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December 30, 2019

The Honorable Ronald D. Kouchi,
President and Members
of the Senate
Thirtieth State Legislature
State Capitol, Room 409
Honolulu, Hawaii 96813

The Honorable Scott K. Saiki,
Speaker and Members of the
House of Representatives
Thirtieth State Legislature
State Capitol, Room 431
Honolulu, Hawaii 96813

Dear President Kouchi, Speaker Saiki, and Members of the Legislature:

For your information and consideration, I am transmitting a copy of the report titled *Hawaii County Industry Analysis 2001-2018*, as required by Senate Concurrent Resolution 86 of the 2019 Legislative Session. In accordance with Section 93-16, Hawaii Revised Statutes, I am also informing you that the report may be viewed electronically at: <http://dbedt.hawaii.gov/overview/annual-reports-reports-to-the-legislature/>.

With aloha,

Mike McCartney

Enclosure

c: Legislative Reference Bureau



HAWAII COUNTY INDUSTRY ANALYSIS

2001-2018



**Department of Business, Economic Development and Tourism
December 2019**

This report fulfills the reporting requirements of Senate Concurrent Resolution 86 of the 2019 Legislative Session and was prepared by the Research and Economic Analysis Division headed by Dr. Eugene Tian, Division Administrator. Data and analyses were developed, and the report was written by Dr. Binsheng Li, economist and edited by Dr. Joseph Roos and Laura Meisinger.



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EXECUTIVE SUMMARY

Senate Concurrent Resolution 86 of the 2019 Legislative Session requested that the Department of Business, Economic Development and Tourism (DBEDT) to conduct a study on potential industries, other than tourism, to promote economic development in the county of Hawaii. In this report, DBEDT attempts to analyze the industry structural changes during the 2001-2018 period using employment and earnings by industry data. The analysis consists of four metrics: (1) The ranking of industries by employment in 2018; (2) the growth of employment between 2001 and 2018 and industry contributions to the growth; (3) the industry concentrations of Hawaii County industries as compared with the state total; and (4) industries with growing potentials – mapped the industries by performance.

The analysis focuses on 20 high level industries sectors as defined by The North American Industry Classification System (NAICS) at the 2-digit level. Table S-1 summarizes jobs and average earnings for each of the respective NAICS-based sectors for Hawaii County. In 2018, Hawaii County had 107,926 jobs including full-time, part-time, payroll and self-employed jobs. Hawaii County’s Government Sector had the most jobs in 2018, accounted for 13.9 percent of the total jobs for Hawaii County. Government sector jobs include all three levels of government. The next four largest sectors were Accommodation and Food Services, Retail Trade, Health Care and Social Assistance, and Administrative and Support and Waste Management. The top five sectors accounted for about 55 percent of total jobs in 2018. The detail industry breakdown of the top five industries is provided in Section IV of this report.

TABLE S-1. JOBS AND AVERAGE EARNINGS FOR HAWAII COUNTY IN 2018

Industry	2018 Jobs	% of Total Jobs	NAICS	2018 Average Earnings
All Industry Total	107,926	100.00		45,966
Government	14,979	13.88	90	77,226
Accommodation and Food Services	14,319	13.27	72	38,143
Retail Trade	12,420	11.51	44	34,654
Health Care and Social Assistance	9,611	8.91	62	49,389
Administrative and Support and Waste Management	8,041	7.45	56	31,696
Agriculture, Forestry, Fishing and Hunting	7,300	6.76	11	25,698
Construction	6,450	5.98	23	62,593
Real Estate and Rental and Leasing	5,875	5.44	53	35,853
Other Services (except Public Administration)	5,635	5.22	81	30,252
Professional, Scientific, and Technical Services	4,693	4.35	54	46,071
Transportation and Warehousing	3,637	3.37	48	48,443
Arts, Entertainment, and Recreation	3,267	3.03	71	32,334
Finance and Insurance	2,550	2.36	52	45,346
Manufacturing	2,408	2.23	31	45,888
Wholesale Trade	2,345	2.17	42	56,530
Educational Services	2,149	1.99	61	37,648
Information	1,000	0.93	51	59,327
Utilities	696	0.64	22	133,381
Management of Companies and Enterprises	336	0.31	55	85,092
Mining, Quarrying, and Oil and Gas Extraction	215	0.20	21	33,731

Source: EMSI and DBEDT, READ.

It should be noted that tourism is not an industry sector in NAICS, tourism is usually defined as the combination of parts of the industries such as Accommodation and Food Services, Retail Trade, Real Estate and Rental and Leasing, Transportation and Warehousing, and Arts, Entertainment, and Recreation.

Though the top 5 industries were the same for both Hawaii County and the state, Hawaii County was heavier in Tourism (more job concentration in Accommodation and Food Services, 13.3 percent for Hawaii County, 12.5 percent for State, and Retail trade, 11.5 percent for Hawaii County versus 9.7 percent for state). In contrast, the state overall was heavily weighted towards Government (government job share was 19.8 percent for the state and 13.9 percent for Hawaii County). Hawaii County was significantly concentrated in Agriculture, Forestry, Fishing and Hunting with 6.8 percent of the jobs in this sector while the state jobs share was only 1.6 percent.

Between 2001 and 2018, Hawaii County added 27,047 jobs, with an average annual job growth rate of 1.7 percent, and this was higher than the state average annual job growth of 1.3 percent. Administrative and Support and Waste Management contributed the most to the job growth (14.5 percent of total additional jobs); followed by Health Care and Social Assistance (10.8 percent), Accommodation and Food Services (9.9 percent), Retail Trade (8.8 percent), and Government (8.6 percent). The top 5 sectors accounted for 52.7 percent of total additional jobs from 2001 to 2018. Among the 20 sectors, no sector lost jobs and 12 sectors had an average annual job growth rate above the overall Hawaii County average of 1.7 percent.

To measure the performance of the industries in comparison with the state overall, the Industry Life Cycle model was applied. An industry is in the **Emerging Group** if the industry has been performing well by showing both job growth and an increase in their competitive share of the state (county growth rate is higher than that of the state). However, these industries have yet to achieve a concentration in the county's economy equal to the same industry for the state. An industry is in **Base-Growth Group** if the industry has been growing their job counts and are increasing their competitive State of Hawaii industry share. Moreover, they have exceeded the State of Hawaii level of industry concentration in the economy and are probably exporting at least a proportion of their output. An industry is in **Transitioning Group** if the industry has been maintaining or growing their workforce, however, they are losing competitive State of Hawaii industry share (growing more slowly than the same industry in the state). This is typical of mature industries that are still important to the economy but are having difficulty maintaining State of Hawaii market share.

Based on the above criterion, seven sectors (Agriculture, Mining, Retail Trade, Entertainment, Real Estate, Administrative Services, Manufacturing) in Hawaii County qualified as base-growth sectors for the 2001 to 2018 period. These sectors have been growing faster than the state counterparts and have been exceeding the state level of industry concentration. These seven sectors accounted for 36.6 percent of the total jobs in 2018. There were nine sectors (Healthcare, Wholesale Trade, Professional Services, Transportation, Private Educational Services, Information, Government, and Finance and Insurance) in the emerging category. These sectors accounted for 43.2 percent of the total jobs in 2018. The industries in the above two groups have greater growth potential in the future. There were four sectors (Accommodation and Food Services, Management of Companies, Construction, and Utilities) in the transitioning category. They accounted for 20.2 percent of the total jobs in 2018. These four industries are still very important to the county but need greater effort to maintain them at the current level. No sector lost jobs in the 2001 to 2018 period.

In 2018, the average earnings of all industries for Hawaii County was \$45,966, 19.2 percent below the state average. Among the 20 sectors, in only three sectors (Utilities, Entertainment, and Government) their average earnings for Hawaii County were above the state average. For the following sectors, the average earnings for Hawaii County were significantly below the state average: Finance and Insurance, Management of Companies, Professional Services, Information, Health Care, Construction, Mining, Transportation, Manufacturing, and Wholesale Trade.

From 2001 to 2018, Hawaii County's average earnings for all industries combined increased 2.5 percent per year in nominal measures (not inflation adjusted), 0.2 of a percentage points below the state average. The average earnings for Hawaii County increased the most in the Government sector; followed by Educational Services, Administrative and Support and Waste Management, Agriculture, Forestry, Fishing and Hunting, and Arts, Entertainment, and Recreation. The average earnings increased the least for Mining, Quarrying, and Oil and Gas Extraction; followed by Real Estate and Rental and Leasing, Professional, Scientific, and Technical Services, Construction, and Information.

TABLE S-2. INDUSTRY SECTORS MAPPED BY PERFORMANCE, 2001-2018

Hawaii County Total Jobs, 2018: 107,926 Average Annual Earnings, 2018: \$45,966 Net Change in Jobs, 2001-2018: 33.4%					
Group	Change in Jobs	Average Earnings	CS	LQ2018	HI County Jobs 2018
Base-Growth Group: 36.6% of Jobs					
Agriculture, Forestry, Fishing and Hunting	14.1%	25,698	0.012	4.287	7,300
Mining, Quarrying, and Oil and Gas Extraction	307.5%	33,731	0.037	1.694	215
Retail Trade	23.6%	34,654	0.007	1.185	12,420
Arts, Entertainment, and Recreation	36.3%	32,334	0.005	1.169	3,267
Real Estate and Rental and Leasing	57.8%	35,853	0.003	1.123	5,875
Administrative and Support and Waste Management	95.1%	31,696	0.021	1.100	8,041
Manufacturing	10.4%	45,888	0.006	1.055	2,408
Emerging Group: 43.2% of Jobs					
Other Services (except Public Administration)	48.9%	30,252	0.010	0.994	5,635
Health Care and Social Assistance	43.8%	49,389	0.000	0.984	9,611
Wholesale Trade	29.6%	56,530	0.010	0.940	2,345
Professional, Scientific, and Technical Services	37.0%	46,071	0.004	0.849	4,693
Transportation and Warehousing	69.8%	48,443	0.013	0.803	3,637
Educational Services	99.9%	37,648	0.021	0.787	2,149
Information	26.8%	59,327	0.023	0.751	1,000
Government	18.5%	77,226	0.006	0.703	14,979
Finance and Insurance	55.8%	45,346	0.010	0.701	2,550
Transitioning Group: 20.2% of Jobs					
Accommodation and Food Services	23.1%	38,143	-0.0028	1.060	14,319
Management of Companies and Enterprises	42.8%	85,092	-0.0073	0.296	336
Construction	14.8%	62,593	-0.0132	1.141	6,450
Utilities	45.7%	133,381	-0.0154	1.160	696

CS: competitive share which is the ratio of Hawaii County annual Job growth over State annual Job growth.

LQ2018: location quotient which is the ratio of Hawaii County's job share in an industry over the State job share for the same industry in 2018.

Source: EMSI and DBEDT, READ.

I. INTRODUCTION

RESEARCH OBJECTIVES

Hawaii Senate Concurrent Resolution 86 of the 2019 Legislative Session requested that the Department of Business, Economic Development and Tourism (DBEDT) to conduct a study on potential industries, other than tourism, to promote economic development in the county of Hawaii. This report is a response to the legislature request.

The analysis in this report uses employment and earning data at the 20-industry level as defined by the North American Industry Classification System (NAICS). The objective of this report is to examine Hawaii County's industry sectors and their performance against the state overall. Specifically, this study has the following research objectives:

- 1) To benchmark the Hawaii County's economic sectors.
- 2) To compare the job and earnings structures between Hawaii County and the State of Hawaii.
- 3) To compare the historical performance of the economic sectors between Hawaii County and the State of Hawaii.
- 4) To examine the performance in each of the 20 sectors for Hawaii County.

DATA SOURCES

The major data source is the Economic Modeling Specialists, Inc. (EMSI). EMSI data consist primarily of jobs and labor earnings that are available annually at the six-digit NAICS level.¹ The EMSI data are available at both the state and the county level, but only available since 2001.

MAJOR INDUSTRY SECTORS OF THE ECONOMY

The NAICS defines 20 sectors at the 2-digit level. As shown in Table 1, in 2018, the 20 industry sectors for Hawaii County had a total of 107,926 jobs. The average annual earnings for all sectors for Hawaii County was \$45,966 per job in 2018.

¹ The basic data are compiled by Economic Modeling Specialists, Inc. (EMSI) and processed by DBEDT. EMSI supplements data from the Federal Departments of Labor and Commerce by including estimates of proprietors and self-employed jobs, and by estimating data for very small industries that are not reported by the Federal agencies due to disclosure issues.

