



# HAWAII'S CLUSTER ECONOMIC PERFORMANCE

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

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## EXECUTIVE SUMMARY

In 2011, Professor Michael E. Porter of Harvard Business School provided a study titled *Hawaii Competitiveness: State and Cluster Economic Performance* (Porter et al., 2011). The main contribution of the Harvard Study was the creation of standardized clusters defined by North American Industry Classification System (NAICS), establishing a framework for Hawaii's industry clusters to be compared to the overall U.S. economy and over time.

This Harvard study grouped employment by industries into 41 traded clusters, 16 local clusters, and several resource-based clusters for all states and the U.S. as a whole. The traded clusters include industries that sell products and services across regions and often to other countries. Traded clusters locate in a particular region based, not on resources, but on broader comparative advantages. For the local clusters, employment is evenly distributed across all regions. Local clusters are composed of industries that provide goods and services primarily to the local market, with only a small fraction of the goods and services leaving the region. Resource-based clusters are composed of resource dependent industries and a majority of the employment is located near the resource. However, in contrast to local clusters, industries related to natural resource clusters often compete outside the region.

The Harvard Study included both broad and narrow cluster definitions. Broad cluster definitions included all the industries within a cluster, and a specific industry may have been included in more than one cluster. Narrow cluster definitions assigned each industry to the single cluster with which it had the strongest locational correlation. The Harvard Study only provided detailed cluster data based on the narrow definitions.

One of the limitations of the Harvard Study was that the cluster definitions were based on an analysis of industry data at the national level. While this approach standardizes categories and allows for comparisons across states, it does not account for regional variations in cluster composition. For example, electricity generation in a state bordering other states would be defined as a traded industry; however, for Hawaii, this should be considered a local industry because the state's grid is not interconnected with other states.

The main purpose of this study was to reclassify the Hawaii industry level data into clusters based on industry definitions and knowledge unique to Hawaii industries. EMSI data was used to determine clusters in Hawaii. The EMSI 2001-2014 annual data by NAICS includes total jobs, annual earnings, and the number of establishments.

### **The DBEDT Cluster Definition**

Based on the narrow cluster definitions from the Harvard Study and adjustments for Hawaii's unique economic structure, Hawaii's private sector was first grouped into 292 industry groups based on different NAICS level. The 292 industry groups are then grouped into 32 traded clusters, 16 local clusters, and 1 resource-based cluster.

Table S-1 below provides an overview of the 32 traded clusters, and their 2014 jobs. The traded clusters accounted for about 171,216 jobs or 24.4% of total private sector jobs in Hawaii in 2014. The top 15 traded clusters accounted for more than 97% of total jobs in all traded clusters.

**Table S-1. Hawaii 2014 Jobs by Traded Clusters Based on DBEDT Definition**

Cluster No.	Cluster Name	Jobs 2014	% of Total Jobs	% of Traded Jobs	Cumulative Share
1	Hospitality and Tourism	56,829	8.1	33.2	33.2
2	Transportation and Logistics	14,746	2.1	8.6	41.8
3	Business Services	22,290	3.2	13.0	54.8
4	Education and Knowledge Creation	15,537	2.2	9.1	63.9
5	Distribution Services	5,726	0.8	3.3	67.2
6	Entertainment	7,271	1.0	4.2	71.5
7	Financial Services	16,263	2.3	9.5	81.0
8	Processed Food	6,013	0.9	3.5	84.5
9	Sporting, Recreational and Children's Goods	892	0.1	0.5	85.0
10	Fishing and Fishing Products	1,511	0.2	0.9	85.9
11	Publishing and Printing	1,834	0.3	1.1	87.0
12	Agricultural Products	14,113	2.0	8.2	95.2
13	Information Technology	1,309	0.2	0.8	96.0
14	Jewelry and Precious Metals	1,389	0.2	0.8	96.8
15	Oil and Gas Products and Services	1,109	0.2	0.6	97.4
16	Building Fixtures, Equipment and Services	173	0.0	0.1	97.5
17	Apparel	1,098	0.2	0.6	98.2
18	Plastics	313	0.0	0.2	98.4
19	Metal Manufacturing	466	0.1	0.3	98.6
20	Construction Materials	310	0.0	0.2	98.8
21	Furniture	519	0.1	0.3	99.1
22	Textiles	283	0.0	0.2	99.3
23	Medical Devices	265	0.0	0.2	99.4
24	Forest Products	176	0.0	0.1	99.5
25	Chemical Products	468	0.1	0.3	99.8
26	Machinery Manufacturing	140	0.0	0.1	99.9
27	Automotive	23	0.0	0.0	99.9
28	Leather and Related Products	91	0.0	0.1	100.0
29	Lighting and Electrical Equipment	48	0.0	0.0	100.0
30	Other transportation equipment manufacturing	-	-	-	100.0
31	Aerospace Product and Parts Manufacturing	12	0.0	0.0	100.0
32	Tobacco	-	-	-	100.0
	Total Traded Clusters	171,216	24.4	100.0	
	Total Private Sector Jobs	702,555	100.0		

Source: DBEDT compilation based on EMSI data

Table S-2 below provides an overview of the 16 local clusters and their 2014 total jobs. In 2014, the local clusters accounted for about 530,016 total jobs or 75.4% of total private sector jobs in Hawaii.

**Table S-2. Hawaii 2014 Jobs by Local Clusters Based on DBEDT Definition**

Cluster No.	Cluster Name	Jobs 2014	% of Total Jobs	% of Traded Jobs	Cumulative Share
1	Local Hospitality Establishments	79,394	11.3	15.0	15.0
2	Local Health Services	68,517	9.8	12.9	27.9
3	Local Commercial Services	88,197	12.6	16.6	44.5
4	Local Real Estate, Construction, and Development	94,525	13.5	17.8	62.4
5	Local Retail Clothing and Accessories	29,723	4.2	5.6	68.0
6	Local Community and Civic Organizations	20,982	3.0	4.0	71.9
7	Local Food and Beverage Processing and Distribution	29,396	4.2	5.5	77.5
8	Local Motor Vehicle Products and Services	14,797	2.1	2.8	80.3
9	Local Financial Services	13,120	1.9	2.5	82.8
10	Local Education and Training	11,809	1.7	2.2	85.0
11	Local Personal Services (Non-Medical)	36,797	5.2	6.9	91.9
12	Local Entertainment and Media	15,973	2.3	3.0	94.9
13	Local Logistical Services	9,381	1.3	1.8	96.7
14	Local Household Goods and Services	6,291	0.9	1.2	97.9
15	Local Utilities	5,851	0.8	1.1	99.0
16	Local Industrial Products and Services	5,262	0.7	1.0	100.0
	Total Local Clusters	530,016	75.4	100.0	
	Total Traded Clusters	171,216	24.4		
	Total Resource-Dependent Clusters	1,322	0.2		
	Sub-Total All Clusters	702,555	100.0		

Source: DBEDT compilation based on EMSI data

### Performance of the Cluster Portfolio

Table S-3 shows how each of the respective traded clusters was classified on a performance matrix. Combined, the traded clusters accounted for about 171,216 jobs in Hawaii's economy in 2014. Based on job growth alone, the leading traded clusters were Financial Services, Sporting, Recreational and Children's Goods, Oil and Gas Products and Services, Education and Knowledge Creation, and Business Services. The earnings average of the traded clusters was \$49,617 in 2014, which was slightly higher than the statewide private sector average of \$49,283.

Overall, the traded clusters added 16,971 jobs between 2001 and 2014 in Hawaii. This amounted to an 11.0 percent increase in jobs. In contrast, total private sector jobs in Hawaii increased 19.2 percent during the same period. There were three traded clusters that qualified as high performing base-growth clusters. Base-growth clusters accounted for about 5.7 percent of jobs in traded clusters. Three traded clusters were included in the emerging category. These clusters accounted for about 21.8 percent of the total traded cluster jobs. Five traded clusters fell into the transitioning category. Transitioning clusters accounted for about 55.9 percent of jobs in traded clusters. Five traded clusters fell into the declining quadrant of the performance map. These clusters accounted for about 16.6 percent of total traded cluster jobs.

Table S-3. State of Hawaii Traded Clusters Mapped by Performance, 2001-2013

Total Traded Clusters Jobs, 2014: 171,216					
Average Traded Cluster Annual Earnings, 2014: \$49,617					
Net Change in Traded Cluster Jobs, 2001-2014: 11.0%					
Transitioning Group: 55.9% of Traded Cluster Jobs			Base-Growth Group: 5.7% of Traded Cluster Jobs		
Group	Change in Jobs	Average Earnings	Group	Change in Jobs	Average Earnings
Financial Services	60.5%	\$ 47,659	Oil and Gas Products and Services	41.3%	\$ 119,360
Education and Knowledge Creation	37.2%	\$ 40,909	Entertainment	21.7%	\$ 39,458
Distribution Services	11.9%	\$ 50,795	Jewelry and Precious Metals	6.0%	\$ 36,502
Information Technology	11.1%	\$ 69,217			
Hospitality and Tourism	3.1%	\$ 46,569			
Declining Group: 16.6% of Traded Cluster Jobs			Emerging Group: 21.8% of Traded Cluster Jobs		
Group	Change in Jobs	Average Earnings	Group	Change in Jobs	Average Earnings
Processed Food	-1.8%	\$ 41,219	Sporting, Recreational and Children's Goods	54.5%	\$ 37,258
Transportation and Logistics	-3.5%	\$ 75,875	Business Services	28.1%	\$ 65,182
Fishing and Fishing Products	-19.9%	\$ 19,176	Agricultural Products	3.4%	\$ 28,251
Other Traded Clusters 1/	-25.2%	\$ 51,477			
Publishing and Printing	-27.0%	\$ 43,870			

1/ Includes clusters #16 to #32 in Table S-1.

Source: DBEDT compilation based on EMSI data.

Table S-4 shows how each of the respective local clusters fell on the performance map based on the 2001 to 2014 performance measures. Combined, the local clusters accounted for about 530,016 jobs in Hawaii's economy in 2014. Based on job growth alone, the leading performers of the local clusters were Local Utilities, Local Real Estate, Construction, and Development, Local Health Services, Local Commercial Services, and Local Personal Services (Non-Medical). The earnings average of the local clusters was \$43,363 in 2014, which was lower than the statewide private sector average of \$49,283.

Overall, the local clusters added 95,554 jobs between 2001 and 2014 in Hawaii. This amounted to a 22.0 percent increase in jobs. There were five local clusters that qualified as high performing base-growth clusters for the 2001 to 2014 period. Base-growth clusters accounted for about 49.6 percent of jobs in local clusters. Four local clusters were included in the emerging category. They accounted for about 6.3 percent of the total local cluster jobs. Five local clusters fell into the transitioning category. Transitioning clusters accounted for about 40.1 percent of jobs in local clusters. Two clusters fell into the declining quadrant, accounting for about 4.0 percent of total local cluster jobs.

Table S-4. State of Hawaii Local Clusters Mapped by Performance, 2001-2013

Total Local Clusters Jobs, 2014: 530,016					
Average Local Cluster Annual Earnings, 2014: \$43,363					
Net Change in Local Cluster Jobs, 2001-2014: 22.0%					
Transitioning Group: 40.1% of Local Cluster Jobs			Base-Growth Group: 49.6% of Local Cluster Jobs		
Group	Change in Jobs	Average Earnings	Group	Change in Jobs	Average Earnings
Local Personal Services (Non-Medical)	25.5%	\$ 27,434	Local Real Estate, Construction, and Development	36.0%	\$ 52,374
Local Health Services	31.6%	\$ 62,399	Local Commercial Services	29.0%	\$ 46,155
Local Hospitality Establishments	18.3%	\$ 23,758	Local Community and Civic Organizations	22.0%	\$ 33,969
Local Education and Training	14.8%	\$ 44,155	Local Retail Clothing and Accessories	12.0%	\$ 30,465
Local Entertainment and Media	1.0%	\$ 25,354	Local Food and Beverage Processing and Distribution	10.3%	\$ 31,848
Declining Group: 4.0% of Local Cluster Jobs			Emerging Group: 6.3% of Local Cluster Jobs		
Group	Change in Jobs	Average Earnings	Group	Change in Jobs	Average Earnings
Local Motor Vehicle Products and Services	-3.4%	\$ 45,215	Local Utilities	37.8%	\$ 103,896
Local Household Goods and Services	-8.0%	\$ 43,581	Local Logistical Services	23.8%	\$ 48,900
			Local Industrial Products and Services	15.6%	\$ 69,525
			Local Financial Services	0.7%	\$ 71,201

Source: DBEDT compilation based on EMSI data.

## I. INTRODUCTION

On February 26, 2011, Professor Michael E. Porter of Harvard Business School published a study titled *Hawaii Competitiveness: State and Cluster Economic Performance* (the Harvard Study). In the Harvard study, industry employment data were grouped into 41 traded clusters, 16 local clusters, and several resource-based clusters for all states and the U.S. as a whole. The 2008 employment and wages by traded and local clusters in Hawaii were included with a comparison of Hawaii's share of national employment between 1998 and 2008.

The main contribution of the Harvard Study was the creation of standardized cluster definitions by NAICS codes for traded clusters, local clusters, and resource-based clusters. According to the study, traded clusters include industries that sell products and services across regions and often to other countries. Traded clusters locate in a particular region (state) based on competitive factors, rather than natural resources or servicing the local market. In contrast, local clusters provide goods and services primarily to the local market. Such industries compete in only a limited way with other regions. Resource-based clusters locate near the respective natural resource. Similar to traded clusters, these resource-based clusters compete with domestic and international markets outside of the cluster region.

The Harvard Study first assigned the industry level data from the U.S. Census County Business Pattern (CBP) data into traded, local, and resource-based industries. These industries were then grouped into clusters based on the possible externalities present. The study designed broad and narrow cluster definitions. Broad cluster definitions included all the industries within a cluster and a specific industry could be included in more than one cluster. On the other hand, narrow cluster definitions assign one industry to one cluster based on the strongest locational correlation. The Harvard Study only provided detailed data for the narrow cluster definitions. If an industry is included in both Cluster A and Cluster B under the broad definitions, data regarding the overlap of industries among various clusters was not included.

This study builds on the Harvard study by establishing a cluster framework for Hawaii's unique economic structure. The first step of this study was to analyze the data sources and methodology of the Harvard Study. The next step was to allocate the data by North American Industry Classification System (NAICS) from Economic Modeling Specialists Inc. (EMSI) to traded, local, and resource dependent clusters based on the narrow definitions using an alternative methodology (the DBEDT methodology). After the industries were allocated, the study compared the employment and average wages between Hawaii and the nation from 2001 to 2014, including the growth rates.

### **The Data and Methodology Used in the Harvard Study**

The data sources and methodology used in the February 2011 Harvard Study were similar to the data sources and methodology used in an earlier paper published in the August/October 2003 Regional Studies (the 2003 Study) by the same author. In the 2003 Study, first the 1996 annual County Business Pattern (CBP) data, covering employment, establishments, and wages by county (and by state) at the four-digit SIC (Standard Industrial Classification) level for all states and the nation were used to separate industries into three groups (traded, local, and resource dependent). The CBP data excluded government and military employment but covered the majority of the private sector, excluding only agricultural workers, railroad workers and household employment. The 879 industries in the SIC system were initially separated into traded or local categories, mainly based on the location quotient (LQ) of the industries (or the relative share of the industry in a region over the relative share of the industry in the nation). The logic behind this methodology was that the share of employment in a local industry should be similar in all regions; in other words, a location quotient (LQ) equal to one. Industries, with an LQ

greater than one, have a greater regional concentration than the nation overall and are likely to export part of their output outside the region.

The 2003 Study used three measures of the variation of industry employment across states to separate industries: (1) the share of national employment for all states with an LQ greater or equal to 1; (2) the mean LQ for the top five states ranked by LQ; and (3) the employment GINI coefficient. The cutoffs were established for each variable: employment in states with an LQ greater or equal to 1 or above 50% of total employment; mean LQ of the top five states greater or equal to 2; and employment GINI of 0.3. The vast majority of the 879 industries in the SIC system were traded or local based on all three criteria. For the industries that met two but not all three criteria, the 2003 Study examined the actual distribution of employment as well as the industry definitions. Of those 62 industries, 18 were categorized as traded and the rest were local. The 2003 Study also identified a number of industries that were traded based on all three criteria but were local based on the industry definitions. These industries were classified as local industries. This process resulted in 241 local industries and 638 traded industries. 48 of the 638 traded industries were then assigned to resource-dependent clusters. Only industries clearly dominated by resource endowments were assigned to resource-dependent industries. In the 2011 Harvard Study, the 2008 annual CBP data by NAICS were used to separate industries into traded, local, and resource-dependent industries.

In the 2003 Harvard Study, a cluster was defined as a geographically proximate group of interconnected companies, suppliers, service providers and associated institutions in a particular field, linked by externalities of various types. To determine the clusters, the 2003 Harvard Study used the locational correlation of employment across industries to reveal externalities and define cluster boundaries. The Study utilized states as the base unit of geography for computing locational correlations. Using CBP data for 1996, the Study identified pairs and then groups of tightly linked industries based on statistically significant locational correlations. To build up clusters, the 2003 Study started with small groups of obviously related industries and then traced correlation patterns to other industries. The Study employed a sequence of steps to eliminate spurious correlations. First, it used detailed four-digit SIC industry definitions and lists of products included in each industry, combined with industry knowledge, to identify the presence of logical externalities. Focused case studies were conducted in unfamiliar industries to better understand the possible externalities present. Second, where there were no apparent externalities, the 2003 Study used the National 1992 Input-Output (I-O) Accounts from the Bureau of Economic Analysis to look for meaningful cross-industry flows. Where there was no logical externality and the I-O data revealed no meaningful product flows, a correlation pair was excluded as spurious. This process resulted in 41 traded clusters in the U.S. economy, with an average of about 29 industries each.

Table 1 shows the 2008 Hawaii employment by traded clusters provided by the Harvard Study. The top 15 traded clusters accounted for more than 97% of all jobs in the traded clusters. Jobs in all traded clusters accounted for about 25.4% of total jobs in Hawaii.

**Table 1. Hawaii 2008 Employment by Traded Clusters Based on Harvard Definition**

Cluster No.	Cluster Name	Jobs 2008	% of Total Jobs	% of Traded Jobs	Cumulative Share
1	Hospitality and Tourism	56,985	10.9	42.7	42.7
2	Transportation and Logistics	16,784	3.2	12.6	55.3
3	Business Services	13,571	2.6	10.2	65.5
4	Education and Knowledge Creation	10,768	2.1	8.1	73.6
5	Distribution Services	5,487	1.0	4.1	77.7
6	Entertainment	5,099	1.0	3.8	81.5
7	Financial Services	4,660	0.9	3.5	85.0
8	Processed Food	4,385	0.8	3.3	88.3
9	Heavy Construction Services	4,214	0.8	3.2	91.5
10	Power Generation and Transmission	1,750	0.3	1.3	92.8
11	Publishing and Printing	1,663	0.3	1.2	94.0
12	Agricultural Products	1,442	0.3	1.1	95.1
13	Information Technology	1,280	0.2	1.0	96.1
14	Jewelry and Precious Metals	766	0.1	0.6	96.6
15	Apparel	742	0.1	0.6	97.2
16	Building Fixtures, Equipment and Services	624	0.1	0.5	97.7
17	Oil and Gas Products and Services	535	0.1	0.4	98.1
18	Plastics	366	0.1	0.3	98.3
19	Metal Manufacturing	315	0.1	0.2	98.6
20	Construction Materials	267	0.1	0.2	98.8
21	Furniture	217	0.0	0.2	98.9
22	Textiles	150	0.0	0.1	99.1
23	Medical Devices	150	0.0	0.1	99.2
24	Forest Products	150	0.0	0.1	99.3
25	Sporting, Recreational and Children's Goods	136	0.0	0.1	99.4
26	Biopharmaceuticals	133	0.0	0.1	99.5
27	Fishing and Fishing Products	120	0.0	0.1	99.6
28	Chemical Products	90	0.0	0.1	99.6
29	Heavy Machinery	89	0.0	0.1	99.7
30	Automotive	79	0.0	0.1	99.8
31	Leather and Related Products	70	0.0	0.1	99.8
32	Footwear	70	0.0	0.1	99.9
33	Lighting and Electrical Equipment	60	0.0	0.0	99.9
34	Production Technology	30	0.0	0.0	99.9
35	Prefabricated Enclosures	30	0.0	0.0	100.0
36	Analytical Instruments	30	0.0	0.0	100.0
37	Motor Driven Products	10	0.0	0.0	100.0
38	Communications Equipment	10	0.0	0.0	100.0
39	Aerospace Engines	-	-	-	100.0
40	Aerospace Vehicles and Defense	-	-	-	100.0
41	Tobacco	-	-	-	100.0
	Total Traded Clusters	133,327	25.4	100.0	
	Total Jobs	524,941	100.0		

Source: Michael E. Porter, 2011 (the Harvard 2011 Study)

Table 2 shows the 2008 Hawaii employment by local clusters provided by the Harvard Study. Based on the classification of the Harvard Study, employment in all local clusters accounted for about 74.4 percent of total employment in Hawaii.

