Hawai‘i’s General Economic Competitiveness and Business Climate

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Department of Business, Economic Development & Tourism
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This report was prepared by Mustafa Shirzad, Economist, under the direction of Dr. Eugene Tian, Division Administrator and Dr. Joseph Roos, Economic Research Program Manager with edits by Paul Migliorato

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Section 1. Introduction

The Department of Business, Economic Development and Tourism (DBEDT) was requested by the Thirty-Second Hawai‘i State Legislature to establish a taskforce to identify methods to improve Hawai‘i’s general economic competitiveness and business climate by mitigating regulatory and tax burdens. This report provides analysis regarding Hawai’i business climate, access to finance, workforce development, and business costs. The objective of this report is to assist the taskforce in formulating recommendations in these areas.

Competitiveness is a multifaceted concept and has been the subject of significant consideration in academic literature. The Institute for Strategy and Competitiveness at Harvard Business School has developed a competitiveness framework and analysis for all U.S states and defined competitiveness as labor productivity which creates value (Porter, 2012). Similarly, competitiveness was also referred to as state capacity to enhance economic growth, wage growth and welfare (Ketels et al, 2012). Competitiveness was also indicated by significant market presence in emerging and strategic clusters or groups of industries (UNIDO, 2009).

This report builds its discussion framework on general economic competitiveness based on earlier definitions of competitiveness as productivity and the ability of the state to create value and promote economic growth. This framework examines the dimensions related to economic growth, job creation, wage increase, and welfare improvement of Hawai‘i’ residents. Successful economic competitiveness policies at the state level not only contribute to the economic well-being within the state but also greatly contribute to the national economic health.

Both microeconomic and macroeconomic phenomena have been vital to the state economic competitiveness and general business environment (Porter 2012). Microeconomic competitiveness includes, but is not limited to, the improvement of firm performance toward gaining competitive labor force, attracting capital and investment and promoting efficient energy and infrastructure development for business operation and performance (Haughton, 2013) (Bartik, 1991) (Francis, 2017). The macroeconomic side focuses on economy-wide conditions and pretexts for firms to improve competition and business environments. Economy-wide policies that directly or indirectly impact the business climate are examined through the lens of business costs including regulatory burdens, tax burdens, and associated costs related to the business operation and survival. Business costs cover factors related to a conducive environment for businesses in terms of regulatory climate, tax policy, and business incentives.

The goal of this report is to analyze trends and recent microeconomic, macroeconomic, and regulatory factors impacting Hawai‘i’s economic competitiveness and business environment. We summarize Hawai‘i’s general economic competitiveness and business climate by developing the discussion framework to facilitate the process of exploring factors relevant and vital to economic competitiveness. Our analysis framework includes major areas of access to capital, workforce and infrastructure development, and business costs that cover both regulatory and tax burdens.

Diagram 1. Economic Competitiveness, Discussion Framework

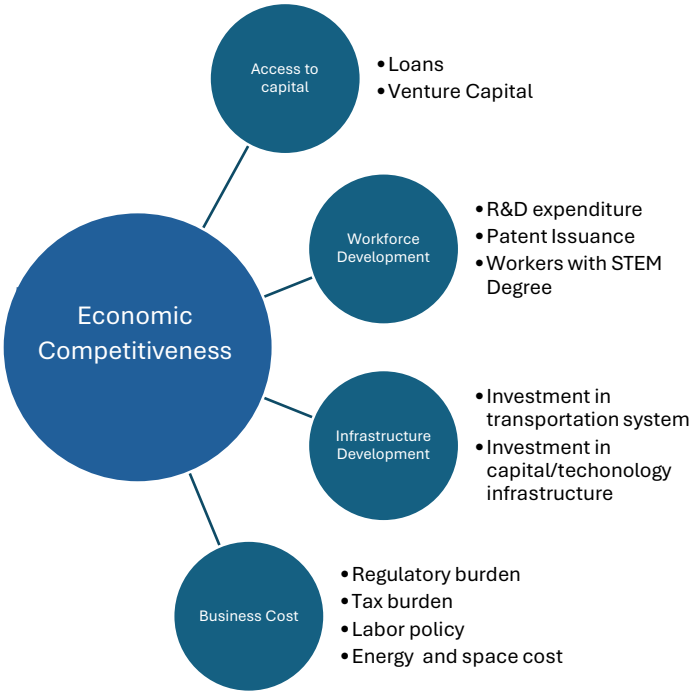


Table 1. Economic Competitiveness Core Areas and Assessment Metrics

Component	Metrics	Measurement unit
Microeconomic Competitiveness: focuses on firm performance toward gaining competitive labor force, attracting capital and investment for incumbents and starts ups as well as promoting efficient energy and infrastructure development for business operation and performance		
Access to Capital: equip businesses with vital financial and operational support to create jobs and compete in both local and traded market.	Business loans	• Small business loan/ GDP (nominal)
	Venture capital	• Capital net flow in $ • Aggregate Asset in $ under Management (AUM)
Workforce Development: market condition and investment toward equipping labor force with competitive knowledge to meet market demand and promote economic growth and innovation.	Research and Development (R&D)	• R&D expenditure $ per 1000 population • R&D value added
	Patent issuance	• Number of patents per 100,000 population
Infrastructure Development: investment toward efficient transportation, technology, and electricity infrastructure.	Expenditure in public infrastructure, technology sites, equipment and other forms of capital.	• Capital spending as percentage of total spending and nominal GDP
	Transportation infrastructure	• Road acceptance rate %
Macro and regulatory policy: focuses on State and local regulation and strategies that include taxation, regulatory climate, labor cost, and energy cost that directly or indirectly hinder/enhance conducive environment for business growth, investment and innovation.		
Regulatory Policy	Regulatory climate	• State ranking for regulatory fairness for businesses
Tax Policy	Tax burden	• Tax burden on personal income
		• Corporate Income Tax % nominal GDP
Labor cost	State and local imposed cost of hiring an employee	• Cost in dollar amount per $100 wage by employer
Energy Cost	State/local price for energy for commercial activities	• Price per millions of BTUs of energy unit
Space cost	Average cost to rent office/retail space/… for commercial activities	• Asking price per square foot

Section 2. Economic Overview

In 2023, Hawai'i Gross Domestic Product (GDP) was $108.02 billion dollars ranking as 40th largest economy for the size of GDP. However, with per capita GDP of $70,778, Hawaii ranked 31st among the 50 states. GDP and incomes aside, the high cost of living is a consistent challenge for Hawai'i's economy, business environment, and its residents. According to a 2023 ranking for the cost of living by state published by Forbes[1], Hawai'i ranks as the nation's most expensive state with average annual expenditure of over $55,000 per average household.

Hawai'i's isolation from the mainland, limited labor mobility and access to broader markets highlight its challenging economic landscape. These factors affect the state's ability to improve economic competitiveness and the business environment because they influence its workforce development, infrastructure development, access to capital, and business costs.

According to several rankings entities evaluating the overall business and economy environments of U.S. states, Hawai'i consistently ranks among the lowest-ranked 10 states. The most commonly employed metrics to rank states for business include business creation and growth rate, business cost, workforce and infrastructure development, access to capital, technology and innovation, and affordability. As shown in Table 2, while Hawai'i was recognized as a state with a moderate level of workforce development, it ranked low in several other categories, including business costs, access to capital, infrastructure development, and innovation. The studies indicate that Hawai'i high cost of doing business, high cost of living, limited access to the finance, and relatively less-developed level of infrastructure and technology have been consistent challenges to the state.

[1] Cost of living index was developed by factoring annual expenses for housing, healthcare, taxes, food, and transportation.

Table 2. Hawai'i's Business and Economic Environment Ranking by Multiple Entities

Ranking Institution	Description	Year	Overall Ranking	Business/ Economy Climate	Business Cost	Workforce	Access to Capital	Cost of Living /Affordability	Infrastructure	Technology & Innovation
CNBC[2]	American Top States for Business	2024	50	49	50	32	48	48	47	45
US News	Best State Ranking	2024	31	47	49	12	46	41	47	
ITIF[3]	State New Economy Index	2020	46	42		32	40		40	47
Forbes	Best States for Business	2019	47	24	50	32		40		
Wallet Hub	Best & Worst State Economies	2024	50	49		50				50
ALEC [4]	Economic Outlook	2024	41	42	41					
Tax Foundation	State Business Tax Climate Index	2024	42		42					

Note: Note: Numbers in the table represent ranking, 1 stands for 1st position (best) and 50 stands for 50th position (worst). A reddish hue represents the worst position yellow represents moderate position, and green represents favorable position. Year column indicates the report publishing year.

[2] Consumer News and Business Channel
[3] Information Technology and Innovation Foundation
[4] American Legislative Exchange Council

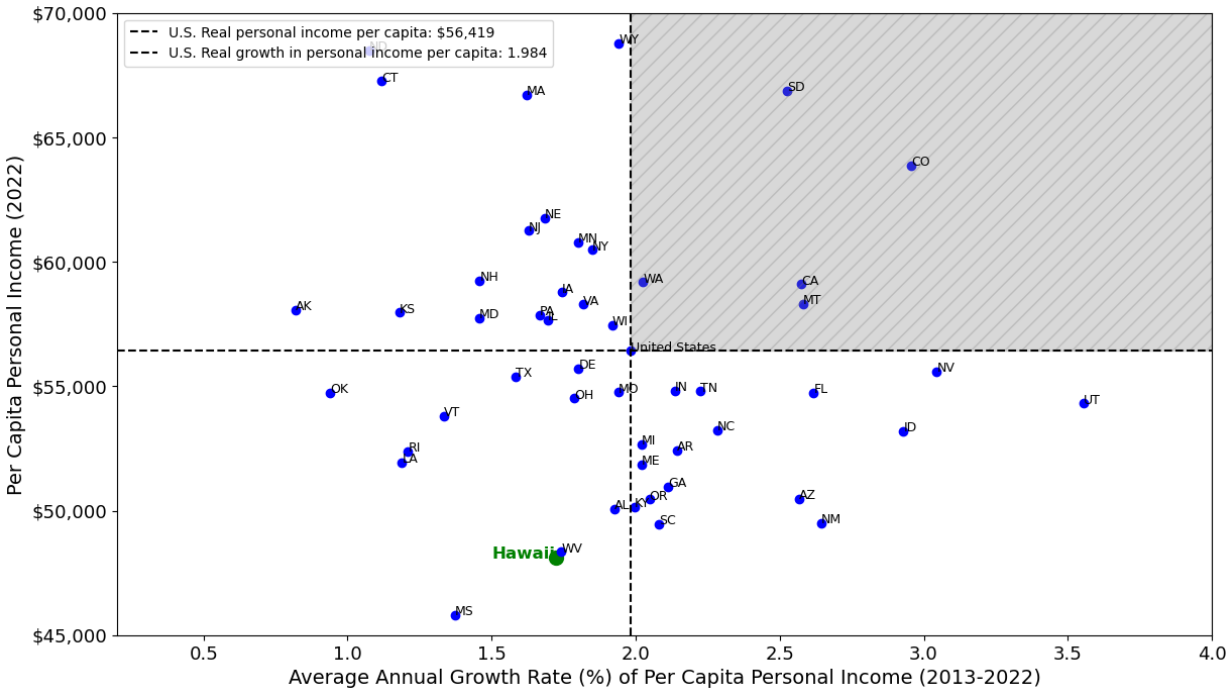
Table 3. GDP and GDP per Capita Year 2023 by State

State	GDP 2023 (millions of current dollar)	GDP Ranking	GDP per Capita 2023 (current dollar)	GDP per Capita Ranking	Real GDP (millions of chained 2017 dollars)
California	$3,870,379	1	$98,155	4	$3,248,657
Texas	$2,583,866	2	$82,576	15	$2,097,090
New York	$2,172,010	3	$109,326	1	$1,791,211
Florida	$1,600,811	4	$68,492	37	$1,292,788
Illinois	$1,098,346	5	$86,415	12	$885,651
Pennsylvania	$976,361	6	$74,652	25	$799,229
Ohio	$884,834	7	$74,460	27	$709,817
Georgia	$831,828	8	$74,397	28	$678,201
Washington	$807,865	9	$101,514	3	$677,238
New Jersey	$806,665	10	$84,905	13	$663,889
North Carolina	$788,103	11	$71,347	32	$638,067
Massachusetts	$736,296	12	$103,178	2	$615,505
Virginia	$719,897	13	$81,703	17	$597,597
Michigan	$673,818	14	$66,448	39	$554,256
Colorado	$529,627	15	$88,901	10	$437,056
Tennessee	$523,032	16	$72,364	29	$422,088
Arizona	$522,767	17	$68,945	34	$422,400
Maryland	$515,607	18	$82,323	16	$422,866
Indiana	$499,503	19	$72,138	30	$404,290
Minnesota	$483,162	20	$83,402	14	$390,908
Missouri	$430,114	21	$68,868	35	$348,487
Wisconsin	$428,447	22	$71,875	31	$344,571
Connecticut	$345,912	23	$94,124	6	$286,628
South Carolina	$327,420	24	$59,761	46	$262,299
Oregon	$318,884	25	$74,639	26	$261,952
Louisiana	$314,989	26	$68,509	36	$248,616
Alabama	$304,936	27	$59,122	47	$245,355
Utah	$281,329	28	$80,297	19	$225,459
Kentucky	$279,708	29	$60,960	44	$224,418
Oklahoma	$256,689	30	$62,678	43	$207,923
Iowa	$254,032	31	$78,369	21	$202,051
Nevada	$245,979	32	$75,281	24	$195,406
Kansas	$228,232	33	$76,830	22	$183,796
Nebraska	$181,285	34	$90,395	9	$145,020
Arkansas	$178,606	35	$57,832	48	$142,861
Mississippi	$151,147	36	$51,357	50	$119,548
New Mexico	$135,010	37	$63,377	42	$110,324
Idaho	$120,958	38	$60,430	45	$95,898
New Hampshire	$114,101	39	$80,978	18	$93,467
Hawaii	$110,265	40	$76,248	23	$88,614
West Virginia	$102,152	41	$57,714	49	$80,798
Delaware	$98,069	42	$93,229	7	$78,014
Maine	$93,270	43	$66,384	40	$75,195
Rhode Island	$77,574	44	$69,741	33	$63,277
North Dakota	$76,043	45	$95,464	5	$60,349
South Dakota	$74,034	46	$80,065	20	$57,275
Montana	$73,255	47	$64,415	41	$57,373
Alaska	$68,056	48	$91,951	8	$54,060
Wyoming	$51,991	49	$88,477	11	$40,211
Vermont	$43,534	50	$67,131	38	$35,237

Source: Census Bureau, State Population & BEA State Annual Summary. READ estimation for GDP per Capita.