TABLE 1. JOB AND AVERAGE EARNING FOR HAWAII COUNTY IN 2018

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Construction	6,450	5.98	23	62,593
Real Estate and Rental and Leasing	5,875	5.44	53	35,853
Other Services (except Public Administration)	5,635	5.22	81	30,252
Professional, Scientific, and Technical Services	4,693	4.35	54	46,071
Transportation and Warehousing	3,637	3.37	48	48,443
Arts, Entertainment, and Recreation	3,267	3.03	71	32,334
Finance and Insurance	2,550	2.36	52	45,346
Manufacturing	2,408	2.23	31	45,888
Wholesale Trade	2,345	2.17	42	56,530
Educational Services	2,149	1.99	61	37,648
Information	1,000	0.93	51	59,327
Utilities	696	0.64	22	133,381
Management of Companies and Enterprises	336	0.31	55	85,092
Mining, Quarrying, and Oil and Gas Extraction	215	0.20	21	33,731

Source: EMSI and DBEDT, READ.

II. EMPLOYMENT ANALYSIS

INDUSTRY RANKING IN 2018

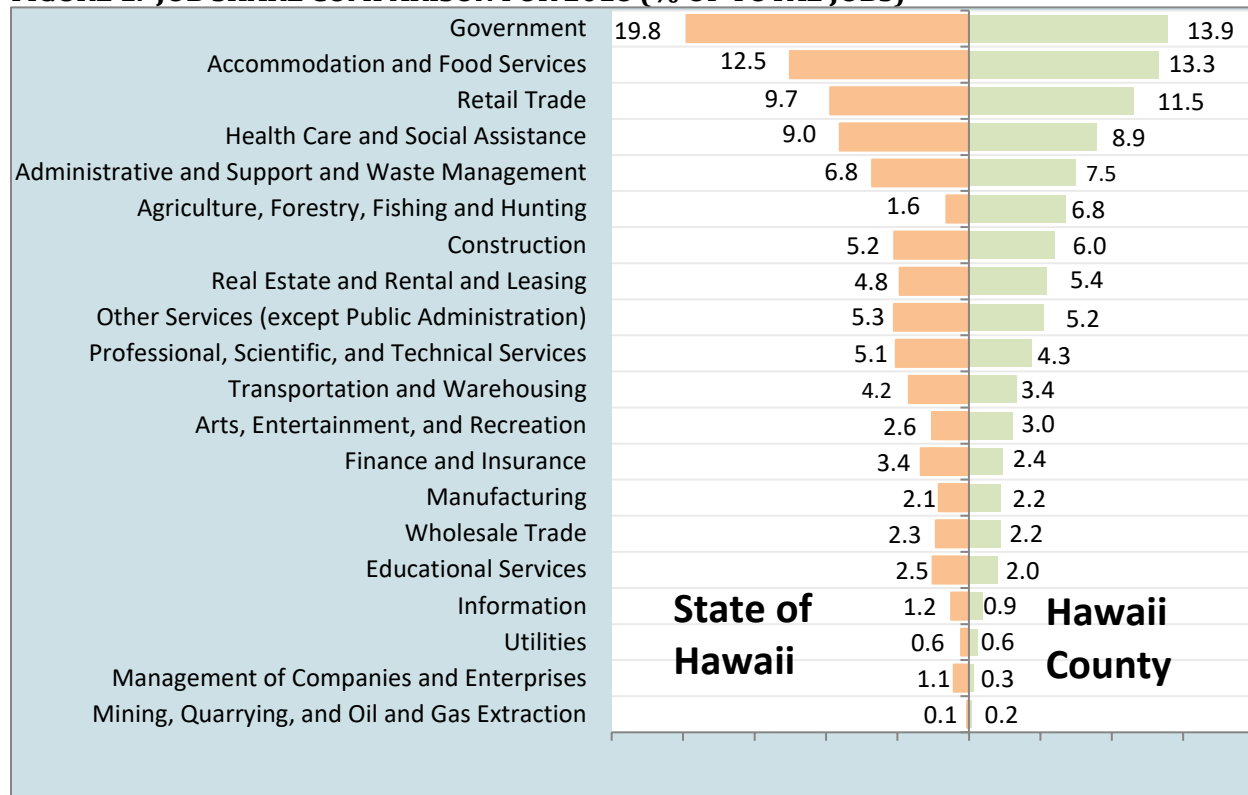
As noted in the previous section, the economy includes 20 sectors based on the 2-digit NAICS code. This section examines the relative performance of the 20 sectors using employment data and compares Hawaii County with the State of Hawaii.

Figure 1 compares the share of jobs for the 20 sectors. In 2018, the top five sectors for Hawaii County were: Government, Accommodation and Food Services, Retail Trade, Health Care and Social Assistance, and Administrative and Support and Waste Management. These sectors together accounted for about 55.0 percent of Hawaii County's total jobs in 2018. The top five sectors for Hawaii County were also the top five sectors of the state. The respective sectors accounted for 57.8 percent of state total jobs in 2018.

The job share of Hawaii County's Agriculture, Forestry, Fishing and Hunting sector was 5.2 percentage points above that of the state average; this was followed by Retail Trade (1.8 percentage point), Accommodation and Food Services (0.7 of a percentage point), Construction (0.7 of a percentage point), and Administrative and Support and Waste Management (0.7 of a percentage point). On the other hand, the job share of Hawaii County's Government sector was 5.9 percentage points below that of the state average; this was followed by Finance and Insurance (1.0 percentage point below), Transportation and Warehousing (0.8 of a percentage point below), Professional, Scientific, and Technical Services (0.8 of a percentage point below), and Management of Companies and Enterprises (0.7 of a percentage point below).

The above analysis indicates that Hawaii County was more concentrated in Agriculture, Tourism, construction, and Administrative Support but less so in Government, Finance and Insurance, Transportation, Professional Services, and Management Services, as compared with the state overall.

FIGURE 1. JOB SHARE COMPARISON FOR 2018 (% OF TOTAL JOBS)



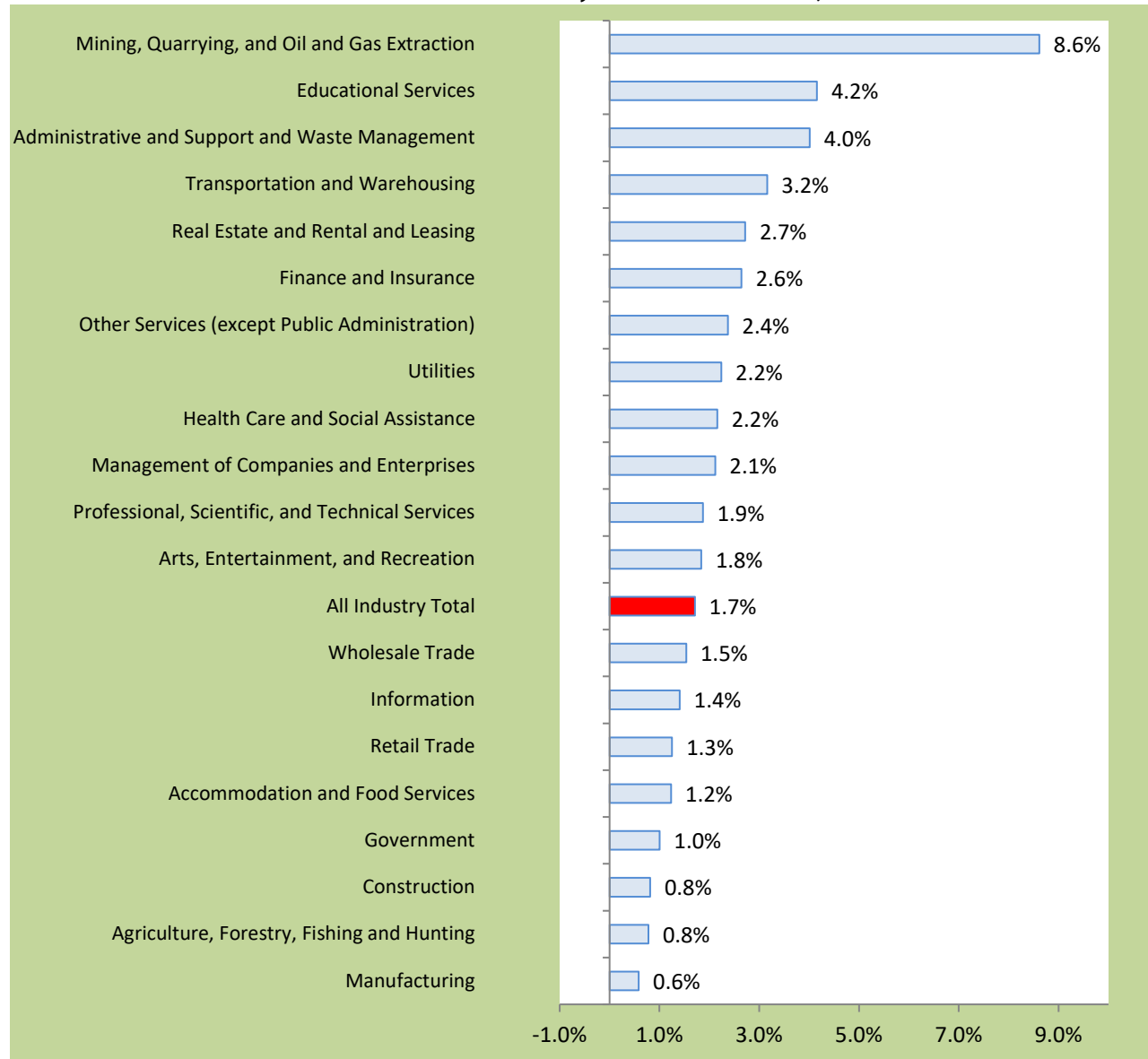
Source: EMSI and DBEDT, READ.

JOB GROWTH FOR HAWAII COUNTY: 2001-2018

From 2001 to 2018, of the 20 industry sectors for Hawaii County, no sector lost jobs over the period and 12 had an average annual job growth rate above the overall Hawaii County average of 1.7 percent (Figure 2). Mining, Quarrying, and Oil and Gas Extraction had the highest job growth; followed by Educational Services, Administrative and Support and Waste Management, Transportation and Warehousing, and Real Estate and Rental and Leasing.

Though Mining, Quarrying, and Oil and Gas Extraction had the highest jobs growth between 2001-2018, this industry sector was still the smallest among the 20 industry sectors with only 215 jobs in 2018.

FIGURE 2. HAWAII COUNTY AVERAGE ANNUAL JOB GROWTH RATE, 2001-2018



Source: EMSI and DBEDT, READ.

While this study focuses more on long-term trends, it is important to examine how jobs have been impacted by the recession. The Hawaii economy experienced severe job losses from the recession that began in late 2007. As shown in Table 2, from 2001 to 2018, Hawaii County added 27,047 jobs; 21,680 jobs were added from 2001 to 2007, and 5,367 jobs were added from 2007 to 2018.