**Table 2. Hawaii 2008 Employment by Local Clusters Based on Harvard Definition**

Cluster No.	Cluster Name	Jobs 2008	% of Total Jobs	% of Traded Jobs	Cumulative Share
1	Local Hospitality Establishments	65,017	12.4	16.6	16.6
2	Local Health Services	57,617	11.0	14.8	31.4
3	Local Commercial Services	54,644	10.4	14.0	45.4
4	Local Real Estate, Construction, and Development	52,949	10.1	13.6	58.9
5	Local Retail Clothing and Accessories	29,138	5.6	7.5	66.4
6	Local Community and Civic Organizations	22,558	4.3	5.8	72.2
7	Local Food and Beverage Processing and Distribution	20,910	4.0	5.4	77.5
8	Local Motor Vehicle Products and Services	15,470	2.9	4.0	81.5
9	Local Financial Services	14,807	2.8	3.8	85.3
10	Local Education and Training	13,123	2.5	3.4	88.6
11	Local Personal Services (Non-Medical)	10,581	2.0	2.7	91.4
12	Local Entertainment and Media	8,749	1.7	2.2	93.6
13	Local Logistical Services	8,428	1.6	2.2	95.8
14	Local Household Goods and Services	7,831	1.5	2.0	97.8
15	Local Utilities	5,397	1.0	1.4	99.1
16	Local Industrial Products and Services	3,359	0.6	0.9	100.0
	Total Local Clusters	390,578	74.4	100.0	
	Total Traded Clusters	133,327	25.4		
	Total Resource-Dependent Clusters	1,036	0.2		
	Sub-Total All Clusters	524,941	100.0		

Source: Michael E. Porter, 2011 (the Harvard 2011 Study)

The CBP data was suppressed if the disclosure would compromise the data for a particular company. If the data was suppressed, a range was reported for the employment data. The Harvard Study utilized the mid-point in the range. Since the employment for these industries were estimated by the mid-point of the given range, the total employment of all clusters do not match the total employment of the region. For example, total Hawaii employment in 2008 by clusters provided by the Harvard Study was about 6,700 higher than the data from CBP.

The Harvard Study also subdivided each cluster into sub-clusters. In all, there were 264 sub-clusters for narrowly defined clusters. In the 2011 Harvard Study, the 2008 Hawaii employment in the top 50 sub-clusters by national employment share was also provided.

### The Clusters Based On DBEDT Definition

In this study, we will reclassify the Hawaii industry level data into clusters based on industry definitions and knowledge about Hawaii industries (the DBEDT Definition). The 2001 to 2014 data from EMSI were used to determine clusters in Hawaii based on the DBEDT methodology. The EMSI 2001 to 2014 annual data by NAICS included total jobs, annual earnings, and the number of establishments.

The clusters defined in the Harvard Study were based on complicated methodology and detailed industry level data by state. Without the detailed clusters by NAICS data, we were unable to verify the

classifications of clusters provided by the Harvard Study. Furthermore, since the clusters in the Harvard Study were classified based on national economic patterns, this may not perfectly match Hawaii's industry patterns. For example, electricity generation in a state interconnected with other states would be a traded industry. However, this should be classified as a local industry for Hawaii since Hawaii is not interconnected with other states.

After estimating the employment and annual earnings data by NAICS industry codes, we first tried to match the industries with the sub-clusters provided by the Harvard Study. In some cases, a NAICS code could clearly be assigned to a sub-cluster. For example, NAICS 6111 (elementary and secondary schools) was assigned to the sub-cluster: elementary and secondary schools, which is included in the Local Education and Training Cluster. In some other cases, a NAICS code could not be clearly assigned to a sub-cluster or even a cluster. For example, NAICS 6117 (educational support services) might be assigned to either Traded Cluster 4 (Education and Knowledge Creation) or Local Cluster 11 (Local Education and Training). In addition, some NAICS industry codes could not be assigned to a sub-cluster provided by the Harvard Study. For example, NAICS 62412 (services for the elderly and persons with disabilities) might be assigned to the Local Health Services Cluster; however, it was difficult to match this with any of the 9 sub-clusters included in the Local Health Services Cluster. For these NAICS codes, we used industry definitions and knowledge about Hawaii's industries to assign them to the traded or local clusters.

In determining whether an industry should be assigned to a traded cluster, we used the following two criteria: (1) whether the goods or services were mainly consumed by local residents or visitors (and/or exported) and (2) did the producers of the goods or services compete heavily with out-of-state producers. For example, since hotels are mainly consumed by visitors, the hotel industry was assigned to a traded cluster. On the other hand, since food services and drinking places were mainly consumed by local residents, this industry was assigned to a local cluster. The two criteria were not always consistent. In some cases, goods or services produced by an industry were mainly consumed by local residents, but the producers competed seriously with importers or out-of-state producers. In these cases, the industry was assigned to a traded cluster.

After examining industry definitions and the EMSI data, the detailed NAICS industries were combined into 292 industries at alternative detailed NAICS levels, from 2-digit to 6-digit. These NAICS industries were assigned to the same clusters as provided in the Harvard Study where possible. The list of the 292 NAICS industries and their assigned clusters are provided in the Appendix Table A-1. The number of local clusters remained the same as Table 2, but the number of traded clusters was reduced from 41 to 32. Some of the traded clusters in Table 1 were combined with other clusters based on the EMSI data, some clusters were moved from traded to local clusters. Specifically, among the 41 traded clusters from the Harvard Study, 34 of them could be matched with the 2012 NAICS industries. Two of these 34 traded clusters, Power Generation and Transmission and Heavy Construction Services were moved from traded clusters to local clusters (combined with the corresponding local clusters). In addition, since Footwear Manufacturing (NAICS 3162) was part of the Leather and Related Products cluster (NAICS 316), the Footwear cluster was removed in the DBEDT definition; therefore, the 34 traded clusters which could be matched with NAICS industries in the Harvard Study were reclassified into 31 traded clusters for the DBEDT definition. The seven traded clusters in the Harvard Study, which could not be matched with the 2012 NAICS code industries, had very few or no jobs in Hawaii. Among the seven clusters, Aerospace Engines and Aerospace Vehicles and Defense, were combined into one cluster, Aerospace Products and Parts Manufacturing (NAICS 3364). Therefore, the DBEDT definition included 32 traded clusters. The NAICS industries with names similar to the other five clusters were already included in other related clusters for the DBEDT definition. For example, the Biological Product industry (NAICS 325414) (similar to the Biopharmaceuticals cluster in the Harvard Study) was included in the Chemical Products cluster (NAICS 325).

Table 3 and Table 4 show the 2014 Hawaii total jobs by traded and local clusters, based on the DBEDT definition. In 2014, the 16 local clusters accounted for 75.4% of total private sector jobs, the 33 traded clusters accounted for 24.4% of total private sector jobs. The top 15 traded clusters accounted for more than 97% of total jobs in all traded clusters. Hawaii had no jobs in three of the traded clusters (No. 30-32).

**Table 3. Hawaii 2014 Jobs by Traded Clusters Based on DBEDT Definition**

Cluster No.	Cluster Name	Jobs 2014	% of Total Jobs	% of Traded Jobs	Cumulative Share
1	Hospitality and Tourism	56,829	8.1	33.2	33.2
2	Transportation and Logistics	14,746	2.1	8.6	41.8
3	Business Services	22,290	3.2	13.0	54.8
4	Education and Knowledge Creation	15,537	2.2	9.1	63.9
5	Distribution Services	5,726	0.8	3.3	67.2
6	Entertainment	7,271	1.0	4.2	71.5
7	Financial Services	16,263	2.3	9.5	81.0
8	Processed Food	6,013	0.9	3.5	84.5
9	Sporting, Recreational and Children's Goods	892	0.1	0.5	85.0
10	Fishing and Fishing Products	1,511	0.2	0.9	85.9
11	Publishing and Printing	1,834	0.3	1.1	87.0
12	Agricultural Products	14,113	2.0	8.2	95.2
13	Information Technology	1,309	0.2	0.8	96.0
14	Jewelry and Precious Metals	1,389	0.2	0.8	96.8
15	Oil and Gas Products and Services	1,109	0.2	0.6	97.4
16	Building Fixtures, Equipment and Services	173	0.0	0.1	97.5
17	Apparel	1,098	0.2	0.6	98.2
18	Plastics	313	0.0	0.2	98.4
19	Metal Manufacturing	466	0.1	0.3	98.6
20	Construction Materials	310	0.0	0.2	98.8
21	Furniture	519	0.1	0.3	99.1
22	Textiles	283	0.0	0.2	99.3
23	Medical Devices	265	0.0	0.2	99.4
24	Forest Products	176	0.0	0.1	99.5
25	Chemical Products	468	0.1	0.3	99.8
26	Machinery Manufacturing	140	0.0	0.1	99.9
27	Automotive	23	0.0	0.0	99.9
28	Leather and Related Products	91	0.0	0.1	100.0
29	Lighting and Electrical Equipment	48	0.0	0.0	100.0
30	Other transportation equipment manufacturing	-	-	-	100.0
31	Aerospace Product and Parts Manufacturing	12	0.0	0.0	100.0
32	Tobacco	-	-	-	100.0
	Total Traded Clusters	171,216	24.4	100.0	
	Total Private Sector Jobs	702,555	100.0		

Source: DBEDT compilation based on EMSI data

**Table 4. Hawaii 2014 Jobs by Local Clusters Based on DBEDT Definition**

Cluster No.	Cluster Name	Jobs 2014	% of Total Jobs	% of Traded Jobs	Cumulative Share
1	Local Hospitality Establishments	79,394	11.3	15.0	15.0
2	Local Health Services	68,517	9.8	12.9	27.9
3	Local Commercial Services	88,197	12.6	16.6	44.5
4	Local Real Estate, Construction, and Development	94,525	13.5	17.8	62.4
5	Local Retail Clothing and Accessories	29,723	4.2	5.6	68.0
6	Local Community and Civic Organizations	20,982	3.0	4.0	71.9
7	Local Food and Beverage Processing and Distribution	29,396	4.2	5.5	77.5
8	Local Motor Vehicle Products and Services	14,797	2.1	2.8	80.3
9	Local Financial Services	13,120	1.9	2.5	82.8
10	Local Education and Training	11,809	1.7	2.2	85.0
11	Local Personal Services (Non-Medical)	36,797	5.2	6.9	91.9
12	Local Entertainment and Media	15,973	2.3	3.0	94.9
13	Local Logistical Services	9,381	1.3	1.8	96.7
14	Local Household Goods and Services	6,291	0.9	1.2	97.9
15	Local Utilities	5,851	0.8	1.1	99.0
16	Local Industrial Products and Services	5,262	0.7	1.0	100.0
	Total Local Clusters	530,016	75.4	100.0	
	Total Traded Clusters	171,216	24.4		
	Total Resource-Dependent Clusters	1,322	0.2		
	Sub-Total All Clusters	702,555	100.0		

Source: DBEDT compilation based on EMSI data

## II. COMPARISON OF TOTAL JOBS AND AVERAGE ANNUAL EARNINGS BY CLUSTERS BETWEEN HAWAII AND THE U.S.

As outline above, the detailed industry NAICS codes were assigned to 32 traded clusters for the DBEDT definition, and these were further reduced to 16 traded clusters due to clusters 16-32 being combined into the “Other Traded Clusters” category (these had small job counts). Resource dependent industries (small in Hawaii) were combined into one cluster. The following are comparisons of total jobs and average annual earnings by clusters between Hawaii and the U.S. in 2014 and 2001.

### Comparison of Total Jobs

Table 5 compares 2014 total jobs by traded clusters between Hawaii and the nation. The top five traded clusters in Hawaii were: (1) Hospitality and Tourism, (2) Business Services, (3) Financial Services, (4) Education and Knowledge Creation, and (5) Transportation and Logistics. These five clusters accounted for 73.4 percent of total jobs in all traded clusters and about 17.9 percent of total private sector jobs in Hawaii. The Hospitality and Tourism cluster alone accounted for 33.2 percent of traded cluster jobs in Hawaii. Traded clusters numbered 16-32 in the table below accounted for only 2.6 percent of traded cluster jobs. Total traded clusters accounted for about 24.4 percent of total private sector jobs in Hawaii in 2014.

The top five U.S. traded clusters in 2014 were: (1) Business Services, (2) Financial Services, (3) Education and Knowledge Creation, (4) Agricultural Production, and (5) Hospitality and Tourism. These five clusters accounted for about 60.6 percent of total jobs in all traded clusters. In the U.S., the Business Services cluster accounted for about 20.2 percent of jobs in all traded clusters; the Hospitality and Tourism cluster accounted for only 7.1 percent; and traded clusters 16-32 accounted for 19.7 percent of jobs in all traded clusters. Total traded clusters accounted for about 25.4 percent of total private sector jobs in the U.S., slightly higher than the corresponding share in Hawaii.

**Table 5. Comparison of 2014 Jobs by Traded Clusters**

Cluster No.	Cluster Name	2014 Jobs		Share of Total Jobs		Share of Traded	
		Hawaii	U.S.	Hawaii	U.S.	Hawaii	U.S.
1	Hospitality and Tourism	56,829	2,943,939	8.1	1.8	33.2	7.1
2	Transportation and Logistics	14,746	1,631,400	2.1	1.0	8.6	3.9
3	Business Services	22,290	8,344,932	3.2	5.1	13.0	20.2
4	Education and Knowledge Creation	15,537	4,578,631	2.2	2.8	9.1	11.1
5	Distribution Services	5,726	1,675,757	0.8	1.0	3.3	4.0
6	Entertainment	7,271	1,034,611	1.0	0.6	4.2	2.5
7	Financial Services	16,263	5,938,867	2.3	3.6	9.5	14.3
8	Processed Food	6,013	1,138,793	0.9	0.7	3.5	2.8
9	Sporting, Recreational and Children's Goods	892	220,526	0.1	0.1	0.5	0.5
10	Fishing and Fishing Products	1,511	86,136	0.2	0.1	0.9	0.2
11	Publishing and Printing	1,834	1,018,880	0.3	0.6	1.1	2.5
12	Agricultural Products	14,113	3,283,228	2.0	2.0	8.2	7.9
13	Information Technology	1,309	1,008,090	0.2	0.6	0.8	2.4
14	Jewelry and Precious Metals	1,389	127,444	0.2	0.1	0.8	0.3
15	Oil and Gas Products and Services	1,109	222,763	0.2	0.1	0.6	0.5
16-32	Other Traded Clusters	4,384	8,136,459	0.6	5.0	2.6	19.7
	Total Traded Clusters	171,216	41,390,456	24.4	25.4	100.0	100.0
	Total Private Sector Jobs	702,555	162,771,519	100.0	100.0		

Source: DBEDT compilation based on EMSI data

Table 6 compares 2014 total jobs by local clusters between Hawaii and the nation. The top five local clusters in Hawaii were: (1) Local Real Estate, Construction, and Development, (2) Local Commercial Services, (3) Local Hospitality Establishments, (4) Local Health Services, and (5) Local Personal Services (Non-Medical). These five clusters accounted for 69.3 percent of total jobs in all local clusters and 52.3 percent of total private sector jobs in Hawaii. The Local Hospitality Establishments cluster accounted for 15.0 percent of the jobs in all local clusters in Hawaii. Total local clusters accounted for about 75.4 percent of total private sector jobs in Hawaii in 2014.

In 2014, the top five local clusters in the U.S. were: (1) Local Commercial Services, (2) Local Real Estate, Construction, and Development, (3) Local Health Services, (4) Local Hospitality Establishments, and (5) Local Personal Services (Non-Medical). The top five local clusters in the U.S. and in Hawaii were the same, only the ranks of the top four local clusters are different. The top five local clusters in the U.S. accounted for 67.1 percent of total jobs in all local clusters and 49.5 percent of total private sector jobs in the U.S., about 2-3 percentage points lower than the corresponding shares in Hawaii. Total local clusters accounted for 73.7 percent of total private sector jobs in the U.S. in 2014, slightly lower than the corresponding share in Hawaii.

**Table 6. Comparison of 2014 Jobs by Local Clusters**

Cluster No.	Cluster Name	2014 Jobs		Share of Total Jobs		Share of Traded	
		Hawaii	U.S.	Hawaii	U.S.	Hawaii	U.S.
1	Local Hospitality Establishments	79,394	13,806,262	11.3	8.5	15.0	11.5
2	Local Health Services	68,517	18,997,453	9.8	11.7	12.9	15.8
3	Local Commercial Services	88,197	19,932,720	12.6	12.2	16.6	16.6
4	Local Real Estate, Construction, and Development	94,525	19,723,291	13.5	12.1	17.8	16.4
5	Local Retail Clothing and Accessories	29,723	5,515,245	4.2	3.4	5.6	4.6
6	Local Community and Civic Organizations	20,982	4,782,358	3.0	2.9	4.0	4.0
7	Local Food and Beverage Processing and Distribution	29,396	5,815,003	4.2	3.6	5.5	4.8
8	Local Motor Vehicle Products and Services	14,797	4,699,013	2.1	2.9	2.8	3.9
9	Local Financial Services	13,120	4,151,878	1.9	2.6	2.5	3.5
10	Local Education and Training	11,809	1,425,925	1.7	0.9	2.2	1.2
11	Local Personal Services (Non-Medical)	36,797	8,038,480	5.2	4.9	6.9	6.7
12	Local Entertainment and Media	15,973	3,645,347	2.3	2.2	3.0	3.0
13	Local Logistical Services	9,381	3,930,818	1.3	2.4	1.8	3.3
14	Local Household Goods and Services	6,291	1,749,652	0.9	1.1	1.2	1.5
15	Local Utilities	5,851	1,486,479	0.8	0.9	1.1	1.2
16	Local Industrial Products and Services	5,262	2,266,012	0.7	1.4	1.0	1.9
	Total Local Clusters	530,016	119,965,936	75.4	73.7	100.0	100.0
	Total Traded Clusters	171,216	41,390,456	24.4	25.4		
	Total Resource-Dependent Clusters	1,322	1,415,127	0.2	0.9		
	Sub-Total All Clusters	702,555	162,771,519	100.0	100.0		

Source: DBEDT compilation based on EMSI data

Table 7 compares 2001 total jobs by traded clusters between Hawaii and the nation. From 2001 to 2014, the top six traded clusters in Hawaii remained the same; only the share of these six clusters in total traded cluster jobs increased from 79.7 percent in 2001 to 82.9 percent in 2014. However, from 2001 to 2014, the traded clusters' share of total private sector jobs decreased in Hawaii. In 2001, total traded clusters accounted for about 26.2 percent of total private sector jobs in Hawaii, 1.8 percentage points higher than that in 2014.

From 2001 to 2014, the top five traded clusters in the U.S. remained the same. These five clusters accounted for about 51.7 percent of total jobs in all traded clusters. From 2001 to 2014, the traded clusters' share of total private sector jobs also decreased in the U.S. In 2001, total traded clusters

accounted for about 27.4 percent of total private sector jobs in the U.S., 2.0 percentage points higher than that in 2014.

**Table 7. Comparison of 2001 Jobs by Traded Clusters**

Cluster No.	Cluster Name	2001 Jobs		Share of Total Jobs		Share of Traded	
		Hawaii	U.S.	Hawaii	U.S.	Hawaii	U.S.
1	Hospitality and Tourism	55,127	2,824,098	9.4	2.0	35.7	7.2
2	Transportation and Logistics	15,283	1,627,562	2.6	1.1	9.9	4.2
3	Business Services	17,403	7,311,815	3.0	5.1	11.3	18.8
4	Education and Knowledge Creation	11,323	3,088,987	1.9	2.2	7.3	7.9
5	Distribution Services	5,118	1,431,313	0.9	1.0	3.3	3.7
6	Entertainment	5,977	990,646	1.0	0.7	3.9	2.5
7	Financial Services	10,134	3,433,247	1.7	2.4	6.6	8.8
8	Processed Food	6,122	1,133,997	1.0	0.8	4.0	2.9
9	Sporting, Recreational and Children's Goods	578	275,570	0.1	0.2	0.4	0.7
10	Fishing and Fishing Products	1,886	103,236	0.3	0.1	1.2	0.3
11	Publishing and Printing	2,513	1,567,874	0.4	1.1	1.6	4.0
12	Agricultural Products	13,647	3,467,534	2.3	2.4	8.8	8.9
13	Information Technology	1,178	790,506	0.2	0.6	0.8	2.0
14	Jewelry and Precious Metals	1,310	130,672	0.2	0.1	0.8	0.3
15	Oil and Gas Products and Services	785	240,308	0.1	0.2	0.5	0.6
16-32	Other Traded Clusters	5,862	10,537,521	1.0	7.4	3.8	27.1
	Total Traded Clusters	154,245	38,954,887	26.2	27.4	100.0	100.0
	Total Private Sector Jobs	589,218	141,994,101	100.0	100.0		

Source: DBEDT compilation based on EMSI data

Table 8 compares 2001 total jobs by local clusters between Hawaii and the nation. From 2001 to 2014, the top five local clusters in Hawaii remained the same, however, their share of total local cluster jobs increased from 65.9 percent in 2001 to 69.3 percent in 2014. In addition, from 2001 to 2014, the local cluster share of total private sector jobs also increased in Hawaii. In 2001, total local clusters accounted for 73.7 percent of total private sector jobs in Hawaii, 1.7 percentage points lower than that in 2014.

From 2001 to 2014, the top five local clusters in the U.S. also remained the same, however, their share of total local cluster jobs increased from 63.7 percent in 2001 to 67.1 percent in 2014. From 2001 to 2014, the local cluster share of total private sector jobs increased in the U.S. In 2001, total local clusters accounted for about 72.0 percent of total private sector jobs in the U.S., 1.7 percentage points lower than that in 2014.

