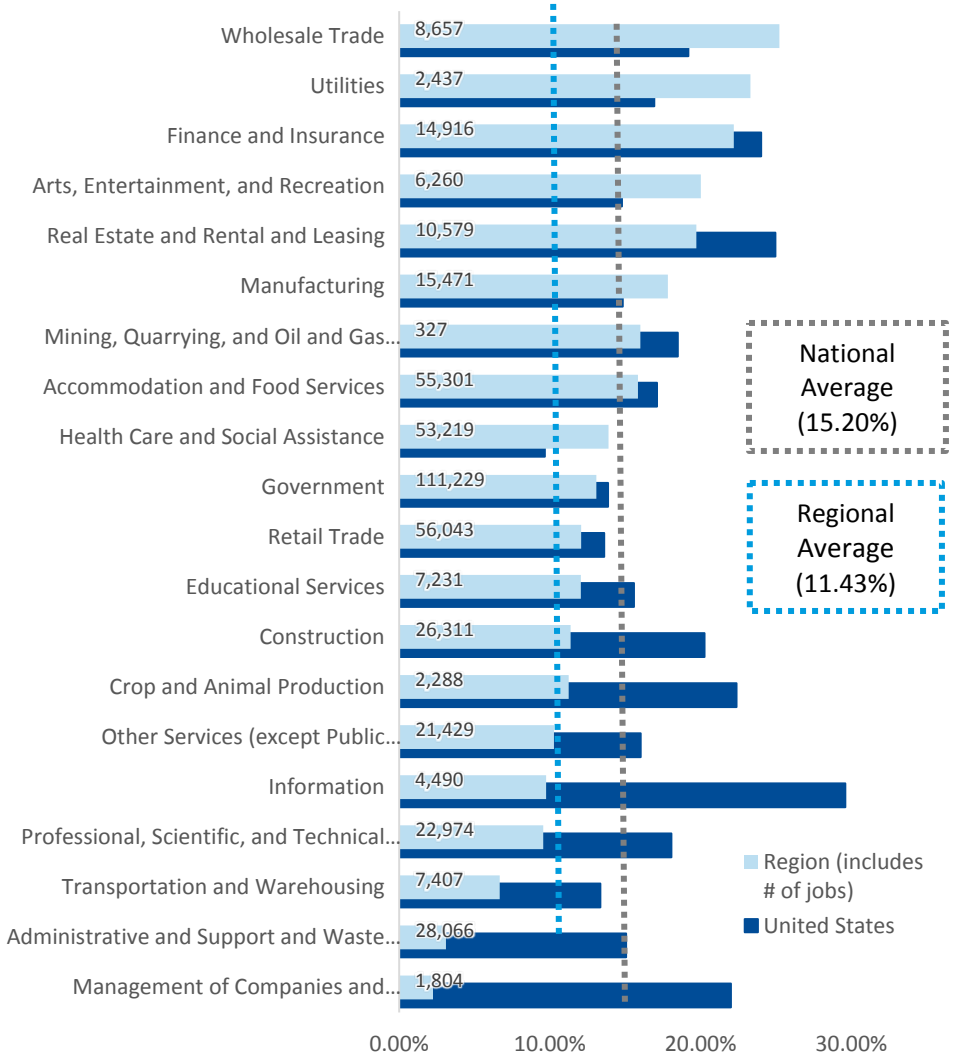


FIGURE 10 AVERAGE EARNINGS GROWTH BY MAJOR INDUSTRY (2009-2016)



Source: Emsi, 2016.4, QCEW Employees, Non-QCEW Employees, and Self-Employed

Employment and Growth by Major Occupations

TABLE 7 OCCUPATION TABLE

SOC	Occupation	Jobs, 2016	Job Change (2009-2016)	Regional % Change (2009-2016)*	US % Change (2009-2016)
43-0000	Office and Administrative Support Occupations	65,699	3,892	6.0%	7.0%
35-0000	Food Preparation and Serving Related Occupations	52,713	9,871	23.0%	18.0%
41-0000	Sales and Related Occupations	51,064	3,133	7.0%	7.0%
55-0000	Military occupations	36,153	1,724	5.0%	-3.0%
25-0000	Education, Training, and Library Occupations	25,817	1,015	4.0%	3.0%
29-0000	Healthcare Practitioners and Technical Occupations	25,395	2,086	9.0%	12.0%
47-0000	Construction and Extraction Occupations	20,238	-1,752	-8.0%	3.0%
49-0000	Installation, Maintenance, and Repair Occupations	19,881	758	4.0%	9.0%
53-0000	Transportation and Material Moving Occupations	19,262	733	4.0%	13.0%
13-0000	Business and Financial Operations Occupations	19,191	931	5.0%	10.0%
37-0000	Building and Grounds Cleaning and Maintenance Occupations	18,981	2,832	18.0%	9.0%
51-0000	Production Occupations	14,673	761	5.0%	7.0%
33-0000	Protective Service Occupations	13,983	439	3.0%	4.0%
39-0000	Personal Care and Service Occupations	13,701	-23	0.0%	14.0%
11-0000	Management Occupations	13,605	-276	-2.0%	7.0%
31-0000	Healthcare Support Occupations	12,055	1,483	14.0%	17.0%
17-0000	Architecture and Engineering Occupations	7,684	362	5.0%	6.0%
15-0000	Computer and Mathematical Occupations	7,229	8	0.0%	19.0%
21-0000	Community and Social Service Occupations	6,690	100	2.0%	11.0%
27-0000	Arts, Design, Entertainment, Sports, and Media Occupations	5,478	86	2.0%	8.0%
23-0000	Legal Occupations	2,974	126	4.0%	2.0%
19-0000	Life, Physical, and Social Science Occupations	2,348	61	3.0%	8.0%
45-0000	Farming, Fishing, and Forestry Occupations	1,816	6	0.0%	10.0%
Total		**456,630**	**28,356**	**7.00%**	**9.00%**

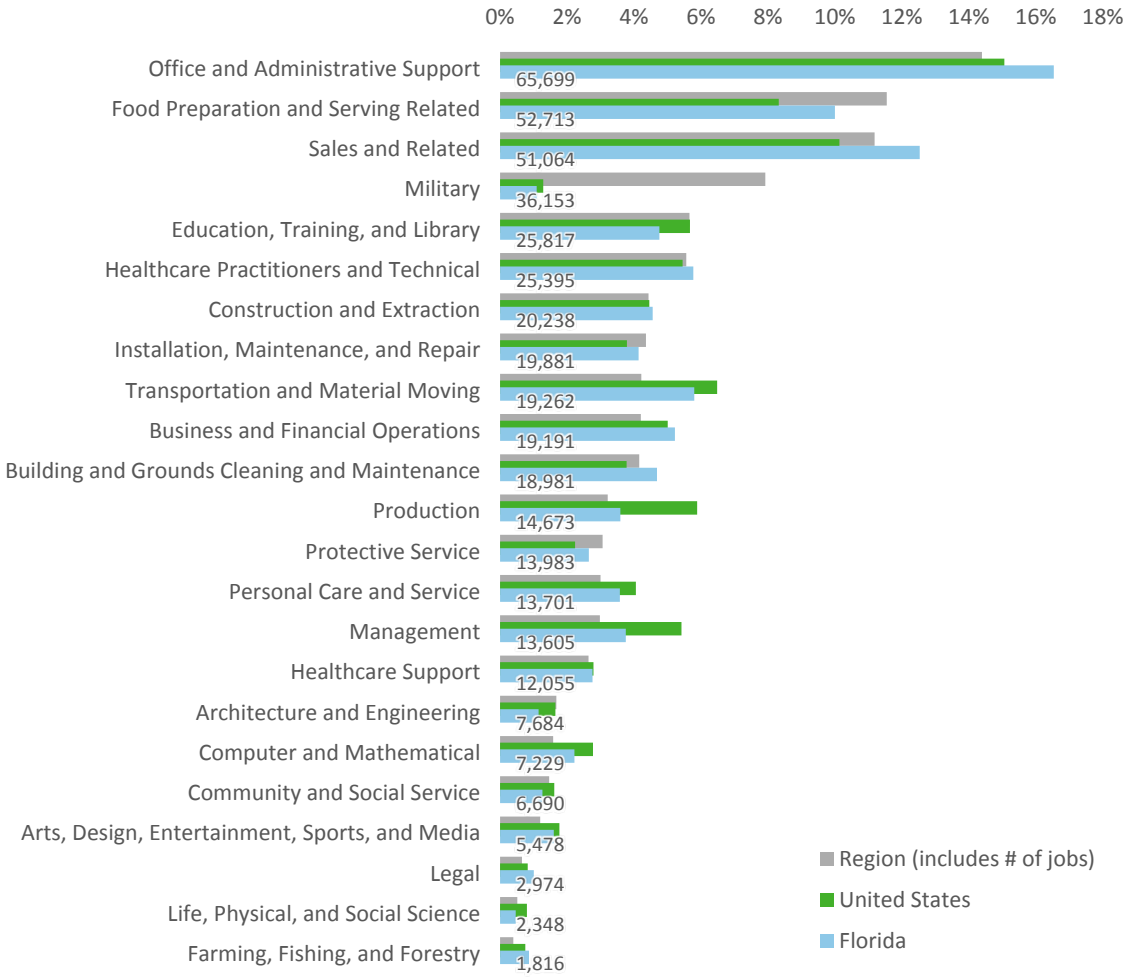
Source: Emsi, 2016.4, QCEW Employees, Non-QCEW Employees, and Self-Employed

*Highlighted cell denotes an industry where regional growth has outpaced national growth since 2009.

Share of Total Employment by Major Occupation

- The share of Military occupations in the region (8%) is over six times the national (1.1%) and state share (1.3%).
- The two major occupation groups most closely associated with tourism, "Food Preparation & Serving Related" and "Sales & Related", constitute 23% of the occupations in the region. Not surprisingly, this is the same share for the rest of Florida (22.5%), and significantly higher than the national share (18.4%).
- The region's share of Production (3%), Management (3%), and Transportation & Material Moving (4%) each trail the national share of such occupations by more than 40%.

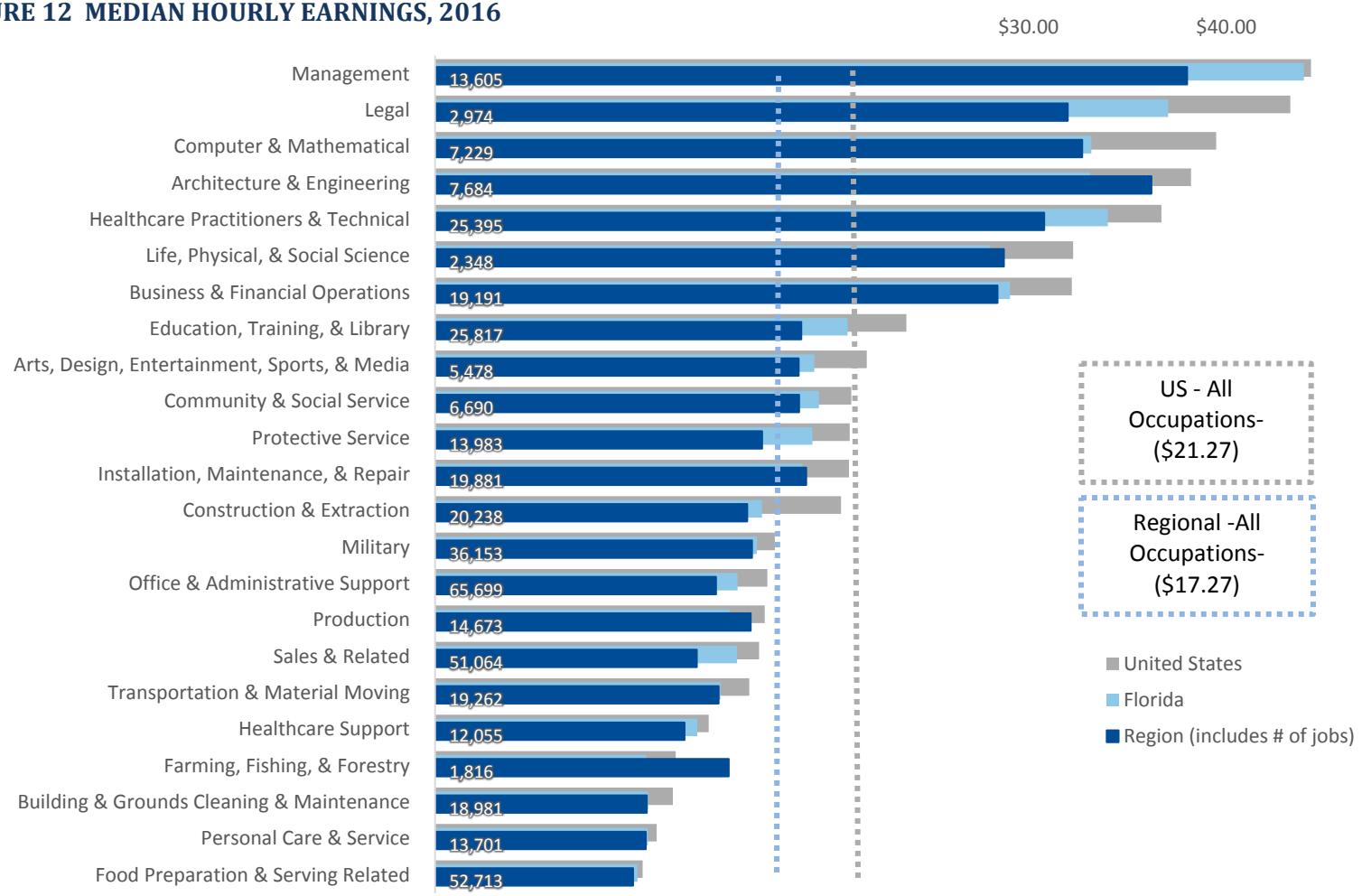
FIGURE 11 SHARE OF TOTAL EMPLOYMENT BY MAJOR OCCUPATION GROUPS,



Source: Emsi, 2016.4, QCEW Employees, Non-QCEW Employees, and Self-Employed

Median Hourly Earnings by Major Occupation

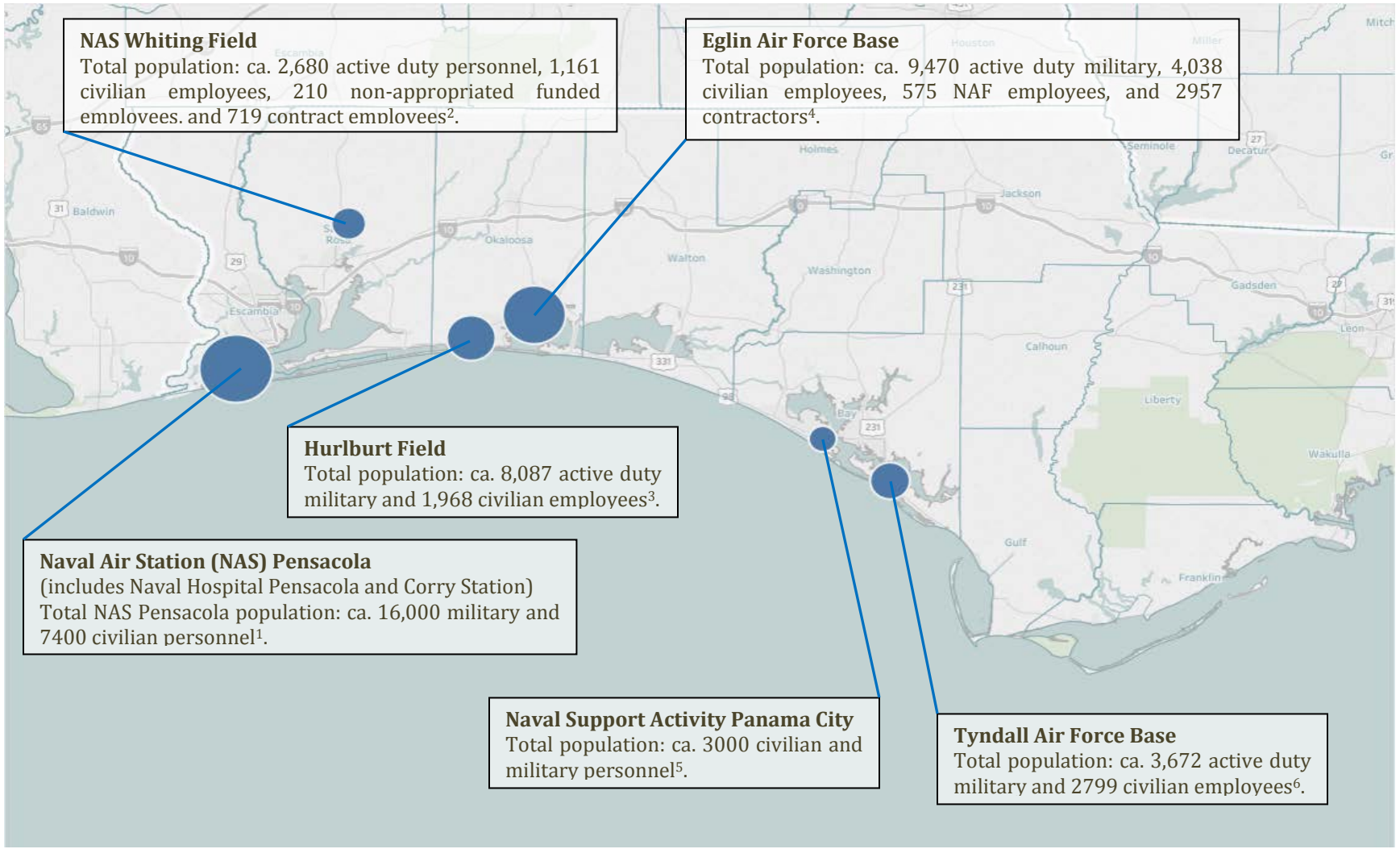
FIGURE 12 MEDIAN HOURLY EARNINGS, 2016



Source: Emsi, 2016.4, QCEW Employees, Non-QCEW Employees, and Self-Employed

Military Installations

FIGURE 13 REGIONAL MILITARY INSTALLATIONS



[1]http://www.cnic.navy.mil/regions/cnrse/installations/nas_pensacola.html
[2]http://www.cnic.navy.mil/regions/cnrse/installations/nas_whiting_field.html
[3]http://www.hurlburt.af.mil/
[4]http://www.eglin.af.mil/
[5]http://www.cnic.navy.mil/regions/cnrse/installations/nsa_panama_city.html
[6]http://www.tyndall.af.mil/

Defense Contracts

FIGURE 14 TOTAL DOLLAR AMOUNT OF DEFENSE CONTRACTS BY COUNTY[1]

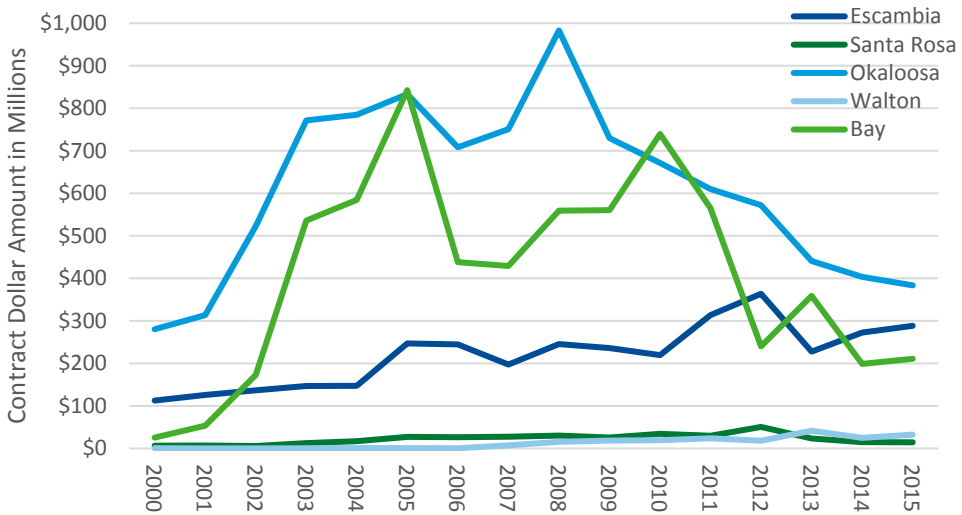


FIGURE 15 NUMBER OF DEFENSE CONTRACTS AWARDED BY COUNTY[1]

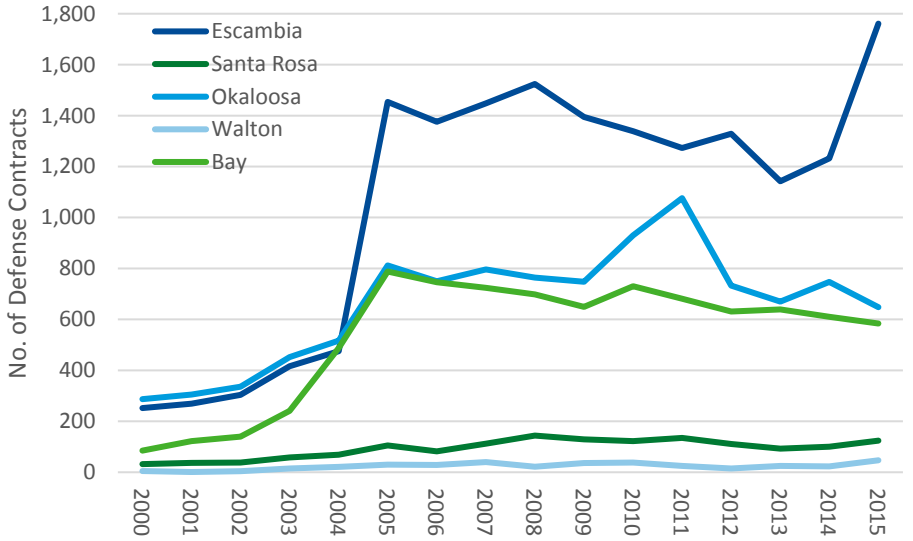


FIGURE 16 ACCUMULATED DEFENSE CONTRACT DOLLAR AMOUNT[1]

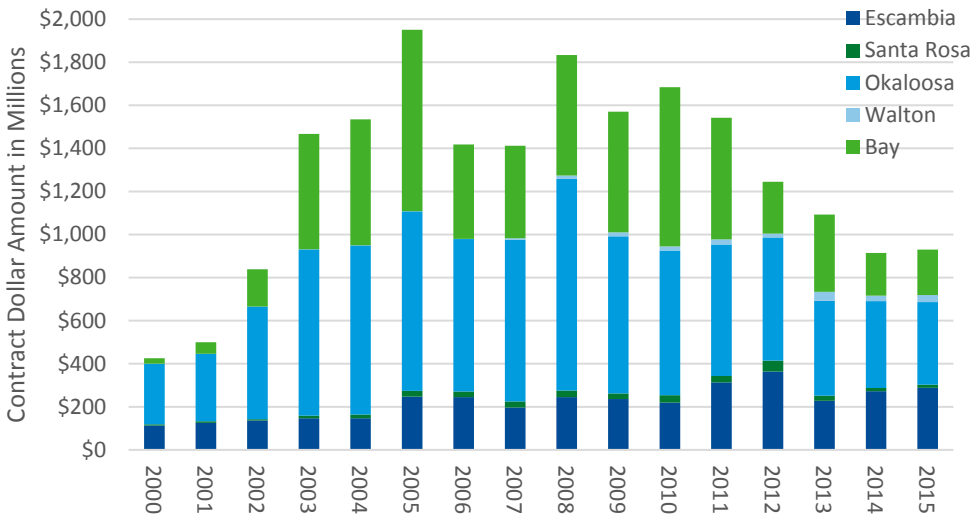
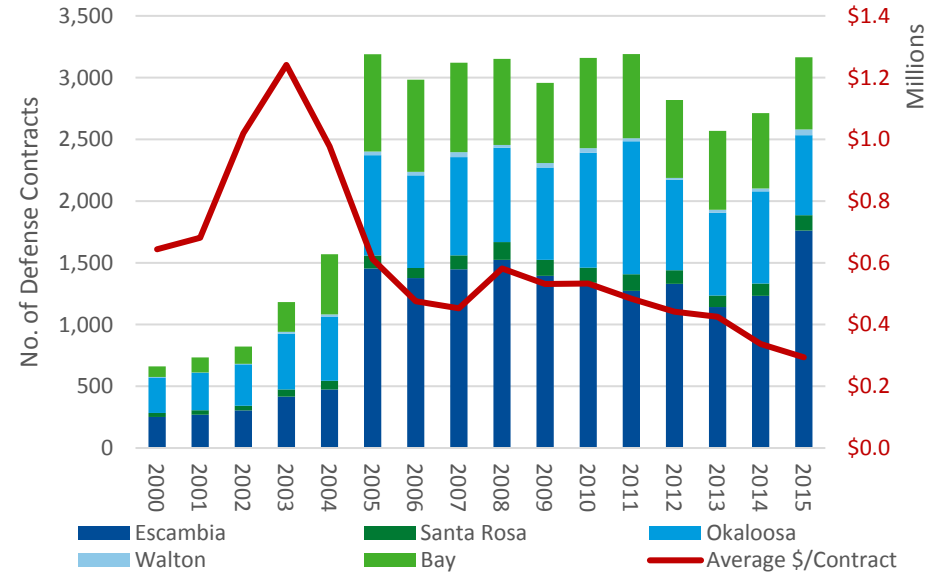


FIGURE 17 ACCUMULATED DEFENSE CONTRACTS[1]



DEMOGRAPHIC SECTION

Population and Population Change

- Population growth in the 13-county region has continuously outpaced the national growth, adding 42% to its population in 25 years compared with only 29% nationally. However, since the late 90's the region's growth has been similar to the national population growth trend, which is about half of the growth rate of Florida.
- Between 2015 and 2045, the total population is projected to increase by 21%, which would add 230,280 new residents.

FIGURE 19 POPULATION PROJECTION, 13-COUNTY REGION

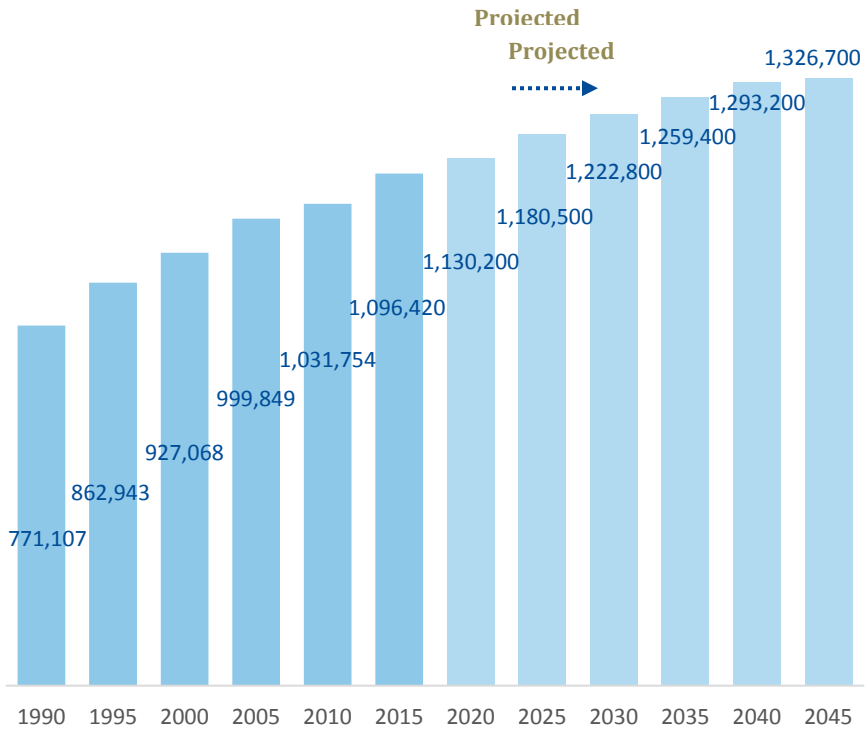
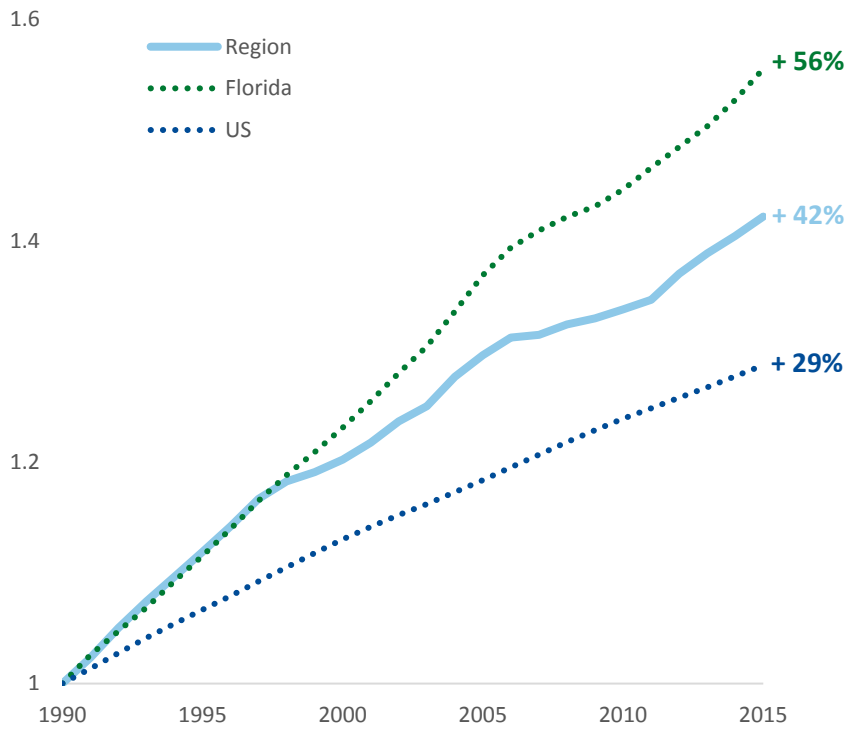


FIGURE 18 TOTAL POPULATION INDEXED TO 1990 (1990=1)

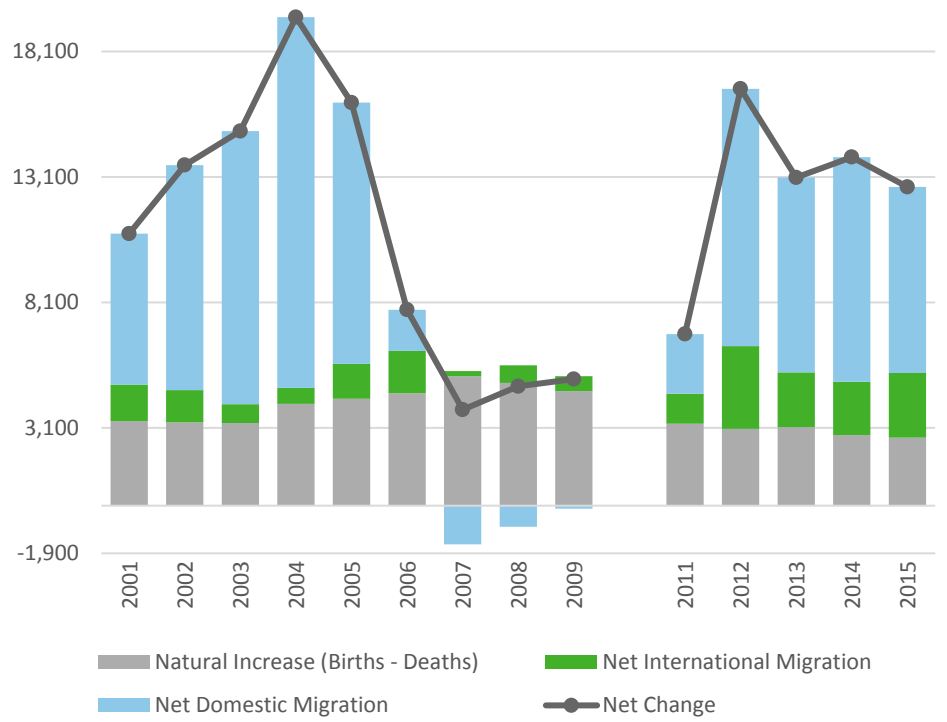


Source: U.S. Census Bureau, and University of Florida, BEBR (Projections)

Components of Population Change

- Net Migration is the difference in number of people moving into a region as compared to the number of a region's residents who move away from the region. The value is positive (a.k.a. "net in-migration") if more people move into the region than move away. Domestic Migration examines only those moves within the United States, while International Migration applies to only moves to or from countries outside the United States.
- Since 2001, the primary contributor to the region's population growth has been net migration. Most years, migration adds between 10,000 and 15,000 new residents to the region, most of which are domestic moves. This is a generally an indication of a growing economy because those outside the region are finding the 13-county-region to be more desirable than their current place of residence.
- The recession was an exception to the typical pattern of positive net migration, which showed net out-migration three successive years (2007-09).
- Natural Increases in the 13-county region's population (births minus deaths) increased from 2001-2007. Since 2007, each successive year has seen the Natural Increase fall – 2015 being the lowest since 2001. However, this trend is not unique to the region; both the state and nation have followed similar patterns.
- Since 2012, International Migration has contributed nearly as much to the region's population (10,174) as Natural Increase (11,725).

FIGURE 20 ANNUAL COMPONENTS OF RESIDENT POPULATION CHANGE

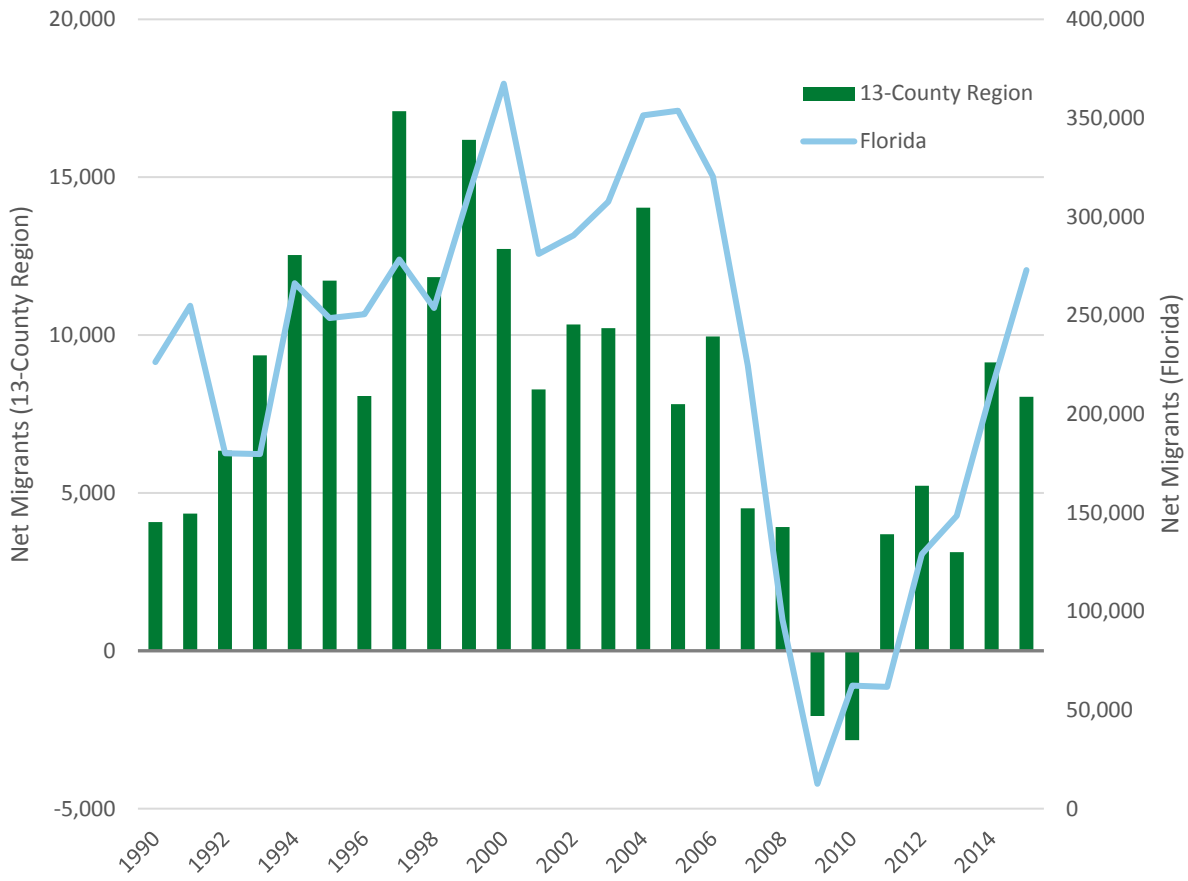


Source: U.S. Census Bureau Population Estimates Program.
Note: Intercensal estimates are replaced by decennial census results

Net Migration Pattern

- Figure 21 shows the similarity of the net migration patterns for the 13-county region and Florida between 1990 and 2015.
- Peak positive net migration for the 13-county region took place in 1997 and 1999 followed by a sharp decline leading into and during the recent recession.
- The 13-county region as well as the State of Florida experienced net out-migration in 2009 and 2010, but returned to net in-migration since 2012 with rates consistent with those since the early 1990s.