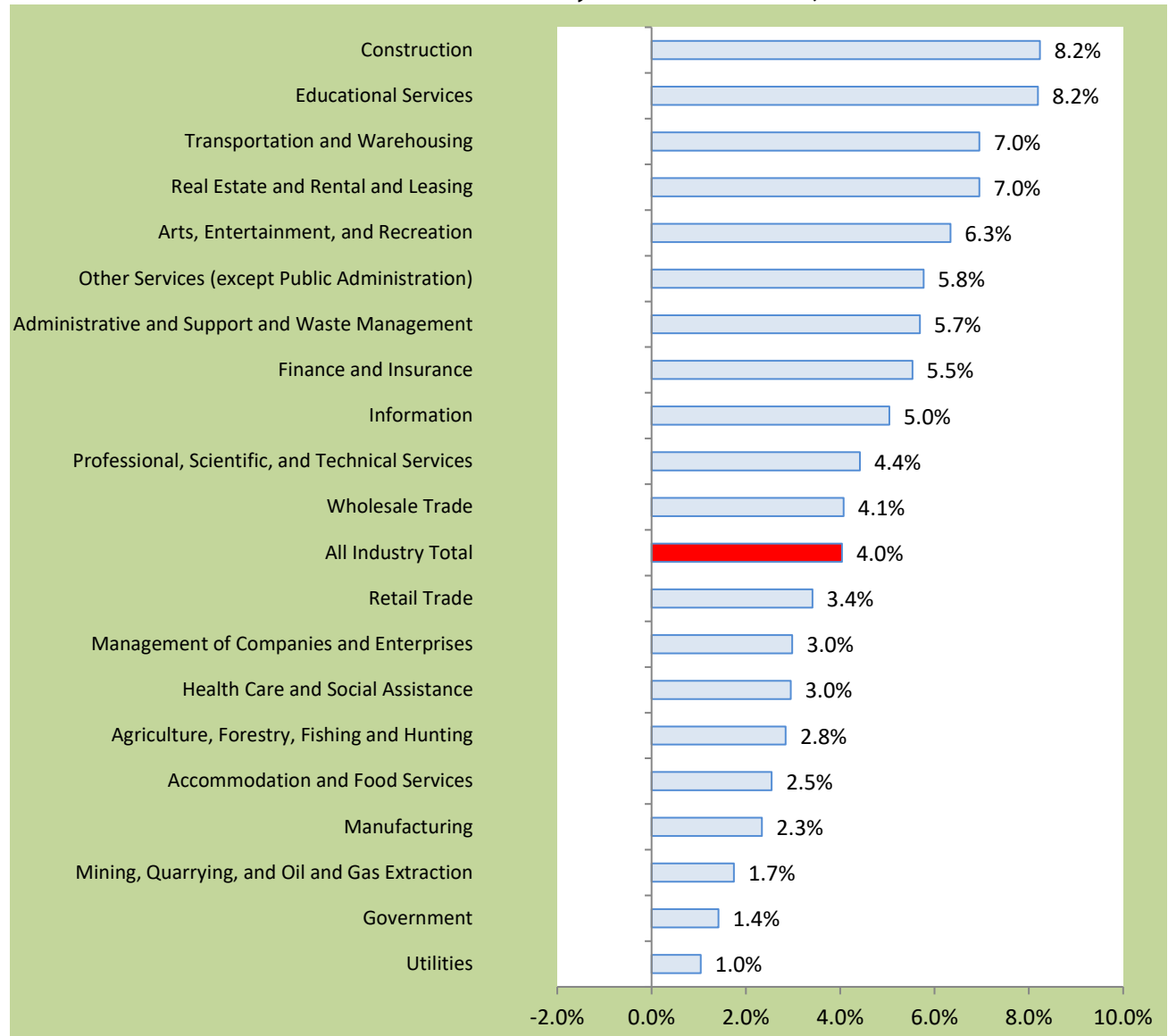
TABLE 2. HAWAII COUNTY JOB CHANGES FROM 2001 TO 2018

Industry Group	Changes in Jobs		
	01-07	07-18	01-18
All Industry Total	21,680	5,367	27,047
Administrative and Support and Waste Management	1,623	2,296	3,919
Health Care and Social Assistance	1,276	1,650	2,926
Accommodation and Food Services	1,895	793	2,688
Retail Trade	2,240	130	2,370
Government	1,114	1,223	2,338
Real Estate and Rental and Leasing	1,849	303	2,152
Other Services (except Public Administration)	1,514	337	1,851
Transportation and Warehousing	1,064	430	1,495
Professional, Scientific, and Technical Services	1,013	255	1,268
Educational Services	649	425	1,074
Finance and Insurance	624	290	914
Agriculture, Forestry, Fishing and Hunting	1,173	-273	900
Arts, Entertainment, and Recreation	1,069	-198	870
Construction	3,414	-2,582	832
Wholesale Trade	490	46	535
Manufacturing	325	-98	227
Utilities	31	188	218
Information	271	-60	211
Mining, Quarrying, and Oil and Gas Extraction	6	157	163
Management of Companies and Enterprises	45	55	101

Source: EMSI and DBEDT, READ.

As shown in Figure 3, from 2001 to 2007, the annual growth rate of all sectors combined for Hawaii County was 4.0 percent. Among the 20 sectors, no one lost jobs and 11 sectors had an average annual job growth rate above the overall Hawaii County average of 4.0 percent. The strongest performers during this period were Construction, Educational Services, Transportation and Warehousing, Real Estate and Rental and Leasing, and Arts, Entertainment, and Recreation.

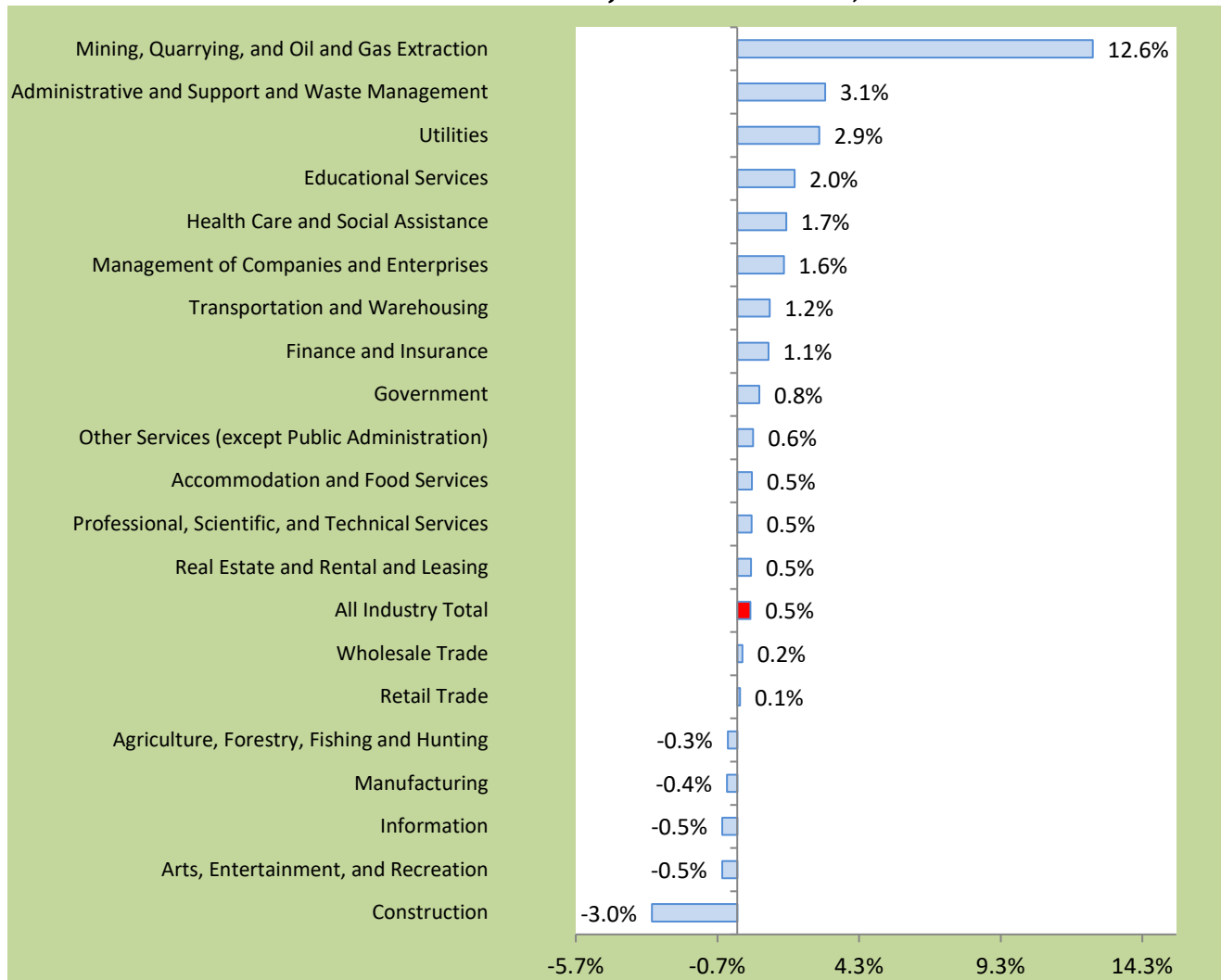
FIGURE 3. HAWAII COUNTY AVERAGE ANNUAL JOB GROWTH RATE, 2001-2007



Source: EMSI and DBEDT, READ.

As shown in Figure 4, from 2007 to 2018, Hawaii County’s annual average growth rate for all sectors combined was 0.5 percent. Among the 20 sectors, five sectors lost jobs and 13 sectors had an average annual job growth rate above the overall Hawaii County average of 0.5 percent. The strongest performers during this period were the Mining, Quarrying, and Oil and Gas Extraction Sector; followed by Administrative and Support and Waste Management, Utilities, Educational Services, and Health Care and Social Assistance.

FIGURE 4. HAWAII COUNTY AVERAGE ANNUAL JOB GROWTH RATE, 2007-2018



Source: EMSI and DBEDT, READ.

INDUSTRY CONTRIBUTIONS TO JOB GROWTH: 2001-2018

Industries with faster job growth rates may not be the heavier contributor to the overall job growth due to the size of the industry. For example, Mining, Quarrying, and Oil and Gas Extraction had the highest average annual job growth rate, but the industry sector was the smallest with only 163 jobs added during the 2001-2018 period. To account for both the sizes of the industry and the growth rates, the contributions to the total additional jobs was calculated.

As shown in Table 3, from 2001 to 2018, Hawaii County added 27,047 jobs. Administrative and Support and Waste Management contributed the most job growth (14.5 percent of total additional jobs); followed by Health Care and Social Assistance (10.8 percent), Accommodation and Food Services (9.9 percent), Retail Trade (8.8 percent), and Government (8.6 percent). The top 5 sectors accounted for 52.7 percent of total additional jobs from 2001 to 2018. Among the 20 sectors, no sector lost jobs and 12 sectors had an average annual job growth rate above the overall Hawaii County average of 1.7 percent.

TABLE 3. CONTRIBUTIONS TO TOTAL ADDITIONAL JOBS FROM 2001 TO 2018

Industry Group	Contribution to Job Growth 01-18		
	Hawaii County	State	Hawaii above State
Administrative and Support and Waste Management	14.5%	9.9%	4.6%
Health Care and Social Assistance	10.8%	14.2%	-3.4%
Accommodation and Food Services	9.9%	14.8%	-4.8%
Retail Trade	8.8%	4.5%	4.3%
Government	8.6%	7.6%	1.0%
Real Estate and Rental and Leasing	8.0%	8.6%	-0.7%
Other Services (except Public Administration)	6.8%	5.6%	1.3%
Transportation and Warehousing	5.5%	6.0%	-0.5%
Professional, Scientific, and Technical Services	4.7%	5.9%	-1.2%
Educational Services	4.0%	3.9%	0.1%
Finance and Insurance	3.4%	4.3%	-1.0%
Agriculture, Forestry, Fishing and Hunting	3.3%	-0.6%	3.9%
Arts, Entertainment, and Recreation	3.2%	2.8%	0.4%
Construction	3.1%	8.3%	-5.2%
Wholesale Trade	2.0%	1.0%	1.0%
Manufacturing	0.8%	0.0%	0.8%
Utilities	0.8%	1.4%	-0.6%
Information	0.8%	-1.1%	1.8%
Mining, Quarrying, and Oil and Gas Extraction	0.6%	0.3%	0.3%
Management of Companies and Enterprises	0.4%	2.1%	-1.7%