**Table 8. Comparison of 2001 Jobs by Local Clusters**

Cluster No.	Cluster Name	2001 Jobs		Share of Total Jobs		Share of Traded	
		Hawaii	U.S.	Hawaii	U.S.	Hawaii	U.S.
1	Local Hospitality Establishments	67,105	10,683,286	11.4	7.5	15.4	10.4
2	Local Health Services	52,066	13,534,739	8.8	9.5	12.0	13.2
3	Local Commercial Services	68,391	17,426,025	11.6	12.3	15.7	17.0
4	Local Real Estate, Construction, and Development	69,517	17,203,958	11.8	12.1	16.0	16.8
5	Local Retail Clothing and Accessories	26,535	5,015,916	4.5	3.5	6.1	4.9
6	Local Community and Civic Organizations	17,203	4,298,925	2.9	3.0	4.0	4.2
7	Local Food and Beverage Processing and Distribution	26,644	5,569,260	4.5	3.9	6.1	5.4
8	Local Motor Vehicle Products and Services	15,324	4,648,536	2.6	3.3	3.5	4.5
9	Local Financial Services	13,035	4,161,747	2.2	2.9	3.0	4.1
10	Local Education and Training	10,289	1,169,341	1.7	0.8	2.4	1.1
11	Local Personal Services (Non-Medical)	29,320	6,291,829	5.0	4.4	6.7	6.2
12	Local Entertainment and Media	15,821	3,459,955	2.7	2.4	3.6	3.4
13	Local Logistical Services	7,577	3,289,888	1.3	2.3	1.7	3.2
14	Local Household Goods and Services	6,836	1,969,847	1.2	1.4	1.6	1.9
15	Local Utilities	4,247	1,461,507	0.7	1.0	1.0	1.4
16	Local Industrial Products and Services	4,553	2,048,541	0.8	1.4	1.0	2.0
	Total Local Clusters	434,462	102,233,301	73.7	72.0	100.0	100.0
	Total Traded Clusters	154,245	38,954,887	26.2	27.4		
	Total Resource-Dependent Clusters	511	805,913	0.1	0.6		
	Sub-Total All Clusters	589,218	141,994,101	100.0	100.0		

Source: DBEDT compilation based on EMSI data

### Comparison of Annual Average Earnings

Table 9 shows Hawaii's annual average earnings by clusters in 2001 and 2014. From 2001 to 2014, the average annual earnings of all clusters in Hawaii increased 52.5 percent, from \$32,316 to \$49,283; the average earnings of all traded clusters increased 38.3 percent from \$35,875 to \$49,617; the average earnings of all local clusters increased 39.7 percent from \$31,037 to \$43,363.

From 2001 to 2014, the average earnings for all traded clusters increased, except for the Fishing and Fishing Products cluster. The Business Services cluster increased the most among all traded clusters, followed by Other Traded clusters, Hospitality and Tourism, Sporting, Recreational and Children's Goods, and Entertainment. The traded clusters with low growth were Financial Services, Publishing and Printing, Jewelry and Precious Metals, Information Technology, and Distribution Services.

Among the local clusters, the average earnings for the Local Utilities cluster increased the most from 2001 to 2014, followed by Local Household Goods and Services, Local Food and Beverage Processing and Distribution, Local Real Estate, Construction, and Development, and Local Education and Training. Local clusters with low growth are Local Entertainment and Media, Local Commercial Services, Local Community and Civic Organizations, Local Retail Clothing and Accessories, and Local Logistical Services.

Among Hawaii's traded clusters, the Oil and Gas Products and Services cluster paid the highest average earnings in 2014, followed by Transportation and Logistics, Information Technology, Business Services, and other Traded Clusters; the Fishing and Fishing Products cluster paid the lowest average earnings, followed by Agricultural Products, Jewelry and Precious Metals, Sporting, Recreational and Children's Goods, and Entertainment.

Among the local clusters, the Local Utilities cluster paid the highest average earnings in 2014, followed by Local Financial Services, Local Industrial Products and Services, Local Health Services, and Local Real Estate, Construction, and Development. Conversely, the Local Hospitality Establishments cluster paid the lowest average wage, followed by Local Entertainment and Media, Local Personal Services (Non-Medical), Local Retail Clothing and Accessories, and Local Food and Beverage Processing and Distribution.

**Table 9. Hawaii Annual Average Earnings and Growth Rate from 2001 to 2014 by Clusters**

Cluster No.	Cluster Name	Average Earnings in Hawaii			Rank in	
		\$/Year	\$/Year	%	2014	Growth
		2001	2014	Growth	Earnings	Rate
1	Hospitality and Tourism	31,758	46,569	46.6	8	3
2	Transportation and Logistics	56,929	75,875	33.3	2	8
3	Business Services	42,749	65,182	52.5	4	1
4	Education and Knowledge Creation	29,276	40,909	39.7	11	6
5	Distribution Services	40,713	50,795	24.8	6	11
6	Entertainment	27,686	39,458	42.5	12	5
7	Financial Services	44,025	47,659	8.3	7	15
8	Processed Food	31,072	41,219	32.7	10	9
9	Sporting, Recreational and Children's Goods	26,118	37,258	42.7	13	4
10	Fishing and Fishing Products	19,810	19,176	-3.2	16	16
11	Publishing and Printing	40,197	43,870	9.1	9	14
12	Agricultural Products	21,914	28,251	28.9	15	10
13	Information Technology	56,705	69,217	22.1	3	12
14	Jewelry and Precious Metals	30,416	36,502	20.0	14	13
15	Oil and Gas Products and Services	88,339	119,360	35.1	1	7
16-32	Other Traded Clusters	33,890	51,477	51.9	5	2
	<b>Total Traded Clusters</b>	<b>35,875</b>	<b>49,617</b>	<b>38.3</b>		
1	Local Hospitality Establishments	17,309	23,758	37.3	16	11
2	Local Health Services	44,887	62,399	39.0	4	8
3	Local Commercial Services	35,603	46,155	29.6	7	15
4	Local Real Estate, Construction, and Development	36,405	52,374	43.9	5	4
5	Local Retail Clothing and Accessories	22,477	30,465	35.5	13	13
6	Local Community and Civic Organizations	25,621	33,969	32.6	11	14
7	Local Food and Beverage Processing and Distribution	22,073	31,848	44.3	12	3
8	Local Motor Vehicle Products and Services	31,929	45,215	41.6	8	6
9	Local Financial Services	51,232	71,201	39.0	2	9
10	Local Education and Training	31,077	44,155	42.1	9	5
11	Local Personal Services (Non-Medical)	19,760	27,434	38.8	14	10
12	Local Entertainment and Media	22,168	25,354	14.4	15	16
13	Local Logistical Services	36,016	48,900	35.8	6	12
14	Local Household Goods and Services	29,118	43,581	49.7	10	2
15	Local Utilities	68,645	103,896	51.4	1	1
16	Local Industrial Products and Services	49,284	69,525	41.1	3	7
	<b>Total Local Clusters</b>	<b>31,037</b>	<b>43,363</b>	<b>39.7</b>		
	<b>Total Resource-Dependent Clusters</b>	<b>44,534</b>	<b>2,371,655</b>	<b>5,225.5</b>		
	<b>All Clusters</b>	<b>32,316</b>	<b>49,283</b>	<b>52.5</b>		

Source: DBEDT compilation based on EMSI data

Table 10 shows U.S. average earnings by clusters for 2001 and 2014. From 2001 to 2014, the average earnings of all clusters in the U.S. increased 32.7 percent (19.8 percentage points lower than that of Hawaii) from \$38,630 to \$51,255; the average earnings of all traded clusters increased 38.7 percent (0.4 of a percentage point higher than that of Hawaii) from \$50,184 to \$69,617; the average earnings of all local clusters increased 30.5 percent (9.2 percentage points lower than that of Hawaii) from \$34,049 to \$44,429.

**Table 10. U.S. Annual Average Earnings and Growth Rate from 2001 to 2014 by Clusters**

Cluster No.	Cluster Name	Average Earnings in U.S.			Rank in	
		\$/Year	\$/Year	%	2014	Growth
		2001	2014	Growth	Earnings	Rate
1	Hospitality and Tourism	26,301	34,845	32.5	14	13
2	Transportation and Logistics	55,496	77,272	39.2	5	8
3	Business Services	60,856	81,445	33.8	4	12
4	Education and Knowledge Creation	38,780	56,725	46.3	12	6
5	Distribution Services	47,206	65,384	38.5	8	9
6	Entertainment	50,101	68,197	36.1	7	10
7	Financial Services	77,935	84,870	8.9	3	16
8	Processed Food	43,592	58,872	35.1	11	11
9	Sporting, Recreational and Children's Goods	44,165	63,984	44.9	10	7
10	Fishing and Fishing Products	22,097	33,503	51.6	15	3
11	Publishing and Printing	48,635	64,070	31.7	9	14
12	Agricultural Products	19,316	28,280	46.4	16	5
13	Information Technology	79,504	129,345	62.7	1	1
14	Jewelry and Precious Metals	40,291	50,050	24.2	13	15
15	Oil and Gas Products and Services	77,509	125,196	61.5	2	2
16-32	Other Traded Clusters	51,904	76,503	47.4	6	4
	<b>Total Traded Clusters</b>	<b>50,184</b>	<b>69,617</b>	<b>38.7</b>		
1	Local Hospitality Establishments	15,200	20,178	32.7	16	9
2	Local Health Services	41,461	55,722	34.4	5	5
3	Local Commercial Services	43,504	57,960	33.2	4	8
4	Local Real Estate, Construction, and Development	36,576	43,709	19.5	8	15
5	Local Retail Clothing and Accessories	20,325	25,851	27.2	14	12
6	Local Community and Civic Organizations	22,260	29,770	33.7	12	7
7	Local Food and Beverage Processing and Distribution	22,687	29,603	30.5	13	10
8	Local Motor Vehicle Products and Services	32,954	40,851	24.0	9	13
9	Local Financial Services	56,601	85,612	51.3	2	2
10	Local Education and Training	24,292	37,137	52.9	11	1
11	Local Personal Services (Non-Medical)	20,424	23,840	16.7	15	16
12	Local Entertainment and Media	30,650	37,675	22.9	10	14
13	Local Logistical Services	38,448	50,151	30.4	6	11
14	Local Household Goods and Services	34,124	45,853	34.4	7	6
15	Local Utilities	54,083	76,505	41.5	3	4
16	Local Industrial Products and Services	59,374	87,341	47.1	1	3
	<b>Total Local Clusters</b>	<b>34,049</b>	<b>44,429</b>	<b>30.5</b>		
	<b>Total Resource-Dependent Clusters</b>	<b>59,770</b>	<b>91,749</b>	<b>53.5</b>		
	<b>All Clusters</b>	<b>38,630</b>	<b>51,255</b>	<b>32.7</b>		

Source: DBEDT compilation based on EMSI data

From 2001 to 2014, the average earnings in the Information Technology cluster increased most among all traded clusters in the U.S., followed by Oil and Gas Products and Services, Fishing and Fishing Products, Other Traded clusters, and Agricultural Products. Traded clusters in the U.S. with the low earnings growth were Financial Services, Jewelry and Precious Metals, Publishing and Printing, Hospitality and Tourism, and Business Services.

Among the U.S. local clusters, the average earnings in the Local Education and Training cluster increased the most from 2001 to 2014, followed by Local Financial Services, Local Industrial Products and Services, Local Utilities, and Local Health Services. The U.S. Local clusters with low earnings growth were Local Personal Services (Non-Medical), Local Real Estate, Construction, and Development, Local Entertainment and Media, Local Motor Vehicle Products and Services, and Local Retail Clothing and Accessories.

Among the U.S. traded clusters for 2014, the Information Technology cluster paid the highest average earnings, followed by Oil and Gas Products and Services, Financial Services, Business Services, and Transportation and Logistics. Conversely, the Agricultural Products cluster had the lowest average earnings, followed by Fishing and Fishing Products, Hospitality and Tourism, Jewelry and Precious Metals, and Education and Knowledge Creation.

Among the U.S. local clusters, the Local Industrial Products and Services cluster paid the highest average earnings in 2014, followed by Local Financial Services, Local Utilities, Local Commercial Services, and Local Health Services. In contrast, the Local Hospitality Establishments cluster had the lowest average earnings, followed by Local Personal Services (Non-Medical), Local Retail Clothing and Accessories, Local Food and Beverage Processing and Distribution, and Local Community and Civic Organizations.

Table 11 compares the 2014 average earnings between the U.S. and Hawaii by clusters. In 2014, the average earnings of all clusters in Hawaii was about 3.8 percent lower than the average earnings of the U.S.; the average earnings of all traded clusters in Hawaii was about 28.7 percent lower than that of the nation; and the average earnings of all local clusters in Hawaii was about 2.4 percent lower than that of the U.S.

Among the traded clusters, only the Hospitality and Tourism cluster had significantly higher earnings in Hawaii relative to that of the nation. The remaining traded clusters had higher earnings for the U.S. overall than Hawaii, with the largest earnings gap in the Information Technology cluster, followed by Financial Services, Fishing and Fishing Products, Entertainment, and Sporting, Recreational and Children's Goods.

Among the 16 local clusters, 10 clusters had higher average earnings in Hawaii compared with the nation in 2014. The largest negative earnings gap between Hawaii and the U.S. was for the Local Entertainment and Media cluster, followed by Local Industrial Products and Services, Local Commercial Services, Local Financial Services, and Local Household Goods and Services. The local clusters with higher average earnings in Hawaii were Local Utilities, Local Real Estate, Construction, and Development, Local Education and Training, Local Retail Clothing and Accessories, and Local Hospitality Establishments.

**Table 11. Comparison of Hawaii and U.S. Average Earnings by Clusters in 2014**

Cluster No.	Cluster Name	Average Earnings in 2014		
		\$/Year Hawaii	\$/Year U.S.	HI above U.S. %
1	Hospitality and Tourism	46,569	34,845	33.6
2	Transportation and Logistics	75,875	77,272	-1.8
3	Business Services	65,182	81,445	-20.0
4	Education and Knowledge Creation	40,909	56,725	-27.9
5	Distribution Services	50,795	65,384	-22.3
6	Entertainment	39,458	68,197	-42.1
7	Financial Services	47,659	84,870	-43.8
8	Processed Food	41,219	58,872	-30.0
9	Sporting, Recreational and Children's Goods	37,258	63,984	-41.8
10	Fishing and Fishing Products	19,176	33,503	-42.8
11	Publishing and Printing	43,870	64,070	-31.5
12	Agricultural Products	28,251	28,280	-0.1
13	Information Technology	69,217	129,345	-46.5
14	Jewelry and Precious Metals	36,502	50,050	-27.1
15	Oil and Gas Products and Services	119,360	125,196	-4.7
16-32	Other Traded Clusters	51,477	76,503	-32.7
	<b>Total Traded Clusters</b>	<b>49,617</b>	<b>69,617</b>	<b>-28.7</b>
1	Local Hospitality Establishments	23,758	20,178	17.7
2	Local Health Services	62,399	55,722	12.0
3	Local Commercial Services	46,155	57,960	-20.4
4	Local Real Estate, Construction, and Development	52,374	43,709	19.8
5	Local Retail Clothing and Accessories	30,465	25,851	17.8
6	Local Community and Civic Organizations	33,969	29,770	14.1
7	Local Food and Beverage Processing and Distribution	31,848	29,603	7.6
8	Local Motor Vehicle Products and Services	45,215	40,851	10.7
9	Local Financial Services	71,201	85,612	-16.8
10	Local Education and Training	44,155	37,137	18.9
11	Local Personal Services (Non-Medical)	27,434	23,840	15.1
12	Local Entertainment and Media	25,354	37,675	-32.7
13	Local Logistical Services	48,900	50,151	-2.5
14	Local Household Goods and Services	43,581	45,853	-5.0
15	Local Utilities	103,896	76,505	35.8
16	Local Industrial Products and Services	69,525	87,341	-20.4
	<b>Total Local Clusters</b>	<b>43,363</b>	<b>44,429</b>	<b>-2.4</b>
	<b>Total Resource-Dependent Clusters</b>	<b>2,371,655</b>	<b>91,749</b>	<b>2,485.0</b>
	<b>All Clusters</b>	<b>49,283</b>	<b>51,255</b>	<b>-3.8</b>

Source: DBEDT compilation based on EMSI data

Table 12 compares the 2001 average earnings between the U.S. and Hawaii by cluster. In 2001, the average earnings of all clusters in Hawaii was about 16.3 percent lower than the average earnings of the U.S. (12.5 percentage points below the earnings gap in 2014); the average earnings of all traded clusters in Hawaii was about 28.5 percent lower than that of the U.S. (about the same as the earnings gap in 2014); and the average earnings of all local clusters in Hawaii was about 8.8 percent lower than that of the U.S. (6.4 percentage points below the earnings gap in 2014).

In 2001, among the 16 traded clusters, 4 clusters had higher average earnings in Hawaii, and 12 clusters had lower average earnings in Hawaii compared with the nation. The negative average earnings gap between Hawaii and the U.S. was the largest for the Entertainment cluster, followed by Financial Services, Sporting, Recreational and Children's Goods, Other Traded clusters, and Business Services. In 2001, the four traded clusters with higher average earnings in Hawaii were Hospitality and Tourism, Oil and Gas Products and Services, Agricultural Products, and Transportation and Logistics.

Among the 16 local clusters, 6 clusters had higher average earnings and 10 clusters had lower average earnings in Hawaii compared with the nation in 2001. The negative average earnings gap between Hawaii and the U.S. was largest for the Local Entertainment and Media cluster, followed by Local Commercial Services, Local Industrial Products and Services, Local Household Goods and Services, and Local Financial Services. The local clusters with higher average earnings in Hawaii in 2001 were Local Education and Training, Local Utilities, Local Community and Civic Organizations, Local Hospitality Establishments, and Local Retail Clothing and Accessories.

Table 12. Comparison of Hawaii and U.S. Average Earnings by Clusters in 2001

Cluster No.	Cluster Name	Average Earnings in 2001		
		\$/Year Hawaii	\$/Year U.S.	HI above U.S. %
1	Hospitality and Tourism	31,758	26,301	20.8
2	Transportation and Logistics	56,929	55,496	2.6
3	Business Services	42,749	60,856	-29.8
4	Education and Knowledge Creation	29,276	38,780	-24.5
5	Distribution Services	40,713	47,206	-13.8
6	Entertainment	27,686	50,101	-44.7
7	Financial Services	44,025	77,935	-43.5
8	Processed Food	31,072	43,592	-28.7
9	Sporting, Recreational and Children's Goods	26,118	44,165	-40.9
10	Fishing and Fishing Products	19,810	22,097	-10.4
11	Publishing and Printing	40,197	48,635	-17.3
12	Agricultural Products	21,914	19,316	13.5
13	Information Technology	56,705	79,504	-28.7
14	Jewelry and Precious Metals	30,416	40,291	-24.5
15	Oil and Gas Products and Services	88,339	77,509	14.0
16-32	Other Traded Clusters	33,890	51,904	-34.7
	<b>Total Traded Clusters</b>	<b>35,875</b>	<b>50,184</b>	<b>-28.5</b>
1	Local Hospitality Establishments	17,309	15,200	13.9
2	Local Health Services	44,887	41,461	8.3
3	Local Commercial Services	35,603	43,504	-18.2
4	Local Real Estate, Construction, and Development	36,405	36,576	-0.5
5	Local Retail Clothing and Accessories	22,477	20,325	10.6
6	Local Community and Civic Organizations	25,621	22,260	15.1
7	Local Food and Beverage Processing and Distribution	22,073	22,687	-2.7
8	Local Motor Vehicle Products and Services	31,929	32,954	-3.1
9	Local Financial Services	51,232	56,601	-9.5
10	Local Education and Training	31,077	24,292	27.9
11	Local Personal Services (Non-Medical)	19,760	20,424	-3.3
12	Local Entertainment and Media	22,168	30,650	-27.7
13	Local Logistical Services	36,016	38,448	-6.3
14	Local Household Goods and Services	29,118	34,124	-14.7
15	Local Utilities	68,645	54,083	26.9
16	Local Industrial Products and Services	49,284	59,374	-17.0
	<b>Total Local Clusters</b>	<b>31,037</b>	<b>34,049</b>	<b>-8.8</b>
	<b>Total Resource-Dependent Clusters</b>	<b>44,534</b>	<b>59,770</b>	<b>-25.5</b>
	<b>All Clusters</b>	<b>32,316</b>	<b>38,630</b>	<b>-16.3</b>

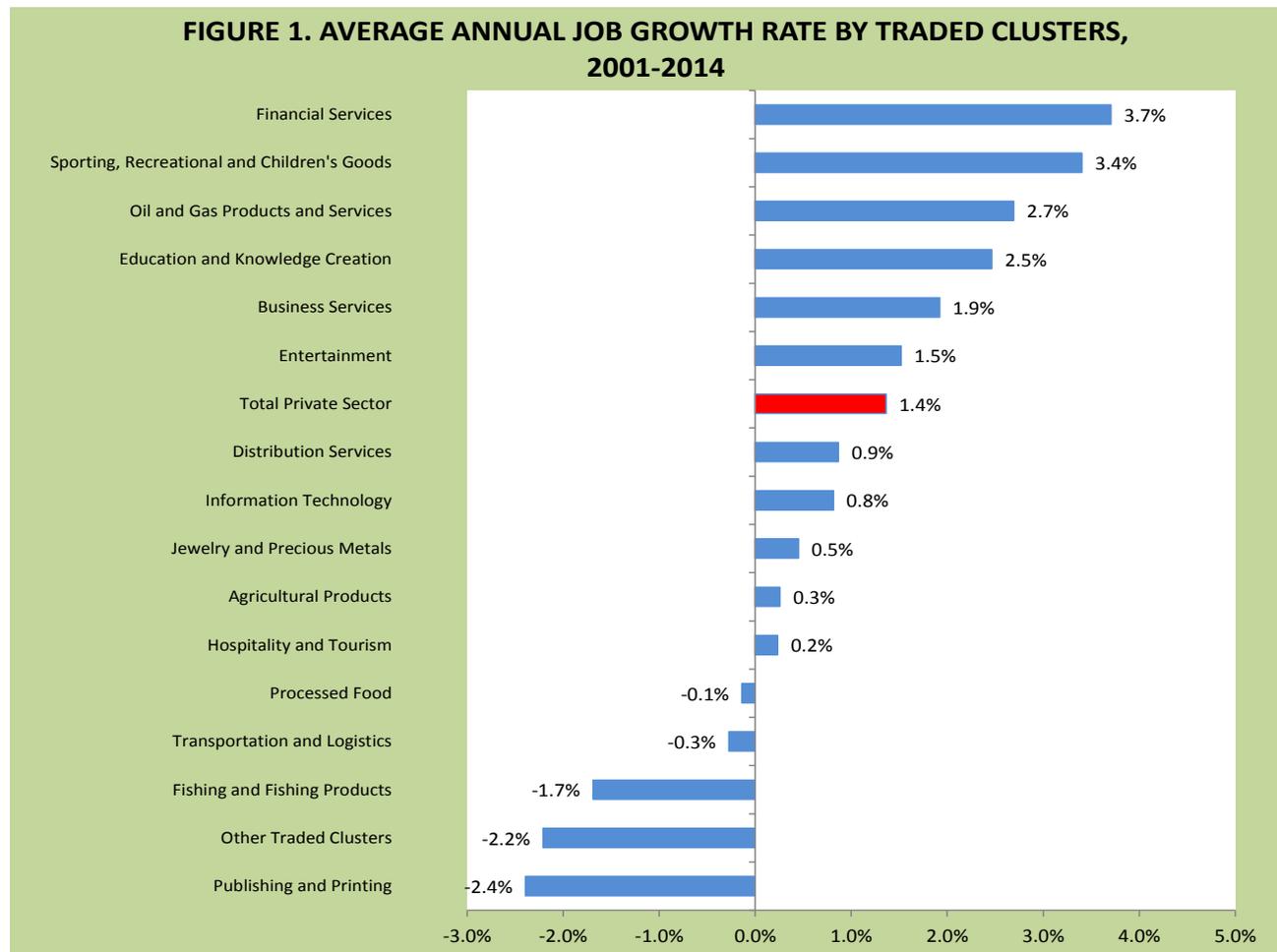
Source: DBEDT compilation based on EMSI data

### III. HAWAII'S CLUSTER PORTFOLIO

As described earlier, the private sector can be separated into traded clusters, local clusters, and resource-based clusters using EMSI data. There are 33 traded clusters, 16 local clusters, and 1 resource-based cluster. Since traded cluster numbers 16 to 33 were very small, we combined them into one group. This section will examine the performance of the 16 traded clusters and 16 local clusters.