FIGURE 21 NET MIGRATION PATTERN



Source: Decennial Census and University of Florida, Bureau of Economic and Business Research, Population Program, Florida Population Studies

Age Distribution

- The age distribution of the region's population is similar to that of the state and nation.
- However, the growth rates of the various age groups since 2009 varies by geography. Notably, the region's 25-44 population grew by 8.4%, outpacing Florida (7.1%) and the nation (3.1%). Growth of this population has been linked to entrepreneurial activity and innovation because younger adults are more likely to form startups and small businesses and are generally less risk adverse[9].
- While the smallest growth occurred among college aged residents (18-24; 0.1%), the region has a higher proportion of such residents (9.6%) compared with the state as a whole (8.7%).

FIGURE 22 AGE DISTRIBUTION AS A % OF TOTAL POPULATION, 2015

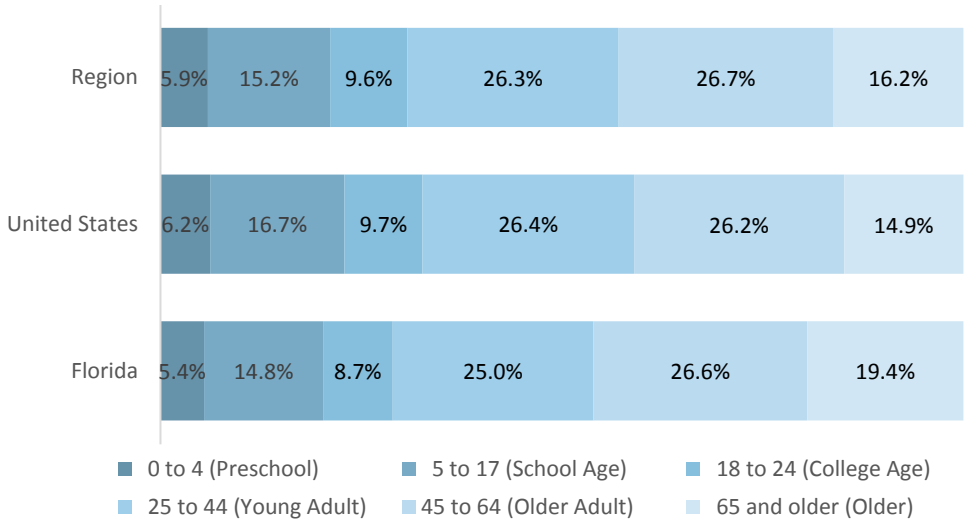
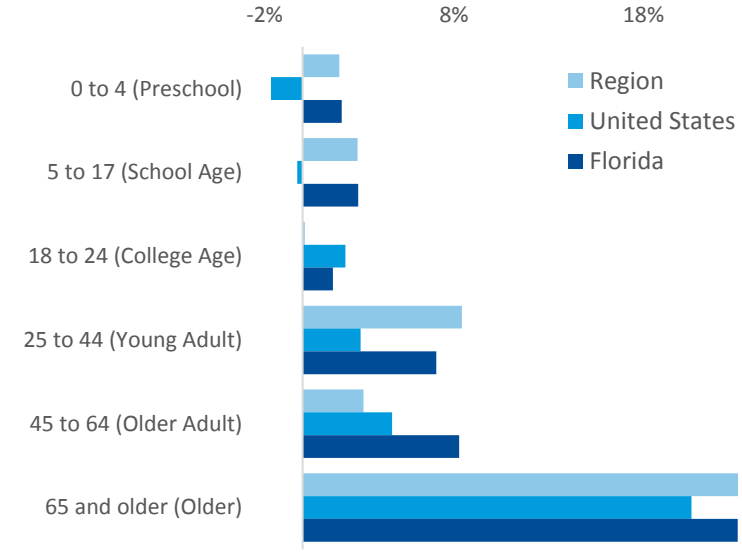


FIGURE 23 GROWTH BY AGE, 2009-2015



Source: U.S. Census Bureau via StatsAmerica.org

[9] "Driving Regional Innovation," Indiana Business Research Center (2016)

Educational Attainment

- In the 13-county region, 12.6% of the population age 25 and higher has less than a high school education, which is slightly better than the state (13.5%) and the nation (13.6%).
- 57.1% of adults in the region hold a credential beyond a high school diploma, compared to 56.8% in the state and 58.4% for the US.
- The 13-county region has a higher share of adults with Associate's degrees (10.3%) than the nation and the state. This is a 23.6% increase since the 2005-09 data, which is far more growth than the nation and state.
- However, 23.0% of the adults in the region have at least a Bachelor's degree, which trails the national average (29.3%) and the state (26.7%).

FIGURE 24 EDUCATIONAL ATTAINMENT (25 +), 2014

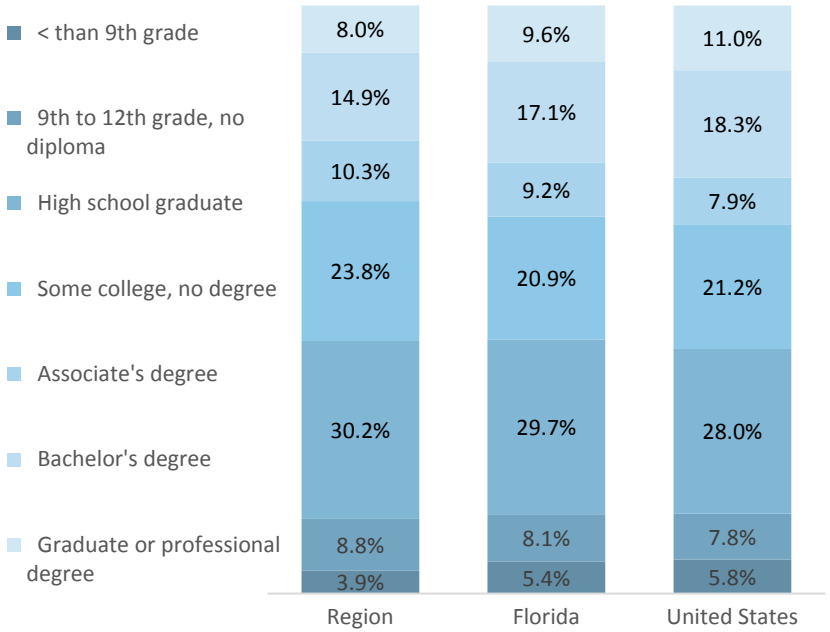
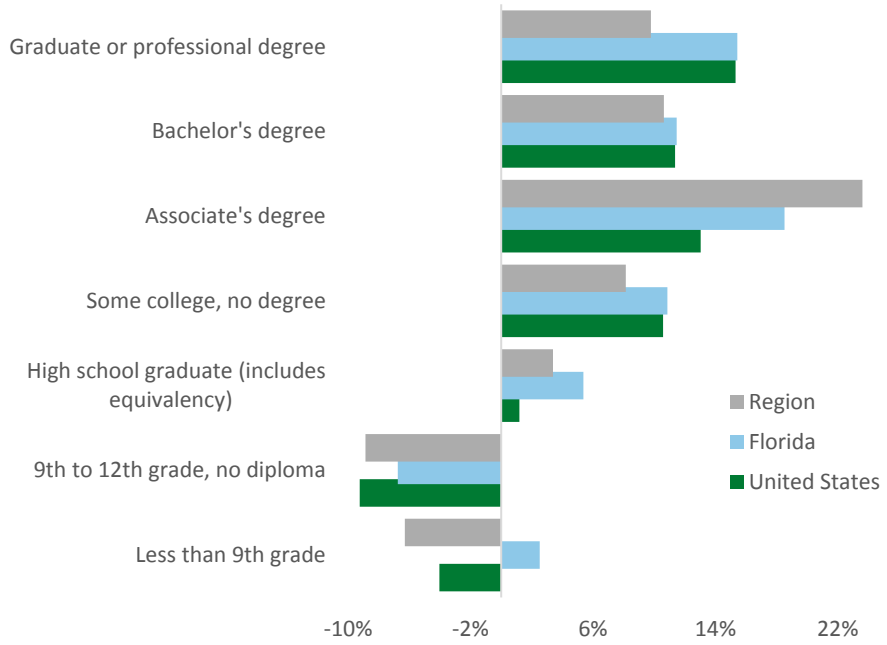


FIGURE 25 % CHANGE IN EDUCATIONAL ATTAINMENT, POPULATION 25+, 2009-2014



Source: U.S. Census Bureau, 2005-2009 and 2010-2014 5 Year American Community Survey

Diversity

- The racial composition of the region's population is generally similar to that of the nation and state.
  - 79.1% of the region's population is White, compared to 77.7% for Florida and 77.1% for the U.S.
  - 14.4% of the region's population is Black, which is slightly higher than the nation (13.6%), but less than Florida (16.8%).
  - 2.4% of the region's population is Asian, which is comparable to Florida (2.8%), but less than the nation (5.6%).
- Although representing only 6% of the total population as of the most recent data, the Hispanic and Latino population in the region is nearly four times what it was in 1990. This growth rate far exceeds the growth rate of the Hispanic and Latino population for the nation and state.

FIGURE 27 PERCENT OF POPULATION BY RACE, 2015

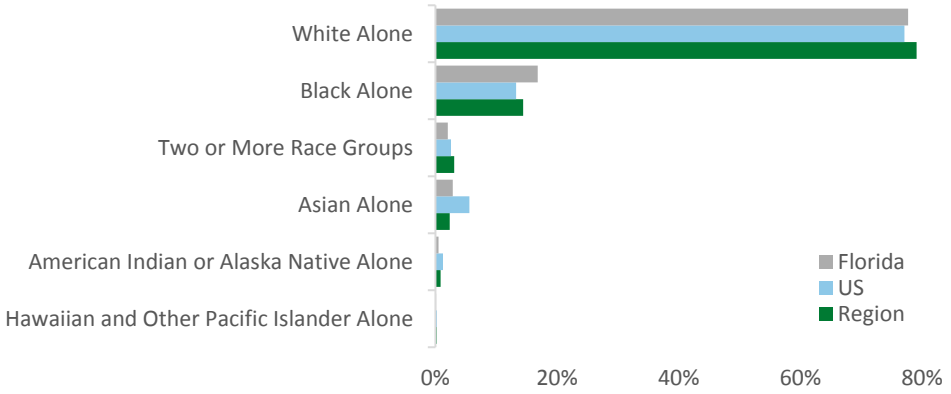


FIGURE 26 POPULATION CHANGE BY RACE, 2009-2015

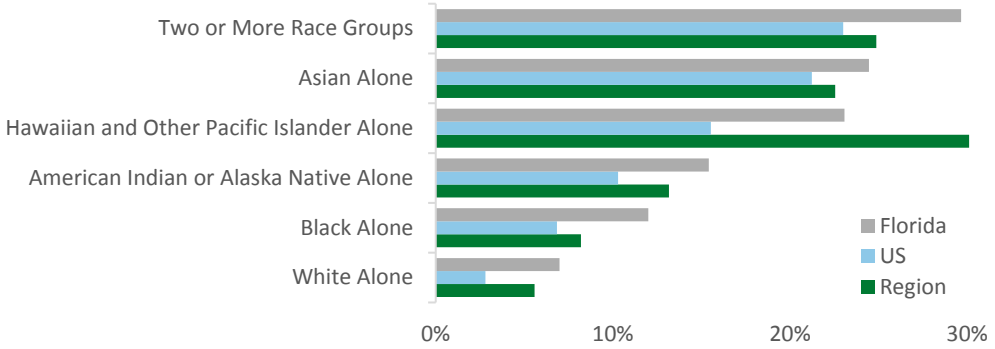
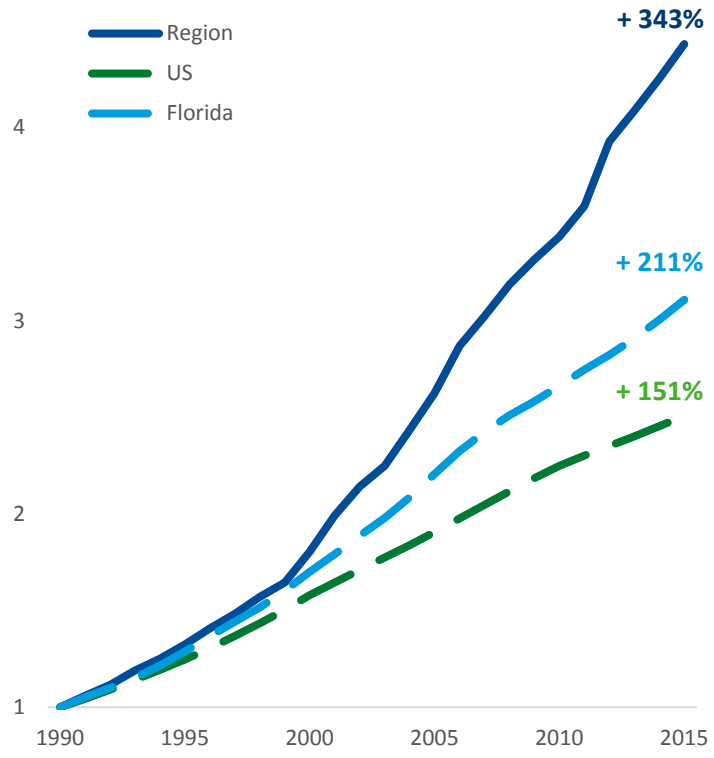


FIGURE 28 HISPANIC OR LATINO POPULATION, INDEXED TO 1990 (1990=1)



Source: U.S. Census Bureau via StatsAmerica.org

LABOR SHED ANALYSIS

Combined 13-County Region

Labor Market Size and Flow Patterns

This section of the report analyzes the commuting trends for those who live or work within the 13-county region. Commuting data comes from the Census Bureau's Longitudinal Employer-Household Dynamics (LEHD) project. The LEHD data links employee place of residence (origin) to their work location (destination). The origin data is derived from aggregated federal data sources, while the destination data is furnished through state Unemployment Insurance programs. The LEHD data covers over 95% of U.S. private sector jobs and is maintained by the U.S. Census Bureau.[10] As shown in the sections that follow, this data can be used to examine commuting patterns of workers who either live or work within the 13-county region. In some cases this data allows further breakdown into industry sector, income, and select demographic categories.

NET INFLOW AND NET OUTFLOW

Net Inflow indicates there are more workers residing outside the area who commute into the region than vice versa. As an example, imagine there 1,000 workers who live in the 13-county region but work outside the 13-county region in Retail Trade. Also suppose that there are 9,000 workers who live outside the region who commute into the region to work in Retail Trade. In this case, there will be a Net Inflow of 8,000.

A Net Outflow is the opposite situation where there are more workers commuting out of a region for work than workers commuting into the region from outside.

In this section, Net Inflows are represented by positive values and are generally shaded green and Net Outflows are negative values and are red in color.

[10] This is a simplified explanation of the LEHD data. For more information, see https://lehd.ces.census.gov/

Figure 29 shows the labor market for the 13-county region from 2004-2014 comparing the total jobs in the region to the total jobs filled by residents of the region. Notably, the number of workers who both live and work in the region barely changed from 2010-14 despite the increasing number of jobs in the region. Figure 30 illustrates that outflow steadily grew from 2004-14 at almost 6% per year annualized. However, inflow has been much more volatile increasing steadily from 2004-10 at a rate of 29% per year annualized despite the recession as workers commuted into the 13-county region finding work. This trend was interrupted from 2010-2012, which saw an 18% per year annualized decline in inflow coinciding with the Deepwater Horizon Oil Spill. But 2012-2014 saw a return to inflow growth of 18% per year annualized.

FIGURE 29 LABOR MARKET SIZE

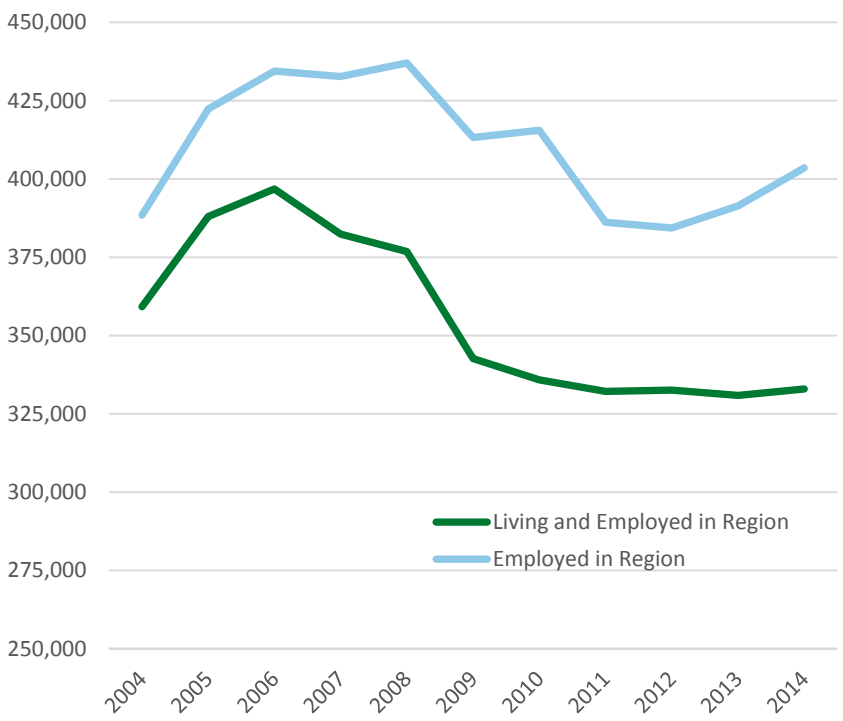
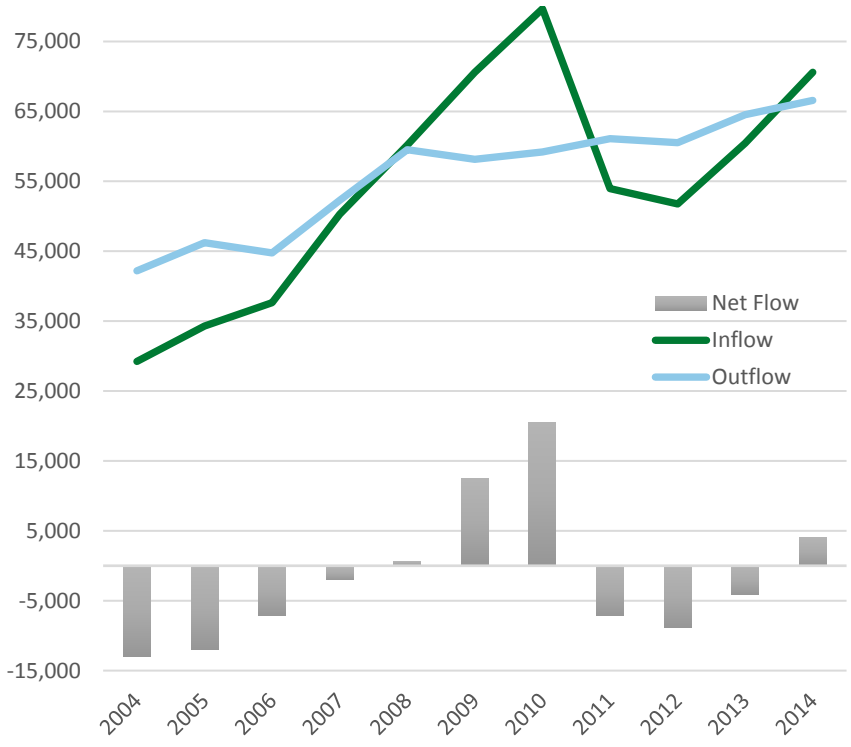


FIGURE 30 INFLOW/OUTFLOW

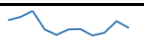
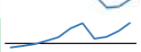


Source: U.S. Census Bureau, LEHD OnTheMap (2004-2014)

Net Flows by Industry in 13-County Region

Table 8 illustrates net labor commuting patterns by 2-digit NAICS codes between 2004 and 2014. Green colored cells represent net inflows (labor inflow minus labor outflow) whereas fields highlighted in red represent net outflows. Retail Trade, Construction, and Accommodation & Food Services are the primary industries responsible for the inflow and are each directly or indirectly related to tourism. Public Administration is the industry with the most outflow and largely represents workers commuting to the state capitol. Other industries with significant outflow are Manufacturing and Transportation & Warehousing.

TABLE 8 NET LABOR FLOW BY 2-DIGIT NAICS CODES

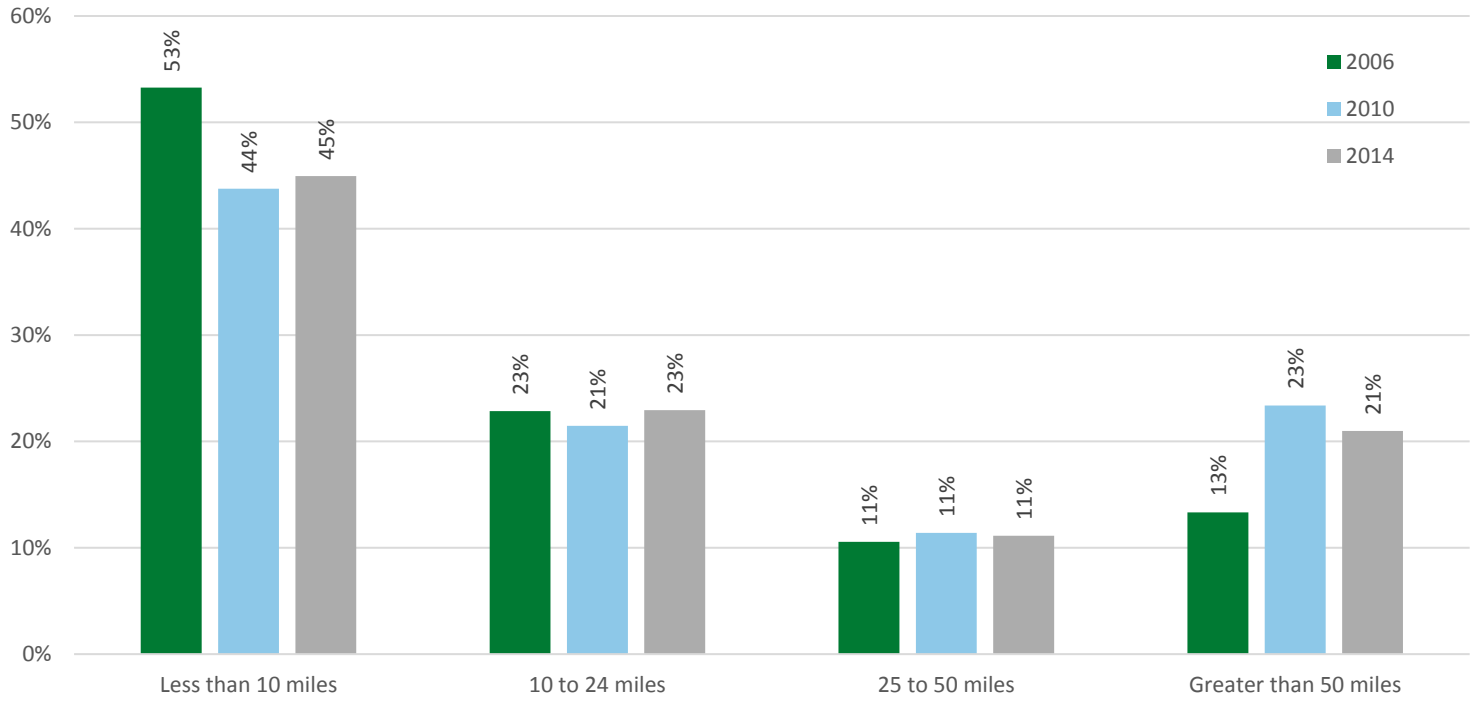
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Trend
Agriculture, Forestry, Fishing and Hunting	-465	-409	-301	-634	-730	-633	-630	-743	-696	-486	-604	
Mining, Quarrying, and Oil and Gas Extraction	-203	-239	-200	-311	-346	-395	-396	-496	-462	-439	-412	
Utilities	-19	-42	18	74	53	106	169	15	-29	9	61	
Construction	-515	402	714	1546	1068	1716	1567	813	972	641	1253	
Manufacturing	-1111	-1059	-436	-723	-875	-490	-639	-1432	-1265	-1262	-1281	
Wholesale Trade	-246	-34	7	473	608	1106	1195	-716	-708	-793	-871	
Retail Trade	1223	1625	3353	3969	7608	10990	13695	2619	1606	4831	8234	
Transportation and Warehousing	-1572	-1588	-1287	-1245	-1303	-1269	-836	-2204	-2049	-2250	-2254	
Information	-332	-321	-269	-297	-68	552	487	-224	-441	-388	-228	
Finance and Insurance	-350	-424	-88	-67	64	424	489	-580	-561	-373	-44	
Real Estate and Rental and Leasing	-261	-204	-153	-160	-22	157	473	50	-16	167	368	
Professional, Scientific, and Technical Services	-1121	-667	-850	-699	-657	228	574	-642	-349	-393	-49	
Management of Companies and Enterprises	-188	-195	-165	-154	-203	-144	-272	-333	-381	-414	-453	
Administration & Support, Waste Management	-885	-2537	-1854	-142	-947	-87	2456	583	-176	-161	360	
Educational Services	-1542	-687	-1056	-881	-866	-1030	-1422	-966	-1446	-1361	-1262	
Health Care and Social Assistance	-248	-1395	-915	-639	-910	545	2036	-99	-455	-83	603	
Arts, Entertainment, and Recreation	-158	-143	-160	-96	-154	48	2	-155	-372	-354	-219	
Accommodation and Food Services	-757	-487	-136	470	1195	2803	3759	914	1257	2297	3899	
Other Services (excl. Public Administration)	-495	-294	-476	-264	-187	364	629	-251	-306	-208	52	
Public Administration	-3717	-3216	-2870	-2209	-2667	-2528	-2856	-3285	-2899	-3058	-3118	

Source: U.S. Census Bureau, LEHD OnTheMap (2004-2014)

Commuting Distance and Destination

Figure 31 displays 2006, 2010, and 2014 commuting distances of workers who live in the 13-county region. The figure illustrates that the percentage value of labor that travels 10 to24 miles and 25 to 50 miles remained relatively constant (~22% and ~11% respectively) during and after the recession of 2007-2009. From 2006 to 2014, the percentage of labor that commutes less than 10 miles decreased from 53% to 45%. This 8 percentage point difference corresponds to the increase in workers traveling more than 50 miles to work (13% to 21%).

FIGURE 31 COMMUTING DISTANCE OF WORKERS WHO ARE EMPLOYED IN 13-COUNTY REGION



Source: U.S. Census Bureau, LEHD OnTheMap (2006-2014)

13-County Region on County Level

Categorized County Commuting Patterns

Tables 9 and 10 identify the components of each county's inflow / outflow. Four out of thirteen counties have net labor inflow (Escambia, Okaloosa, Walton, and Bay County). For confidentiality reasons, the Census Bureau suppresses data which would identify the origin and destination county of workers by demographic and industry sector. Such data is only reported as a net flow for each county.

However, by looking at the net flow of neighboring counties it is usually possible to infer the commuting patterns. For example, Table 9 indicates that twenty-two percent of Okaloosa County's inflow is in the Professional, Scientific & Technical (PST) sector. Okaloosa's neighboring counties of Santa Rosa and Walton each have and outflow of PST workers , -8.1% and -5.3%, respectively. Table 10 reveals that 39% of Okaloosa's worker inflow earns more than $40,000 per year while Santa Rosa and Walton each have outflows of higher earning workers (-47% and -10%, respectively). Based upon these trends, one could reasonably infer that there are a significant number of workers employed in Professional, Scientific & Technical industries who are commuting into Okaloosa County from Santa Rosa and Walton counties.

Applying similar logic, other patterns emerge from the commuting patterns. For workers in the Public Administration sector, there is significant outflow of workers from the eastern counties and no county in the region with a significant inflow. Given the proximity to the state capitol of Tallahassee, it is reasonable to conclude that these Public Administration workers are commuting into Leon County. Similarly, there is significant inflow of workers in Retail Trade among Escambia, Okaloosa, Walton and Bay counties and outflow of workers in neighboring counties. This should not be surprising given the magnitude of the tourism industry in these four counties.

TABLE 9 CATEGORIZED SHARE OF NET FLOW COMMUTING PATTERNS (BY INDUSTRY)*

	Escambia	Santa Rosa	Okaloosa	Walton	Bay	Gulf	Washington	Holmes	Jackson	Calhoun	Liberty	Franklin	Wakulla
Inflow	59,691	18,984	33,731	15,071	25,469	1,688	3,819	1,733	7,486	1,694	1,647	1,641	2,432
Outflow	31,877	40,779	25,971	12,181	18,844	3,089	6,153	5,018	8,629	3,631	2,563	2,215	10,101
Net Inflow / Outflow	**27,814**	**-21,795**	**7,760**	**2,890**	**6,625**	**-1,401**	**-2,334**	**-3,285**	**-1,143**	**-1,937**	**-916**	**-574**	**-7,669**
NAICS Industry Sector													
Agriculture, Forestry, Fishing and Hunting	-0.5%	0.0%	-0.8%	-1.4%	-0.4%	-1.3%	-0.6%	-1.2%	-2.6%	0.5%	0.2%	-5.7%	-1.2%
Mining, Quarrying, and Oil and Gas Extraction	-0.8%	-0.4%	-0.5%	0.0%	-0.7%	-0.1%	-0.2%	-0.2%	3.6%	-0.7%	-0.1%	-0.3%	-0.2%
Utilities	1.3%	-1.0%	-0.4%	1.4%	-0.8%	0.1%	-1.4%	-1.8%	1.6%	-1.0%	1.0%	-1.1%	-0.1%
Construction	6.2%	-4.5%	5.5%	5.0%	6.4%	-2.8%	-1.4%	-8.8%	4.9%	-8.0%	7.8%	-2.8%	-6.8%
Manufacturing	2.3%	-8.3%	8.1%	-3.8%	6.3%	-10.3%	-6.8%	-11.4%	-3.6%	-12.4%	6.6%	-4.5%	-1.1%
Wholesale Trade	4.5%	-5.1%	-2.3%	-2.0%	1.0%	-5.5%	-3.7%	-5.1%	-2.4%	-1.1%	-4.6%	-1.3%	-4.0%
Retail Trade	25.6%	-8.9%	26.8%	16.5%	25.2%	-15.8%	-17.6%	-17.7%	-1.1%	-13.9%	-19.3%	-15.1%	-9.7%
Transportation and Warehousing	-1.1%	-5.0%	-1.2%	-4.6%	2.1%	-5.2%	-6.7%	-4.3%	4.0%	-1.4%	-3.7%	-4.3%	-2.1%
Information	1.2%	-1.3%	0.9%	-0.9%	1.3%	-0.8%	-2.6%	-1.2%	-0.7%	-2.0%	-1.7%	-2.9%	-2.7%
Finance and Insurance	6.4%	-6.6%	5.3%	-4.4%	-0.3%	-2.5%	-3.3%	-2.4%	-1.8%	-2.8%	-3.0%	-3.7%	-3.4%
Real Estate and Rental and Leasing	1.3%	-2.2%	1.5%	4.3%	6.8%	-1.5%	-3.4%	-2.3%	-5.7%	-2.6%	-2.6%	2.1%	-1.6%
Professional, Scientific, and Technical Services	3.5%	-8.1%	22.3%	-5.3%	2.8%	-3.5%	-2.1%	-5.6%	-12.5%	-6.2%	-8.0%	-3.4%	-4.3%
Management of Companies and Enterprises	0.6%	-1.4%	-0.1%	-0.6%	-1.2%	-1.0%	-1.2%	-1.0%	-1.9%	-0.7%	-0.5%	-1.0%	-0.6%
Administration & Support, Waste Mgt.	6.3%	-5.3%	5.5%	1.6%	7.0%	-9.9%	-12.9%	-7.0%	-5.7%	-5.9%	-7.5%	-5.9%	-4.6%
Educational Services	3.7%	-6.1%	3.3%	-3.2%	1.0%	-7.8%	-4.5%	0.1%	-4.4%	-3.3%	-5.3%	-8.9%	-7.9%
Health Care and Social Assistance	18.8%	-16.4%	2.9%	-2.6%	12.9%	-12.0%	-6.3%	-10.1%	-26.6%	-10.3%	-1.5%	-13.3%	-11.1%
Arts, Entertainment, and Recreation	0.5%	-1.4%	1.6%	-0.2%	0.3%	-1.9%	1.0%	-1.1%	-3.1%	-1.6%	-1.7%	-0.5%	-0.8%
Accommodation and Food Services	11.7%	-12.3%	9.3%	39.0%	19.0%	-9.9%	-17.8%	-13.1%	4.1%	-13.5%	-10.9%	19.7%	-7.6%
Other Services (excl. Public Administration)	2.8%	-2.3%	0.9%	2.0%	1.6%	-2.7%	-4.2%	-1.1%	-3.5%	-3.5%	-3.3%	-2.8%	-2.7%
Public Administration	1.1%	-3.3%	-0.7%	1.2%	-2.7%	5.5%	2.1%	-4.4%	-6.2%	-8.5%	-10.8%	-0.9%	-27.4%

Source: U.S. Census Bureau, LEHD OnTheMap (2014)

*Note: Values represent the percentage of total commuting workers (Inflow + Outflow). Positive values represent industries with net inflow; negative values represent industries with net outflow.