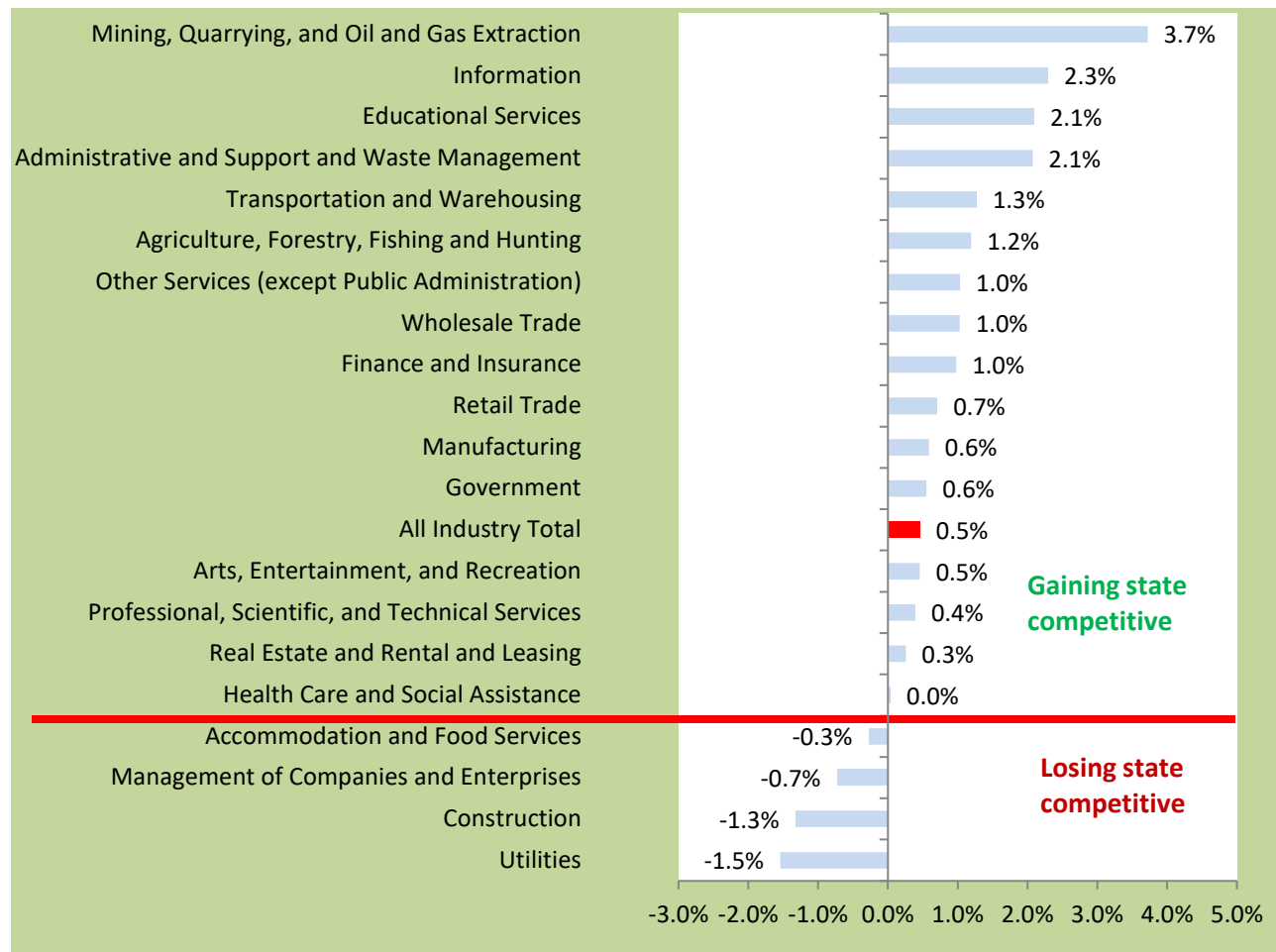
Source: EMSI and DBEDT, READ.

STATE COMPETITIVENESS OF HAWAII COUNTY

Another measure that can help shed light on the economy is the performance compared with the State of Hawaii industry average for each sector. If a Hawaii County sector has an average annual growth rate that is higher than the state average for the respective sector, then the Hawaii County sector is effectively increasing its competitive share of the total State of Hawaii industry. Conversely, if Hawaii County's growth rate for a respective sector is less than the state average, then the Hawaii County sector is effectively decreasing its competitive share of the total State of Hawaii industry.

Figure 5 shows how much more or less Hawaii County's sectors grew per year on average compared with the respective sectors of the state. For instance, over the 2001 to 2018 period, jobs in the Mining, Quarrying, and Oil and Gas Extraction Sector grew at an average annual rate that was 3.7 percentage points higher for Hawaii County than the respective sector for the state. Thus, Hawaii's Mining, Quarrying, and Oil and Gas Extraction Sector increased its competitive State of Hawaii industry share. On the other hand, the Utilities Sector lost State of Hawaii industry share due to an average annual growth rate that was 1.5 percentage points below the State of Hawaii sector growth rate.

FIGURE 5. GAIN OR LOSS OF STATE OF HAWAII COMPETITIVE INDUSTRY SHARE, 2001-2018



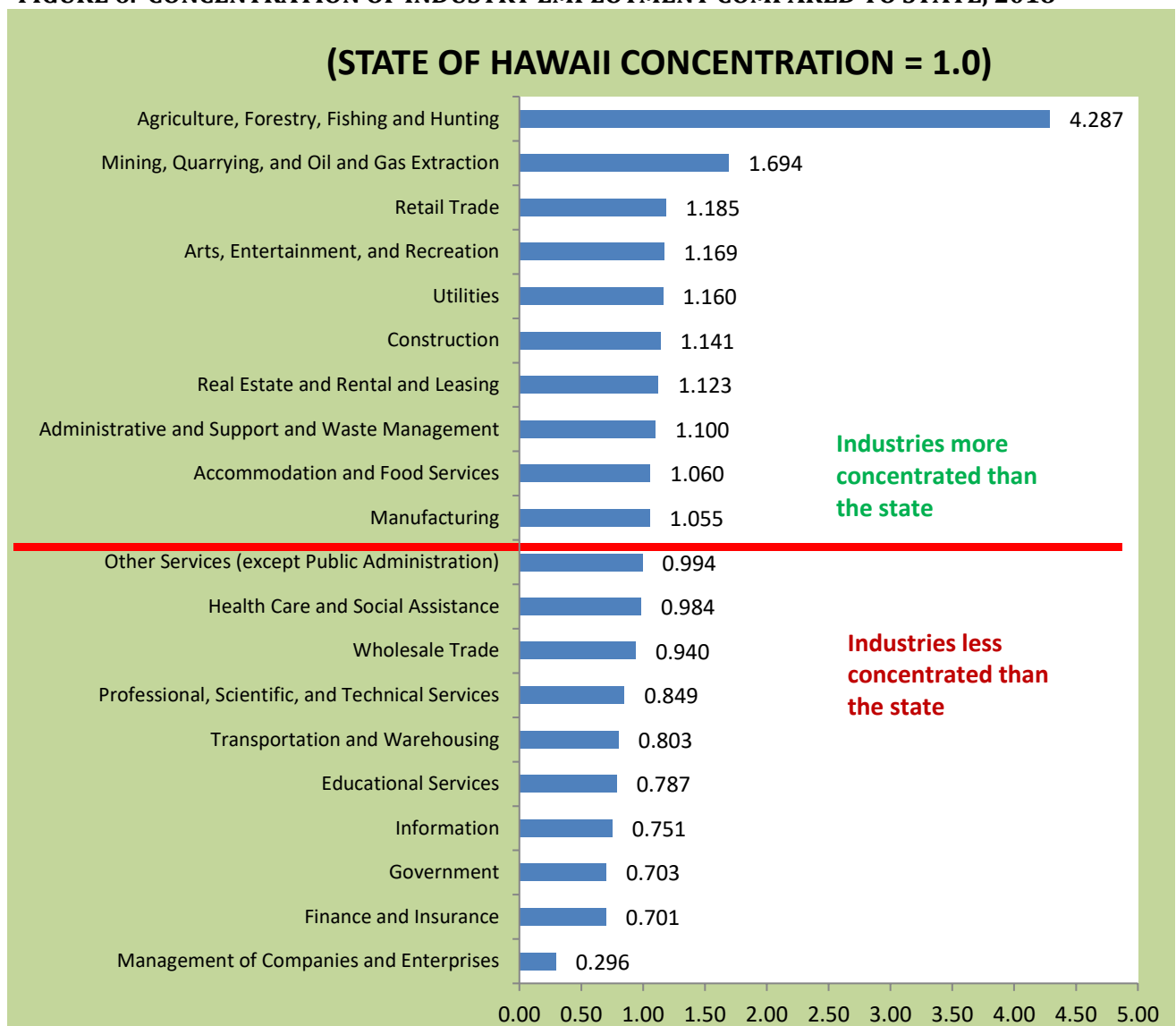
Source: EMSI and DBEDT, READ.

Of Hawaii County’s 20 sectors, only four sectors lost competitive share over the 2001-2018 period. Sectors that have both positive job growth and an increase in competitive state industry share represent the best performing industry sectors over the period. Industry sectors with the higher competitive share metric are probably showing a higher comparative advantage compared with the respective sectors in the State of Hawaii.

INDUSTRY CONCENTRATION - HAWAII COUNTY’S SPECIALTIES

The third performance metric that helps in the evaluation of the industry portfolio is job concentration (Figure 6). This is a measure of the Hawaii County’s level of specialization in each respective sector and helps shed light on the sectors’ export potential.

FIGURE 6. CONCENTRATION OF INDUSTRY EMPLOYMENT COMPARED TO STATE, 2018



Source: EMSI and DBEDT, READ.

Export activity brings new money into Hawaii County and is a basis for long-term industry growth. Unfortunately, estimates of industry exports are not part of standard industry data programs. Thus, it is not clear how much output in a given sector is exported or consumed by out-of-county consumers.

However, it is possible to identify sectors that are likely exporting by measuring the concentration of their employment in the county’s economy. As explained above, an industry that employs a higher proportion of jobs for Hawaii County than the same industry for the state is relatively more concentrated and is more likely to be exporting a portion of its output.

Industry concentration is measured by a metric called the Location Quotient or LQ for short. The LQ for an industry at the county level that is equal to the state level is 1.0. Hawaii County industries with an LQ measure of more than 1.0 are more concentrated in the county economy than the same industry for the state. Conversely, those industries that are below 1.0 are less concentrated in the county economy than the state as whole.

Of the 20 sectors for Hawaii County, ten sectors had a concentration level for Hawaii County’s economy that was higher than the respective sector for the state. Sectors that are less concentrated for Hawaii County may also be exporting some of their output. However, a majority of the output is probably supplying local demand.

PERFORMANCE MAP FRAMEWORK: IDENTIFYING EMERGING INDUSTRIES

A framework to better understand the overall implications of these key performance metrics is the performance map adapted from the industry life cycle model. The performance map breaks industries in the economy into four generalized stages of life, starting with an *emerging* phase, moving to a *base-growth* industry phase, followed by a mature or *transitioning* phase and finally a *declining* phase. Of course, not all industries fit nicely into this notion, especially over short periods of time. However, with some qualifications, this notion of development stages can help us evaluate the status of the all industry portfolio.

Based on the performance metrics from Figures 2, 5, and 7, the 20 sectors can be placed into one of four life-cycle quadrants according to the criteria shown in Table 4 and described below.

TABLE 4. PERFORMANCE MAP CRITERIA

TRANSITIONING	BASE-GROWTH
<ul style="list-style-type: none"> • Positive job growth • Losing competitive national industry share 	<ul style="list-style-type: none"> • Positive job growth • Highly concentrated in the economy • Increasing competitive national industry share
DECLINING	EMERGING
<ul style="list-style-type: none"> • Losing jobs over period 	<ul style="list-style-type: none"> • Positive job growth • Current low concentration in the economy • Increasing competitive national industry share

Emerging Quadrant: These are industries that are potentially in the early, take-off stage. They have been performing well by showing both job growth and an increase in their competitive share of the state. However, these industries have yet to achieve a concentration in the county's economy equal to the same industry for the state. An *emerging* industry is one that has found a competitive niche in the economy and is gaining in competitive State of Hawaii industry share. At some point, if the process continues, the industry's concentration will exceed the State of Hawaii level and the emerging industry will graduate to a base-growth industry in the county's economy.

Base-Growth Quadrant: These are industries that have become potential economic drivers. They are growing their job counts and are increasing their competitive State of Hawaii industry share. Moreover, they have exceeded the State of Hawaii level of industry concentration in the economy and are probably exporting at least a proportion of their output.

Transitioning Quadrant: Transitioning industries are still maintaining or growing their workforce, however, they are losing competitive State of Hawaii industry share (growing more slowly than the same industry in the state). This is typical of mature industries that are still important to the economy but are having difficulty maintaining State of Hawaii market share. They are considered transitioning because they could either continue to lose industry share and eventually fall into the declining quadrant or reinvigorate themselves and begin to regain industry share and continue growing. Also, in this quadrant may be former emerging industries that never reached base-growth status before losing competitive state industry share and some previously declining industries that are fighting back into competitiveness.

Declining Quadrant: The declining quadrant contains industry sectors showing job losses over the period. All these industry sectors have lost jobs to some extent between 2001 and 2018. Most industries that are losing jobs are also losing competitive share within the state. However, while they are declining in jobs for the period, these industries are not necessarily dying industries. Some temporary circumstances may have put some of Hawaii County's industries into the declining quadrant for the period studied. Their appearance in the declining quadrant is a red flag that warrants more careful analysis to understand the problem.

It should be emphasized that the performance map framework is more of a guide to understand an industry's situation rather than a conclusion about the value of the industry to the economy. It provides a starting point for assessing the strengths and weaknesses of the industries in the portfolio. Also, it is important to note that, within industries that are experiencing mixed or poor performance, there may be pockets of very successful firms.

Table 5 shows how each of the respective NAICS-based sectors fell on the performance map based for the 2001 to 2018 performance measures. Combined, Hawaii County had 107,926 jobs in 2018. From 2001 to 2018, total jobs for Hawaii County increased 33.4 percent. The average earning of the whole economy was \$45,966 in 2018.