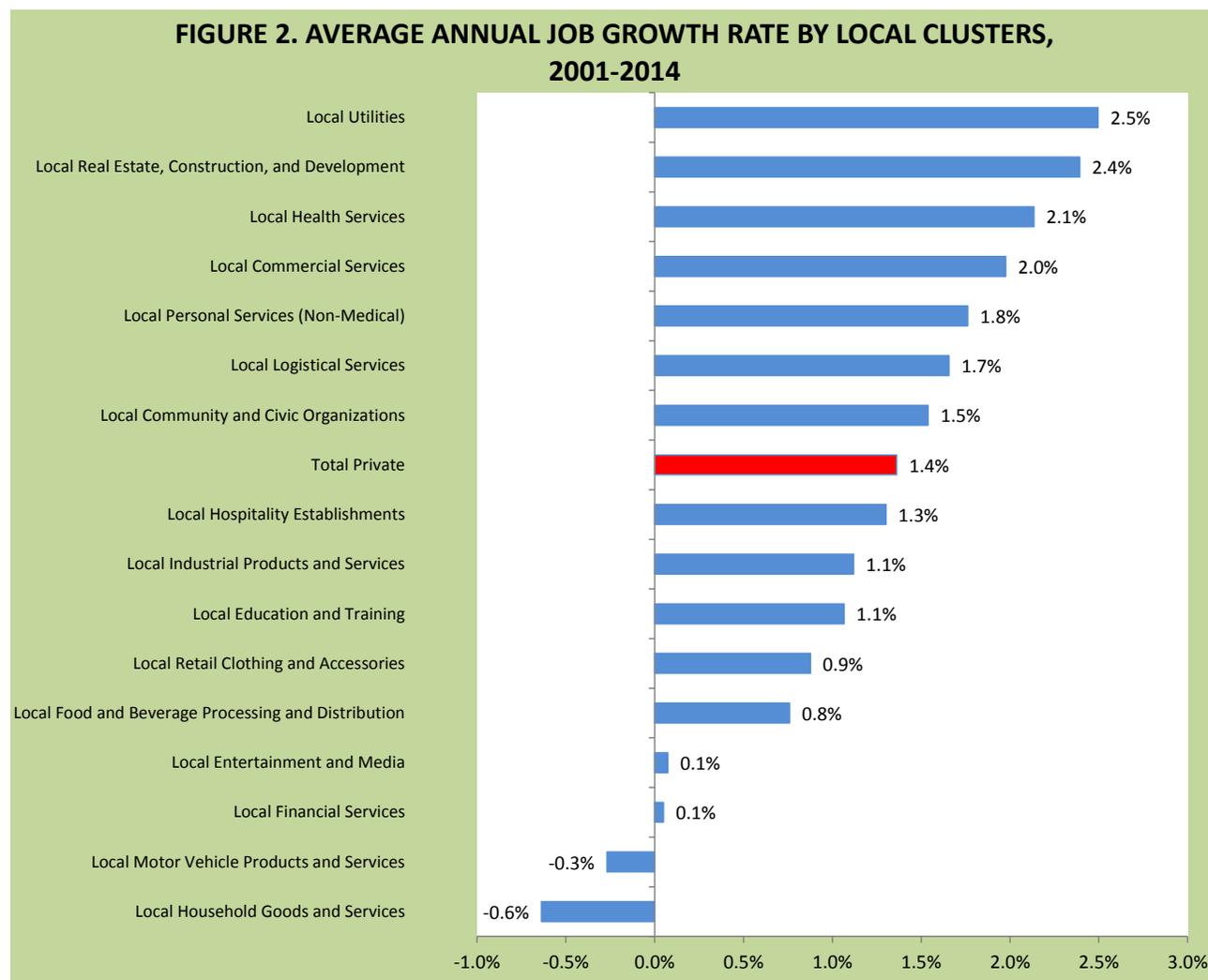
#### Job Growth by Clusters

From 2001 to 2014, the traded clusters' job growth was lower than that of the average job growth for all Hawaii's private industries combined. As shown in Figure 1, of the 16 traded clusters, 11 clusters showed net job growth over the period but only six had an average annual job growth rate above the overall state private sector average of 1.4%. Financial Services topped the list with a 3.7% average annual growth, followed by Sporting, Recreational and Children's Goods. Combined traded clusters gained 0.8% jobs per year on average from 2001 to 2014.



Source: DBEDT compilation based on EMSI data.

From 2001 to 2014, the local clusters' job growth was slightly higher than that of the average job growth for all of Hawaii's private industries combined. As shown in Figure 2, of the 16 local clusters, 14 clusters showed net job growth over the period and seven clusters had an average annual job growth rate above the overall state private sector average of 1.4%. Local Utilities topped the list with a 2.5% average annual growth. This was followed by Local Real Estate, Construction, and Development. The local clusters combined gained 1.5% jobs per year on average from 2001 to 2014.

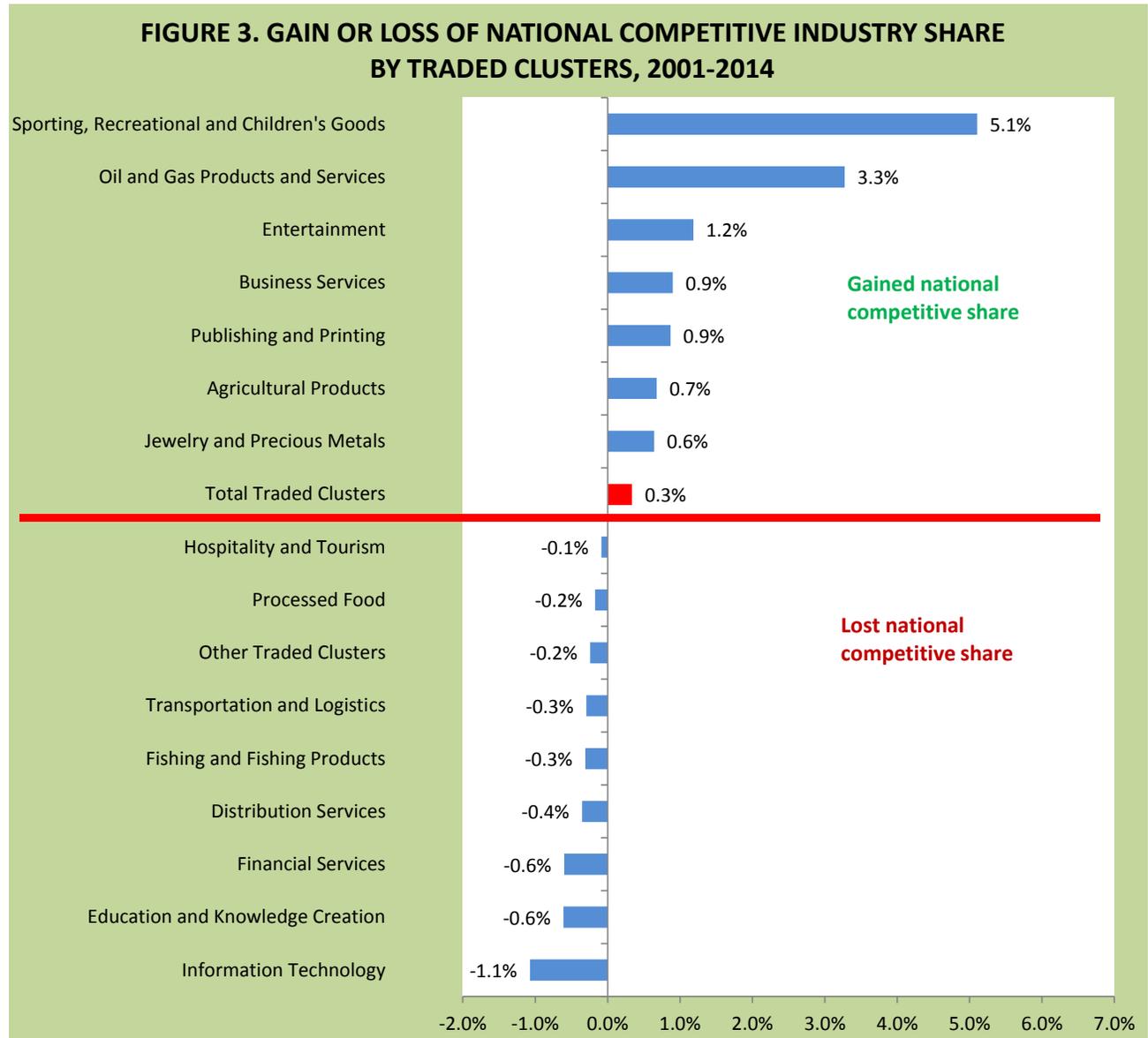


Source: DBEDT compilation based on EMSI data.

### National Competitiveness of the Clusters

Another measure that can help shed light on the clusters is their performance compared with the national industry average for each cluster. If a Hawaii's cluster average annual job growth rate is higher than the national average for the same cluster, the Hawaii cluster is effectively increasing its competitive share of the total national industry. Conversely, if Hawaii's growth rate for each respective cluster is less, then Hawaii's competitive share of the national industry is declining for that cluster. Figure 3 shows how much more or less Hawaii's traded clusters grew per year on average compared with the same clusters

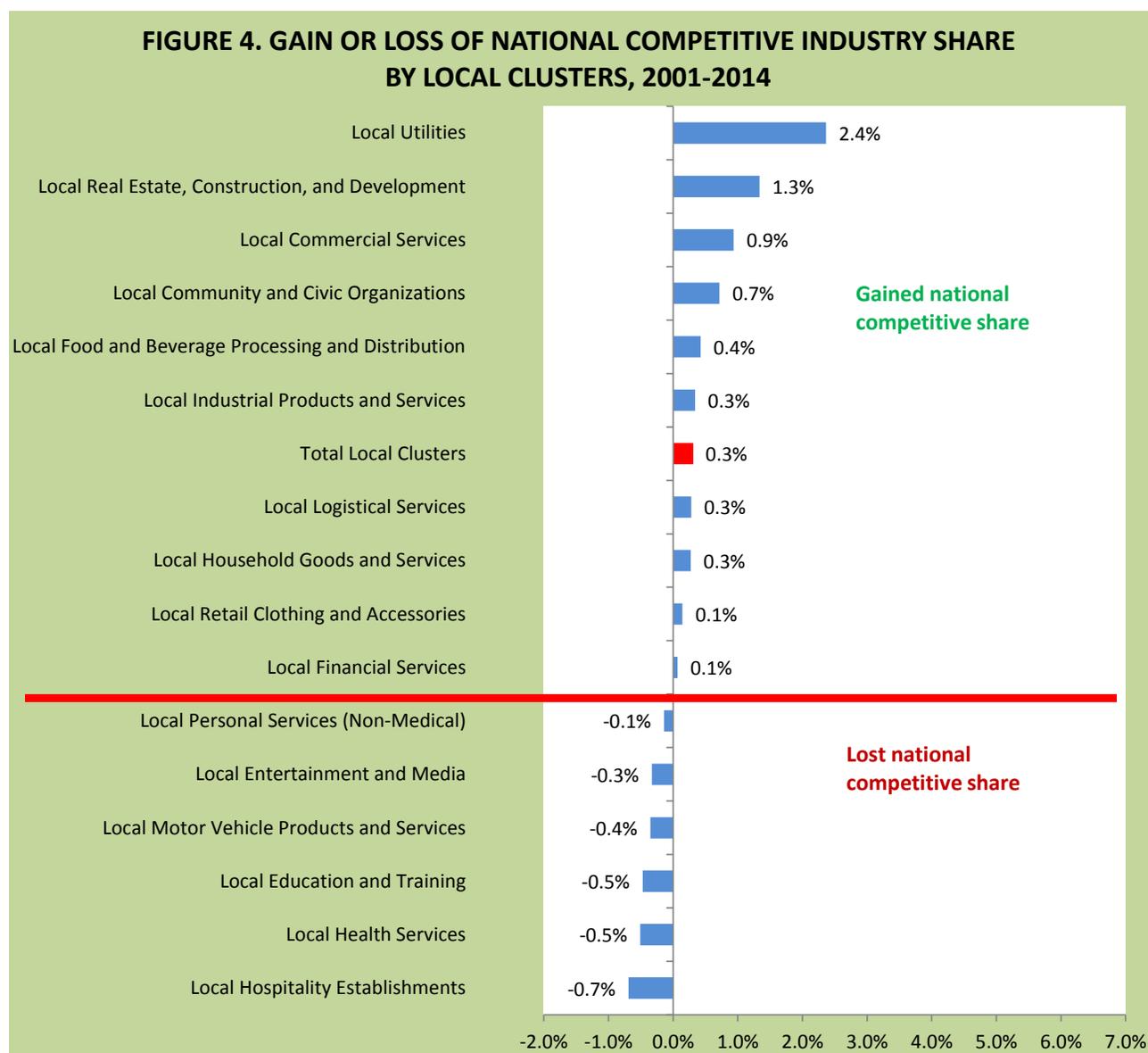
nationally. For example, over the 2001 to 2014 period, jobs in the Sporting, Recreational and Children's Goods cluster grew at an average annual rate that was 5.1% higher in Hawaii than the same cluster nationally. Thus, Hawaii's Sporting, Recreational and Children's Goods cluster increased its competitive national industry share. On the other hand, Information Technology lost national industry share due to an average annual growth rate that was 1.1% below the national cluster growth rate.



Source: DBEDT compilation based on EMSI data.

Of the 16 traded clusters, nine clusters lost national competitive share over the 2001-2014 period. Clusters that have both positive job growth and an increase in competitive national industry share represent the best performing clusters over a given period of time. Generally, Hawaii clusters with a higher competitive share metric have a comparative advantage over the respective national cluster.

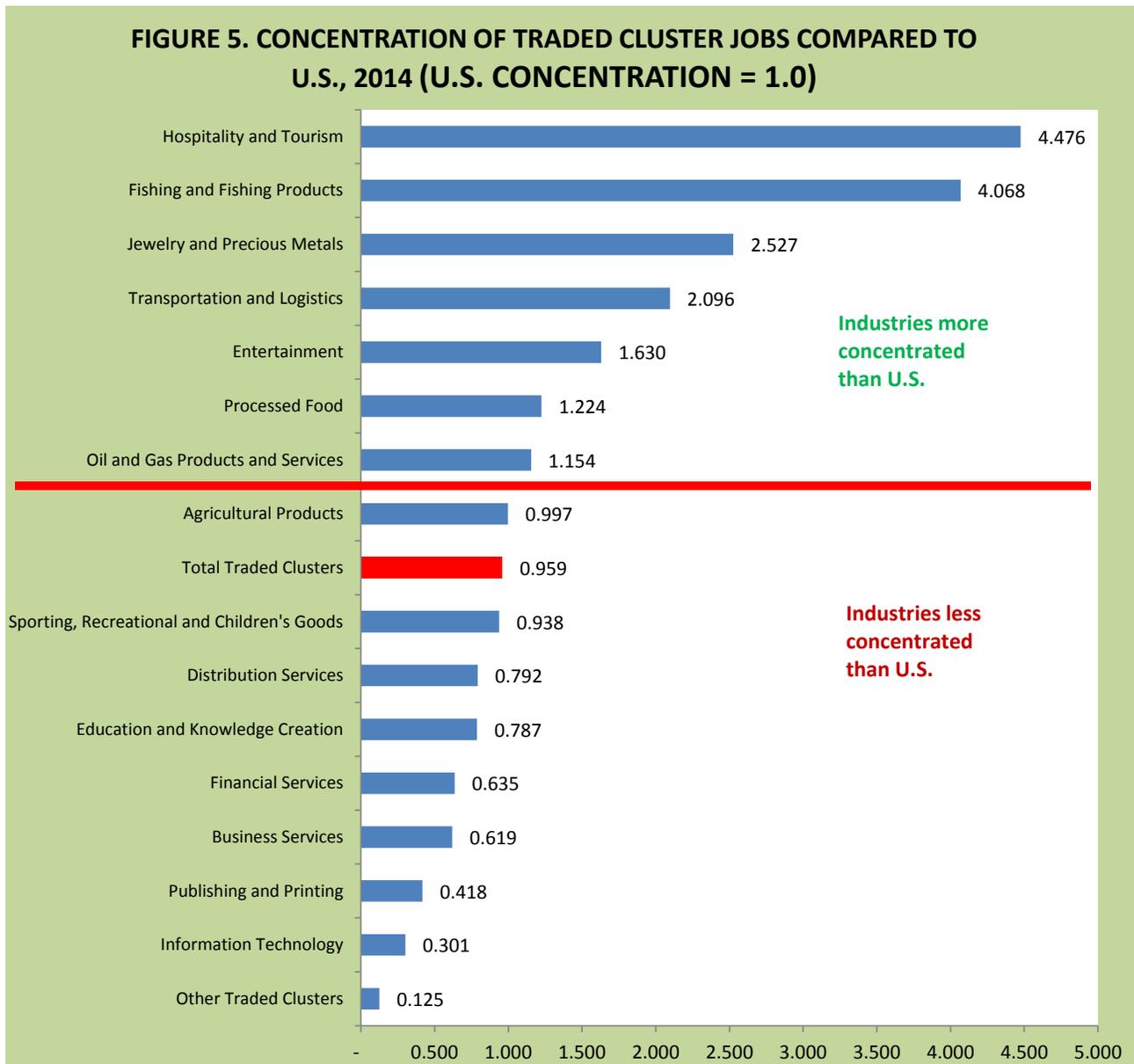
Figure 4 shows how much more or less Hawaii's local clusters grew per year on average compared with the same clusters nationally. Of the 16 local clusters, six clusters lost national competitive share over the 2001-2014 period.



Source: DBEDT compilation based on EMSI data.