Moreover, personal income level and income growth are important metrics because they affect individuals' welfare condition, consumption level and overall economic growth. Figure 1 illustrates average annual growth rate of real personal income (horizontal-axis) across all states for the period of 2013-2022 and its level in 2022 (vertical-axis). The upper right quadrant represents states with high income growth and high-income level while the lower left quadrant represents states with both low-income growth rate and income level. Hawai'i is spotted in the quadrant of states with both low growth and low real per capita personal income. Hawai'i' real personal income per capita stands below $50,000 with the growth rate of less than two percent over the period depicted.

Figure 1. Comparative State Per Capita Personal Income Performance (2013-2022)



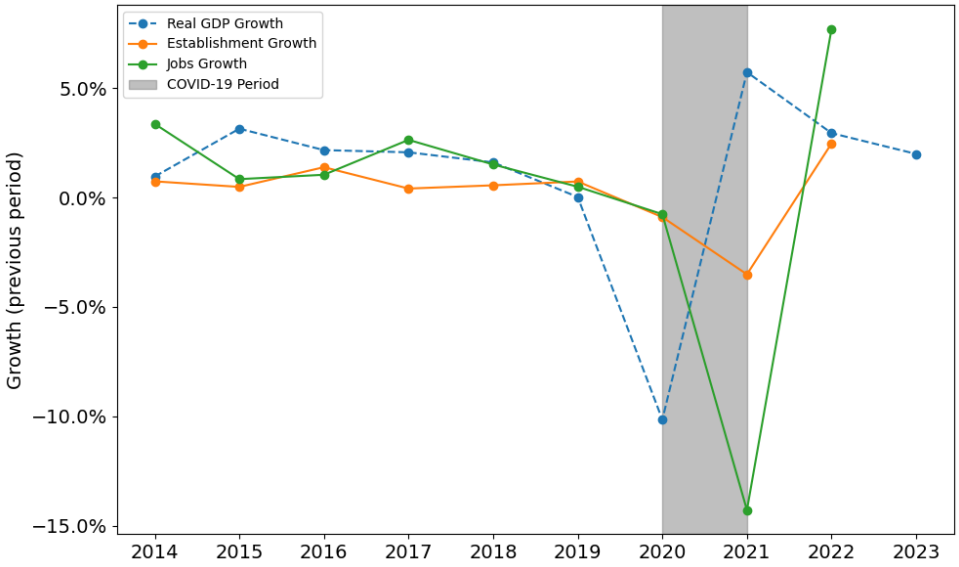
Source: Bureau of Economic Analysis, Real per capita personal income (constant 2017 dollars). Average annual growth rate is calculated as compound annual growth rate for 10 years period in percentage. READ estimation.

The subsequent sections of this study are organized as follows: Section 3 assesses Hawai'i's general business environment, Section 4 covers workforce development, Section 5 delves into access to capital, Section 6 explores macroeconomic and fiscal policies, and Section 7 examines findings on infrastructure development.

Section 3. Business Environment

Over the last decade, Hawai‘i’s private sector experienced significant fluctuations in terms of growth in real GDP, business establishments, and jobs. Covid-19 seriously disrupted real GDP and employment growth rate, resulting in declines of 10.5% in real GDP growth in 2020, 15% in job growth and 3.5% in establishment growth in 2021. However, these trends were followed by recoveries in real GDP growth from 2020 to 2021, employment and establishment growth from 2021 to 2022. While growth rates for employment and establishments remained positive, real GDP declined slightly from 2021 to 2023.

Figure 2. Hawai‘i Real GDP, Business Establishment, and Job Growth (2014-2023)

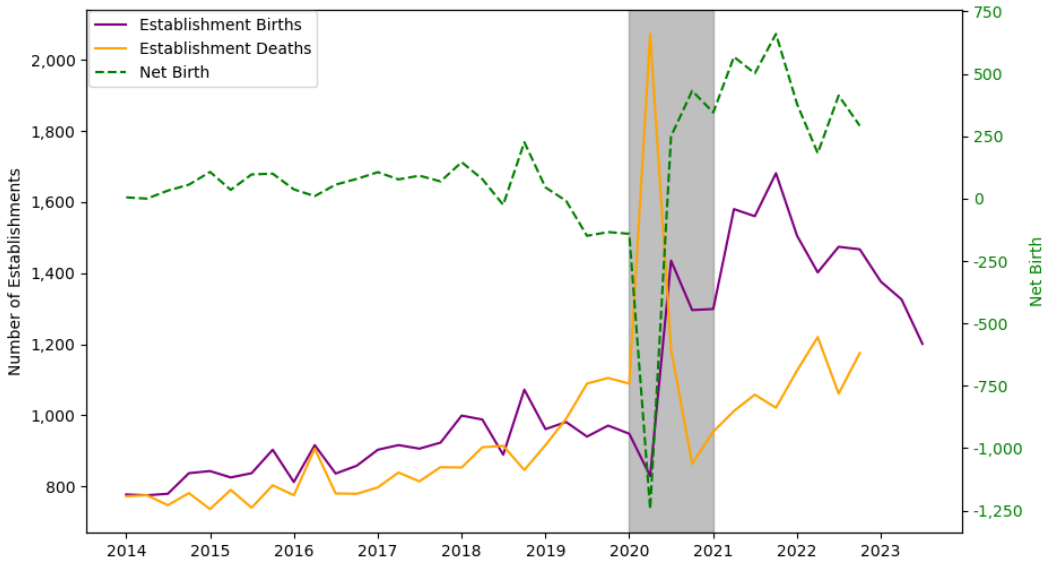


Source: US Census Bureau (Business Dynamics Statistics), Bureau of Economic Analysis (State Annual Summary Statistics) & Bureau of Labor Statistics (Business Employment Dynamics)

Business establishment data shows that establishments net births[5] declined sharply in Hawai‘i following the Covid-19 pandemic in 2020. Over the course of early to mid-2020, more than 2,000 establishments were closed, leading to the lowest level establishments net births during the period of 2014-2023. However, the level of establishment net births began to recover in 2021 and reached a positive level in 2023.

[5] Bureau of Labor Statistics defines establishment birth as records with positive employment in the third months of a quarter and zero employment in the third months of the previous four quarters. Establishment death is defined when a business with positive employment report zero employment or does not report at all for a length of time.

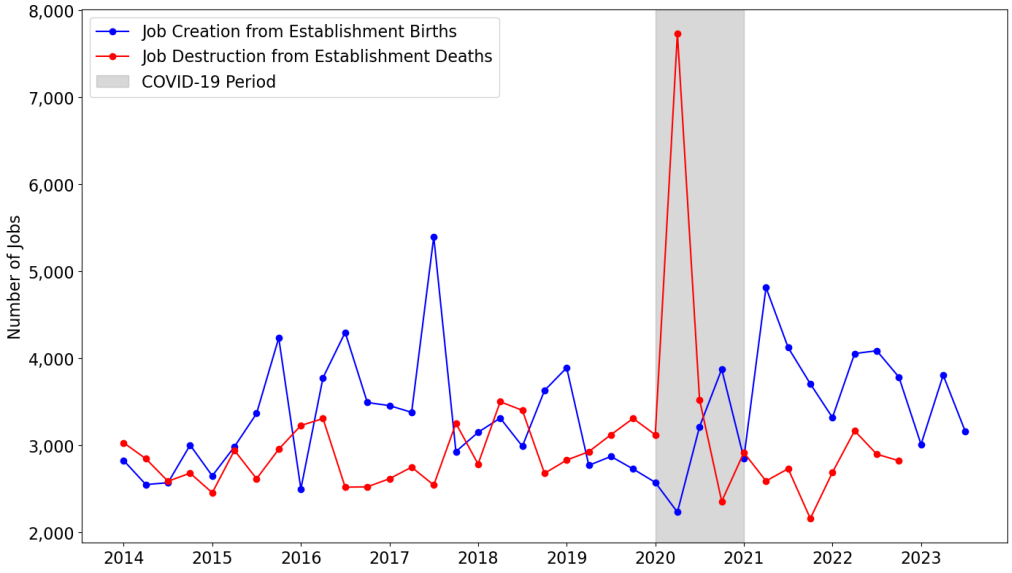
Figure 3. Annual Hawai‘i Establishment Birth and Death (2014-2023)



Source: Bureau of Labor Statistics, BED. Shaded area represents Covid-19 period. Seasonally adjusted data.

Job creation and destruction from both business births and deaths have followed a similar pattern over 2014-2023. Figure 4 illustrates that major job loss happened during the Covid-19 period, which is directly related to the establishment closures. On the other hand, it can be observed that the number of jobs created by establishment births has recovered since 2021, remaining higher than job losses from establishment deaths.

Figure 4. Annual Hawai‘i Jobs Creation and Destruction by Establishment Births and Deaths (2014-2023)

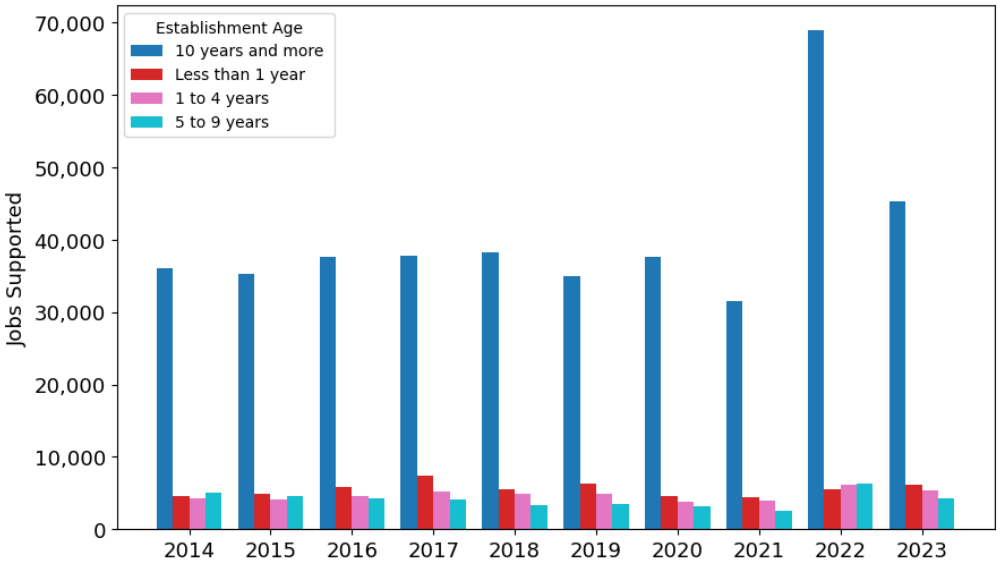


Source: Bureau of Labor Statistics, BED. Seasonally adjusted data.

Analyzing job creation across establishments with respect to their age groups, establishments 10 years old or more have created the most jobs followed by establishments less than one year old.

At the aggregate level, establishments operating 10 years and more have created more around seventy thousand jobs in 2022 and more than forty thousand in 2023.

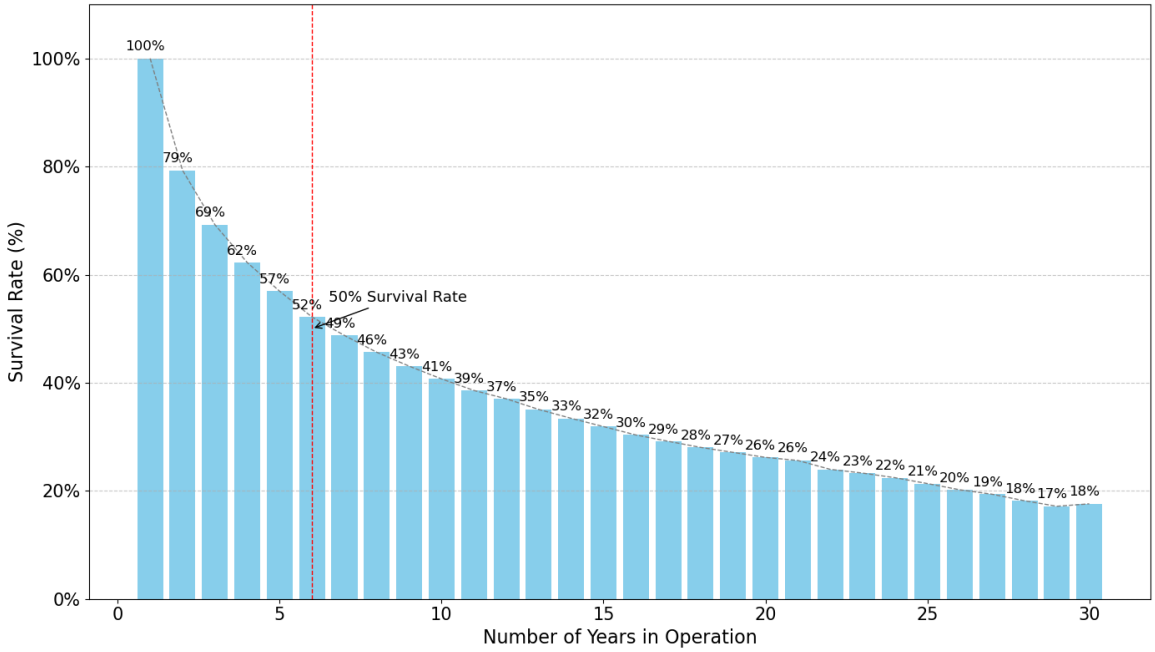
Figure 5. Annual Hawai‘i Job Supported by Establishment Age (2014-2023)



Source: Bureau of Labor Statistics, BED. READ estimation.

Having observed the variation in job creation and establishment age, we turn to analyzing the survival rate of the establishments in Hawai‘i. Related data are reported by the Bureau of Labor Statistics (BLS). Data employed here is for establishments created in or after 1994. Figure 6 illustrates that a survival rate of 50% (red dashed vertical line) corresponds to the businesses which are in operation for the maximum of around 5.7 years. It explains that half of failures take place during the first five years in operation. For businesses in operation for more than six years, the survival rate declines gradually to around 17% for those operating for 30 years.

Figure 6. Hawai‘i’ Average Survival Rate of Establishments by Number of Years in Operation (1994-2023)



Source: Bureau of Labor Statistics, Establishments age and survival rate. READ estimation.