There were seven sectors that qualified as base-growth sectors for the 2001 to 2018 period. These sectors accounted for 36.6 percent of the total jobs in 2018. There were nine sectors in the emerging category. These sectors accounted for 43.2 percent of the total jobs in 2018. There were four sectors in the transitioning category. They accounted for 20.2 percent of the total jobs in 2018. No sector lost jobs in the 2001 to 2018 period.

TABLE 5. ALL INDUSTRY SECTORS MAPPED BY PERFORMANCE, 2001-2018

Hawaii County Total Jobs, 2018: 107,926 Average Annual Earnings, 2018: \$45,966 Net Change in Jobs, 2001-2018: 33.4%					
Group	Change in Jobs	Average Earnings	CS	LQ2018	HI County Jobs 2018
Base-Growth Group: 36.6% of Jobs					
Agriculture, Forestry, Fishing and Hunting	14.1%	25,698	0.012	4.287	7,300
Mining, Quarrying, and Oil and Gas Extraction	307.5%	33,731	0.037	1.694	215
Retail Trade	23.6%	34,654	0.007	1.185	12,420
Arts, Entertainment, and Recreation	36.3%	32,334	0.005	1.169	3,267
Real Estate and Rental and Leasing	57.8%	35,853	0.003	1.123	5,875
Administrative and Support and Waste Management	95.1%	31,696	0.021	1.100	8,041
Manufacturing	10.4%	45,888	0.006	1.055	2,408
Emerging Group: 43.2% of Jobs					
Other Services (except Public Administration)	48.9%	30,252	0.010	0.994	5,635
Health Care and Social Assistance	43.8%	49,389	0.000	0.984	9,611
Wholesale Trade	29.6%	56,530	0.010	0.940	2,345
Professional, Scientific, and Technical Services	37.0%	46,071	0.004	0.849	4,693
Transportation and Warehousing	69.8%	48,443	0.013	0.803	3,637
Educational Services	99.9%	37,648	0.021	0.787	2,149
Information	26.8%	59,327	0.023	0.751	1,000
Government	18.5%	77,226	0.006	0.703	14,979
Finance and Insurance	55.8%	45,346	0.010	0.701	2,550
Transitioning Group: 20.2% of Jobs					
Accommodation and Food Services	23.1%	38,143	-0.0028	1.060	14,319
Management of Companies and Enterprises	42.8%	85,092	-0.0073	0.296	336
Construction	14.8%	62,593	-0.0132	1.141	6,450
Utilities	45.7%	133,381	-0.0154	1.160	696

CS: competitive share which is the ratio of Hawaii County annual Job growth over State annual Job growth.

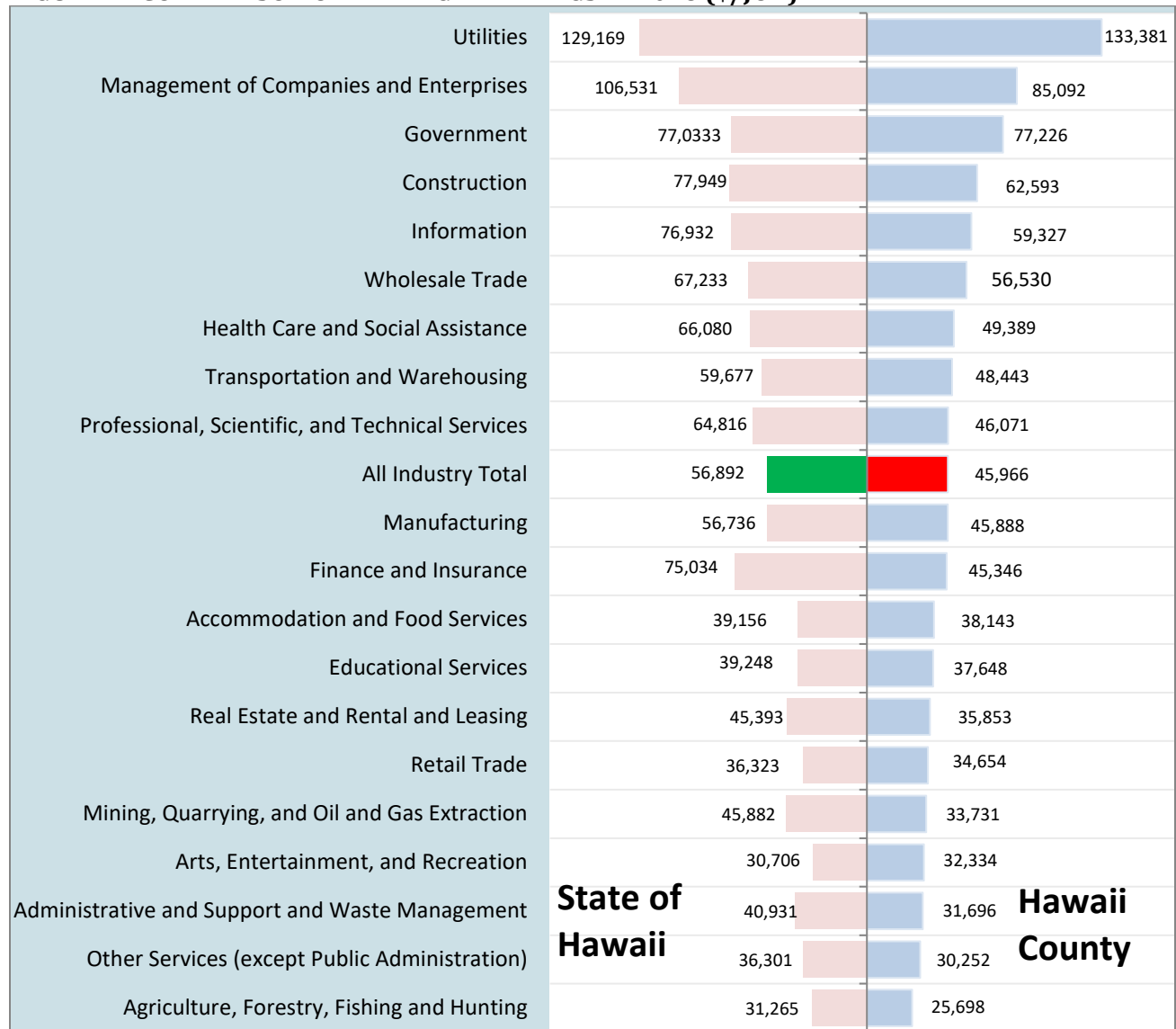
LQ2018: location quotient which is the ratio of Hawaii County's job share in an industry over the State job share for the same industry in 2018.

Source: EMSI and DBEDT, READ.

III. EARNINGS ANALYSIS

Figure 7 compares the average earnings between Hawaii County and the state. In 2018, the average earnings of all industries for Hawaii County was \$45,966, 19.2 percent below the state average. Only three sectors (Utilities, Arts, Entertainment, and Recreation, and Government) had average earnings for Hawaii County that were above the state average. In the following sectors, the average earnings for Hawaii County were significantly below the state average: Finance and Insurance, Management of Companies and Enterprises, Professional, Scientific, and Technical Services, Information, Health Care and Social Assistance, Construction, Mining, Quarrying, and Oil and Gas Extraction, Transportation and Warehousing, Manufacturing, and Wholesale Trade.

FIGURE 7. COMPARISON OF AVERAGE EARNINGS IN 2018 (\$/JOB)



Source: EMSI and DBEDT, READ.

The top five sectors for Hawaii County with the highest average earnings in 2018 were: Utilities, Management of Companies and Enterprises, Government, Construction, and Information. The five sectors in Hawaii with the lowest average earnings were: Agriculture, Forestry, Fishing and Hunting, Other Services (except Public Administration), Administrative and Support and Waste Management, Arts, Entertainment, and Recreation, and Mining, Quarrying, and Oil and Gas Extraction.

As shown in Table 6, from 2001 to 2018, Hawaii County's average earnings for all industries combined increased 2.5 percent per year, 0.2 of a percentage points below the state average. The average earnings for Hawaii County increased the most in the Hawaii government; followed by Educational Services, Administrative and Support and Waste Management, Agriculture, Forestry, Fishing and Hunting, and Arts, Entertainment, and Recreation. The average earnings increased the lowest in Mining, Quarrying, and Oil and Gas Extraction; followed by Real Estate and Rental and Leasing, Professional, Scientific, and Technical Services, Construction, and Information.

TABLE 6. COMPARISON OF THE GROWTH RATE OF AVERAGE EARNINGS FROM 2001 TO 2018

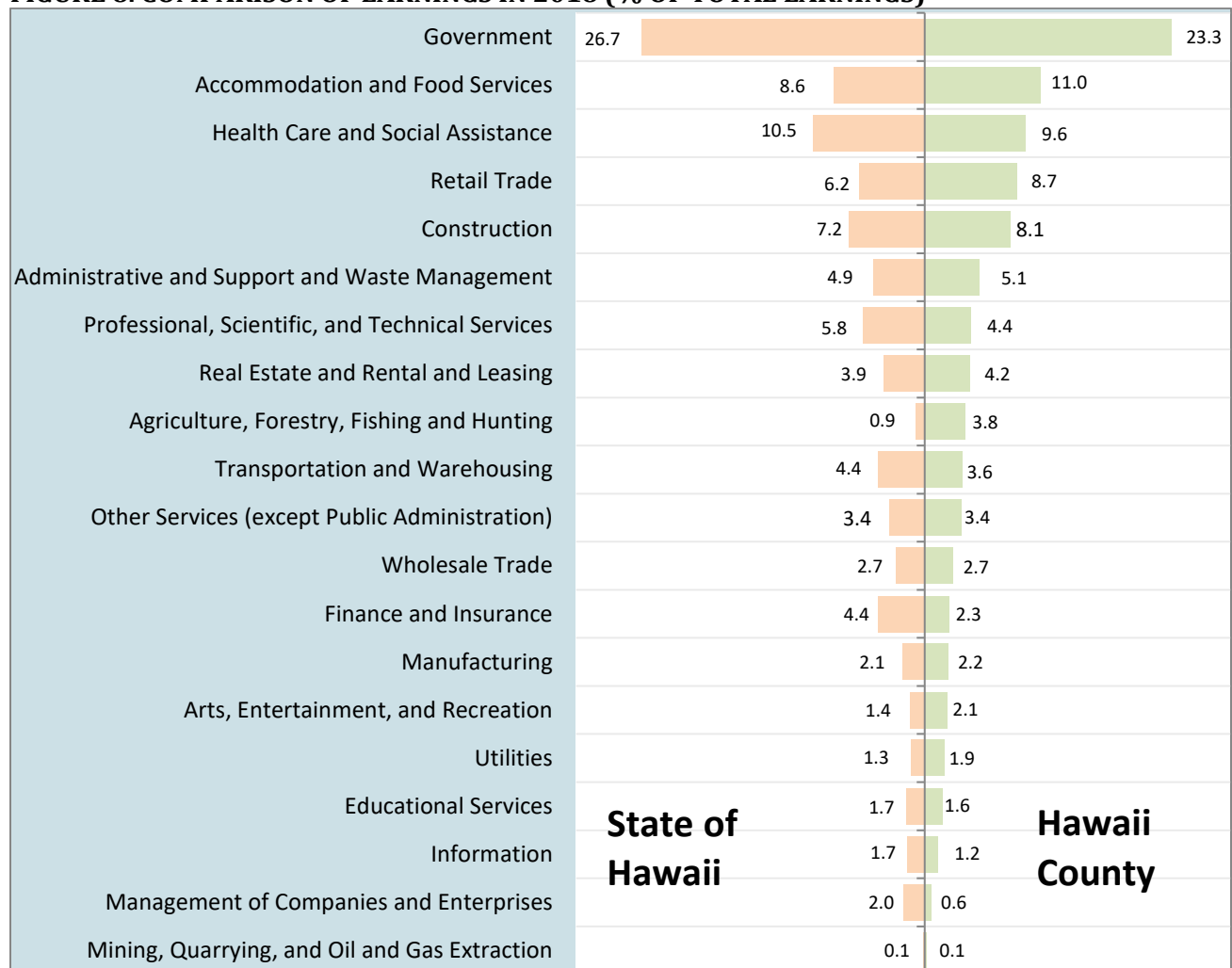
Industry Group	Growth of Average Earnings 01-18		
	HI County	State	HI County above State
All Industry Total	2.5%	2.7%	-0.2%
Government	3.8%	3.6%	0.2%
Educational Services	3.4%	2.1%	1.3%
Administrative and Support and Waste Management	3.1%	3.0%	0.1%
Agriculture, Forestry, Fishing and Hunting	3.0%	2.4%	0.6%
Arts, Entertainment, and Recreation	2.9%	2.7%	0.2%
Wholesale Trade	2.8%	2.3%	0.5%
Utilities	2.8%	2.3%	0.5%
Manufacturing	2.7%	2.6%	0.1%
Health Care and Social Assistance	2.7%	2.7%	0.0%
Accommodation and Food Services	2.5%	3.0%	-0.5%
Transportation and Warehousing	2.4%	1.8%	0.6%
Retail Trade	2.3%	2.3%	0.0%
Finance and Insurance	2.2%	2.3%	-0.2%
Management of Companies and Enterprises	2.0%	2.3%	-0.3%
Other Services (except Public Administration)	2.0%	2.2%	-0.3%
Information	1.9%	2.6%	-0.7%
Construction	1.8%	2.4%	-0.6%
Professional, Scientific, and Technical Services	1.1%	2.0%	-0.9%
Real Estate and Rental and Leasing	0.6%	0.9%	-0.3%
Mining, Quarrying, and Oil and Gas Extraction	-2.0%	-0.8%	-1.2%

Source: EMSI and DBEDT, READ.