TABLE 10 CATEGORIZED SHARE OF NET FLOW COMMUTING PATTERNS (BY DEMOGRAPHICS)

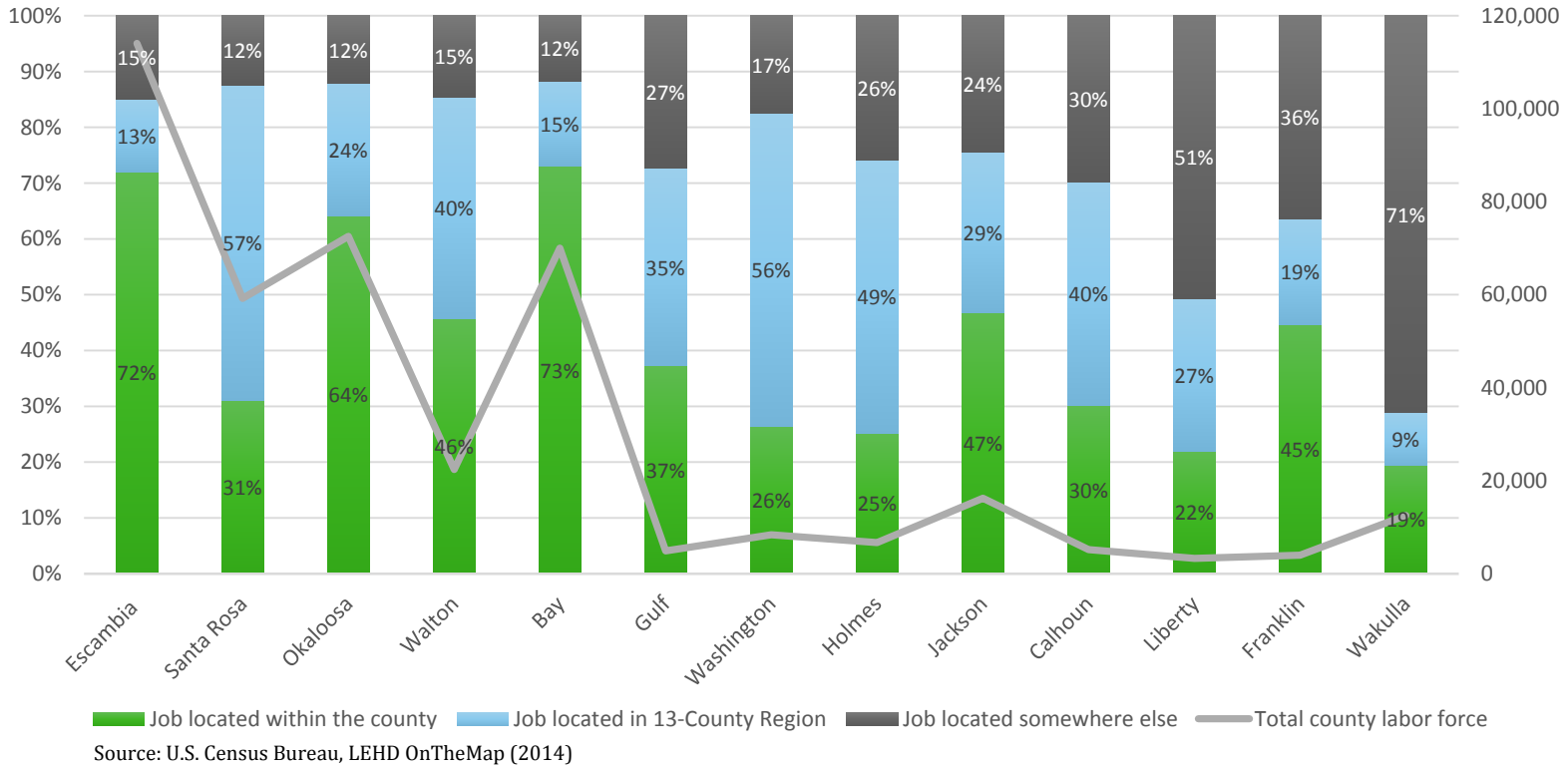
	Escambia	Santa Rosa	Okaloosa	Walton	Bay	Gulf	Washington	Holmes	Jackson	Calhoun	Liberty	Franklin	Wakulla
Inflow	59,691	18,984	33,731	15,071	25,469	1,688	3,819	1,733	7,486	1,694	1,647	1,641	2,432
Outflow	31,877	40,779	25,971	12,181	18,844	3,089	6,153	5,018	8,629	3,631	2,563	2,215	10,101
Net Inflow / Outflow	**27,814**	**-21,795**	**7,760**	**2,890**	**6,625**	**-1,401**	**-2,334**	**-3,285**	**-1,143**	**-1,937**	**-916**	**-574**	**-7,669**
Age													
Age 29 or younger	25.5%	-18.8%	23.4%	59.6%	29.4%	-27.9%	-28.5%	-22.1%	-22.2%	-24.8%	-28.7%	-22.0%	-20.3%
Age 30 to 54	54.6%	-58.8%	58.8%	38.8%	51.5%	-46.2%	-55.0%	-55.4%	-42.5%	-55.0%	-40.2%	-40.4%	-58.3%
Age 55 or older	19.9%	-22.4%	17.8%	1.7%	19.1%	-25.9%	-16.5%	-22.5%	-35.3%	-20.2%	-31.1%	-37.6%	-21.4%
Earnings													
$15,000 per year or less	31.0%	-19.6%	31.1%	42.9%	37.2%	-27.4%	-30.2%	-26.2%	-20.9%	-23.7%	-40.0%	-35.4%	-19.4%
$15,000 to $40,000	38.6%	-33.3%	29.9%	66.9%	39.6%	-44.7%	-42.0%	-42.6%	-50.7%	-39.2%	-28.1%	-15.3%	-40.5%
More than $40,000 per year	30.3%	-47.0%	39.0%	-9.8%	23.2%	-27.9%	-27.7%	-31.1%	-28.4%	-37.1%	-32.0%	-49.3%	-40.1%
Race													
White Alone	93.1%	-97.7%	83.5%	60.2%	69.8%	-79.0%	-90.4%	-94.3%	-56.7%	-83.5%	-86.2%	-59.6%	-88.0%
Black or African American Alone	2.1%	1.8%	13.4%	29.6%	24.8%	-18.2%	-6.4%	-2.7%	-41.3%	-13.9%	-13.1%	-31.2%	-9.5%
American Indian or Alaska Native Alone	0.7%	-0.9%	1.0%	0.2%	1.2%	-0.1%	-1.5%	-0.9%	0.9%	-1.3%	-1.1%	-3.3%	-0.6%
Asian Alone	2.3%	-1.8%	1.1%	8.8%	2.2%	-0.9%	-0.4%	-0.8%	-1.3%	-0.5%	-0.5%	-6.4%	-0.9%
Native Hawaiian or Other Pacific Islander	0.2%	-0.1%	-0.1%	-0.1%	0.1%	-0.1%	-0.1%	-0.1%	-0.5%	-0.1%	0.1%	0.2%	0.0%
Two or More Race Groups	1.6%	-1.3%	1.1%	1.3%	1.9%	-1.6%	-1.2%	-1.2%	-1.0%	-0.7%	0.9%	0.3%	-1.0%
Educational Attainment													
Less than high school	9.4%	-7.7%	10.1%	12.3%	11.9%	-9.0%	-9.9%	-10.0%	-4.3%	-11.1%	-2.9%	0.5%	-8.7%
High school or equivalent, no college	22.0%	-22.8%	23.2%	16.4%	24.0%	-19.8%	-19.7%	-24.8%	-17.7%	-23.0%	-17.6%	-26.8%	-23.0%
Some college or Associate degree	24.7%	-27.7%	24.5%	10.9%	24.2%	-24.4%	-23.8%	-24.5%	-33.9%	-24.1%	-28.1%	-25.6%	-27.0%
Bachelor's degree or advanced degree	18.3%	-22.9%	18.8%	0.9%	10.4%	-18.8%	-18.1%	-18.6%	-21.9%	-17.0%	-22.7%	-26.1%	-21.0%
Educational attainment not available	25.5%	-18.8%	23.4%	59.6%	29.4%	-27.9%	-28.5%	-22.1%	-22.2%	-24.8%	-28.7%	-22.0%	-20.3%
Sex													
Male	45.7%	-52.6%	62.9%	38.7%	55.8%	-56.7%	-57.2%	-56.9%	-22.9%	-60.4%	-26.2%	-63.9%	-48.2%
Female	54.3%	-47.4%	37.1%	61.3%	44.2%	-43.3%	-42.8%	-43.1%	-77.1%	-39.6%	-73.8%	-36.1%	-51.8%

Source: U.S. Census Bureau, LEHD OnTheMap (2014)

County Level Commuting Patterns

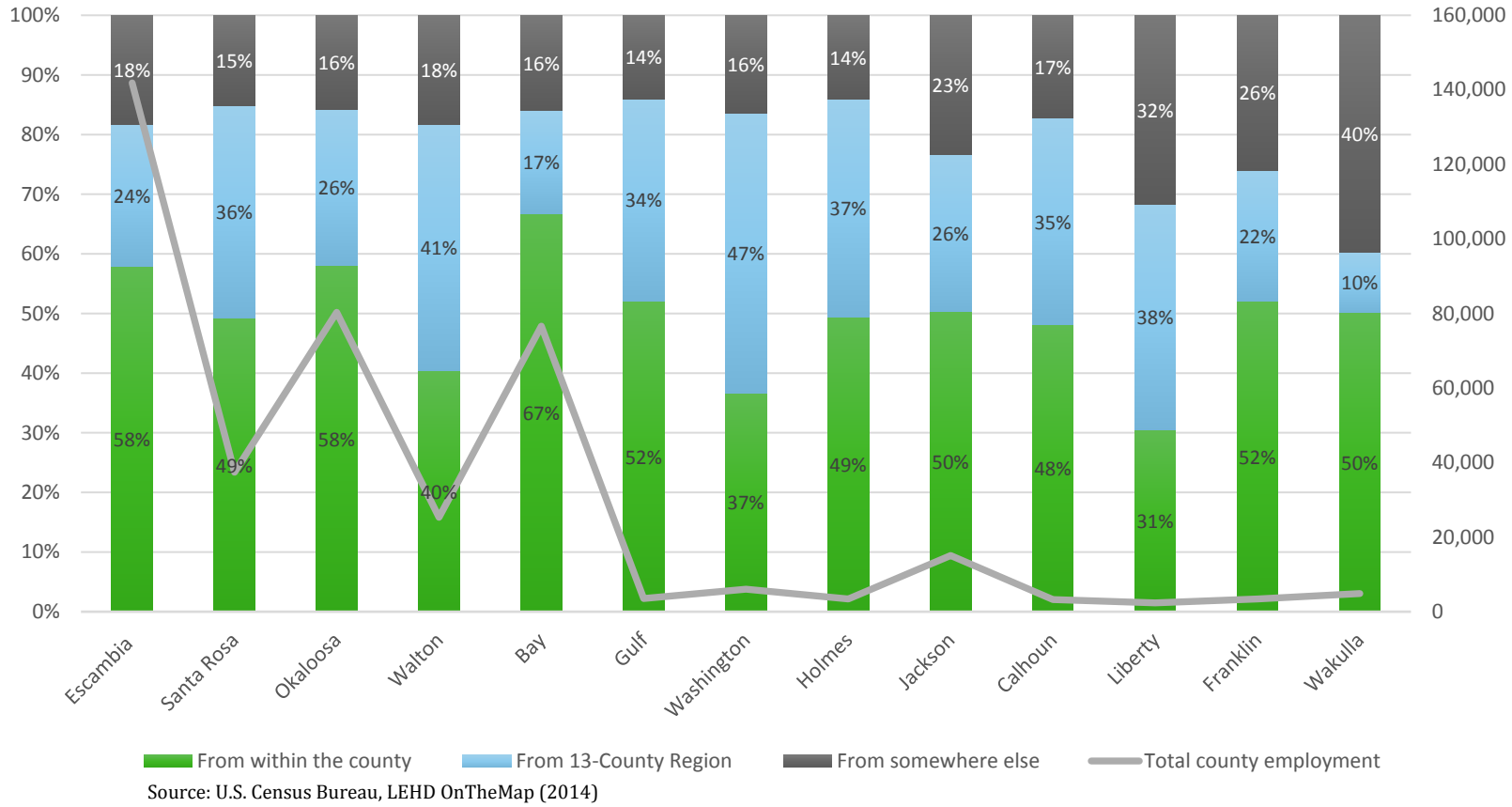
The following two figures depict county commuting patterns as a share of total county labor force (Figure 32) and total county employment (Figure 33). Specifically, Figure 32 presents the commuting destination of workers who live in a selected county. For example, 72% of Escambia County's employed population lives and works in Escambia County, whereas 13% commute to counties within the 13-county region and 15% commute outside the 13-county region. Figure 33 is the opposite of Figure 32 in that it presents the place of residence for workers employed in the selected county. For example, 58% of all jobs in Escambia County are filled by Escambia County residents, while 24% commute from within the 13-county region, and 18% commute from outside the 13-county region.

FIGURE 32 WHERE WORKERS ARE EMPLOYED WHO LIVE IN SELECTED COUNTY (COMMUTING TO)



Source: U.S. Census Bureau, LEHD OnTheMap (2014)

FIGURE 33 WHERE WORKERS LIVE WHO ARE EMPLOYED IN SELECTED COUNTY (COMMUTING FROM)



Source: U.S. Census Bureau, LEHD OnTheMap (2014)

County-to-County Commuting Patterns

The following 5 tables demonstrate various combinations of county-to-county commuting values – by origin, by destination, by count, and by percent. Each table is interpreted in the same manner. Using Table 11 as an example, the top row represents county of residence. Going down the column, the values indicate the number of residents who commute to a county displayed on the left column for work. Values in the shaded diagonal fields represent workers who live and work in a respective county. For example (see info graphic), 350 residents of Bay County commute to Gulf County. Leon County, which is not part of the 13-county region, is included in the tables because the outflow of labor, particularly in the eastern counties, shows meaningful patterns for the analysis.

	How many workers who live in _Bay_ County.				
work in _Gulf_ County?	Escambia	Santa Rosa	Okaloosa	Walton	Bay
Escambia County	82,171	23,616	5,631	706	2,4[illegible]0
Santa Rosa County	8,445	18,415	3,195	312	8[illegible]6
Okaloosa County	3,537	8,009	46,591	5,086	2,6[illegible]5
Walton County	677	644	5,365	10,228	2,3[illegible]6
Bay County	1,661	919	2,353	1,808	51,1[illegible]9
Gulf County	[illegible]	[illegible]	[illegible]	[illegible]	350
Washington County	132	57	143	208	635

DO 114 PEOPLE DRIVE FROM WAKULLA TO ESCAMBIA EVERY DAY?

Probably not. The data in the following table only indicates that there are 114 people whose place of residence for 2014 is Wakulla while their primary job of 2014 was in Escambia. The LEHD data is based upon a combination of state data on an individual's place of work with federal data on that individual's place of residence. For the majority of workers, this combination is able to correctly identify the worker's daily commute from home to work. However, there are some fairly common circumstances that such an assumption would fail. For example, a college student from Wakulla attends UWF and takes a job during the semester. In such a case, she would likely be included among the 114. Seasonal workers or those who changed employment during the year can also have the location of their primary job quite distant from their county of residence.

TABLE 11 WHERE WORKERS ARE EMPLOYED WHO LIVE IN SELECTED COUNTY (COMMUTING TO)

		How many workers who live in _____ County…												
		Escambia	Santa Rosa	Okaloosa	Walton	Bay	Gulf	Washington	Holmes	Jackson	Calhoun	Liberty	Franklin	Wakulla
work in _____ County?	Escambia County	82,171	23,616	5,631	706	2,420	45	328	252	605	51	30	38	114
	Santa Rosa County	8,445	18,415	3,195	312	816	14	140	105	238	10	8	11	37
	Okaloosa County	3,537	8,009	46,591	5,086	2,605	35	508	420	725	40	19	19	91
	Walton County	677	644	5,365	10,228	2,386	32	339	561	300	24	24	20	58
	Bay County	1,661	919	2,353	1,808	51,159	1,140	2,016	607	1,195	682	202	300	388
	Gulf County	54	23	60	118	350	1,836	70	66	129	121	47	107	50
	Washington County	132	57	143	208	635	68	2,214	588	797	98	21	41	45
	Holmes County	46	25	80	167	206	25	381	1,694	221	47	15	18	21
	Jackson County	242	131	204	375	748	105	746	570	7,604	650	88	43	62
	Calhoun County	33	13	34	59	186	63	70	41	281	1,570	251	43	56
	Liberty County	15	15	21	78	142	28	55	44	140	271	723	43	44
	Franklin County	28	13	18	32	93	136	26	11	22	44	125	1,784	204
	Wakulla County	40	14	65	21	77	50	11	11	16	45	68	77	2,446
	Leon County	1,383	744	1,737	497	1,672	324	232	191	477	473	748	470	6,734
	County Labor Force	114,048	59,194	72,562	22,409	70,003	4,925	8,367	6,712	16,233	5,201	3,286	3,999	12,547

Source: U.S. Census Bureau, LEHD OnTheMap (2014)

Table 12 follows the same reasoning as Table 11 with the exception that values represent the number of workers per 100 with respect to labor force in a particular county.

TABLE 12 WHERE WORKERS ARE EMPLOYED WHO LIVE IN SELECTED COUNTY (COMMUTING TO)

		Number of workers (per 100) who live in _____ County…												
		Escambia	Santa Rosa	Okaloosa	Walton	Bay	Gulf	Washington	Holmes	Jackson	Calhoun	Liberty	Franklin	Wakulla
work in _____ County?	Escambia County	72	40	8	3	3	<1	4	4	4	<1	<1	<1	<1
	Santa Rosa County	7	31	4	1	1	<1	2	2	1	<1	<1	<1	<1
	Okaloosa County	3	14	64	23	4	<1	6	6	4	<1	<1	<1	<1
	Walton County	<1	1	7	46	3	<1	4	8	2	<1	<1	<1	<1
	Bay County	1	2	3	8	73	23	24	9	7	13	6	8	3
	Gulf County	<1	<1	<1	<1	<1	37	<1	<1	<1	2	1	3	<1
	Washington County	<1	<1	<1	<1	<1	1	26	9	5	2	<1	1	<1
	Holmes County	<1	<1	<1	<1	<1	<1	5	25	1	<1	<1	<1	<1
	Jackson County	<1	<1	<1	2	1	2	9	8	47	12	3	1	<1
	Calhoun County	<1	<1	<1	<1	<1	1	<1	<1	2	30	8	1	<1
	Liberty County	<1	<1	<1	<1	<1	<1	<1	<1	<1	5	22	1	<1
	Franklin County	<1	<1	<1	<1	<1	3	<1	<1	<1	<1	4	45	2
	Wakulla County	<1	<1	<1	<1	<1	1	<1	<1	<1	<1	2	2	19
	Leon County	1	1	2	2	2	7	3	3	3	9	23	12	54
	County Labor Force	114,048	59,194	72,562	22,409	70,003	4,925	8,367	6,712	16,233	5,201	3,286	3,999	12,547

Source: U.S. Census Bureau, LEHD OnTheMap (2014)

Table 13 illustrates the number of workers who commute from a county located in the left column to a county displayed in the top row. For example, 23,616 of Santa Rosa County's employed labor force commutes to Escambia County, but 8,445 of Escambia's workers commute to Santa Rosa County. The numbers in the shaded diagonal fields represent workers who live and work in a selected county. These values are identical to those in Table 11.

TABLE 13 WHERE WORKERS LIVE WHO ARE EMPLOYED IN THE SELECTED COUNTY (COMMUTING FROM)

		How many workers who work in _____ County…												
		Escambia	Santa Rosa	Okaloosa	Walton	Bay	Gulf	Washington	Holmes	Jackson	Calhoun	Liberty	Franklin	Wakulla
live in _____ County?	Escambia County	82,171	8,445	3,537	677	1,661	54	132	46	242	33	15	28	40
	Santa Rosa County	23,616	18,415	8,009	644	919	23	57	25	131	13	15	13	14
	Okaloosa County	5,631	3,195	46,591	5,365	2,353	60	143	80	204	34	21	18	65
	Walton County	706	312	5,086	10,228	1,808	118	208	167	375	59	78	32	21
	Bay County	2,420	816	2,605	2,386	51,159	350	635	206	748	186	142	93	77
	Gulf County	45	14	35	32	1,140	1,836	68	25	105	63	28	136	50
	Washington County	328	140	508	339	2,016	70	2,214	381	746	70	55	26	11
	Holmes County	252	105	420	561	607	66	588	1,694	570	41	44	11	11
	Jackson County	605	238	725	300	1,195	129	797	221	7,604	281	140	22	16
	Calhoun County	51	10	40	24	682	121	98	47	650	1,570	271	44	45
	Liberty County	30	8	19	24	202	47	21	15	88	251	723	125	68
	Franklin County	38	11	19	20	300	107	41	18	43	43	43	1,784	77
	Wakulla County	114	37	91	58	388	50	45	21	62	56	44	204	2,446
	Leon County	923	293	670	277	1,290	87	128	50	427	106	195	218	874
	Total County Jobs	141,862	37,399	80,322	25,299	76,628	3,524	6,033	3,427	15,090	3,264	2,370	3,425	4,878

Source: U.S. Census Bureau, LEHD OnTheMap (2014)

Table 14 presents number of workers per 100 with respect to total county jobs.

TABLE 14 WHERE WORKERS LIVE WHO ARE EMPLOYED IN THE SELECTED COUNTY (COMMUTING FROM)

		Number of workers (per 100) who work in _____ County…												
		Escambia	Santa Rosa	Okaloosa	Walton	Bay	Gulf	Washington	Holmes	Jackson	Calhoun	Liberty	Franklin	Wakulla
live in_____ County?	Escambia County	58	23	4	3	2	2	2	1	2	1	<1	<1	<1
	Santa Rosa County	17	49	10	3	1	<1	<1	<1	<1	<1	<1	<1	<1
	Okaloosa County	4	9	58	21	3	2	2	2	1	1	<1	<1	1
	Walton County	<1	<1	6	40	2	3	3	5	2	2	3	<1	<1
	Bay County	2	2	3	9	67	10	11	6	5	6	6	3	2
	Gulf County	<1	<1	<1	<1	1	52	1	<1	<1	2	1	4	1
	Washington County	<1	<1	<1	1	3	2	37	11	5	2	2	<1	<1
	Holmes County	<1	<1	<1	2	<1	2	10	49	4	1	2	<1	<1
	Jackson County	<1	<1	<1	1	2	4	13	6	50	9	6	<1	<1
	Calhoun County	<1	<1	<1	<1	<1	3	2	1	4	48	11	1	<1
	Liberty County	<1	<1	<1	<1	<1	1	<1	<1	<1	8	31	4	1
	Franklin County	<1	<1	<1	<1	<1	3	<1	<1	<1	1	2	52	2
	Wakulla County	<1	<1	<1	<1	<1	1	<1	<1	<1	2	2	6	50
	Leon County	<1	<1	<1	1	2	2	2	1	3	3	8	6	18
	Total County Jobs	141,862	37,399	80,322	25,299	76,628	3,524	6,033	3,427	15,090	3,264	2,370	3,425	4,878

Source: U.S. Census Bureau, LEHD OnTheMap (2014)

It is important to note that Table 15 has to be read vertically. Given a county from the top row of the table, the field values indicate a net outflow (red) to or a net inflow (from) a county located in the left column. The bottom row of the table shows the total net inflow/outflow, which is the difference between total county employment and the total of a county's employed labor force. For example, Santa Rosa County has a net outflow of 15,171 workers commuting to Escambia County. Consequentially, Santa Rosa County's outflow becomes Escambia County's inflow from Santa Rosa County; ergo, the table is symmetric along its diagonal axis.

TABLE 15 NET INFLOW/OUTFLOW TABLE

		Net Flow from _____ County (Net Outflow / Net Inflow) …												
		Escambia	Santa Rosa	Okaloosa	Walton	Bay	Gulf	Washington	Holmes	Jackson	Calhoun	Liberty	Franklin	Wakulla
to ____ County.	Escambia County	0	-15,171	-2,094	-29	-759	9	-196	-206	-363	-18	-15	-10	-74
	Santa Rosa County	15,171	0	4,814	332	103	9	-83	-80	-107	3	7	2	-23
	Okaloosa County	2,094	-4,814	0	279	-252	25	-365	-340	-521	-6	2	-1	-26
	Walton County	29	-332	-279	0	-578	86	-131	-394	75	35	54	12	-37
	Bay County	759	-103	252	578	0	-790	-1,381	-401	-447	-496	-60	-207	-311
	Gulf County	-9	-9	-25	-86	790	0	-2	-41	-24	-58	-19	29	0
	Washington County	196	83	365	131	1,381	2	0	-207	-51	-28	34	-15	-34
	Holmes County	206	80	340	394	401	41	207	0	349	-6	29	-7	-10
	Jackson County	363	107	521	-75	447	24	51	-349	0	-369	52	-21	-46
	Calhoun County	18	-3	6	-35	496	58	28	6	369	0	20	1	-11
	Liberty County	15	-7	-2	-54	60	19	-34	-29	-52	-20	0	82	24
	Franklin County	10	-2	1	-12	207	-29	15	7	21	-1	-82	0	-127
	Wakulla County	74	23	26	37	311	0	34	10	46	11	-24	127	0
	Leon County	-460	-451	-1,067	-220	-382	-237	-104	-141	-50	-367	-553	-252	-5,860
	Total County Jobs	141,862	37,399	80,322	25,299	76,628	3,524	6,033	3,427	15,090	3,264	2,370	3,425	4,878
	County Labor Force	114,048	59,194	72,562	22,409	70,003	4,925	8,367	6,712	16,233	5,201	3,286	3,999	12,547
	Net Inflow / Outflow	27,814	-21,795	7,760	2,890	6,625	-1,401	-2,334	-3,285	-1,143	-1,937	-916	-574	-7,669

Source: U.S. Census Bureau, LEHD OnTheMap (2014)

Commuting Distance and Direction

Commuting Patterns into Core Urban Areas

The maps on the following pages shed light on the commuting distance and direction of labor employed in a defined geographical area. Each dot on the map represents the place of residence of workers who are employed in the area highlighted by a blue circle.[11] The size of the dot indicates the number of workers residing at a particular geographical location. The three identified areas in this subsection are based on core urban areas (50,000 or more population) in Metropolitan Statistical Areas (MSA) as defined by the U.S. Census Bureau. An MSA is formed when the core urban area and surrounding counties show strong social and economic relationships resulting in quantifiable commuting patterns. The three MSAs in the 13-county region are Pensacola-Ferry Pass-Brent MSA (Escambia and Santa Rosa County), Crestview-Fort Walton Beach-Destin MSA (Okaloosa and Walton County), and Panama City MSA (Bay and Gulf County). The core urban areas, which signify substantial economic activities within an MSA, are highlighted by a blue circle.

The Commuting Patterns highlight the distances workers travel to work in these three core urban areas. More importantly, the maps show the interconnectedness of the region's workforce particularly along the coast via US Highway 98 and the rural areas via Interstate 10.

HOW TO INTERPRET COMMUTE MAPS

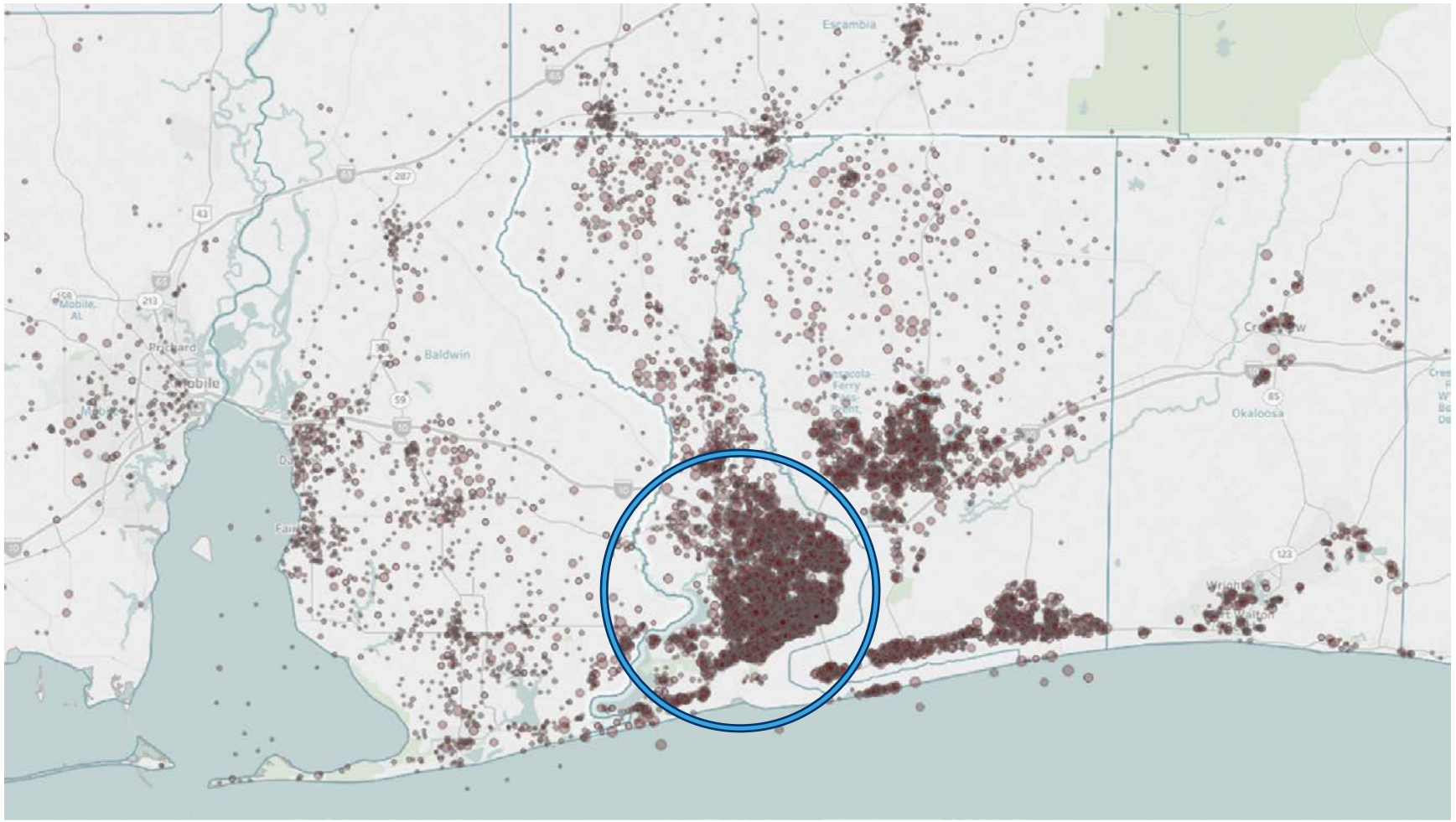
The map in Figure 34, for example, marks a core urban area with high economic activities (blue circle). In this case, the defined area represents basically the city of Pensacola. This figure answers the question: "Where do people live if they work in Pensacola?"

One can observe a significant amount of labor lives within the defined area. In addition, workers who are employed in Pensacola but live outside predominately commute from Santa Rosa County to the selected area.

Each dot on the map denotes a distance/direction relationship between place of residence and place of work and, hence, helps understand the intensity of urban and rural economic links.

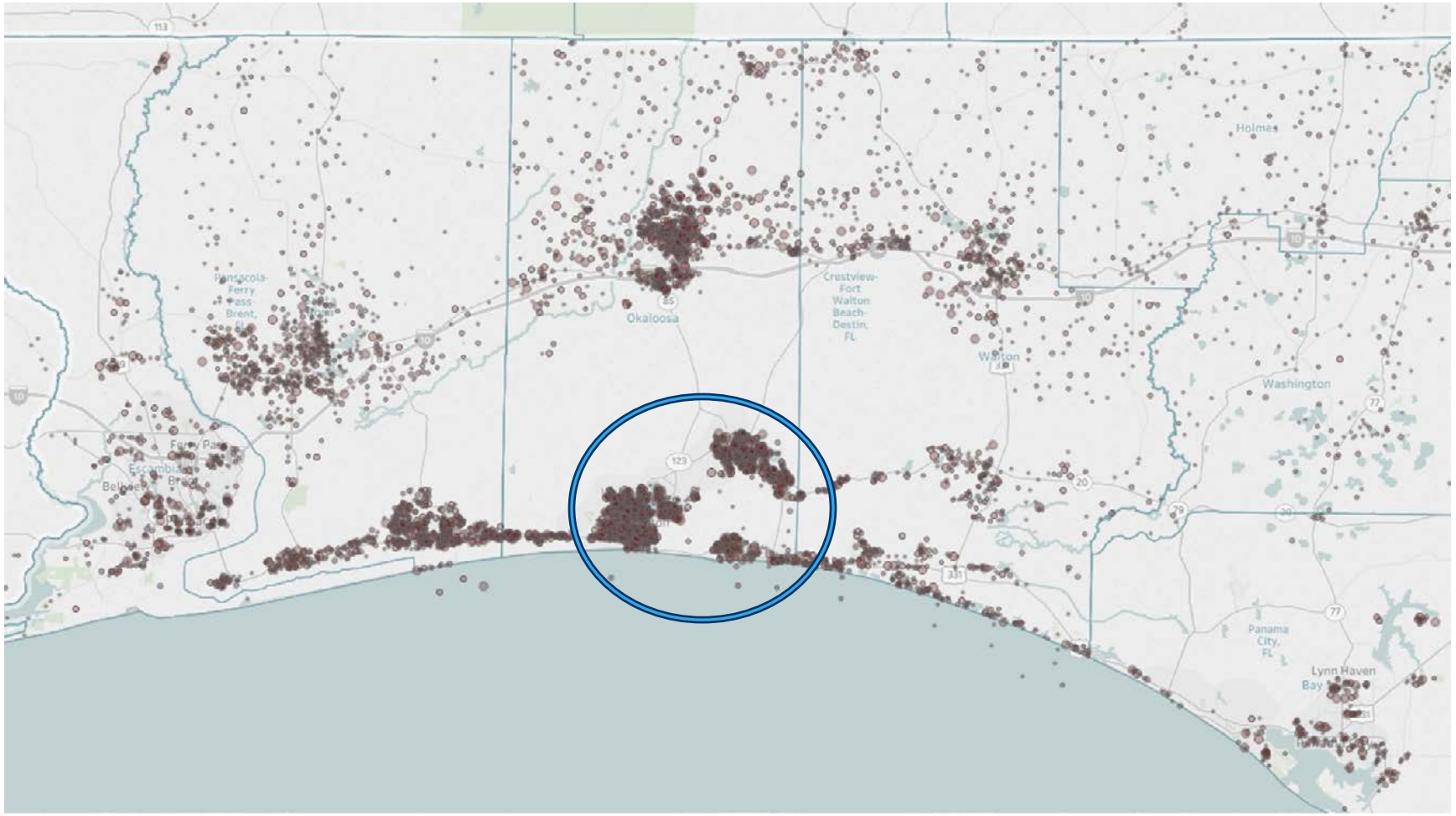
[11] The Census Bureau takes extreme care in suppressing data to preserve the confidentiality of the data. One method to preserve the confidentiality is to move the dots a random distance from the actual street address, which is why there are dots in the Gulf of Mexico.

FIGURE 34 WHERE WORKERS LIVE WHO ARE EMPLOYED IN PENSACOLA



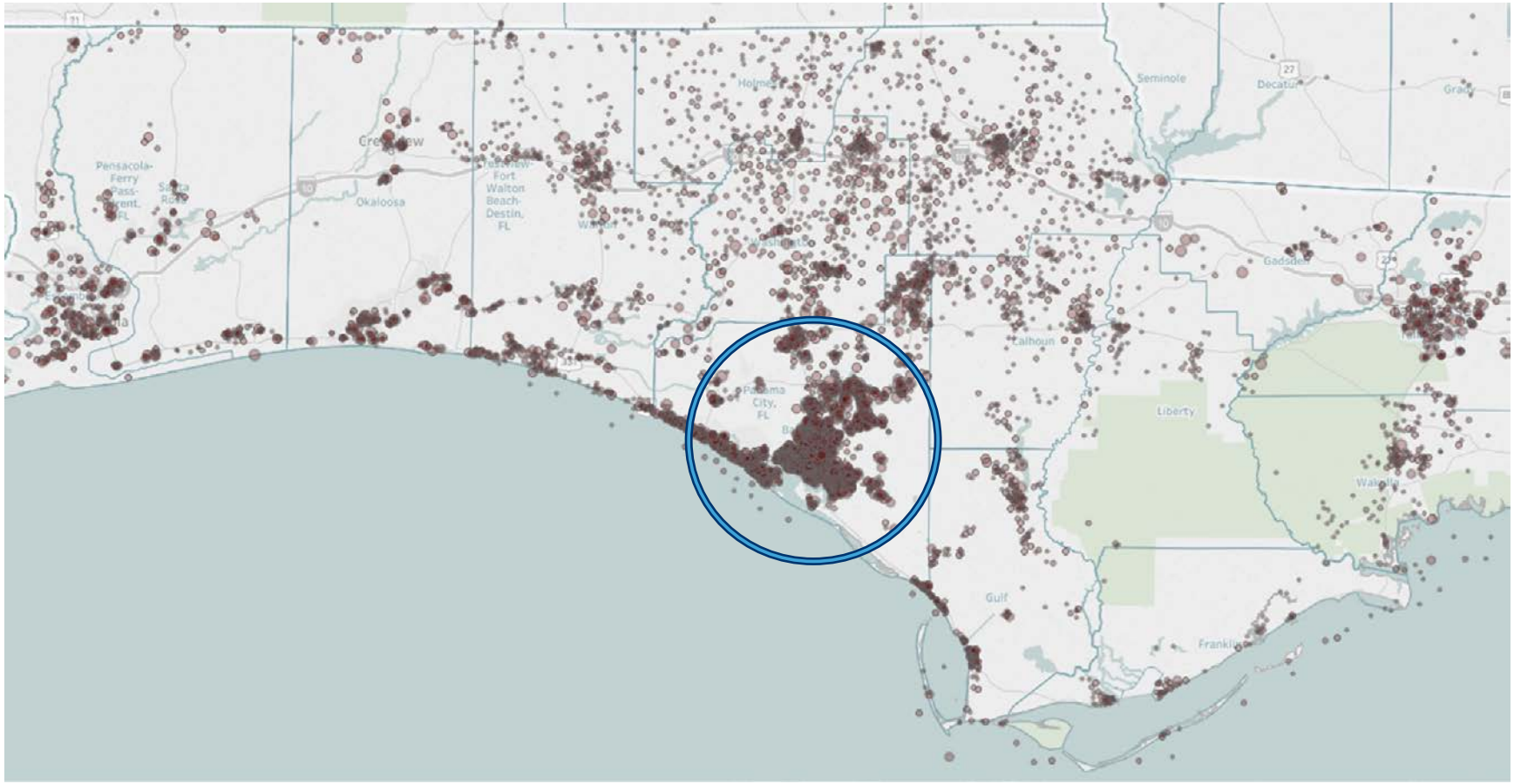
Source: U.S. Census Bureau, LEHD OnTheMap (2014)
Data visualization with Tableau Software

FIGURE 35 WHERE WORKERS LIVE WHO ARE EMPLOYED IN THE FORT WALTON BEACH / DESTIN AREA



Source: U.S. Census Bureau, LEHD OnTheMap (2014)
Data visualization with Tableau Software

FIGURE 36 WHERE WORKERS LIVE WHO ARE EMPLOYED IN PANAMA CITY



Source: U.S. Census Bureau, LEHD OnTheMap (2014)
Data visualization with Tableau Software

INDUSTRY CLUSTER ANALYSIS

13-County Region Industry Cluster Analysis

Industry Cluster Definitions

The industry cluster analysis for the 13-county region is based upon cluster definitions[12] from U.S. Cluster Mapping[13], a project supported by Harvard Business School and funded by the U.S. Economic Development Administration. U.S. Cluster Mapping identifies 51 traded and 16 local industry clusters based on 1,088 6-digit 2007 NAICS codes[14].

