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December 20, 2021

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

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

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

For your information and consideration, I am transmitting a copy of the report on *Hawaii's Targeted & Emerging Industries, 2021 Update Report*, as required by Sections §201-16 and §201-19, Hawaii Revised Statutes. In accordance with Section 93-16, Hawaii Revised Statutes, I am also informing you that the report may be viewed electronically at: <http://dbedt.hawaii.gov/overview/annual-reports-reports-to-the-legislature/>.

With aloha,

Mike McCartney

Enclosure

c: Legislative Reference Bureau



Hawaii's Targeted & Emerging Industries

2021 Update Report



Department of Business, Economic Development and Tourism

December 2021

In accordance with §201-16 and §201-19, Hawaii Revised Statutes, this publication was produced by the Research and Economic Analysis Division (READ) of the Department of Business, Economic Development & Tourism (DBEDT), State of Hawaii which is responsible for its content and presentation.



The DBEDT Research and Economic Analysis Division wishes to thank the many agencies stakeholders who have provided valuable input into the development of the Targeted Industry Portfolio and performance measurements.

Hawaii Department of Business, Economic Development & Tourism
December 2021

TABLE OF CONTENTS

INTRODUCTION	1
Defining Targeted Industries	1
The Targeted Industry Portfolio.....	1
Measuring Targeted Industries	3
Data Sources	4
TECHNOLOGY SECTOR.....	5
Size & Growth	5
Competitive Metrics.....	7
Overall Performance	9
CREATIVE SECTOR	10
Size & Growth	10
Competitive Metrics.....	12
Overall Performance	13
AGRIBUSINESS.....	14
Size & Growth	14
Competitive Metrics.....	15
Overall Performance	16
HEALTH & WELLNESS.....	17
Size & Growth	17
Competitive Metrics.....	19
Overall Performance	19
EDUCATION	20
Size & Growth	20
Competitive Metrics.....	21
Overall Performance	22
OTHER TARGETED ACTIVITIES	22
Size & Growth	23
Competitive Metrics.....	24
Overall Performance	25
PERFORMANCE BY COUNTY.....	25
City & County of Honolulu	27
Hawaii County	30
Maui County	33

Kauai County	36
CONCLUSIONS.....	39

EXECUTIVE SUMMARY

In 2009 DBEDT Research compiled and published a performance review of Hawaii's targeted industry portfolio.¹ The portfolio consisted of several dozen economic activities that had been suggested, proposed or actively promoted over the past several decades as potential new growth industries. The purpose of the review was to better define those activities for measurement purposes and to find out which had performed best in recent years. This report is the 12th update of the 2009 report to cover the 2010-2020 period.

The activities were grouped into four performance categories. *Base-growth* activities rated the highest on the basis of State and national performance and were more concentrated in Hawaii's economy than the nation overall. Industries in this category had developed a competitive national advantage and were probably exporting some proportion of industry output. *Emerging* activities also rated high on performance but had not reached a level of concentration that would as yet suggest a competitive advantage. *Transitioning* activities in the portfolio were showing growth in jobs over the measurement period (and in some cases impressive growth), but were outperformed by the same activity nationally, suggesting that Hawaii was not as competitive. Finally, *declining* activities lost jobs over the measurement period and in most cases (but not all) were less competitive than their national counterpart. This update report extends the performance measures through 2020. Table 1 provides a comprehensive overview of performance among activities in the Targeted Industry Portfolio over the 2010 to 2020 period. In the body of this report the activities will be examined in detail by their major sector groups such as technology, creative industries, and others. Key observations from the updated examination of the portfolio are:

- Eight activities were high performing, with positive job growth combined with a job growth rate that was higher than the nation for the same activity. Among those were Cultural Activities, Pharmacies, Specialty Health Care Services, Engineering and Related Services, Alternative Power Generation, Hospitals & Nursing Facilities, Agriculture Support Services, and Agriculture Packaging & Warehousing.
- The high-performing activities in the targeted industry portfolio (Base-growth and Emerging) accounted for about 49,917 jobs or 6.3% of total civilian jobs in 2020. However, between 2010 and 2020 those activities generated 77.5% of the total gain in jobs for the civilian economy, or about 10,658 new jobs.
- Among the best performing activities, Cultural Activities, and Specialty Health Care Services grew jobs over 4% per year during the 2010 to 2020 period.
- Adjusting for overlaps, total targeted jobs reached 156,476 jobs in 2020, an increase of 13,958 jobs from 2010.

¹ *Benchmarking Hawaii's Emerging Industries*, DBEDT, December 2009, http://dbedt.hawaii.gov/economic/reports_studies/emerging-industries/

Table 1. Overall Performance of the Targeted Industry Portfolio

INDUSTRY GROUPS	Jobs in Hawaii		Avg. Ann. Job Growth (2010-2020)		Concentration of Industry in Hawaii Compared to U.S.		Avg. Annual Earnings (2020)	
	2020	Change 10-20	HI	U.S.	2020	% Point Change 10-20	HI	U.S.
TOTAL CIVILIAN JOBS	793,269	13,747	0.2%	1.3%	100%	0.00%	\$61,850	\$66,114
TOTAL TARGETED JOBS WITHOUT OVERLAP	156,476	13,958	0.9%	1.6%	85%	3.88%	\$65,822	\$80,210
Base-Growth Activities								
Cultural Activities	2,538	881	4.4%	1.6%	322%	101%	\$68,698	\$66,365
Pharmacies	3,578	207	0.6%	-0.6%	129%	26%	\$51,969	\$56,908
Specialty Health Care Services	13,358	5,926	6.0%	3.6%	110%	32%	\$66,595	\$53,602
Engineering and Related Serv.	6,845	900	1.4%	1.3%	100%	11%	\$109,851	\$105,660
Emerging Activities								
Alternative Power Generation	255	58	2.6%	-0.6%	95%	33%	\$124,837	\$182,199
Hospitals & Nursing Facilities	21,241	2,041	1.0%	0.4%	79%	12%	\$93,389	\$76,865
Agric. Support Services	1,888	601	3.9%	2.6%	69%	14%	\$53,868	\$57,955
Agric. Packaging & Warehsg	214	45	2.4%	1.3%	28%	5%	\$56,333	\$63,512
Transitioning Activities								
Farm Production	13,400	91	0.1%	0.1%	102%	10%	\$34,644	\$37,211
Art Education	744	157	2.4%	2.6%	69%	6%	\$16,725	\$15,912
Technical Consulting Services	5,750	1,778	3.8%	4.1%	72%	5%	\$65,906	\$90,618
Specialty Education	5,489	827	1.6%	2.0%	96%	6%	\$26,715	\$30,569
Technology Equipment Distr.	860	53	0.6%	1.2%	37%	2%	\$123,768	\$141,729
Business Consulting	6,227	1,632	3.1%	3.8%	67%	2%	\$65,441	\$90,227
Marketing, Photography & Related	12,049	1,820	1.7%	2.4%	99%	3%	\$36,874	\$58,950
Engineering and Research & Development	5,906	294	0.5%	1.3%	85%	2%	\$114,906	\$123,248
Health Practitioners	22,441	1,659	0.8%	1.6%	100%	3%	\$92,808	\$88,461
Design Services	2,094	207	1.0%	2.2%	98%	0%	\$35,829	\$49,018
Medical and Diagnostic Testing	1,794	92	0.5%	1.8%	145%	-3%	\$74,964	\$83,045
Agric. Processing	6,006	86	0.1%	1.7%	83%	-4%	\$50,706	\$64,551
Performing and Creative Arts	10,171	1,331	1.4%	3.1%	122%	-8%	\$21,360	\$27,170
Computer Services and Software Publishers	5,023	406	0.8%	4.3%	42%	-11%	\$104,725	\$145,555

Table 1. Overall Performance of the Targeted Industry Portfolio (Cont.)

INDUSTRY GROUPS	Jobs in Hawaii		Avg. Ann. Job Growth (2010-2020)		Concentration of Industry in Hawaii Compared to U.S.		Avg. Annual Earnings (2020)	
	2020	Change 10-20	HI	U.S.	% Point		HI	U.S.
					2020	Change 10-20		
Declining Activities								
Information & Telecom Tech.	4,946	-50	-0.1%	2.5%	56%	-9%	\$98,886	\$155,944
Architecture	1,963	-62	-0.3%	1.3%	142%	-7%	\$90,229	\$84,151
Higher Education	5,251	-239	-0.4%	0.7%	65%	0%	\$35,245	\$60,046
Computer Sys. Design & Related	6,006	-407	-0.7%	3.5%	55%	-20%	\$98,130	\$132,557
Fishing, Forestry & Hunting	1,595	-117	-0.7%	-0.4%	358%	28%	\$13,723	\$36,240
Music	918	-90	-0.9%	2.0%	112%	-23%	\$25,468	\$39,893
Radio and Television Broadcasting	972	-166	-1.6%	-0.2%	96%	-3%	\$74,441	\$95,151
Chemical & Pharmaceutical Mfg	78	-15	-1.7%	1.2%	4%	-1%	\$89,007	\$149,076
Agric. Inputs	348	-79	-2.0%	0.7%	35%	-6%	\$66,694	\$78,885
Call Centers	265	-85	-2.7%	1.4%	13%	-5%	\$29,639	\$48,284
Other Technology Mfg	432	-146	-2.9%	0.5%	8%	-2%	\$77,858	\$124,289
Publishing & Information	1,623	-804	-3.9%	-0.1%	52%	-17%	\$53,471	\$154,088
Apparel	715	-354	-3.9%	-4.3%	154%	21%	\$24,928	\$48,038
R&D Services (exc. Biotech.)	1,245	-646	-4.1%	1.3%	53%	-30%	\$99,605	\$141,584
Film, TV, Video Production/Distrib	1,643	-927	-4.4%	-0.2%	107%	-40%	\$56,116	\$111,626
Biotechnology	375	-281	-5.4%	5.4%	38%	-62%	\$95,016	\$225,376

*The 1,794 jobs in this industry were allocated to both the Technology and Health and Wellness Sector.

Source: DBEDT based on data from Economic Modeling Specialists, Inc. (EMSI). The sum of the individual industries does not add up to the total due to adjusting for overlaps among sectors.

- About 89% of the high-performing activities had average annual earnings that exceeded \$66,500 in 2020. Alternative Power Generation had the highest average earnings at \$124,837. By comparison, the average earnings for the civilian economy in 2020 was \$61,850.
- Fourteen activities, which accounted for 97,955 jobs in 2020, fell into the Transitioning category. They gained jobs over the period but did not keep up with national growth for the same activities resulting in a loss of competitive national industry share. However, twelve of those activities grew faster in terms of jobs than the civilian economy as a whole.
- The positive side of the Transitioning activities in the portfolio was that they did contribute to job growth in the economy. They were also an important source of high paying jobs. About 49% of jobs in Transitioning category had average earnings over \$65,000 in 2020. The main concern of these activities was that they were not as competitive as the same activities at the national level.
- Sixteen activities in the portfolio fell into the Declining industry category as the result of net job losses for the 2010 to 2020 period. Notable among these were Film, TV, Video Production/Distribution, Publishing & Information, R&D Services (exc. Biotech.), Computer System Design & Related, Apparel, Biotechnology, Higher Education, Radio and Television Broadcasting, Other Technology Manufacturing, Fishing, Forestry & Hunting, Music, Agriculture Inputs, Call Centers, Architecture, Information & Telecom Technology, and Chemical & Pharmaceutical Manufacturing.

- Among the 16 declining industries, only five of them lost job at the U.S. level for the 2010 to 2020 period. They are Apparel, Fishing, Forestry & Hunting, Film, TV, Video Production/Distribution, Radio and Television Broadcasting, and Publishing & Information.
- Jobs in the Declining industry group totaled an estimated 28,376 in 2020 (3.6% of all civilian jobs), representing a loss of about 4,466 jobs from 2010. About 53% of the jobs in the Declining industry group had above average earnings in Hawaii.
- Declining industries are not necessarily dying activities. In some cases, like Publishing & Information activity, the technology for developing and delivering information is improving rapidly, and perhaps reducing the need for workers. In these cases, the declining activities may stabilize at some point and resume some growth as the economy expands. Finally, some Declining activities may be tied to other activities such as tourism and defense and may be reflecting the cycles of those industries, rather than independent local or export markets.

It is important to note that the measures and classifications used in the targeted industry portfolio are descriptive but not diagnostic. That is, the measures alone do not reveal why the industries performed as they did. They also do not reveal the role of these activities in the economy. It is not clear if the high performing industries are growing independently or are feeding off growth in other activities. It is also not clear which industries are devoting their output primarily to export as opposed to local consumption markets, although the measures of concentration help identify probable export candidates. The purpose of this performance assessment is to assist economic developers and policymakers to understand which targeted industries are achieving the expected potential and which are not.

INTRODUCTION

In 2009 in accordance with Chapter 201-16 Hawaii Revised Statutes, DBEDT Research and Economic Analysis Division reviewed the range of economic activities that have been suggested over the years as candidates for diversifying the State's economy. These activities have been labeled variously as *emerging*, *targeted* and *growth* industries. The activities ranged from technology specialties, to diversified agriculture and have been pursued by various stakeholders including state and local governments, business groups and community-based organizations.

The report of that review sought to improve the definition of the various activities that had been targeted for promotion in a way that would permit their performance to be measured. The result of the review was the construction of a targeted industry portfolio of around three dozen activities, and performance measures for 2002 to 2008. This is the 12th report that updates the review of targeted industry performance at the state level to 2020. In this study, the targeted industry performance at the county level is also examined.

Defining Targeted Industries

Act 148 (2007) directed DBEDT to identify and measure systematically the performance of *emerging* industries in Hawaii's economy. For the first report in 2009, more than a dozen major studies, reports and efforts were reviewed to construct a list of sectors, industries and activities that have been of interest over the last several decades. The activities were then defined for measurement purposes and criteria were established to identify those that could justifiably be called *emerging* industries.

For the purpose of this report, the term "targeted" simply means that at some point in the past an activity was of interest for its potential contribution to growth and diversification by agencies, organizations or stakeholders. These ranged from activities that had simply been suggested as having potential, to industries that had been actively pursued with public resources for their growth potential, like Biotechnology and the Film/TV industry.

Even if it appeared that an activity was no longer of significant development interest it still was included in the portfolio. The portfolio was made broadly inclusive and detailed so that many specific activities could be assessed for their contribution to economic growth and diversification over the years. Some industries in the portfolio will show exceptional performance and others will show relatively poor performance over the periods measured. This range permits us to focus on weaknesses in the portfolio as well as strengths.

The Targeted Industry Portfolio

Table 2 lists the industries of the portfolio. The portfolio industries have also been grouped into major areas of interest such as Technology, Creative and Agribusiness. A detailed description of each portfolio industry was presented in the 2009 report and readers are referred to that report for more detail. For most of these industry groups, definitions for measurement purposes have been adopted from previous studies, particularly for the technology sector, the creative sector, and health and wellness. Activities included in each sector are not necessarily mutually exclusive to each other. For example, a moderate overlap exists between the creative and technology sectors because of their mutually dependent relationship. The Medical Labs, Diagnostic and Imaging Centers group is included in both the Technology sector and the Health & Wellness sector.