Figure 8 compares the earnings shares of the 20 sectors. In 2018, the top five sectors for Hawaii County with largest earnings shares were: Government, Accommodation and Food Services, Health Care and Social Assistance, Retail Trade, and Construction. These sectors together accounted for 60.7 percent of Hawaii County’s total earnings in 2018. The respective sectors accounted for 59.3 percent of the state total earnings in 2018.

The earnings share of Hawaii County’s Agriculture, Forestry, Fishing and Hunting Sector was 2.9 percentage points above that of the state average; this was followed by Retail Trade (2.5 percentage points), Accommodation and Food Services (2.4 percentage points), Construction (1.0 percentage point) and Arts, Entertainment, and Recreation (0.7 of a percentage point). On the other hand, the earnings share of Hawaii County’s Government Sector was 3.4 percentage points below that of the state average; this was followed by Finance and Insurance (2.1 percentage point below), Professional, Scientific, and Technical Services (1.5 percentage point below), Management of Companies and Enterprises (1.4 percentage point below), Health Care and Social Assistance (0.9 of a percentage point below), and Transportation and Warehousing (0.9 of a percentage point below).

FIGURE 8. COMPARISON OF EARNINGS IN 2018 (% OF TOTAL EARNINGS)



Source: EMSI and DBEDT, READ.

From 2001 to 2018, Hawaii County’s total earnings increased \$2,519 million. As shown in Table 7, the Government Sector contributed the most earnings growth (25.3 percent of total earnings growth); followed by Health Care and Social Assistance (10.5 percent), Accommodation and Food Services Government (10.1 percent), Retail Trade (7.6 percent), and Administrative and Support and Waste Management (7.0 percent). The top 5 sectors accounted for 60.6 percent of total additional earnings from 2001 to 2018.

TABLE 7. CONTRIBUTIONS TO TOTAL ADDITIONAL EARNINGS FROM 2001 TO 2018

Industry Group	HI County Avg. ann. total earnings growth	Contribution to Earnings Growth 01-18		
		HI County	State	Difference
Government	4.5%	25.3%	27.0%	-1.7%
Health Care and Social Assistance	4.6%	10.5%	12.0%	-1.5%
Accommodation and Food Services	3.6%	10.1%	9.5%	0.6%
Retail Trade	3.3%	7.6%	4.8%	2.8%
Administrative and Support and Waste Management	6.8%	7.0%	5.7%	1.3%
Construction	2.5%	5.7%	7.9%	-2.2%
Transportation and Warehousing	5.4%	4.3%	4.2%	0.1%
Real Estate and Rental and Leasing	3.2%	3.6%	3.5%	0.1%
Other Services (except Public Administration)	4.1%	3.5%	3.1%	0.4%
Agriculture, Forestry, Fishing and Hunting	3.5%	3.5%	0.5%	3.0%
Professional, Scientific, and Technical Services	2.8%	3.3%	5.3%	-2.0%
Wholesale Trade	4.1%	2.7%	2.1%	0.6%
Finance and Insurance	4.6%	2.5%	4.5%	-1.9%
Arts, Entertainment, and Recreation	4.5%	2.3%	1.4%	0.9%
Educational Services	7.3%	2.3%	1.8%	0.5%
Utilities	4.8%	2.1%	1.7%	0.4%
Manufacturing	3.1%	1.9%	1.5%	0.3%
Information	3.1%	1.0%	0.8%	0.1%
Management of Companies and Enterprises	3.9%	0.6%	2.3%	-1.8%
Mining, Quarrying, and Oil and Gas Extraction	6.1%	0.2%	0.1%	0.1%
All Industry Total	4.0%	100%	100%	NA

Source: EMSI and DBEDT, READ.

As shown in Table 8, from 2001 to 2018, Hawaii County’s all industry average earnings increased \$15,774; \$6,939 were added from 2001 to 2007, and \$8,834 were added from 2007 to 2018. Of the 20 sectors, ten sectors added more average earnings than the all industry total during the 2001 to 2018 period. The Utilities Sector increased average earnings the most from 2001 to 2018; followed by Government, Management of Companies and Enterprises, Wholesale Trade, Health Care and Social Assistance, Manufacturing, and Educational Services.

TABLE 8. CHANGES IN AVERAGE EARNINGS FROM 2001 TO 2018

Industry Group	Changes in Average Earnings		
	01-07	07-18	01-18
All Industry Total	6,939	8,834	15,774
Utilities	25,231	24,592	49,823
Government	17,075	19,032	36,107
Management of Companies and Enterprises	5,434	18,966	24,400
Wholesale Trade	6,214	15,007	21,221
Health Care and Social Assistance	7,184	10,718	17,902
Manufacturing	5,740	11,135	16,875
Educational Services	6,307	10,169	16,477
Transportation and Warehousing	5,226	11,055	16,282
Construction	9,753	6,460	16,213
Information	2,866	13,021	15,887
Finance and Insurance	10,362	3,399	13,761
Accommodation and Food Services	5,461	7,627	13,088
Administrative and Support and Waste Management	4,821	7,999	12,820
Arts, Entertainment, and Recreation	6,454	6,077	12,531
Retail Trade	5,313	5,661	10,974
Agriculture, Forestry, Fishing and Hunting	4,586	5,441	10,028
Other Services (except Public Administration)	4,241	4,231	8,472
Professional, Scientific, and Technical Services	4,612	2,890	7,502
Real Estate and Rental and Leasing	(6,222)	9,826	3,605
Mining, Quarrying, and Oil and Gas Extraction	(27,661)	14,157	(13,504)

Source: EMSI and DBEDT, READ.

IV. TOP FIVE EMPLOYMENT INDUSTRY ANALYSIS

The top 5 industry groups in Table 1 (% of total jobs in 2018), Table 3 (% of total additional jobs from 2001 to 2018), and Table 7 (% of additional earnings from 2001 to 2018) are summarized in Table 9. The top five industry groups in Table 1 are also the top five groups in Table 3 and Table 7.

TABLE 9. TOP FIVE INDUSTRY GROUPS IN HAWAII

Industry	% of 2018 Jobs	% of Additional Jobs 01-18	% of Additional Earnings 01-18	2018 Average Earnings
All Industry Total	100%	100%	100%	45,966
Government	13.9%	8.6%	25.3%	77,226
Accommodation and Food Services	13.3%	9.9%	10.1%	38,143
Retail Trade	11.5%	8.8%	7.6%	34,654
Health Care and Social Assistance	8.9%	10.8%	10.5%	49,389
Administrative and Support and Waste Management	7.5%	14.5%	7.0%	31,696
Sum Total Top Five	55.0%	52.7%	60.6%	

Source: EMSI and DBEDT, READ.

Government

The Government Sector ranked first in terms of its share in 2018 total jobs (13.9 percent). With an average annual job growth rate from 2001 to 2018 at 1.0 percent, lower than the average growth rate of all industry total (1.7 percent), the contribution to total additional jobs from 2001 to 2018 was 8.6 percent, which ranked the 5th among all industries (Table 3). Average annual earnings in 2018 was \$77,226, about 68.0 percent above the average earnings of all industry total that year. The average annual growth rate of earnings was 4.5 percent, above the average growth rate of all industry total (4.0 percent) between 2001 and 2018, and its contribution to the additional earnings was the highest among all industry sectors at 25.3 percent (Table 7).

As shown in Table 10, the Government Sector includes nine groups based on six-digit NAICS code. In 2018, the State Government employed 9,579 jobs, the Local Government employed 2,697 jobs, the Federal Military and Civilian employed 1,438 and 1,264 jobs, respectively. From 2001 to 2018, the State Government added 1,601 jobs, the Local Government added 442 jobs, the Federal Civilian Government added 268 jobs, and the Federal Military Government added 27 jobs.

TABLE 10. JOBS AND AVERAGE EARNINGS IN THE GOVERNMENT SECTOR

NAICS	Industry	2018 Jobs	Job Changes 01-18	2018 Average Earnings
90	Government	14,979	2,338	\$ 77,226
901149	US Postal Service	235	-4	\$ 89,352
901199	Federal Government, Civilian, Excluding Postal Service	1,030	272	\$ 101,321
901200	Federal Government, Military	1,438	27	\$ 22,801
902611	Elementary and Secondary Schools (State)	3,779	658	\$ 72,294
902612	Colleges, Universities, and Professional Schools (State)	1,903	513	\$ 54,927
902619	All Other Schools and Educational Support Services (State)	23	23	\$ 43,522
902622	Hospitals (State)	1,890	381	\$ 107,231
902999	State Government, Excluding Education and Hospitals	1,984	26	\$ 83,399
903999	Local Government, Excluding Education and Hospitals	2,697	442	\$ 93,348
	Federal Civilian	1,264	268	\$ 99,099
	Federal Military	1,438	27	\$ 22,801
	State Government	9,579	1,601	\$ 77,968
	Local Government	2,697	442	\$ 93,348

Source: EMSI and DBEDT, READ.

Accommodation and Food Services

Accommodation and Food Services ranked second in terms its share in 2018 total jobs (13.3 percent). With an average annual job growth rate from 2001 to 2018 at 1.2 percent, below the average growth rate of all industry total (1.7 percent), its contribution to total additional jobs from 2001 to 2018 was 9.9 percent, ranked the third largest (Table 3). The annual average earnings in this sector was \$38,143 in 2018, 17.0 percent below the average of all industry total that year. The average annual earnings growth rate in this sector was 3.6 percent between 2001 and 2018, lower than the average growth rate of all industry total (4.0 percent). The sector's contribution to additional earnings from 2001 to 2018 was 10.1 percent, was also the third largest (Table 7).

As shown in Table 11, the Accommodation and Food Services Sector includes 14 industry groups based on six-digit NAICS code. The top five groups in the Accommodation and Food Services Sector which employed the most jobs in 2018 were Hotels (except Casino Hotels) and Motels, Full-Service Restaurants, Limited-Service Restaurants, Snack and Nonalcoholic Beverage Bars, and Bed-and-Breakfast Inns. From 2001 to 2018, the Full-Service Restaurants generated the most additional jobs; followed by Limited-Service Restaurants. The Hotels (except Casino Hotels) and Motels lost the most jobs from 2001 to 2018.

TABLE 11. JOBS AND AVERAGE EARNINGS IN THE ACCOMMODATION AND FOOD SERVICES SECTOR

NAICS	Industry	2018 Jobs	Job Changes 01-18	2018 Average Earnings
72	Accommodation and Food Services	14,319	2,688	\$ 38,143
721110	Hotels (except Casino Hotels) and Motels	6,174	-886	\$ 51,104
722511	Full-Service Restaurants	4,179	1,603	\$ 30,443
722513	Limited-Service Restaurants	2,055	640	\$ 23,846
722515	Snack and Nonalcoholic Beverage Bars	534	390	\$ 22,586
721191	Bed-and-Breakfast Inns	297	194	\$ 30,039
722310	Food Service Contractors	252	119	\$ 31,791
721199	All Other Traveler Accommodation	220	203	\$ 31,245
722320	Caterers	176	126	\$ 35,029
722410	Drinking Places (Alcoholic Beverages)	163	83	\$ 18,086
722330	Mobile Food Services	160	140	\$ 36,452
721310	Rooming and Boarding Houses, Dormitories, and Workers' Camps	66	49	\$ 34,727
722514	Cafeterias, Grill Buffets, and Buffets	21	10	\$ 28,229
721214	Recreational and Vacation Camps (except Campgrounds)	11	9	\$ 44,773
721211	RV (Recreational Vehicle) Parks and Campgrounds	9	8	\$ 21,197

Source: EMSI and DBEDT, READ.