Section 4. Workforce Development

Equipping the labor force with competitive knowledge and skills to meet market demand is one of the crucial factors in promoting economic growth and labor productivity. Economic competitiveness is closely related and aligned with the workforce development goals and productivity since it focuses on supply of the labor that provides knowledge-based support for the businesses.

4.1 Labor productivity

Labor productivity is an important economic indicator associated with economic growth, competitiveness and living standard in an economy. Labor productivity defines the total volume of economic output (GDP) produced per unit of labor (CRS, 2023) (ILO, 2024). The table below shows that Hawai‘i state labor productivity reached the level of $137,441 per job in 2022 which is still lower than the national average in the same period. Among Hawai‘i counties, after Honolulu County, Maui and Kauai Counties had the highest labor productivity in 2023.

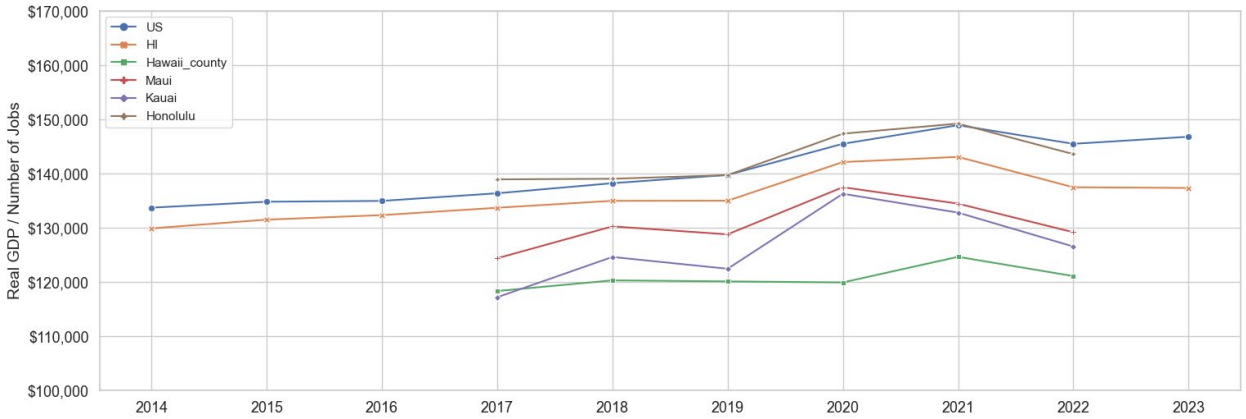
Table 4. Labor Productivity Across Hawai‘i State, Counties and U.S national (2023).

State	Real GDP (millions of chained 2017 dollars)	Number of Jobs	Labor Productivity	Productivity Growth (previous period)
United States	$ 21,822,037	150,025,676	$ 145,455	-2.3 %
Hawai‘i State	$ 85,211.432	619,987	$ 137,441	-3.9 %
Honolulu	$ 63,071.690	439,355	$ 143,555	-3.7 %
Hawai‘i County	$ 8,497.948	70,199	$ 121,055	-2.8 %
Maui	$ 9,692.556	75,054	$ 129,141	-3.9 %
Kauai	$ 3,940.174	31,145	$ 126,510	-4.7 %

Source: LightCast data on number of QCEW jobs & Bureau of Economic Analysis, Real GDP (chained 2017 dollars) data. READ estimation for productivity.

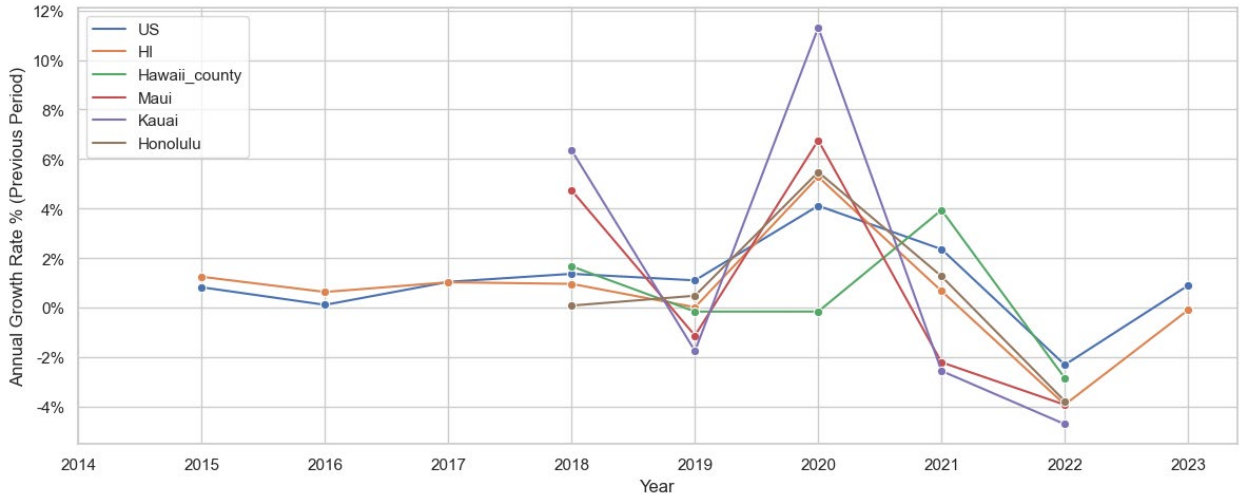
Similarly, observing labor productivity over a longer time span reveals that both the productivity level and growth in the state have been lower than the national average for the last ten years. Among the counties, Honolulu has experienced the highest labor productivity, while Hawai‘i county has experienced the lowest level during the analysis period.

Figure 7. Labor Productivity U.S vs Hawai‘i State (2014-2023)



Source: LightCast, number of jobs for QCEW & Bureau of Economic Analysis, Real GDP (chained 2017 dollars) data. READ estimation of productivity.

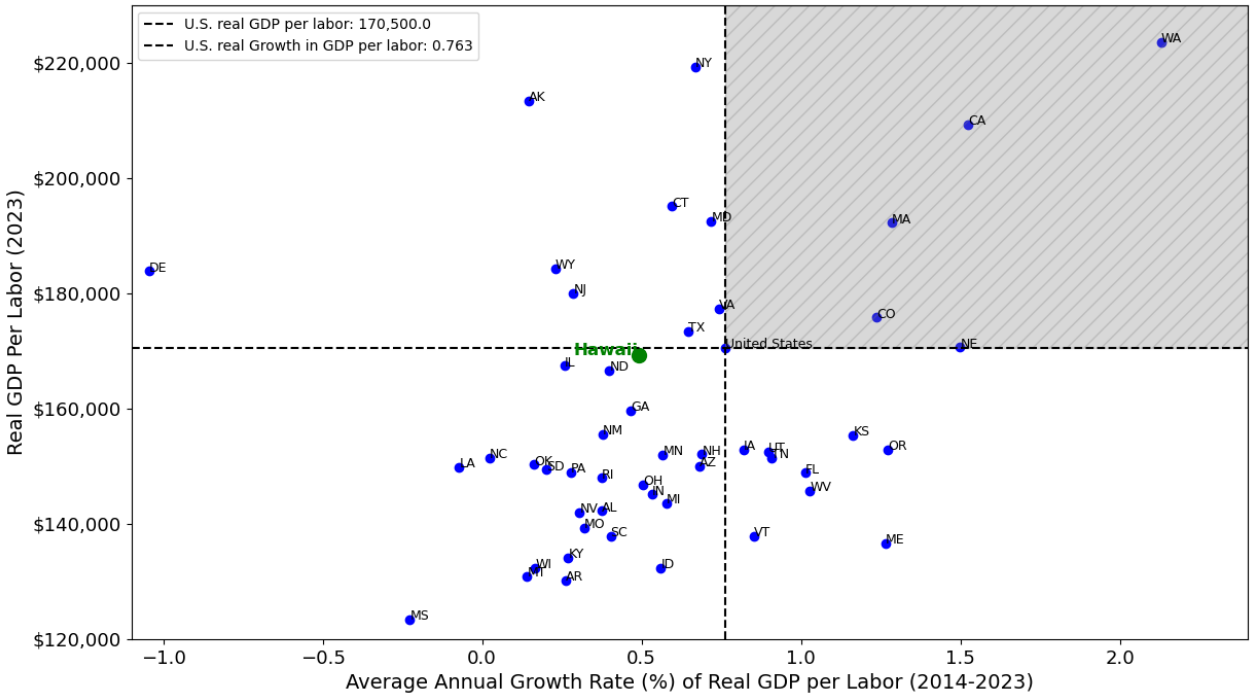
Figure 8. Labor Productivity Growth (previous period) U.S vs Hawai‘i State and Counties (2014-2023)



Source: LightCast, number of jobs for QCEW & Bureau of Economic Analysis, Real GDP (chained 2017 dollars) data. READ Estimation of productivity growth rate (previous period).

Next, we conduct a comparative analysis of labor productivity across U.S states. Figures 9 illustrates labor productivity across all states for the period of 2014-2023. Hawai‘i is in the quadrant with both low 10-year growth and low labor productivity level in 2023. This result is closely aligned with our result for comparative illustration of real personal income per capita shown in Figure 1.

Figure 9. Comparative State Labor Productivity Performance (2014-2023)



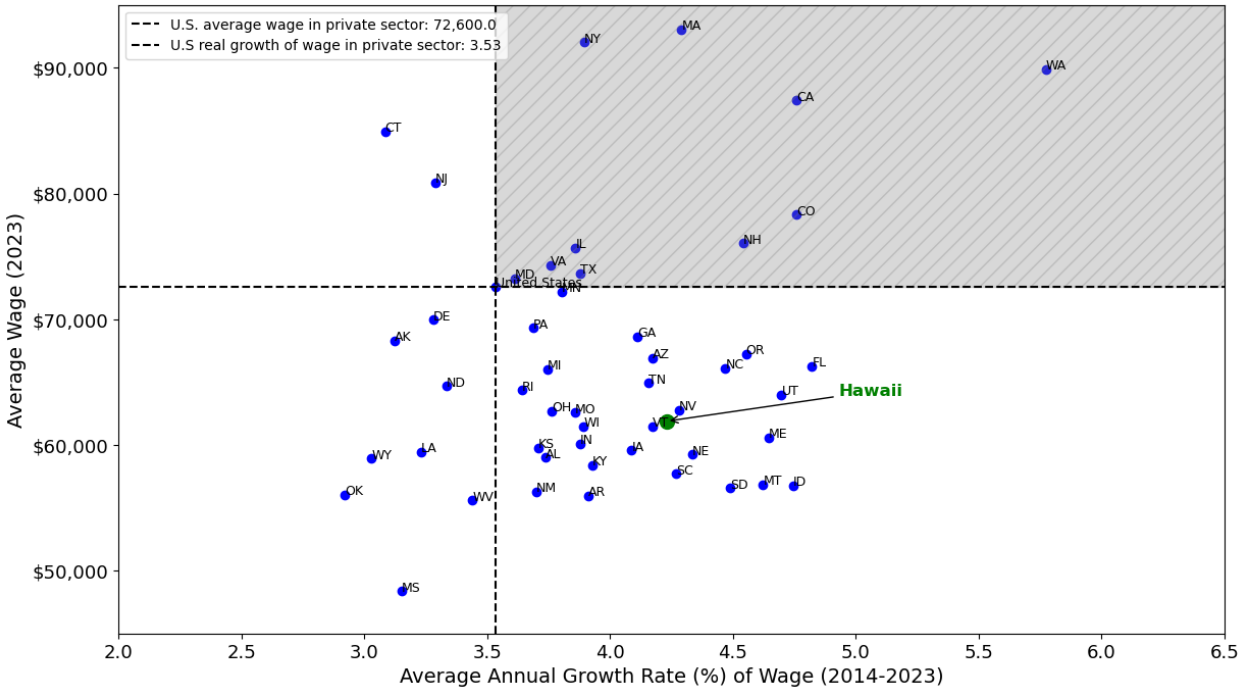
Source: Bureau of Economic Analysis, Real GDP (chained 2017 dollars) data & Bureau of Labor Statistics, QCEW private sector labor force data. Average growth rate is calculated as compound annual growth rate for 10 years period in percentage. READ estimation.

4.2 Wages

In this section, we examine wages across states and industries aiming to provide insights regarding wages and economic competitiveness. Figure 10 shows that Hawai‘i is in the quadrant of states with low average wage and high real wage growth for 2014-2023 period. Annual wage growth for the last 10 years has averaged over 4%.

In addition, Hawai‘i is among the states that increased minimum wage in 2024. According to the recent data from Economic Policy Institute, minimum wage in Hawai‘i increased to $14 per hour statewide. Across industries in private sector in Hawai‘i, average hourly earnings ranged from $20 to over $50 in 2023. Retail Trade, Accommodation and Food services had the lowest average hourly earnings while Utility and Professional, Scientific, and Technical Services had the highest in 2023.

Figure 10. Comparative State Nominal Wage Performance (2014-2023)



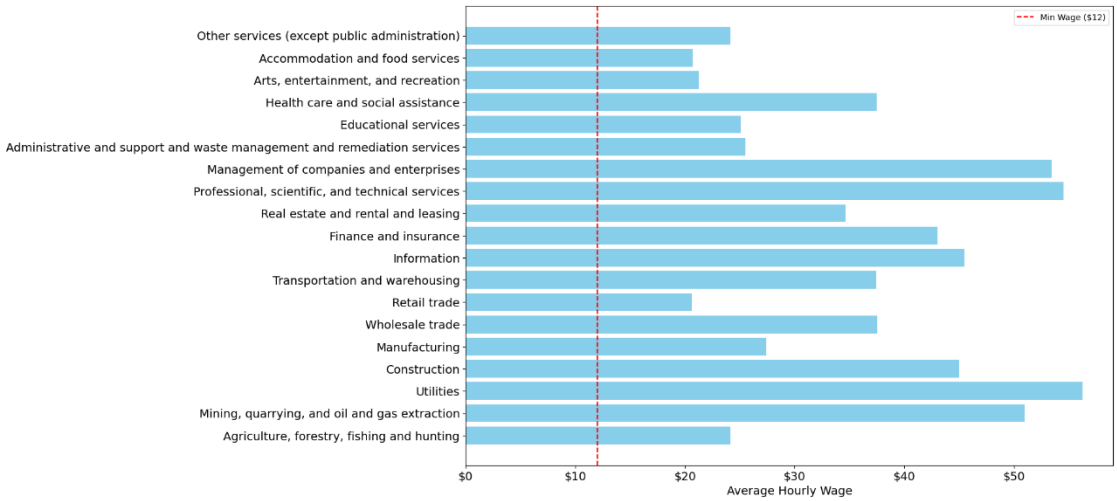
Source: Bureau of Labor Statistics, QCEW private sector labor force and total wages all industries for all establishment sizes. Average annual growth rate is calculated as compound annual growth rate for 10 years period in percentage. READ estimation.