Table 2. Targeted Industry Portfolio

TECHNOLOGY SECTOR	AGRIBUSINESS
Alternative Power Generation	Agriculture Inputs
Biotechnology	Agric. Packaging & Warehousing
Chemical & Pharmaceutical Manufacturing	Agriculture Processing
Computer Sys. Design & Related	Agriculture Support Services
Engineering and Related Serv.	Farm Production
Information & Telecom Tech.	Fishing, Forestry & Hunting
Medical Labs, Diagnostic and Imaging Centers	HEALTH & WELLNESS
Other Technology Manufacturing	Health Practitioners
R&D Services (exc. Biotech.)	Hospitals & Nursing Facilities
Technical Consulting Services	Medical Labs, Diagnostic and Imaging Centers
Technology Equipment Distr.	Pharmacies
CREATIVE SECTOR	Specialty Health Care Services
Art Education	EDUCATION (PRIVATE)
Architecture	Higher Education
Business Consulting	Specialty Education
Computer Services and Software Publishers	OTHER TARGETS
Cultural Activities	Apparel
Design Services	Call Centers
Engineering and Research & Development	
Film, TV, Video Production/Distribution	
Marketing, Photography & Related	
Music	
Performing and Creative Arts	
Publishing & Information	
Radio and Television Broadcasting	

Source: DBEDT

Measuring Targeted Industries

In this updated report, the industry groups of the targeted industry portfolio are presented by the major sectors shown in Table 2. The performance measures are the same as those developed for the 2009 report. However, they are presented in a slightly different way that will be clearer and intuitive to readers unfamiliar with economic performance measures.

One of the key performance measures is the change of jobs over time. While most industries show some decline in a recession, we would expect promising industries to show a net increase in jobs over the entire business cycle. The rate of job growth for each portfolio activity, relative to the rest of the state, has important implications for diversifying the state's economy. Activities that grow faster than the overall state economy would help increase economic diversification.

Another performance measure is Hawaii's competitiveness and concentration of activities compared to the nation overall. If the respective activity is growing faster in Hawaii than the nation, this suggests that the state has a competitive advantage in this activity. Also, if the activity has a greater employment concentration in the state than the nation (as measured by the percentage of total jobs), it is likely an activity in which Hawaii has a competitive advantage. A higher concentration (as measured by the percentage of total jobs) also suggests that the activity has matured to the point that it is likely exporting a portion of its output directly or indirectly.

The average earnings for workers in each activity were examined. Higher earnings generally come from high quality jobs. A relatively higher earnings average suggests that the activity is creating high quality jobs that can help keep Hawaii's highly educated youth in the state.

By combining these performance measures, we attempt to group the portfolio activities into four performance categories as in Table 3. A popular framework in the economic development research is the industry life cycle model. This model breaks down industries in the economy into four generalized stages. The first stage of the life cycle is usually called the emerging stage of an industry. This characterizes relatively new and rapidly growing activities that are usually serving new markets inside or outside the local economy. The second stage identifies base-growth industries that have passed through the emerging stage and have become strong, competitive sources of economic growth in the economy. As base-growth industries mature, they reach their full market potential and growth slows. This represents the transition stage. A majority are relatively healthy; but have slowed and have become less competitive over time. Declining industries lose jobs over time and shrink as a proportion of the economy. If the industry is unable to reinvent itself with new products and markets, it will continue to wither and fade away.

Not all industries or their evolution will fit nicely into the model, especially over short periods of time. Some industries may emerge but never rise to the level moving from weakly emerging to the transitioning or declining stage or move back and forth among the different stages over a period of time. Likewise, an industry that has slowed from a base-growth to a transitioning industry may have a revival and move back to base growth status. In the short-term, business cycle fluctuations impact the forward and backward movements of the industry life cycle. However, in the long-term, the model should provide a fairly accurate picture of the performance of industries.

Table 3. Performance Map Criteria (Industry Life Cycle)

<i>Emerging Activities</i>		<i>Base-Growth Activities</i>
Positive job growth Increasing competitive national market share (outperforming the same activity nationally) Lower concentration in Hawaii than nationally	➡	Positive job growth Increasing competitive national market share (outperforming the same activity nationally) Higher concentration in Hawaii than nationally
		⬇
<i>Declining Activities</i>		<i>Transitioning Activities</i>
Losing jobs over period	⬅	Positive job growth Losing competitive national market share

Data Sources

Jobs and earnings reported in this report include wage and salary positions and estimates for self-employed and proprietors. The data were obtained via a subscription to the data bases of Economic Modeling Specialists, Inc. (EMSI). EMSI uses data from Bureau of Labor Statistics, Bureau of Economic Analysis and others to construct very detailed industry data series regarding jobs, occupations and earnings for the states and counties.

TECHNOLOGY SECTOR

A joint project in 2008 between DBEDT, the Hawaii Science and Technology Association (HiSciTech) and other stakeholders, updated the definition of the technology sector for Hawaii and established baseline measurements.² The project adopted a definition for technology established by the U.S. Bureau of Labor Statistics (BLS).³ The BLS approach classifies industries as being in the technology sector based on the proportion of highly trained technical workers in the industries. This update report followed the earlier definition with a few adjustments that were necessary due to changes in new NAICS coding system. The earlier definition excluded wireless telecom services from the technology sector, because the services could not meet the BLS criteria to be in the Technology sector. Wired services, however, are no longer reported separately from other telecom services since the 2012 revision in NAICS. Facing the increased competition with new telecom services, many wired carriers chose to close or reduce the traditional wired services in order to expand services with more market potential. As a result, a variety of services are often served by a single carrier and the change in the 2012 NAICS was a reflection of these market trends. This update report adjusted the earlier definition by applying the BLS approach to new NAICS codes.

Size & Growth

With the adjustments described above, the technology sector accounted for 28,587 jobs in 2020, or 3.6% of all civilian jobs in Hawaii including self-employed and sole proprietors. For the 2010 to 2020 period, the technology sector had an annual average 0.5% gain in jobs, 0.3 of a percentage point higher than the average annual growth for the civilian economy.

The 2020 estimate shows that the technology sector had a net job gain of 0.3% in 2020 from 2019, compared with a 10.5% loss for total civilian jobs in Hawaii. Technical Consulting Services added 189 jobs, followed by Engineering and Related Services (added 185 jobs), and Biotechnology (added 39 jobs). The major categories with job losses in 2020 were Computer System Design and Related (lost 168 jobs), Information & Telecom Technology (lost 126 jobs), and Alternative Power Generation (lost 31 jobs).

For the 2010 to 2020 period, Technical Consulting Services had the strongest job growth among the technology industry groups, followed by Alternative Power Generation. However, it is important to note that total jobs for Alternative Power Generation is still relatively small at 255 jobs. Other activities in the technology sector with positive job growth over the 2010 to 2020 period were Engineering and Related Services, Technology Equipment Distribution, and Medical and Diagnostic Testing.

The six technology industry groups that lost jobs during the 2010 to 2020 period were Biotechnology, R&D Services, Chemical & Pharmaceutical Manufacturing, Other Technology Manufacturing, Computer System Design and Related, and Information & Telecom Technology.

² Hawaii Science & Technology Institute, *Innovation and Technology in Hawaii: An Economic and Workforce Profile*, October 2008.

³ As yet there is no official or universally agreed upon definition for the technology sector.

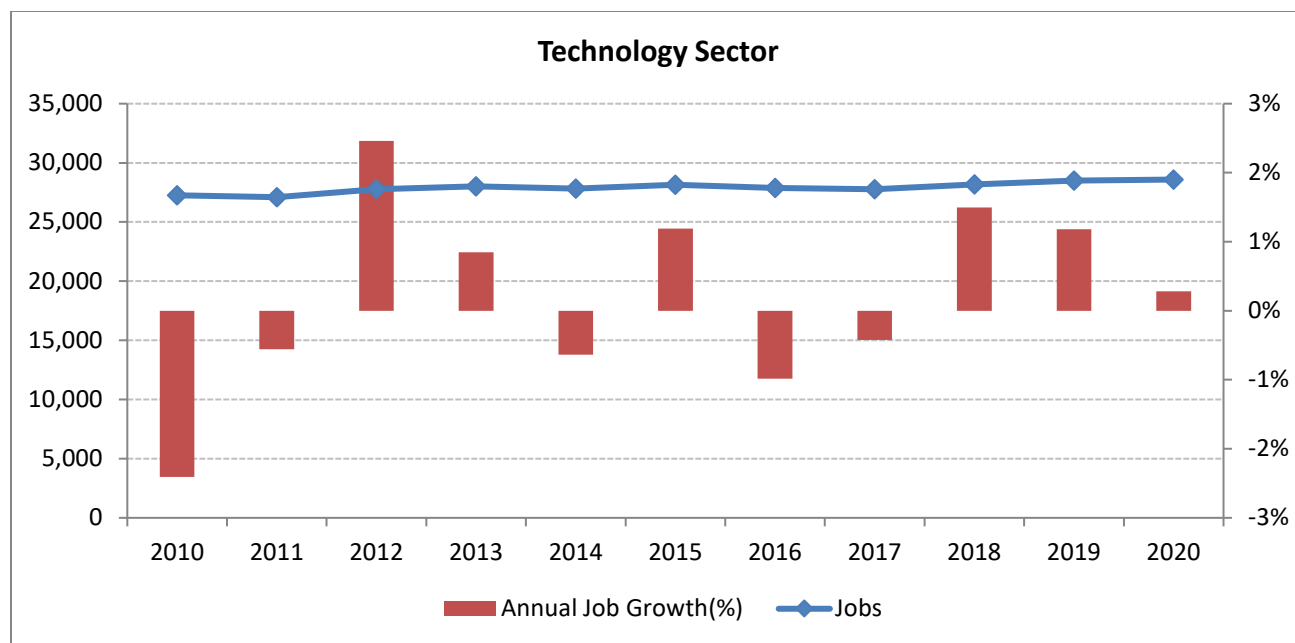
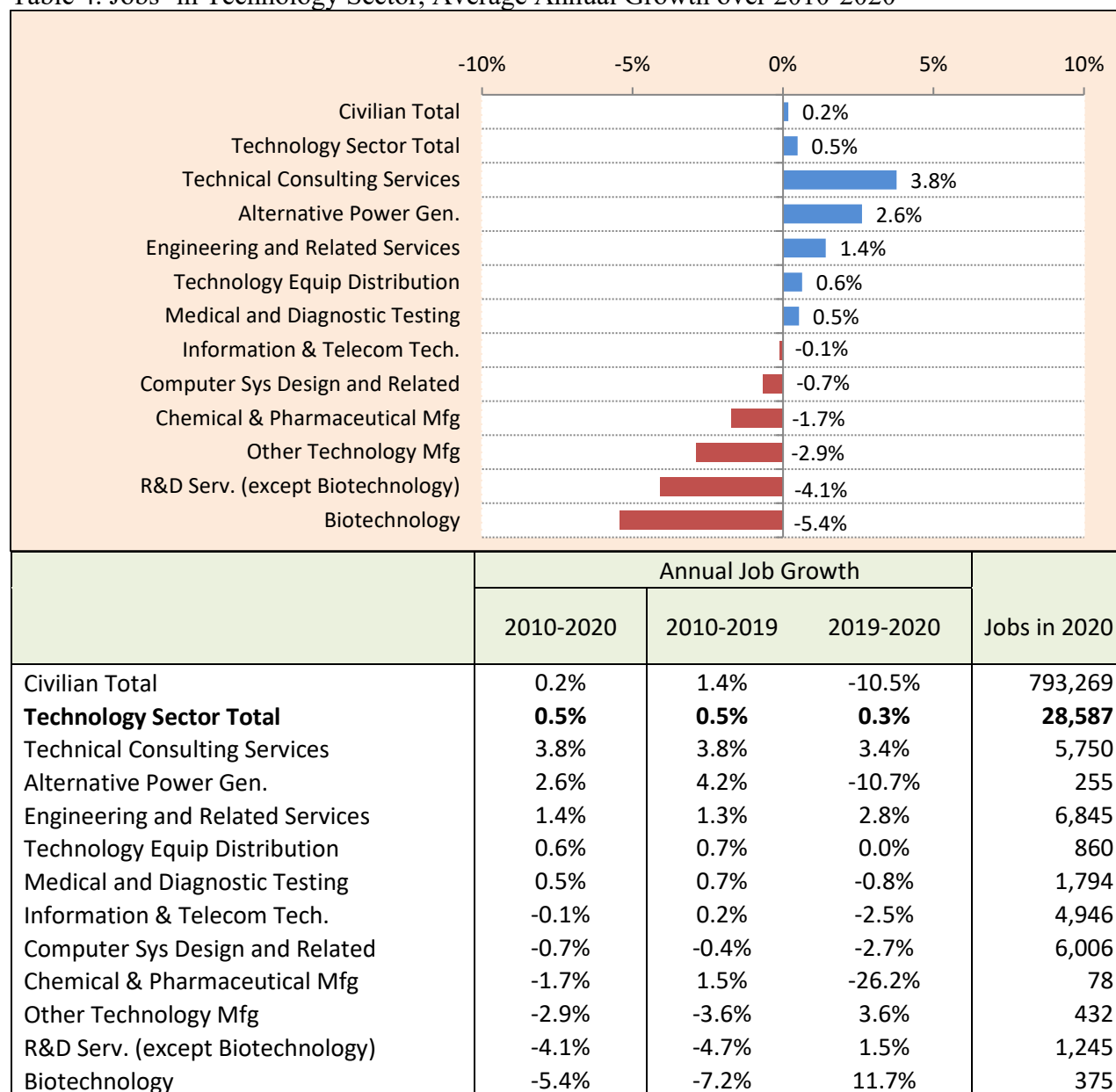


Table 4. Jobs¹ in Technology Sector, Average Annual Growth over 2010-2020

¹Includes wage & salary, sole proprietors & self-employed.

Source: DBEDT based on data from Economic Modeling Specialists, Inc. (EMSI).

Competitive Metrics

The sixth column of Table 5 shows the difference in percentage points between job growth in Hawaii and the U.S. for the technology sector industry groups. Overall, Hawaii's technology sector grew jobs less than the same activities in the nation.

Alternative Power Generation outperformed their national counterparts by 3.3 percentage points during the 2010-2020 period. Biotechnology underperformed their national counterparts by 10.8 percentage points.