Retail Trade

Retail Trade ranked third in terms of its share in 2018 total jobs (11.5 percent). With an average annual job growth rate from 2001 to 2018 at 1.3 percent, lower than the average growth rate of all industry total (1.7 percent), its contribution to the total additional jobs from 2001 to 2018 was 8.8 percent, ranked the fourth highest (Table 3). Average earnings in this sector was \$34,654 in 2018, 24.6 percent below the average of all industries. Average annual earnings growth rate in this sector was 3.3 percent between 2001 and 2018, lower than the average growth rate of all industry total (4.0 percent). Its contribution to additional earnings from 2001 to 2018 was 7.6 percent, the fourth highest among all industry sectors (Table 7).

As shown in Table 12, the Retail Trade Sector includes 27 industry groups based on four-digit NAICS code. The top five groups in the Retail Trade Sector which employed the most jobs in 2018 were Grocery Stores, Department Stores, Building Material and Supplies Dealers, Direct Selling Establishments, and Other Miscellaneous Store Retailers. From 2001 to 2018, the Grocery Stores generated the most additional jobs, followed by the Department Stores.

The earnings levels are generally low in the Retail Trade Sector, among the 27 industry groups, only four groups had higher average earnings than the all industry average earnings of \$45,966 in 2018.

TABLE 12. JOBS AND AVERAGE EARNINGS IN THE RETAIL TRADE SECTOR

NAICS	Industry	2018 Jobs	Job Changes 01-18	2018 Average Earnings
44	Retail Trade	12,420	2,370	\$ 34,654
4451	Grocery Stores	2,452	927	\$ 36,789
4522	Department Stores	1,793	443	\$ 31,281
4441	Building Material and Supplies Dealers	959	298	\$ 44,182
4543	Direct Selling Establishments	957	131	\$ 7,208
4539	Other Miscellaneous Store Retailers	680	237	\$ 35,382
4461	Health and Personal Care Stores	615	145	\$ 40,256
4523	General Merchandise Stores, including Warehouse Clubs and Supercenters	594	90	\$ 46,863
4471	Gasoline Stations	574	-50	\$ 33,050
4411	Automobile Dealers	554	107	\$ 71,240
4481	Clothing Stores	538	42	\$ 24,336
4532	Office Supplies, Stationery, and Gift Stores	455	-118	\$ 22,479
4413	Automotive Parts, Accessories, and Tire Stores	414	97	\$ 45,146
4511	Sporting Goods, Hobby, and Musical Instrument Stores	377	145	\$ 30,061
4452	Specialty Food Stores	259	-127	\$ 28,111
4483	Jewelry, Luggage, and Leather Goods Stores	184	-21	\$ 35,473
4531	Florists	161	23	\$ 34,754
4541	Electronic Shopping and Mail-Order Houses	129	64	\$ 23,191
4442	Lawn and Garden Equipment and Supplies Stores	120	-3	\$ 41,308
4422	Home Furnishings Stores	115	23	\$ 25,388
4533	Used Merchandise Stores	107	40	\$ 20,164
4421	Furniture Stores	98	10	\$ 42,841
4431	Electronics and Appliance Stores	68	-90	\$ 50,811
4482	Shoe Stores	61	17	\$ 26,178
4512	Book Stores and News Dealers	51	-21	\$ 32,814
4453	Beer, Wine, and Liquor Stores	50	2	\$ 24,134
4412	Other Motor Vehicle Dealers	37	-24	\$ 47,065
4542	Vending Machine Operators	20	-16	\$ 9,175

Source: EMSI and DBEDT, READ.

Health Care and Social Assistance

The Health Care and Social Assistance Sector's share of total jobs ranked fourth in 2018 (8.9 percent). With an average annual job growth rate from 2001 to 2018 at 2.2 percent, higher than the average growth rate of all industry total (1.7 percent). The contribution to total additional jobs from 2001 to 2018 was 10.8 percent, ranked the second highest (Table 3). The average earning in this sector was \$49,389 in 2018, 7.4 percent above the average earnings of all industry total. The average annual earnings growth rate in this sector was 4.6 percent, higher than the average annual growth rate of all industry total (4.0 percent). The sector's contribution to additional earnings from 2001 to 2018 was 10.5 percent, ranked the second largest (Table 7).

As shown in Table 13, the Health Care and Social Assistance Sector includes 16 groups based on four-digit NAICS code. The top five groups in the Health Care and Social Assistance Sector which employed the most jobs in 2018 were Individual and Family Services, Offices of Physicians, Offices of

Other Health Practitioners, Outpatient Care Centers, and Home Health Care Services. From 2001 to 2018, Individual and Family Services generated the most additional jobs. Followed by Outpatient Care Centers.

In 2018, the average earnings ranged from a high \$91,922 in Offices of Physicians to a low of \$23,139 in Individual and Family Services. Among the 16 industry groups, seven groups had higher average earnings than the all industry average earnings of \$45,966 in 2018.

TABLE 13. JOBS AND AVERAGE EARNINGS IN THE HEALTH CARE AND SOCIAL ASSISTANCE SECTOR

NAICS	Industry	2018 Jobs	Job Changes 01-18	2018 Average Earnings
62	Health Care and Social Assistance	9,611	2,926	\$ 49,389
6241	Individual and Family Services	2,086	888	\$ 23,139
6211	Offices of Physicians	1,318	175	\$ 91,922
6213	Offices of Other Health Practitioners	1,178	547	\$ 43,474
6214	Outpatient Care Centers	845	629	\$ 73,364
6216	Home Health Care Services	804	465	\$ 29,352
6244	Child Day Care Services	785	-163	\$ 32,239
6231	Nursing Care Facilities (Skilled Nursing Facilities)	780	301	\$ 54,622
6212	Offices of Dentists	494	70	\$ 64,254
6221	General Medical and Surgical Hospitals	489	117	\$ 71,505
6243	Vocational Rehabilitation Services	274	-58	\$ 26,566
6215	Medical and Diagnostic Laboratories	212	-35	\$ 46,517
6219	Other Ambulatory Health Care Services	136	89	\$ 57,638
6242	Community Food and Housing, and Emergency and Other Relief Services	90	71	\$ 41,678
6233	Continuing Care Retirement Communities and Assisted Living Facilities	64	7	\$ 43,564
6232	Residential Intellectual and Developmental Disability, Mental Health	52	-178	\$ 41,905
6239	Other Residential Care Facilities	6	2	\$ 43,691

Source: EMSI and DBEDT, READ.

Administrative and Support and Waste Management

The Administrative and Support and Waste Management Sector's share of total jobs ranked fifth in 2018 (7.5 percent). This was due to this industry's growth rate being significantly higher than the overall industry total with an average annual job growth rate from 2001 to 2018 at 4.0 percent, significantly higher than the average growth rate of all industry total (1.7 percent). The contribution to total additional jobs from 2001 to 2018 was 14.5 percent, ranked the highest among all industry sectors (Table 3). The average annual earnings in this sector was \$31,696 in 2018 per job, which was 31.0 percent below the all industry average. The average annual earnings growth rate in this sector was 6.8 percent between 2001 and 2018, above the average growth rate of all industry total (4.0 percent). The sector's contributions to the additional earnings from 2001 to 2018 was 7.0 percent, ranked the fifth highest (Table 7).

As shown in Table 14, the Administrative and Support and Waste Management Sector includes 11 groups based on the four-digit NAICS code. The top five groups by number of jobs in 2018 were Services to Buildings and Dwellings, Employment Services, Travel Arrangement and Reservation Services, Investigation and Security Services, and Business Support Services. From 2001 to 2018, the Services to Buildings and Dwellings generated the most additional jobs, followed by Employment Services.

The earnings levels are generally low in this sector; among the 11 industry groups, only three groups had higher average earnings than the all industry average earnings of \$45,966 in 2018.

TABLE 14. JOBS AND AVERAGE EARNINGS IN THE ADMINISTRATIVE AND SUPPORT AND WASTE MANAGEMENT SECTOR

NAICS	Industry	2018 Jobs	Job Changes 01-18	2018 Average Earnings
56	Administrative and Support and Waste Management	8,041	3,919	\$ 31,696
5617	Services to Buildings and Dwellings	3,815	2,229	\$ 27,296
5613	Employment Services	2,229	1,417	\$ 37,046
5615	Travel Arrangement and Reservation Services	541	179	\$ 46,605
5616	Investigation and Security Services	524	10	\$ 32,735
5614	Business Support Services	263	-208	\$ 22,731
5611	Office Administrative Services	247	63	\$ 16,812
5619	Other Support Services	159	91	\$ 26,331
5621	Waste Collection	154	120	\$ 40,465
5629	Remediation and Other Waste Management Services	47	9	\$ 47,391
5612	Facilities Support Services	31	-12	\$ 23,851
5622	Waste Treatment and Disposal	30	20	\$ 74,860

Source: EMSI and DBEDT, READ.

APPENDIX. HAWAII COUNTY JOBS AND AVERAGE EARNINGS BY DETAILED INDUSTRY GROUPS

In the appendix, the Hawaii County jobs and the average annual earnings in 2018 by detailed industry groups for the other 20 sectors based on 2-digit NAICS code are provided.

TABLE A1. JOBS AND AVERAGE EARNINGS IN THE AGRICULTURE, FORESTRY, FISHING AND HUNTING SECTOR

NAICS	Industry	2018 Jobs	Job Changes 01-18	2018 Average Earnings
11	Agriculture, Forestry, Fishing and Hunting	7,300	900	\$ 25,698
111000	Crop Production	3,972	-544	\$ 23,450
112000	Animal Production	1,686	1,055	\$ 33,883
114111	Finfish Fishing	502	-30	\$ 19,511
115115	Farm Labor Contractors and Crew Leaders	443	214	\$ 24,109
115112	Soil Preparation, Planting, and Cultivating	217	175	\$ 13,859
115116	Farm Management Services	196	139	\$ 18,916
115114	Postharvest Crop Activities (except Cotton Ginning)	133	-18	\$ 25,161
113110	Timber Tract Operations	58	58	\$ 75,169
115210	Support Activities for Animal Production	40	0	\$ 16,527
115310	Support Activities for Forestry	38	-10	\$ 36,597
114210	Hunting and Trapping	11	4	\$ 18,602
113210	Forest Nurseries and Gathering of Forest Products	2	-7	\$ 36,885
113310	Logging	1	-55	\$ 65,958

Source: EMSI and DBEDT, READ.

TABLE A2. JOBS AND AVERAGE EARNINGS IN THE CONSTRUCTION SECTOR

NAICS	Industry	2018 Jobs	Job Changes 01-18	2018 Average Earnings
23	Construction	6,450	832	\$ 62,593
2361	Residential Building Construction	1,364	195	\$ 52,686
2382	Building Equipment Contractors	1,111	430	\$ 66,888
2383	Building Finishing Contractors	1,087	100	\$ 48,421
2389	Other Specialty Trade Contractors	877	105	\$ 50,476
2381	Foundation, Structure, and Building Exterior	527	50	\$ 48,805
2362	Nonresidential Building Construction	432	-108	\$ 86,956
2372	Land Subdivision	345	-70	\$ 74,624
2371	Utility System Construction	340	253	\$ 118,111
2373	Highway, Street, and Bridge Construction	296	-107	\$ 96,320
2379	Other Heavy and Civil Engineering Construction	70	-18	\$ 41,130

Source: EMSI and DBEDT, READ.

TABLE A3. JOBS AND AVERAGE EARNINGS IN THE REAL ESTATE AND RENTAL AND LEASING SECTOR

NAICS	Industry	2018 Jobs	Job Changes 01-18	2018 Average Earnings
53	Real Estate and Rental and Leasing	5,875	2,152	\$ 35,853
5313	Activities Related to Real Estate	1,939	983	\$ 31,392
5312	Offices of Real Estate Agents and Brokers	1,831	463	\$ 31,349
5311	Lessors of Real Estate	1,317	637	\$ 44,003
5321	Automotive Equipment Rental and Leasing	440	56	\$ 46,245
5322	Consumer Goods Rental	180	-34	\$ 31,358
5324	Commercial and Industrial Machinery and Equipment Rental and Leasing	153	62	\$ 53,258
5323	General Rental Centers	13	-16	\$ 18,233
5331	Lessors of Nonfinancial Intangible Assets (except Copyrighted Works)	3	2	\$ 27,244

Source: EMSI and DBEDT, READ.