Table 5. States Increased Minimum Wage in 2023-2024

State	2023 minimum wage	2023 tipped minimum wage	2024 minimum wage	2024 tipped minimum wage	Minimum wage increase	Tipped minimum wage increase	Type of increase
Washington	$15.74	–	$16.28	–	$0.54	–	Inflation adjustment
California	$15.50	–	$16.00	–	$0.50	–	Inflation adjustment
New York	$15.00	$10.00	$16.00	$10.65	$1.00	$0.65	Legislation
Connecticut	$15.00	$6.38	$15.69	$6.38	$0.69	$0.00	Inflation adjustment
New Jersey	$14.13	$5.26	$15.13	$5.26	$1.00	$0.00	Legislation
Maryland	$13.25	$3.63	$15.00	$3.63	$1.75	$0.00	Legislation
Colorado	$13.65	$10.63	$14.42	$11.40	$0.77	$0.77	Inflation adjustment
Arizona	$13.85	$10.85	$14.35	$11.35	$0.50	$0.50	Inflation adjustment
Maine	$13.80	$6.90	$14.15	$7.08	$0.35	$0.18	Inflation adjustment
Hawai‘i	$12.00	$11.00	$14.00	$12.75	$2.00	$1.75	Legislation
Illinois	$13.00	$7.80	$14.00	$8.40	$1.00	$0.60	Legislation
Rhode Island	$13.00	$3.89	$14.00	$3.89	$1.00	$0.00	Legislation
Vermont	$13.18	$6.59	$13.67	$6.84	$0.49	$0.25	Inflation adjustment
Delaware	$11.75	$2.23	$13.25	$2.23	$1.50	$0.00	Legislation
Missouri	$12.00	$6.00	$12.30	$6.15	$0.30	$0.15	Ballot measure
Nebraska	$10.50	$2.13	$12.00	$2.13	$1.50	$0.00	Ballot measure
Alaska	$10.85	–	$11.73	–	$0.88	–	Inflation adjustment
South Dakota	$10.80	$5.40	$11.20	$5.60	$0.40	$0.20	Inflation adjustment
Minnesota	$10.59	–	$10.85	–	$0.26	–	Inflation adjustment
Ohio	$10.10	$5.05	$10.45	$5.25	$0.35	$0.20	Inflation adjustment
Michigan	$10.10	$3.84	$10.33	$3.93	$0.23	$0.09	Legislation
Montana	$9.95	–	$10.30	–	$0.35	–	Inflation adjustment

Source: Economic Policy Institute, Working Economics Blog, 2023

Figure 11. Hawai‘i Average Hourly Earnings by Industry Year 2023

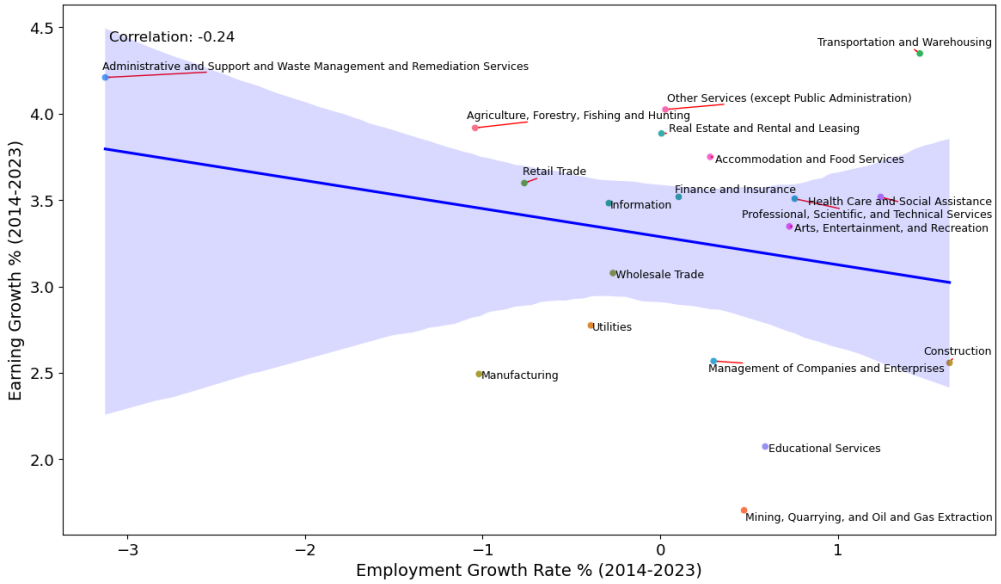


Source: Bureau of Labor Statistics. READ estimation

Fluctuations in the hourly earnings across industries provide reason to delve further into competitiveness across industries in Hawai‘i. Figure 12 illustrates a week negative correlation between employment growth and earnings growth for 2013-2023. A negative fitted line implies that employment growth and earnings growth negatively correlated with employment growth exceeding earnings growth. Transportation and Warehousing experienced the fastest growth for both employment and earnings, while two sectors, 1) Administrative and Support and Waste Management and Redemption Services, and 2) Manufacturing, exhibited the slowest growth for both employment and earnings during the period depicted.

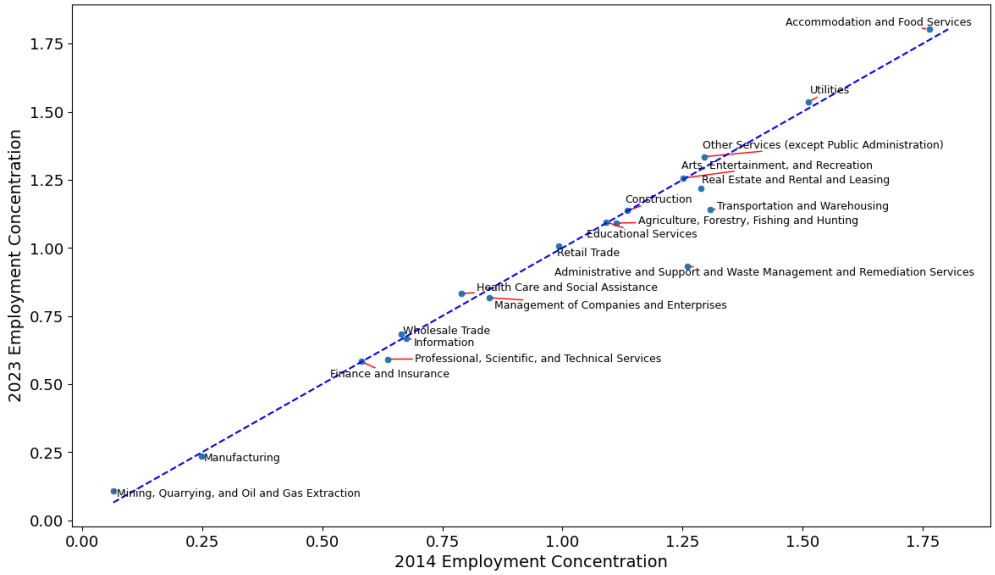
To further study competitiveness across industries, we analyze the ability of the industries to attract and retain workers within the state and regional economy. More jobs in the industry implies growth of the industry, while lower jobs signal a decline. One way to investigate this topic is to assess the industry level employment concentration over time. Figure 13 illustrates Hawai‘i industry-level employment concentration for 2014 versus 2023 in the private sector. The diagonal 45-degree line in Figure 13 enables us to represent which industries have become more concentrated (above the line) or less concentrated (below the line) over the last 10 years. No industry became more concentrated during this period (no dispersion above the line) while only two industries (Administrative and Support and Waste Management and Redemption Services, and Transportation and Warehousing) became less concentrated.

Figure 12. Cross-Plot of Employment Growth Versus Earnings Growth by Industry (2014-2023)



Source: Lightcast, QCEW. Growth rate is calculated as compound annual growth rate in %. Unclassified industry is not included in this analysis. READ estimation.

Figure 13. Hawai‘i Private Sector Employment Concentration by Industry 2014 vs 2023



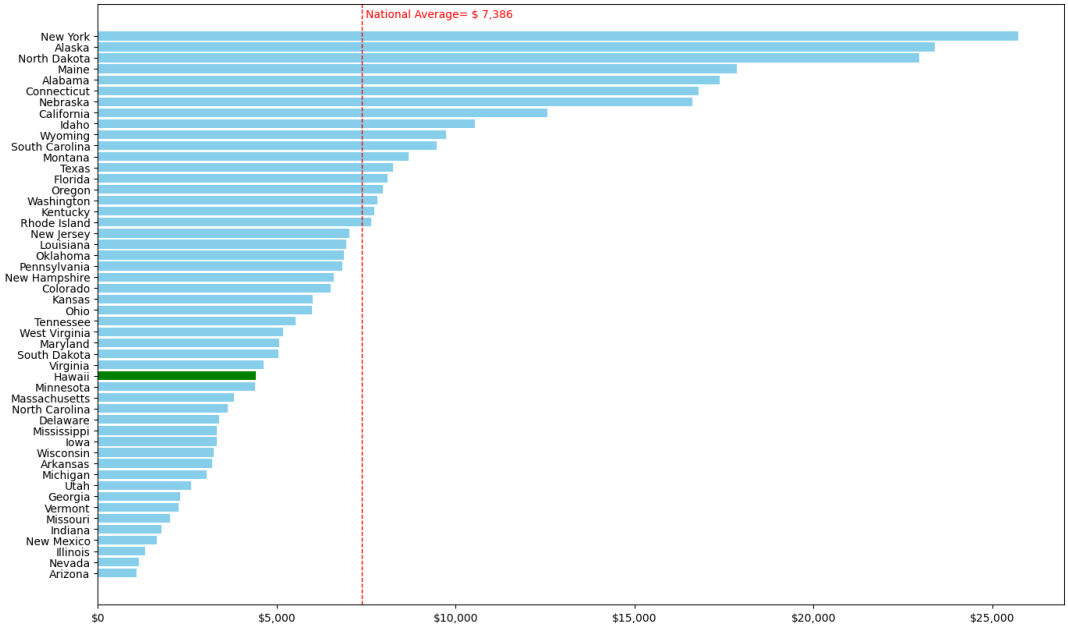
Source: Lightcast, QCEW. Unclassified industry is not included. READ estimation.

Based on the last two figures, we can clearly identify both strengths and weaknesses across industries. It can be observed that high earning-growth industries experienced negative or no employment growth. This slightly week but negative correlation merits consideration of how research, technology, capital investment, and regulatory as well as industry level policies impacted both employment and earnings across industries in Hawai‘i.

4.3 Research and Development

This section addresses the level of research and development (R&D) expenditure in Hawai‘i. For a better comparison analysis across states, we compare research and development expenditure across states per thousands of populations.

Figure 14. Research and Development Expenditure per Thousands of Populations (2022)



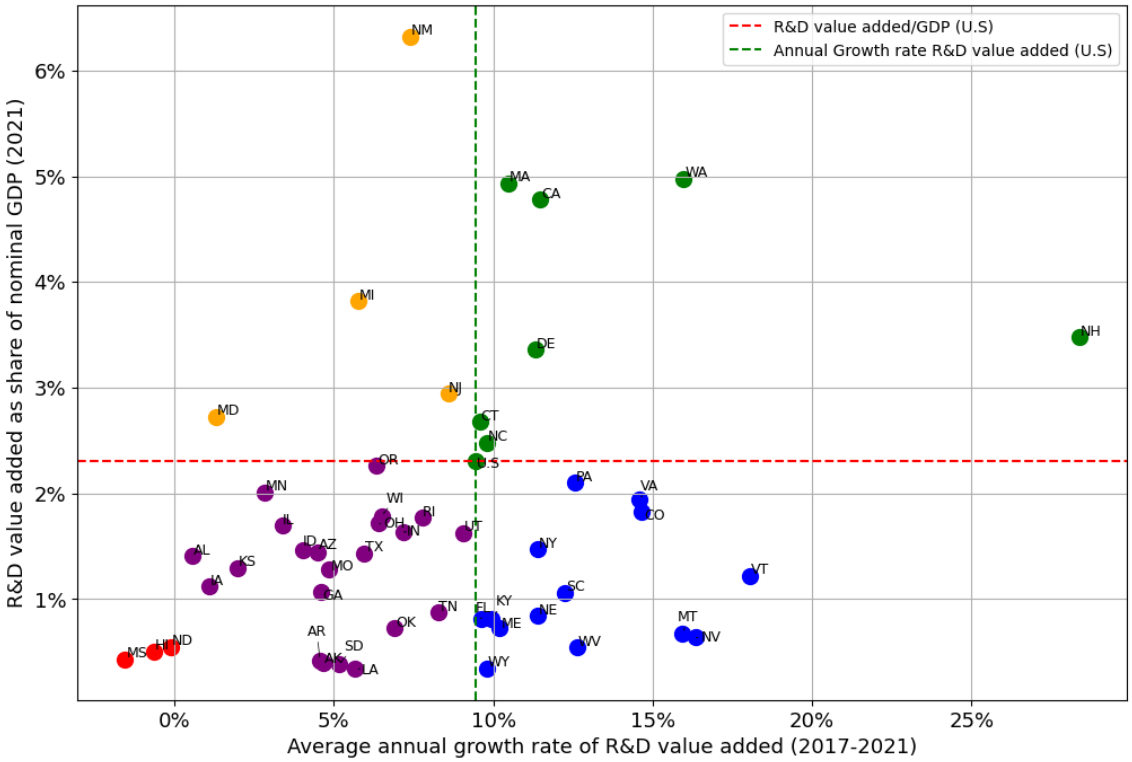
Source: National Center for Science and Engineering Statistics, State government expenditures for R&D and plant, by state and performer: FY 2022. READ estimation.

The Data shows that there was $4,400 in research and development expenditure per thousand population in Hawai‘i for 2022. This ranks well below the national average expenditure of $7,386.