### Industry Concentration – Hawaii's Clusters

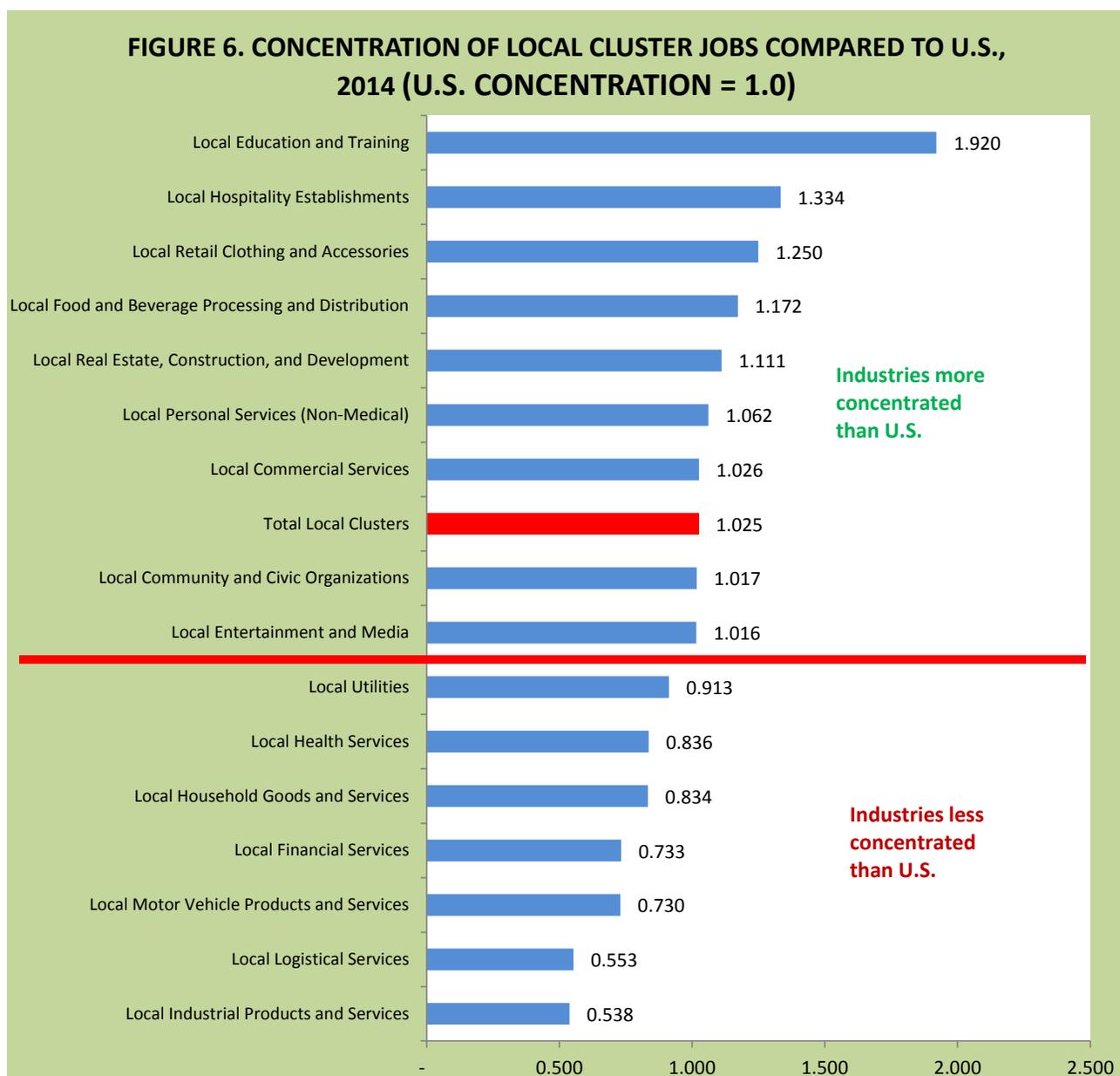
A third performance metric that helps in the evaluation of a clusters' portfolio is cluster job concentration. This is a measure of the state's level of specialization in each respective cluster and helps shed light on the clusters' export potential. Export activity brings new money into the state and is a basis for long-term industry growth. While it is difficult to identify export activity for each cluster, it is possible to identify *likely* export clusters by measuring the concentration of their employment in the state's economy. As explained above, a cluster that employs a higher proportion of jobs in Hawaii than the same cluster nationally, is relatively more concentrated and is more likely to exporting a portion of its output.



Source: DBEDT compilation based on EMSI data.

As explained in the introduction, cluster concentration is measured by a metric called the Location Quotient (LQ). The LQ for a cluster at the state level that is exactly the same as the U.S. level is 1.0. Hawaii clusters with a LQ measure of greater than 1.0 are more concentrated in the state's economy than the same cluster for the U.S. as a whole. Conversely, those clusters that are less than 1.0 are less concentrated in state's economy than the U.S. as whole.

As shown in Figure 5, of the 16 traded clusters, 7 clusters had a concentration level in Hawaii's economy that was higher than the same cluster nationally. Traded clusters with an LQ value of greater than one are probably exporting a portion of their output, and traded clusters with an LQ value of less than one are probably consuming a majority of the output locally. As shown in Figure 6, of the 16 local clusters, 9 clusters had a concentration level in Hawaii that was higher than the same cluster nationally.



Source: DBEDT compilation based on EMSI data.

### The Performance Map Framework: Identifying Emerging Clusters

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 cluster portfolio. Using the three performance metrics from Figures 1, 3 and 5, the clusters can be placed into one of four life-cycle quadrants according to the criteria shown in Table 13 and described below.

**TABLE 13. Performance Map Criteria**

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

**Emerging Quadrant:** These are clusters 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 national cluster. However, these clusters have yet to achieve a concentration in the state's economy equal to the same cluster for the U.S. as a whole. An *emerging* cluster is one that has found a competitive niche in the economy and is gaining in competitive national industry share. At some point, if the process continues, the cluster's concentration will exceed the national level and the emerging cluster will graduate to a base-growth cluster in the state's economy.

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

**Transitioning Quadrant:** Transitioning clusters are still maintaining or growing their workforce, however they are losing competitive national industry share (growing slower than the same cluster nationally). This is typical of mature clusters that are still important to the economy but are having difficulty maintaining national market share. They are considered transitioning because they could either continue to lose industry share and eventually fall into decline, or reinvigorate themselves and begin to regain industry share and continue growing. Also in this quadrant may be former emerging clusters that never reached base-growth status before losing competitive national industry share. Another group could be declining clusters that are fighting to regain competitiveness.

**Declining Quadrant:** The declining quadrant contains clusters showing job losses over the period. All of these clusters have lost jobs to some extent between 2001 and 2014. Most clusters that are losing jobs are also losing competitive national industry share. However, while they are declining in jobs for the period, these clusters are not necessarily dying industries. A number of temporary circumstances may have put some of Hawaii's clusters into the declining quadrant for the period of the analysis. Their appearance in the declining quadrant is a red flag that warrants more careful analysis to understand the problem.

## IV. STATE CLUSTER PORTFOLIO PERFORMANCE

Table 14 shows how each of the respective traded clusters fell on the performance map based on the 2001 to 2014 performance measures. Combined, the traded clusters accounted for about 171,216 jobs in Hawaii's economy in 2014.

**Table 14. State Traded Clusters Mapped by Performance, 2001-2014**

Total Traded Clusters Jobs, 2014: 171,216					
Average Traded Cluster Annual Earnings, 2014: \$49,617					
Net Change in Traded Cluster Jobs, 2001-2014: 11.0%					
Transitioning Group: 55.9% of Traded Cluster Jobs			Base-Growth Group: 5.7% of Traded Cluster Jobs		
Group	Change in Jobs	Average Earnings	Group	Change in Jobs	Average Earnings
Financial Services	60.5%	\$ 47,659	Oil and Gas Products and Services	41.3%	\$ 119,360
Education and Knowledge Creation	37.2%	\$ 40,909	Entertainment	21.7%	\$ 39,458
Distribution Services	11.9%	\$ 50,795	Jewelry and Precious Metals	6.0%	\$ 36,502
Information Technology	11.1%	\$ 69,217			
Hospitality and Tourism	3.1%	\$ 46,569			
Declining Group: 16.6% of Traded Cluster Jobs			Emerging Group: 21.8% of Traded Cluster Jobs		
Group	Change in Jobs	Average Earnings	Group	Change in Jobs	Average Earnings
Processed Food	-1.8%	\$ 41,219	Sporting, Recreational and Children's Goods	54.5%	\$ 37,258
Transportation and Logistics	-3.5%	\$ 75,875	Business Services	28.1%	\$ 65,182
Fishing and Fishing Products	-19.9%	\$ 19,176	Agricultural Products	3.4%	\$ 28,251
Other Traded Clusters	-25.2%	\$ 51,477			
Publishing and Printing	-27.0%	\$ 43,870			

Source: DBEDT compilation based on EMSI data.

Overall, the traded clusters added 16,971 jobs between 2001 and 2014 in Hawaii. This amounted to an 11.0 percent increase in jobs. In contrast, total private sector jobs in Hawaii increased 19.2 percent during the same period. Based on job growth alone, the leading performers of the traded clusters were Financial Services, Sporting, Recreational and Children's Goods, Oil and Gas Products and Services, Education and Knowledge Creation, and Business Services. The earnings average of the traded clusters was \$49,617 in 2014, which was slightly higher than the statewide private sector average of \$49,283.

There were three traded clusters that qualified as high performing base-growth clusters for the 2001 to 2014 period. They were Oil and Gas Products and Services, Entertainment, and Jewelry and Precious Metals. Base-growth clusters accounted for about 5.7 percent of jobs in traded clusters.

The traded clusters in the emerging category were composed of Sporting, Recreational and Children's Goods, Business Services, and Agricultural Products. These clusters accounted for about 21.8 percent of the total traded cluster jobs in 2014.

Five traded clusters fell into the transitioning category for the 2001 to 2014 period; these ranged from the Financial Services category (60.5 percent job increase) to the Hospitality and Tourism category (3.1 percent job increase). However, while these Hawaii clusters grew, they grew at a slower pace than the same clusters nationally. As a result, they lost some ground in terms of competitive industry share. Transitioning clusters accounted for about 55.9 percent of traded cluster jobs.

The five clusters that lost jobs in the 2001 to 2014 period fell into the declining quadrant of the performance map. These clusters accounted for about 16.6 percent of total traded cluster jobs in 2014. Publishing and Printing had the largest job decrease, followed by Other Traded Clusters, Fishing and Fishing Products, Transportation and Logistics, and Processed Food.

Table 15 shows each of the respective local clusters categorized by the performance map based on the 2001 to 2014 performance measures. Combined, the local clusters accounted for about 530,016 jobs in Hawaii's economy in 2014.

**Table 15. State Local Clusters Mapped by Performance, 2001-2014**

Total Local Clusters Jobs, 2014: 530,016					
Average Local Cluster Annual Earnings, 2014: \$43,363					
Net Change in Local Cluster Jobs, 2001-2014: 22.0%					
Transitioning Group: 40.1% of Local Cluster Jobs			Base-Growth Group: 49.6% of Local Cluster Jobs		
Group	Change in Jobs	Average Earnings	Group	Change in Jobs	Average Earnings
Local Personal Services (Non-Medical)	25.5%	\$ 27,434	Local Real Estate, Construction, and Development	36.0%	\$ 52,374
Local Health Services	31.6%	\$ 62,399	Local Commercial Services	29.0%	\$ 46,155
Local Hospitality Establishments	18.3%	\$ 23,758	Local Community and Civic Organizations	22.0%	\$ 33,969
Local Education and Training	14.8%	\$ 44,155	Local Retail Clothing and Accessories	12.0%	\$ 30,465
Local Entertainment and Media	1.0%	\$ 25,354	Local Food and Beverage Processing and Distribution	10.3%	\$ 31,848
Declining Group: 4.0% of Local Cluster Jobs			Emerging Group: 6.3% of Local Cluster Jobs		
Group	Change in Jobs	Average Earnings	Group	Change in Jobs	Average Earnings
Local Motor Vehicle Products and Services	-3.4%	\$ 45,215	Local Utilities	37.8%	\$ 103,896
Local Household Goods and Services	-8.0%	\$ 43,581	Local Logistical Services	23.8%	\$ 48,900
			Local Industrial Products and Services	15.6%	\$ 69,525
			Local Financial Services	0.7%	\$ 71,201

Source: DBEDT compilation based on EMSI data.

Overall, the local clusters added 95,554 jobs between 2001 and 2014 in Hawaii. This amounted to a 22.0 percent increase in jobs. Based on job growth alone, the leading performers of the local clusters were Local Utilities, Local Real Estate, Construction, and Development, Local Health Services, Local Commercial Services, and Local Personal Services (Non-Medical). The earnings average of the local clusters was \$43,363 in 2014, which was lower than the statewide private sector average of \$49,283.

There were five local clusters that qualified as high performing base-growth clusters for the 2001 to 2014 period. They were Local Real Estate, Construction, and Development, Local Commercial Services, Local Community and Civic Organizations, Local Retail Clothing and Accessories, and Local Food and Beverage Processing and Distribution. Base-growth clusters accounted for about 49.6 percent of local cluster jobs in 2014.

The local clusters in the emerging category were composed of Local Utilities, Local Logistical Services, Local Industrial Products and Services, and Local Financial Services. These clusters accounted for about 6.3 percent of the total local cluster jobs in 2014.

Five local clusters fell into the transitioning category for the 2001 to 2014 period. These ranged from the Local Health Services (31.6 percent job increase) to Local Entertainment and Media (1.0 percent job increase). Transitioning clusters accounted for about 40.1 percent of jobs in local clusters.

The two clusters that lost jobs in the 2001 to 2014 period fell into the declining quadrant of the performance map. These clusters accounted for about 4.0 percent of total local cluster jobs in 2014. Local Household Goods and Services had the largest job decrease, followed by Local Motor Vehicle Products and Services.

## V. COUNTY CLUSTER PORTFOLIO PERFORMANCE

The following tables summarize the 2001 to 2014 county cluster performance. Performance has been organized by *Best Performing Targets* (registering as base-growth & emerging clusters and *Other Targeted Industry Performance* (those that fell into the transitioning and declining categories).

### City & County of Honolulu

Table 16 shows how each of the respective traded clusters fell on the performance map based on the 2001 to 2014 performance measures of Honolulu. Combined, the traded clusters accounted for about 108,993 jobs in Honolulu.

**Table 16. Honolulu County Traded Clusters Mapped by Performance, 2001-2014**

Total Traded Clusters Jobs, 2014: 108,993					
Average Traded Cluster Annual Earnings, 2014: \$53,914					
Net Change in Traded Cluster Jobs, 2001-2014: 10.5%					
Transitioning Group: 54.0% of Traded Cluster Jobs			Base-Growth Group: 9.7% of Traded Cluster Jobs		
Group	Change in Jobs	Average Earnings	Group	Change in Jobs	Average Earnings
Financial Services	55.3%	\$ 52,210	Entertainment	33.7%	\$ 41,514
Education and Knowledge Creation	32.1%	\$ 39,094	Oil and Gas Products and Services	29.0%	\$ 128,613
Distribution Services	5.1%	\$ 53,119	Processed Food	8.2%	\$ 40,420
Information Technology	4.3%	\$ 73,851			
Hospitality and Tourism	3.1%	\$ 46,017			
Declining Group: 19.4% of Traded Cluster Jobs			Emerging Group: 16.9% of Traded Cluster Jobs		
Group	Change in Jobs	Average Earnings	Group	Change in Jobs	Average Earnings
Transportation and Logistics	-7.7%	\$ 82,390	Sporting, Recreational and Children's Goods	53.5%	\$ 37,344
Jewelry and Precious Metals	-8.6%	\$ 39,924	Business Services	27.5%	\$ 68,676
Agricultural Products	-16.8%	\$ 29,716			
Publishing and Printing	-32.8%	\$ 46,402			
Fishing and Fishing Products	-33.3%	\$ 31,190			
Other Traded Clusters	-35.0%	\$ 50,883			

Source: DBEDT compilation based on EMSI data.

Overall, the traded clusters added 10,378 jobs between 2001 and 2014 in Honolulu. This amounted to a 10.5 percent increase in jobs. In contrast, total private sector jobs in Honolulu increased 18.1 percent during the same period. The earnings average of the traded clusters was \$53,914 in 2014, which was higher than the Honolulu private sector average of \$50,158.

There were three traded clusters that qualified as high performing base-growth clusters for the 2001 to 2014 period. Base-growth clusters accounted for about 9.7 percent of jobs in traded clusters.

The emerging category included two traded clusters. These clusters accounted for about 16.9 percent of the total traded cluster jobs in 2014.

Five traded clusters fell into the transitioning category for the 2001 to 2014 period. Transitioning clusters accounted for about 54.0 percent of jobs for traded clusters.

The six clusters that lost jobs in the 2001 to 2014 period fell into the declining quadrant of the performance map. These accounted for about 19.4 percent of total traded cluster jobs in 2014.

Table 17 shows how each of the respective local clusters were categorized on the performance map based on the 2001 to 2014 performance measures. Combined, the local clusters accounted for about 378,939 jobs in Honolulu.

**Table 17. Honolulu County Local Clusters Mapped by Performance, 2001-2014**

Total Local Clusters Jobs, 2014: 378,939					
Average Local Cluster Annual Earnings, 2014: \$46,863					
Net Change in Local Cluster Jobs, 2001-2014: 20.4%					
Transitioning Group: 37.1% of Local Cluster Jobs			Base-Growth Group: 49.5% of Local Cluster Jobs		
Group	Change in Jobs	Average Earnings	Group	Change in Jobs	Average Earnings
Local Personal Services (Non-Medical)	24.4%	\$ 28,488	Local Real Estate, Construction, and Development	40.4%	\$ 57,539
Local Health Services	32.7%	\$ 66,016	Local Commercial Services	25.5%	\$ 51,817
Local Education and Training	8.0%	\$ 46,241	Local Community and Civic Organizations	15.4%	\$ 36,665
Local Hospitality Establishments	14.3%	\$ 22,946	Local Retail Clothing and Accessories	12.5%	\$ 30,603
			Local Food and Beverage Processing and Distribution	6.5%	\$ 32,502
Declining Group: 9.4% of Local Cluster Jobs			Emerging Group: 4.0% of Local Cluster Jobs		
Group	Change in Jobs	Average Earnings	Group	Change in Jobs	Average Earnings
Local Motor Vehicle Products and Services	-2.7%	\$ 47,448	Local Utilities	40.1%	\$ 102,846
Local Financial Services	-3.0%	\$ 74,638	Local Logistical Services	21.0%	\$ 53,504
Local Entertainment and Media	-7.6%	\$ 26,575	Local Industrial Products and Services	20.0%	\$ 74,678
Local Household Goods and Services	-7.9%	\$ 48,787			

Source: DBEDT compilation based on EMSI data.

Overall, the local clusters added 64,247 jobs between 2001 and 2014 in Honolulu, which was a 20.4 percent increase. The earnings average of the local clusters was \$46,863 in 2014, which was below the Honolulu private sector average of \$50,158.

There were five local clusters that qualified as high performing base-growth clusters for the 2001 to 2014 period. Base-growth clusters accounted for about 49.5 percent of jobs in local clusters.

The emerging category included three local clusters. These clusters accounted for about 4.0 percent of the total Honolulu local cluster jobs in 2014.

Four local clusters fell into the transitioning category for the 2001 to 2014 period. Transitioning clusters accounted for about 37.1 percent of jobs in local clusters.

The four clusters that lost jobs in the 2001 to 2014 period fell into the declining quadrant of the performance map. These clusters accounted for about 9.4 percent of total local cluster jobs in 2014.

## Hawaii County

Table 18 shows how each of the respective traded clusters were positioned on the performance map based on the 2001 to 2014 performance measures of Hawaii County. Combined, the traded clusters accounted for about 24,125 jobs in Hawaii County.

**Table 18. Hawaii County Traded Clusters Mapped by Performance, 2001-2014**

Total Traded Clusters Jobs, 2014: 24,125					
Average Traded Cluster Annual Earnings, 2014: \$35,273					
Net Change in Traded Cluster Jobs, 2001-2014: 12.8%					
Transitioning Group: 18.2% of Traded Cluster Jobs			Base-Growth Group: 29.7% of Traded Cluster Jobs		
Group	Change in Jobs	Average Earnings	Group	Change in Jobs	Average Earnings
Financial Services	90.9%	\$ 21,825	Jewelry and Precious Metals	142.0%	\$ 24,285
Business Services	21.4%	\$ 39,601	Agricultural Products	21.7%	\$ 21,293
Transportation and Logistics	10.6%	\$ 58,397			
Entertainment	5.3%	\$ 26,281			
Declining Group: 39.2% of Traded Cluster Jobs			Emerging Group: 12.9% of Traded Cluster Jobs		
Group	Change in Jobs	Average Earnings	Group	Change in Jobs	Average Earnings
Fishing and Fishing Products	-4.9%	\$ 8,369	Education and Knowledge Creation	70.0%	\$ 49,576
Hospitality and Tourism	-7.7%	\$ 42,686	Oil and Gas Products and Services	70.0%	\$ 68,824
Processed Food	-8.2%	\$ 45,437	Information Technology	70.0%	\$ 39,137
Publishing and Printing	-16.2%	\$ 26,130	Distribution Services	54.7%	\$ 41,000
			Sporting, Recreational and Children's Goods	50.1%	\$ 26,512
			Other Traded Clusters	37.6%	\$ 61,438

Source: DBEDT compilation based on EMSI data.

Overall, the traded clusters added 2,742 jobs between 2001 and 2014 in Hawaii County, a 12.8 percent increase. In contrast, total private sector jobs in Hawaii County increased 26.6 percent during the same period. The earnings average of the traded clusters was \$35,273 in 2014, which was slightly lower than the Hawaii County private sector average of \$35,925.

There were two traded clusters that qualified as high performing base-growth clusters for the 2001 to 2014 period. Base-growth clusters accounted for about 29.7 percent of jobs in traded clusters.

The emerging category included six traded clusters. These clusters accounted for about 12.9 percent of the total traded cluster jobs in 2014.

Four traded clusters fell into the transitioning category for the 2001 to 2014 period. Transitioning clusters accounted for about 18.2 percent of traded cluster jobs.

The four clusters that lost jobs in the 2001 to 2014 period fell into the declining quadrant of the performance map. These clusters accounted for about 39.2 percent of total traded cluster jobs in 2014.

Table 19 shows how each of the respective local clusters fell on the performance map based on the 2001 to 2014 performance measures. Combined, the local clusters accounted for about 61,140 jobs in Hawaii County.