Cluster Overview

Between 2009 and 2015, the region's total traded cluster employment increased by 0.81% from 140,511 to 141,644 while total local cluster employment increased by 7.66% from 285,746 to 307,645. Combining traded and local clusters results in 449,288 jobs in 2015 for the 13-county region, an increase of 5.40% since 2009. Traded clusters gained the largest number of jobs in Federal Government Services, Business Services, and Hospitality and Tourism, but several clusters did not keep pace with growth in their particular industry, including Construction Products and Services and Aerospace Vehicles and Defense. Among Local Industry Clusters, Local Hospitality Establishments and Local Health Services experienced the most growth, while losses in employment occurred predominately in Local Real Estate, Construction, and Development; and in Local Utilities (highest earnings per worker among local clusters). Average total earnings per worker of

TRADED OR LOCAL CLUSTER?

Industry Cluster Analysis helps identify a region's industries that already have or are moving toward having a competitive advantage. These industries have the greatest potential to promote economic growth in the regional economy.

Traded clusters consist of a set of related industries in the region that export their goods or services to those outside the region's borders. Traded clusters are not present in every geographic region.

Local clusters include industries that are typically found in every local economy. Local clusters generally do not compete outside their region and serve the local population.

[12] Delgado, M., M.E. Porter, and S. Stern (2014), "Defining Clusters of Related Industries."

[13] U.S. Cluster Mapping (http://clustermapping.us), Institute for Strategy and Competitiveness, Harvard Business School. Copyright © 2014 President and Fellows of Harvard College. All rights reserved. Research funded in part by the U.S. Department of Commerce, Economic Development Administration.

[14] Cluster mapping methodology and traded / local cluster appendix see http://www.clustermapping.us/content/cluster-mapping-methodology

all traded industry clusters with $59,576 (72.7% of national average) is higher than the average of all local industry clusters with $41,940 (82.2% of national average).

Traded Industry Clusters in the 13-County Region

Figure 37 illustrates the 13-county region's composition in terms of traded industry clusters. For clarity, the list of 53 traded industry clusters (including federal and state government services), only includes clusters with location quotients (LQ) greater than 0.5 and at least 300 employees in the region.

Among the high performing industry clusters (positive LQ growth and LQ > 1.25) are Federal Government Services[15], which includes approx. 36,000 military occupations, Textile Manufacturing (approx. 70% of which is Ascend Performance Materials LLC in Escambia County), Water Transportation (approx. 50% of which is Eastern Shipbuilding Group in Bay County), Forestry, and Hospitality and Tourism. The Financial Services cluster[16] (approx. 60% of which is Navy Federal Credit Union in Escambia County) is marginally below the 1.25 LQ threshold, but has experienced a 29% increase in LQ between 2009 and 2015.

Among the selected traded industry clusters, only three generate total earnings (wages, salaries, benefits, and proprietor income) per worker above U.S. average: Textile Manufacturing (high performance industry quadrant), Medical Devices (emerging industry quadrant), and Paper and Packaging (transforming industry quadrant).

[15] Federal Government Services and State Government Services have been included in the bubble chart to provide context, even though they are not "Traded Clusters"

[16] The 6-digit NAICS for Navy Federal Credit Union's operations in Escambia County is listed within the local Financial Services cluster definition. However, the nature of the operations are not local in character so the Haas Center transferred these activities to the traded Financial Services cluster for purposes of this analysis.

INDUSTRY CLUSTER BUBBLE CHART EXPLAINED

Vertical Axis: Location Quotient is a measure of the relative concentration of a cluster as compared to the country. As an example, assume that nationally 1% of all jobs are in the Water Transportation cluster. If a region of 100,000 workers has 2,000 workers in Water Transportation, its LQ would be 2.0 because its concentration (2%) is twice the nation's concentration (1%). A cluster with an LQ of 1.25+ is considered specialized.

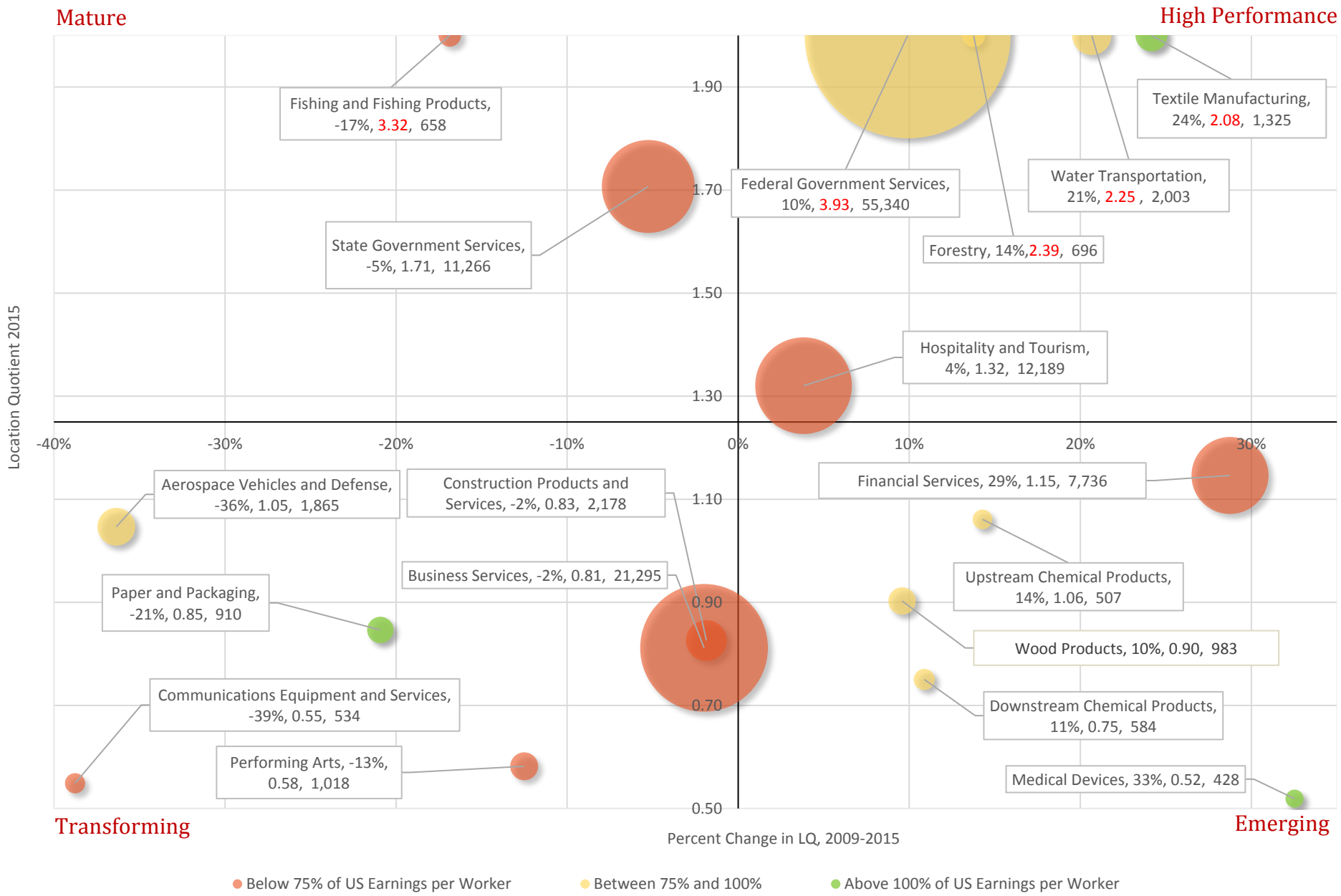
Horizontal Axis: Measures the percent change in LQ from 2009-2015 for each industry.

Bubble Size: is proportional to the number of jobs in the industry cluster; the larger the bubble, the more jobs represented

Bubble Color: Wages relative to the US average for the cluster.

Label Legend: Cluster Name; [% change in LQ from 2009-2015]; [2015 LQ]; [# of workers 2015]

FIGURE 37 TRADED INDUSTRY CLUSTERS IN THE 13-COUNTY REGION

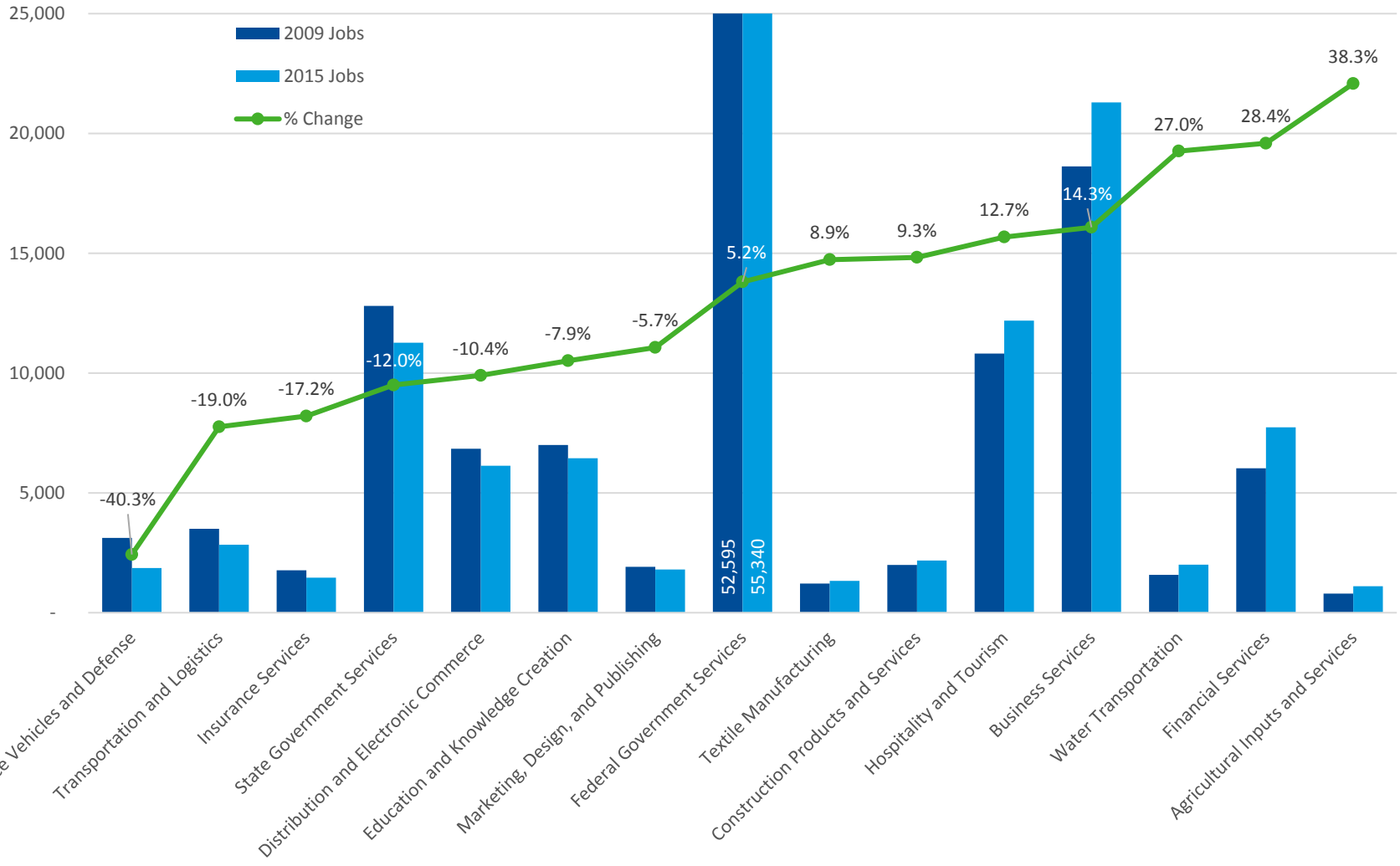


Data Source: Emsi 2016.4; QCEW, non-QCEW, Self-Employed / Cluster Definition: Delgado, M., M.E. Porter, and S. Stern (2014), "Defining Clusters of Related Industries."

Industry Cluster by Numbers

Figure 38 shows fifteen traded industry clusters with the highest employment in 2015 within the 13-county region. The chart is sorted by job growth rates between 2009 and 2015 from lowest to highest.

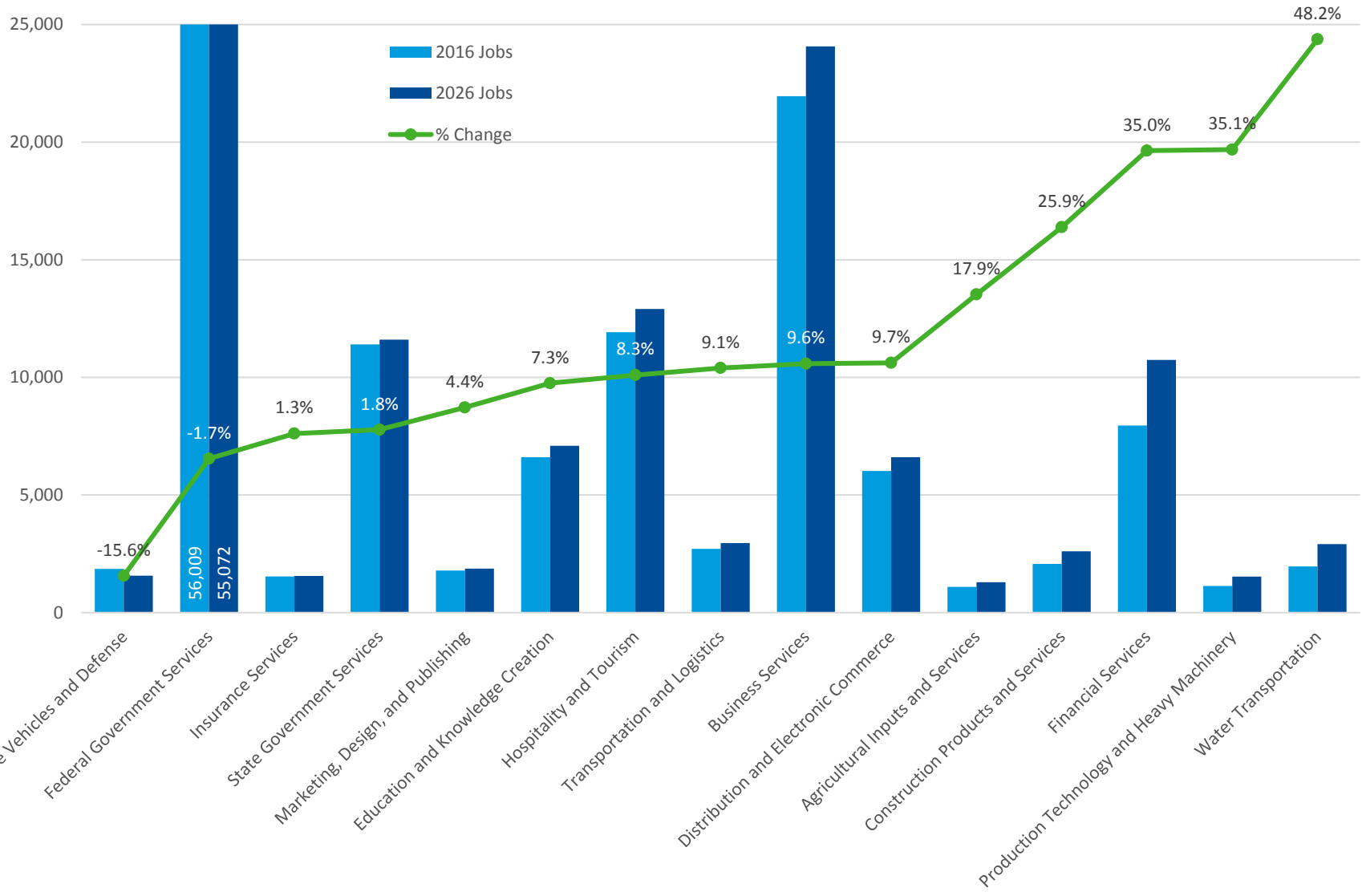
FIGURE 38 TOP 15 INDUSTRY CLUSTERS BY EMPLOYMENT



Data Source: Emsi 2016.4; QCEW, non-QCEW, Self-Employed / Cluster Definition: Delgado, M., M.E. Porter, and S. Stern (2014), "Defining Clusters of Related Industries."

Figure 39 shows a 10-year projection of fifteen traded industry clusters with the highest number of employment in 2026 within the 13-county region. The chart is sorted by job growth rates between 2016 and 2026 from lowest to highest.

FIGURE 39 TOP 15 INDUSTRY CLUSTERS BY EMPLOYMENT (PROJECTION 2016-2026)



Data Source: Emsi 2016.4; QCEW, non-QCEW, Self-Employed / Cluster Definition: Delgado, M., M.E. Porter, and S. Stern (2014), "Defining Clusters of Related Industries."

Shift-Share Analysis

A shift-share analysis (see info box for explanation) allows the identification of regional clusters that have experienced employment growth exceeding the national job growth as well as the job growth of the particular industry. The value next to each stacked bar indicates the total employment change between 2009 and 2015 which is the sum of the national growth effect, the industry mix effect and regional competitiveness effect.

Since national employment growth increased between 2009 and 2015, this component of shift-share is positive for every industry cluster (green bar). Industry clusters that had higher job growth rates than the national employment growth rate are on the positive side of the chart (i.e. the dark blue bar is to the right of the zero axis, like Business Services) and on the negative side if the industry did not keep pace with national job growth (i.e. the dark blue bar is left of the zero axis, like for Textile Manufacturing. The competitiveness effect, which presents the main focus of this analysis, is positive when a regional industry cluster grew more than the equivalent national industry cluster. It is important to note that shift-share analysis is able to filter out the competitive component of an industry but fails to identify the cause of the effect.

Figure 40 presents traded industry clusters that show the highest share of employment in the 13-county region. Figures 41 and 42 display those traded industry clusters[17] that experienced the largest employment gains and losses in terms of competitiveness effects within the 13-county region.

Business Services is the largest traded industry cluster in terms of employment and added the most jobs over the period (2,670; 14.3% growth), but did not match the

[17] Federal and State Government Services are not included in this analysis in order to focus on the private sector.

SHIFT-SHARE ANALYSIS EXPLAINED

A shift-share analysis of the Business Services cluster is presented in Figure 40. The value on the end of the bar chart, 2,670, indicates the increase in jobs from 2009-15.

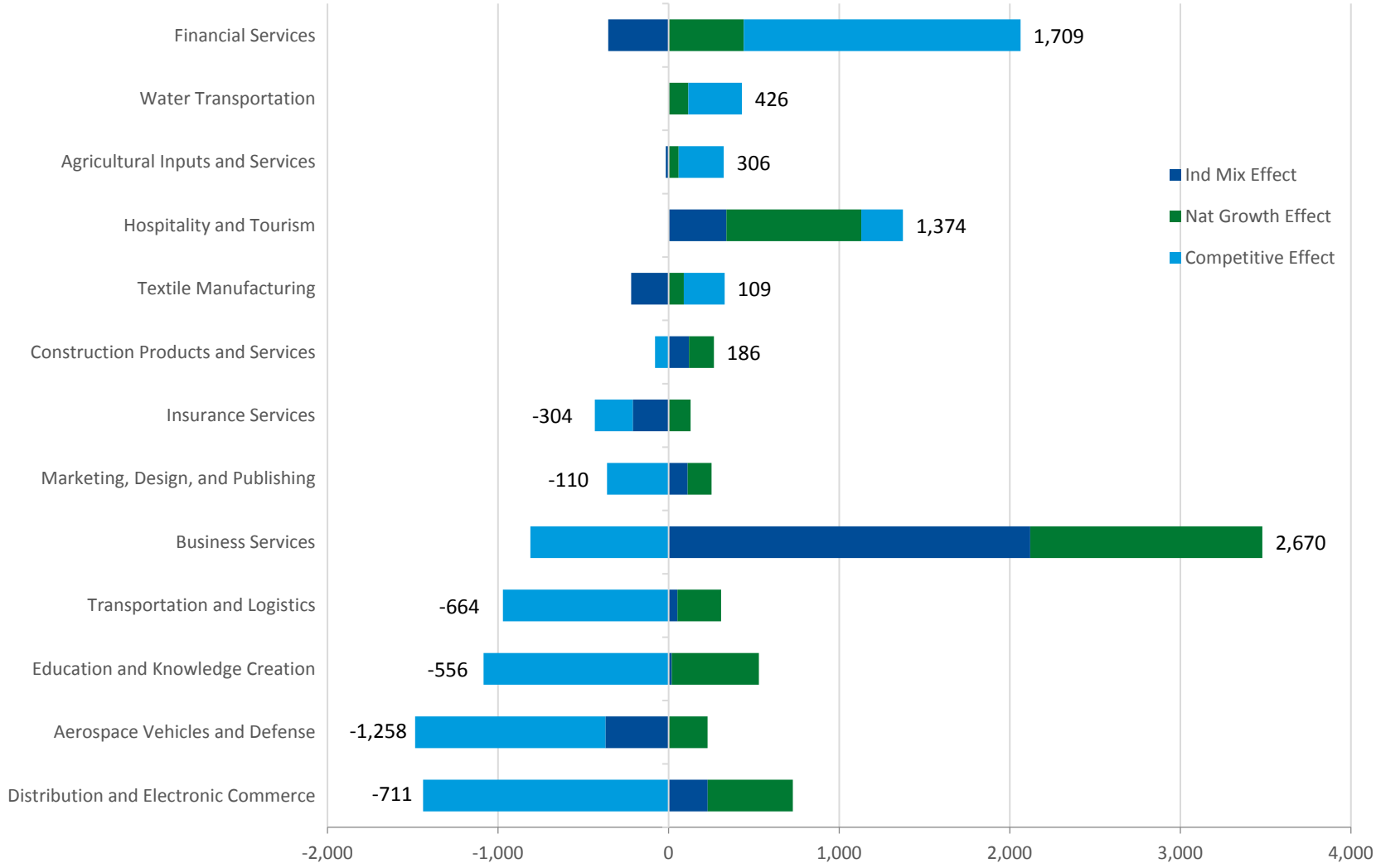
During this period, total employment in all traded clusters in the nation grew an average of 7.3%. This is the **National Effect** (green).

Total employment in the Business Services cluster nationally grew an additional 11.4%. This is the **Industry Cluster Effect** (dark blue).

If the region's Business Services cluster matched these growth rates, the cluster would have grown by 3,481 jobs (18.7%). However, the cluster only grew by 2,670 jobs, which is 811 fewer jobs than the combined national and industry growth. This difference is the **Regional Competitive Effect** (Light Blue).

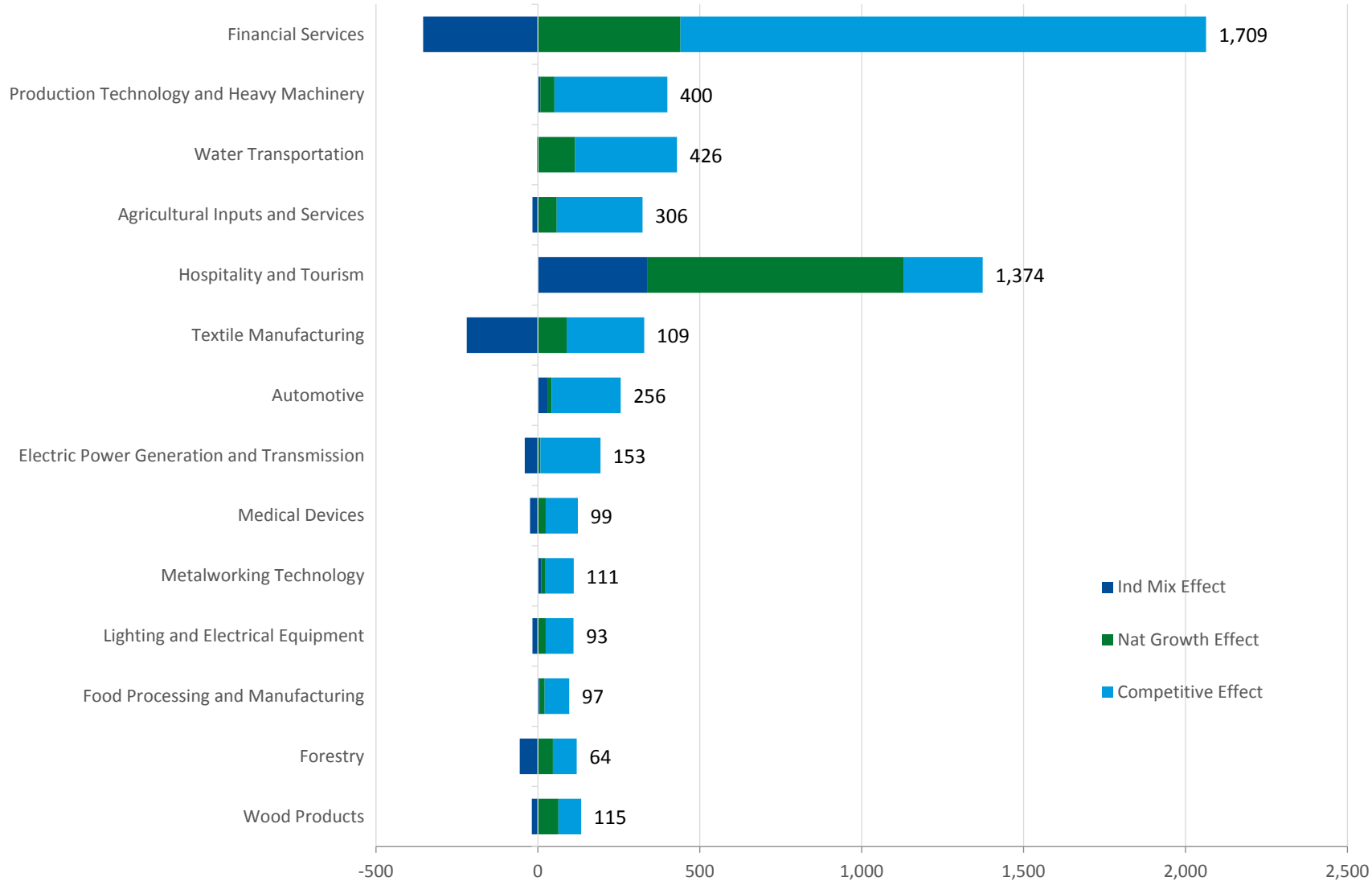
cluster's national growth rate of 18.7%. Financial Services added the second most jobs among the region's traded clusters (1,709; 28.4%) which dramatically outperformed the cluster's national growth rate of 1.4%.

FIGURE 40 INDUSTRY CLUSTER COMPETITIVENESS (SORTED BY COMPETITIVE EFFECT)



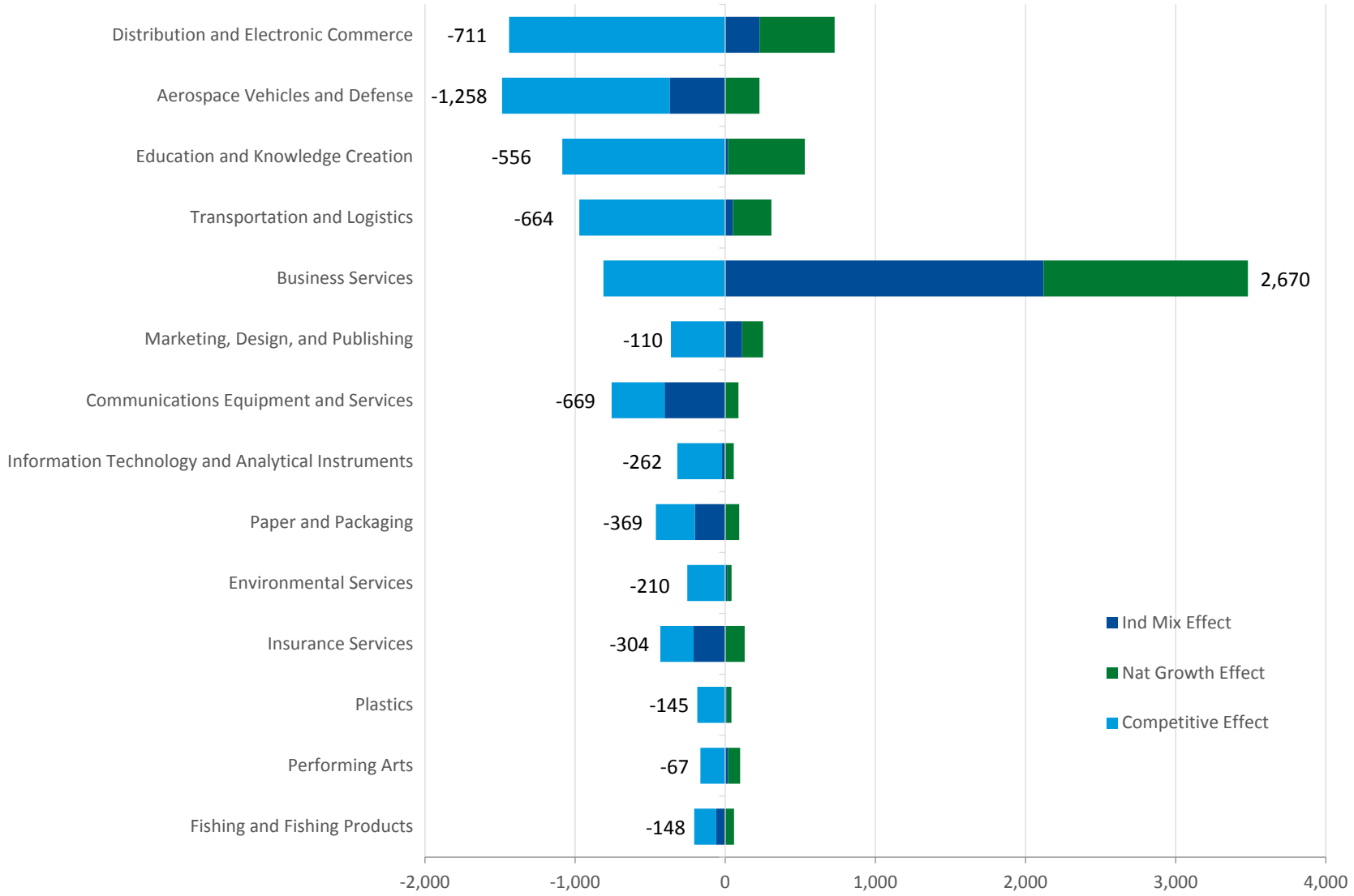
Data Source: Emsi 2016.4; QCEW, non-QCEW, Self-Employed / Cluster Definition: Delgado, M., M.E. Porter, and S. Stern (2014), "Defining Clusters of Related Industries."

FIGURE 41 INDUSTRY CLUSTER COMPETITIVENESS (INDUSTRY CLUSTERS WITH LARGEST GAINS IN COMPETITIVENESS 2009-2015)



Data Source: Emsi 2016.4; QCEW, non-QCEW, Self-Employed / Cluster Definition: Delgado, M., M.E. Porter, and S. Stern (2014), "Defining Clusters of Related Industries."

FIGURE 42 INDUSTRY CLUSTER COMPETITIVENESS (INDUSTRY CLUSTERS WITH LARGEST LOSSES IN COMPETITIVENESS 2009 2015)

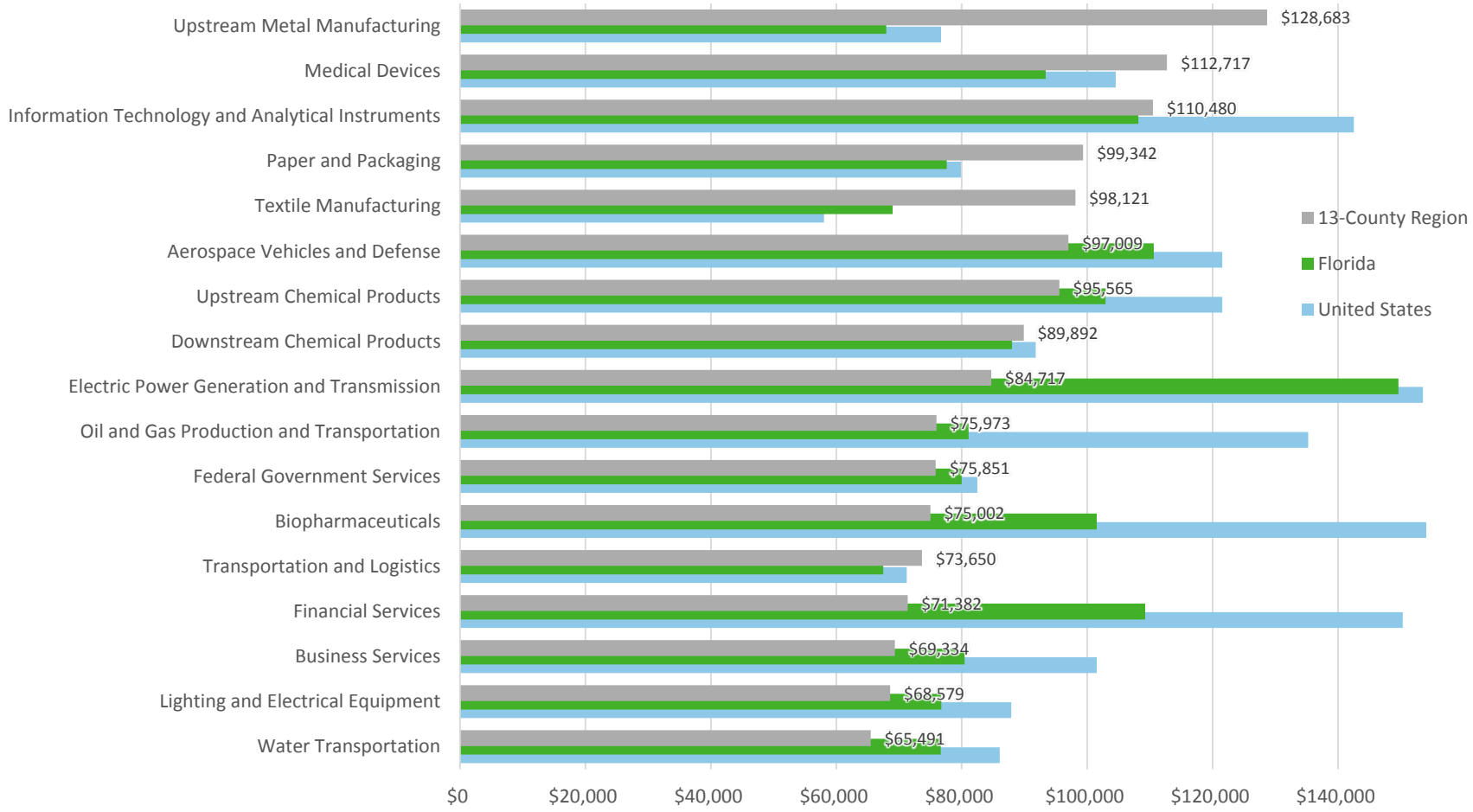


Data Source: Emsi 2016.4; QCEW, non-QCEW, Self-Employed / Cluster Definition: Delgado, M., M.E. Porter, and S. Stern (2014), "Defining Clusters of Related Industries."