We also examine the contribution of research and development investment in terms of value generated by the states. For this metric, we compare the value added[6] by research and development activities in each state as a percentage of their respective nominal GDP. Figure 15 below shows that Hawai’i is among the states with the lowest ratio of R&D value added as a share of its nominal GDP in 2021. Hawai’i ratio for these metric equals to 0.5%, while states such as New Mexico, California, Washington, and Massachusetts have ratios near or above 5%. Hawai’i, Mississippi and North Dakota are the only three states which experienced declines in their average annual growth of R&D value added during the period of 2017-2021.

[6] R&D value added consists of the value that an industry generates as part of R&D production after it has accounted for its costs of energy, materials, and services used up in R&D production.

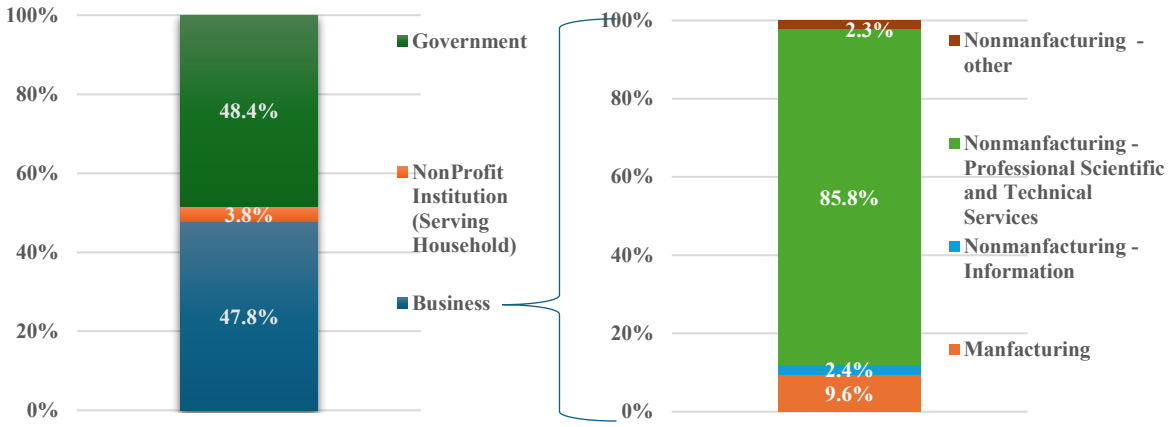
Figure 15. Comparative State R&D Value Added as share of Nominal GDP vs R&D Value Added Average Annual Growth Rate (2017-2021).



Source: Bureau of Economic Analysis, Experimental R&D value added (millions of current dollars) statistics & Nominal GDP (millions of current dollars).

More than 48% of R&D value added in Hawaii in 2021 was generated by the government sector. The business sector generated more than 47%, with 85.8% of the R&D value added was generated by the Professional, Scientific and Technical Services industry (nonmanufacturing) followed by Manufacturing (9.6%), and Information (2.4%) industries. This finding clearly highlights the importance of role business sector plays in generating R&D value added.

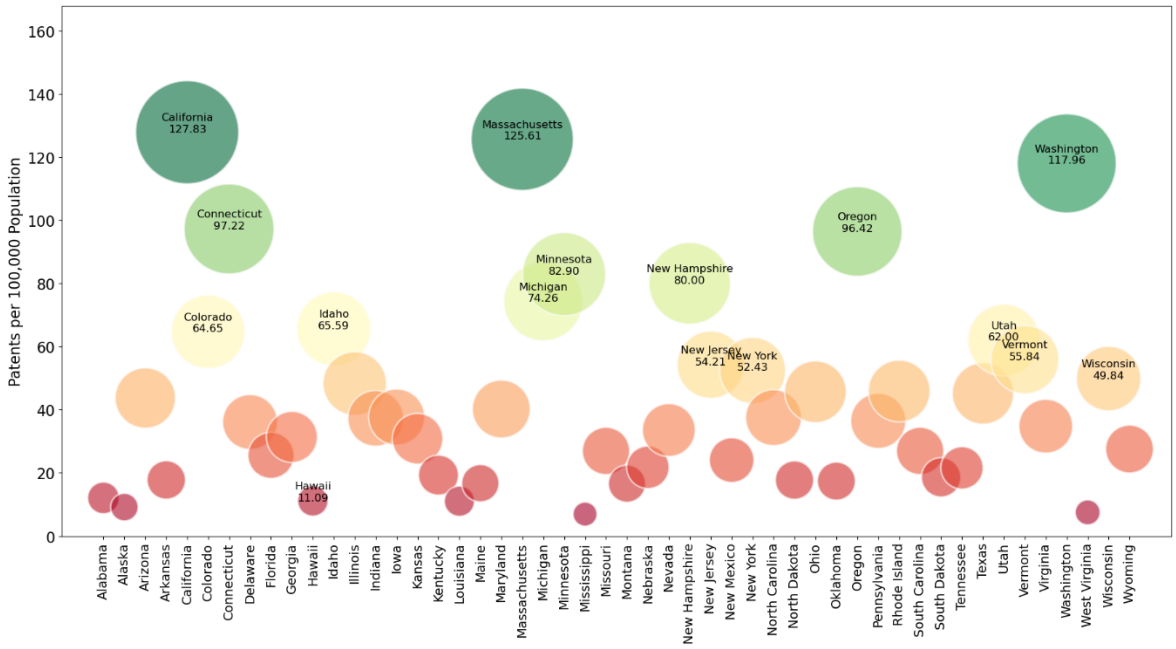
Figure 16.Sector and Business Industry Comparison: Hawaii R&D Value Added, Year 2021



Source: Bureau of Economic Analysis, Experimental R&D value added (millions of current dollars) statistics. READ Estimation.

U.S. Patent and Trademark Office data tracking the number of patents issued by each state provide an additional R&D metric. We analyze the ratio of patents per hundred thousand of population for each state. Figure 17 shows that Hawai‘i has value of 11.9 for this ratio for 2020, ranking Hawai‘i among the states with the lowest patent issuance.

Figure 17. Number of Patents per Hundred Thousand Population by States, Year 2020



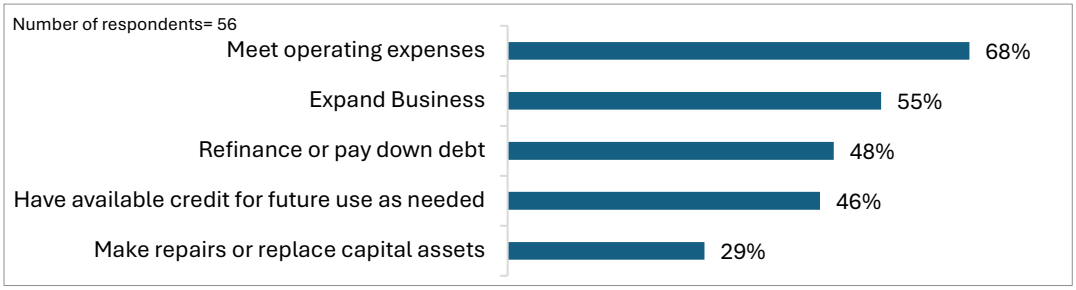
Source: Patents Statistics 2020, U.S Patent and Trademark Office. READ estimation.

Section 5. Access to Finance

Access to finance is a vital factor for business growth and survival, particularly for small businesses since they act as an active catalyst for creating jobs and advancing economic competitiveness (Jeong, 2023). Banks, financial institutions, and credit unions play significant roles in providing financing to the small businesses. According to the Small Business Credit Survey (SBCS, 2024), more than 50% of the small businesses in Hawai'i rely on banks (both large and small) to access finance followed by financial companies (25%) and credit unions (14%).

In addition, the main reasons businesses and firms sought financing in Hawai'i in 2023 included meeting operating expenses and business expansion (SBCS, 2024). It clearly highlights the importance of access to finance for businesses to support not only their daily/routine operation and performance, but also to foster business growth. In this section, we use two proxies to measure access to finance: Small Business Administration loans and venture capital investment.

Figure 18.Reasons Firms/Business Seek Financing, Hawai'i Year 2023.



Source: Small Business Credit Survey (SBCS, 2024). Note: Respondents could select multiple options."other" not shown¡...

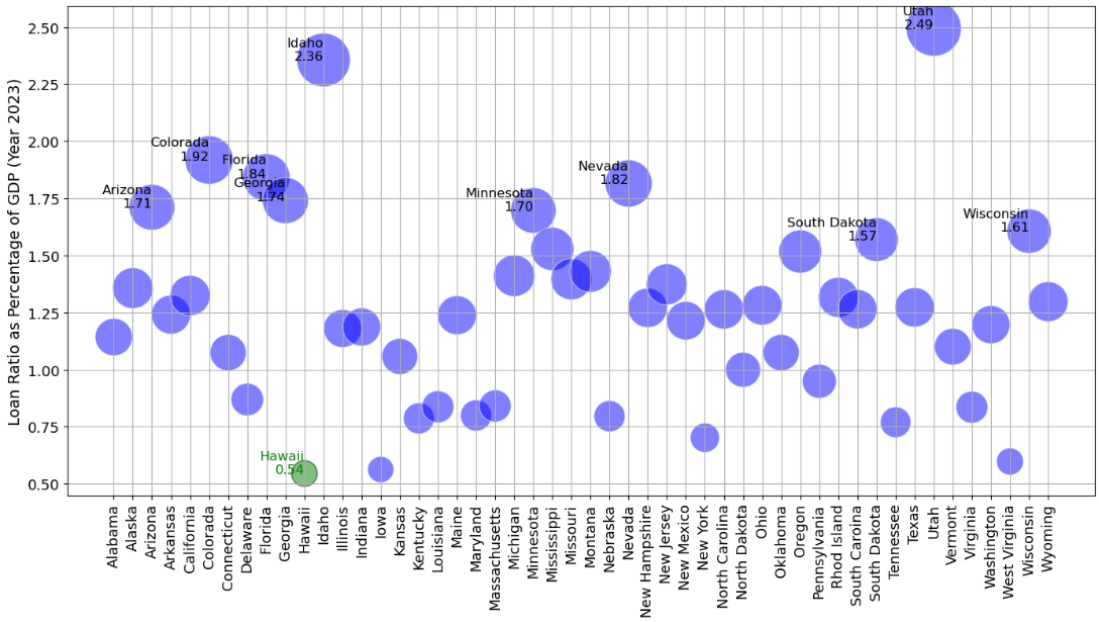
5.1 Business Loans

First, we focus on the amount and pattern of loan issuance by the Small Business Administration (SBA) and its impact on employment opportunities in Hawai'i during the period 2014-2023. SBA's annual report on different loan programs provides information about 7(a)[7], 504[8], Community Advantage (CA), and Microloan[9], which are major loan programs for businesses.

Figure 19 indicates that the ratio of aggregate loan amount received by Hawai'i as a percentage of its nominal GDP is around 0.54 which is below the ratio obtained by top-ranked states for the business ranking and economic competitiveness.

[7] The 7(a) loan program provides loan guaranties to lenders that allow them to provide financial help for small businesses with special requirements, Source: SBA
[8] The 504 loan program provides long-term, fixed rate financing for major fixed assets that promote business growth and job creation, Source: SBA
[9] Microloan program provides up to 50,000$ to the business owners through financing intermediaries, Source: SBA

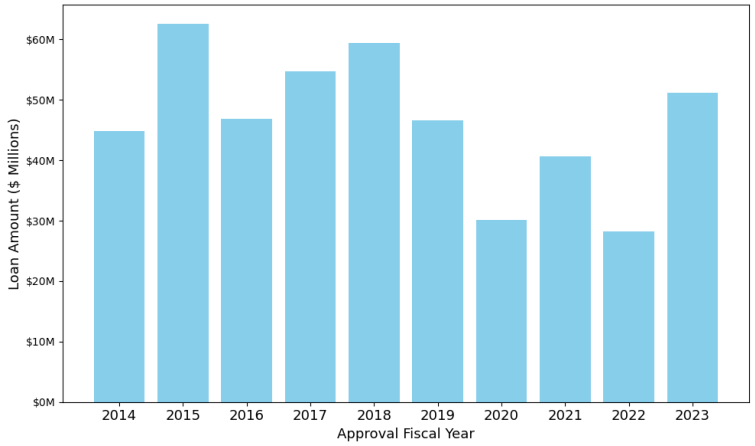
Figure 19. Small Business Loan Amount as Ratio of GDP (nominal) Year 2023



Source: Small Business Administration, 7(a) & 504 Activity Reports, (Disaster loan data is not included in this estimation). Bureau of Economic Analysis, GDP (Thousands of current dollars). READ estimation.

The latest trend for loan issuance for Hawai‘i indicates that the amount of loans issued annually for Hawai‘i ranged from above $30m to over $50m during the period 2014-2023. In 2023, the total SBA loan amount recovered to pre-Covid 2019 levels.

Figure 20. Aggregate SBA Loan Amount Issued for Hawai‘i (2014-2023)

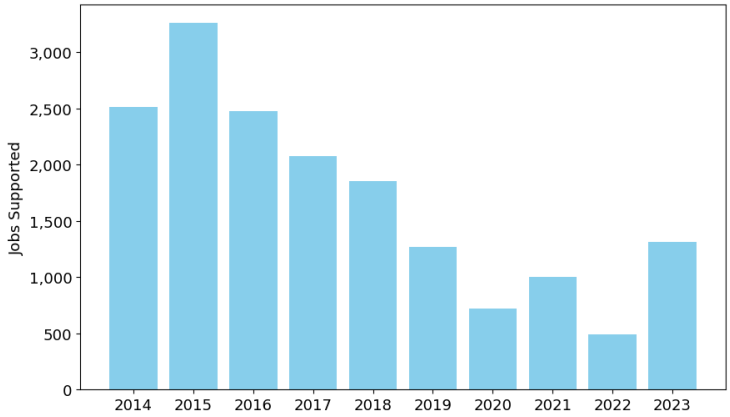


Source: SBA 7(a) & 504 FOIA Reports, READ estimation of aggregate loan. (Disaster loan is not included in this stats). Only loans under status[10] COMMIT, PIF, CHGOFF and EXEMPT are considered for this analysis.

[10] COMMIT = Undisbursed
• PIF = Paid in Full
• CHGOFF = Charged off
• EXEMPT = The status of loans that have been disbursed but have not been cancelled, paid in full, or charged off are exempt from disclosure under FOIA Exemption 4.

In addition, annual jobs supported by SBA loans declined by 6% annually, on average, over the period of 2014-2023 with the lowest level in 2022 and the highest level in 2015.