**Table 19. Hawaii County Local Clusters Mapped by Performance, 2001-2014**

Total Local Clusters Jobs, 2014: 61,140					
Average Local Cluster Annual Earnings, 2014: \$35,634					
Net Change in Local Cluster Jobs, 2001-2014: 32.6%					
Transitioning Group: 7.0% of Local Cluster Jobs			Base-Growth Group: 53.7% of Local Cluster Jobs		
Group	Change in Jobs	Average Earnings	Group	Change in Jobs	Average Earnings
Local Personal Services (Non-Medical)	15.1%	\$ 25,159	Local Hospitality Establishments	41.9%	\$ 25,400
			Local Education and Training	30.7%	\$ 39,648
			Local Utilities	27.0%	\$ 104,472
			Local Real Estate, Construction, and Development	26.3%	\$ 41,673
			Local Entertainment and Media	26.2%	\$ 19,472
			Local Food and Beverage Processing and Distribution	23.6%	\$ 30,976
			Local Retail Clothing and Accessories	15.9%	\$ 30,716
Declining Group: 5.1% of Local Cluster Jobs			Emerging Group: 34.3% of Local Cluster Jobs		
Group	Change in Jobs	Average Earnings	Group	Change in Jobs	Average Earnings
Local Industrial Products and Services	-0.8%	\$ 52,312	Local Community and Civic Organizations	104.1%	\$ 28,639
Local Motor Vehicle Products and Services	-3.0%	\$ 40,496	Local Commercial Services	57.2%	\$ 30,633
Local Household Goods and Services	-6.1%	\$ 31,451	Local Logistical Services	54.8%	\$ 38,155
			Local Health Services	42.4%	\$ 49,335
			Local Financial Services	16.6%	\$ 49,362

Source: DBEDT compilation based on EMSI data.

Overall, the local clusters added 15,016 jobs between 2001 and 2014 in Hawaii County. This amounted to a 32.6 percent increase in jobs. The earnings average of the local clusters was \$35,634 in 2014, which was slightly lower than the Hawaii County private sector average of \$35,925.

There were seven local clusters that qualified as high performing base-growth clusters for the 2001 to 2014 period. Base-growth clusters accounted for about 53.7 percent of jobs in local clusters.

The emerging category included five local clusters. These clusters accounted for about 34.3 percent of the total local cluster jobs in Hawaii County.

Only one local cluster was categorized as transitioning for the 2001 to 2014 period. Transitioning clusters accounted for about 7.0 percent of jobs in local clusters.

The three clusters that lost jobs in the 2001 to 2014 period fell into the declining quadrant of the performance map. These clusters accounted for about 5.1 percent of total local cluster jobs in 2014.

## Maui County

Table 20 shows how each of the respective traded clusters was categorized on the performance map based on the 2001 to 2014 performance measures of Maui. Combined, the traded clusters accounted for about 27,050 jobs in Maui.

**Table 20. Maui County Traded Clusters Mapped by Performance, 2001-2014**

Total Traded Clusters Jobs, 2014: 27,050					
Average Traded Cluster Annual Earnings, 2014: \$47,542					
Net Change in Traded Cluster Jobs, 2001-2014: 10.5%					
Transitioning Group: 5.2% of Traded Cluster Jobs			Base-Growth Group: 63.6% of Traded Cluster Jobs		
Group	Change in Jobs	Average Earnings	Group	Change in Jobs	Average Earnings
Education and Knowledge Creation	23.1%	\$ 37,180	Oil and Gas Products and Services	133.2%	\$ 84,623
Distribution Services	13.0%	\$ 54,362	Jewelry and Precious Metals	46.9%	\$ 30,286
			Transportation and Logistics	37.9%	\$ 48,013
			Sporting, Recreational and Children's Goods	32.5%	\$ 39,833
			Hospitality and Tourism	7.8%	\$ 49,925
Declining Group: 16.5% of Traded Cluster Jobs			Emerging Group: 14.7% of Traded Cluster Jobs		
Group	Change in Jobs	Average Earnings	Group	Change in Jobs	Average Earnings
Agricultural Products	-7.4%	\$ 38,559	Financial Services	90.5%	\$ 52,872
Fishing and Fishing Products	-8.0%	\$ 9,172	Information Technology	57.3%	\$ 44,887
Entertainment	-15.8%	\$ 35,492	Business Services	50.0%	\$ 50,041
Processed Food	-30.1%	\$ 45,367	Publishing and Printing	30.0%	\$ 35,599
			Other Traded Clusters	7.8%	\$ 47,740

Source: DBEDT compilation based on EMSI data.

Overall, the traded clusters added 2,563 jobs between 2001 and 2014 in Maui County. This amounted to a 10.5 percent increase in jobs. However, total private sector jobs in Maui County increased 19.4 percent during the same period. The earnings average of the traded clusters was \$47,542 in 2014, which was lower than the Maui County private sector average of \$52,964.

There were five traded clusters that qualified as high performing base-growth clusters for the 2001 to 2014 period. Base-growth clusters accounted for about 63.6 percent of jobs in traded clusters.

The emerging category included five traded clusters. These clusters accounted for about 14.7 percent of the total traded cluster jobs in 2014.

Two traded clusters fell into the transitioning category for the 2001 to 2014 period. Transitioning clusters accounted for about 5.2 percent of traded cluster jobs.

The four clusters that lost jobs in the 2001 to 2014 period fell into the declining quadrant of the performance map. These clusters accounted for about 16.5 percent of total traded cluster jobs in 2014.

Table 21 shows how each of the respective local clusters were positioned on the performance map based on the 2001 to 2014 performance measures. Combined, the local clusters accounted for about 63,309 jobs in Maui County.

**Table 21. Maui County Local Clusters Mapped by Performance, 2001-2014**

Total Local Clusters Jobs, 2014: 63,309					
Average Local Cluster Annual Earnings, 2014: \$37,146					
Net Change in Local Cluster Jobs, 2001-2014: 23.1%					
Transitioning Group: 36.1% of Local Cluster Jobs			Base-Growth Group: 40.4% of Local Cluster Jobs		
Group	Change in Jobs	Average Earnings	Group	Change in Jobs	Average Earnings
Local Health Services	21.5%	\$ 54,988	Local Education and Training	79.3%	\$ 41,974
Local Logistical Services	17.5%	\$ 41,781	Local Personal Services (Non-Medical)	39.7%	\$ 27,652
Local Hospitality Establishments	17.0%	\$ 27,937	Local Real Estate, Construction, and Development	30.7%	\$ 44,002
Local Industrial Products and Services	10.1%	\$ 64,146	Local Food and Beverage Processing and Distribution	23.4%	\$ 34,509
Local Retail Clothing and Accessories	8.7%	\$ 32,337	Local Entertainment and Media	18.5%	\$ 23,199
Declining Group: 3.9% of Local Cluster Jobs			Emerging Group: 19.7% of Local Cluster Jobs		
Group	Change in Jobs	Average Earnings	Group	Change in Jobs	Average Earnings
Local Motor Vehicle Products and Services	-7.7%	\$ 42,539	Local Commercial Services	34.8%	\$ 32,776
Local Household Goods and Services	-11.8%	\$ 35,147	Local Utilities	34.4%	\$ 97,820
			Local Community and Civic Organizations	14.6%	\$ 33,337
			Local Financial Services	6.7%	\$ 55,342

Source: DBEDT compilation based on EMSI data.

Overall, the local clusters added 11,871 jobs between 2001 and 2014 in Maui County, a 23.1 percent increase. The earnings average of the local clusters was \$37,146 in 2014, which was lower than the Maui County private sector average of \$52,964.

There were five local clusters that qualified as high performing base-growth clusters for the 2001 to 2014 period. Base-growth clusters accounted for about 40.4 percent of local cluster jobs.

The emerging category included four local clusters. These clusters accounted for about 19.7 percent of the total local cluster jobs in Maui County.

Five local clusters were in the transitioning category for the 2001 to 2014 period. Transitioning clusters accounted for about 36.1 percent of local cluster jobs.

The two clusters that lost jobs in the 2001 to 2014 period fell into the declining quadrant of the performance map. These clusters accounted for about 3.9 percent of total local cluster jobs in 2014.

## Kauai County

Table 22 shows how each of the respective traded clusters were positioned on the performance map based on the 2001 to 2014 performance measures of Kauai. Combined, the traded clusters accounted for about 11,047 jobs in Kauai.

**Table 22. Kauai County Traded Clusters Mapped by Performance, 2001-2014**

Total Traded Clusters Jobs, 2014: 11,047					
Average Traded Cluster Annual Earnings, 2014: \$45,179					
Net Change in Traded Cluster Jobs, 2001-2014: 13.2%					
Transitioning Group: 5.3% of Traded Cluster Jobs			Base-Growth Group: 67.5% of Traded Cluster Jobs		
Group	Change in Jobs	Average Earnings	Group	Change in Jobs	Average Earnings
Financial Services	54.1%	\$ 22,103	Jewelry and Precious Metals	83.6%	\$ 22,242
			Hospitality and Tourism	7.8%	\$ 46,782
			Transportation and Logistics	2.0%	\$ 55,002
			Agricultural Products	1.3%	\$ 33,198
Declining Group: 9.0% of Traded Cluster Jobs			Emerging Group: 18.1% of Traded Cluster Jobs		
Group	Change in Jobs	Average Earnings	Group	Change in Jobs	Average Earnings
Publishing and Printing	-1.4%	\$ 29,871	Sporting, Recreational and Children's Goods	749.3%	\$ 45,149
Processed Food	-1.6%	\$ 37,514	Education and Knowledge Creation	227.1%	\$ 57,335
Fishing and Fishing Products	-3.6%	\$ 7,440	Oil and Gas Products and Services	123.8%	\$ 78,525
Entertainment	-5.7%	\$ 45,341	Information Technology	53.9%	\$ 79,957
Other Traded Clusters	-10.9%	\$ 39,033	Distribution Services	38.0%	\$ 43,769
			Business Services	18.7%	\$ 62,499

Source: DBEDT compilation based on EMSI data.

Overall, the traded clusters added 1,288 jobs between 2001 and 2014 in Kauai County. This amounted to a 13.2 percent increase in jobs. However, total private sector jobs in Kauai County increased 18.4 percent during the same period. The earnings average of the traded clusters was \$45,179 in 2014, which was lower than the Kauai County private sector average of \$63,069.

There were four traded clusters that qualified as high performing base-growth clusters for the 2001 to 2014 period. Base-growth clusters accounted for about 67.5 percent of jobs in traded clusters.

The emerging category included six traded clusters. These clusters accounted for about 18.1 percent of the total traded cluster jobs in 2014.

Only one traded cluster was in the transitioning category for the 2001 to 2014 period. Transitioning clusters accounted for about 5.3 percent of jobs in traded clusters.

The five clusters that lost jobs in the 2001 to 2014 period fell into the declining quadrant of the performance map. These clusters accounted for about 9.0 percent of total traded cluster jobs in 2014.

Table 23 shows how each of the respective local clusters fell on the performance map based on the 2001 to 2014 performance measures. Combined, the local clusters accounted for about 26,627 jobs in Kauai County.

**Table 23. Kauai County Local Clusters Mapped by Performance, 2001-2014**

Total Local Clusters Jobs, 2014: 26,627					
Average Local Cluster Annual Earnings, 2014: \$35,143					
Net Change in Local Cluster Jobs, 2001-2014: 19.9%					
Transitioning Group: 23.7% of Local Cluster Jobs			Base-Growth Group: 51.1% of Local Cluster Jobs		
Group	Change in Jobs	Average Earnings	Group	Change in Jobs	Average Earnings
Local Logistical Services	15.6%	\$ 36,959	Local Personal Services (Non-Medical)	34.1%	\$ 21,981
Local Health Services	10.3%	\$ 57,364	Local Hospitality Establishments	31.1%	\$ 23,608
Local Retail Clothing and Accessories	6.0%	\$ 30,909	Local Real Estate, Construction, and Development	22.6%	\$ 42,042
Local Food and Beverage Processing and Distribution	2.0%	\$ 29,852	Local Entertainment and Media	11.6%	\$ 15,331
Declining Group: 5.0% of Local Cluster Jobs			Emerging Group: 20.1% of Local Cluster Jobs		
Group	Change in Jobs	Average Earnings	Group	Change in Jobs	Average Earnings
Local Education and Training	-2.0%	\$ 31,724	Local Financial Services	72.6%	\$ 69,541
Local Household Goods and Services	-4.0%	\$ 35,831	Local Utilities	47.9%	\$ 105,554
Local Motor Vehicle Products and Services	-5.7%	\$ 44,058	Local Community and Civic Organizations	37.0%	\$ 26,064
Local Industrial Products and Services	-45.5%	\$ 50,872	Local Commercial Services	22.6%	\$ 31,447

Source: DBEDT compilation based on EMSI data.

Overall, the local clusters added 26,627 jobs between 2001 and 2014 in Kauai County. This amounted to a 19.9 percent increase in jobs. The earnings average of the local clusters was \$35,143 in 2014, which was lower than the Kauai County private sector average of \$63,069.

There were four local clusters that qualified as high performing base-growth clusters for the 2001 to 2014 period. Base-growth clusters accounted for about 51.1 percent of jobs in local clusters.

The emerging category included four local clusters. These clusters accounted for about 20.1 percent of the total local cluster jobs in Kauai County.

Four local clusters fell into the transitioning category for the 2001 to 2014 period. Transitioning clusters accounted for about 23.7 percent of jobs in local clusters.

The four clusters that lost jobs in the 2001 to 2014 period fell into the declining quadrant of the performance map. These clusters accounted for about 5.0 percent of total local cluster jobs in 2014.

## VI. APPENDIX: DETAILED STATE DATA AND COUNTY JOBS BY CLUSTERS

**Appendix Table A-1. State of Hawaii NAICS Level Clusters Based on DBEDT Definition**

No.	NAICS	NAICS CODE DESCRIPTION	2014 Jobs	Cluster
1	713	Amusement, gambling, and recreation industries	10,075	LC1
2	722	Food services and drinking places	65,029	LC1
3	45322	Gift, novelty, and souvenir stores	3,567	LC1
4	532292	Recreational goods rental	722	LC1
5	622	Hospitals	14,844	LC2
6	623	Nursing and residential care facilities	9,353	LC2
7	6211	Offices of physicians	10,377	LC2
8	6212	Offices of dentists	4,487	LC2
9	6213	Offices of other health practitioners	7,016	LC2
10	6214	Outpatient care centers	3,493	LC2
11	6215	Medical and diagnostic laboratories	1,709	LC2
12	6216	Home health care services	6,126	LC2
13	6219	Other ambulatory health care services	881	LC2
14	8122	Death care services	612	LC2
15	44611	Pharmacies and drug stores	3,747	LC2
16	44613	Optical goods stores	432	LC2
17	62412	Services for the elderly and persons with disabilities	5,262	LC2
18	532291	Home health equipment rental	178	LC2
19	517	Telecommunications	4,270	LC3
20	4234	Professional and Commercial Equipment and Supplies Merchant Wholesalers	1,194	LC3
21	5323	General rental centers	186	LC3
22	5324	Commercial and Industrial Machinery and Equipment Rental and Leasing	992	LC3
23	5411	Legal services	5,002	LC3
24	5412	Accounting, tax preparation, bookkeeping, and payroll services	5,420	LC3
25	5418	Advertising, public relations, and related services	2,047	LC3
26	55111	Management of Companies and Enterprises	8,808	LC3
27	5611	Office administrative services	1,539	LC3
28	5613	Employment services	20,902	LC3
29	5616	Investigation and security services	7,831	LC3
30	5617	Services to buildings and dwellings	19,027	LC3
31	5619	Other support services	1,729	LC3
32	8112	Electronic and precision equipment repair and maintenance	480	LC3
33	8113	Commercial machinery repair and maintenance	856	LC3
34	45321	Office supplies and stationery stores	789	LC3
35	54138	Testing laboratories	213	LC3
36	54194	Veterinary services	1,113	LC3
37	54199	All other professional, scientific, and technical services	5,435	LC3
38	532299	All other consumer goods rental	364	LC3
39	236	Construction of buildings	12,370	LC4
40	237	Heavy and civil engineering construction	4,745	LC4
41	238	Specialty trade contractors	25,566	LC4
42	321	Wood product manufacturing	609	LC4
43	3274	Lime and Gypsum Product Manufacturing	5	LC5
44	531	Real estate	43,790	LC4
45	3273	Cement and concrete product manufacturing	718	LC4
46	4233	Lumber and other construction materials merchant wholesalers	1,004	LC4
47	44411	Home centers	2,817	LC4
48	44412	Paint and wallpaper stores	84	LC4
49	44419	Other building material dealers	667	LC4
50	45393	Manufactured (Mobile) Home Dealers	5	LC4

**Appendix Table A-1. State of Hawaii NAICS Level Clusters Based on DBEDT Definition**

No.	NAICS	NAICS CODE DESCRIPTION	2014 Jobs	Cluster
51	54131	Architectural services	1,593	LC4
52	54132	Landscape architectural services	370	LC4
53	54135	Building inspection services	152	LC4
54	54136	Geophysical surveying and mapping services	31	LC4
55	452	General merchandise stores	13,800	LC5
56	4481	Clothing stores	9,428	LC5
57	4482	Shoe stores	1,075	LC5
58	4533	Used merchandise stores	802	LC5
59	44831	Jewelry stores	2,175	LC5
60	44832	Luggage and leather goods stores	262	LC5
61	45113	Sewing, needlework, and piece goods stores	475	LC5
62	53222	Formal wear and costume rental	78	LC5
63	453998	All other miscellaneous store retailers (except tobacco stores)	1,629	LC5
64	525	Funds, trusts, and other financial vehicles	1,252	LC6
65	6242	Community Food and Housing, and Emergency and Other Relief Services	729	LC6
66	8131	Religious organizations	5,142	LC6
67	8132	Grantmaking and giving services	1,342	LC6
68	8133	Social advocacy organizations	984	LC6
69	8134	Civic and social organizations	1,773	LC6
70	81391	Business associations	299	LC6
71	81392	Professional organizations	121	LC6
72	81393	Labor unions and similar labor organizations	938	LC6
73	81394	Political organizations	18	LC6
74	81399	Other similar organizations	5,315	LC6
75	814	Private Households	3,068	LC6
76	3116	Animal slaughtering and processing	446	LC7
77	4248	Beer, wine, and distilled alcoholic beverage merchant wholesalers	1,241	LC7
78	4451	Grocery stores	12,972	LC7
79	4452	Specialty food stores	2,211	LC7
80	4453	Beer, wine, and liquor stores	240	LC7
81	4542	Vending machine operators	268	LC7
82	4543	Direct selling establishments	6,957	LC7
83	42443	Dairy product (except dried or canned) merchant wholesalers	268	LC7
84	42444	Poultry and poultry product merchant wholesalers	71	LC7
85	42446	Fish and seafood merchant wholesalers	629	LC7
86	42447	Meat and meat product merchant wholesalers	116	LC7
87	42448	Fresh fruit and vegetable merchant wholesalers	1,083	LC7
88	42494	Tobacco and tobacco product merchant wholesalers	5	LC7
89	45391	Pet and pet supplies stores	544	LC7
90	311991	Perishable prepared food manufacturing	1,144	LC7
91	312111	Soft drink manufacturing	481	LC7
92	312113	Ice manufacturing	105	LC7
93	453991	Tobacco stores	616	LC7
94	447	Gasoline stations	2,210	LC8
95	4411	Automobile dealers	4,479	LC8
96	4413	Automotive parts, accessories, and tire stores	2,040	LC8
97	8111	Automotive repair and maintenance	3,835	LC8
98	42311	Automobile and other motor vehicle merchant wholesalers	81	LC8
99	42312	Motor vehicle supplies and new parts merchant wholesalers	327	LC8
100	42313	Tire and tube merchant wholesalers	68	LC8

**Appendix Table A-1. State of Hawaii NAICS Level Clusters Based on DBEDT Definition**

No.	NAICS	NAICS CODE DESCRIPTION	2014 Jobs	Cluster
101	42314	Motor vehicle parts (used) merchant wholesalers	5	LC8
102	44121	Recreational vehicle dealers	5	LC8
103	81293	Parking lots and garages	1,451	LC8
104	441228	Motorcycle, ATV, and All Other Motor Vehicle Dealers	296	LC8
105	5221	Depository credit intermediation	6,137	LC9
106	5222	Nondepository credit intermediation	1,310	LC9
107	5223	Activities related to credit intermediation	1,002	LC9
108	5241	Insurance carriers	4,672	LC9
109	6111	Elementary and secondary schools	10,072	LC10
110	6243	Vocational rehabilitation services	1,737	LC10
111	6244	Child day care services	5,737	LC11
112	8114	Personal and household goods repair and maintenance	3,146	LC11
113	8121	Personal care services	7,169	LC11
114	8123	Drycleaning and laundry services	2,060	LC11
115	44314	Electronics and Appliance Stores	1,471	LC11
116	44612	Cosmetics, beauty supplies, and perfume stores	1,198	LC11
117	44619	Other health and personal care stores	1,007	LC11
118	62411	Child and youth services	2,423	LC11
119	62419	Other individual and family services	2,808	LC11
120	81291	Pet care (except veterinary) services	398	LC11
121	81292	Photofinishing	98	LC11
122	81299	All other personal services	7,506	LC11
123	541921	Photography studios, portrait	1,774	LC11
124	711	Performing arts, spectator sports, and related industries	9,461	LC12
125	4512	Book, periodical, and music stores	458	LC12
126	5111	Newspaper, periodical, book, and directory publishers	1,757	LC12
127	42391	Sporting and recreational goods and supplies merchant wholesalers	315	LC12
128	42392	Toy and hobby goods and supplies merchant wholesalers	129	LC12
129	42393	Recyclable material merchant wholesalers	546	LC12
130	42492	Book, periodical, and newspaper merchant wholesalers	327	LC12
131	45111	Sporting goods stores	2,039	LC12
132	45112	Hobby, toy, and game stores	672	LC12
133	45114	Musical instrument and supplies stores	156	LC12
134	53223	Video tape and disc rental	112	LC12
135	484	Truck transportation	3,520	LC13
136	486	Pipeline transportation	2	LC13
137	493	Warehousing and storage	836	LC13
138	562	Waste management and remediation services	2,093	LC13
139	4854	School and employee bus transportation	1,039	LC13
140	4855	Charter bus industry	66	LC13
141	4859	Other transit and ground passenger transportation	1,228	LC13
142	4884	Support activities for road transportation	449	LC13
143	53212	Truck, trailer, and RV rental and leasing	147	LC13
144	442	Furniture and home furnishings stores	1,532	LC14
145	3271	Clay product and refractory manufacturing	272	LC14
146	4232	Furniture and home furnishing merchant wholesalers	297	LC14
147	4237	Hardware and plumbing merchant wholesalers	688	LC14
148	4442	Lawn and garden equipment and supplies stores	273	LC14
149	4531	Florists	919	LC14
150	42362	Household Appliances, Electric Housewares, and Con. Electronics Wholesalers	138	LC14