Table 5. Hawaii Technology Sector Performance Compared with Nation

	Jobs per Avg. Annual			Avg. Annual Job Growth		When U.S. = 100%		
	Jobs 2020	Estabs 2020	Earnings 2020	10-20	above U.S.	Concentration 1/	Jobs per Estabs	Avg. Annual Earning
Total Civilian	793,269	16.2	61,850	0.2%	-1.1%	100%	87%	94%
TECHNOLOGY SECTOR	28,587	10.7	93,833	0.5%	-1.9%	58%	78%	73%
Engineering and Related Serv.	6,845	9.1	109,851	1.4%	0.1%	100%	68%	104%
Computer Sys. Design & Related	6,006	10.2	98,130	-0.7%	-4.2%	55%	114%	74%
Technical Consulting Services	5,750	15.2	65,906	3.8%	-0.4%	72%	152%	73%
Information & Telecom Tech.	4,946	10.1	98,886	-0.1%	-2.6%	56%	57%	63%
Medical and Diagnostic Testing	1,794	13.3	74,964	0.5%	-1.3%	145%	102%	90%
R&D Services (exc. Biotech.)	1,245	10.0	99,605	-4.1%	-5.4%	53%	40%	70%
Technology Equipment Distr.	860	8.1	123,768	0.6%	-0.5%	37%	70%	87%
Other Technology Mfg	432	12.8	77,858	-2.9%	-3.3%	8%	26%	63%
Biotechnology	375	10.5	95,016	-5.4%	-10.8%	38%	49%	42%
Alternative Power Generation	255	8.0	124,837	2.6%	3.3%	95%	28%	69%
Chemical & Pharmaceutical Mfg	78	11.2	89,007	-1.7%	-2.9%	4%	20%	60%

1. Proportion of jobs in the activity in Hawaii compared to the proportion nationally

Source: See Table 4 for data source.

Over the 2010 to 2020 period, Computer System Design & Related Services lost competitive ground to their national counterparts. It is important to note it was a large group with 6,006 jobs.

Three forces may have influenced the negative job growth in the Information & Telecom Technology group. First, the inclusion of wired telecom service, an activity with declining demand, could be a lag for overall job growth this category. Second, productivity gains in information technology may have reduced the labor required to produce the same output of services. Third, in recent years there has been a consolidation of internet services, especially web hosting, into fewer providers around the country that serve national markets. It is difficult for local internet services to compete with the economies of scale of these large internet service companies.

In terms of concentration, most of Hawaii's technology industry groups are still a relatively small percentage of Hawaii's total economy, compared with the technology industry groups at the national level. In 2020, Hawaii's proportion of the state's workforce in technology was 58% of the proportion nationally. One noteworthy exception is Medical and Diagnostic Testing, which was 45% more concentrated in Hawaii than the nation overall.

The average earnings in Hawaii's technology sector was relatively high, at \$93,833 in 2020. As a group, it was 52% higher than the average for Hawaii's economy. Average earnings of the eleven technology industry groups all exceeded the average for Hawaii's economy. However, workers in most of the Hawaii technology sector groups were not paid as much as the U.S. average for the same activities. The average earnings in Hawaii's technology sector was only 73% of the average earnings paid nationally. The largest earnings gaps between Hawaii and the U.S. were found in Biotechnology, Chemical & Pharmaceutical Manufacturing, Other Technology Manufacturing, Information & Telecom Technology, and Alternative Power Generation.

Overall Performance

By combining the growth and competitive measures, the technology industry groups can be placed in several performance categories as shown earlier in Table 3.

Only two technology industry groups were in the high performing Base-Growth and Emerging categories by showing positive growth and also outperforming their national counterpart. These industry groups were Alternative Power Generation and Engineering and Related Services. The only difference between the Base-Growth and Emerging categories is their level of concentration in the state's economy. Base-Growth industry groups have reached or exceeded national concentrations, while the Emerging industry groups have yet to reach national concentration levels. Beyond that, both categories showed positive and competitive growth in jobs.

Three groups in the technology sector were in the Transitioning category for the 2010 to 2020 period. Including Technical Consulting Services, Technology Equipment Distribution, and Medical and Diagnostic Testing. While job growth was positive in these industry groups, they still lost some competitive share to the national industry groups.

Information & Telecom Technology, Computer System Design & Related Services, Other Technology Manufacturing, Chemical & Pharmaceutical Manufacturing, R&D Services (except Biotechnology), and Biotechnology fell into the Declining category for 2010 to 2020 due to job losses during the period. These groups also lost more jobs proportionately than the same activity nationally, resulting in the loss of competitive share to the U.S. economy.

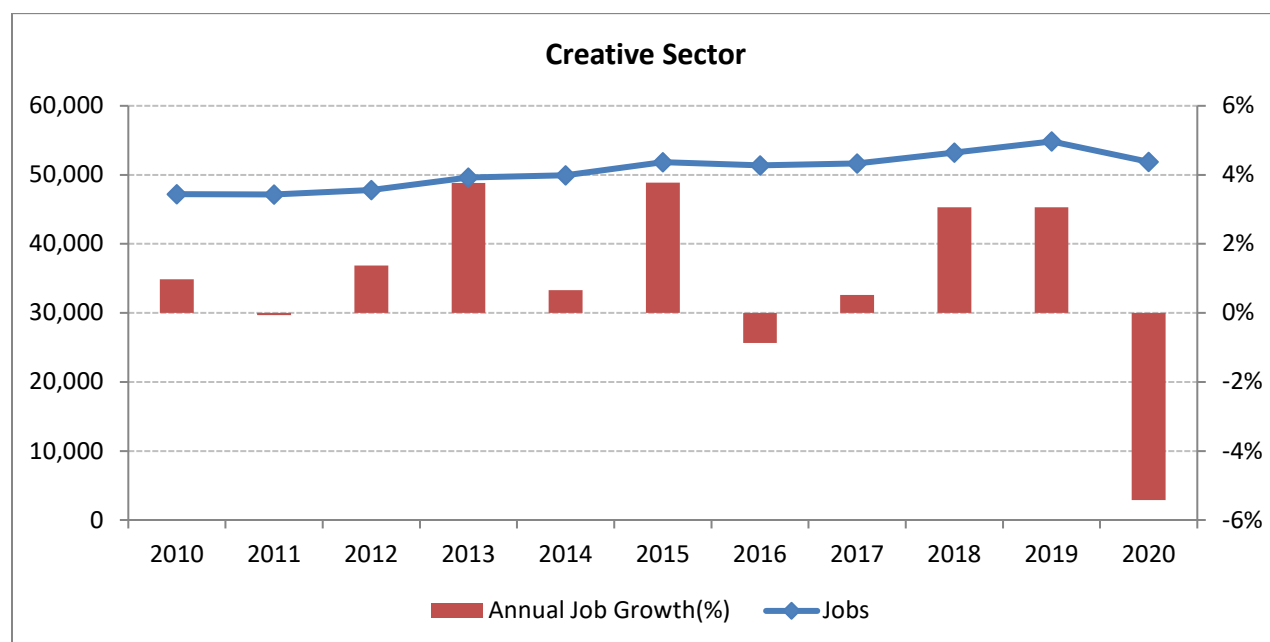
Emerging Activities	Base-Growth Activities
Alternative Power Generation	Engineering and Related Serv.
Declining Activities	Transitioning Activities
Information & Telecom Tech. Computer Sys. Design & Related Other Technology Mfg Chemical & Pharmaceutical Mfg R&D Services (exc. Biotech.) Biotechnology	Technical Consulting Services Technology Equipment Distr. Medical and Diagnostic Testing

CREATIVE SECTOR

In 2010, the DBEDT Research Division and Creative Industries divisions collaborated on an update of data and industry definitions for the Creative Sector, based on a review of models nationally.⁴ The report expanded the scope of creative activity beyond the previous focal areas of arts and culture. The new definition added a number of industries such as Computer and Digital Media, Engineering/R&D, Marketing, and Design, among others. The purpose was to better reflect the integration of art, technology and other creative activities.

Size & Growth

The thirteen creative industry groups accounted for an estimated 51,871 jobs in 2020, about 6.5% of all civilian jobs in Hawaii. Marketing, Photograph & Related and Performing and Creative Arts were the two largest groups in the sector, together the two groups accounted for about 43% of jobs in the sector in 2020.



As a group, the creative sector's job growth was 0.8 of a percentage point above the annual average growth rate of the state civilian economy over the 2010 to 2020 period. The sector's growth rate was 0.3 of a percentage point higher than the Hawaii's civilian economy during the 2010 to 2019 period. From 2019 to 2020, the job growth rate of the creative sector was negative 5.4%, better than the negative 10.5% growth rate for Hawaii's civilian jobs during the same period.

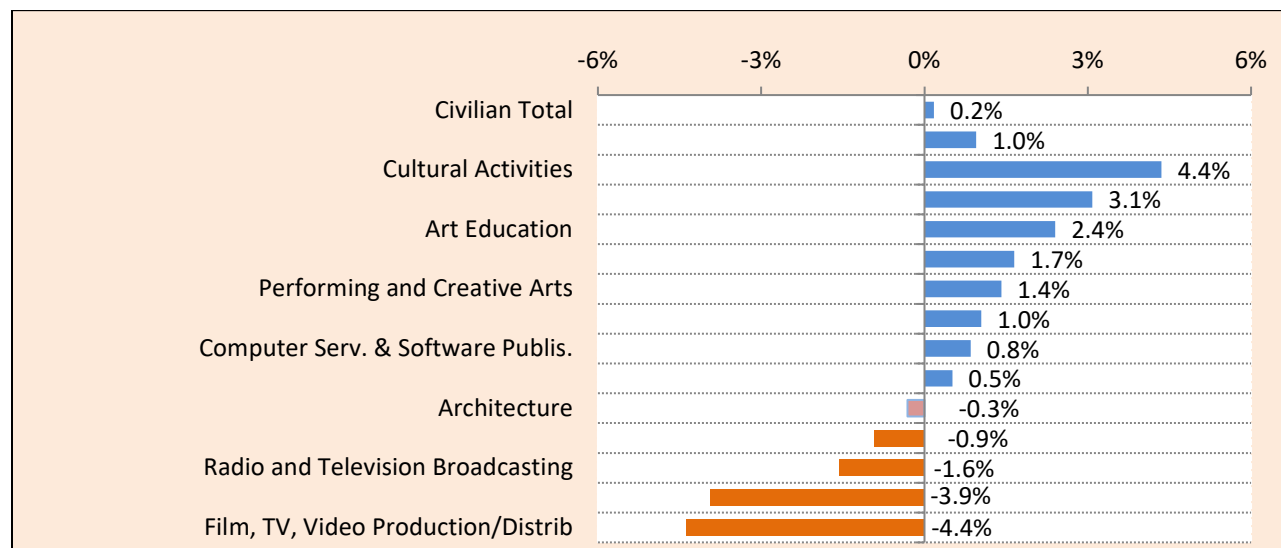
Cultural Activities grew jobs the most over the 2010 to 2020 period, 4.4% per year on average. Most job growth in Cultural Activities from 2010 to 2019 was achieved in the Museum category. Jobs in this category increased from 685 in 2010 to 2,183 in 2019. In 2020 jobs in Museum decreased to 1,241. Business Consulting showed the second highest job growth with a 3.1% average annual increase in jobs from 2010 to 2020.

⁴ DBEDT, *Hawaii's Creative Industries: Update Report 2010*, June 2010. http://dbedt.hawaii.gov/economic/reports_studies/hawaii-creative-report/

Film/TV Production varied widely depending on the number of productions filmed during the year. With many new productions filmed in Hawaii in late 2010, the number of 2010 jobs more than doubled from the 2009 level. However, during the overall 2010 to 2020 period, the number of jobs in Film/TV Production decreased from 2,570 jobs to 1,643 jobs.

Five groups in the sector, Film, TV, Video Production/Distribution, Publishing & Information, Radio/TV Broadcasting, Music, Architecture failed to gain jobs over the 2010 to 2020 period. Jobs in Publishing & Information decreased from 2,427 in 2010 to 1,623 in 2020; jobs in this time period reflected the closing of the Honolulu Advertiser in 2010,

Table 6. Jobs in Creative Sector: Average Annual Growth over 2010-2020



	Annual Job Growth			Jobs in 2020
	2010-2020	2010-2019	2019-2020	
Civilian Total	0.2%	1.4%	-10.5%	793,269
Creative Sector Total	1.0%	1.7%	-5.4%	51,871
Cultural Activities	4.4%	9.1%	-30.2%	2,538
Business Consulting	3.1%	3.1%	2.9%	6,227
Art Education	2.4%	4.0%	-11.3%	744
Marketing, Photography & Related	1.7%	2.3%	-4.3%	12,049
Performing and Creative Arts	1.4%	2.0%	-4.1%	10,171
Design Services	1.0%	1.1%	0.3%	2,094
Computer Serv. & Software Publis.	0.8%	1.1%	-1.5%	5,023
Engineering and R & D	0.5%	0.1%	4.3%	5,906
Architecture	-0.3%	-0.2%	-0.9%	1,963
Music	-0.9%	3.3%	-32.0%	918
Radio and Television Broadcasting	-1.6%	-0.7%	-8.6%	972
Publishing & Information	-3.9%	-3.6%	-7.3%	1,623
Film, TV, Video Production/Distrib	-4.4%	-2.1%	-22.9%	1,643

Source: See Table 4 for data source.

Competitive Metrics

Many activities in the creative sector lost competitive share to the U.S. economy over the 2010 to 2020 period. Only one (Cultural Activities) among the thirteen groups in this sector outperformed its national counterpart during this period.

A number of creative industry groups have levels of concentration in the state's economy that exceed the nation as a whole. Cultural Activities are more than three times as concentrated in Hawaii. Music, Architecture, Performing and Creative Arts, and Film, TV, Video Production/Distribution also exceed national concentrations. In contrast, most business and technology oriented activities in the sector, such as Business Consulting, Computer Services and Software Publishers, and Publishing & Information show a much lower concentration in Hawaii than the same industries nationally.

With average annual earnings of \$57,592 in 2020, the activities in the creative sector were making a little less than the average for the overall Hawaii economy. Compared with the same activities nationally, the average earnings in Hawaii was only 64% of the national average. The lower earnings in Hawaii were found in both business and technology-oriented and artistic-oriented activities in the sector. Among the thirteen activities in the creative sector, only workers in Architecture, Culture Activities, and Art Education were paid slightly higher in Hawaii than the nation overall. The activities that showed significant earnings gaps between Hawaii and the U.S. include Publishing & Information, Film, TV, Video Production/Distribution, Marketing/Photography & Related, and Music.