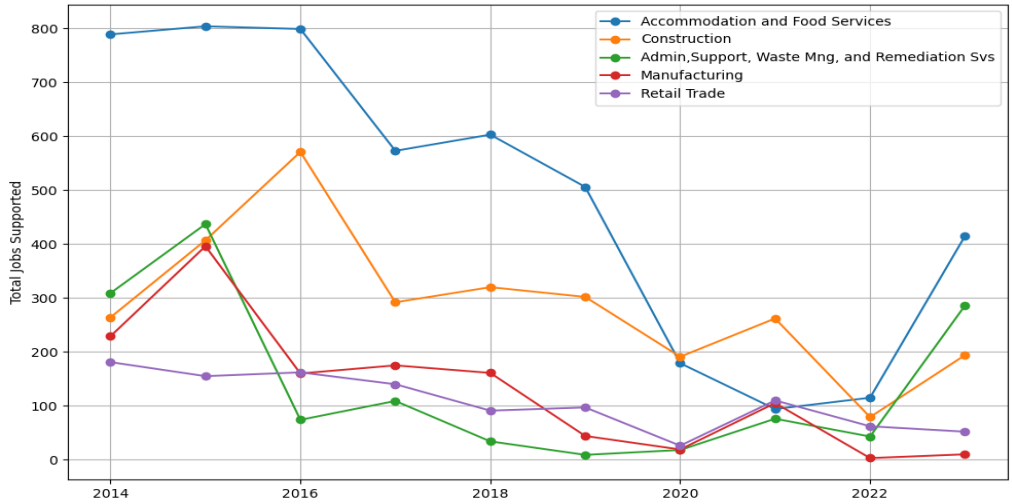
Figure 21. Annual Supported Jobs by SBA Loans in Hawai‘i (2014-2023)



Source: Source: SBA 7(a) & 504 FOIA Reports, READ estimation of aggregate loan. (Disaster loan is not included in this stats). Only loans under status COMMIT, PIF, CHGOFF and EXEMPT are considered for this analysis. READ estimation.

The impact of SBA loans on job creation varied across industries, with some sectors experiencing larger gains and others more modest ones over the last 10 years (2014-2023). Figure 22 shows that the number of jobs supported in all industries significantly declined during the analyzed period, particularly during the Covid-19 period. Sectors that experienced the most job creation through SBA loans include Accommodation and Food Services most prominently, and in addition Construction, Administration Support, Waste Management and Remediation Services, Manufacturing and Retail Trade.

Figure 22. Annual Jobs Supported in Hawai‘i by Sector through SBA Loans (2014-2023)



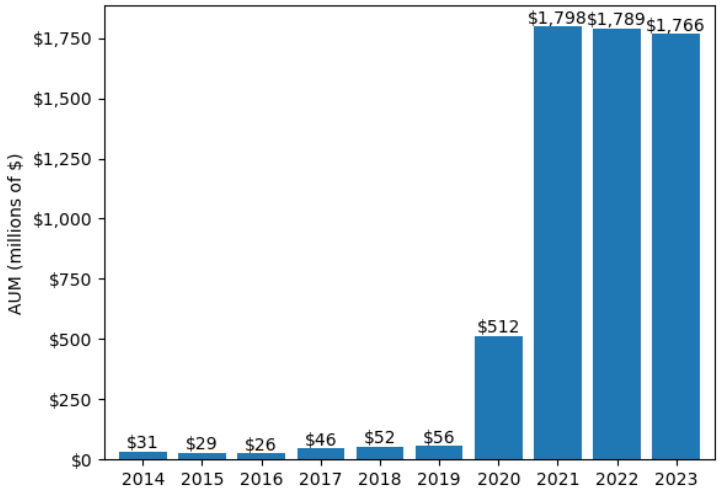
Source: SBA 7(a) & 504 FOIA Reports, READ estimation of aggregate loan. (Disaster loan is not included in this stats). Only loans under status[11] commit, pif, chgoff and exempt are considered for this analysis

Overall, business loans play a vital role in supporting industries and creating jobs. Financial assistance and loans are directly related to the firm's operation toward accessing technological advancement and innovation. Limited financial access can hinder limit technological and infrastructure investment, both of which overall can impact the creation and level of supporting jobs.

5.2 Venture Capital

Venture capital (VC) provides both financing and non-financing supports to the high-growth and innovative companies. VC investment flow and expansion facilitate the development of cutting-edge technologies and businesses across different sectors. Aggregate assets under VC-backed management have increased in Hawai'i from $31M to more than $1.7B between 2014 and 2023.

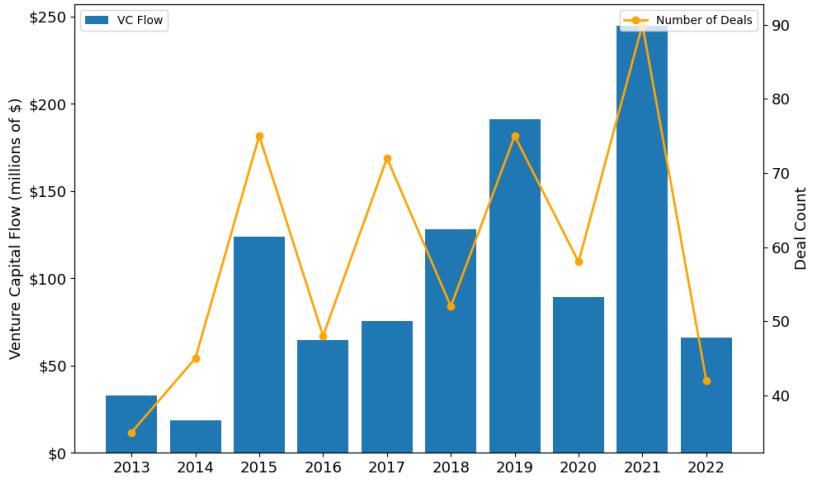
Figure 23. Hawai'i VC-backed Companies' Aggregate Asset under Management (AUM) 2014-2023



Source: PitchBook, NVCA 2024 Yearbook.

In addition, venture capital flow along with the number of venture capital deals fluctuated significantly in Hawai'i between 2013 and 2022. Venture capital flow increased from less than $50 million in 2013, peaking at $250 million in 2021, which was the highest level of venture capital flow Hawai'i experienced during this period.

Figure 24. Hawai'i Venture Backed Investment Net Flow ($million), 2013-2022



Source: Pitchbook, venture capital and private equity database.

Section 6. Business Cost

As we discussed in the previous sections, businesses and entrepreneurs are essential for creating jobs and stimulating economic growth. Facilitating an environment conducive to the emergence and attraction of new businesses and startups is a crucial step toward both job and aggregate output growth rate. Conversely, any undue hindrances in terms of regulation, taxes, and costs of operating businesses can discourage start-ups, reduce a location's attractiveness, and can drive firms to the locations with more conducive environments.

The business costs considered here refer to various regulations, taxes and other costs associated with the business operation that are controlled by government. There is not a single definition of what an ideal environment is for business attraction and operation in terms of both regulatory and tax climates. However, previous studies on business costs and burdens have identified several key areas to assess business costs. These areas include state level tax policy on businesses, state regulatory climate, and state occupation and licensing environment, as well as labor, energy and space cost for commercial and business operations.

6.1 Regulatory burden

We start the regulatory burden analysis by investigating state general regulatory climate for businesses. The U.S Chamber of Commerce Institute for Legal Reform developed Lawsuit Climate Survey to rank states based on how fair and reasonable state regulatory systems are for businesses. This ranking focuses on the attitude of the business community toward individual state's legislature systems and how its impacts the business environment. The first position in this ranking implies the state has the most fair and reasonable legal system for businesses. Hawai‘i ranked in 15th position in this ranking with an overall score of 71.

Table 6. States Legal Climate for Businesses Ranking (2015-2019)

State	2019 Rank	2019 score	2017 Rank	2015 Rank
Delaware	1	76.3	11	1
Maine	2	73.8	9	14
Connecticut	3	73.8	16	22
Wyoming	4	73.1	8	8
Alaska	5	73.1	6	12
North Dakota	6	72.6	17	15
Montana	7	72.5	27	34
Nebraska	8	72.3	7	3
Idaho	9	72.2	3	6
South Dakota	10	72	1	9
Vermont	11	71.7	2	2
Virginia	12	71.3	10	11
Wisconsin	13	71.2	20	20
Oklahoma	14	71.2	31	33
Hawai‘i	15	71.1	23	30
North Carolina	16	70.9	33	7
Arizona	17	70.8	25	25
New Hampshire	18	70.7	5	5
Utah	19	70.7	12	10
Minnesota	20	70.7	4	13
Colorado	21	70.7	35	16
New Mexico	22	70.6	32	45
Iowa	23	70.6	13	4
Rhode Island	24	70.5	24	26
Oregon	25	69.9	21	32
Washington	26	69.8	28	29
Maryland	27	69.7	19	28
Massachusetts	28	69.6	14	17
Nevada	29	69.5	37	35
Arkansas	30	69.5	36	41
Indiana	31	68.9	15	18
Kansas	32	68.8	18	19
Michigan	33	68.8	22	24
Tennessee	34	68.3	30	23
Ohio	35	67.7	26	27
New York	36	67.7	29	21
South Carolina	37	67.6	34	36
Texas	38	67.1	39	40
Pennsylvania	39	66.6	38	37
Kentucky	40	66.5	42	39
Georgia	41	66.1	40	31
Alabama	42	65.6	43	46
New Jersey	43	65.4	41	38
Missouri	44	64.4	49	42
West Virginia	45	63.3	45	50
Florida	46	62.3	46	44
Mississippi	47	61.9	44	43
California	48	60.2	47	47
Louisiana	49	60	50	49
Illinois	50	59.6	48	48

Source: U.S Chamber of Commerce, Lawsuit Climate Survey 2019.

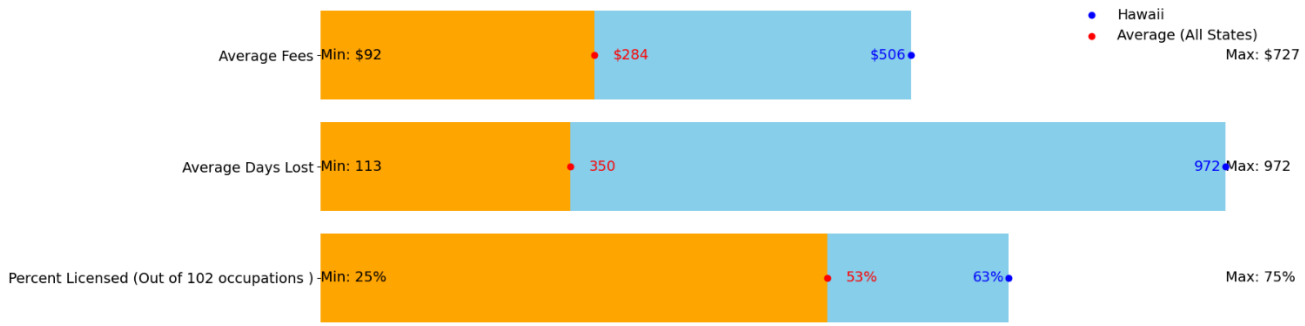
6.1.1 Occupational licensing and permits

Occupational permits and licensing (all legal practices) are another important aspect of a state's regulatory environment. The Institute for Peace publishes an annual state ranking based on burdens imposed on licensing and occupational permits[12]. This ranking assesses the percentage of total license and permits each states issues, average fees, education and experience eligibility and exams as well as average minimum grade required to pass the exams across the 50 states.

The first category illustrates the percentage of licenses issued by each state out of 102 occupation licenses or permits recognized nationally. Average fees indicate the average payment required to process paperwork for registering and acquiring an occupational license. Also, average education and experience is examined in terms of how many days are required as part of education and experience to receive specific licenses[13]. The measurement is labeled as the number of days lost in the process of acquiring the necessary qualification.

Figure below shows that Hawai'i is above the average of all states in all three categories. Regarding the education and experience requirements, an estimate of 972 days are lost in Hawai'i compared to only 350 days national average; Hawai'i has the highest experience and education requirements across all states. The average licensing fee in Hawai'i is approximately $506, nearly double the national average of $284. Hawai'i ranks above the national average in terms of the number of occupations for which states issue licenses; Hawai'i issues licenses for 63% of the 102 occupations.

Figure 25. Occupational Licensing and Permits Comparison (Hawai'i vs U.S Average) Year 2022



Source: Institute for Peace, License to Work 3rd Edition November 2022.

Finally, a complete state ranking based on the average burden of licensing requirement is illustrated below in Table 7. Hawai'i is ranked first, meaning that its licensing and permit requirements are the most burdensome in the U.S.

[12] The most recent published version of this report is 2022 Ranking, data for this ranking was collected over a period of two years from February 2020 to March 2022. The final version of this report was published in November 2022.
[13] For example, to receive a cosmetology license in Michigan, aspirants must complete either two years of apprenticeship or 1,500 hours of cosmetology training. We interpret this requirement as 350 days lost in acquiring cosmetology license in Michigan.