TABLE A4. JOBS AND AVERAGE EARNINGS IN THE OTHER SERVICES SECTOR

NAICS	Industry	2018 Jobs	Job Changes 01-18	2018 Average Earnings
81	Other Services (except Public Administration)	5,635	1,851	\$30,252
8129	Other Personal Services	1,187	376	\$21,038
8121	Personal Care Services	772	400	\$25,768
8139	Business, Professional, Labor, Political, and Similar Organizations	688	296	\$37,738
8114	Personal and Household Goods Repair and Maintenance	666	134	\$24,804
8111	Automotive Repair and Maintenance	609	75	\$39,294
8131	Religious Organizations	442	112	\$18,124
8141	Private Households	387	166	\$33,866
8123	Dry cleaning and Laundry Services	261	79	\$35,430
8133	Social Advocacy Organizations	199	101	\$42,238
8132	Grantmaking and Giving Services	143	84	\$57,164
8113	Commercial/Industrial Machinery/Equip. Repair/Maintenance	132	-1	\$54,901
8134	Civic and Social Organizations	60	22	\$21,717
8112	Electronic and Precision Equipment Repair and Maintenance	51	-20	\$29,388
8122	Death Care Services	39	27	\$57,174

Source: EMSI and DBEDT, READ.

TABLE A5. JOBS AND AVERAGE EARNINGS IN THE PROFESSIONAL, SCIENTIFIC, AND TECHNICAL SERVICES SECTOR

NAICS	Industry	2018 Jobs	Job Changes 01-18	2018 Average Earnings
54	Professional, Scientific, and Technical Services	4,693	1,268	\$46,071
5419	Other Professional, Scientific, and Technical Services	1,285	444	\$29,781
5412	Accounting, Tax Preparation, Bookkeeping, and Payroll Services	677	14	\$34,369
5416	Management, Scientific, and Technical Consulting Services	631	282	\$37,233
5413	Architectural, Engineering, and Related Services	584	106	\$65,659
5411	Legal Services	380	16	\$57,460
5417	Scientific Research and Development Services	373	79	\$100,413
5415	Computer Systems Design and Related Services	349	142	\$57,417
5414	Specialized Design Services	260	157	\$30,811
5418	Advertising, Public Relations, and Related Services	155	28	\$35,927

Source: EMSI and DBEDT, READ.

TABLE A6. JOBS AND AVERAGE EARNINGS IN THE TRANSPORTATION AND WAREHOUSING SECTOR

NAICS	Industry	2018 Jobs	Job Changes 01-18	2018 Average Earnings
48	Transportation and Warehousing	3,637	1,495	\$48,443
487	Scenic and Sightseeing Transportation	988	484	\$48,592
481	Air Transportation	767	278	\$50,731
485	Transit and Ground Passenger Transportation	656	447	\$26,241
484	Truck Transportation	554	16	\$55,748
492	Couriers and Messengers	270	93	\$43,246
488	Support Activities for Transportation	266	130	\$65,869
483	Water Transportation	81	23	\$117,364
493	Warehousing and Storage	54	27	\$45,437
482	Rail Transportation	1	1	\$32,093
491	Postal Service	0	-5	\$21,111

Source: EMSI and DBEDT, READ.

TABLE A7. JOBS AND AVERAGE EARNINGS IN THE ARTS, ENTERTAINMENT, AND RECREATION SECTOR

NAICS	Industry	2018 Jobs	Job Changes 01-18	2018 Average Earnings
71	Arts, Entertainment, and Recreation	3,267	870	\$32,334
7139	Other Amusement and Recreation Industries	1,493	306	\$42,411
7115	Independent Artists, Writers, and Performers	1,082	292	\$20,174
7111	Performing Arts Companies	237	129	\$22,595
7121	Museums, Historical Sites, and Similar Institutions	191	37	\$44,706
7112	Spectator Sports	104	61	\$12,740
7113	Promoters of Performing Arts, Sports, and Similar Events	82	22	\$34,452
7131	Amusement Parks and Arcades	37	22	\$38,198
7114	Agents and Managers for Artists, Athletes, Entertainers	31	-7	\$24,766
7132	Gambling Industries	9	9	\$24,060

Source: EMSI and DBEDT, READ.

TABLE A8. JOBS AND AVERAGE EARNINGS IN THE FINANCE AND INSURANCE SECTOR

NAICS	Industry	2018 Jobs	Job Changes 01-18	2018 Average Earnings
52	Finance and Insurance	2,550	914	\$45,346
5239	Other Financial Investment Activities	861	452	\$23,546
5221	Depository Credit Intermediation	734	141	\$59,663
5242	Agencies, Brokerages, and Other Insurance Related Activities	416	78	\$38,244
5241	Insurance Carriers	188	131	\$67,041
5223	Activities Related to Credit Intermediation	130	61	\$50,505
5222	Nondepository Credit Intermediation	107	-12	\$64,206
5231	Securities/Commodity Contracts Intermediation and Brokerage	82	33	\$103,587
5259	Other Investment Pools and Funds	16	16	\$35,599
5232	Securities and Commodity Exchanges	11	9	\$32,258
5251	Insurance and Employee Benefit Funds	5	5	\$39,785

Source: EMSI and DBEDT, READ.

TABLE A9. JOBS AND AVERAGE EARNINGS IN THE MANUFACTURING SECTOR

NAICS	Industry	2018 Jobs	Job Changes 01-18	2018 Average Earnings
31	Manufacturing	2,408	227	\$45,888
311	Food Manufacturing	949	-49	\$47,215
339	Miscellaneous Manufacturing	251	97	\$28,104
327	Nonmetallic Mineral Product Manufacturing	218	21	\$67,102
321	Wood Product Manufacturing	184	0	\$17,291
337	Furniture and Related Product Manufacturing	131	29	\$84,928
312	Beverage and Tobacco Product Manufacturing	129	9	\$54,718
323	Printing and Related Support Activities	117	-39	\$29,924
325	Chemical Manufacturing	107	-19	\$64,690
332	Fabricated Metal Product Manufacturing	84	57	\$55,198
315	Apparel Manufacturing	78	31	\$14,813
333	Machinery Manufacturing	40	35	\$17,562
331	Primary Metal Manufacturing	24	24	\$95,915
326	Plastics and Rubber Products Manufacturing	24	9	\$48,461
334	Computer and Electronic Product Manufacturing	23	17	\$25,338
336	Transportation Equipment Manufacturing	21	12	\$42,592
314	Textile Product Mills	17	3	\$25,323
316	Leather and Allied Product Manufacturing	5	-2	\$32,147
313	Textile Mills	4	4	\$39,575
324	Petroleum and Coal Products Manufacturing	1	-4	\$3,733

Source: EMSI and DBEDT, READ.

TABLE A10. JOBS AND AVERAGE EARNINGS IN THE WHOLESALE TRADE SECTOR

NAICS	Industry	2018 Jobs	Job Changes 01-18	2018 Average Earnings
42	Wholesale Trade	2,345	535	\$56,530
4244	Grocery and Related Product Merchant Wholesalers	794	151	\$55,702
4249	Miscellaneous Nondurable Goods Merchant Wholesalers	303	-109	\$40,459
4239	Miscellaneous Durable Goods Merchant Wholesalers	214	58	\$37,037
4248	Beer, Wine, and Distilled Alcoholic Beverage Merchant Wholesalers	169	97	\$71,825
4233	Lumber and Other Construction Materials Merchant Wholesalers	162	97	\$70,213
4238	Machinery, Equipment, and Supplies Merchant Wholesalers	141	31	\$71,316
4247	Petroleum and Petroleum Products Merchant Wholesalers	116	63	\$88,223
4251	Wholesale Electronic Markets and Agents and Brokers	80	34	\$52,961
4245	Farm Product Raw Material Merchant Wholesalers	64	44	\$22,657
4237	Hardware/Plumbing/Heating Equipment/Supplies Merchant Wholesalers	57	23	\$69,533
4236	Household Appliances/Electrical/Electronic Goods Merchant Wholesalers	50	43	\$65,523
4243	Apparel, Piece Goods, and Notions Merchant Wholesalers	47	1	\$22,683
4234	Professional/Commercial Equipment/Supplies Merchant Wholesalers	42	25	\$57,741
4241	Paper and Paper Product Merchant Wholesalers	31	-19	\$51,831
4246	Chemical and Allied Products Merchant Wholesalers	22	-8	\$74,793
4231	Motor Vehicle/Motor Vehicle Parts/Supplies Merchant Wholesalers	18	13	\$57,564
4235	Metal and Mineral (except Petroleum) Merchant Wholesalers	16	7	\$63,979
4242	Drugs and Druggists' Sundries Merchant Wholesalers	14	0	\$172,789
4232	Furniture and Home Furnishing Merchant Wholesalers	3	-15	\$25,051

Source: EMSI and DBEDT, READ.

TABLE A11. JOBS AND AVERAGE EARNINGS IN THE EDUCATIONAL SERVICES SECTOR

NAICS	Industry	2018 Jobs	Job Changes 01-18	2018 Average Earnings
61	Educational Services	2,149	1,074	\$37,648
611110	Elementary and Secondary Schools	1,103	443	\$48,364
611620	Sports and Recreation Instruction	284	189	\$16,053
611699	All Other Miscellaneous Schools and Instruction	215	159	\$39,874
611310	Colleges, Universities, and Professional Schools	93	66	\$35,521
611430	Professional and Management Development Training	87	40	\$30,974
611691	Exam Preparation and Tutoring	85	44	\$22,196
611710	Educational Support Services	85	63	\$34,461
611610	Fine Arts Schools	62	37	\$12,081
611519	Other Technical and Trade Schools	58	34	\$12,647
611630	Language Schools	33	13	\$12,585
611512	Flight Training	31	8	\$43,886
611511	Cosmetology and Barber Schools	5	2	\$18,126
611513	Apprenticeship Training	3	0	\$32,322
611420	Computer Training	3	-24	\$35,148
611692	Automobile Driving Schools	2	-2	\$13,624
611410	Business and Secretarial Schools	1	1	\$38,672

Source: EMSI and DBEDT, READ.

TABLE A12. JOBS AND AVERAGE EARNINGS IN THE INFORMATION SECTOR

NAICS	Industry	2018 Jobs	Job Changes 01-18	2018 Average Earnings
51	Information	1,000	211	\$59,327
5173	Wired and Wireless Telecommunications Carriers	376	78	\$83,031
5121	Motion Picture and Video Industries	181	44	\$37,787
5111	Newspaper, Periodical, Book, and Directory Publishers	170	-28	\$35,409
5151	Radio and Television Broadcasting	85	18	\$44,550
5182	Data Processing, Hosting, and Related Services	57	24	\$39,948
5191	Other Information Services	43	29	\$27,261
5112	Software Publishers	41	33	\$138,147
5122	Sound Recording Industries	18	5	\$28,203
5179	Other Telecommunications	15	-2	\$85,215
5152	Cable and Other Subscription Programming	13	11	\$37,113
5174	Satellite Telecommunications	1	0	\$31,223

Source: EMSI and DBEDT, READ.

TABLE A13. JOBS AND AVERAGE EARNINGS IN THE UTILITIES SECTOR

NAICS	Industry	2018 Jobs	Job Changes 01-18	2018 Average Earnings
22	Utilities	696	218	\$133,381
221112	Fossil Fuel Electric Power Generation	420	56	\$169,294
221320	Sewage Treatment Facilities	107	78	\$46,734
221310	Water Supply and Irrigation Systems	105	97	\$76,031
221210	Natural Gas Distribution	42	-19	\$136,857
221117	Biomass Electric Power Generation	12	12	\$161,767
221115	Wind Electric Power Generation	4	4	\$133,216
221116	Geothermal Electric Power Generation	4	4	\$66,977
221114	Solar Electric Power Generation	2	2	\$127,820

Source: EMSI and DBEDT, READ.

TABLE A14. JOBS AND AVERAGE EARNINGS IN THE MANAGEMENT OF COMPANIES AND ENTERPRISES SECTOR

NAICS	Industry	2018 Jobs	Job Changes 01-18	2018 Average Earnings
55	Management of Companies and Enterprises	336	101	\$85,092
551114	Corporate, Subsidiary, and Regional Managing Offices	300	116	\$80,956
551112	Offices of Other Holding Companies	36	-15	\$119,543

Source: EMSI and DBEDT, READ.

TABLE A15. JOBS AND AVERAGE EARNINGS IN THE MINING, QUARRING, AND OIL AND GAS EXTRACTION SECTOR

NAICS	Industry	2018 Jobs	Job Changes 01-18	2018 Average Earnings
21	Mining, Quarrying, and Oil and Gas Extraction	215	163	\$33,731
2111	Oil and Gas Extraction	188	188	\$19,979
2123	Nonmetallic Mineral Mining and Quarrying	24	-14	\$142,950
2131	Support Activities for Mining	3	3	\$13,179

Source: EMSI and DBEDT, READ.