Earnings Comparison

This section compares regional total earnings per workers to state, and national earnings. Figure 43 lists traded industry clusters that generate the highest earnings within the 13-county region. Only a few regional industry clusters – Upstream Metal Manufacturing, Medical Devices, Paper and Packaging, Textile Manufacturing, and Transportation and Logistics – outperform U.S. earnings per worker. Specifically Textile Manufacturing shows the highest ratio between regional and national earnings (1.691) in addition to an increase in LQ (2.08) and a positive change in LQ between 2009 and 2015.

FIGURE 43: EARNINGS PER WORKER (13-COUNTY REGION, FLORIDA, AND UNITED STATES)



Data Source: Emsi 2016.4; QCEW, non-QCEW, Self-Employed / Cluster Definition: Delgado, M., M.E. Porter, and S. Stern (2014), "Defining Clusters of Related Industries."

Staffing Patterns

Staffing Patterns identify the specific occupations that comprise an industry or cluster of industries. Tables 16-21 present the top ten occupations for selected Traded Industry Clusters for the combined 13-county region. The blue bars indicate the magnitude of an occupation relative to total jobs within the industry cluster.

The Medical Devices industry cluster experienced the highest LQ growth from 2009 to 2015 (Figure 38).

TABLE 16 MEDICAL DEVICES INDUSTRY CLUSTER

SOC	Occupation	Employed in Industry (2009)	Employed in Industry (2015)	Change (2009 - 2015)	% Change (2009 - 2015)	% of Total Jobs in Industry Group	Median Hourly Earnings	Typical Entry Level Education
51-9081	Dental Laboratory Technicians	104	141	37	36%	33.0%	$16.59	High school diploma or equivalent
51-2092	Team Assemblers	36	48	12	33%	11.0%	$14.22	High school diploma or equivalent
51-9083	Ophthalmic Laboratory Technicians	10	13	3	30%	3.0%	$13.83	High school diploma or equivalent
43-4051	Customer Service Representatives	<10	13	3	30%	2.9%	$11.87	High school diploma or equivalent
51-1011	First-Line Supervisors of Production and Operating Workers	<10	11	2	22%	2.6%	$24.21	High school diploma or equivalent
17-2112	Industrial Engineers	<10	10	2	25%	2.4%	$31.93	Bachelor's degree
51-9199	Production Workers, All Other	<10	<10	0	0%	0.8%	$15.30	High school diploma or equivalent
43-4151	Order Clerks	<10	<10	0	0%	0.1%	$13.94	High school diploma or equivalent
51-9198	Helpers--Production Workers	<10	<10	1	50%	0.6%	$11.73	No formal educational credential
19-1042	Medical Scientists, Except Epidemiologists	0	<10	0	0%	0.1%	$36.32	Doctoral or professional degree

Source: Emsi, 2016.4, QCEW Employees, Non-QCEW Employees, and Self-Employed

The Aerospace Vehicles and Defense industry cluster shows significant losses in terms of LQ and employment from 2009 to 2015 (Figure 37). The listed occupations are predominately located in Okaloosa County.

TABLE 17 AEROSPACE VEHICLES AND DEFENSE INDUSTRY CLUSTER

SOC	Occupation	Employed in Industry (2009)	Employed in Industry (2015)	Change (2009 - 2015)	% Change (2009 - 2015)	% of Total Jobs in Industry Group	Median Hourly Earnings	Typical Entry Level Education
51-2011	Aircraft Structure, Surfaces, Rigging, and Systems Assemblers	261	170	-91	-35%	8.7%	$21.78	High school diploma or equivalent
49-3011	Aircraft Mechanics and Service Technicians	216	153	-63	-29%	7.7%	$27.19	Postsecondary nondegree award
17-2112	Industrial Engineers	141	92	-49	-35%	4.9%	$31.93	Bachelor's degree
51-2092	Team Assemblers	99	66	-33	-33%	3.6%	$14.22	High school diploma or equivalent
17-2011	Aerospace Engineers	107	55	-52	-49%	2.9%	$42.55	Bachelor's degree
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	94	50	-44	-47%	2.7%	$18.94	High school diploma or equivalent
13-1081	Logisticians	74	49	-25	-34%	2.5%	$37.03	Bachelor's degree
51-2022	Electrical and Electronic Equipment Assemblers	83	46	-37	-45%	2.8%	$16.15	High school diploma or equivalent
13-1023	Purchasing Agents, Except Wholesale, Retail, and Farm Products	71	43	-28	-39%	2.3%	$32.13	Bachelor's degree
15-1133	Software Developers, Systems Software	78	43	-35	-45%	2.3%	$48.40	Bachelor's degree

Source: Emsi, 2016.4, QCEW Employees, Non-QCEW Employees, and Self-Employed

Jobs within the Downstream Chemical Products industry cluster are mainly located in Wakulla County (St. Marks Powder, Inc). This LQ of this industry cluster grew by 11% from 2009 and 2015 (Figure 37).

TABLE 18 DOWNSTREAM CHEMICAL PRODUCTS INDUSTRY CLUSTER

SOC	Occupation	Employed in Industry (2009)	Employed in Industry (2015)	Change (2009 - 2015)	% Change (2009 - 2015)	% of Total Jobs in Industry Group	Median Hourly Earnings	Typical Entry Level Education
51-9023	Mixing and Blending Machine Setters, Operators, and Tenders	93	107	14	15%	18.0%	$15.65	High school diploma or equivalent
51-1011	First-Line Supervisors of Production and Operating Workers	24	29	5	21%	4.9%	$24.21	High school diploma or equivalent
51-9011	Chemical Equipment Operators and Tenders	25	27	2	8%	4.8%	$20.87	High school diploma or equivalent
51-2092	Team Assemblers	20	24	4	20%	4.3%	$14.22	High school diploma or equivalent
41-4012	Sales Representatives, Wholesale and Manufacturing	19	22	3	16%	3.7%	$21.10	High school diploma or equivalent
51-9111	Packaging and Filling Machine Operators and Tenders	17	18	1	6%	3.1%	$12.14	High school diploma or equivalent
43-5071	Shipping, Receiving, and Traffic Clerks	14	15	1	7%	2.6%	$13.95	High school diploma or equivalent
19-2031	Chemists	13	15	2	15%	2.5%	$32.22	Bachelor's degree
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	13	14	1	8%	2.5%	$18.94	High school diploma or equivalent
51-9199	Production Workers, All Other	13	14	1	8%	2.3%	$15.30	High school diploma or equivalent

Source: Emsi, 2016.4, QCEW Employees, Non-QCEW Employees, and Self-Employed

The positive growth rate in LQ and number of jobs is attributable to Navy Federal Credit Union's expansion in Pensacola, Escambia County, which locates most of the industry jobs within the 13-county region.

TABLE 19 FINANCIAL SERVICES INDUSTRY CLUSTER

SOC	Occupation	Employed in Industry (2009)	Employed in Industry (2015)	Change (2009 - 2015)	% Change (2009 - 2015)	% of Total Jobs in Industry Group	Median Hourly Earnings	Typical Entry Level Education
43-3071	Tellers	1,065	1,369	304	29%	17.8%	$13.13	High school diploma or equivalent
43-4051	Customer Service Representatives	704	1,242	538	76%	16.1%	$11.87	High school diploma or equivalent
43-1011	First-Line Supervisors of Office and Administrative Support Workers	412	674	262	64%	8.8%	$21.06	High school diploma or equivalent
13-2072	Loan Officers	490	445	-45	-9%	5.8%	$28.67	Bachelor's degree
43-4131	Loan Interviewers and Clerks	424	442	18	4%	5.8%	$17.75	High school diploma or equivalent
41-3031	Securities, Commodities, and Financial Services Sales Agents	329	296	-33	-10%	3.8%	$30.32	Bachelor's degree
43-3031	Bookkeeping, Accounting, and Auditing Clerks	146	218	72	49%	2.8%	$15.55	Some college, no degree
43-6014	Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	134	195	61	46%	2.5%	$14.05	High school diploma or equivalent
13-2052	Personal Financial Advisors	172	174	2	1%	2.2%	$45.18	Bachelor's degree
11-3031	Financial Managers	149	167	18	12%	2.2%	$48.78	Bachelor's degree

Source: Emsi, 2016.4, QCEW Employees, Non-QCEW Employees, and Self-Employed

The Eastern Shipbuilding Group in Panama City, Bay County, employs most of the listed jobs within the 13-county region. A high LQ and double-digit growth rates in LQ illustrate the competitive strength of this industry cluster.

TABLE 20 WATER TRANSPORTATION INDUSTRY CLUSTER

SOC	Occupation	Employed in Industry (2009)	Employed in Industry (2015)	Change (2009 - 2015)	% Change (2009 - 2015)	% of Total Jobs in Industry Group	Median Hourly Earnings	Typical Entry Level Education
51-4121	Welders, Cutters, Solderers, and Brazers	164	213	49	30%	10.6%	$16.12	High school diploma or equivalent
51-2092	Team Assemblers	108	145	37	34%	7.2%	$14.22	High school diploma or equivalent
51-2091	Fiberglass Laminators and Fabricators	100	141	41	41%	7.0%	$14.26	High school diploma or equivalent
53-7062	Laborers and Freight, Stock, and Material Movers, Hand	75	87	12	16%	4.4%	$10.60	No formal educational credential
51-1011	First-Line Supervisors of Production and Operating Workers	58	75	17	29%	3.7%	$24.21	High school diploma or equivalent
47-2152	Plumbers, Pipefitters, and Steamfitters	54	69	15	28%	3.4%	$15.56	High school diploma or equivalent
51-2041	Structural Metal Fabricators and Fitters	45	60	15	33%	3.0%	$17.48	High school diploma or equivalent
47-2111	Electricians	44	55	11	25%	2.7%	$19.89	High school diploma or equivalent
17-2141	Mechanical Engineers	40	54	14	35%	2.7%	$45.57	Bachelor's degree
53-5021	Captains, Mates, and Pilots of Water Vessels	34	46	12	35%	2.4%	$29.47	Postsecondary nondegree award

Source: Emsi, 2016.4, QCEW Employees, Non-QCEW Employees, and Self-Employed

The Textile Manufacturing industry cluster is one of three clusters that generates higher average earnings per worker relative to national numbers. In addition, the cluster shows a high LQ in conjunction with strong LQ growth rates from 2009 to 2015. Most jobs are employed by Ascend Performance Materials in Cantonment, Escambia County.

TABLE 21 TEXTILE MANUFACTURING INDUSTRY CLUSTER

SOC	Occupation	Employed in Industry (2009)	Employed in Industry (2015)	Change (2009 - 2015)	% Change (2009 - 2015)	% of Total Jobs in Industry Group	Median Hourly Earnings	Typical Entry Level Education
51-9011	Chemical Equipment Operators and Tenders	72	95	23	32%	7.2%	$20.87	High school diploma or equivalent
51-8091	Chemical Plant and System Operators	64	87	23	36%	6.5%	$27.84	High school diploma or equivalent
51-1011	First-Line Supervisors of Production and Operating Workers	63	72	9	14%	5.4%	$24.21	High school diploma or equivalent
51-6031	Sewing Machine Operators	69	52	-17	-25%	4.0%	$10.99	No formal educational credential
51-6091	Extruding and Forming Machine Setters, Operators, and Tenders	44	50	6	14%	3.8%	$21.36	High school diploma or equivalent
49-9071	Maintenance and Repair Workers, General	40	46	6	15%	3.5%	$14.81	High school diploma or equivalent
49-9041	Industrial Machinery Mechanics	36	44	8	22%	3.3%	$22.25	High school diploma or equivalent
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	34	32	-2	-6%	2.5%	$18.94	High school diploma or equivalent
51-2092	Team Assemblers	26	33	7	27%	2.5%	$14.22	High school diploma or equivalent
51-9023	Mixing and Blending Machine Setters, Operators, and Tenders	23	29	6	26%	2.2%	$15.65	High school diploma or equivalent

Source: Emsi, 2016.4, QCEW Employees, Non-QCEW Employees, and Self-Employed

Traded and Local Industry Clusters by Numbers

This section presents tables with more specific data for each of the 53 traded clusters and 17 local clusters within the 13-County Region. These tables are organized as follows:

Tables 22 - 25

- Employment growth, shift-share analysis, location quotient, earnings ratio, and number of establishments for 53 traded industry clusters in the 13-county region (2009-2015).

Tables 26 - 29

- Employment growth, shift-share analysis, location quotient, earnings ratio, and number of establishments for 17 local industry clusters in the 13-county region (2009-2015).

TABLE 22 TRADED INDUSTRY CLUSTER (JOB GROWTH)

Industry Cluster	2009 Jobs	2015 Jobs	Share of Total Employment	% Change	Change
Automotive	153	409	0.3%	167%	256
Electric Power Generation and Transmission	109	262	0.2%	140%	153
Trailers, Motor Homes, and Appliances	47	110	0.1%	133%	63
Metalworking Technology	143	254	0.2%	77%	111
Production Technology and Heavy Machinery	602	1,002	0.7%	66%	400
Recreational and Small Electric Goods	102	160	0.1%	57%	58
Food Processing and Manufacturing	215	311	0.2%	45%	97
Agricultural Inputs and Services	799	1,105	0.8%	38%	306
Medical Devices	329	428	0.3%	30%	99
Lighting and Electrical Equipment	332	425	0.3%	28%	93
Water Transportation	1,577	2,003	1.4%	27%	426
Video Production and Distribution	70	85	0.1%	22%	16
Coal Mining	2	2	0.0%	22%	0
Upstream Metal Manufacturing	157	190	0.1%	21%	33
Nonmetal Mining	171	204	0.1%	19%	32
Business Services	18,625	21,295	15.0%	14%	2,670
Upstream Chemical Products	447	507	0.4%	13%	60
Wood Products	868	983	0.7%	13%	115
Hospitality and Tourism	10,815	12,189	8.6%	13%	1,374
Downstream Chemical Products	519	584	0.4%	13%	65
Furniture	266	299	0.2%	12%	33
Forestry	632	696	0.5%	10%	64
Construction Products and Services	1,993	2,178	1.5%	9%	186
Textile Manufacturing	1,217	1,325	0.9%	9%	109
Federal Government Services	52,595	55,340	39.1%	5%	2,745
Oil and Gas Production and Transportation	160	162	0.1%	1%	2
Metal Mining	0	10	0.0%	0%	10
Tobacco	0	3	0.0%	0%	3
Footwear	0	0	0.0%	0%	0
Marketing, Design, and Publishing	1,914	1,804	1.3%	-6%	-110
Performing Arts	1,085	1,018	0.7%	-6%	-67
Livestock Processing	99	91	0.1%	-8%	-8
Education and Knowledge Creation	6,998	6,442	4.5%	-8%	-556

Industry Cluster	2009 Jobs	2015 Jobs	Share of Total Employment	% Change	Change
Distribution and Electronic Commerce	6,842	6,131	4.3%	-10%	-711
State Government Services	12,803	11,266	8.0%	-12%	-1,537
Leather and Related Products	56	48	0.0%	-15%	-8
Insurance Services	1,766	1,463	1.0%	-17%	-304
Downstream Metal Products	651	536	0.4%	-18%	-116
Fishing and Fishing Products	806	658	0.5%	-18%	-148
Transportation and Logistics	3,502	2,838	2.0%	-19%	-664
Paper and Packaging	1,279	910	0.6%	-29%	-369
Financial Services	2,837	1,910	1.3%	-33%	-927
Printing Services	575	387	0.3%	-33%	-189
Plastics	438	294	0.2%	-33%	-145
Information Technology and Analytical Instruments	777	515	0.4%	-34%	-262
Biopharmaceuticals	102	65	0.0%	-36%	-37
Jewelry and Precious Metals	9	5	0.0%	-40%	-3
Apparel	163	98	0.1%	-40%	-65
Aerospace Vehicles and Defense	3,123	1,865	1.3%	-40%	-1,258
Environmental Services	415	205	0.1%	-51%	-210
Music and Sound Recording	28	13	0.0%	-53%	-15
Communications Equipment and Services	1,202	534	0.4%	-56%	-669
Vulcanized and Fired Materials	95	28	0.0%	-71%	-67
Total	140,511	141,644	100%	0.81%	1,133

Source: Emsi, 2016.4, QCEW Employees, Non-QCEW Employees, and Self-Employed
Cluster Definition: Delgado, M., M.E. Porter, and S. Stern (2014), "Defining Clusters of Related Industries."

TABLE 23 TRADED INDUSTRY CLUSTER (SHIFT-SHARE ANALYSIS)

Industry Cluster	Change	Industry Mix Effect	National Growth Effect	Competitive Effect
Federal Government Services	2,745	-5,212	3,842	4,115
Production Technology and Heavy Machinery	400	7	44	348
Water Transportation	426	-3	115	314
Agricultural Inputs and Services	306	-17	58	265
Hospitality and Tourism	1,374	339	790	245
Textile Manufacturing	109	-220	89	239
Automotive	256	31	11	213
Electric Power Generation and Transmission	153	-41	8	185
Medical Devices	99	-24	24	99
Metalworking Technology	111	11	10	89
Lighting and Electrical Equipment	93	-17	24	86
Food Processing and Manufacturing	97	5	16	76
Forestry	64	-56	46	74
Wood Products	115	-19	63	70
Recreational and Small Electric Goods	58	-10	7	61
Upstream Chemical Products	60	-28	33	56
Downstream Chemical Products	65	-21	38	48
Trailers, Motor Homes, and Appliances	63	15	3	45
Furniture	33	-23	19	37
Nonmetal Mining	32	-10	13	30
Upstream Metal Manufacturing	33	0	11	21
Metal Mining	10	0	0	9
Video Production and Distribution	16	7	5	3
Tobacco	3	0	0	3
Coal Mining	0	0	0	1
Footwear	0	0	0	1
Jewelry and Precious Metals	-3	-1	1	-3
Livestock Processing	-8	-9	7	-6
Leather and Related Products	-8	-6	4	-7
Music and Sound Recording	-15	-3	2	-13
Oil and Gas Production and Transportation	2	22	12	-32
Biopharmaceuticals	-37	-9	7	-36
Apparel	-65	-31	12	-46

Industry Cluster	Change	Industry Mix Effect	National Growth Effect	Competitive Effect
Vulcanized and Fired Materials	-67	-2	7	-72
Construction Products and Services	186	120	146	-80
Printing Services	-189	-125	42	-106
Downstream Metal Products	-116	-33	48	-130
Fishing and Fishing Products	-148	-60	59	-147
Performing Arts	-67	20	79	-166
Plastics	-145	10	32	-186
Insurance Services	-304	-210	129	-222
Environmental Services	-210	12	30	-252
Paper and Packaging	-369	-201	93	-261
Information Technology and Analytical Instruments	-262	-21	57	-298
Communications Equipment and Services	-669	-404	88	-353
Marketing, Design, and Publishing	-110	112	140	-362
Business Services	2,670	2,120	1,361	-811
State Government Services	-1,537	-1,641	935	-831
Financial Services	-927	-186	207	-948
Transportation and Logistics	-664	51	256	-972
Education and Knowledge Creation	-556	18	511	-1,085
Aerospace Vehicles and Defense	-1,258	-371	228	-1,116
Distribution and Electronic Commerce	-711	229	500	-1,439
	1,133	-5,884	10,266	-3,248

Source: Emsi, 2016.4, QCEW Employees, Non-QCEW Employees, and Self-Employed
Cluster Definition: Delgado, M., M.E. Porter, and S. Stern (2014), "Defining Clusters of Related Industries."

TABLE 24 TRADED INDUSTRY CLUSTER (LOCATION QUOTIENTS)

Industry Cluster	2009 LQ	2015 LQ	Percent Change LQ
Federal Government Services	3.58	3.93	10%
Fishing and Fishing Products	3.99	3.32	-17%
Forestry	2.10	2.39	14%
Water Transportation	1.87	2.25	21%
Textile Manufacturing	1.68	2.08	24%
State Government Services	1.80	1.71	-5%
Hospitality and Tourism	1.27	1.32	4%
Upstream Chemical Products	0.93	1.06	14%
Aerospace Vehicles and Defense	1.64	1.05	-36%
Wood Products	0.82	0.90	10%
Paper and Packaging	1.07	0.85	-21%
Construction Products and Services	0.84	0.83	-2%
Business Services	0.83	0.81	-2%
Downstream Chemical Products	0.68	0.75	11%
Nonmetal Mining	0.62	0.74	19%
Environmental Services	1.34	0.61	-54%
Performing Arts	0.67	0.58	-13%
Communications Equipment and Services	0.90	0.55	-39%
Medical Devices	0.39	0.52	33%
Electric Power Generation and Transmission	0.14	0.49	248%
Transportation and Logistics	0.63	0.48	-24%
Lighting and Electrical Equipment	0.37	0.47	27%
Leather and Related Products	0.49	0.44	-11%
Downstream Metal Products	0.52	0.42	-18%
Marketing, Design, and Publishing	0.44	0.38	-15%
Insurance Services	0.42	0.37	-12%
Distribution and Electronic Commerce	0.45	0.37	-18%
Production Technology and Heavy Machinery	0.23	0.36	56%
Education and Knowledge Creation	0.39	0.34	-13%
Financial Services	0.47	0.32	-32%
Recreational and Small Electric Goods	0.18	0.29	64%
Printing Services	0.35	0.28	-20%
Furniture	0.23	0.26	16%

Industry Cluster	2009 LQ	2015 LQ	Percent Change LQ
Trailers, Motor Homes, and Appliances	0.15	0.26	71%
Agricultural Inputs and Services	0.16	0.21	34%
Apparel	0.28	0.20	-31%
Metalworking Technology	0.11	0.18	57%
Music and Sound Recording	0.34	0.17	-49%
Plastics	0.26	0.16	-38%
Upstream Metal Manufacturing	0.14	0.16	14%
Information Technology and Analytical Instruments	0.23	0.15	-36%
Automotive	0.07	0.14	112%
Food Processing and Manufacturing	0.08	0.10	34%
Video Production and Distribution	0.09	0.09	6%
Biopharmaceuticals	0.12	0.08	-34%
Oil and Gas Production and Transportation	0.09	0.07	-15%
Metal Mining	0.00	0.07	0%
Tobacco	0.00	0.07	0%
Livestock Processing	0.07	0.06	-5%
Jewelry and Precious Metals	0.08	0.06	-33%
Vulcanized and Fired Materials	0.13	0.04	-71%
Footwear	0.00	0.01	0%
Coal Mining	0.01	0.01	56%
	0.65	0.64	

Source: Emsi, 2016.4, QCEW Employees, Non-QCEW Employees, and Self-Employed
Cluster Definition: Delgado, M., M.E. Porter, and S. Stern (2014), "Defining Clusters of Related Industries."

TABLE 25 TRADED INDUSTRY CLUSTER (EARNINGS AND ESTABLISHMENTS)

Industry Cluster	Earnings per Worker 13CR	Earnings per Worker US	Ratio	Establishments
Textile Manufacturing	$98,121	$58,038	1.691	19
Upstream Metal Manufacturing	$128,683	$76,712	1.677	12
Paper and Packaging	$99,342	$79,891	1.243	8
Medical Devices	$112,717	$104,540	1.078	17
Footwear	$58,344	$54,364	1.073	0
Furniture	$52,353	$49,397	1.060	49
Transportation and Logistics	$73,650	$71,223	1.034	186
Wood Products	$50,799	$50,957	0.997	37
Forestry	$48,534	$49,331	0.984	92
Downstream Chemical Products	$89,892	$91,806	0.979	13
Metalworking Technology	$62,379	$66,409	0.939	22
Federal Government Services	$75,851	$82,483	0.920	271
Leather and Related Products	$45,617	$50,171	0.909	8
Education and Knowledge Creation	$56,618	$66,136	0.856	169
Agricultural Inputs and Services	$28,140	$34,323	0.820	118
Aerospace Vehicles and Defense	$97,009	$121,539	0.798	33
Plastics	$52,815	$66,597	0.793	25
Environmental Services	$55,910	$70,514	0.793	31
Upstream Chemical Products	$95,565	$121,550	0.786	9
Lighting and Electrical Equipment	$68,579	$87,894	0.780	17
Information Technology and Analytical Instruments	$110,480	$142,518	0.775	35
Water Transportation	$65,491	$86,058	0.761	65
Distribution and Electronic Commerce	$62,355	$82,217	0.758	817
Downstream Metal Products	$49,678	$65,503	0.758	42
Production Technology and Heavy Machinery	$59,356	$78,266	0.758	36
Food Processing and Manufacturing	$51,601	$68,608	0.752	29
Trailers, Motor Homes, and Appliances	$48,229	$65,473	0.737	6
Construction Products and Services	$61,101	$83,072	0.736	167
Vulcanized and Fired Materials	$47,852	$65,544	0.730	5
Hospitality and Tourism	$28,611	$41,564	0.688	827
Business Services	$69,334	$101,537	0.683	1,776
Automotive	$50,317	$75,047	0.670	13
Fishing and Fishing Products	$33,855	$50,689	0.668	29

Industry Cluster	Earnings per Worker 13CR	Earnings per Worker US	Ratio	Establishments
Printing Services	$37,677	$56,857	0.663	60
State Government Services	$53,376	$80,713	0.661	350
Apparel	$30,789	$46,687	0.659	15
Music and Sound Recording	$49,529	$75,252	0.658	3
Financial Services	$105,523	$161,550	0.653	375
Recreational and Small Electric Goods	$43,847	$68,419	0.641	22
Livestock Processing	$26,766	$46,665	0.574	7
Nonmetal Mining	$42,649	$75,354	0.566	21
Oil and Gas Production and Transportation	$75,973	$135,243	0.562	29
Electric Power Generation and Transmission	$84,717	$153,527	0.552	6
Communications Equipment and Services	$58,550	$111,120	0.527	35
Marketing, Design, and Publishing	$48,839	$93,575	0.522	349
Biopharmaceuticals	$75,002	$154,065	0.487	6
Insurance Services	$48,825	$100,373	0.486	126
Tobacco	$54,272	$117,569	0.462	1
Metal Mining	$48,180	$104,586	0.461	2
Performing Arts	$19,184	$47,810	0.401	79
Jewelry and Precious Metals	$18,951	$60,455	0.313	0
Video Production and Distribution	$23,954	$97,377	0.246	11
Coal Mining	$21,746	$97,518	0.223	1
	$59,576	$81,975	0.727	6,476

Source: Emsi, 2016.4, QCEW Employees, Non-QCEW Employees, and Self-Employed
Cluster Definition: Delgado, M., M.E. Porter, and S. Stern (2014), "Defining Clusters of Related Industries."
Note: 13CR = 13-county region

TABLE 26 LOCAL INDUSTRY CLUSTER (JOB GROWTH)

Industry Cluster	2009 Jobs	2015 Jobs	Share of Total Employment	% Change	Change
Local Financial Services	9,614	11,952	3.9%	24%	2,339
Local Hospitality Establishments	41,239	50,748	16.5%	23%	9,510
Local Food and Beverage Processing and Distribution	10,757	12,602	4.1%	17%	1,846
Local Household Goods and Services	7,436	8,496	2.8%	14%	1,060
Local Commercial Services	17,995	20,259	6.6%	13%	2,264
Local Motor Vehicle Products and Services	13,223	14,792	4.8%	12%	1,568
Local Personal Services (Non-Medical)	9,813	10,740	3.5%	9%	927
Local Logistical Services	4,008	4,349	1.4%	9%	341
Local Community and Civic Organizations	11,701	12,364	4.0%	6%	663
Local Health Services	45,743	48,114	15.6%	5%	2,370
Local Education and Training	28,741	29,560	9.6%	3%	819
Local Retailing of Clothing and General Merchandise	19,065	19,539	6.4%	2%	474
Local Government Services	14,269	14,159	4.6%	-1%	-110
Local Entertainment and Media	5,384	5,242	1.7%	-3%	-141
Local Real Estate, Construction, and Development	41,232	39,953	13.0%	-3%	-1,279
Local Utilities	4,311	3,821	1.2%	-11%	-490
Local Industrial Products and Services	1,216	954	0.3%	-22%	-262
Total	285,746	307,645	100%	7.66%	21,899

Source: Emsi, 2016.4, QCEW Employees, Non-QCEW Employees, and Self-Employed
Cluster Definition: Delgado, M., M.E. Porter, and S. Stern (2014), "Defining Clusters of Related Industries."

TABLE 27 LOCAL INDUSTRY CLUSTER (SHIFT-SHARE ANALYSIS)

Industry Cluster	Change	Industry Mix Effect	National Growth Effect	Competitive Effect
Local Hospitality Establishments	9,510	3,841	3,013	2,656
Local Financial Services	2,339	-258	702	1,895
Local Food and Beverage Processing and Distribution	1,846	-56	786	1,116
Local Education and Training	819	-2,314	2,100	1,033
Local Household Goods and Services	1,060	-175	543	691
Local Personal Services (Non-Medical)	927	-113	717	323
Local Entertainment and Media	-141	-761	393	227
Local Government Services	-110	-1,314	1,042	162
Local Motor Vehicle Products and Services	1,568	632	966	-30
Local Logistical Services	341	253	293	-205
Local Retailing of Clothing and General Merchandise	474	-574	1,393	-345
Local Industrial Products and Services	-262	36	89	-386
Local Utilities	-490	-380	315	-424
Local Commercial Services	2,264	1,985	1,315	-1,036
Local Health Services	2,370	841	3,342	-1,813
Local Real Estate, Construction, and Development	-1,279	-2,395	3,012	-1,896
Local Community and Civic Organizations	663	1,980	855	-2,172
Total	21,899	1,227	20,876	-204

Source: Emsi, 2016.4, QCEW Employees, Non-QCEW Employees, and Self-Employed
Cluster Definition: Delgado, M., M.E. Porter, and S. Stern (2014), "Defining Clusters of Related Industries."

TABLE 28 LOCAL INDUSTRY CLUSTER (LOCATION QUOTIENTS)

Industry Cluster	2009 LQ	2015 LQ	Percent Change LQ
Local Financial Services	1.17	1.42	21%
Local Hospitality Establishments	1.30	1.39	7%
Local Retailing of Clothing and General Merchandise	1.39	1.39	0%
Local Household Goods and Services	1.17	1.29	11%
Local Real Estate, Construction, and Development	1.25	1.22	-3%
Local Education and Training	1.10	1.16	5%
Local Utilities	1.23	1.12	-8%
Local Motor Vehicle Products and Services	1.10	1.11	2%
Local Entertainment and Media	1.01	1.07	6%
Local Food and Beverage Processing and Distribution	0.89	1.00	12%
Local Health Services	0.98	0.96	-2%
Local Personal Services (Non-Medical)	0.92	0.96	5%
Local Government Services	0.85	0.88	3%
Local Community and Civic Organizations	0.93	0.81	-13%
Local Commercial Services	0.77	0.74	-3%
Local Logistical Services	0.63	0.61	-3%
Local Industrial Products and Services	0.75	0.54	-28%
Total	1.03	1.04	

Source: Emsi, 2016.4, QCEW Employees, Non-QCEW Employees, and Self-Employed
Cluster Definition: Delgado, M., M.E. Porter, and S. Stern (2014), "Defining Clusters of Related Industries."

TABLE 29 LOCAL INDUSTRY CLUSTER (EARNINGS AND ESTABLISHMENTS)

Industry Cluster	Earnings per Worker 13CR	Earnings per Worker US	Ratio	Establishments
Local Commercial Services	$39,871	$53,005	0.752	2,180
Local Community and Civic Organizations	$25,821	$29,689	0.870	691
Local Education and Training	$46,354	$60,307	0.769	178
Local Entertainment and Media	$35,289	$45,283	0.779	451
Local Financial Services	$57,573	$77,837	0.740	963
Local Food and Beverage Processing and Distribution	$29,883	$35,701	0.837	762
Local Government Services	$57,352	$74,479	0.770	178
Local Health Services	$58,518	$64,850	0.902	2,549
Local Hospitality Establishments	$20,413	$20,892	0.977	2,724
Local Household Goods and Services	$32,436	$35,039	0.926	938
Local Industrial Products and Services	$48,760	$58,929	0.827	102
Local Logistical Services	$40,857	$50,003	0.817	475
Local Motor Vehicle Products and Services	$38,629	$44,721	0.864	1,658
Local Personal Services (Non-Medical)	$25,953	$26,737	0.971	1,255
Local Real Estate, Construction, and Development	$42,014	$56,870	0.739	5,205
Local Retailing of Clothing and General Merchandise	$25,321	$26,773	0.946	984
Local Utilities	$87,938	$105,779	0.831	196
Total	$41,940	$50,994	0.822	21,488

Source: Emsi, 2016.4, QCEW Employees, Non-QCEW Employees, and Self-Employed
Cluster Definition: Delgado, M., M.E. Porter, and S. Stern (2014), "Defining Clusters of Related Industries."
Note: 13CR = 13-county region

OCCUPATION CLUSTER ANALYSIS

13-County Region Occupation Cluster Analysis

Occupation Cluster Definitions

The occupation cluster analysis for the 13-county region is based upon nineteen clusters of occupations identified in the 2009 collaborative study[18] "Crossing the Next Regional Frontier: Information and Analytics Linking Regional Competitiveness to Investment in a Knowledge-Based Economy."

Each Occupation Cluster is a group of occupations[19] with similar skills, knowledge, education, and/or training. All military jobs are represented by a single SOC code, and as such are not considered in cluster analysis because of the variety of skills within the code. However, Military Occupations are included in this analysis for reference purposes.

The study identifies a subset of six clusters representing high wage, innovation-driven occupations that are associated with strong regional economic growth. These "innovation" or "tech" occupation clusters are: Information Technology; Engineering and Related Sciences; Health Care and Medical Science; Mathematics, Statistics, Data and Accounting; Natural Sciences and Environmental Management; and Postsecondary Education and Knowledge Creation.

OCCUPATION VS. INDUSTRY CLUSTER ANALYSIS

The **Industry Cluster Analysis** in the previous section looks primarily at the goods and services produced in the region which are traded outside the region's boundaries. Such analysis helps understand what the region's workforce "makes."

The **Occupation Cluster Analysis** in this section is similar, but instead focuses on the comparative knowledge and skills of the region's workforce. This helps understand what the region's workforce "knows."

The analysis in this section aggregates the region's workers into nineteen Occupation Clusters and assesses the national competitiveness of each knowledge-based cluster.

[18] Funded by the U.S. Economic Development Administration and was awarded the 2010 Award of Excellence by the Council for Community and Economic Research (C2ER). Partners include: the Center for Regional Development, Purdue University; Indiana Business Research Center, Kelly School of Business, Indiana University; Center for Regional Competitiveness, Rural Policy Research Institute, Truman School of Public Affairs, University of Missouri; Strategic Development Group, Inc.; and Economic Modeling Specialist, Inc.

[19] Occupations are classified into 840 Standard Occupation Classification (SOC) codes by the Bureau of Labor Statistics (BLS). The BLS also classifies each occupation into five Job Zones based upon increasing degree of preparation required for entry. For example, Job Zone 1 occupations may not require any training or experience, whereas Job Zone 5 occupations usually require a master's degree or higher.

Occupation Clusters in the 13-County Region

Excluding the Job Zone 1 and 2 clusters, ten of the region's seventeen Occupation Clusters look similar to the rest of the United States in terms of share of employment and growth from 2009-2015 (i.e. 2015 LQ is 1.0 ±0.25 and change of LQ of ±3% from 2009-2015). Among these are three of the six "tech" clusters – Medical Practitioners & Scientists, Engineering and Natural Sciences.

Of the seven remaining occupation clusters, only Agribusiness and Food Technology (LQ growth of 17%) outpaced its corresponding national occupation cluster growth since 2009. This cluster is not large in terms of worker share (LQ 0.5) or total jobs (1,569), but represents the only cluster with earnings exceeding the US median. The Public Safety and Domestic Security occupation cluster (LQ 1.8) is the only cluster with an LQ exceeding 1.25, which LQ has been maintained since 2009.

Five occupation clusters were significantly less concentrated in the region than in the nation in 2009 and fell even further behind from 2009-2015[20]. These include the remaining three "tech" occupation clusters: Mathematics, Statistics, Data and Accounting (-6%); Postsecondary Education and Knowledge Creation (-8%); and Information Technology (-18%).