Table 7. States Ranking Average Burden Based on Occupational Licensing year 2022

Rank	State	Number of occupations licensed	Average Fees	Average estimated days lost	Average exam	Average min grade	Average min age
1	Hawai‘i	64	$506	972	2	2	16
2	Nevada	75	$727	883	2	1	15
3	California	75	$517	837	2	1	15
4	Arizona	68	$481	689	2	1	16
5	Florida	55	$300	658	1	1	13
6	Virginia	72	$319	580	1	1	14
7	Oregon	69	$311	530	1	1	13
8	Massachusetts	50	$331	511	1	3	11
9	Maryland	58	$295	532	1	1	11
10	New Mexico	66	$273	495	2	1	14
11	Delaware	42	$230	495	1	2	10
12	Georgia	41	$197	472	2	3	13
13	Kentucky	38	$281	404	2	4	12
14	New Jersey	54	$279	422	1	3	10
15	South Carolina	60	$243	428	2	1	7
16	Oklahoma	42	$307	405	2	2	10
17	Connecticut	65	$290	374	1	1	6
18	Texas	38	$264	329	2	3	10
19	New Hampshire	37	$209	326	2	2	8
20	Michigan	48	$281	308	1	3	12
21	Montana	32	$316	295	2	4	11
22	Wyoming	26	$373	259	2	4	11
23	Indiana	37	$162	306	1	2	12
24	Idaho	66	$187	330	1	1	7
25	Rhode Island	70	$236	297	1	2	14
26	Maine	46	$226	323	1	1	5
27	South Dakota	32	$244	281	2	2	11
28	Missouri	33	$192	281	1	2	12
29	Arkansas	72	$267	282	1	2	8
30	New York	41	$275	275	2	1	11
31	Vermont	31	$194	266	2	3	6
32	Ohio	40	$145	269	1	3	10
33	Colorado	34	$355	257	2	1	11
34	Illinois	41	$281	234	1	3	14
35	Minnesota	35	$243	266	2	1	7
36	Tennessee	69	$339	245	1	2	7
37	Iowa	71	$152	269	1	2	5
38	North Carolina	66	$231	228	1	1	14
39	Kansas	35	$160	199	2	3	9
40	West Virginia	67	$200	214	2	1	8
41	Alaska	64	$439	230	1	1	5
42	Wisconsin	42	$258	197	1	1	10
43	Mississippi	65	$343	169	2	2	6
44	Louisiana	77	$333	175	1	1	7
45	Alabama	63	$374	154	2	2	5
46	Washington	76	$230	171	1	1	6
47	North Dakota	65	$151	113	1	1	13
48	Utah	64	$321	130	1	0	4
49	Pennsylvania	50	$116	120	1	1	8
50	Nebraska	61	$92	114	1	2	6

Source: Institute for Peace, License to Work 3rd Edition, November 2022. 1st rank represents the state with the highest level of burden, while 50th represents the state with the lowest level of burden.

6.2 Tax burden

Tax burdens play a crucial role for individual and corporate decisions toward consumption, savings, and investment. According to a report by the Tax Foundation[14] , Hawai‘i ranked 48th for state and local tax burden in years 2021 and 2022. Hawaii has the highest tax burden in the nation after Connecticut and New York. Hawai‘i’ tax rates range from 1.4% to 11% for individual income tax rate and from 4.4% to 6.4% for corporate income taxes.

Table 8. State-Local Tax Burdens as a Percentage of Real GDP, 2019-2022 (Top-Ranked States vs Low-Ranked States)

State	2019	Rank	2020	Rank	2021	Rank	2022	Rank
Alaska	5.60%	1	5.00%	1	4.10%	1	4.60%	1
Wyoming	7.90%	3	9.30%	7	8.30%	4	7.50%	2
Tennessee	6.90%	2	7.60%	2	7.70%	2	7.60%	3
South Dakota	8.60%	5	8.80%	4	8.70%	6	8.40%	4
Michigan	9.60%	20	9.60%	12	9.00%	7	8.60%	5
Texas	8.40%	4	8.70%	3	8.40%	5	8.60%	6
North Dakota	9.20%	14	9.90%	16	7.90%	3	8.80%	7
Georgia	9.00%	9	9.40%	9	9.10%	10	8.90%	8
South Carolina	9.20%	13	9.90%	17	9.40%	13	8.90%	9
Oklahoma	8.80%	6	9.60%	13	9.00%	8	9.00%	10
Maine	11.60%	41	12.10%	39	12.40%	42	12.40%	41
Delaware	11.30%	39	12.20%	40	12.20%	40	12.40%	42
Virginia	10.90%	35	12.40%	41	12.40%	41	12.50%	43
Illinois	11.20%	38	12.50%	42	12.90%	44	12.90%	44
New Jersey	11.90%	44	12.80%	45	13.00%	45	13.20%	45
California	12.20%	46	12.90%	47	13.30%	46	13.50%	46
Vermont	12.00%	45	12.80%	46	13.40%	47	13.60%	47
Hawai‘i	13.20%	49	13.70%	49	13.90%	48	14.10%	48
Connecticut	12.50%	48	13.70%	48	14.70%	49	15.40%	49
New York	14.20%	50	14.90%	50	15.20%	50	15.90%	50
U.S	10.60%		11.20%		11.20%		11.20%	

Source: Tax Foundation, combined report on tax burden 2019-2022 (Includes income, corporate, property, GET taxes).

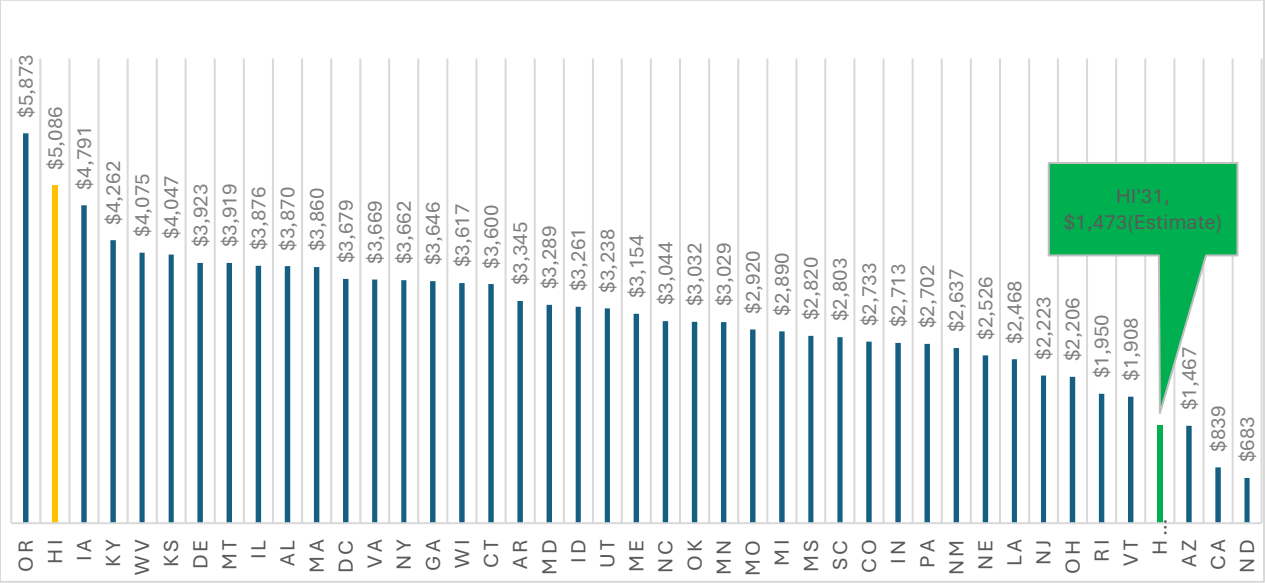
Currently, Hawai‘i’s income tax rate is among the highest in the nation. Figure 26 shows that for a family of four with annual income of $88,005 in Hawai‘i, there is $5,068 tax burden. Considering the same category of household and income level, we can see that Hawai‘i has the second highest tax burden for this category after Oregon, a state where there is no sales tax.

[14] State Business Tax Climate Index Report 2023

However, a tax law change known as Green Affordability Plan (GAP-II)[15] was signed in 2024 by Hawai‘i’s governor. It will reduce Hawai‘i’s residents’ income tax liability by the largest amount in the state’s history. According to this tax cut bill, the standard deduction for all income

categories will be raised, which allows a larger exemption from taxation. The estimated standard deduction will increase from $4,400 for a married couple filing jointly to $24,000, and from $2,200 for single/married filing separately to $12,000 (Colby, 2024)[16]. Given the application of this standard deduction, Hawai‘i’s income tax burden will significantly decrease by almost six-fold. With the mentioned standard deduction, tax burden for a family of with annual income of $88,005 in Hawai‘i will decrease from $5,068 to $1,473 (estimated) by 2031(Colby, 2024)[17].

Figure 26. Income Tax Burden by State, for a Family of Four with Annual Gross Income of $ 88,005



Source: Department of Taxation, State of Hawaii, Tax Research Insights, June 2024

6.2.1. Corporate tax burden analysis

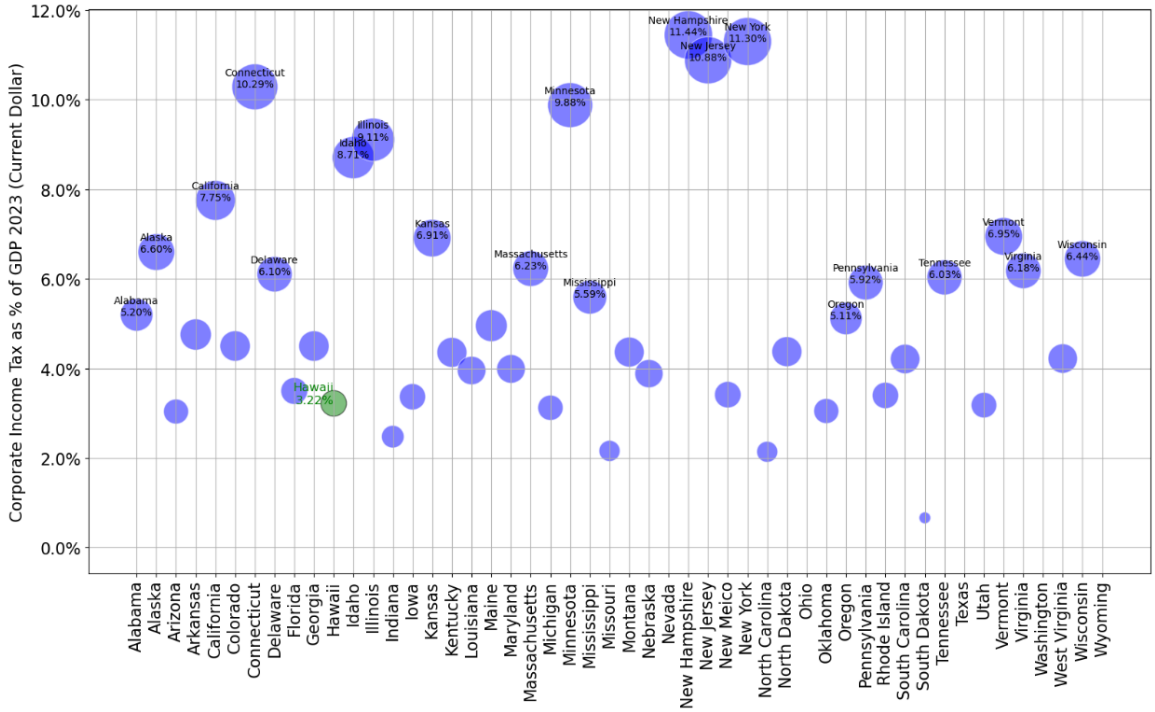
Corporation tax burdens are vital to the study of economic competitiveness and business growth since they have direct and indirect impact toward business innovation, expansion, and investment toward new technology and infrastructure. State Business Tax Climate Index (Tax Foundation, 2024) report shows that the majority states ranked highest for business formation either employ a flat tax rate or have no corporate or income taxes.

For this study we analyze the corporate tax burden as a ratio of corporate income tax (CIT) revenue collected by each state to their respected nominal GDP. Hawai‘i’ is among the states with the lowest corporate tax ratio as a percentage of its nominal GDP. Its ratio is 3.2%, a level which in comparison with the states with the highest ratio, ranging from 8% to 12%, ranks

[15] Hawai‘i governor signed tax bill H.B. 2404 H.D. 1, S.D.1, C.D.1 into law, Act 46 SLH 2024.
[16] Research Insights, Department of Taxation, State of Hawaii
[17] Research Insights, Department of Taxation, State of Hawaii

among the states which has the lowest corporate tax burdens. However, an important caveat is that Hawai'i corporations also pay General Excise Tax (GET) at various rates, depending on their industry. Our analysis only examines corporate income tax rates and does not include GET paid by corporations.

Figure 27. Corporate Income Tax Ratio as Percentage of GDP Year 2023

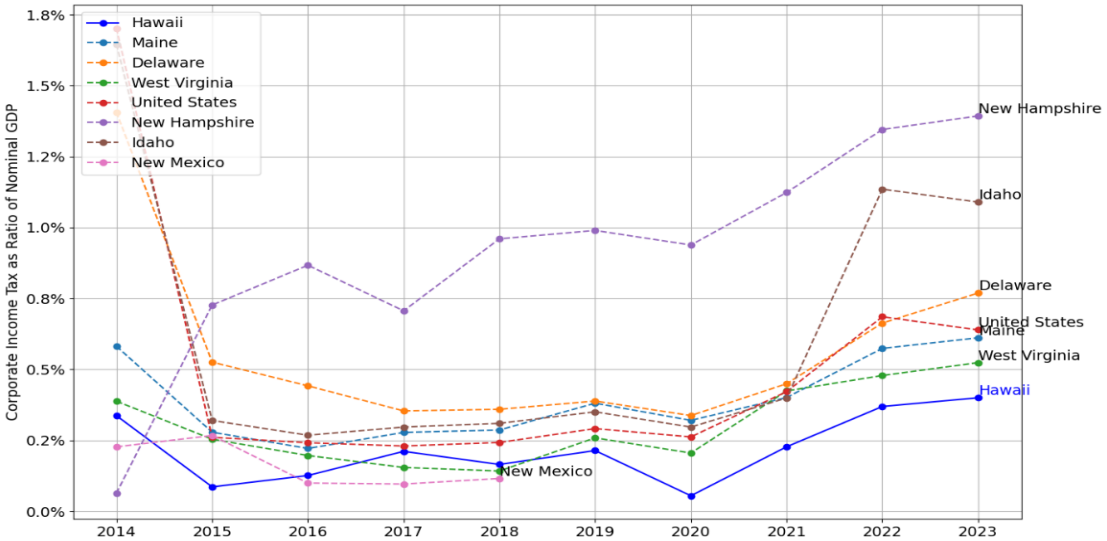


Source: Census Bureau, Annual Survey of State Government Tax Collections (STC) and nominal GDP (current dollars). READ estimation

Our deeper analysis of corporate tax burdens compares the corporate tax burden in Hawai'i with the states with similar GDP. For this analysis we assess CIT burden and business growth for the same period. Figure 28 illustrates that Hawai'i has the lower CIT burden compared to the states having similar GDP over the last 10 years. The states with the highest CIT burden are New Hampshire, Idaho, and Delaware.