**Appendix Table A-1. State of Hawaii NAICS Level Clusters Based on DBEDT Definition**

No.	NAICS	NAICS CODE DESCRIPTION	2014 Jobs	Cluster
151	42382	Farm and garden machinery and equipment merchant wholesalers	96	LC14
152	42399	Other miscellaneous durable goods merchant wholesalers	915	LC14
153	42493	Flower, nursery stock, & florists' supplies merchant wholesalers	341	LC14
154	44413	Hardware stores	647	LC14
155	53221	Consumer electronics and appliances rental	172	LC14
156	492	Couriers and messengers	1,776	LC15
157	2211	Electric power generation, transmission and distribution	3,291	LC15
158	2212	Natural gas distribution	316	LC15
159	2213	Water, sewage and other systems	463	LC15
160	491	Postal Service	5	LC15
161	425	Wholesale electronic markets and agents and brokers	2,294	LC16
162	4235	Metal and mineral (except petroleum) merchant wholesalers	115	LC16
163	4246	Chemical and allied products merchant wholesalers	235	LC16
164	42361	Elec. equip. and wiring merchant wholesalers	373	LC16
165	42369	Other electronic parts and equipment merchant wholesalers	109	LC16
166	42383	Industrial machinery and equipment merchant wholesalers	504	LC16
167	42384	Industrial supplies merchant wholesalers	187	LC16
168	42385	Service establishment equipment and supplies merchant wholesalers	132	LC16
169	42386	Other transport. goods merchant wholesalers	27	LC16
170	42495	Paint, varnish, and supplies merchant wholesalers	102	LC16
171	42499	Other miscellaneous nondurable goods merchant wholesalers	1,184	LC16
172	4853	Taxi and limousine service	2,879	TC1
173	487	Scenic and sightseeing transportation	4,558	TC1
174	721	Accommodation	40,275	TC1
175	4851	Urban transit systems	5	TC1
176	5615	Travel arrangement and reservation services	5,547	TC1
177	53211	Passenger car rental and leasing	2,524	TC1
178	336612	Boat building	26	TC1
179	441222	Boat dealers	91	TC1
180	483112	Deep sea passenger transportation	-	TC1
181	483114	Coastal and great lakes passenger transportation	924	TC1
182	481	Air transportation	8,623	TC2
183	482	Rail Transportation	5	TC2
184	4832	Inland water transportation	168	TC2
185	4852	Interurban and rural bus transportation	5	TC2
186	4881	Support activities for air transportation	2,147	TC2
187	4882	Support Activities for Rail Transportation	-	TC2
188	4883	Support activities for water transportation	1,202	TC2
189	4885	Freight transportation arrangement	706	TC2
190	4889	Other support activities for transportation	119	TC2
191	33995	Sign manufacturing	363	TC2
192	336611	Ship building and repairing	705	TC2
193	483111	Deep sea freight transportation	14	TC2
194	483113	Coastal and great lakes freight transportation	690	TC2
195	334	Computer and electronic product manufacturing	265	TC3
196	5414	Specialized design services	1,694	TC3
197	5415	Computer systems design and related services	6,344	TC3
198	5612	Facilities support services	1,308	TC3
199	5614	Business support services	2,080	TC3
200	33994	Office supplies (except paper) manufacturing	12	TC3

**Appendix Table A-1. State of Hawaii NAICS Level Clusters Based on DBEDT Definition**

No.	NAICS	NAICS CODE DESCRIPTION	2014 Jobs	Cluster
201	54133	Engineering services	3,954	TC3
202	54134	Drafting services	303	TC3
203	54161	Management consulting services	4,434	TC3
204	54162	Environmental consulting services	714	TC3
205	54191	Marketing research and public opinion polling	344	TC3
206	54193	Translation and interpretation services	436	TC3
207	541922	Commercial photography	403	TC3
208	533	Lessors of nonfinancial intangible assets	14	TC4
209	5417	Scientific research and development services	2,214	TC4
210	6112	Junior colleges	712	TC4
211	6113	Colleges, universities, and professional schools	4,977	TC4
212	6114	Business schools and computer and management training	695	TC4
213	6115	Technical and trade schools	820	TC4
214	6116	Other schools and instruction	4,443	TC4
215	6117	Educational support services	595	TC4
216	54137	Surveying and mapping (except geophysical) services	282	TC4
217	54169	Other scientific and technical consulting services	784	TC4
218	4242	Drugs and druggists' sundries merchant wholesalers	591	TC5
219	4243	Apparel, piece goods, and notions merchant wholesalers	837	TC5
220	4245	Farm product raw material merchant wholesalers	153	TC5
221	4541	Electronic shopping and mail-order houses	1,067	TC5
222	42441	General line grocery merchant wholesalers	1,314	TC5
223	42442	Packaged frozen food merchant wholesalers	445	TC5
224	42445	Confectionery merchant wholesalers	534	TC5
225	42449	Other grocery and related products merchant wholesalers	544	TC5
226	42491	Farm supplies merchant wholesalers	241	TC5
227	512	Motion picture and sound recording industries	2,281	TC6
228	515	Broadcasting (except Internet)	1,213	TC6
229	712	Museums, historical sites, and similar institutions	2,885	TC6
230	45392	Art dealers	892	TC6
231	521	Monetary Authorities-Central Bank	-	TC7
232	523	Securities, commodity contracts, investments	10,427	TC7
233	5242	Agencies, brokerages, and other insurance related activities	5,836	TC7
234	3111	Animal food manufacturing	30	TC8
235	3112	Grain and oilseed milling	50	TC8
236	3113	Sugar and confectionery product manufacturing	849	TC8
237	3114	Fruit and vegetable preserving and specialty food manufacturing	454	TC8
238	3115	Dairy product manufacturing	379	TC8
239	3117	Seafood product preparation and packaging	62	TC8
240	3118	Bakeries and tortilla manufacturing	2,670	TC8
241	31191	Snack food manufacturing	357	TC8
242	31192	Coffee and tea manufacturing	516	TC8
243	31193	Flavoring syrup and concentrate manufacturing	35	TC8
244	31194	Seasoning and dressing manufacturing	175	TC8
245	31212	Breweries	58	TC8
246	31213	Wineries	35	TC8
247	31214	Distilleries	60	TC8
248	311999	All other miscellaneous food manufacturing	61	TC8
249	312112	Bottled water manufacturing	222	TC8
250	33992	Sporting and athletic goods manufacturing	538	TC9

**Appendix Table A-1. State of Hawaii NAICS Level Clusters Based on DBEDT Definition**

No.	NAICS	NAICS CODE DESCRIPTION	2014 Jobs	Cluster
251	33993	Doll, Toy, and Game Manufacturing	37	TC9
252	33999	All other miscellaneous manufacturing	318	TC9
253	114	Fishing, hunting and trapping	1,511	TC10
254	322	Paper manufacturing	45	TC11
255	323	Printing and related support activities	1,200	TC11
256	4241	Paper and paper product merchant wholesalers	589	TC11
257	111	Crop Production	10,148	TC12
258	112	Animal Production and Aquaculture	1,666	TC12
259	1151	Support activities for crop production	2,143	TC12
260	1152	Support activities for animal production	156	TC12
261	518	Data processing, hosting and related services	685	TC13
262	519	Other information services	443	TC13
263	5112	Software publishers	181	TC13
264	33991	Jewelry and silverware manufacturing	628	TC14
265	42394	Jewelry merchant wholesalers	760	TC14
266	324	Petroleum and coal products manufacturing	507	TC15
267	4247	Petroleum and petroleum products merchant wholesalers	602	TC15
268	42381	Construction equipment merchant wholesalers	173	TC16
269	315	Apparel manufacturing	1,098	TC17
270	326	Plastics and rubber products manufacturing	313	TC18
271	331	Primary Metal Manufacturing	32	TC19
272	332	Fabricated metal product manufacturing	434	TC19
273	3272	Glass and glass product manufacturing	133	TC20
274	3279	Other nonmetallic mineral product manufacturing	177	TC20
275	337	Furniture and related product manufacturing	519	TC21
276	313	Textile mills	47	TC22
277	314	Textile product mills	236	TC22
278	3391	Medical equipment and supplies manufacturing	265	TC23
279	113	Forestry and logging	104	TC24
280	1153	Support activities for forestry	72	TC24
281	325	Chemical manufacturing	468	TC25
282	333	Machinery manufacturing	140	TC26
283	3361	Motor Vehicle Manufacturing	-	TC27
284	3362	Motor vehicle body and trailer manufacturing	5	TC27
285	3363	Motor vehicle parts manufacturing	18	TC27
286	316	Leather and allied product manufacturing	91	TC28
287	335	Electrical equipment, appliance, and component manufacturing	48	TC29
288	3369	Other transportation equipment manufacturing	-	TC30
289	3365	Railroad Rolling Stock Manufacturing	-	TC30
289	3364	Aerospace Product and Parts Manufacturing	12	TC31
290	3122	Tobacco Manufacturing	-	TC32
291	21	Mining, quarrying, and oil and gas extraction	1,322	R

Source: DBEDT compilation based on EMSI data  
1/ LC=Local Cluster, TC=Traded Cluster, R=Resourced-Based Cluster

**Appendix Table A-2. Comparison of Job Growth of Honolulu County, State, and Nation by Traded Clusters**

Cluster No.	Cluster Name	Honolulu Jobs in		Avg. Ann. Job Growth 2001-2014		
		2001	2014	County	State	U.S.
1	Hospitality and Tourism	27,207	28,044	0.2%	0.2%	0.3%
2	Transportation and Logistics	13,121	12,116	-0.6%	-0.3%	0.0%
3	Business Services	13,847	17,712	1.9%	1.9%	1.0%
4	Education and Knowledge Creation	9,606	12,751	2.2%	2.5%	3.1%
5	Distribution Services	3,890	4,091	0.4%	0.9%	1.2%
6	Entertainment	4,220	5,644	2.3%	1.5%	0.3%
7	Financial Services	8,252	12,830	3.5%	3.7%	4.3%
8	Processed Food	3,796	4,106	0.6%	-0.1%	0.0%
9	Sporting, Recreational and Children's Goods	418	659	3.6%	3.4%	-1.7%
10	Fishing and Fishing Products	972	648	-3.1%	-1.7%	-1.4%
11	Publishing and Printing	2,085	1,404	-3.0%	-2.4%	-3.3%
12	Agricultural Products	3,502	2,916	-1.4%	0.3%	-0.4%
13	Information Technology	1,029	1,064	0.3%	0.8%	1.9%
14	Jewelry and Precious Metals	1,085	992	-0.7%	0.5%	-0.2%
15	Oil and Gas Products and Services	648	848	2.1%	2.7%	-0.6%
16-33	Other Traded Clusters	4,683	3,117	-3.1%	-2.2%	-2.0%
	Total Traded Clusters	98,362	108,942	0.8%	0.8%	0.5%
	Total Private Sector Jobs	412,994	487,859	1.3%	1.4%	1.1%

Source: DBEDT compilation based on EMSI data

**Appendix Table A-3. Comparison of Job Growth of Honolulu County, State, and Nation by Local Clusters**

Cluster No.	Cluster Name	Honolulu Jobs in		Avg. Ann. Job Growth 2001-2014		
		2001	2014	County	State	U.S.
1	Local Hospitality Establishments	46,288	52,916	1.0%	1.3%	2.0%
2	Local Health Services	39,805	52,848	2.2%	2.1%	2.6%
3	Local Commercial Services	53,057	66,502	1.8%	2.0%	1.0%
4	Local Real Estate, Construction, and Development	45,697	64,170	2.6%	2.4%	1.1%
5	Local Retail Clothing and Accessories	18,777	21,153	0.9%	0.9%	0.7%
6	Local Community and Civic Organizations	13,382	15,483	1.1%	1.5%	0.8%
7	Local Food and Beverage Processing and Distribution	18,693	19,887	0.5%	0.8%	0.3%
8	Local Motor Vehicle Products and Services	10,825	10,505	-0.2%	-0.3%	0.1%
9	Local Financial Services	11,182	10,844	-0.2%	0.1%	0.0%
10	Local Education and Training	8,403	9,089	0.6%	1.1%	1.5%
11	Local Personal Services (Non-Medical)	20,632	25,656	1.7%	1.8%	1.9%
12	Local Entertainment and Media	10,855	10,030	-0.6%	0.1%	0.4%
13	Local Logistical Services	5,551	6,714	1.5%	1.7%	1.4%
14	Local Household Goods and Services	4,647	4,278	-0.6%	-0.6%	-0.9%
15	Local Utilities	2,822	3,989	2.7%	2.5%	0.1%
16	Local Industrial Products and Services	3,699	4,439	1.4%	1.1%	0.8%
	Total Local Clusters	314,315	378,504	1.4%	1.5%	1.2%
	Total Traded Clusters	98,362	108,942	0.8%	0.8%	0.5%
	Total Resource-Dependent Clusters	317	414	2.1%	7.6%	4.4%
	Sub-Total All Clusters	412,994	487,859	1.3%	1.4%	1.1%

Source: DBEDT compilation based on EMSI data

**Appendix Table A-4. Comparison of Job Shares of Honolulu County, State, and Nation by Traded Clusters**

Cluster No.	Cluster Name	Share of 2014 Total Jobs			Share of 2014 Traded Jobs		
		County	State	U.S.	County	State	U.S.
1	Hospitality and Tourism	5.7%	8.1%	1.8%	25.7%	33.2%	7.1%
2	Transportation and Logistics	2.5%	2.1%	1.0%	11.1%	8.6%	3.9%
3	Business Services	3.6%	3.2%	5.1%	16.3%	13.0%	20.2%
4	Education and Knowledge Creation	2.6%	2.2%	2.8%	11.7%	9.1%	11.1%
5	Distribution Services	0.8%	0.8%	1.0%	3.8%	3.3%	4.0%
6	Entertainment	1.2%	1.0%	0.6%	5.2%	4.2%	2.5%
7	Financial Services	2.6%	2.3%	3.6%	11.8%	9.5%	14.3%
8	Processed Food	0.8%	0.9%	0.7%	3.8%	3.5%	2.8%
9	Sporting, Recreational and Children's Goods	0.1%	0.1%	0.1%	0.6%	0.5%	0.5%
10	Fishing and Fishing Products	0.1%	0.2%	0.1%	0.6%	0.9%	0.2%
11	Publishing and Printing	0.3%	0.3%	0.6%	1.3%	1.1%	2.5%
12	Agricultural Products	0.6%	2.0%	2.0%	2.7%	8.2%	7.9%
13	Information Technology	0.2%	0.2%	0.6%	1.0%	0.8%	2.4%
14	Jewelry and Precious Metals	0.2%	0.2%	0.1%	0.9%	0.8%	0.3%
15	Oil and Gas Products and Services	0.2%	0.2%	0.1%	0.8%	0.6%	0.5%
16-33	Other Traded Clusters	0.6%	0.6%	5.0%	2.9%	2.6%	19.7%
	Total Traded Clusters	22.3%	24.4%	25.4%	100.0%	100.0%	100.0%
	Total Private Sector Jobs	100.0%	100.0%	100.0%			

Source: DBEDT compilation based on EMSI data

**Appendix Table A-5. Comparison of Job Shares of Honolulu County, State, and Nation by Local Clusters**

Cluster No.	Cluster Name	Share of 2014 Total Jobs			Share of 2014 Local Jobs		
		County	State	U.S.	County	State	U.S.
1	Local Hospitality Establishments	10.8%	11.3%	8.5%	14.0%	15.0%	11.5%
2	Local Health Services	10.8%	9.8%	11.7%	14.0%	12.9%	15.8%
3	Local Commercial Services	13.6%	12.6%	12.2%	17.6%	16.6%	16.6%
4	Local Real Estate, Construction, and Development	13.2%	13.5%	12.1%	17.0%	17.8%	16.4%
5	Local Retail Clothing and Accessories	4.3%	4.2%	3.4%	5.6%	5.6%	4.6%
6	Local Community and Civic Organizations	3.2%	3.0%	2.9%	4.1%	4.0%	4.0%
7	Local Food and Beverage Processing and Distribution	4.1%	4.2%	3.6%	5.3%	5.5%	4.8%
8	Local Motor Vehicle Products and Services	2.2%	2.1%	2.9%	2.8%	2.8%	3.9%
9	Local Financial Services	2.2%	1.9%	2.6%	2.9%	2.5%	3.5%
10	Local Education and Training	1.9%	1.7%	0.9%	2.4%	2.2%	1.2%
11	Local Personal Services (Non-Medical)	5.3%	5.2%	4.9%	6.8%	6.9%	6.7%
12	Local Entertainment and Media	2.1%	2.3%	2.2%	2.7%	3.0%	3.0%
13	Local Logistical Services	1.4%	1.3%	2.4%	1.8%	1.8%	3.3%
14	Local Household Goods and Services	0.9%	0.9%	1.1%	1.1%	1.2%	1.5%
15	Local Utilities	0.8%	0.8%	0.9%	1.1%	1.1%	1.2%
16	Local Industrial Products and Services	0.9%	0.7%	1.4%	1.2%	1.0%	1.9%
	Total Local Clusters	77.6%	75.4%	73.7%	100.0%	100.0%	100.0%
	Total Traded Clusters	22.3%	24.4%	25.4%			
	Total Resource-Dependent Clusters	0.1%	0.2%	0.9%			
	Sub-Total All Clusters	100.0%	100.0%	100.0%			

Source: DBEDT compilation based on EMSI data

**Appendix Table A-6. Comparison of Job Growth of Hawaii County, State, and Nation by Traded Clusters**

Cluster No.	Cluster Name	Hawaii County Jobs in		Avg. Ann. Job Growth 2001-2014		
		2001	2014	County	State	U.S.
1	Hospitality and Tourism	8,549	7,894	-0.6%	0.2%	0.3%
2	Transportation and Logistics	726	804	0.8%	-0.3%	0.0%
3	Business Services	1,357	1,647	1.5%	1.9%	1.0%
4	Education and Knowledge Creation	859	1,459	4.2%	2.5%	3.1%
5	Distribution Services	496	767	3.4%	0.9%	1.2%
6	Entertainment	506	533	0.4%	1.5%	0.3%
7	Financial Services	734	1,401	5.1%	3.7%	4.3%
8	Processed Food	978	898	-0.7%	-0.1%	0.0%
9	Sporting, Recreational and Children's Goods	49	73	3.2%	3.4%	-1.7%
10	Fishing and Fishing Products	516	490	-0.4%	-1.7%	-1.4%
11	Publishing and Printing	204	171	-1.4%	-2.4%	-3.3%
12	Agricultural Products	5,788	7,043	1.5%	0.3%	-0.4%
13	Information Technology	47	81	4.2%	0.8%	1.9%
14	Jewelry and Precious Metals	53	129	7.0%	0.5%	-0.2%
15	Oil and Gas Products and Services	56	95	4.2%	2.7%	-0.6%
16-33	Other Traded Clusters	467	642	2.5%	-2.2%	-2.0%
	Total Traded Clusters	21,384	24,125	0.9%	0.8%	0.5%
	Total Private Sector Jobs	67,564	85,565	1.8%	1.4%	1.1%

Source: DBEDT compilation based on EMSI data

**Appendix Table A-7. Comparison of Job Growth of Hawaii County, State, and Nation by Local Clusters**

Cluster No.	Cluster Name	Hawaii County Jobs in		Avg. Ann. Job Growth 2001-2014		
		2001	2014	County	State	U.S.
1	Local Hospitality Establishments	6,151	8,727	2.7%	1.3%	2.0%
2	Local Health Services	5,088	7,244	2.8%	2.1%	2.6%
3	Local Commercial Services	5,879	9,242	3.5%	2.0%	1.0%
4	Local Real Estate, Construction, and Development	9,925	12,536	1.8%	2.4%	1.1%
5	Local Retail Clothing and Accessories	2,893	3,352	1.1%	0.9%	0.7%
6	Local Community and Civic Organizations	1,121	2,287	5.6%	1.5%	0.8%
7	Local Food and Beverage Processing and Distribution	3,387	4,188	1.6%	0.8%	0.3%
8	Local Motor Vehicle Products and Services	1,992	1,932	-0.2%	-0.3%	0.1%
9	Local Financial Services	832	971	1.2%	0.1%	0.0%
10	Local Education and Training	987	1,289	2.1%	1.1%	1.5%
11	Local Personal Services (Non-Medical)	3,709	4,271	1.1%	1.8%	1.9%
12	Local Entertainment and Media	1,520	1,919	1.8%	0.1%	0.4%
13	Local Logistical Services	783	1,213	3.4%	1.7%	1.4%
14	Local Household Goods and Services	871	818	-0.5%	-0.6%	-0.9%
15	Local Utilities	628	797	1.9%	2.5%	0.1%
16	Local Industrial Products and Services	357	355	-0.1%	1.1%	0.8%
	Total Local Clusters	46,124	61,140	2.2%	1.5%	1.2%
	Total Traded Clusters	21,384	24,125	0.9%	0.8%	0.5%
	Total Resource-Dependent Clusters	57	299	13.7%	7.6%	4.4%
	Sub-Total All Clusters	67,564	85,565	1.8%	1.4%	1.1%