Job Zone 1 represents almost 90,000 workers in the region and its growth has outpaced the national Job Zone 1 growth (5% growth of LQ). But because these occupations generally pay low wages and require the least training and education, they are not considered to be drivers of regional economic growth. As discussed above military occupations are not traditional Occupation Clusters, but have been included for reference. Not only is the concentration of these workers six times the national average (LQ 6.1), but the LQ has increased by 9% since 2009.

[20] LQ less than 0.75 in 2009 and LQ growth less than -3% from 2009 to 2015

OCCUPATION CLUSTER BUBBLE CHART EXPLAINED

Vertical Axis: Location Quotient is a measure of the relative concentration of a cluster as compared to the country. As an example, assume that nationally 1% of all jobs are in the Information Technology cluster. If a region of 100,000 workers has 2,000 workers in IT, its LQ would be 2.0 because its concentration (2%) is twice the nation's concentration (1%). A cluster with an LQ of 1.25+ is considered specialized.

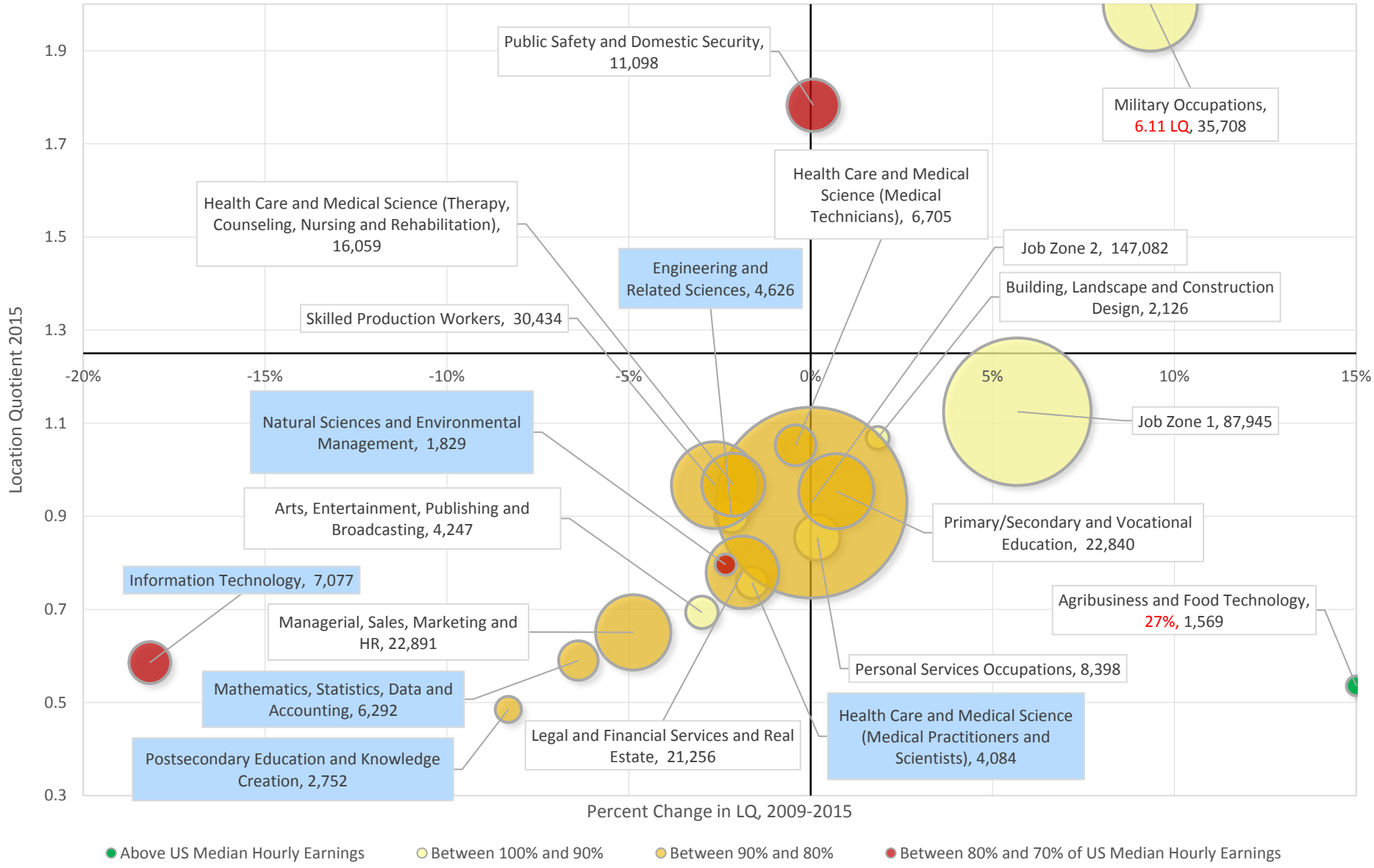
Horizontal Axis: Measures the percent change in LQ from 2009-2015 for each industry.

Bubble Size: is proportional to the number of jobs in the occupation cluster; the larger the bubble, the more jobs represented

Bubble Color: Wages relative to the US average for the cluster.

Label Legend: Cluster Name; [# of workers 2015]. The six "innovation" clusters have blue shaded labels.

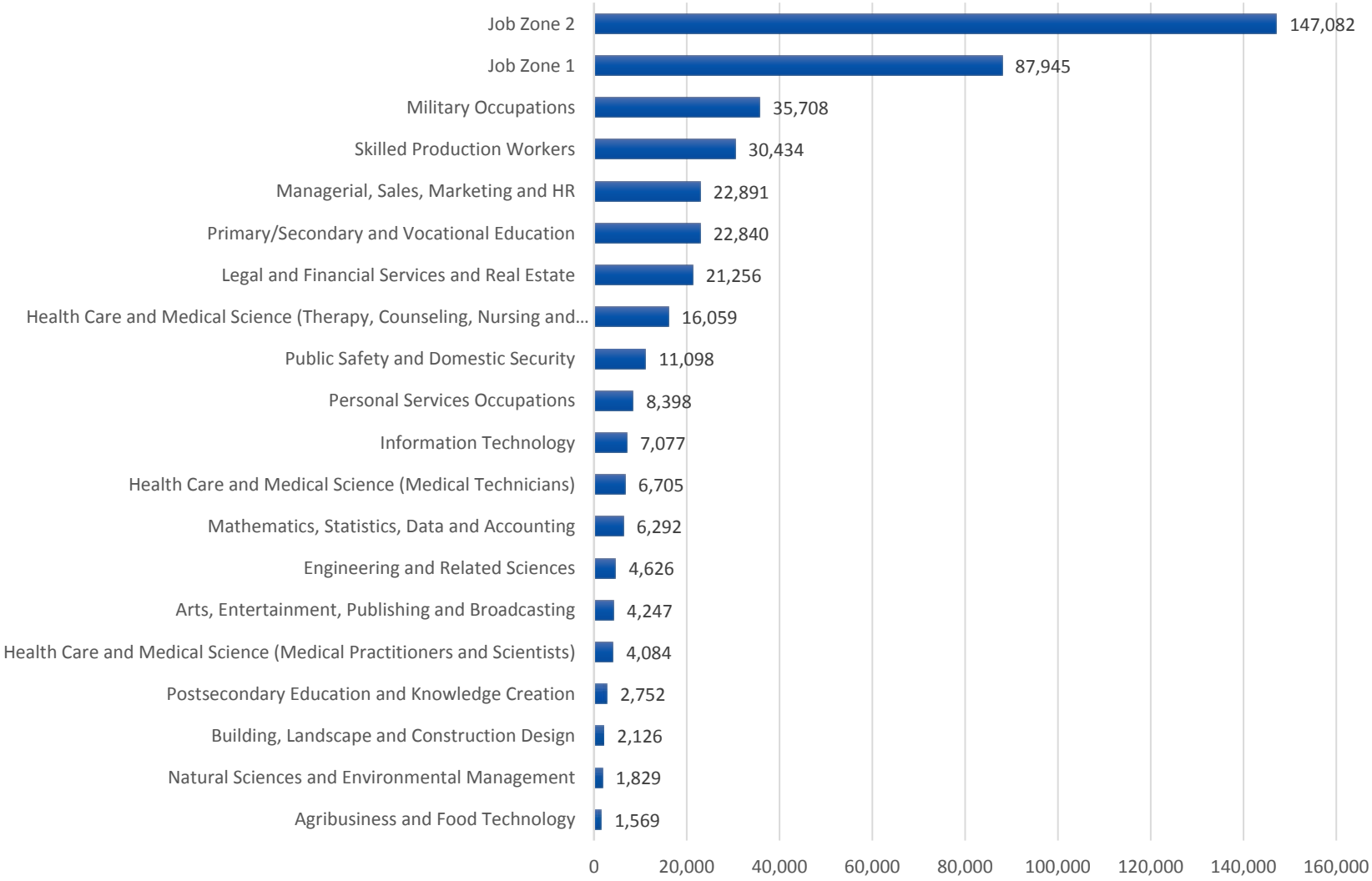
FIGURE 44 OCCUPATION CLUSTERS IN THE 13-COUNTY REGION



Source: Emsi, 2016.4, QCEW Employees, Non-QCEW Employees, and Self-Employed
Cluster Definition: Purdue Center for Regional Development, the Indiana Business Research Center at Indiana University's Kelley School of Business, and other research partners.
Highlighted box = Tech cluster

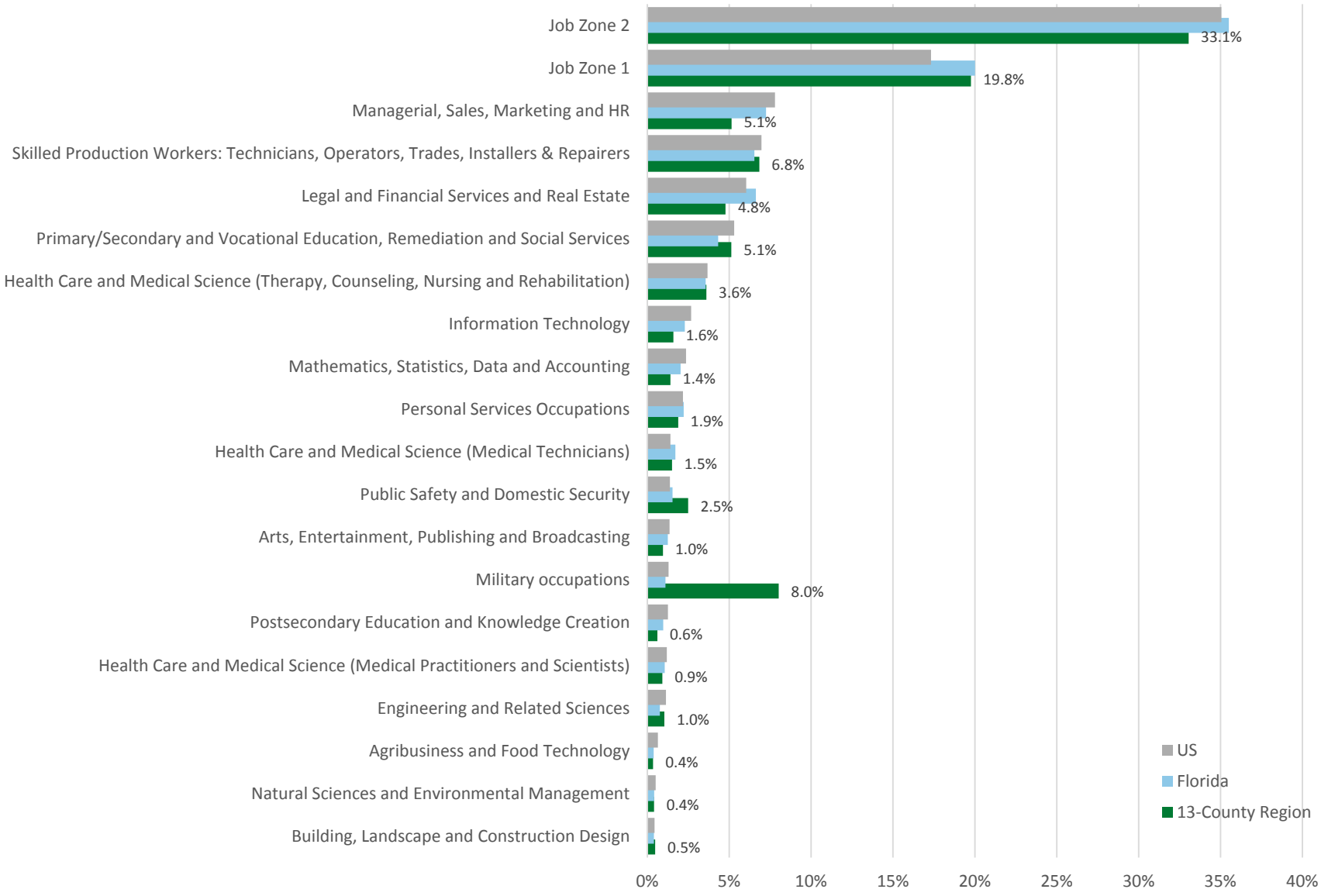
Occupation Clusters by Numbers

FIGURE 45 NUMBER OF JOBS PER OCCUPATION CLUSTER (2015, 13-COUNTY REGION)



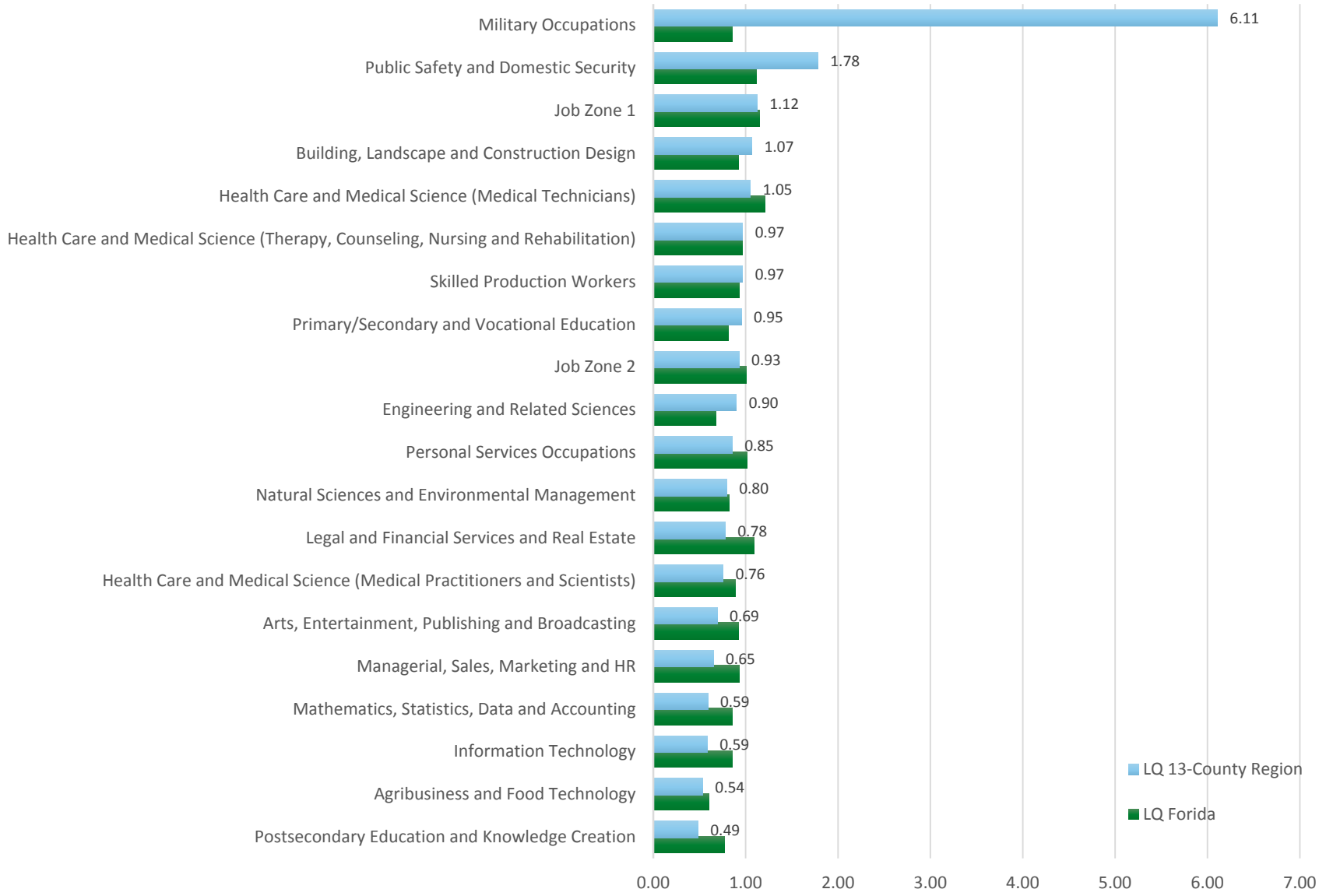
Source: Emsi, 2016.4, QCEW Employees, Non-QCEW Employees, and Self-Employed
Cluster Definition: Purdue Center for Regional Development, the Indiana Business Research Center at Indiana University's Kelley School of Business, and other research partners.

FIGURE 46 SHARE OF TOTAL WORKERS BY OCCUPATION CLUSTER



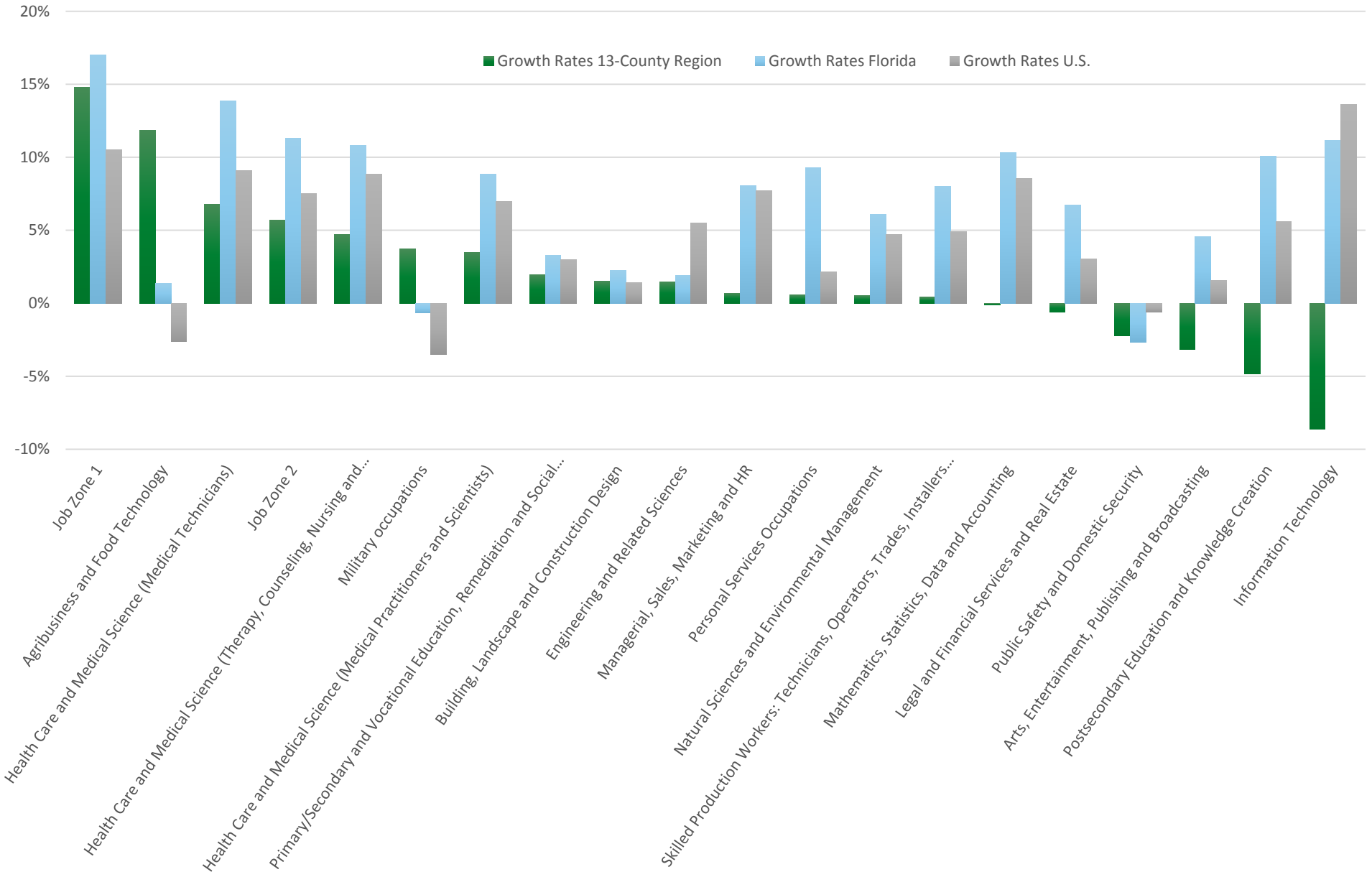
Source: Emsi, 2016.4, QCEW Employees, Non-QCEW Employees, and Self-Employed
Cluster Definition: Purdue Center for Regional Development, the Indiana Business Research Center at Indiana University's Kelley School of Business, and other research partners.

FIGURE 47 OCCUPATION CLUSTERS BY LOCATION QUOTIENT



Source: Emsi, 2016.4, QCEW Employees, Non-QCEW Employees, and Self-Employed
Cluster Definition: Purdue Center for Regional Development, the Indiana Business Research Center at Indiana University's Kelley School of Business, and other research partners.

FIGURE 48 OCCUPATION CLUSTER EMPLOYMENT GROWTH RATES (2009-2015)



Source: Emsi, 2016.4, QCEW Employees, Non-QCEW Employees, and Self-Employed
Cluster Definition: Purdue Center for Regional Development, the Indiana Business Research Center at Indiana University's Kelley School of Business, and other research partners.

Shift-Share Analysis

A shift-share analysis (see info box for explanation) allows the identification of regional clusters that have experienced employment growth exceeding the national job growth as well as the job growth of the particular occupation cluster. The value next to each stacked bar indicates the total employment change between 2009 and 2015 which is the sum of the national growth effect, the occupation effect and regional competitiveness effect.

Since national employment grew between 2009 and 2015, this component of shift-share is positive for every occupation cluster (green bar). Occupation clusters that had higher job growth rates than the national employment growth rate are on the positive side of the chart (i.e. the dark blue bar is to the right of the zero axis, like Information Technology and Job Zone 1) and on the negative side if the industry did not keep pace with national job growth (i.e. the dark blue bar is left of the zero axis, like Legal and Financial Services). The competitiveness effect, which presents the main focus of this analysis, is positive when a regional occupation cluster grew faster than the equivalent national occupation cluster. It is important to note that shift-share analysis is able to filter out the competitive component of an occupation cluster growth but fails to identify the cause of the effect.

Figure 49 presents the occupation clusters sorted by net job growth from 2009 to 2015. Only four clusters demonstrate a positive competitive effect. The remaining clusters, including all six "tech" occupation clusters, had less growth than their respective occupation cluster nationally.

Notably, military occupations decreased substantially on the national level. Had the region followed the national trend, there would have been a loss of over 1,200 jobs. Instead, the region added 1,279 demonstrating significant competitive effect.

SHIFT-SHARE ANALYSIS EXPLAINED

A Shift-share analysis of the region's Health-Care – Therapy (HC-T) cluster is presented in figure 49. The value at the end of the bar chart, 1,354, indicates the increase in jobs from 2009-15.

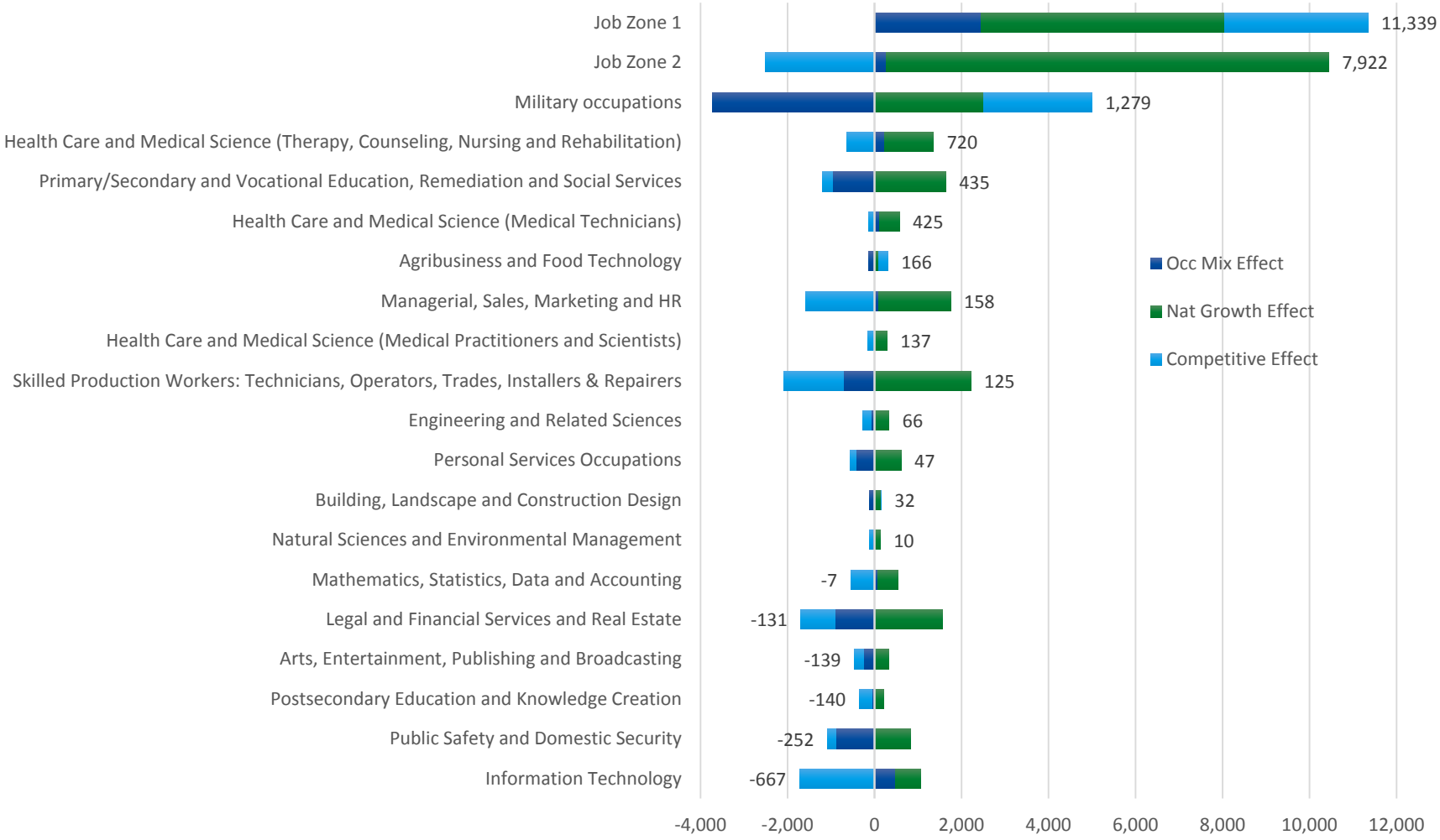
During this period, total employment in all occupation clusters nationally grew an average of 7.3%. This is the **National Effect**, shown in green.

Total employment specifically in this occupation cluster grew by 1.5% above the national effect. This is the **Occupation Effect** (dark blue).

If the HC-T cluster matched these growth rates, the cluster would have grown by 1,354 jobs (8.8%). However, the cluster only grew by 1,354 jobs, which is 634 fewer jobs than the combined national and occupation growth. This difference is the **Regional Competitive Effect** (Light Blue).

On the other end of the spectrum, if the Information Technology cluster had kept pace with the national growth trend, the region would have seen over 1,000 jobs added in the cluster. However, the region's occupation cluster actually decreased by 667 jobs because of a negative competitive effect of over 1,700.

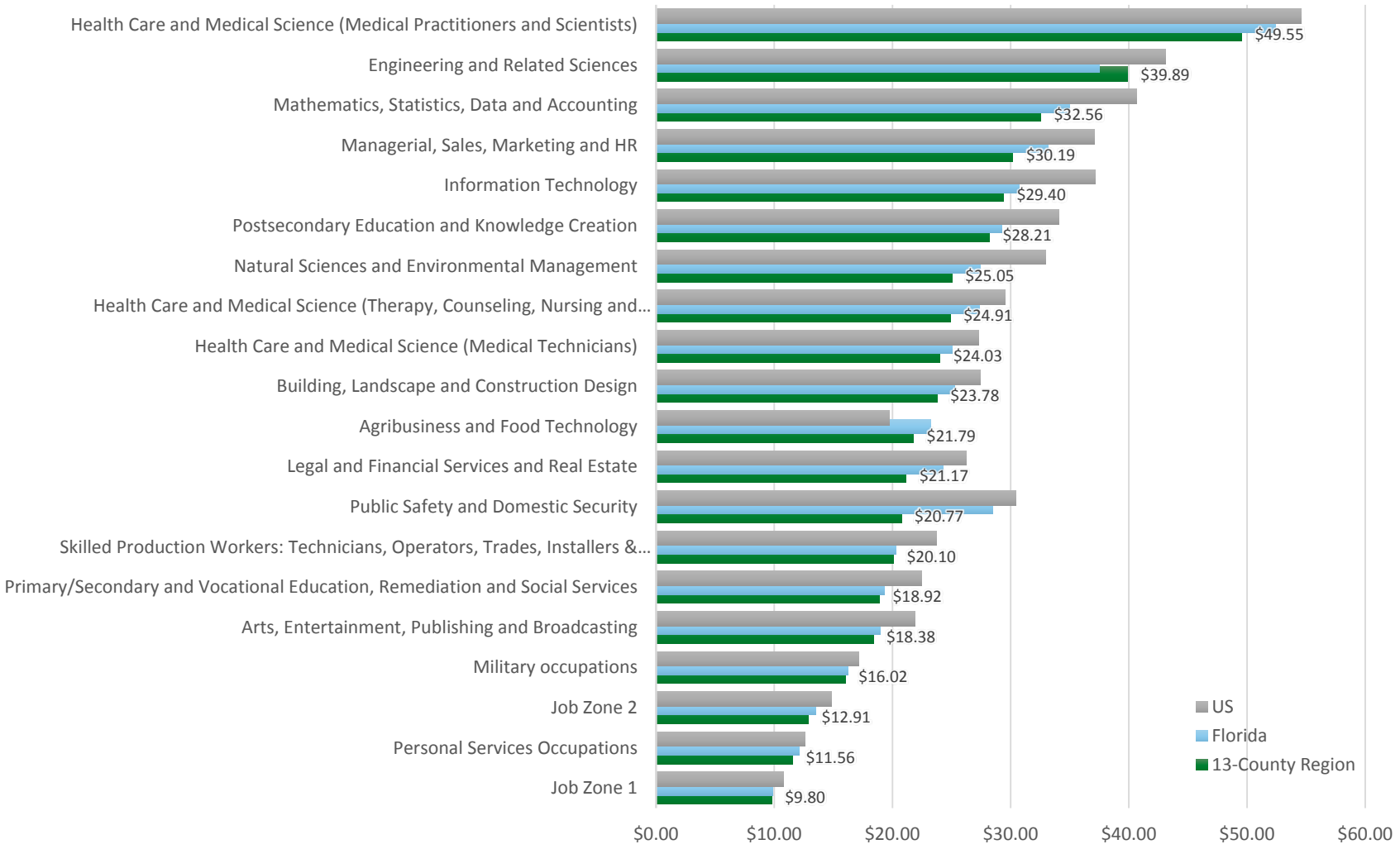
FIGURE 49 SHIFT-SHARE CLUSTER ANALYSIS (SORTED BY NET JOB GROWTH)



Source: Emsi, 2016.4, QCEW Employees, Non-QCEW Employees, and Self-Employed
Cluster Definition: Purdue Center for Regional Development, the Indiana Business Research Center at Indiana University's Kelley School of Business, and other research partners.

Occupation Cluster Earnings Comparison

FIGURE 50 EARNINGS PER WORKER (13-COUNTY REGION, FLORIDA, AND UNITED STATES)



Source: Emsi, 2016.4, QCEW Employees, Non-QCEW Employees, and Self-Employed
Cluster Definition: Purdue Center for Regional Development, the Indiana Business Research Center at Indiana University's Kelley School of Business, and other research partners.