Table 7. Hawaii's Creative Sector Performance Compared with Nation

	Jobs 2020	Jobs per Estabs 2020	Avg. Annual Earnings 2020	Avg. Annual Job Growth		When U.S. = 100%		
				10-20	above U.S.	Concen- tration 1/ Estabs	Jobs per Estabs	Avg. Annual Earning
Total Civilian	793,269	16.2	61,850	0.2%	-1.1%	100%	87%	94%
CREATIVE SECTOR	51,871	17.4	57,592	1.0%	-1.7%	85%	127%	64%
Marketing, Photography & Related	12,049	27.1	36,874	1.7%	-0.8%	99%	164%	63%
Performing and Creative Arts	10,171	46.8	21,360	1.4%	-1.7%	122%	129%	79%
Business Consulting	6,227	15.3	65,441	3.1%	-0.8%	67%	157%	73%
Engineering and Research & Develop.	5,906	8.7	114,906	0.5%	-0.8%	85%	52%	93%
Computer Services and Software Publis.	5,023	9.5	104,725	0.8%	-3.5%	42%	102%	72%
Cultural Activities	2,538	14.6	68,698	4.4%	2.8%	322%	120%	104%
Design Services	2,094	27.9	35,829	1.0%	-1.1%	98%	224%	73%
Architecture	1,963	11.1	90,229	-0.3%	-1.6%	142%	103%	107%
Film, TV, Video Production/Distrib	1,643	17.8	56,116	-4.4%	-4.2%	107%	128%	50%
Publishing & Information	1,623	18.7	53,471	-3.9%	-3.8%	52%	112%	35%
Radio and Television Broadcasting	972	13.4	74,441	-1.6%	-1.4%	96%	44%	78%
Music	918	39.3	25,468	-0.9%	-3.0%	112%	256%	64%
Art Education	744	59.8	16,725	2.4%	-0.2%	69%	331%	105%

1. Proportion of jobs in the activity in Hawaii compared to the proportion nationally

Source: See Table 4 for data source.

Overall Performance

Based on the performance metrics above, the creative industry groups are placed into the performance categories as below. Only one group, Cultural Activities, was rated as high performing for growth and competitiveness, compared with the same activities nationally.

Seven other groups – Art Education, Business Consulting, Marketing, Photography & Related, Engineering and Research & Development, Design Services, Performing and Creative Arts, and Computer Services and Software Publishers - grew jobs over the period but came up short competitively, compared with the performance of the same industry group nationally over the 2010 to 2020 period.

Architecture, Music, Radio and Television Broadcasting, Publishing & Information, and Film, TV, Video Production/Distribution were in the lowest performance group. All lost jobs over the 2010 to 2020 period.

Emerging Activities	Base-Growth Activities
	Cultural Activities
Declining Activities	Transitioning Activities
Architecture Music Radio and Television Broadcasting Publishing & Information Film, TV, Video Production/Distrib	Art Education Business Consulting Marketing, Photography & Related Engineering and Research & Development Design Services Performing and Creative Arts Computer Services and Software Publishers

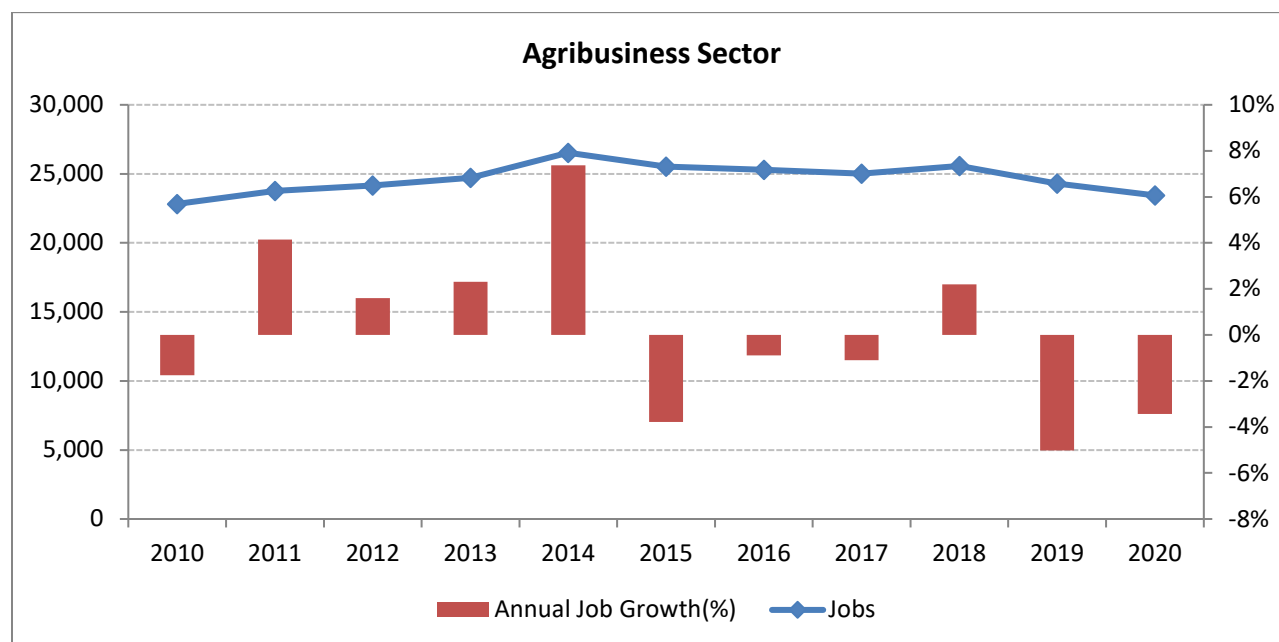
AGRIBUSINESS

In 2020, the 23,451 jobs in Agribusiness were found in a range of inter-related industry groups that support the core farm sector. Most of the agribusiness jobs, including self-employed, are in Farm Production (57%). The second largest industry group in the sector was Agricultural Processing at 26% of the sector's jobs.

Size & Growth

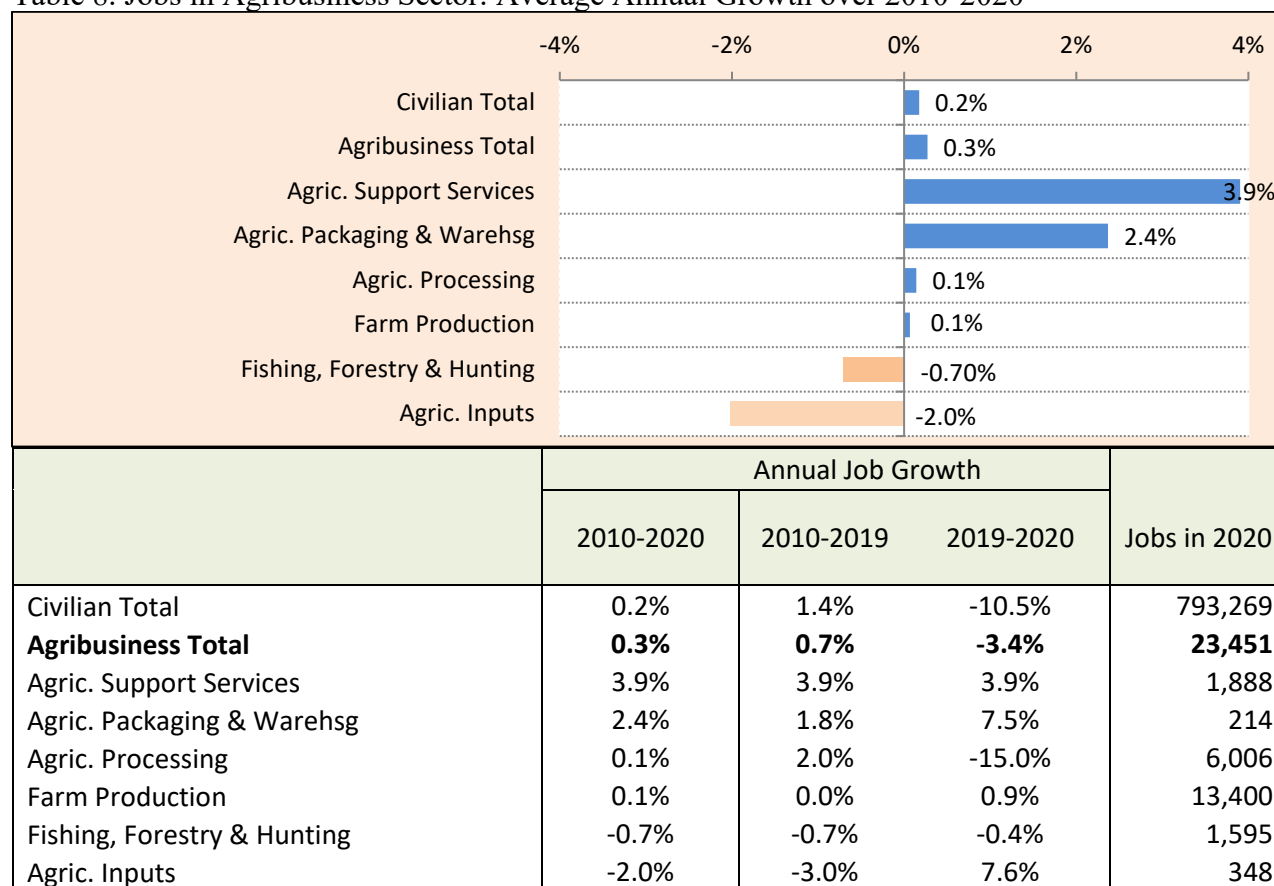
The agribusiness sector was able to achieve a small positive job growth over the 2010 to 2020 period. Although two of the six Agribusiness industry groups lost jobs over the period, job gains among four other groups exceeded the losses.

The largest activity in the agribusiness sector is Farm Production. Jobs in this group increased slightly over the 2010 to 2020 period. From 2010 to 2019, jobs in this group increased from 13,309 jobs to 13,278 jobs. From 2019 to 2020 jobs increased to 13,400 jobs.



The best performing agribusiness industry group over the 2010 to 2020 cycle was the Agricultural Support Services, with a 3.9% average annual increase in jobs. Another high-performing group in agribusiness, during the 2010 to 2020 period, was Agricultural Packaging & Warehousing. Job growth in this group averaged 2.4% over this period.

Table 8. Jobs in Agribusiness Sector: Average Annual Growth over 2010-2020



Source: See Table 4 for data source

Competitive Metrics

Competitive metrics show that the comparable U.S. agricultural sector also experienced a job gain over the 2010 to 2020 period.

Two of the four groups that gained jobs over the 2010 to 2020 period outperformed the same activities in the nation. Agricultural Support Services outperformed the same activities for the nation overall by 1.3 percentage point per year, and Agricultural Packaging & Warehousing outperformed the same activities for the nation overall by 1.0 of a percentage point per year.

Table 9. Hawaii Agribusiness Sector Performance Compared with Nation

	Jobs 2020	Jobs per Estabs 2020	Avg. Annual Earnings 2020	Avg. Annual Job Growth		When U.S. = 100%		
				above		Concen- tration 1/	Jobs per Estabs	Avg. Annual Earning
				10-20	U.S.			
Total Civilian	793,269	16.2	61,850	0.2%	-1.1%	100%	87%	94%
AGRIBUSINESS	23,451	25.3	39,556	0.3%	-0.6%	92%	80%	80%
Farm Production	13,400	28.9	34,644	0.1%	-0.1%	102%	78%	93%
Agric. Processing	6,006	19.7	50,706	0.1%	-1.6%	83%	44%	79%
Agric. Support Services	1,888	18.6	53,868	3.9%	1.3%	69%	122%	93%
Fishing, Forestry & Hunting	1,595	72.9	13,723	-0.7%	-0.3%	358%	233%	38%
Agric. Inputs	348	15.0	66,694	-2.0%	-2.7%	35%	109%	85%
Agric. Packaging & Warehsg	214	17.8	56,333	2.4%	1.0%	28%	48%	89%

1. Proportion of jobs in the activity in Hawaii compared to the proportion nationally

Source: See Table 4 for data source.

Agribusiness had a lower concentration level in Hawaii than the nation for most activities. The clear exception was Fishing, Forestry & Hunting that is significantly more concentrated in Hawaii than the nation.

Overall Performance

From an overall performance standpoint, two groups – Agriculture Support Services and Agriculture Packaging & Warehousing – were in the Base-Growth or Emerging categories for the 2010 to 2020 period.

Agriculture Processing and Agricultural Farm Production were in the Transitioning category, and Agricultural Inputs, and Fishing, Forestry & Hunting fell into the Declining category over the 2010 to 2020 period.

Emerging Activities	Base-Growth Activities
Agric. Support Services Agric. Packaging & Warehsg	
Declining Activities	Transitioning Activities
Fishing, Forestry & Hunting Agric. Inputs	Farm Production Agric. Processing

HEALTH & WELLNESS

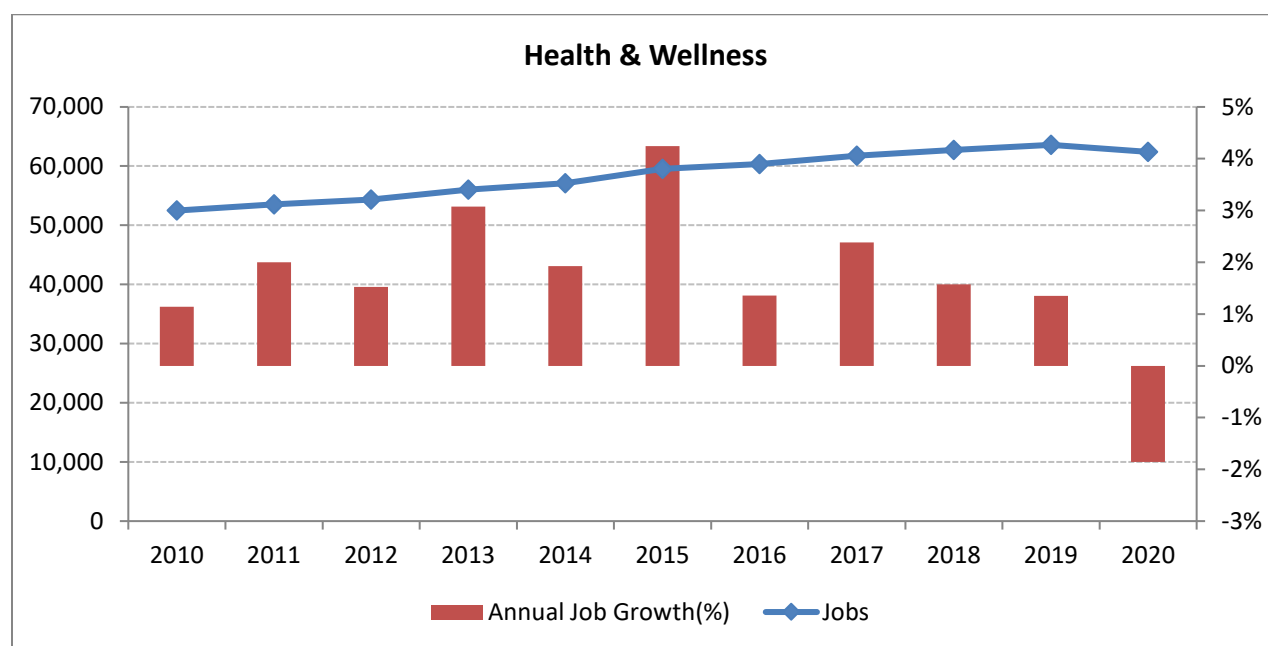
Health and Wellness has been of interest for several decades as a potential export activity. It has been proposed that first class medical and related health facilities in Hawaii could spur Health and Wellness tourism among the more affluent in Asian-Pacific countries that may not have the same level of health care. Unfortunately, there is no readily available data regarding such visitors.