Source: DBEDT compilation based on EMSI data

**Appendix Table A-8. Comparison of Job Shares of Hawaii County, State, and Nation by Traded Clusters**

Cluster No.	Cluster Name	Share of 2014 Total Jobs			Share of 2014 Traded Jobs		
		County	State	U.S.	County	State	U.S.
1	Hospitality and Tourism	9.2%	8.1%	1.8%	32.7%	33.2%	7.1%
2	Transportation and Logistics	0.9%	2.1%	1.0%	3.3%	8.6%	3.9%
3	Business Services	1.9%	3.2%	5.1%	6.8%	13.0%	20.2%
4	Education and Knowledge Creation	1.7%	2.2%	2.8%	6.0%	9.1%	11.1%
5	Distribution Services	0.9%	0.8%	1.0%	3.2%	3.3%	4.0%
6	Entertainment	0.6%	1.0%	0.6%	2.2%	4.2%	2.5%
7	Financial Services	1.6%	2.3%	3.6%	5.8%	9.5%	14.3%
8	Processed Food	1.0%	0.9%	0.7%	3.7%	3.5%	2.8%
9	Sporting, Recreational and Children's Goods	0.1%	0.1%	0.1%	0.3%	0.5%	0.5%
10	Fishing and Fishing Products	0.6%	0.2%	0.1%	2.0%	0.9%	0.2%
11	Publishing and Printing	0.2%	0.3%	0.6%	0.7%	1.1%	2.5%
12	Agricultural Products	8.2%	2.0%	2.0%	29.2%	8.2%	7.9%
13	Information Technology	0.1%	0.2%	0.6%	0.3%	0.8%	2.4%
14	Jewelry and Precious Metals	0.2%	0.2%	0.1%	0.5%	0.8%	0.3%
15	Oil and Gas Products and Services	0.1%	0.2%	0.1%	0.4%	0.6%	0.5%
16-33	Other Traded Clusters	0.8%	0.6%	5.0%	2.7%	2.6%	19.7%
	Total Traded Clusters	28.2%	24.4%	25.4%	100.0%	100.0%	100.0%
	Total Private Sector Jobs	100.0%	100.0%	100.0%			

Source: DBEDT compilation based on EMSI data

**Appendix Table A-9. Comparison of Job Shares of Hawaii County, State, and Nation by Local Clusters**

Cluster No.	Cluster Name	Share of 2014 Total Jobs			Share of 2014 Local Jobs		
		County	State	U.S.	County	State	U.S.
1	Local Hospitality Establishments	10.2%	11.3%	8.5%	14.3%	15.0%	11.5%
2	Local Health Services	8.5%	9.8%	11.7%	11.8%	12.9%	15.8%
3	Local Commercial Services	10.8%	12.6%	12.2%	15.1%	16.6%	16.6%
4	Local Real Estate, Construction, and Development	14.7%	13.5%	12.1%	20.5%	17.8%	16.4%
5	Local Retail Clothing and Accessories	3.9%	4.2%	3.4%	5.5%	5.6%	4.6%
6	Local Community and Civic Organizations	2.7%	3.0%	2.9%	3.7%	4.0%	4.0%
7	Local Food and Beverage Processing and Distribution	4.9%	4.2%	3.6%	6.8%	5.5%	4.8%
8	Local Motor Vehicle Products and Services	2.3%	2.1%	2.9%	3.2%	2.8%	3.9%
9	Local Financial Services	1.1%	1.9%	2.6%	1.6%	2.5%	3.5%
10	Local Education and Training	1.5%	1.7%	0.9%	2.1%	2.2%	1.2%
11	Local Personal Services (Non-Medical)	5.0%	5.2%	4.9%	7.0%	6.9%	6.7%
12	Local Entertainment and Media	2.2%	2.3%	2.2%	3.1%	3.0%	3.0%
13	Local Logistical Services	1.4%	1.3%	2.4%	2.0%	1.8%	3.3%
14	Local Household Goods and Services	1.0%	0.9%	1.1%	1.3%	1.2%	1.5%
15	Local Utilities	0.9%	0.8%	0.9%	1.3%	1.1%	1.2%
16	Local Industrial Products and Services	0.4%	0.7%	1.4%	0.6%	1.0%	1.9%
	Total Local Clusters	71.5%	75.4%	73.7%	100.0%	100.0%	100.0%
	Total Traded Clusters	28.2%	24.4%	25.4%			
	Total Resource-Dependent Clusters	0.3%	0.2%	0.9%			
	Sub-Total All Clusters	100.0%	100.0%	100.0%			

Source: DBEDT compilation based on EMSI data

**Appendix Table A-10. Comparison of Job Growth of Maui County, State, and Nation by Traded Clusters**

Cluster No.	Cluster Name	Maui Jobs in		Avg. Ann. Job Growth 2001-2014		
		2001	2014	County	State	U.S.
1	Hospitality and Tourism	14,238	15,345	0.6%	0.2%	0.3%
2	Transportation and Logistics	1,022	1,409	2.5%	-0.3%	0.0%
3	Business Services	1,175	1,763	3.2%	1.9%	1.0%
4	Education and Knowledge Creation	649	798	1.6%	2.5%	3.1%
5	Distribution Services	549	621	0.9%	0.9%	1.2%
6	Entertainment	822	692	-1.3%	1.5%	0.3%
7	Financial Services	760	1,448	5.1%	3.7%	4.3%
8	Processed Food	1,119	782	-2.7%	-0.1%	0.0%
9	Sporting, Recreational and Children's Goods	98	130	2.2%	3.4%	-1.7%
10	Fishing and Fishing Products	242	223	-0.6%	-1.7%	-1.4%
11	Publishing and Printing	139	181	2.0%	-2.4%	-3.3%
12	Agricultural Products	2,976	2,757	-0.6%	0.3%	-0.4%
13	Information Technology	69	109	3.5%	0.8%	1.9%
14	Jewelry and Precious Metals	126	186	3.0%	0.5%	-0.2%
15	Oil and Gas Products and Services	53	124	6.7%	2.7%	-0.6%
16-33	Other Traded Clusters	447	482	0.6%	-2.2%	-2.0%
	Total Traded Clusters	24,486	27,050	0.8%	0.8%	0.5%
	Total Private Sector Jobs	75,951	90,679	1.4%	1.4%	1.1%

Source: DBEDT compilation based on EMSI data

**Appendix Table A-11. Comparison of Job Growth of Maui County, State, and Nation by Local Clusters**

Cluster No.	Cluster Name	Maui Jobs in		Avg. Ann. Job Growth 2001-2014		
		2001	2014	County	State	U.S.
1	Local Hospitality Establishments	10,382	12,149	1.2%	1.3%	2.0%
2	Local Health Services	4,631	5,626	1.5%	2.1%	2.6%
3	Local Commercial Services	6,443	8,685	2.3%	2.0%	1.0%
4	Local Real Estate, Construction, and Development	9,695	12,677	2.1%	2.4%	1.1%
5	Local Retail Clothing and Accessories	3,308	3,596	0.6%	0.9%	0.7%
6	Local Community and Civic Organizations	1,992	2,283	1.1%	1.5%	0.8%
7	Local Food and Beverage Processing and Distribution	3,023	3,729	1.6%	0.8%	0.3%
8	Local Motor Vehicle Products and Services	1,812	1,673	-0.6%	-0.3%	0.1%
9	Local Financial Services	664	709	0.5%	0.1%	0.0%
10	Local Education and Training	691	1,239	4.6%	1.1%	1.5%
11	Local Personal Services (Non-Medical)	3,471	4,850	2.6%	1.8%	1.9%
12	Local Entertainment and Media	2,602	3,085	1.3%	0.1%	0.4%
13	Local Logistical Services	936	1,099	1.2%	1.7%	1.4%
14	Local Household Goods and Services	893	788	-1.0%	-0.6%	-0.9%
15	Local Utilities	568	764	2.3%	2.5%	0.1%
16	Local Industrial Products and Services	326	359	0.7%	1.1%	0.8%
	Total Local Clusters	51,439	63,309	1.6%	1.5%	1.2%
	Total Traded Clusters	24,486	27,050	0.8%	0.8%	0.5%
	Total Resource-Dependent Clusters	26	320	21.2%	7.6%	4.4%
	Sub-Total All Clusters	75,951	90,679	1.4%	1.4%	1.1%

Source: DBEDT compilation based on EMSI data

**Appendix Table A-12. Comparison of Job Shares of Maui County, State, and Nation by Traded Clusters**

Cluster No.	Cluster Name	Share of 2014 Total Jobs			Share of 2014 Traded Jobs		
		County	State	U.S.	County	State	U.S.
1	Hospitality and Tourism	16.9%	8.1%	1.8%	56.7%	33.2%	7.1%
2	Transportation and Logistics	1.6%	2.1%	1.0%	5.2%	8.6%	3.9%
3	Business Services	1.9%	3.2%	5.1%	6.5%	13.0%	20.2%
4	Education and Knowledge Creation	0.9%	2.2%	2.8%	3.0%	9.1%	11.1%
5	Distribution Services	0.7%	0.8%	1.0%	2.3%	3.3%	4.0%
6	Entertainment	0.8%	1.0%	0.6%	2.6%	4.2%	2.5%
7	Financial Services	1.6%	2.3%	3.6%	5.4%	9.5%	14.3%
8	Processed Food	0.9%	0.9%	0.7%	2.9%	3.5%	2.8%
9	Sporting, Recreational and Children's Goods	0.1%	0.1%	0.1%	0.5%	0.5%	0.5%
10	Fishing and Fishing Products	0.2%	0.2%	0.1%	0.8%	0.9%	0.2%
11	Publishing and Printing	0.2%	0.3%	0.6%	0.7%	1.1%	2.5%
12	Agricultural Products	3.0%	2.0%	2.0%	10.2%	8.2%	7.9%
13	Information Technology	0.1%	0.2%	0.6%	0.4%	0.8%	2.4%
14	Jewelry and Precious Metals	0.2%	0.2%	0.1%	0.7%	0.8%	0.3%
15	Oil and Gas Products and Services	0.1%	0.2%	0.1%	0.5%	0.6%	0.5%
16-33	Other Traded Clusters	0.5%	0.6%	5.0%	1.8%	2.6%	19.7%
	Total Traded Clusters	29.8%	24.4%	25.4%	100.0%	100.0%	100.0%
	Total Private Sector Jobs	100.0%	100.0%	100.0%			

Source: DBEDT compilation based on EMSI data

**Appendix Table A-13. Comparison of Job Shares of Maui County, State, and Nation by Local Clusters**

Cluster No.	Cluster Name	Share of 2014 Total Jobs			Share of 2014 Local Jobs		
		County	State	U.S.	County	State	U.S.
1	Local Hospitality Establishments	13.4%	11.3%	8.5%	19.2%	15.0%	11.5%
2	Local Health Services	6.2%	9.8%	11.7%	8.9%	12.9%	15.8%
3	Local Commercial Services	9.6%	12.6%	12.2%	13.7%	16.6%	16.6%
4	Local Real Estate, Construction, and Development	14.0%	13.5%	12.1%	20.0%	17.8%	16.4%
5	Local Retail Clothing and Accessories	4.0%	4.2%	3.4%	5.7%	5.6%	4.6%
6	Local Community and Civic Organizations	2.5%	3.0%	2.9%	3.6%	4.0%	4.0%
7	Local Food and Beverage Processing and Distribution	4.1%	4.2%	3.6%	5.9%	5.5%	4.8%
8	Local Motor Vehicle Products and Services	1.8%	2.1%	2.9%	2.6%	2.8%	3.9%
9	Local Financial Services	0.8%	1.9%	2.6%	1.1%	2.5%	3.5%
10	Local Education and Training	1.4%	1.7%	0.9%	2.0%	2.2%	1.2%
11	Local Personal Services (Non-Medical)	5.3%	5.2%	4.9%	7.7%	6.9%	6.7%
12	Local Entertainment and Media	3.4%	2.3%	2.2%	4.9%	3.0%	3.0%
13	Local Logistical Services	1.2%	1.3%	2.4%	1.7%	1.8%	3.3%
14	Local Household Goods and Services	0.9%	0.9%	1.1%	1.2%	1.2%	1.5%
15	Local Utilities	0.8%	0.8%	0.9%	1.2%	1.1%	1.2%
16	Local Industrial Products and Services	0.4%	0.7%	1.4%	0.6%	1.0%	1.9%
	Total Local Clusters	69.8%	75.4%	73.7%	100.0%	100.0%	100.0%
	Total Traded Clusters	29.8%	24.4%	25.4%			
	Total Resource-Dependent Clusters	0.4%	0.2%	0.9%			
	Sub-Total All Clusters	100.0%	100.0%	100.0%			

Source: DBEDT compilation based on EMSI data

**Appendix Table A-14. Comparison of Job Growth of Kauai County, State, and Nation by Traded Clusters**

Cluster No.	Cluster Name	Kauai Jobs in		Avg. Ann. Job Growth 2001-2014		
		2001	2014	County	State	U.S.
1	Hospitality and Tourism	5,146	5,545	0.6%	0.2%	0.3%
2	Transportation and Logistics	427	436	0.2%	-0.3%	0.0%
3	Business Services	944	1,120	1.3%	1.9%	1.0%
4	Education and Knowledge Creation	161	526	9.5%	2.5%	3.1%
5	Distribution Services	175	242	2.5%	0.9%	1.2%
6	Entertainment	426	402	-0.5%	1.5%	0.3%
7	Financial Services	378	582	3.4%	3.7%	4.3%
8	Processed Food	213	210	-0.1%	-0.1%	0.0%
9	Sporting, Recreational and Children's Goods	4	34	17.9%	3.4%	-1.7%
10	Fishing and Fishing Products	155	149	-0.3%	-1.7%	-1.4%
11	Publishing and Printing	80	79	-0.1%	-2.4%	-3.3%
12	Agricultural Products	1,381	1,399	0.1%	0.3%	-0.4%
13	Information Technology	26	40	3.4%	0.8%	1.9%
14	Jewelry and Precious Metals	45	82	4.8%	0.5%	-0.2%
15	Oil and Gas Products and Services	19	43	6.4%	2.7%	-0.6%
16-33	Other Traded Clusters	180	160	-0.9%	-2.2%	-2.0%
	Total Traded Clusters	9,760	11,047	1.0%	0.8%	0.5%
	Total Private Sector Jobs	32,078	37,965	1.3%	1.4%	1.1%

Source: DBEDT compilation based on EMSI data

**Appendix Table A-15. Comparison of Job Growth of Kauai County, State, and Nation by Local Clusters**

Cluster No.	Cluster Name	Kauai Jobs in		Avg. Ann. Job Growth 2001-2014		
		2001	2014	County	State	U.S.
1	Local Hospitality Establishments	4,273	5,601	2.1%	1.3%	2.0%
2	Local Health Services	2,525	2,785	0.8%	2.1%	2.6%
3	Local Commercial Services	2,900	3,556	1.6%	2.0%	1.0%
4	Local Real Estate, Construction, and Development	4,172	5,114	1.6%	2.4%	1.1%
5	Local Retail Clothing and Accessories	1,509	1,600	0.5%	0.9%	0.7%
6	Local Community and Civic Organizations	678	929	2.5%	1.5%	0.8%
7	Local Food and Beverage Processing and Distribution	1,537	1,568	0.2%	0.8%	0.3%
8	Local Motor Vehicle Products and Services	710	670	-0.4%	-0.3%	0.1%
9	Local Financial Services	329	567	4.3%	0.1%	0.0%
10	Local Education and Training	196	192	-0.2%	1.1%	1.5%
11	Local Personal Services (Non-Medical)	1,492	2,001	2.3%	1.8%	1.9%
12	Local Entertainment and Media	808	902	0.8%	0.1%	0.4%
13	Local Logistical Services	314	363	1.1%	1.7%	1.4%
14	Local Household Goods and Services	416	399	-0.3%	-0.6%	-0.9%
15	Local Utilities	205	303	3.1%	2.5%	0.1%
16	Local Industrial Products and Services	143	78	-4.6%	1.1%	0.8%
	Total Local Clusters	22,207	26,627	1.4%	1.5%	1.2%
	Total Traded Clusters	9,760	11,047	1.0%	0.8%	0.5%
	Total Resource-Dependent Clusters	111	290	7.6%	7.6%	4.4%
	Sub-Total All Clusters	32,078	37,965	1.3%	1.4%	1.1%

Source: DBEDT compilation based on EMSI data

**Appendix Table A-16. Comparison of Job Shares of Kauai County, State, and Nation by Traded Clusters**

Cluster No.	Cluster Name	Share of 2014 Total Jobs			Share of 2014 Traded Jobs		
		County	State	U.S.	County	State	U.S.
1	Hospitality and Tourism	14.6%	8.1%	1.8%	50.2%	33.2%	7.1%
2	Transportation and Logistics	1.1%	2.1%	1.0%	3.9%	8.6%	3.9%
3	Business Services	2.9%	3.2%	5.1%	10.1%	13.0%	20.2%
4	Education and Knowledge Creation	1.4%	2.2%	2.8%	4.8%	9.1%	11.1%
5	Distribution Services	0.6%	0.8%	1.0%	2.2%	3.3%	4.0%
6	Entertainment	1.1%	1.0%	0.6%	3.6%	4.2%	2.5%
7	Financial Services	1.5%	2.3%	3.6%	5.3%	9.5%	14.3%
8	Processed Food	0.6%	0.9%	0.7%	1.9%	3.5%	2.8%
9	Sporting, Recreational and Children's Goods	0.1%	0.1%	0.1%	0.3%	0.5%	0.5%
10	Fishing and Fishing Products	0.4%	0.2%	0.1%	1.4%	0.9%	0.2%
11	Publishing and Printing	0.2%	0.3%	0.6%	0.7%	1.1%	2.5%
12	Agricultural Products	3.7%	2.0%	2.0%	12.7%	8.2%	7.9%
13	Information Technology	0.1%	0.2%	0.6%	0.4%	0.8%	2.4%
14	Jewelry and Precious Metals	0.2%	0.2%	0.1%	0.7%	0.8%	0.3%
15	Oil and Gas Products and Services	0.1%	0.2%	0.1%	0.4%	0.6%	0.5%
16-33	Other Traded Clusters	0.4%	0.6%	5.0%	1.4%	2.6%	19.7%
	Total Traded Clusters	29.1%	24.4%	25.4%	100.0%	100.0%	100.0%
	Total Private Sector Jobs	100.0%	100.0%	100.0%			

Source: DBEDT compilation based on EMSI data

**Appendix Table A-17. Comparison of Job Shares of Kauai County, State, and Nation by Local Clusters**

Cluster No.	Cluster Name	Share of 2014 Total Jobs			Share of 2014 Local Jobs		
		County	State	U.S.	County	State	U.S.
1	Local Hospitality Establishments	14.8%	11.3%	8.5%	21.0%	15.0%	11.5%
2	Local Health Services	7.3%	9.8%	11.7%	10.5%	12.9%	15.8%
3	Local Commercial Services	9.4%	12.6%	12.2%	13.4%	16.6%	16.6%
4	Local Real Estate, Construction, and Development	13.5%	13.5%	12.1%	19.2%	17.8%	16.4%
5	Local Retail Clothing and Accessories	4.2%	4.2%	3.4%	6.0%	5.6%	4.6%
6	Local Community and Civic Organizations	2.4%	3.0%	2.9%	3.5%	4.0%	4.0%
7	Local Food and Beverage Processing and Distribution	4.1%	4.2%	3.6%	5.9%	5.5%	4.8%
8	Local Motor Vehicle Products and Services	1.8%	2.1%	2.9%	2.5%	2.8%	3.9%
9	Local Financial Services	1.5%	1.9%	2.6%	2.1%	2.5%	3.5%
10	Local Education and Training	0.5%	1.7%	0.9%	0.7%	2.2%	1.2%
11	Local Personal Services (Non-Medical)	5.3%	5.2%	4.9%	7.5%	6.9%	6.7%
12	Local Entertainment and Media	2.4%	2.3%	2.2%	3.4%	3.0%	3.0%
13	Local Logistical Services	1.0%	1.3%	2.4%	1.4%	1.8%	3.3%
14	Local Household Goods and Services	1.1%	0.9%	1.1%	1.5%	1.2%	1.5%
15	Local Utilities	0.8%	0.8%	0.9%	1.1%	1.1%	1.2%
16	Local Industrial Products and Services	0.2%	0.7%	1.4%	0.3%	1.0%	1.9%
	Total Local Clusters	70.1%	75.4%	73.7%	100.0%	100.0%	100.0%
	Total Traded Clusters	29.1%	24.4%	25.4%			
	Total Resource-Dependent Clusters	0.8%	0.2%	0.9%			
	Sub-Total All Clusters	100.0%	100.0%	100.0%			

Source: DBEDT compilation based on EMSI data