TABLE 30 MEDIAN HOURLY EARNINGS (2014)

Occupation Cluster	Median Hourly Earnings 13CR	Median Hourly Earnings FL	Median Hourly Earnings US	Ratio 13CR/FL	Ratio 13CR/US
Health Care and Medical Science (Medical Practitioners and Scientists)	$49.55	$52.41	$54.56	0.945	0.908
Engineering and Related Sciences	$39.89	$37.54	$43.14	1.063	0.925
Mathematics, Statistics, Data and Accounting	$32.56	$35.00	$40.67	0.930	0.801
Managerial, Sales, Marketing and HR	$30.19	$33.19	$37.12	0.910	0.813
Information Technology	$29.40	$30.73	$37.15	0.957	0.791
Postsecondary Education and Knowledge Creation	$28.21	$29.23	$34.07	0.965	0.828
Natural Sciences and Environmental Management	$25.05	$27.40	$32.98	0.914	0.760
Health Care and Medical Science (Therapy, Counseling, Nursing and Rehabilitation)	$24.91	$27.34	$29.52	0.911	0.844
Health Care and Medical Science (Medical Technicians)	$24.03	$25.06	$27.31	0.959	0.880
Building, Landscape and Construction Design	$23.78	$25.24	$27.45	0.942	0.866
Agribusiness and Food Technology	$21.79	$23.27	$19.71	0.936	1.106
Legal and Financial Services and Real Estate	$21.17	$24.28	$26.26	0.872	0.806
Public Safety and Domestic Security	$20.77	$28.45	$30.44	0.730	0.682
Skilled Production Workers: Technicians, Operators, Trades, Installers & Repairers	$20.10	$20.32	$23.70	0.989	0.848
Primary/Secondary and Vocational Education, Remediation and Social Services	$18.92	$19.29	$22.45	0.981	0.843
Arts, Entertainment, Publishing and Broadcasting	$18.38	$18.94	$21.92	0.970	0.838
Military occupations	$16.02	$16.27	$17.17	0.985	0.933
Job Zone 2	$12.91	$13.49	$14.81	0.957	0.871
Personal Services Occupations	$11.56	$12.09	$12.58	0.956	0.919
Job Zone 1	$9.80	$9.89	$10.81	0.991	0.906

Source: Emsi, 2016.4, QCEW Employees, Non-QCEW Employees, and Self-Employed
Cluster Definition: Purdue Center for Regional Development, the Indiana Business Research Center at Indiana University's Kelley School of Business, and other research partners.
Note: 13CR = 13-county region

Five-Digit SOC-Code Occupation Analysis

TABLE 31 FASTEST GROWING OCCUPATIONS IN 13-COUNTY REGION (PERCENTAGE, TOP 25, 2009-2015)

SOC	Description	2015 Jobs	2009 - 2015 % Change	Trend 2009 - 2015	2015 Location Quotient	Median Hourly Earnings 13CR	Median Hourly Earnings US	13CR/US Ratio	Typical Entry Level Education
39-3011	Gaming Dealers	135	118%		0.46	$10.19	$10.13	1.01	High school diploma or equivalent
27-4012	Broadcast Technicians	84	62%		0.99	$10.99	$19.35	0.57	Associate's degree
51-8013	Power Plant Operators	109	56%		1.01	$37.34	$34.85	1.07	High school diploma or equivalent
49-3091	Bicycle Repairers	49	48%		1.34	$15.34	$13.34	1.15	High school diploma or equivalent
51-2091	Fiberglass Laminators and Fabricators	182	41%		2.93	$14.26	$14.41	0.99	High school diploma or equivalent
49-3051	Motorboat Mechanics and Service Technicians	112	37%		1.52	$17.37	$17.51	0.99	High school diploma or equivalent
51-9192	Cleaning, Washing, and Metal Pickling Equipment Operators and Tenders	24	33%		0.43	$13.92	$13.88	1.00	No formal educational credential
31-2021	Physical Therapist Assistants	289	33%		1.21	$28.70	$26.67	1.08	Associate's degree
49-3092	Recreational Vehicle Service Technicians	65	33%		1.72	$18.51	$17.58	1.05	High school diploma or equivalent
35-3021	Combined Food Preparation and Serving Workers, Including Fast Food	14,277	32%		1.51	$8.91	$9.45	0.94	No formal educational credential
39-2021	Nonfarm Animal Caretakers	620	32%		0.91	$9.67	$10.82	0.89	High school diploma or equivalent
41-9041	Telemarketers	501	32%		0.74	$10.73	$11.73	0.91	No formal educational credential
45-2092	Farmworkers and Laborers, Crop, Nursery, and Greenhouse	609	32%		0.27	$11.36	$10.56	1.08	No formal educational credential
11-9013	Farmers, Ranchers, and Other Agricultural Managers	180	31%		0.12	$18.83	$14.62	1.29	High school diploma or equivalent
45-2091	Agricultural Equipment Operators	72	31%		0.33	$13.57	$13.84	0.98	No formal educational credential
31-9011	Massage Therapists	524	31%		1.12	$14.81	$16.59	0.89	Postsecondary nondegree award
37-3012	Pesticide Handlers, Sprayers, and Applicators, Vegetation	198	30%		2.17	$14.99	$15.39	0.97	High school diploma or equivalent
53-7121	Tank Car, Truck, and Ship Loaders	22	29%		0.61	$15.74	$18.27	0.86	No formal educational credential
39-5093	Shampooers	53	29%		0.77	$8.08	$9.06	0.89	No formal educational credential
51-7042	Woodworking Machine Setters, Operators, and Tenders, Except Sawing	169	29%		0.77	$13.25	$13.67	0.97	High school diploma or equivalent
51-2031	Engine and Other Machine Assemblers	18	29%		0.16	$20.99	$19.47	1.08	High school diploma or equivalent
39-5092	Manicurists and Pedicurists	316	27%		0.83	$9.91	$10.02	0.99	Postsecondary nondegree award
49-2095	Electrical and Electronics Repairers, Powerhouse, Substation, and Relay	77	26%		1.14	$30.85	$34.89	0.88	Postsecondary nondegree award
35-1012	First-Line Supervisors of Food Preparation and Serving Workers	4,152	26%		1.58	$14.31	$14.84	0.96	High school diploma or equivalent
29-2092	Hearing Aid Specialists	25	25%		1.41	$24.47	$27.77	0.88	High school diploma or equivalent

Source: Emsi, 2016.4, QCEW Employees, Non-QCEW Employees, and Self-Employed

TABLE 32 FASTEST GROWING OCCUPATIONS (COUNT, TOP 25, 2009-2015)

SOC	Description	2015 Jobs	2009 - 2015 Change	Trend 2009 - 2015	2015 Location Quotient	Median Hourly Earnings 13CR	Median Hourly Earnings US	13CR/US Ratio	Typical Entry Level Education
35-3021	Combined Food Preparation and Serving Workers, Including Fast Food	14,277	3,499		1.51	$8.91	$9.45	0.94	No formal educational credential
35-3031	Waiters and Waitresses	13,301	2,043		1.81	$9.35	$9.92	0.94	No formal educational credential
43-4051	Customer Service Representatives	10,216	1,905		1.34	$11.87	$15.55	0.76	High school diploma or equivalent
41-2031	Retail Salespersons	17,984	1,523		1.32	$10.34	$10.80	0.96	No formal educational credential
41-2011	Cashiers	13,084	1,466		1.28	$9.08	$9.72	0.93	No formal educational credential
55-9999	Military occupations	35,708	1,279		6.11	$16.02	$17.17	0.93	N/A
35-2014	Cooks, Restaurant	5,765	1,098		1.68	$11.23	$11.48	0.98	No formal educational credential
35-1012	First-Line Supervisors of Food Preparation and Serving Workers	4,152	860		1.58	$14.31	$14.84	0.96	High school diploma or equivalent
37-3011	Landscaping and Groundskeeping Workers	4,238	739		1.16	$10.83	$11.95	0.91	No formal educational credential
37-2011	Janitors and Cleaners, Except Maids and Housekeeping Cleaners	6,664	692		0.90	$10.44	$11.93	0.88	No formal educational credential
31-1014	Nursing Assistants	4,810	625		1.13	$11.08	$12.63	0.88	Postsecondary nondegree award
37-2012	Maids and Housekeeping Cleaners	5,415	593		1.24	$9.12	$10.44	0.87	No formal educational credential
43-5081	Stock Clerks and Order Fillers	5,757	460		1.02	$10.86	$11.43	0.95	No formal educational credential
41-1011	First-Line Supervisors of Retail Sales Workers	5,864	454		1.42	$17.15	$17.49	0.98	High school diploma or equivalent
43-1011	First-Line Supervisors of Office and Administrative Support Workers	4,404	449		1.03	$21.06	$25.38	0.83	High school diploma or equivalent
49-9071	Maintenance and Repair Workers, General	4,701	393		1.12	$14.81	$17.90	0.83	High school diploma or equivalent
43-6014	Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	8,987	370		1.14	$14.05	$16.52	0.85	High school diploma or equivalent
33-9032	Security Guards	2,453	366		0.73	$9.52	$12.52	0.76	High school diploma or equivalent
41-2021	Counter and Rental Clerks	2,010	365		1.53	$10.83	$12.13	0.89	No formal educational credential
29-2061	Licensed Practical and Licensed Vocational Nurses	2,816	364		1.33	$17.69	$21.09	0.84	Postsecondary nondegree award
35-3011	Bartenders	2,602	350		1.50	$9.87	$10.32	0.96	No formal educational credential
43-4171	Receptionists and Information Clerks	3,604	349		1.19	$12.04	$13.40	0.90	High school diploma or equivalent
35-2021	Food Preparation Workers	2,328	317		0.90	$10.11	$10.23	0.99	No formal educational credential
35-9011	Dining Room and Cafeteria Attendants and Bartender Helpers	1,828	303		1.49	$9.24	$9.72	0.95	No formal educational credential
51-2092	Team Assemblers	1,720	296		0.53	$14.22	$14.42	0.99	High school diploma or equivalent

Source: Emsi, 2016.4, QCEW Employees, Non-QCEW Employees, and Self-Employed

TABLE 33 FASTEST DECLINING OCCUPATION IN 13-COUNTY REGION (PERCENTAGE, TOP 25, 2009-2105)

SOC	Description	2015 Jobs	2009 - 2015 % Change	Trend 2009 - 2015	2015 Location Quotient	Median Hourly Earnings 13CR	Median Hourly Earnings US	13CR/US Ratio	Typical Entry Level Education
51-6063	Textile Knitting and Weaving Machine Setters, Operators, and Tenders	12	-56%		0.19	$13.48	$13.23	1.02	High school diploma or equivalent
47-2082	Tapers	17	-51%		0.24	$17.75	$23.16	0.77	No formal educational credential
51-5113	Print Binding and Finishing Workers	31	-43%		0.21	$14.58	$14.94	0.98	High school diploma or equivalent
31-1013	Psychiatric Aides	67	-42%		0.32	$11.36	$13.35	0.85	High school diploma or equivalent
13-2053	Insurance Underwriters	37	-40%		0.13	$27.63	$31.91	0.87	Bachelor's degree
11-9033	Education Administrators, Postsecondary	38	-40%		0.10	$41.85	$42.34	0.99	Master's degree
51-4111	Tool and Die Makers	22	-35%		0.10	$23.46	$24.62	0.95	High school diploma or equivalent
49-2021	Radio, Cellular, and Tower Equipment Installers and Repairs	47	-35%		1.07	$25.52	$24.91	1.02	Associate's degree
51-4081	Multiple Machine Tool Setters, Operators, and Tenders, Metal and Plastic	29	-34%		0.09	$16.37	$16.49	0.99	High school diploma or equivalent
47-5071	Roustabouts, Oil and Gas	10	-33%		0.05	$15.97	$17.91	0.89	No formal educational credential
13-2041	Credit Analysts	51	-33%		0.25	$29.38	$34.46	0.85	Bachelor's degree
51-2011	Aircraft Structure, Surfaces, Rigging, and Systems Assemblers	189	-32%		1.53	$21.78	$24.33	0.90	High school diploma or equivalent
47-2021	Brickmasons and Blockmasons	199	-32%		0.85	$17.20	$22.63	0.76	High school diploma or equivalent
45-3021	Hunters and Trappers	99	-32%		4.53	$18.20	$18.19	1.00	No formal educational credential
45-3011	Fishers and Related Fishing Workers	345	-32%		4.56	$15.18	$15.77	0.96	No formal educational credential
51-5111	Prepress Technicians and Workers	52	-32%		0.51	$13.46	$18.98	0.71	Postsecondary nondegree award
41-9031	Sales Engineers	48	-31%		0.22	$48.78	$47.38	1.03	Bachelor's degree
49-9091	Coin, Vending, and Amusement Machine Servicers and Repairers	99	-31%		0.95	$12.96	$16.17	0.80	High school diploma or equivalent
53-3021	Bus Drivers, Transit and Intercity	308	-31%		0.61	$13.52	$19.68	0.69	High school diploma or equivalent
47-2081	Drywall and Ceiling Tile Installers	263	-31%		0.77	$13.77	$19.51	0.71	No formal educational credential
49-9069	Precision Instrument and Equipment Repairers, All Other	25	-31%		0.65	$20.19	$25.35	0.80	High school diploma or equivalent
47-4031	Fence Erectors	65	-30%		0.84	$12.92	$15.43	0.84	No formal educational credential
49-2022	Telecommunications Equipment Installers and Repairers, Except Line Installers	741	-30%		1.13	$25.69	$26.39	0.97	Postsecondary nondegree award
39-9041	Residential Advisors	263	-28%		0.71	$10.88	$12.59	0.86	High school diploma or equivalent
47-3011	Helpers--Brickmasons, Blockmasons, Stonemasons, and Tile and Marble Setters	58	-28%		0.85	$10.55	$14.87	0.71	No formal educational credential

Source: Emsi, 2016.4, QCEW Employees, Non-QCEW Employees, and Self-Employed

TABLE 34 FASTEST DECLINING OCCUPATION IN 13-COUNTY REGION (COUNT, TOP 25, 2009-2015)

SOC	Description	2015 Jobs	2009 - 2015 Change	Trend 2009 - 2015	2015 Location Quotient	Median Hourly Earnings 13CR	Median Hourly Earnings US	13CR/US Ratio	Typical Entry Level Education
47-2031	Carpenters	2,587	-449		0.88	$15.15	$18.92	0.80	High school diploma or equivalent
49-2022	Telecommunications Equipment Installers and Repairers, Except Line Installers	741	-315		1.13	$25.69	$26.39	0.97	Postsecondary nondegree award
47-2061	Construction Laborers	3,555	-310		0.95	$12.82	$15.47	0.83	No formal educational credential
11-9021	Construction Managers	1,274	-304		1.19	$28.62	$33.71	0.85	Bachelor's degree
47-1011	First-Line Supervisors of Construction Trades and Extraction Workers	1,889	-303		1.04	$22.78	$28.22	0.81	High school diploma or equivalent
39-9021	Personal Care Aides	2,518	-289		0.47	$9.36	$10.44	0.90	No formal educational credential
39-9011	Childcare Workers	3,136	-254		0.86	$8.45	$9.02	0.94	High school diploma or equivalent
33-3012	Correctional Officers and Jailers	5,285	-202		4.20	$16.66	$22.27	0.75	High school diploma or equivalent
47-2073	Operating Engineers and Other Construction Equipment Operators	815	-185		0.75	$16.53	$22.54	0.73	High school diploma or equivalent
11-1021	General and Operations Managers	3,063	-177		0.48	$45.21	$48.03	0.94	Bachelor's degree
47-2111	Electricians	1,739	-164		0.89	$19.89	$25.41	0.78	High school diploma or equivalent
45-3011	Fishers and Related Fishing Workers	345	-160		4.56	$15.18	$15.77	0.96	No formal educational credential
29-2041	Emergency Medical Technicians and Paramedics	779	-148		1.13	$14.17	$15.97	0.89	Postsecondary nondegree award
53-3021	Bus Drivers, Transit and Intercity	308	-137		0.61	$13.52	$19.68	0.69	High school diploma or equivalent
53-3032	Heavy and Tractor-Trailer Truck Drivers	3,458	-131		0.63	$15.69	$19.23	0.82	Postsecondary nondegree award
49-9052	Telecommunications Line Installers and Repairers	430	-127		1.33	$18.44	$26.38	0.70	High school diploma or equivalent
41-4012	Sales Representatives, Wholesale and Manufacturing	2,435	-127		0.57	$21.10	$26.57	0.79	High school diploma or equivalent
47-2081	Drywall and Ceiling Tile Installers	263	-116		0.77	$13.77	$19.51	0.71	No formal educational credential
43-5052	Postal Service Mail Carriers	968	-114		1.09	$27.21	$27.40	0.99	High school diploma or equivalent
25-1099	Postsecondary Teachers	2,083	-114		0.48	$27.43	$33.35	0.82	Doctoral or professional degree
49-2011	Computer, Automated Teller, and Office Machine Repairers	338	-112		0.87	$17.05	$17.39	0.98	Some college, no degree
41-9022	Real Estate Sales Agents	1,668	-109		1.47	$15.72	$19.68	0.80	High school diploma or equivalent
21-1093	Social and Human Service Assistants	746	-108		0.66	$12.88	$15.22	0.85	High school diploma or equivalent
39-9041	Residential Advisors	263	-100		0.71	$10.88	$12.59	0.86	High school diploma or equivalent
47-2021	Brickmasons and Blockmasons	199	-93		0.85	$17.20	$22.63	0.76	High school diploma or equivalent

Source: Emsi, 2016.4, QCEW Employees, Non-QCEW Employees, and Self-Employed

TABLE 35 HIGHEST MEDIAN HOURLY EARNINGS IN 13-COUNTY REGION (TOP 25, 2009-2015)

SOC	Description	2015 Jobs	2009 - 2015 % Change	Trend 2009 - 2015	2015 Location Quotient	Median Hourly Earnings 13CR	Median Hourly Earnings US	13CR/US Ratio	Typical Entry Level Education
29-1063	Internists, General	99	-1%		0.63	$102.94	$86.22	1.19	Doctoral or professional degree
29-1069	Physicians and Surgeons, All Other	733	0%		0.71	$96.50	$89.25	1.08	Doctoral or professional degree
29-1061	Anesthesiologists	72	9%		0.76	$95.53	$100.02	0.96	Doctoral or professional degree
29-1067	Surgeons	77	3%		0.57	$91.94	$97.53	0.94	Doctoral or professional degree
29-1064	Obstetricians and Gynecologists	46	5%		0.71	$89.37	$91.14	0.98	Doctoral or professional degree
29-1022	Oral and Maxillofacial Surgeons	13	0%		0.65	$88.51	$95.26	0.93	Doctoral or professional degree
29-1062	Family and General Practitioners	333	3%		0.82	$82.37	$85.83	0.96	Doctoral or professional degree
29-1029	Dentists, All Other Specialists	23	10%		1.16	$80.75	$79.71	1.01	Doctoral or professional degree
29-1023	Orthodontists	14	8%		0.65	$80.48	$93.53	0.86	Doctoral or professional degree
29-1066	Psychiatrists	34	-8%		0.44	$80.38	$88.77	0.91	Doctoral or professional degree
29-1021	Dentists, General	243	1%		0.61	$71.62	$73.92	0.97	Doctoral or professional degree
29-1065	Pediatricians, General	86	2%		0.94	$67.63	$80.53	0.84	Doctoral or professional degree
11-1011	Chief Executives	571	1%		0.65	$64.90	$74.82	0.87	Bachelor's degree
53-2011	Airline Pilots, Copilots, and Flight Engineers	81	-9%		0.33	$58.07	$57.54	1.01	Bachelor's degree
19-2012	Physicists	47	12%		0.99	$57.97	$54.71	1.06	Doctoral or professional degree
29-1051	Pharmacists	902	4%		1.04	$57.61	$58.81	0.98	Doctoral or professional degree
29-1151	Nurse Anesthetists	113	9%		0.97	$56.82	$75.37	0.75	Master's degree
23-1023	Judges, Magistrate Judges, and Magistrates	94	-10%		1.10	$55.93	$54.90	1.02	Doctoral or professional degree
11-9041	Architectural and Engineering Managers	473	6%		0.89	$55.41	$64.58	0.86	Bachelor's degree
11-3061	Purchasing Managers	87	-4%		0.40	$51.58	$51.59	1.00	Bachelor's degree
29-1024	Prosthodontists	13	8%		4.70	$50.12	$64.51	0.78	Doctoral or professional degree
17-2199	Engineers, All Other	788	17%		1.89	$49.99	$45.69	1.09	Bachelor's degree
11-3031	Financial Managers	628	-9%		0.38	$48.78	$57.13	0.85	Bachelor's degree
41-9031	Sales Engineers	48	-31%		0.22	$48.78	$47.38	1.03	Bachelor's degree
17-2071	Electrical Engineers	516	11%		0.98	$48.64	$45.35	1.07	Bachelor's degree

Source: Emsi, 2016.4, QCEW Employees, Non-QCEW Employees, and Self-Employed

TABLE 36 HIGHEST LOCATION QUOTIENTS IN 13-COUNTY REGION (TOP 25, 2009-2015)

SOC	Description	2015 Jobs	2009 - 2015 % Change	Trend 2009 - 2015	2015 Location Quotient	Median Hourly Earnings 13CR	Median Hourly Earnings US	13CR/US Ratio	Typical Entry Level Education
27-4013	Radio Operators	25	0%		7.04	$21.65	$21.84	0.99	High school diploma or equivalent
55-9999	Military occupations	35,708	4%		6.11	$16.02	$17.17	0.93	N/A
29-1024	Prosthodontists	13	8%		4.70	$50.12	$64.51	0.78	Doctoral or professional degree
39-3021	Motion Picture Projectionists	75	25%		4.59	$10.01	$11.07	0.90	No formal educational credential
45-3011	Fishers and Related Fishing Workers	345	-32%		4.56	$15.18	$15.77	0.96	No formal educational credential
45-3021	Hunters and Trappers	99	-32%		4.53	$18.20	$18.19	1.00	No formal educational credential
53-5022	Motorboat Operators	58	5%		4.51	$13.63	$18.83	0.72	Postsecondary nondegree award
33-3012	Correctional Officers and Jailers	5,285	-4%		4.20	$16.66	$22.27	0.75	High school diploma or equivalent
25-2059	Special Education Teachers, All Other	429	5%		3.74	$22.33	$26.70	0.84	Bachelor's degree
47-4099	Construction and Related Workers, All Other	410	12%		3.59	$14.64	$18.04	0.81	High school diploma or equivalent
47-2231	Solar Photovoltaic Installers	75	3%		3.23	$16.04	$18.62	0.86	High school diploma or equivalent
49-2091	Avionics Technicians	163	-8%		3.16	$27.26	$28.92	0.94	Associate's degree
15-2091	Mathematical Technicians	<10	Insf. Data		3.16	Insf. Data	$22.36		Bachelor's degree
49-3011	Aircraft Mechanics and Service Technicians	1,158	-4%		3.11	$27.19	$29.01	0.94	Postsecondary nondegree award
53-2012	Commercial Pilots	372	-6%		3.00	$47.85	$36.73	1.30	High school diploma or equivalent
15-1111	Computer and Information Research Scientists	233	17%		2.95	$42.88	$53.07	0.81	Doctoral or professional degree
51-2091	Fiberglass Laminators and Fabricators	182	41%		2.93	$14.26	$14.41	0.99	High school diploma or equivalent
19-3039	Psychologists, All Other	156	11%		2.93	$44.87	$43.75	1.03	Master's degree
53-2021	Air Traffic Controllers	210	13%		2.87	$47.87	$59.85	0.80	Associate's degree
43-2099	Communications Equipment Operators, All Other	20	5%		2.74	$15.67	$19.42	0.81	High school diploma or equivalent
33-1011	First-Line Supervisors of Correctional Officers	340	-6%		2.71	$23.26	$30.44	0.76	High school diploma or equivalent
25-2032	Career/Technical Education Teachers, Secondary School	556	0%		2.60	$18.18	$27.70	0.66	Bachelor's degree
49-2094	Electrical and Electronics Repairers, Commercial and Industrial Equip.	524	12%		2.53	$28.26	$26.96	1.05	Postsecondary nondegree award
17-3021	Aerospace Engineering and Operations Technicians	94	0%		2.45	$30.38	$32.04	0.95	Associate's degree
27-3042	Technical Writers	380	11%		2.41	$30.54	$34.51	0.88	Bachelor's degree

Source: Emsi, 2016.4, QCEW Employees, Non-QCEW Employees, and Self-Employed

TABLE 37 TOP 25 OCCUPATION BY NUMBER OF JOBS IN 13-COUNTY REGION (2009-2015)

SOC	Description	2015 Jobs	2009 - 2015 % Change	Trend 2009 - 2015	2015 Location Quotient	Median Hourly Earnings 13CR	Median Hourly Earnings US	13CR/US Ratio	Typical Entry Level Education
55-9999	Military occupations	35,708	4%		6.11	$16.02	$17.17	0.93	N/A
41-2031	Retail Salespersons	17,984	9%		1.32	$10.34	$10.80	0.96	No formal educational credential
35-3021	Combined Food Preparation and Serving Workers, Including Fast Food	14,277	32%		1.51	$8.91	$9.45	0.94	No formal educational credential
35-3031	Waiters and Waitresses	13,301	18%		1.81	$9.35	$9.92	0.94	No formal educational credential
41-2011	Cashiers	13,084	13%		1.28	$9.08	$9.72	0.93	No formal educational credential
43-4051	Customer Service Representatives	10,216	23%		1.34	$11.87	$15.55	0.76	High school diploma or equivalent
43-6014	Secretaries and Administrative Assistants	8,987	4%		1.14	$14.05	$16.52	0.85	High school diploma or equivalent
29-1141	Registered Nurses	7,793	3%		0.96	$26.89	$33.81	0.80	Bachelor's degree
43-9061	Office Clerks, General	7,373	0%		0.77	$12.40	$14.54	0.85	High school diploma or equivalent
37-2011	Janitors and Cleaners, Except Maids and Housekeeping Cleaners	6,664	12%		0.90	$10.44	$11.93	0.88	No formal educational credential
41-1011	First-Line Supervisors of Retail Sales Workers	5,864	8%		1.42	$17.15	$17.49	0.98	High school diploma or equivalent
35-2014	Cooks, Restaurant	5,765	24%		1.68	$11.23	$11.48	0.98	No formal educational credential
43-5081	Stock Clerks and Order Fillers	5,757	9%		1.02	$10.86	$11.43	0.95	No formal educational credential
37-2012	Maids and Housekeeping Cleaners	5,415	12%		1.24	$9.12	$10.44	0.87	No formal educational credential
33-3012	Correctional Officers and Jailers	5,285	-4%		4.20	$16.66	$22.27	0.75	High school diploma or equivalent
31-1014	Nursing Assistants	4,810	15%		1.13	$11.08	$12.63	0.88	Postsecondary nondegree award
49-9071	Maintenance and Repair Workers, General	4,701	9%		1.12	$14.81	$17.90	0.83	High school diploma or equivalent
43-3031	Bookkeeping, Accounting, and Auditing Clerks	4,628	-1%		0.90	$15.55	$18.14	0.86	Some college, no degree
43-1011	First-Line Supervisors of Office and Administrative Support Workers	4,404	11%		1.03	$21.06	$25.38	0.83	High school diploma or equivalent
53-7062	Laborers and Freight, Stock, and Material Movers, Hand	4,307	4%		0.58	$10.60	$12.40	0.85	No formal educational credential
25-2021	Elementary School Teachers, Except Special Education	4,281	3%		1.06	$22.02	$27.33	0.81	Bachelor's degree
37-3011	Landscaping and Groundskeeping Workers	4,238	21%		1.16	$10.83	$11.95	0.91	No formal educational credential
35-1012	First-Line Supervisors of Food Preparation and Serving Workers	4,152	26%		1.58	$14.31	$14.84	0.96	High school diploma or equivalent
13-1199	Business Operations Specialists, All Other	4,137	7%		1.48	$30.51	$33.17	0.92	Bachelor's degree
43-4171	Receptionists and Information Clerks	3,604	11%		1.19	$12.04	$13.40	0.90	High school diploma or equivalent

Source: Emsi, 2016.4, QCEW Employees, Non-QCEW Employees, and Self-Employed

TABLE 38 PROJECTION: FASTEST DECLINING OCCUPATIONS (PERCENTAGE, TOP 25, 2016-2021)

SOC	Description	2021 Jobs	2016 - 2021 % Change	Trend 2016 - 2021	2021 Location Quotient	Median Hourly Earnings 13CR	Median Hourly Earnings US	13CR/US Ratio	Typical Entry Level Education
45-3021	Hunters and Trappers	61	-34%		2.84	$18.20	$18.19	1.00	No formal educational credential
45-3011	Fishers and Related Fishing Workers	215	-33%		2.89	$15.18	$15.77	0.96	No formal educational credential
47-2161	Plasterers and Stucco Masons	80	-25%		1.04	$14.70	$18.99	0.77	No formal educational credential
51-5111	Prepress Technicians and Workers	40	-23%		0.47	$13.46	$18.98	0.71	Postsecondary nondegree award
47-2081	Drywall and Ceiling Tile Installers	210	-19%		0.65	$13.77	$19.51	0.71	No formal educational credential
49-2096	Electronic Equipment Installers and Repairers, Motor Vehicles	19	-17%		0.67	$15.50	$15.01	1.03	Postsecondary nondegree award
47-2022	Stonemasons	39	-17%		0.77	$14.04	$18.24	0.77	High school diploma or equivalent
51-6051	Sewers, Hand	15	-17%		0.52	$9.73	$11.01	0.88	No formal educational credential
47-4031	Fence Erectors	57	-16%		0.71	$12.92	$15.43	0.84	No formal educational credential
47-2021	Brickmasons and Blockmasons	166	-16%		0.71	$17.20	$22.63	0.76	High school diploma or equivalent
39-5011	Barbers	89	-16%		0.45	$9.92	$10.79	0.92	Postsecondary nondegree award
51-6091	Extruding and Forming Machine Setters, Operators, and Tenders, Synthetic and Glass Fibers	69	-16%		1.28	$21.36	$15.96	1.34	High school diploma or equivalent
47-2131	Insulation Workers, Floor, Ceiling, and Wall	83	-15%		1.05	$13.05	$17.33	0.75	No formal educational credential
47-3011	Helpers--Brickmasons, Blockmasons, Stonemasons, and Tile and Marble Setters	50	-15%		0.71	$10.55	$14.87	0.71	No formal educational credential
43-2021	Telephone Operators	17	-15%		0.68	$13.84	$17.65	0.78	High school diploma or equivalent
51-4021	Extruding and Drawing Machine Setters, Operators, and Tenders, Metal and Plastic	69	-15%		0.37	$14.54	$16.18	0.90	High school diploma or equivalent
27-3011	Radio and Television Announcers	104	-15%		1.16	$11.98	$16.59	0.72	Bachelor's degree
51-5112	Printing Press Operators	205	-14%		0.45	$13.62	$17.23	0.79	High school diploma or equivalent
51-6031	Sewing Machine Operators	218	-14%		0.56	$10.99	$11.64	0.94	No formal educational credential
41-9091	Door-to-Door Sales Workers, News and Street Vendors, and Related Workers	208	-14%		1.10	$8.15	$10.03	0.81	No formal educational credential
51-5113	Print Binding and Finishing Workers	28	-13%		0.21	$14.58	$14.94	0.98	High school diploma or equivalent
51-6099	Textile, Apparel, and Furnishings Workers, All Other	85	-12%		1.82	$11.42	$13.43	0.85	High school diploma or equivalent
51-9151	Photographic Process Workers and Processing Machine Operators	39	-11%		0.64	$12.87	$13.98	0.92	High school diploma or equivalent
49-9064	Watch Repairers	24	-11%		1.74	$12.44	$13.17	0.94	High school diploma or equivalent
49-9091	Coin, Vending, and Amusement Machine Servicers and Repairers	83	-11%		0.84	$12.96	$16.17	0.80	High school diploma or equivalent

Source: Emsi, 2016.4, QCEW Employees, Non-QCEW Employees, and Self-Employed

TABLE 39 PROJECTION: FASTEST DECLINING OCCUPATIONS (COUNT, TOP 25, 2016-2021)

SOC	Description	2021 Jobs	2016 - 2021 Change	Trend 2016 - 2021	2021 Location Quotient	Median Hourly Earnings 13CR	Median Hourly Earnings US	13CR/US Ratio	Typical Entry Level Education
47-2061	Construction Laborers	3,373	-139		0.86	$12.82	$15.47	0.83	No formal educational credential
47-2031	Carpenters	2,388	-132		0.82	$15.15	$18.92	0.80	High school diploma or equivalent
11-9021	Construction Managers	1,109	-114		1.09	$28.62	$33.71	0.85	Bachelor's degree
45-3011	Fishers and Related Fishing Workers	215	-107		2.89	$15.18	$15.77	0.96	No formal educational credential
33-3012	Correctional Officers and Jailers	5,233	-104		4.05	$16.66	$22.27	0.75	High school diploma or equivalent
41-9022	Real Estate Sales Agents	1,561	-99		1.43	$15.72	$19.68	0.80	High school diploma or equivalent
43-3031	Bookkeeping, Accounting, and Auditing Clerks	4,534	-92		0.91	$15.55	$18.14	0.86	Some college, no degree
43-5052	Postal Service Mail Carriers	921	-74		1.11	$27.21	$27.40	0.99	High school diploma or equivalent
49-2022	Telecommunications Equipment Installers and Repairers, Except Line Installers	675	-60		1.05	$25.69	$26.39	0.97	Postsecondary nondegree award
47-2081	Drywall and Ceiling Tile Installers	210	-49		0.65	$13.77	$19.51	0.71	No formal educational credential
47-1011	First-Line Supervisors of Construction Trades and Extraction Workers	1,813	-41		0.98	$22.78	$28.22	0.81	High school diploma or equivalent
51-6031	Sewing Machine Operators	218	-36		0.56	$10.99	$11.64	0.94	No formal educational credential
49-9052	Telecommunications Line Installers and Repairers	385	-35		1.20	$18.44	$26.38	0.70	High school diploma or equivalent
51-5112	Printing Press Operators	205	-34		0.45	$13.62	$17.23	0.79	High school diploma or equivalent
41-9091	Door-to-Door Sales Workers, News and Street Vendors, and Related Workers	208	-33		1.10	$8.15	$10.03	0.81	No formal educational credential
47-2021	Brickmasons and Blockmasons	166	-32		0.71	$17.20	$22.63	0.76	High school diploma or equivalent
45-3021	Hunters and Trappers	61	-31		2.84	$18.20	$18.19	1.00	No formal educational credential
11-9141	Property, Real Estate, and Community Association Managers	1,064	-29		1.36	$20.48	$24.85	0.82	High school diploma or equivalent
43-2011	Switchboard Operators, Including Answering Service	270	-26		1.01	$11.37	$13.46	0.84	High school diploma or equivalent
47-2161	Plasterers and Stucco Masons	80	-26		1.04	$14.70	$18.99	0.77	No formal educational credential
17-3011	Architectural and Civil Drafters	358	-24		1.22	$20.14	$24.76	0.81	Associate's degree
15-1131	Computer Programmers	413	-24		0.46	$29.32	$38.42	0.76	Bachelor's degree
51-9196	Paper Goods Machine Setters, Operators, and Tenders	242	-24		1.00	$15.22	$17.34	0.88	High school diploma or equivalent
41-9021	Real Estate Brokers	356	-23		1.20	$23.60	$25.93	0.91	High school diploma or equivalent
51-8091	Chemical Plant and System Operators	166	-20		1.67	$27.84	$29.00	0.96	High school diploma or equivalent

Source: Emsi, 2016.4, QCEW Employees, Non-QCEW Employees, and Self-Employed

TABLE 40 PROJECTION: FASTEST GROWING OCCUPATIONS (PERCENTAGE, TOP 25, 2016-2021)

SOC	Description	2021 Jobs	2016 - 2021 % Change	Trend 2016 - 2021	2021 Location Quotient	Median Hourly Earnings 13CR	Median Hourly Earnings US	13CR/US Ratio	Typical Entry Level Education
39-3011	Gaming Dealers	160	54%		0.53	$10.19	$10.13	1.01	High school diploma or equivalent
39-1012	Slot Supervisors	14	40%		0.61	$16.13	$16.64	0.97	High school diploma or equivalent
51-2031	Engine and Other Machine Assemblers	35	40%		0.31	$20.99	$19.47	1.08	High school diploma or equivalent
17-2121	Marine Engineers and Naval Architects	18	38%		0.70	$44.55	$45.51	0.98	Bachelor's degree
31-2011	Occupational Therapy Assistants	104	33%		0.80	$29.81	$27.93	1.07	Associate's degree
31-2022	Physical Therapist Aides	132	32%		0.73	$11.69	$12.60	0.93	High school diploma or equivalent
47-3016	Helpers--Roofers	54	32%		1.51	$10.89	$13.42	0.81	No formal educational credential
19-3022	Survey Researchers	13	30%		0.28	Insf. Data	$27.19		Master's degree
49-3041	Farm Equipment Mechanics and Service Technicians	59	28%		0.49	$15.94	$17.79	0.90	High school diploma or equivalent
13-2041	Credit Analysts	69	28%		0.32	$29.38	$34.46	0.85	Bachelor's degree
49-9081	Wind Turbine Service Technicians	14	27%		0.56	Insf. Data	$22.34		Some college, no degree
49-9011	Mechanical Door Repairers	43	26%		0.75	$18.06	$18.72	0.97	High school diploma or equivalent
17-3027	Mechanical Engineering Technicians	48	26%		0.32	$22.13	$26.07	0.85	Associate's degree
41-3041	Travel Agents	481	26%		2.25	$13.65	$16.77	0.81	High school diploma or equivalent
39-1011	Gaming Supervisors	39	26%		0.50	$20.41	$23.00	0.89	High school diploma or equivalent
51-4081	Multiple Machine Tool Setters, Operators, and Tenders, Metal and Plastic	40	25%		0.13	$16.37	$16.49	0.99	High school diploma or equivalent
19-1042	Medical Scientists, Except Epidemiologists	76	25%		0.23	$36.32	$40.01	0.91	Doctoral or professional degree
31-1013	Psychiatric Aides	87	24%		0.39	$11.36	$13.35	0.85	High school diploma or equivalent
41-9041	Telemarketers	630	24%		0.90	$10.73	$11.73	0.91	No formal educational credential
43-3041	Gaming Cage Workers	21	24%		0.37	$9.76	$12.79	0.76	High school diploma or equivalent
31-2021	Physical Therapist Assistants	371	22%		1.27	$28.70	$26.67	1.08	Associate's degree
15-2041	Statisticians	39	22%		0.34	$28.49	$39.00	0.73	Master's degree
29-1181	Audiologists	28	22%		0.69	$30.08	$36.15	0.83	Doctoral or professional degree
19-1021	Biochemists and Biophysicists	45	22%		0.45	$37.37	$40.89	0.91	Doctoral or professional degree
51-2091	Fiberglass Laminators and Fabricators	218	20%		3.56	$14.26	$14.41	0.99	High school diploma or equivalent

Source: Emsi, 2016.4, QCEW Employees, Non-QCEW Employees, and Self-Employed

TABLE 41 PROJECTION: FASTEST GROWING OCCUPATIONS (COUNT, TOP 25, 2016-2021)

SOC	Description	2021 Jobs	2016 - 2021 Change	Trend 2016 - 2021	2021 Location Quotient	Median Hourly Earnings 13CR	Median Hourly Earnings US	13CR/US Ratio	Typical Entry Level Education
41-2031	Retail Salespersons	19,049	1,309		1.32	$10.34	$10.80	0.96	No formal educational credential
35-3021	Combined Food Preparation and Serving Workers, Including Fast Food	15,599	1,115		1.50	$8.91	$9.45	0.94	No formal educational credential
43-4051	Customer Service Representatives	11,261	949		1.36	$11.87	$15.55	0.76	High school diploma or equivalent
37-2011	Janitors and Cleaners, Except Maids and Housekeeping Cleaners	7,553	651		0.95	$10.44	$11.93	0.88	No formal educational credential
35-3031	Waiters and Waitresses	14,020	588		1.79	$9.35	$9.92	0.94	No formal educational credential
35-2014	Cooks, Restaurant	6,472	574		1.67	$11.23	$11.48	0.98	No formal educational credential
31-1014	Nursing Assistants	5,441	543		1.16	$11.08	$12.63	0.88	Postsecondary nondegree award
41-2011	Cashiers	13,409	515		1.27	$9.08	$9.72	0.93	No formal educational credential
29-1141	Registered Nurses	8,537	457		0.94	$26.89	$33.81	0.80	Bachelor's degree
37-3011	Landscaping and Groundskeeping Workers	4,713	380		1.21	$10.83	$11.95	0.91	No formal educational credential
37-2012	Maids and Housekeeping Cleaners	5,849	375		1.26	$9.12	$10.44	0.87	No formal educational credential
43-1011	First-Line Supervisors of Office and Administrative Support Workers	4,794	336		1.05	$21.06	$25.38	0.83	High school diploma or equivalent
43-5081	Stock Clerks and Order Fillers	6,025	332		1.01	$10.86	$11.43	0.95	No formal educational credential
35-1012	First-Line Supervisors of Food Preparation and Serving Workers	4,510	302		1.56	$14.31	$14.84	0.96	High school diploma or equivalent
11-1021	General and Operations Managers	3,443	289		0.51	$45.21	$48.03	0.94	Bachelor's degree
29-2061	Licensed Practical and Licensed Vocational Nurses	3,112	251		1.34	$17.69	$21.09	0.84	Postsecondary nondegree award
41-1011	First-Line Supervisors of Retail Sales Workers	6,028	249		1.42	$17.15	$17.49	0.98	High school diploma or equivalent
33-9032	Security Guards	2,765	244		0.76	$9.52	$12.52	0.76	High school diploma or equivalent
31-1011	Home Health Aides	2,073	226		0.61	$9.99	$10.82	0.92	No formal educational credential
43-3071	Tellers	2,532	223		1.78	$13.13	$12.82	1.02	High school diploma or equivalent
25-2021	Elementary School Teachers, Except Special Education	4,564	221		1.08	$22.02	$27.33	0.81	Bachelor's degree
43-9061	Office Clerks, General	7,699	216		0.77	$12.40	$14.54	0.85	High school diploma or equivalent
53-7062	Laborers and Freight, Stock, and Material Movers, Hand	4,592	202		0.59	$10.60	$12.40	0.85	No formal educational credential
35-3011	Bartenders	2,823	199		1.49	$9.87	$10.32	0.96	No formal educational credential
13-2011	Accountants and Auditors	3,016	192		0.69	$27.64	$32.40	0.85	Bachelor's degree
35-2021	Food Preparation Workers	2,544	186		0.92	$10.11	$10.23	0.99	No formal educational credential

Source: Emsi, 2016.4, QCEW Employees, Non-QCEW Employees, and Self-Employed

Inverse Staffing Patterns

This section contains inverse staffing patterns for the six tech clusters. The following inverse staffing patterns list the top ten industries (6-digit NAICS) employing workers within these select occupation clusters.