Recuperation and rejuvenation services have also been proposed as potential export activities that could utilize Hawaii's beauty and calming environment. Spas and similar, non-medical treatment services have been integrated into the hotel industry and serve a specialized tourism market. However, these facilities and their markets are not distinct enough to be reflected separately in standard statistical data.

In order to provide some underlying data to support future discussions on the topic of the Health and Wellness sector, DBEDT adopted with some minor modifications, a definition for Health and Wellness developed by researchers on Kauai for that county's Comprehensive Economic Development Strategy in 2005.⁵ This definition identifies the major industry groups of Hawaii's health care sector.

Size & Growth

The Health and Wellness Sector accounted for an estimated 62,412 jobs in 2020. About 70% of the jobs were among Health Practitioners and Hospital & Nursing Facilities. All the industry groups in Health and Wellness grew jobs over the 2010 to 2020 period.



Overall, the Health and Wellness sector grew faster than the rest of the economy during the 2010-2020 period. This sector had job growth for each year during the 2010 to 2019 period, and only decreased 1.9% in 2020.

⁵ Hawaii Office of Planning, *Hawaii Statewide Comprehensive Economic Development Strategy (CEDS)*, 2005. Modifications included translating from the 1997 to the 2002 NAICS industry codes. Report is at <http://hawaii.gov/dbedt/op/projects.htm>

Pharmacies (a retailing industry which includes drug stores) experienced a job decline during the 2009-2011 period. Pharmacies lost 41 jobs in the two-year period. The reason for the decline is not clear. However, the filling of prescriptions through the internet, rather than in pharmacies, has become a more common practice in recent years.

Health Practitioners showed modest growth. For the 2010 to 2020 period, this sector had an average job growth of 0.8% per year.

The highest job growth was observed in Specialty Health Care Services, a relatively small industry group, during the 2010-2020 period. This subsector gained jobs at an annual average rate of 6.0% during the period.

Table 10. Jobs in Health and Wellness: Average Annual Growth over 2010-2020

	0%	2%	4%	6%	8%
Civilian Total	0.2%				
Health & Wellness Total	1.7%				
Specialty Health Care Services	6.0%				
Hospitals & Nursing Facilities	1.0%				
Health Practitioners	0.8%				
Pharmacies	0.6%				
Medical Labs and Imaging Centers	0.5%				

	Annual Job Growth			Jobs in 2020
	2010-2020	2010-2019	2019-2020	
Civilian Total	0.2%	1.4%	-10.5%	793,269
Health & Wellness Total	1.7%	2.2%	-1.9%	62,412
Specialty Health Care Services	6.0%	7.2%	-3.7%	13,358
Hospitals & Nursing Facilities	1.0%	1.3%	-1.4%	21,241
Health Practitioners	0.8%	1.0%	-1.6%	22,441
Pharmacies	0.6%	0.6%	0.2%	3,578
Medical Labs and Imaging Centers	0.5%	0.7%	-0.8%	1,794

Source: See Table 4 for data source.

Competitive Metrics

Overall, the growth in Hawaii's Health and Wellness Sector was slightly above the national average for the same sector over the 2010 to 2020 period. The higher job growth in Hawaii's Specialty Health Care Services, Hospitals & Nursing Facilities, and Pharmacies offset the lower job growth in other groups of the sector.

Table 11. Hawaii Health and Wellness Sector Performance Compared with Nation

	Jobs 2020	Jobs per Estabs 2020	Avg. Annual Earnings 2020	Avg. Annual Job Growth		When U.S. = 100%		
				above 10-20 U.S.		Concen- tration 1/	Jobs per Estabs	Avg. Annual Earning
Total Civilian	793,269	16.2	61,850	0.2%	-1.1%	100%	87%	94%
HEALTH & WELLNESS	62,412	11.8	84,541	1.7%	0.4%	95%	52%	112%
Health Practitioners	22,441	10.8	92,808	0.8%	-0.8%	100%	100%	105%
Hospitals & Nursing Facilities	21,241	10.7	93,389	1.0%	0.6%	79%	5%	121%
Specialty Health Care Services	13,358	15.0	66,595	6.0%	2.4%	110%	41%	124%
Pharmacies	3,578	19.2	51,969	0.6%	1.2%	129%	181%	91%
Medical Labs and Imaging Centers	1,794	13.3	74,964	0.5%	-1.3%	145%	102%	90%

1. Proportion of jobs in the activity in Hawaii compared to the proportion nationally

Source: See Table 4 for data source.

At \$84,541, the average earnings for the Health & Wellness Sector as a whole, exceeded the national average in 2020 by about 12%. This was the only major sector in the targeted industry portfolio that had earnings above the U.S. average for the same sector. Except for Medical Labs & Imaging Centers and Pharmacies, all other groups in the sector had earnings higher than the U.S. average.

Overall Performance

Among the Health & Wellness industry groups, Specialty Health Care Services, Pharmacies, and Hospitals & Nursing Facilities performed the best in terms of growth and competitiveness.

Health Practitioners and Medical Labs & Imaging Centers were in the Transitioning category. These groups grew jobs but lost competitive national share due to better growth at the U.S. level.

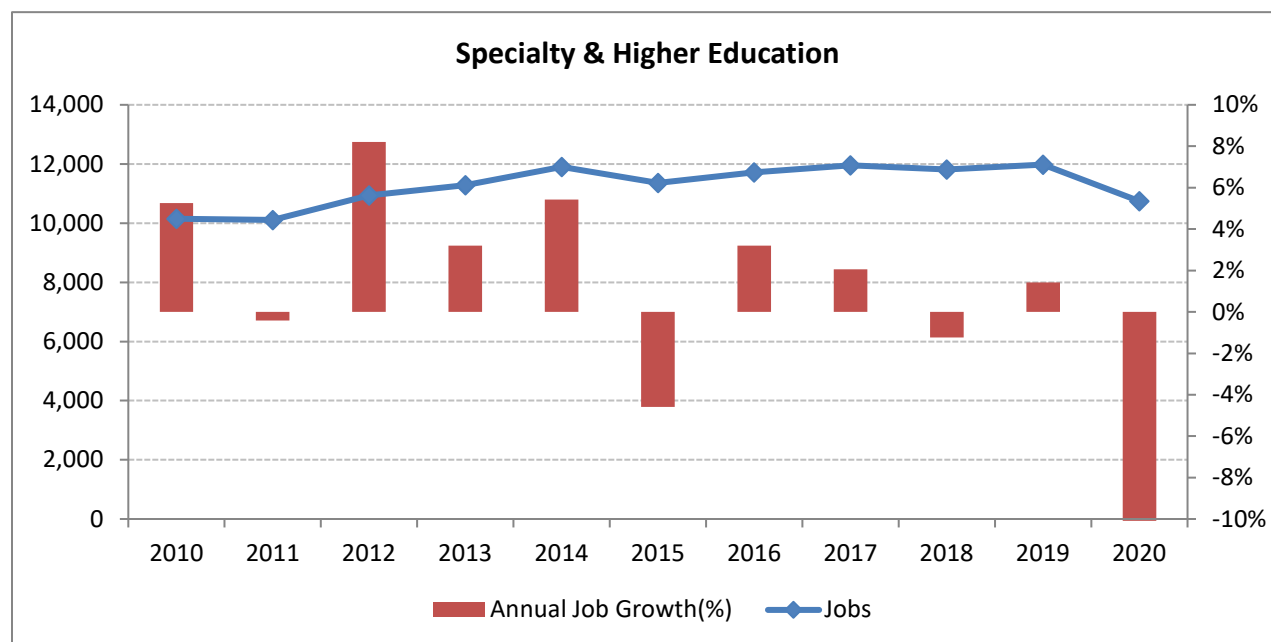
Emerging Activities	Base-Growth Activities
Hospitals & Nursing Facilities	Specialty Health Care Services Pharmacies
Declining Activities	Transitioning Activities
	Health Practitioners Medical Labs and Imaging Centers

EDUCATION

The private education sector, which includes private colleges and specialty schools, is an important segment of Hawaii's economy. One area of particular interest for economic development is the number of international students in Hawaii. There is strong potential for Hawaii's higher education system to attract more students from around the world. While the topic of foreign students is outside of the main focus of this section, it is an area that should be monitored as an area for economic development. The following section examines the growth and performance of the education activity of the private sector colleges and specialty schools.

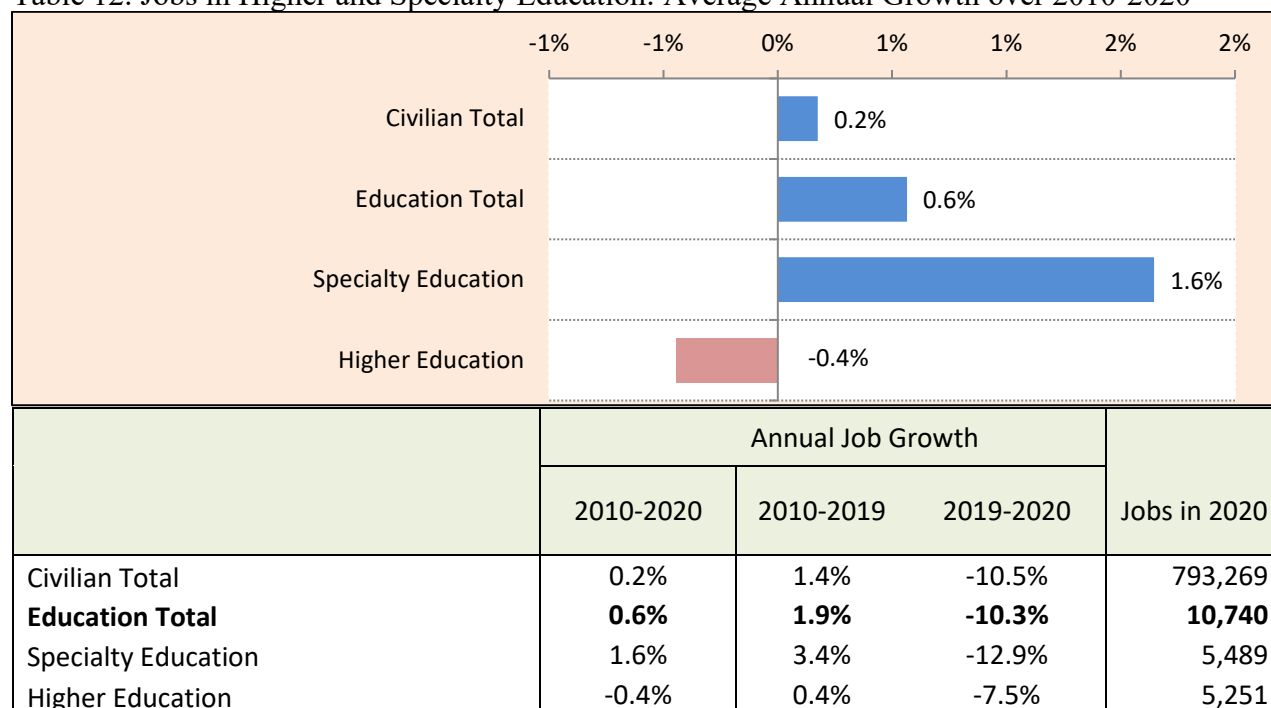
Size & Growth

Private post-secondary and specialty education in Hawaii accounted for 10,740 jobs in 2020. These sectors together performed better than the rest of the Hawaii economy. Jobs grew 0.6% annually, adding 588 new jobs to the economy over the 2010 to 2020 period. From 2010 to 2019, Specialty & Higher Education added 1,828 jobs; however it lost 1,240 jobs in 2020.



From 2010 to 2020, Specialty Education job growth averaged 1.6% per year on average; however, Higher Education job growth averaged negative 0.4% per year on average. From 2010 to 2019, Specialty Education added jobs every year; while Higher Education lost jobs in 2011, 2015, 2018, and 2019. In 2020, Specialty Education lost 813 jobs and Higher Education lost 427 jobs, respectively from the previous year.

Table 12. Jobs in Higher and Specialty Education: Average Annual Growth over 2010-2020



Source: See Table 4 for data source.

Competitive Metrics

From 2010 to 2020, for both the Specialty Education and Higher Education job growth in Hawaii was below the national level and Hawaii lost some national competitive share.

The annual earnings of Specialty Education in Hawaii averaged \$26,715 in 2020, which was about 43% of the earning average of civilian jobs in Hawaii. This level of earnings was about 87% of the national level for the same group. The average earnings for Hawaii Higher Education was higher than Specialty Education. However, it was only about 59% of the national earnings for the same activities in 2020.

Table 13. Hawaii Private Education Sector Performance Compared with Nation

	Jobs per Annual			Avg. Annual Job Growth		When U.S. = 100%		
	Jobs 2020	Estabs 2020	Avg. Annual Earnings 2020	above		Concentration 1/	Jobs per Estabs	Avg. Annual Earning
				10-20	U.S.			
Total Civilian	793,269	16.2	61,850	0.2%	-1.1%	100%	87%	94%
EDUCATION (PRIVATE)	10,740	32.4	30,885	0.6%	-0.6%	78%	96%	65%
Specialty Education	5,489	37.4	26,715	1.6%	-0.4%	96%	236%	87%
Higher Education	5,251	28.4	35,245	-0.4%	-1.1%	65%	17%	59%

1. Proportion of jobs in the activity in Hawaii compared to the proportion nationally

Source: See Table 4 for data source.

Overall Performance

During the 2010 to 2020 period, the Specialty Education group increased jobs, but decreased competitiveness and fell into the Transitioning category. The Higher Education group lost jobs and fell into the Declining category.

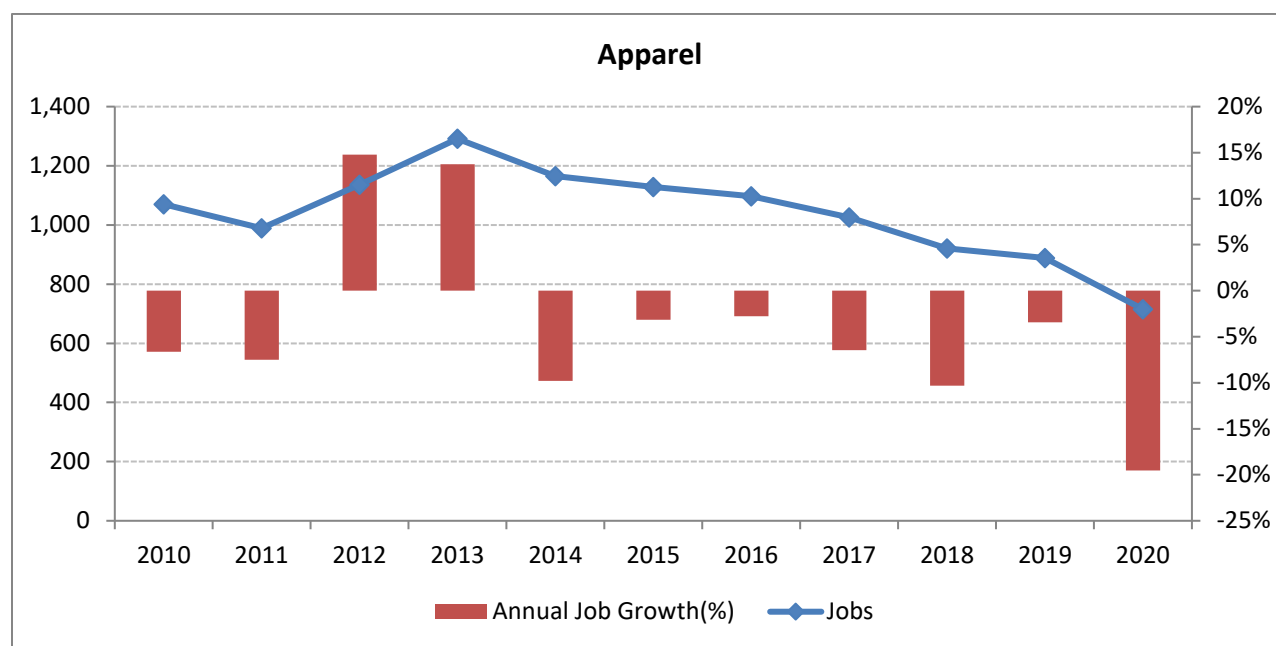
Emerging Activities	Base-Growth Activities
Declining Activities	Transitioning Activities
Higher Education	Specialty Education

OTHER TARGETED ACTIVITIES

Apparel and Call Centers have been pursued as sources of economic diversification. Apparel was promoted based on Hawaii's unique style and cultural heritage that brought Hawaiian/Aloha wear to worldwide prominence. However, over the years, a large portion of the garment manufacturing jobs have been outsourced overseas. While there is still some manufacturing of Hawaiian wear in the state, it is more common to find garments with labels that say designed in Hawaii but manufactured elsewhere. Call Centers were promoted based on Hawaii's developing communications technology capacity, its mid Pacific location and multi-lingual resources.

Size & Growth

Both Apparel Manufacturing and Call Center in Hawaii lost jobs in the past ten years. From 2010 to 2020, jobs in the Apparel group decreased 3.9% per year on average, and jobs in Call Center decreased 2.7% per year on average. From 2010 to 2019, Apparel jobs decreased 2.0% and Call Center jobs decreased 2.3% per year on average. In 2020, Apparel decreased 19.5% and Call Center decreased 6.3%.



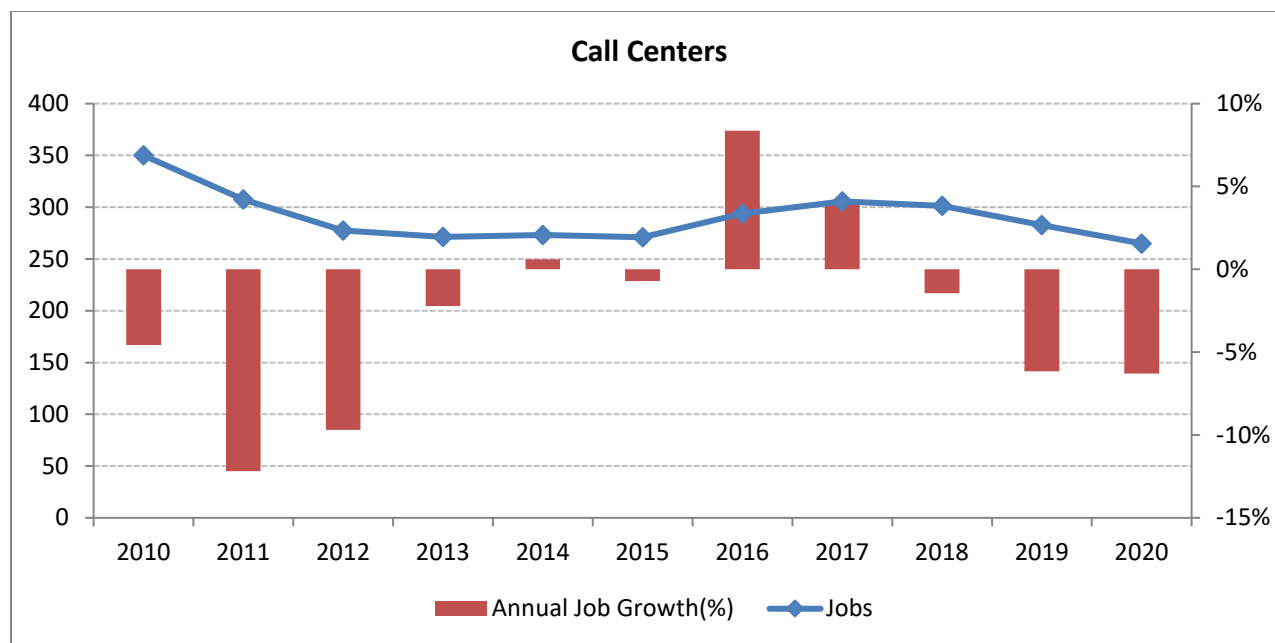


Table 14. Jobs in Apparel and Call Centers: Average Annual Growth over 2010-2020

		-5%	-4%	-3%	-2%	-1%	0%	1%
Civilian Total					0.2%			
Call Centers					-2.7%			
Apparel					-3.9%			

	Annual Job Growth			Jobs in 2020
	2010-2020	2010-2019	2019-2020	
Civilian Total	0.2%	1.4%	-10.5%	793,269
Call Centers	-2.7%	-2.3%	-6.3%	265
Apparel	-3.9%	-2.0%	-19.5%	715

Source: See Table 4 for data source.

Competitive Metrics

In terms of job growth, Apparel decreased in both Hawaii and the nation. During the 2010-2020 period, Apparel in Hawaii lost 3.9% of its jobs annually, while the U.S. apparel industry lost 4.3% of its jobs annually. This partially reflects the global outsourcing trend for manufacturing in general.

During the 2010 to 2020 period, the U.S. Call Center industry had a job increase of 1.4% per year. In contrast, the Call Center industry in Hawaii experienced an average job decrease of 2.7% per year, during the same period.

The concentration level of Apparel in 2020 was 54% above the national level. In contrast, Call Centers had a very low job concentration in Hawaii's economy compared to the activity nationally. The concentration of Call Centers in Hawaii was only 13% of the national level in 2020.

The annual average earnings for Apparel and Call Center were \$24,928 and \$29,639 respectively in 2020. These earning levels were about 52% and 61% of the average earnings nationally, respectively.

Table 15. Hawaii Apparel and Call Centers Performance Compared with Nation

	Jobs 2020	Jobs per Estabs 2020	Avg. Annual Earnings 2020	Avg. Annual Job Growth		When U.S. = 100%		
				above 10-20 U.S.		Concen- tration 1/	Jobs per Estabs	Avg. Annual Earning
OTHERS	980	38.2	26,201	-3.6%	-3.7%	38%	104%	54%
Apparel	715	40.1	24,928	-3.9%	0.4%	154%	216%	52%
Call Centers	265	33.7	29,639	-2.7%	-4.1%	13%	72%	61%

1. Proportion of jobs in the activity in Hawaii compared to the proportion nationally

Source: See Table 4 for data source.

Overall Performance

Based on the performance metrics, during the 2010 to 2020 period. Both the Apparel group and the Call Center group fell into the declining category, with an average job loss of 3.9% and 2.7% per year, respectively.

Emerging Activities	Base-Growth Activities
Declining Activities	Transitioning Activities
Apparel	
Call Centers	

PERFORMANCE BY COUNTY

The following tables summarize the 2010 to 2020 county performance of the statewide targeted & emerging industries. Performance has been organized by Best Performing Targets (registering as base-growth & emerging industry groups) and Other Targeted Industry Performance (those that fell into the transitioning and declining categories).

The total number of jobs in Hawaii's targeted & emerging industries without overlaps was 156,476 in 2020. Honolulu accounted for about 69%, followed by Hawaii County at 14%, Maui at 12%, and Kauai at 5%. From 2010 to 2020, adjusting for overlaps, total jobs in the targeted & emerging industries increased by 13,958 jobs. Honolulu added 7,925 jobs, followed by Hawaii at 2,400 jobs, Maui at 2,367 jobs, and Kauai at 1,091 jobs.

Table 16. Jobs and Job Changes from 2010 to 2020 by County

	2020 Jobs				
	State	Honolulu	Hawaii	Maui	Kauai
Total Civilian	793,269	554,447	100,304	94,812	43,705
Total Targeted w/o Overlap	156,476	108,611	22,178	18,015	7,414
TECHNOLOGY SECTOR	28,587	22,963	2,447	2,054	1,029
CREATIVE SECTOR	51,871	37,366	5,617	6,389	2,418
AGRIBUSINESS	23,451	9,756	8,643	3,240	1,806
HEALTH & WELLNESS	62,412	46,099	6,466	7,259	2,587
EDUCATION (PRIVATE)	10,740	8,831	871	683	230
OTHERS	980	820	54	79	27
	% in State 2020 Jobs				
	State	Honolulu	Hawaii	Maui	Kauai
Total Civilian	100%	70%	13%	12%	6%
Total Targeted w/o Overlap	100%	69%	14%	12%	5%
TECHNOLOGY SECTOR	100%	80%	9%	7%	4%
CREATIVE SECTOR	100%	72%	11%	12%	5%
AGRIBUSINESS	100%	42%	37%	14%	8%
HEALTH & WELLNESS	100%	74%	10%	12%	4%
EDUCATION (PRIVATE)	100%	82%	8%	6%	2%
OTHERS	100%	84%	6%	8%	3%
	Job Changes 2010 to 2020				
	State	Honolulu	Hawaii	Maui	Kauai
Total Civilian	13,747	2,058	7,293	1,688	2,709
Total Targeted w/o Overlap	13,958	7,925	2,400	2,367	1,091
TECHNOLOGY SECTOR	1,337	734	231	148	173
CREATIVE SECTOR	4,680	3,497	518	317	320
AGRIBUSINESS	627	584	617	-722	144
HEALTH & WELLNESS	9,925	5,581	1,129	2,723	497
EDUCATION (PRIVATE)	588	-8	228	186	58
OTHERS	-439	-414	-25	6	-7

Source: See Table 4 for data source.

City & County of Honolulu

Adjusting for overlaps, Honolulu accounted for 108,611 of the state's targeted & emerging industry jobs in 2020, a 0.8% average annual increase from 2010. As shown in Table 17, among the six major sectors, no sector was high performing Base-Growth or Emerging activities in Honolulu County in the 2010 to 2020 period. Four sectors were in the Transitioning category, and two sectors were in the Declining category.

Table 17. Performance of the Major Groups of Honolulu Targeted Industry Portfolio

INDUSTRY GROUPS	Jobs in Honolulu		Avg. Ann. Job Growth (2010-2020)		Concentration of Industry in Honolulu Compared to U.S.		Avg. Annual Earnings 2020	
	Change				% Point			
	2020	10-20	Honolulu	U.S.	2020	Change 10-20	Honolulu	U.S.
TOTAL CIVILIAN JOBS	554,447	2,058	0.0%	1.3%	100%	0%	\$66,055	\$66,114
TOTAL TARGETED JOBS W/O OVERLAP	108,611	7,925	0.8%	1.6%	84%	4%	\$72,638	\$80,210
Transitioning Activities								
TECHNOLOGY SECTOR	22,963	734	0.3%	2.4%	67%	-5%	\$97,874	\$127,684
CREATIVE SECTOR	37,366	3,497	1.0%	2.6%	88%	-3%	\$64,517	\$90,045
AGRIBUSINESS	9,756	584	0.6%	0.9%	55%	5%	\$45,592	\$49,701
HEALTH & WELLNESS	46,099	5,581	1.3%	1.3%	101%	11%	\$89,126	\$75,780
Declining Activities								
EDUCATION (PRIVATE)	8,831	-8	0.0%	1.2%	92%	0%	\$32,172	\$47,822
OTHERS	820	-414	-4.0%	0.1%	46%	-16%	\$27,447	\$48,240

Source: See Table 4 for data source. The sum of the individual industries does not add up to the total due to adjusting for overlaps among sectors.

Table 18 shows the performance of detailed targeted & emerging industry groups in Honolulu. Among the 38 detailed industry groups, 11 groups were high performing, with positive job growth combined with a job growth rate that was higher than the nation for the same activity. The high-performing activities in the target industry portfolio accounted for about 26,091 jobs or 4.7% of all civilian jobs in 2020. Between 2010 and 2020, those groups added 6,655 new jobs. In comparison, the whole civilian economy in Honolulu only added 2,058 new jobs during the same period.

About 32% of the high-performing activities had average annual earnings that exceeded \$70,000 in 2020. By comparison, the average earnings for the civilian economy in 2020 was \$66,055 by the projected 2020 estimate.

From 2010 to 2020, 13 activities, which included 72,317 jobs, fell into the Transitioning category. They gained jobs over the period but did not keep up with national growth for the same activities resulting in a loss of competitive national industry share. However, all of those activities grew faster in terms of jobs than the civilian economy as a whole.

Fourteen activities in the portfolio fell into the Declining industry category as the result of net job losses for the 2010 to 2020 period. Jobs in the Declining industry groups totaled an estimated 26,026 in 2020, representing a loss of 4,200 jobs from 2010.

Table 18. Performance of the Detailed Honolulu Targeted Industry Portfolio

INDUSTRY GROUPS	Jobs in Honolulu		Avg. Ann. Job Growth (2010-2020)		Concentration of Industry in Honolulu Compared to U.S.		Avg. Annual Earnings 2020	
	2020	Change 10-20	Honolulu	U.S.	2020	% Point Change 10-20	Honolulu	U.S.
Base-Growth Activities								
Cultural Activities	2,285	809	4.5%	1.6%	414%	136%	\$70,374	\$66,365
Pharmacies	2,613	202	0.8%	-0.6%	135%	31%	\$52,392	\$56,908
Engineering and Related Serv.	5,944	919	1.7%	1.3%	125%	18%	\$114,645	\$105,660
Specialty Health Care Services	9,506	3,745	5.1%	3.6%	112%	26%	\$69,956	\$53,602
Music	579	143	2.9%	2.0%	101%	19%	\$27,096	\$39,893
Emerging Activities								
Art Education	570	129	2.6%	2.6%	75%	9%	\$16,854	\$15,912
Agric. Support Services	1,229	385	3.8%	2.6%	64%	14%	\$55,718	\$57,955
Alternative Power Generation	76	3	0.4%	-0.6%	40%	8%	\$113,038	\$182,199
Farm Production	3,078	285	1.0%	0.1%	33%	6%	\$36,131	\$37,211
Agric. Packaging & Warehsg	180	25	1.5%	1.3%	33%	4%	\$59,959	\$63,512
Chemical & Pharmaceutical Mfg	29	10	4.3%	1.2%	2%	1%	\$78,932	\$149,076

Table 18. Performance of the Detailed Honolulu Targeted Industry Portfolio (Cont.)