TABLE 42 NATURAL SCIENCES AND ENVIRONMENTAL MANAGEMENT OCCUPATION CLUSTER

NAICS	Industry	Occupation Group Jobs in Industry (2009)	Occupation Group Jobs in Industry (2015)	Change (2009 - 2015)	% Change (2009 - 2015)	% of Occupation Group in Industry (2016)
901199	Federal Government, Civilian, Excluding Postal Service	594	626	32	5%	34.0%
902999	State Government, Excluding Education and Hospitals	312	262	-50	-16%	14.3%
541330	Engineering Services	200	223	23	12%	12.3%
903999	Local Government, Excluding Education and Hospitals	126	124	-2	-2%	7.0%
541611	Administrative Management and General Management Consulting Services	38	52	14	37%	2.9%
541712	Research and Development in the Physical, Engineering, and Life Sciences (except Biotechnology)	40	57	17	43%	2.7%
541370	Surveying and Mapping (except Geophysical) Services	27	32	5	19%	1.8%
541310	Architectural Services	36	31	-5	-14%	1.7%
221122	Electric Power Distribution	17	22	5	29%	1.2%
902612	Colleges, Universities, and Professional Schools (State Government)	25	20	-5	-20%	1.2%

Source: Emsi, 2016.4, QCEW Employees, Non-QCEW Employees, and Self-Employed
Cluster Definition: Purdue Center for Regional Development, the Indiana Business Research Center at Indiana University's Kelley School of Business, and other research partners.

TABLE 43 POSTSECONDARY EDUCATION AND KNOWLEDGE CREATION OCCUPATION CLUSTER

NAICS	Industry	Occupation Group Jobs in Industry (2009)	Occupation Group Jobs in Industry (2015)	Change (2009 - 2015)	% Change (2009 - 2015)	% of Occupation Group in Industry (2016)
902612	Colleges, Universities, and Professional Schools (State Government)	1,180	1,184	4	0%	43.6%
611310	Colleges, Universities, and Professional Schools	530	443	-87	-16%	15.4%
903612	Colleges, Universities, and Professional Schools (Local Government)	331	227	-104	-31%	7.9%
903611	Elementary and Secondary Schools (Local Government)	156	155	-1	-1%	5.4%
611519	Other Technical and Trade Schools	90	125	35	39%	4.8%
901199	Federal Government, Civilian, Excluding Postal Service	115	125	10	9%	4.5%
903999	Local Government, Excluding Education and Hospitals	101	101	0	0%	3.7%
611210	Junior Colleges	27	32	5	19%	1.5%
902999	State Government, Excluding Education and Hospitals	48	40	-8	-17%	1.4%
622110	General Medical and Surgical Hospitals	36	38	2	6%	1.4%

Source: Emsi, 2016.4, QCEW Employees, Non-QCEW Employees, and Self-Employed
Cluster Definition: Purdue Center for Regional Development, the Indiana Business Research Center at Indiana University's Kelley School of Business, and other research partners.

TABLE 44 HEALTH CARE AND MEDICAL SCIENCE (MEDICAL PRACTITIONERS AND SCIENTISTS) OCCUPATION CLUSTER

NAICS	Industry	Occupation Group Jobs in Industry (2009)	Occupation Group Jobs in Industry (2015)	Change (2009 - 2015)	% Change (2009 - 2015)	% of Occupation Group in Industry (2016)
621111	Offices of Physicians (except Mental Health Specialists)	841	947	106	13%	22.7%
622110	General Medical and Surgical Hospitals	645	667	22	3%	16.6%
901199	Federal Government, Civilian, Excluding Postal Service	592	633	41	7%	15.3%
621210	Offices of Dentists	265	271	6	2%	6.6%
621320	Offices of Optometrists	203	211	8	4%	5.3%
902999	State Government, Excluding Education and Hospitals	141	116	-25	-18%	2.8%
621310	Offices of Chiropractors	101	103	2	2%	2.6%
903622	Hospitals (Local Government)	255	97	-158	-62%	2.5%
623110	Nursing Care Facilities (Skilled Nursing Facilities)	66	83	17	26%	2.0%
903999	Local Government, Excluding Education and Hospitals	60	59	-1	-2%	1.5%

Source: Emsi, 2016.4, QCEW Employees, Non-QCEW Employees, and Self-Employed
Cluster Definition: Purdue Center for Regional Development, the Indiana Business Research Center at Indiana University's Kelley School of Business, and other research partners.

TABLE 45 ENGINEERING AND RELATED SCIENCES OCCUPATION CLUSTER

NAICS	Industry	Occupation Group Jobs in Industry (2009)	Occupation Group Jobs in Industry (2015)	Change (2009 - 2015)	% Change (2009 - 2015)	% of Occupation Group in Industry (2016)
541330	Engineering Services	1,381	1,529	148	11%	34.3%
901199	Federal Government, Civilian, Excluding Postal Service	663	748	85	13%	16.1%
902999	State Government, Excluding Education and Hospitals	231	198	-33	-14%	4.3%
541712	Research and Development in the Physical, Engineering, and Life Sciences (except Biotechnology)	102	159	57	56%	3.0%
221122	Electric Power Distribution	106	134	28	26%	2.9%
903999	Local Government, Excluding Education and Hospitals	109	109	0	0%	2.4%
336413	Other Aircraft Parts and Auxiliary Equipment Manufacturing	150	116	-34	-23%	2.3%
325220	Artificial and Synthetic Fibers and Filaments Manufacturing	58	75	17	29%	1.6%
517110	Wired Telecommunications Carriers	107	70	-37	-35%	1.4%
336419	Other Guided Missile and Space Vehicle Parts and Auxiliary Equipment Manufacturing	103	64	-39	-38%	1.4%

Source: Emsi, 2016.4, QCEW Employees, Non-QCEW Employees, and Self-Employed
Cluster Definition: Purdue Center for Regional Development, the Indiana Business Research Center at Indiana University's Kelley School of Business, and other research partners.

TABLE 46 INFORMATION TECHNOLOGY OCCUPATION CLUSTER

NAICS	Industry	Occupation Group Jobs in Industry (2009)	Occupation Group Jobs in Industry (2015)	Change (2009 - 2015)	% Change (2009 - 2015)	% of Occupation Group in Industry (2016)
541511	Custom Computer Programming Services	1,037	837	-200	-19%	12.6%
541512	Computer Systems Design Services	367	614	247	67%	9.1%
517110	Wired Telecommunications Carriers	1,018	649	-369	-36%	8.8%
541330	Engineering Services	363	448	85	23%	6.4%
901199	Federal Government, Civilian, Excluding Postal Service	181	212	31	17%	2.9%
522130	Credit Unions	96	189	93	97%	2.8%
903611	Elementary and Secondary Schools (Local Government)	179	185	6	3%	2.6%
902999	State Government, Excluding Education and Hospitals	211	179	-32	-15%	2.5%
903999	Local Government, Excluding Education and Hospitals	161	159	-2	-1%	2.3%
551114	Corporate, Subsidiary, and Regional Managing Offices	124	139	15	12%	1.9%

Source: Emsi, 2016.4, QCEW Employees, Non-QCEW Employees, and Self-Employed
Cluster Definition: Purdue Center for Regional Development, the Indiana Business Research Center at Indiana University's Kelley School of Business, and other research partners.

TABLE 47 MATHEMATICS, STATISTICS, DATA AND ACCOUNTING OCCUPATION CLUSTER

NAICS	Industry	Occupation Group Jobs in Industry (2009)	Occupation Group Jobs in Industry (2015)	Change (2009 - 2015)	% Change (2009 - 2015)	% of Occupation Group in Industry (2016)
901199	Federal Government, Civilian, Excluding Postal Service	775	874	99	13%	13.6%
541219	Other Accounting Services	331	400	69	21%	6.9%
522130	Credit Unions	197	346	149	76%	5.7%
541211	Offices of Certified Public Accountants	301	308	7	2%	5.3%
902999	State Government, Excluding Education and Hospitals	335	280	-55	-16%	4.4%
541511	Custom Computer Programming Services	318	226	-92	-29%	3.7%
903999	Local Government, Excluding Education and Hospitals	186	183	-3	-2%	3.0%
541213	Tax Preparation Services	189	176	-13	-7%	2.8%
541512	Computer Systems Design Services	113	165	52	46%	2.7%
541330	Engineering Services	138	166	28	20%	2.7%

Source: Emsi, 2016.4, QCEW Employees, Non-QCEW Employees, and Self-Employed
Cluster Definition: Purdue Center for Regional Development, the Indiana Business Research Center at Indiana University's Kelley School of Business, and other research partners.

APPENDIX A: CYBERSECURITY

Cybersecurity Workforce

Collecting data on the cybersecurity workforce of a region is a challenge because there are no NAICS or SOC codes for "cybersecurity." Creating a NAICS industry code for cybersecurity would still fail to capture tens of thousands of cybersecurity professionals nationwide. For example, none of the cybersecurity professionals working in the finance or health care industries would be captured because they would be reported in their employer's primary industry code. A cybersecurity Occupation codes would present a similar problem for cybersecurity as many workers have cybersecurity responsibilities that are secondary to their primary job duty. For example, systems software developers (SOC 15-1133) certainly must consider issues of cybersecurity in the course of their job duties. However, if "cybersecurity" is not their primary job duty, they should still select SOC 15-1133 as their occupation, which would leave them out of the job count for cybersecurity professionals entirely.

Given these difficulties, a more accurate source of local cybersecurity workforce information is through job postings analysis. Job postings analysis involves mining data from online job postings sites in order to identify job openings and workers whose skillset may not fit within traditional SOC and NAICS codes. One such effort to mine job postings data in order to quantify the supply and demand of cybersecurity workers is Cyberseek.org[21], which is presented in this section.

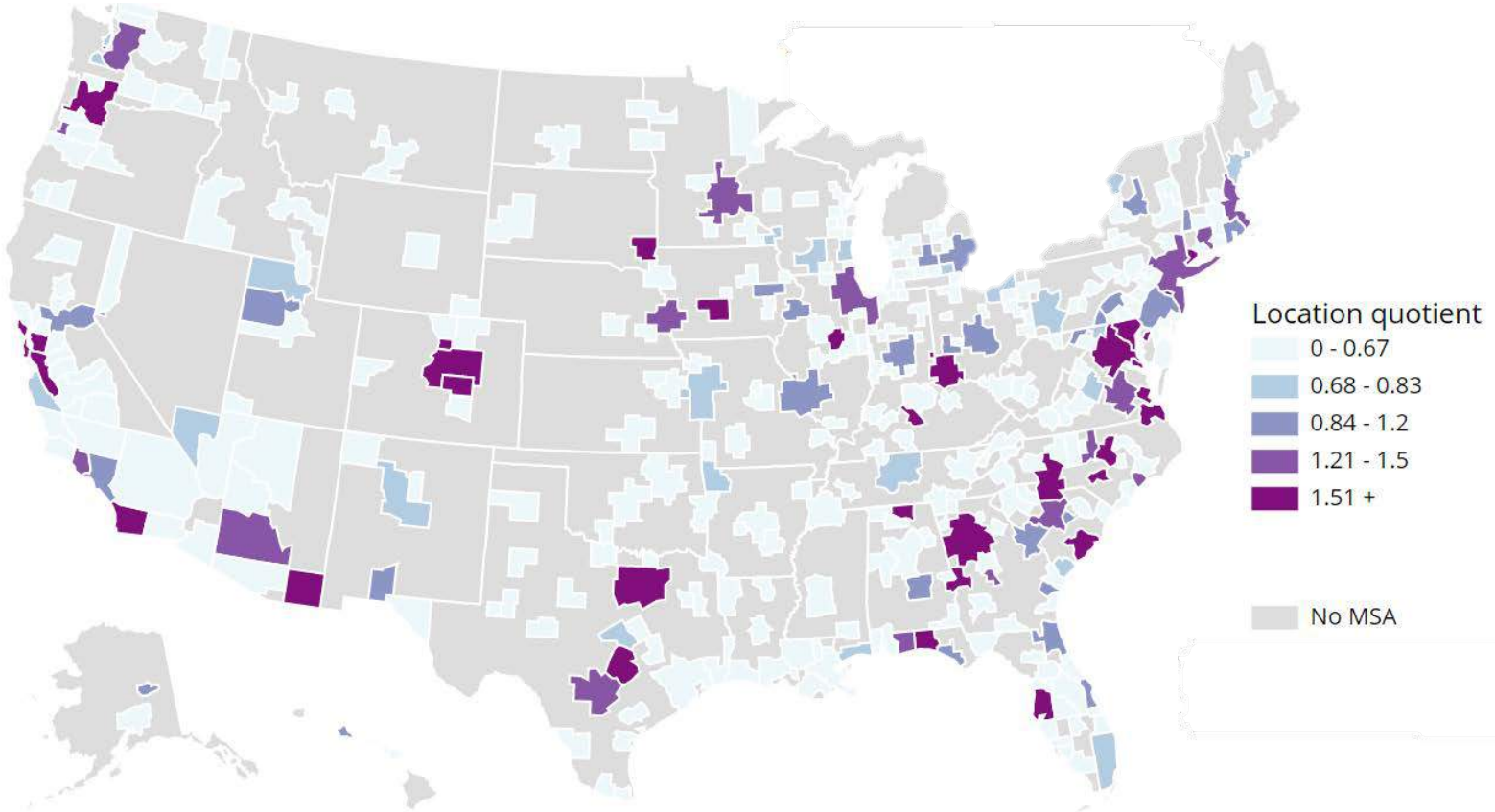
CYBERSECURITY LOCATION QUOTIENT

The Cyberseek project mines online job postings to identify unique cybersecurity job postings and their corresponding location. In the year ending June 2016, there were 348,975 total cybersecurity job openings nationwide. If the Crestview-Ft. Walton Beach-Destin MSA had the same rate of job openings as the nation as a whole, there would have been about 265 cybersecurity job openings. Instead, there were 504 job openings in cybersecurity in the MSA which translates to a Location Quotient of 1.9 (504 / 265 = 1.9).

[21] Cyberseek.org is supported by the National Initiative for Cybersecurity Education (NICE), a program of the National Institute of Standards and Technology in the U.S. Department of Commerce. It is a partnership between NICE, Burning Glass Technologies and the Computing Technology Industry Association (CompTIA). Cyberseek presents data down to the MSA level, so only six of the region's thirteen counties are represented in this section.

Figure 51 indicates the cybersecurity location quotient of each MSA in the country. There are 50 "cybersecurity-concentrated" MSAs whose LQ is 1.21 or greater. Twenty-six of these are in large MSAs with a population of at least a million. There seems to be a spillover benefit from these large MSAs, as fifteen medium or small cybersecurity-concentrated MSAs share a border with a large cybersecurity-concentrated MSA and another four are within 90 miles. There are only five small or medium sized MSAs that are more than 90 miles from a large cybersecurity-concentrated MSA, two of which are the Pensacola-Ferry Pass-Brent MSA (LQ 1.3) and the Crestview-Ft. Walton Beach-Destin MSA (LQ 1.9).

FIGURE 51 MAP OF CYBERSECURITY JOB DEMAND CONCENTRATION



Source: CyberSeek.org

The figures to the right demonstrate the makeup of the region's cybersecurity job demand and workforce as compared to the state and national profiles. Nationally and within Florida, the certifications that are most in demand among cybersecurity job postings are CISSP and CISM[22] (Figure52). The Pensacola MSA also has a high demand for CISSP certificate holders, but only 10 percent of its cybersecurity professionals have such certification. Fewer than 5 percent of the job postings in the Crestview and Panama City MSAs require either a CISSP or CISM certification, but over 30 percent require CISA certification. About half of all cybersecurity job openings in the region only require Security+ certification, which is almost three times the national average.

Compared to the state and nation, the region has a relatively high share of cybersecurity jobs classified as "Operate & Maintain" and "Securely Provision."[23] All three MSAs in the region have relatively less demand in cybersecurity jobs classified as "Analyze" and "Oversee & Govern." However, each MSA in the region has an area of relative specialty in cybersecurity job demand: Pensacola MSA in "Investigate"; Crestview MSA in "Collect & Operate"; and Panama City MSA in "Protect & Defend".

FIGURE 52 CYBERSECURITY JOB OPENINGS[4]

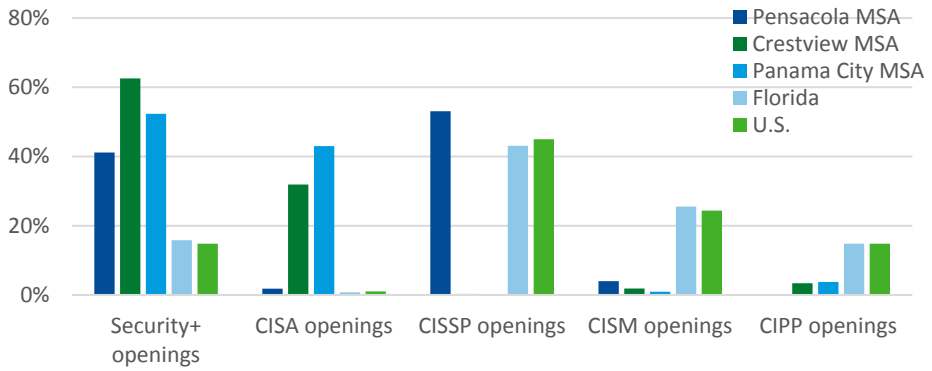


FIGURE 53 CYBERSECURITY CERTIFICATE HOLDINGS[4]

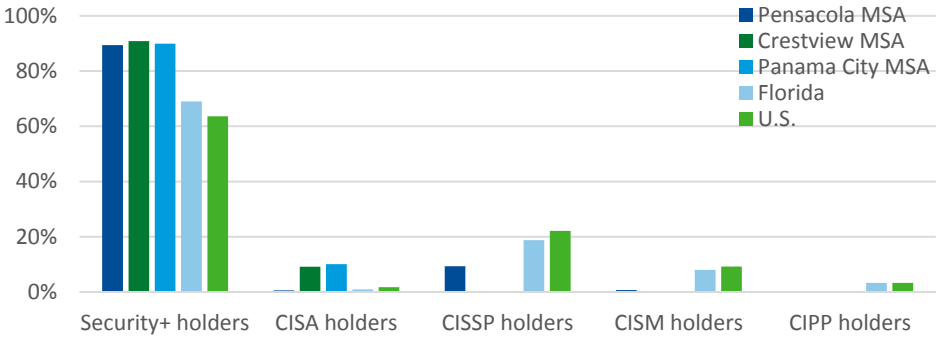
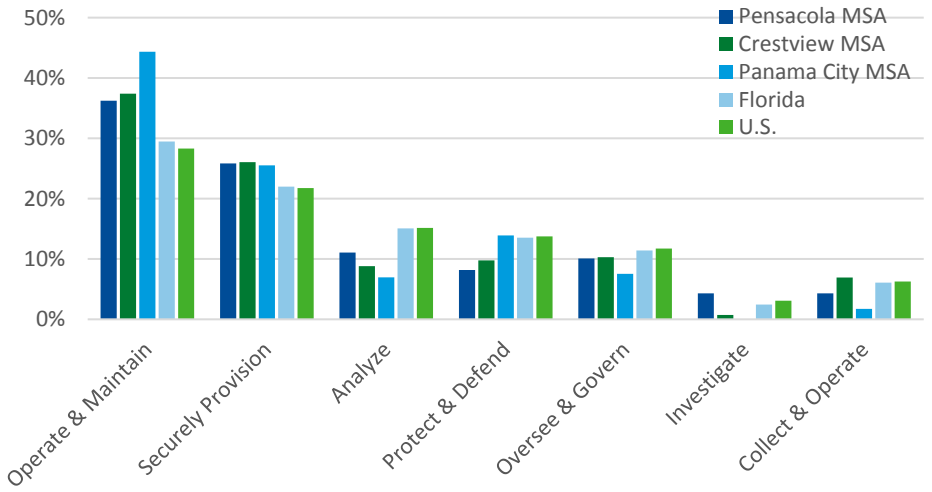


FIGURE 54 CYBERSECURITY JOB OPENINGS BY NICE



[22] Certified Information Privacy Professional (CIPP), Certified Information Systems Security Professional (CISSP), Certified Information Systems Auditor (CISA), Certified Information Security Manager (CISM)

[23] See Cyberseek.org for description of each of the seven NICE categories of cybersecurity jobs.

APPENDIX B: INNOVATION

Innovation Matrix

The innovation matrix for the 13-county region is based upon the Innovation Index 2.0 project from StatsAmerica, a service of the Indiana Business Research Center (IBRC) at Indiana University's Kelley School of Business. The Innovation Index 2.0 project is funded and supported by the U.S. Commerce Department's Economic Development Administration.

The innovation matrix illustrates five major indexes, which, equally weighted, are combined into one overall headline index. A major index is derived by a set of measures and/or core indexes computed by a subset of measures. Overall, the innovation matrix includes 57 measures that flow into core and major indexes and, ultimately, into the headline innovation index. The innovation matrix shows percentile values that are based on a comparison among 3,110 counties in the U.S. For example, a percentile of 80 means that 80 percent of all 3,110 counties in the U.S. score lower than the county under examination. For detailed information about methodology and rationale behind measures see documentation on http://www.statsamerica.org/ii2/reports/Driving-Regional-Innovation.pdf.

WHY USE INNOVATION INDEX 2.0 BETA?

Even though the product is in Beta phase at the time of this report, the five major indexes should not change in the final product. The primary differences between the Beta version and the final is that the final is expected to provide additional data including an additional major index (social capital), further custom geographical selection options, and the ability to download select raw data.

Despite these limitations, the Haas Center considers the Innovation 2.0 to be the most transparent and methodologically sound tool available to quantify a region's "innovation" that would allow comparisons across the country. For example, one indicator of a region's innovation is its venture capital attraction. However, 2,500 counties have no venture capital investment and the San Francisco Bay Area has approximately 1,400 times more VC investment than the "average" region. Patents granted, STEM degrees created, and foreign investment are each components of "innovation" that present the same challenge of large numbers of geographic regions with "zeroes" and incredible outliers. The researchers behind the Innovation 2.0 project used advanced statistical techniques to account for these and other data challenges making possible meaningful comparison of innovation across geographies.

TABLE 48 HEADLINE INDEX AND HUMAN CAPITAL AND KNOWLEDGE CREATION INDEX (PERCENTILE)

	Escambia	Santa Rosa	Okaloosa	Walton	Bay	Gulf	Washington	Holmes	Jackson	Calhoun	Liberty	Franklin	Wakulla
Headline Index	**67**	**84**	**77**	**78**	**59**	**6**	**25**	**1**	**29**	**7**	**18**	**34**	**80**

	Escambia	Santa Rosa	Okaloosa	Walton	Bay	Gulf	Washington	Holmes	Jackson	Calhoun	Liberty	Franklin	Wakulla
1. Human Capital and Knowledge Creation Index	**85**	**85**	**89**	**48**	**62**	**9**	**10**	**5**	**21**	**6**	**9**	**24**	**78**
Salad Days Population Growth (Ages 25-44)	62	92	81	97	84	73	87	52	78	80	84	98	96
Educational Attainment Core Index	89	93	98	63	73	17	17	9	23	10	3	9	35
High School Attainment (Ages 18-24)	73	63	77	43	47	11	26	10	40	49	24	3	23
Some College, No Degree (Age 25+)	62	69	83	71	77	56	58	53	51	35	7	42	69
Associate Degree (Age 25+)	95	92	81	42	82	34	23	22	34	9	2	13	51
Bachelor's Degree (Age 25+)	74	82	79	81	65	40	7	5	23	8	22	38	46
Graduate Degree (Age 25+)	75	79	88	72	69	13	33	28	41	1	22	44	47
Knowledge Creation and Technology Diffusion Core Index	71	77	67	24	35	15	17	20	27	15	32	39	81
Patent Technology Diffusion	80	91	83	34	56	0	0	0	34	0	0	97	95
University-Based Knowledge Spillovers	56	50	37	0	0	0	0	0	0	0	53	0	59
Business Incubator Spillovers	71	62	39	28	45	33	42	68	51	30	51	0	51
STEM Education and Occupations Core Index	80	50	78	3	44	25	7	26	19	8	1	9	82
STEM Degree Creation (per 1,000 Population)	87	0	0	0	0	0	0	0	0	0	0	0	0
Technology-Based Knowledge Occupation Clusters	55	47	65	2	35	10	5	49	9	6	1	9	75
High-Tech Industry Employment Share	77	73	94	23	70	65	28	7	55	31	7	28	94

Source: Innovation 2.0 project via StatsAmerica.org

Note: The source of the STEM Degree Creation data is the National Center for Education Statistics Integrated Postsecondary Education Data System (IPEDS). This metric includes awards of a bachelor's degree or higher categorized by CIP Codes 11, 14, 15, 26, 27, 30.01, 30.08, 30.10, 30.15, 40 and 41. The data is aggregated by institution, not by location, so degrees awarded to students at University of Florida and Florida State University campuses within the 13-county region will be listed in Alachua and Leon Counties, respectively.

TABLE 49 BUSINESS DYNAMICS INDEX (PERCENTILE)

	Escambia	Santa Rosa	Okaloosa	Walton	Bay	Gulf	Washington	Holmes	Jackson	Calhoun	Liberty	Franklin	Wakulla
2. Business Dynamics Index	**59**	**77**	**60**	**91**	**57**	**7**	**77**	**30**	**32**	**46**	**61**	**25**	**69**
Establishment Formation Core Index	84	94	85	99	78	6	95	21	53	32	18	14	96
Establishment Births to All Establishments Ratio	68	91	75	98	72	35	94	51	52	51	7	72	95
Traded Sector Estab. Births to All Estab. Ratio	81	94	81	97	68	12	86	14	86	98	61	38	92
Jobs Attributed to Estab. Births to Total Employment Ratio	91	93	91	100	87	0	95	46	55	0	23	0	96
Change in Estab. Births to All Estab. Ratio	40	12	39	18	38	8	28	2	7	1	19	8	24
Establishment Dynamics Core Index	29	67	28	95	41	25	59	62	20	77	96	65	10
Estab. Expansions Divided by Estab. Contractions	33	48	42	95	57	78	14	92	11	37	100	59	14
Estab. Births Divided by Estab. Deaths	51	71	42	84	43	5	92	16	31	11	16	24	28
Traded Sector Establishment Dynamics	36	78	30	82	46	10	22	15	64	98	97	87	21
Venture Capital Dollar Measures Core Index	0	0	0	0	0	0	0	0	0	0	0	0	0
Venture Capital (Average Annual $)	0	0	0	0	0	0	0	0	0	0	0	0	0
Expansion Stage Venture Capital $	0	0	0	0	0	0	0	0	0	0	0	0	0
High-Tech Venture Capital $	0	0	0	0	0	0	0	0	0	0	0	0	0
Change in Venture Capital $	0	0	0	0	0	0	0	0	0	0	0	0	0
Venture Capital Count Measures Core Index	0	0	0	86	0	0	0	0	0	0	0	0	0
Initial Public Offerings	0	0	0	0	0	0	0	0	0	0	0	0	0
Venture Capital Deals (Average Annual)	0	0	0	88	0	0	0	0	0	0	0	0	0
Change in Venture Capital Deals	0	0	0	0	0	0	0	0	0	0	0	0	0

Source: Innovation 2.0 project via StatsAmerica.org

Note: Venture Capital (VC) core indexes and measures show zeros except for the Venture Capital Deals measure in Walton County. This measure shows the total amount of VC deals, scaled by the region's average GDP and is part of a subset of measures under the Venture Capital Count Measures Core Index. Walton County ranks 382nd among 3,110 counties in the U.S., but 2,526 counties show no VC investment at all.

TABLE 50 BUSINESS PROFILE INDEX (PERCENTILE)

	Escambia	Santa Rosa	Okaloosa	Walton	Bay	Gulf	Washington	Holmes	Jackson	Calhoun	Liberty	Franklin	Wakulla
3. Business Profile Index	**78**	**62**	**47**	**76**	**62**	**59**	**80**	**27**	**66**	**13**	**51**	**50**	**36**
Foreign Direct Investment Attractiveness Core Index	94	57	58	56	59	0	57	0	76	0	0	0	0
FDI Employment Index, Foreign Source	84	0	0	0	0	0	0	0	0	0	0	0	0
FDI $ Investment Index, Foreign Source	83	0	0	0	0	0	0	0	0	0	0	0	0
FDI Employment Index, National Source	90	65	68	62	71	0	66	0	96	0	0	0	0
FDI $ Investment Index, National Source	85	67	70	65	72	0	65	0	67	0	0	0	0
Connectivity Core Index	58	37	59	39	96	41	72	63	69	18	52	74	81
Residential High-Speed Connection Density	97	84	97	84	97	62	62	62	62	62	62	62	84
Change in Residential High-Speed Connections	0	0	0	0	54	54	94	94	94	0	94	54	79
Farm Operators with Internet Access	26	46	31	65	88	22	67	25	46	47	10	98	58
Dynamic Industry Profile Core Index	77	89	76	97	60	74	68	8	21	19	54	61	42
Small Establishments (Average)	23	75	40	92	55	81	56	41	43	68	4	88	72
Large Establishments (Average)	69	40	56	55	52	0	53	0	35	0	52	0	0
High-Tech, Early-in-Life-Cycle Establishment Ratio	89	92	90	89	76	92	82	23	26	46	86	77	76
Proprietorship Core Index	6	28	16	51	14	84	58	79	34	74	80	59	65
Proprietorship Rate	23	70	41	61	38	89	54	92	20	76	74	94	90
Change in Proprietorship Rate	49	40	63	78	46	90	91	75	83	88	98	26	66
Proprietor Income to Total Wages and Salaries	10	5	11	34	22	5	6	35	13	12	4	8	6
Availability of Capital from All Banks	43	28	43	28	43	71	10	10	28	10	61	73	73

Source: Innovation 2.0 project via StatsAmerica.org

TABLE 51 EMPLOYMENT AND PRODUCTIVITY INDEX (PERCENTILE)

	Escambia	Santa Rosa	Okaloosa	Walton	Bay	Gulf	Washington	Holmes	Jackson	Calhoun	Liberty	Franklin	Wakulla
4. Employment and Productivity Index	**42**	**80**	**64**	**72**	**66**	**6**	**11**	**1**	**47**	**20**	**22**	**61**	**90**
Job Growth to Population Growth Ratio	45	88	73	99	80	74	43	57	53	55	80	52	83
Change in Share of High-Tech Industry Employment	33	80	63	33	66	60	89	47	17	94	70	88	89
Industry Performance Core Index	1	28	2	60	11	30	37	12	22	58	74	76	44
Cluster Diversity	7	6	8	4	8	12	34	23	10	18	8	56	23
Cluster Strength	1	2	3	2	5	19	68	45	20	81	97	78	58
Cluster Growth Factor	12	73	11	99	49	69	60	20	62	81	74	81	73
Gross Domestic Product Core Index	52	20	59	5	49	12	10	2	36	6	4	6	4
GDP per Worker	68	25	85	31	67	29	21	4	46	15	19	7	9
Change in GDP per Worker	40	29	9	0	37	10	11	2	40	7	1	17	7
Patents Core Index	87	81	90	69	78	0	0	0	87	0	0	51	97
Change in Average Patenting Rate	67	52	71	83	42	0	0	0	99	0	0	51	100
Patent Diversity	92	90	94	72	89	0	0	0	62	0	0	56	72

Source: Innovation 2.0 project via StatsAmerica.org

Note: The Patents Core Index for Jackson and Wakulla counties is exceptionally high. This observation can be explained by how the data patents are recorded. If a patent has multiple applicants, the patent is recorded at each applicant's location. In the case of Jackson County, the vast majority of patents originate from the Florida Foundation Seed Producers, Inc. (FFSP) in Marianna, FL, a support organization of the University of Florida with multiple offices in Florida. Some patent inventors reside in other locations than Jackson County, but it appears all of the patents of the FFSP are recorded in Marianna.

Wakulla County ranks number one in the nation with respect to the Change in Average Patenting Rate measure. This measure is computed by the three-year average of patents per 1,000 workers between 2011 and 2013 divided by the three-year average of patents per 1000 workers between 2003 and 2005. A search of the U.S. Patent and Trademark Office's database revels multiple patents with at least one applicant residing in Wakulla County, although the assignee is the Florida State University Research Foundation or Florida A&M University based in Tallahassee, FL. Because this metric is per 1,000 workers and Wakulla has only 6,243 jobs (2016), it does not take many patent awards to have a dramatic effect on the county's Patents Core Index metrics.

TABLE 52 ECONOMIC WELL-BEING INDEX (PERCENTILE)

	Escambia	Santa Rosa	Okaloosa	Walton	Bay	Gulf	Washington	Holmes	Jackson	Calhoun	Liberty	Franklin	Wakulla
5. Economic Well-Being Index	**21**	**59**	**54**	**43**	**32**	**28**	**20**	**14**	**9**	**9**	**17**	**31**	**70**
Per Capita Personal Income Growth	22	38	13	28	18	49	59	10	13	47	10	45	61
Income Inequality (Mean to Median Ratio)	35	67	57	11	50	63	68	64	40	38	28	9	98
Poverty Rate (Average)	38	76	67	41	60	42	24	12	31	13	17	18	63
Unemployment Rate (Average)	44	58	68	63	43	51	37	35	40	34	48	67	64
Dependency Based on Income Sources (Ratio)	45	65	74	79	52	23	8	7	9	8	34	36	57
Net Migration (Average)	59	70	40	95	47	76	68	85	60	80	99	96	91
Compensation Core Index	27	23	35	4	23	5	7	9	12	5	0	14	6
Growth in Wage/Salary Earnings per Worker	49	45	67	36	24	25	31	13	42	26	8	39	29
Change in Proprietors' Income per Proprietor	22	20	12	2	35	7	7	20	9	5	2	12	6

Source: Innovation 2.0 project via StatsAmerica.org

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