INDUSTRY GROUPS			Avg. Ann. Job Growth (2010-2020)		Concentration of Industry in Honolulu Compared to U.S.		Avg. Annual Earnings 2020	
	Jobs in Honolulu							
	2020	Change 10-20	Honolulu	U.S.	2020	% Point Change 10-20	Honolulu	U.S.
Transitioning Activities								
Agric. Inputs	192	12	0.7%	0.7%	27%	3%	\$77,095	\$78,885
Hospitals & Nursing Facilities	17,108	365	0.2%	0.4%	91%	9%	\$95,614	\$76,865
Technical Consulting Services	4,535	1,429	3.9%	4.1%	81%	7%	\$73,609	\$90,618
Technology Equipment Distr.	829	59	0.7%	1.2%	51%	4%	\$124,856	\$141,729
Engineering and Research & Developm.	4,852	316	0.7%	1.3%	100%	5%	\$117,177	\$123,248
Marketing, Photography & Related	8,386	1,339	1.8%	2.4%	98%	5%	\$39,578	\$58,950
Business Consulting	4,903	1,282	3.1%	3.8%	76%	4%	\$72,690	\$90,227
Health Practitioners	15,468	1,190	0.8%	1.6%	99%	4%	\$101,019	\$88,461
Specialty Education	3,844	404	1.1%	2.0%	97%	3%	\$27,821	\$30,569
Design Services	1,348	138	1.1%	2.2%	90%	1%	\$38,129	\$49,018
Medical and Diagnostic Testing	1,404	79	0.6%	1.8%	162%	0%	\$77,204	\$83,045
Performing and Creative Arts	5,426	730	1.5%	3.1%	93%	-4%	\$21,047	\$27,170
Computer Services and Software Publi.	4,020	98	0.2%	4.3%	48%	-15%	\$108,915	\$145,555
Declining Activities								
Agric. Processing	4,348	-30	-0.1%	1.7%	86%	-5%	\$52,494	\$64,551
Information & Telecom Tech.	3,878	-128	-0.3%	2.5%	63%	-10%	\$99,931	\$155,944
Architecture	1,556	-55	-0.3%	1.3%	160%	-7%	\$98,123	\$84,151
Higher Education	4,987	-412	-0.8%	0.7%	89%	-2%	\$35,526	\$60,046
Computer Sys. Design & Related	5,027	-595	-1.1%	3.5%	66%	-26%	\$101,892	\$132,557
Fishing, Forestry & Hunting	729	-93	-1.2%	-0.4%	234%	10%	\$15,429	\$36,240
Radio and Television Broadcasting	788	-127	-1.5%	-0.2%	112%	-1%	\$77,819	\$95,151
Other Technology Mfg	367	-121	-2.8%	0.5%	10%	-2%	\$84,379	\$124,289
Call Centers	231	-96	-3.4%	1.4%	16%	-7%	\$30,029	\$48,284
Publishing & Information	1,211	-525	-3.5%	-0.1%	56%	-14%	\$59,149	\$154,088
Apparel	590	-318	-4.2%	-4.3%	182%	22%	\$26,436	\$48,038
Film, TV, Video Production/Distrib	1,441	-779	-4.2%	-0.2%	134%	-45%	\$54,570	\$111,626
R&D Services (exc. Biotech.)	676	-630	-6.4%	1.3%	42%	-40%	\$87,912	\$141,584
Biotechnology	198	-291	-8.6%	5.4%	28%	-76%	\$97,505	\$225,376

Source: See Table 4 for data source.

Hawaii County

Adjusting for overlaps, Hawaii County accounted for 22,178 of the state's targeted & emerging industry jobs in 2020, an 1.2% average annual increase from 2010. As shown in Table 19, among the six major sectors, two sectors were high performing in Hawaii County in the 2010 to 2020 period. Three sectors were in the Transitioning category and one sector lost jobs.

Table 19. Performance of the Major Groups of Hawaii County Targeted Industry Portfolio

INDUSTRY GROUPS	Jobs in HI County		Avg. Ann. Job Growth 2010-2020		Concentration of Industry in HI County Compared to U.S.		Avg. Annual Earnings 2020	
	2020	Change 10-20	HI County	U.S.	2020	% Point Change 10-20	HI County	U.S.
TOTAL CIVILIAN JOBS	100,304	7,293	0.8%	1.3%	100%	0%	\$49,886	\$66,114
TOTAL TARGETED JOBS W/O OVERLAP	22,178	2,400	1.2%	1.6%	95%	1%	\$44,473	\$80,210
Emerging Activities								
EDUCATION (PRIVATE)	871	228	3.1%	1.2%	50%	10%	\$26,276	\$47,822
HEALTH & WELLNESS	6,466	1,129	1.9%	1.3%	78%	8%	\$63,479	\$75,780
Transitioning Activities								
AGRIBUSINESS	8,643	617	0.7%	0.9%	270%	10%	\$32,720	\$49,701
TECHNOLOGY SECTOR	2,447	231	1.0%	2.4%	39%	-3%	\$73,309	\$127,684
CREATIVE SECTOR	5,617	518	1.0%	2.6%	73%	-9%	\$38,910	\$90,045
Declining Activities								
OTHERS	54	-25	-3.7%	0.1%	17%	-7%	\$17,654	\$48,240

Source: See Table 4 for data source. The sum of the individual industries does not add up to the total due to adjusting for overlaps among sectors.

Table 20 shows the performance of detailed targeted & emerging industry groups in Hawaii County. Among the 38 detailed industry groups, 15 groups were high performing. The high-performing activities in the target industry portfolio accounted for about 12,486 jobs or 12.4% of all civilian jobs in 2020. Between 2010 and 2020, those groups generated 30.4% of the total gain in jobs for the civilian economy or about 2,217 new jobs.

About 14.7% of the high-performing activities had average annual earnings that exceeded \$60,000 in 2020. By comparison, the earnings average for the civilian economy in 2020 was \$49,886 by the projected 2020 estimate.

From 2010 to 2020, 11 activities with 9,650 jobs fell into the Transitioning category. They gained jobs over the period but did not keep up with national growth for the same activities resulting in a loss of competitive national industry share. However, eight of those activities grew faster in terms of jobs than the civilian economy as a whole.

Twelve activities in the portfolio fell into the Declining industry category, as a result of net job losses for the 2010 to 2020 period. Jobs in the Declining industry groups totaled an estimated 1,756 in 2020, representing a loss of 434 jobs from 2010.

Table 20. Performance of the Detailed Hawaii County Targeted Industry Portfolio

INDUSTRY GROUPS	Jobs in HI County		Avg. Ann. Job Growth 2010-2020		Concentration of Industry in HI County Compared to U.S.		Avg. Annual Earnings 2020	
	2020	Change 10-20	HI County	U.S.	2020	% Point Change 10-20	HI County	U.S.
Base-Growth Activities								
Farm Production	6,737	393	0.6%	0.1%	405%	37%	\$31,424	\$37,211
Alternative Power Generation	107	23	2.4%	-0.6%	314%	93%	\$131,076	\$182,199
Cultural Activities	136	50	4.6%	1.6%	137%	40%	\$63,861	\$66,365
Design Services	327	79	2.8%	2.2%	121%	13%	\$29,861	\$49,018
Specialty Health Care Services	1,806	969	8.0%	3.6%	118%	44%	\$53,305	\$53,602
Pharmacies	396	46	1.2%	-0.6%	113%	23%	\$49,935	\$56,908
Specialty Education	789	210	3.2%	2.0%	110%	16%	\$25,486	\$30,569
Emerging Activities								
Agric. Support Services	334	113	4.2%	2.6%	97%	18%	\$44,969	\$57,955
Radio and Television Broadcasting	78	28	4.6%	-0.2%	61%	25%	\$44,373	\$95,151
Art Education	62	26	5.6%	2.6%	45%	13%	\$15,999	\$15,912
Hospitals & Nursing Facilities	1,212	67	0.6%	0.4%	36%	2%	\$67,165	\$76,865
Agric. Packaging & Warehsg	28	22	16.7%	1.3%	29%	22%	\$43,628	\$63,512
Computer Services and Software Publish.	377	167	6.0%	4.3%	25%	5%	\$68,191	\$145,555
Higher Education	83	17	2.4%	0.7%	8%	2%	\$33,821	\$60,046
Call Centers	15	5	4.8%	1.4%	5%	2%	\$31,391	\$48,284

Table 20. Performance of the Detailed Hawaii County Targeted Industry Portfolio (Cont.)

INDUSTRY GROUPS	Jobs in HI County		Avg. Ann. Job Growth 2010-2020		Concentration of Industry in HI County Compared to U.S.		Avg. Annual Earnings 2020	
	2020	Change 10-20	HI County	U.S.	2020	% Point Change 10-20	HI County	U.S.
Transitioning Activities								
Technology Equipment Distr.	11	1	1.2%	1.2%	4%	0%	\$90,776	\$141,729
Computer Sys. Design & Related	349	98	3.3%	3.5%	25%	1%	\$55,909	\$132,557
Agric. Processing	961	116	1.3%	1.7%	105%	1%	\$46,365	\$64,551
Information & Telecom Tech.	470	73	1.7%	2.5%	42%	-1%	\$88,254	\$155,944
Engineering and Related Serv.	370	7	0.2%	1.3%	43%	-3%	\$79,742	\$105,660
Engineering and Research & Development	549	11	0.2%	1.3%	62%	-4%	\$104,008	\$123,248
Marketing, Photography & Related	1,368	162	1.3%	2.4%	89%	-6%	\$26,591	\$58,950
Health Practitioners	2,846	61	0.2%	1.6%	101%	-9%	\$70,621	\$88,461
Performing and Creative Arts	1,598	192	1.3%	3.1%	151%	-21%	\$17,193	\$27,170
Business Consulting	591	106	2.0%	3.8%	50%	-7%	\$40,981	\$90,227
Technical Consulting Services	537	102	2.1%	4.1%	53%	-8%	\$38,376	\$90,618
Declining Activities								
R&D Services (exc. Biotech.)	343	-1	0.0%	1.3%	116%	-10%	\$112,835	\$141,584
Fishing, Forestry & Hunting	495	-2	0.0%	-0.4%	879%	75%	\$12,740	\$36,240
Architecture	156	-3	-0.2%	1.3%	89%	-9%	\$68,427	\$84,151
Medical and Diagnostic Testing	206	-13	-0.6%	1.8%	132%	-28%	\$58,399	\$83,045
Music	150	-28	-1.7%	2.0%	145%	-55%	\$21,067	\$39,893
Other Technology Mfg	21	-5	-1.9%	0.5%	3%	-1%	\$30,369	\$124,289
Agric. Inputs	89	-25	-2.5%	0.7%	70%	-21%	\$45,251	\$78,885
Biotechnology	11	-7	-4.6%	5.4%	9%	-14%	\$22,162	\$225,376
Publishing & Information	149	-111	-5.4%	-0.1%	38%	-24%	\$36,491	\$154,088
Apparel	40	-30	-5.5%	-4.3%	68%	-6%	\$12,631	\$48,038
Chemical & Pharmaceutical Mfg	22	-47	-10.9%	1.2%	9%	-21%	\$76,533	\$149,076
Film, TV, Video Production/Distrib	74	-161	-10.9%	-0.2%	38%	-75%	\$73,511	\$111,626

Source: See Table 4 for data source

Maui County

Adjusting for overlaps, Maui accounted for 18,015 of the state's targeted & emerging industry jobs in 2020, an 1.4% average annual increase from 2020. As shown in Table 21, among the six major sectors, three sectors were high performing in Maui County in the 2010 to 2020 period. Two sectors were in the Transitioning category and one sector lost jobs.

Table 21. Performance of the Major Groups of Maui County Targeted Industry Portfolio

INDUSTRY GROUPS	Jobs in Maui		Avg. Ann. Job Growth (2010-2020)		Concentration of Industry in Maui Compared to U.S.		Avg. Annual Earnings 2020	
	Change 10-20				% Point Change 10-20			
	2020	10-20	Maui	U.S.	2020	10-20	Maui	U.S.
TOTAL CIVILIAN JOBS	94,812	1,688	0.2%	1.3%	100%	0%	\$53,171	\$66,114
TOTAL TARGETED JOBS W/O OVERLAP	18,015	2,367	1.4%	1.6%	82%	7%	\$55,907	\$80,210
Emerging Activities								
HEALTH & WELLNESS	7,259	2,723	4.8%	1.3%	93%	34%	\$77,148	\$75,780
EDUCATION (PRIVATE)	683	186	3.2%	1.2%	42%	11%	\$23,596	\$47,822
OTHERS	79	6	0.8%	0.1%	26%	4%	\$18,986	\$48,240
Transitioning Activities								
TECHNOLOGY SECTOR	2,054	148	0.8%	2.4%	35%	-2%	\$80,723	\$127,684
CREATIVE SECTOR	6,389	317	0.5%	2.6%	88%	-9%	\$39,813	\$90,045
Declining Activities								
AGRIBUSINESS	3,240	-722	-2.0%	0.9%	107%	-21%	\$41,191	\$49,701

Source: See Table 4 for data source. The sum of the individual industries does not add up to the total due to adjusting for overlaps among sectors.

Table 22 shows the performance of detailed targeted & emerging industry groups in Maui. Among the detailed industry groups, 10 groups were high performing. The high-performing activities in the target industry portfolio accounted for about 4,937 jobs or 5.2% of all civilian jobs in 2020. Between 2010 and 2020, those groups generated 2,960 additional jobs. In comparison, the whole civilian economy in Maui only added 1,688 new jobs during the same period.

About 80.7% of the high-performing activities had average annual earnings that exceeded \$60,000 in 2020. By comparison, the earnings average for the civilian economy in 2020 was an estimated \$53,171.

In 2020, eight activities with 8,921 jobs fell into the Transitioning category. They gained jobs over the period but did not keep up with national growth for the same activities, resulting in a loss of competitive national industry share. However, all of those activities grew faster in terms of jobs than the civilian economy as a whole.

Twenty activities in the portfolio fell into the Declining industry category as the result of net job losses for the 2010 to 2020 period. Jobs in the Declining industry groups totaled an estimated 5,702 in 2020, representing a loss of 1,451 jobs from 2020.

Table 22. Performance of the Detailed Maui County Targeted Industry Portfolio

INDUSTRY GROUPS	Jobs in Maui		Avg. Ann. Job Growth (2010-2020)		Concentration of Industry in Maui Compared to U.S.		Avg. Annual Earnings 2020	
	2020	Change 10-20	Maui	U.S.	2020	% Point Change 10-20	Maui	U.S.
Base-Growth Activities								
Specialty Health Care Services	1,568	1,016	11.0%	3.6%	108%	59%	\$65,767	\$53,602
Emerging Activities								
Medical and Diagnostic Testing	144	43	3.6%	1.8%	97%	24%	\$79,018	\$83,045
Specialty Education	641	163	3.0%	2.0%	94%	17%	\$21,234	\$30,569
Agric. Support Services	245	90	4.7%	2.6%	75%	20%	\$58,054	\$57,955
Hospitals & Nursing Facilities	2,157	1,561	13.7%	0.4%	67%	50%	\$91,572	\$76,865
Film, TV, Video Production/Distrib	90	32	4.4%	-0.2%	49%	21%	\$66,837	\$111,626
Chemical & Pharmaceutical Mfg	27	22	19.1%	1.2%	11%	9%	\$109,726	\$149,076
Call Centers	20	9	5.8%	1.4%	8%	3%	\$23,807	\$48,284
Agric. Packaging & Warehsg	4	1	3.2%	1.3%	5%	1%	\$8,947	\$63,512
Higher Education	42	23	8.2%	0.7%	4%	2%	\$59,596	\$60,046
Transitioning Activities								
Cultural Activities	69	10	1.6%	1.6%	74%	7%	\$44,070	\$66,365
Technical Consulting Services	455	138	3.7%	4.1%	47%	3%	\$35,161	\$90,618
Business Consulting	495	137	3.3%	3.8%	45%	2%	\$35,088	\$90,227
Health Practitioners	3,005	150	0.5%	1.6%	112%	0%	\$76,040	\$88,461
Computer Services and Software Publishers	454	124	3.2%	4.3%	31%	0%	\$102,110	\$145,555
Marketing, Photography & Related	1,586	188	1.3%	2.4%	109%	-1%	\$32,861	\$58,950
Computer Sys. Design & Related	436	77	2.0%	3.5%	33%	-2%	\$95,629	\$132,557
Performing and Creative Arts	2,421	283	1.3%	3.1%	242%	-19%	\$23,421	\$27,170

Table 22. Performance of the Detailed Maui County Targeted Industry Portfolio (Cont.)

INDUSTRY GROUPS	Jobs in Maui		Avg. Ann. Job Growth (2010-2020)		Concentration of Industry in Maui Compared to U.S.		Avg. Annual Earnings 2020	
	2020	Change 10-20	Maui	U.S.	2020	% Point Change 10-20	Maui	U.S.
Declining Activities								
Design Services	312	-4	-0.1%	2.2%	122%	-15%	\$34,783	\$49,018
Apparel	59	-2	-0.4%	-4.3%	107%	43%	\$17,373	\$48,038
Art Education	81	-3	-0.4%	2.6%	63%	-13%	\$18,340	\$15,912
Architecture	164	-9	-0.5%	1.3%	99%	-7%	\$60,965	\$84,151
Engineering and Related Serv.	354	-29	-0.8%	1.3%	43%	-5%	\$82,880	\$105,660
R&D Services (exc. Biotech.)	148	-14	-0.9%	1.3%	53%	-6%	\$108,441	\$141,584
Engineering and Research & Development	337	-34	-1.0%	1.3%	41%	-5%	\$104,714	\$123,248
Information & Telecom Tech.	410	-46	-1.1%	2.5%	39%	-11%	\$101,774	\$155,944
Fishing, Forestry & Hunting	212	-24	-1.1%	-0.4%	399%	17%	\$9,696	\$36,240
Pharmacies	386	-47	-1.2%	-0.6%	116%	6%	\$50,684	\$56,908
Biotechnology	6	-1	-1.5%	5.4%	5%	-4%	\$171,938	\$225,376
Agric. Processing	458	-121	-2.3%	1.7%	53%	-18%	\$46,746	\$64,551
Farm Production	2,265	-615	-2.4%	0.1%	144%	-23%	\$40,579	\$37,211
Technology Equipment Distr.	17	-7	-3.3%	1.2%	6%	-2%	\$77,928	\$141,729
Other Technology Mfg	38	-16	-3.5%	0.5%	6%	-2%	\$47,131	\$124,289
Publishing & Information	192	-117	-4.6%	-0.1%	52%	-22%	\$36,021	\$154,088
Alternative Power Generation	20	-19	-6.4%	-0.6%	62%	-39%	\$128,520	\$182,199
Agric. Inputs	55	-54	-6.6%	0.7%	46%	-41%	\$69,102	\$78,885
Radio and Television Broadcasting	60	-68	-7.3%	-0.2%	50%	-44%	\$84,623	\$95,151
Music	127	-223	-9.6%	2.0%	130%	-263%	\$24,492	\$39,893

Source: See Table 4 for data source.

Kauai County

Adjusting for overlaps, Kauai County accounted for 7,414 of the state's targeted & emerging industry jobs in 2020, an 1.6% annual increase from 2010. As shown in Table 23, among the six major sectors, two sectors were high performing in Kauai County in the 2010 to 2020 period. Three sectors were in the Transitioning category and one sector lost jobs.

Table 23. Performance of the Major Groups of Kauai County Targeted Industry Portfolio

INDUSTRY GROUPS	Jobs in Kauai		Avg. Ann. Job Growth (2010-2020)		Concentration of Industry in Kauai Compared to U.S.		Avg. Annual Earnings 2020	
	Change				% Point Change			
	2020	10-20	Kauai	U.S.	2020	10-20	Kauai	U.S.
TOTAL CIVILIAN JOBS	43,705	2,709	0.6%	1.3%	100%	0%	\$49,856	\$66,114
TOTAL TARGETED JOBS W/O OVERLAP	7,414	1,091	1.6%	1.6%	73%	5%	\$53,561	\$80,210
Emerging Activities								
EDUCATION (PRIVATE)	230	58	2.9%	1.2%	30%	6%	\$29,425	\$47,822
HEALTH & WELLNESS	2,587	497	2.2%	1.3%	72%	10%	\$76,199	\$75,780
Transitioning Activities								
AGRIBUSINESS	1,806	144	0.8%	0.9%	129%	7%	\$36,542	\$49,701
TECHNOLOGY SECTOR	1,029	173	1.9%	2.4%	38%	0%	\$74,412	\$127,684
CREATIVE SECTOR	2,418	320	1.4%	2.6%	72%	-4%	\$37,892	\$90,045
Declining Activities								
OTHERS	27	-7	-2.3%	0.1%	19%	-4%	\$26,599	\$48,240

Source: See Table 4 for data source. The sum of the individual industries does not add up to the total due to adjusting for overlaps among sectors.

Table 24 shows the performance of detailed targeted & emerging industry groups in Kauai. Among the detailed industry groups with jobs in 2020, 15 groups were in the high performing category; with positive job growth combined with a job growth rate that was higher than the nation for the same activity. The high performing activities in the target industry portfolio accounted for about 5,135 jobs or 11.7% of all civilian jobs in 2020. Between 2010 and 2020, these groups generated 37.0% of the total gain in jobs for the civilian economy or about 1,002 new jobs.

In 2020, about 37.8% of the high-performing activities had average annual earnings that exceeded \$60,000 by comparison; the earnings average for the overall civilian economy was lower at \$49,856.

Ten activities with 2,313 jobs fell into the Transitioning category for 2020. They gained jobs over the period but did not keep up with national growth for the same activities resulting in a loss of competitive national industry share. Five of the ten activities grew faster than the civilian economy as a whole in terms of jobs.

Ten activities in the portfolio fell into the Declining industry category as the result of net job losses for the 2010 to 2020 period. Jobs in the Declining industry groups totaled an estimated 609 in 2020, representing a loss of 104 jobs from 2010.

Table 24. Performance of the Detailed Kauai County Targeted Industry Portfolio

INDUSTRY GROUPS	Jobs in Kauai		Avg. Ann. Job Growth (2010-2020)		Concentration of Industry in Kauai Compared to U.S.		Avg. Annual Earnings 2020	
	Change				% Point			
	2020	10-20	Kauai	U.S.	2020	10-20	Kauai	U.S.
Base-Growth Activities								
Fishing, Forestry & Hunting	159	3	0.2%	-0.4%	648%	74%	\$14,340	\$36,240
Alternative Power Generation	53	51	43.2%	-0.6%	356%	347%	\$127,756	\$182,199
Farm Production	1,319	28	0.2%	0.1%	182%	12%	\$37,420	\$37,211
Music	61	19	3.8%	2.0%	135%	28%	\$22,907	\$39,893
Pharmacies	183	9	0.5%	-0.6%	120%	19%	\$52,939	\$56,908
Cultural Activities	44	11	2.7%	1.6%	102%	16%	\$35,655	\$66,365
Emerging Activities								
Health Practitioners	1,122	259	2.7%	1.6%	91%	14%	\$80,767	\$88,461
Radio and Television Broadcasting	46	1	0.1%	-0.2%	83%	7%	\$54,330	\$95,151
Specialty Health Care Services	478	196	5.4%	3.6%	71%	15%	\$52,678	\$53,602
Specialty Education	215	48	2.6%	2.0%	69%	7%	\$27,568	\$30,569
Agric. Processing	234	116	7.1%	1.7%	59%	26%	\$41,920	\$64,551
Hospitals & Nursing Facilities	764	49	0.7%	0.4%	52%	4%	\$90,254	\$76,865
Technical Consulting Services	215	102	6.7%	4.1%	49%	13%	\$32,554	\$90,618
Business Consulting	226	101	6.1%	3.8%	44%	11%	\$32,495	\$90,227
Higher Education	15	9	10.0%	0.7%	3%	2%	\$55,885	\$60,046

Table 24. Performance of the Detailed Kauai County Targeted Industry Portfolio (Cont.)

INDUSTRY GROUPS	Jobs in Kauai		Avg. Ann. Job Growth (2010-2020)		Concentration of Industry in Kauai Compared to U.S.		Avg. Annual Earnings 2020	
	Change				% Point			
	2020	10-20	Kauai	U.S.	2020	10-20	Kauai	U.S.
Transitioning Activities								
Marketing, Photography & Related	683	116	1.9%	2.4%	102%	1%	\$30,354	\$58,950
Architecture	87	5	0.5%	1.3%	114%	-1%	\$43,260	\$84,151
Art Education	31	5	1.7%	2.6%	52%	-1%	\$11,600	\$15,912
Agric. Support Services	80	13	1.7%	2.6%	53%	-1%	\$49,722	\$57,955
R&D Services (exc. Biotech.)	78	3	0.4%	1.3%	61%	-2%	\$124,628	\$141,584
Performing and Creative Arts	725	128	2.0%	3.1%	157%	-9%	\$25,996	\$27,170
Engineering and Research & Development	154	1	0.1%	1.3%	40%	-3%	\$100,859	\$123,248
Information & Telecom Tech.	138	8	0.6%	2.5%	28%	-4%	\$90,373	\$155,944
Computer Sys. Design & Related	176	10	0.6%	3.5%	29%	-7%	\$74,311	\$132,557
Biotechnology	160	18	1.2%	5.4%	292%	-119%	\$93,965	\$225,376
Declining Activities								
Engineering and Related Serv.	163	-1	-0.1%	1.3%	43%	-4%	\$58,787	\$105,660
Computer Services and Software Publishers	145	-2	-0.1%	4.3%	22%	-10%	\$80,880	\$145,555
Design Services	107	-7	-0.6%	2.2%	90%	-21%	\$28,139	\$49,018
Other Technology Mfg	6	-1	-1.2%	0.5%	2%	0%	\$33,444	\$124,289
Apparel	27	-3	-1.2%	-4.3%	105%	33%	\$26,599	\$48,038
Medical and Diagnostic Testing	40	-16	-3.3%	1.8%	59%	-34%	\$67,195	\$83,045
Film, TV, Video Production/Distrib	38	-17	-3.7%	-0.2%	45%	-15%	\$55,356	\$111,626
Publishing & Information	69	-40	-4.5%	-0.1%	41%	-19%	\$38,494	\$154,088
Agric. Inputs	12	-12	-6.9%	0.7%	21%	-22%	\$46,151	\$78,885
Agric. Packaging & Warehsg	2	-4	-10.2%	1.3%	4%	-10%	\$9,316	\$63,512

Source: See Table 4 for data source.

CONCLUSIONS

This report is the 12th update of the performance measures of Hawaii's Targeted Industry Portfolio that was developed in 2009. The 2009 report, which initially established and measured the targeted industry portfolio, showed that a number of industry groups performed well during the expansion phase (as measured by change in jobs). The 2010 - 2020 update reports extended those measurements through the contraction phase, providing an analysis of how targets performed over the ups and downs of the business cycle. This updated report added the 2020 data to illustrate how targeted industries have been performing after the recovery period of the recession.

Table 25 summarizes the best performing targeted industry groups for the 2010 to 2020 period in terms of average growth and national competitiveness. They all showed positive growth and at the same time outperformed the same activities nationally over the measurement period. Among the eight best performing industry groups, five groups had average earnings above the average for Hawaii's economy.

Table 25. Highest Performing Targeted Activities, 2010 to 2020

INDUSTRY GROUPS	Jobs in Hawaii		Avg. Ann. Job Growth (2010-2020)		Concentration of Industry in Hawaii Compared to U.S.		Avg. Annual Earnings (2020)	
	2020	Change 10-20	HI	U.S.	2020	% Point Change 10-20	HI	U.S.
TOTAL CIVILIAN JOBS	793,269	13,747	0.2%	1.3%	100%	0%	\$61,850	\$66,114
TOTAL TARGETED JOBS WITHOUT OVERLAP	156,476	13,958	0.9%	1.6%	85%	4%	\$65,822	\$80,210
Base-Growth and Emerging Activities								
Above Average State Earnings								
Alternative Power Generation	255	58	2.6%	-0.6%	95%	33%	\$124,837	\$182,199
Engineering and Related Serv.	6,845	900	1.4%	1.3%	100%	11%	\$109,851	\$105,660
Hospitals & Nursing Facilities	21,241	2,041	1.0%	0.4%	79%	12%	\$93,389	\$76,865
Cultural Activities	2,538	881	4.4%	1.6%	322%	101%	\$68,698	\$66,365
Specialty Health Care Services	13,358	5,926	6.0%	3.6%	110%	32%	\$66,595	\$53,602
Below Average State Earnings								
Agric. Packaging & Warehsg	214	45	2.4%	1.3%	28%	5%	\$56,333	\$63,512
Agric. Support Services	1,888	601	3.9%	2.6%	69%	14%	\$53,868	\$57,955
Pharmacies	3,578	207	0.6%	-0.6%	129%	26%	\$51,969	\$56,908

* For definition and data source, See Table 4