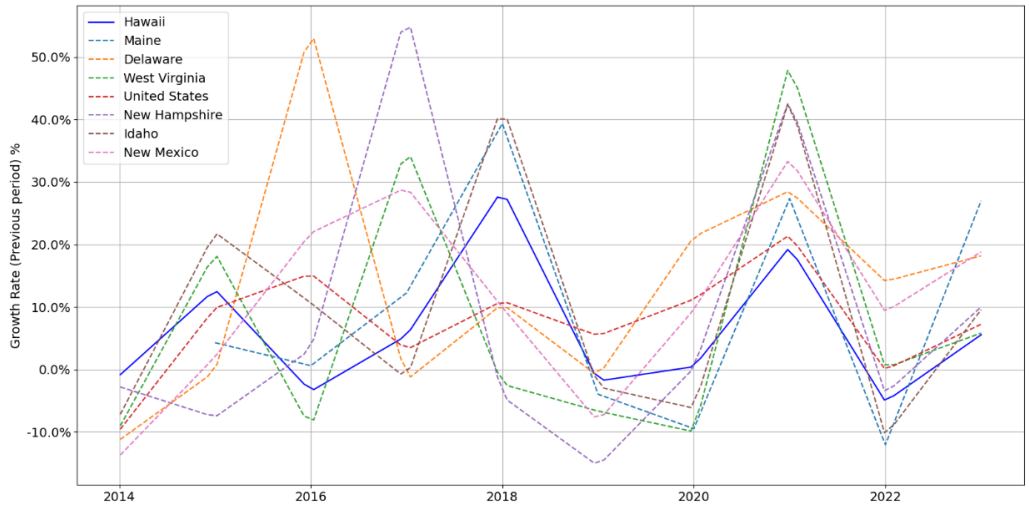
Illustrating business growth in the above states, Figure 29 shows that despite Hawai'i's low CIT burden, business growth pace has not been higher in Hawai'i compared to states with higher CIT burdens. Business growth in Hawai'i remains lower than the states of Maine, Delaware, New Hampshire, and the U.S overall.

Figure 28. Corporate Income Tax Burden, Hawai‘i vs Selected States 2014-2023



Source: Census Bureau, Annual Survey of State Government Tax Collection, READ Estimation

Figure 29. Business Formation Growth Rate, Hawai‘i vs Selected States (2014-2023)



Source: Bureau of Economic Analysis, Business Formation Statistics

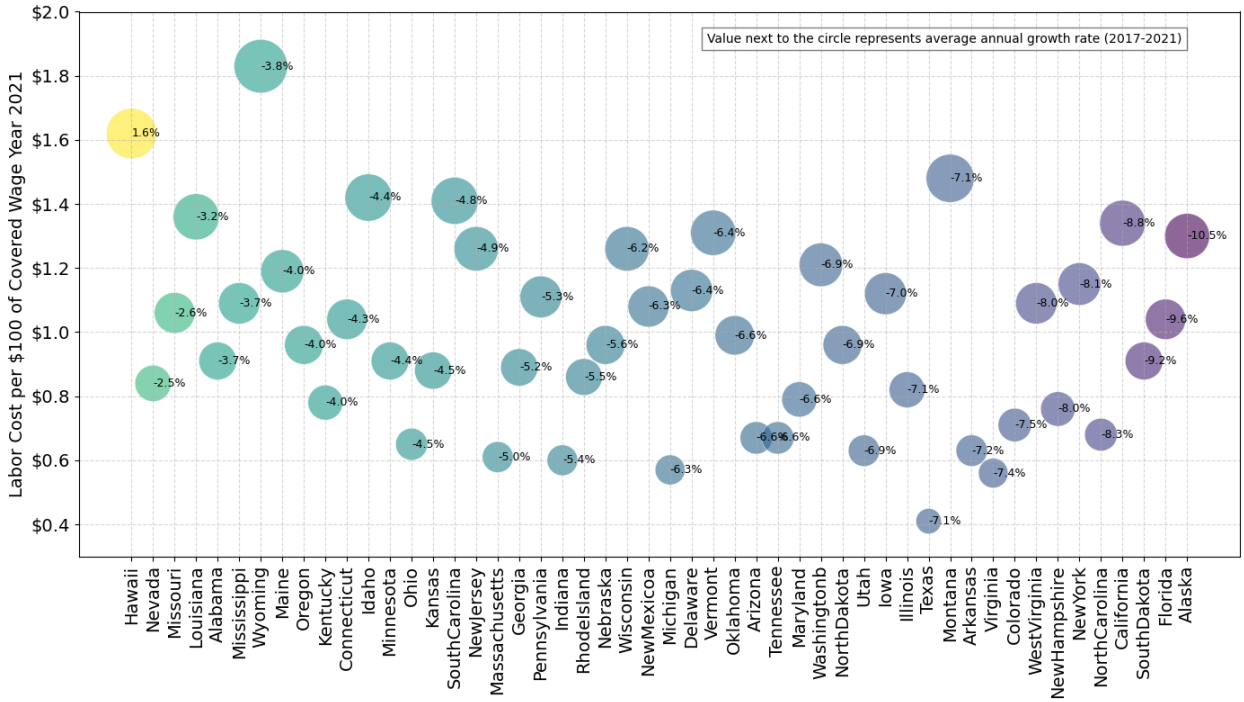
6.3 Labor cost

Labor costs are directly related to the overall operation cost and profitability of any business. Labor costs include wages, benefits, insurance, retirement savings, and social security payments. Higher labor cost environment can hinder a firm’s investments funding expansion and innovation, a category generally termed capital investment. According to the recent report on Small Business Credit Survey (SBCS, 2024), 77% of firms in Hawai’i indicated that the high costs of goods, services, and/or wages were one of the main financial challenges they faced during 2023. A study by the National Academy of Social Insurance (Tyler et al, 2024[18]) examines labor costs covering workers’ compensation benefits, insurance and other related costs imposed

[18]This study uses data collected in 2021 and it excludes federal and state employees.

by state law across all states. This study shows that, on average, it costs an employer an average of $1.62 per $100 wage to hire an employee in Hawai'i. It also shows that Hawai'i is the only state which experienced positive average annual growth (1.6%) in labor costs during 2017-2021. In contrast, other states experienced a negative growth in their labor costs.

Figure 30. Employee Cost and Growth Rate in Cost per $100 of Covered Wage (Year 2021)



Source: National Academy of Social Insurance (NASI, 2024)

6.4 Energy and Real Estate Costs

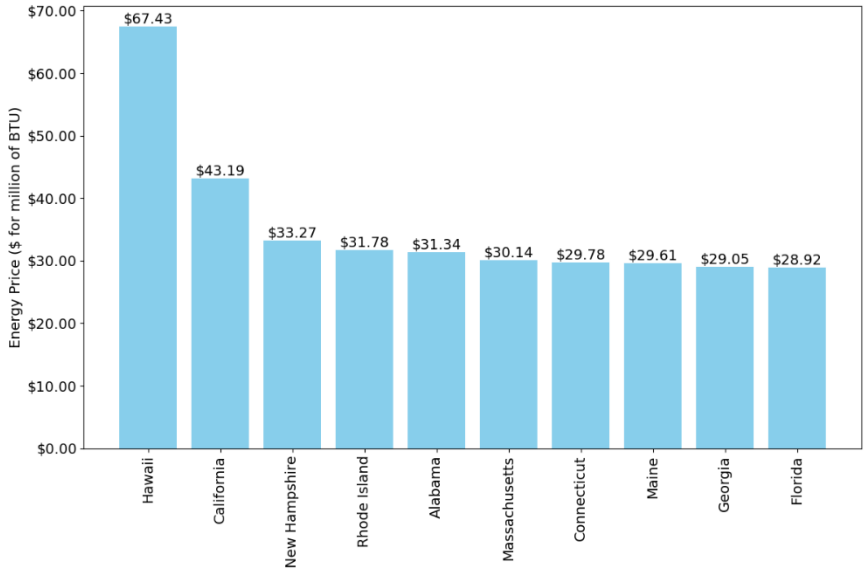
Finally, we compare both energy and space costs for businesses and startups in Hawai'i with those of other states. Energy and space cost are directly related to the operational cost of the businesses. High energy and space costs can significantly increase the cost burden on a business and reduce its allocation toward expansion, including capital and technology investment. For instance, businesses that require high energy consumption can be directly impacted by any fluctuation in energy price or high energy price as it is an obstacle to their competitiveness and performance. Similarly, businesses that require larger space can be significantly impacted by high rent and lease cost for office, warehouse, and retail space. Therefore, it is not attractive for businesses to operate or expand in locations with high energy and space cost as doing so significantly impacts their allocation toward other strategic investment in both workforce and infrastructure development.

Hawai'i ranked first in terms of energy price for business activities compared to all other state in 2022. With an average cost of $68 per million of BTUs[19], its energy price is higher than the

[19] BTU is the amount of energy needed to raise the temperature of water by one degree Fahrenheit.

energy price in California and more than double the amount in states such as Massachusetts, New Hampshire, and Connecticut.

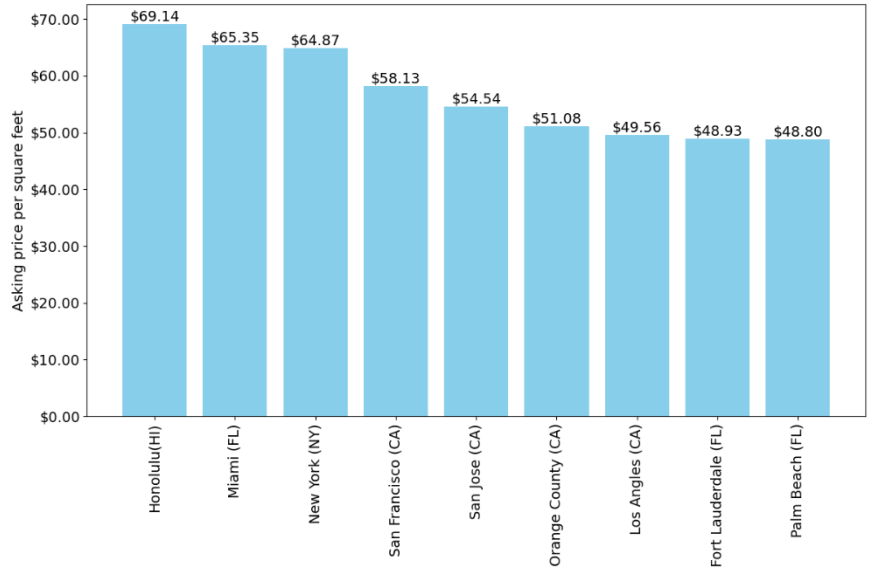
Figure 31. Energy Price for the Most Expensive States, Year 2022



Source: U.S. Energy Information Administration, State Energy Data System. Energy price represents a composite value for both primary energy (fuel, gas, etc) and electricity for commercial activities.

To evaluate the costs of commercial space rental, we compare the costs in Honolulu with those in major urban area. With an average rent of around $70 per square foot, Honolulu is the most expensive city in the U.S. to rent commercial space. Commercial rent levels in Hawai‘i’s largest metropolitan city are higher than those in major technology and financial hubs including New York city (NY), San Jose (CA), San Fransisco (CA).

Figure 32. Asking Rent Price per Square Foot for Commercial Space, Year 2024 Q2



Source: Collier, Retail Market Statistics Report, 2024 Q2.

Overall, we observed that both rent and energy costs are substantially higher for businesses in Hawai‘i. The high cost of energy and electricity can be explained to a great extent by the high cost of petroleum, with 74.1% of Hawai’i electricity being generated from petroleum-fired sources[20]. The high demand for real estate and limited availability of land, itself partly due to geographical isolation, combine to make rent levels for office, retail, and industrial space in Hawai‘i the highest among all the states. The above two factors significantly impact both the business environment and business competitive performance.

[20] U.S Energy Information Administration (2024)

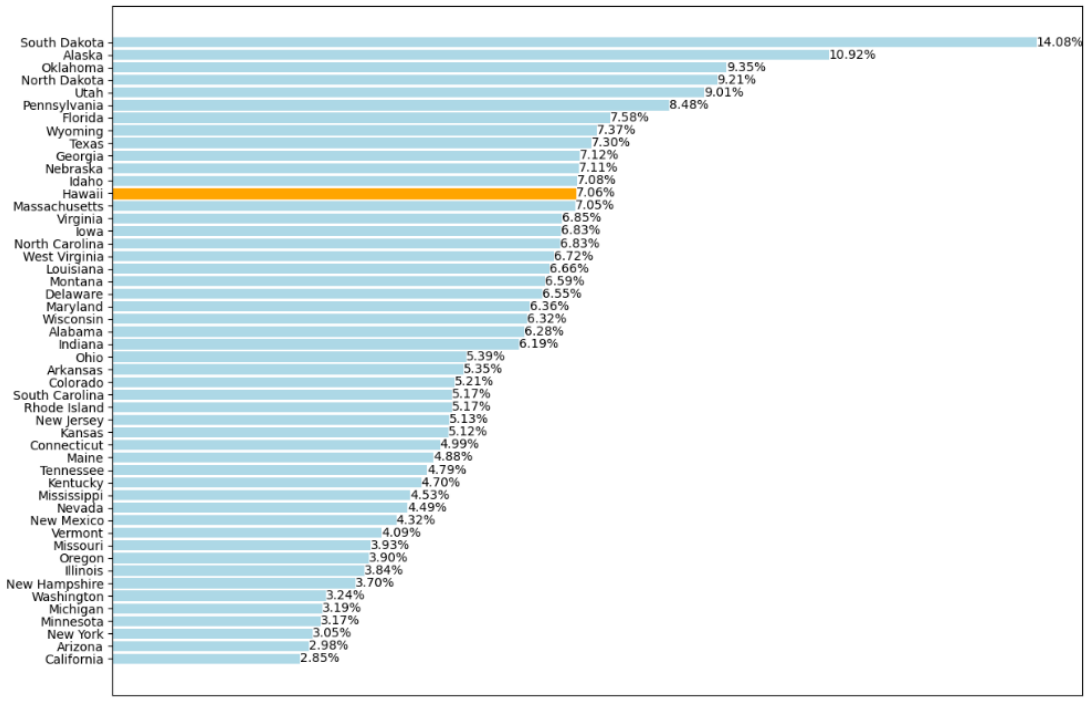
Section 7. Infrastructure Development

A state's investment in public infrastructure, transportation structures, and utility system is vital to economic growth, job creation and promoting economic competitiveness. A state's spending in capital, and public infrastructure that includes, but not limited to, ports, roads, schools, technology sites, and utility system affect its overall ability to develop and function competitively (Munnell, 1992) (Bivens, 2014).

7.1 Capital Expenditure

Figure 33 shows that capital spending ranged from 2% to 14% of total spending by U.S. states in 2022. Total spendings in capital constituted around 7% of the Hawai'i total spending during the fiscal year 2022.

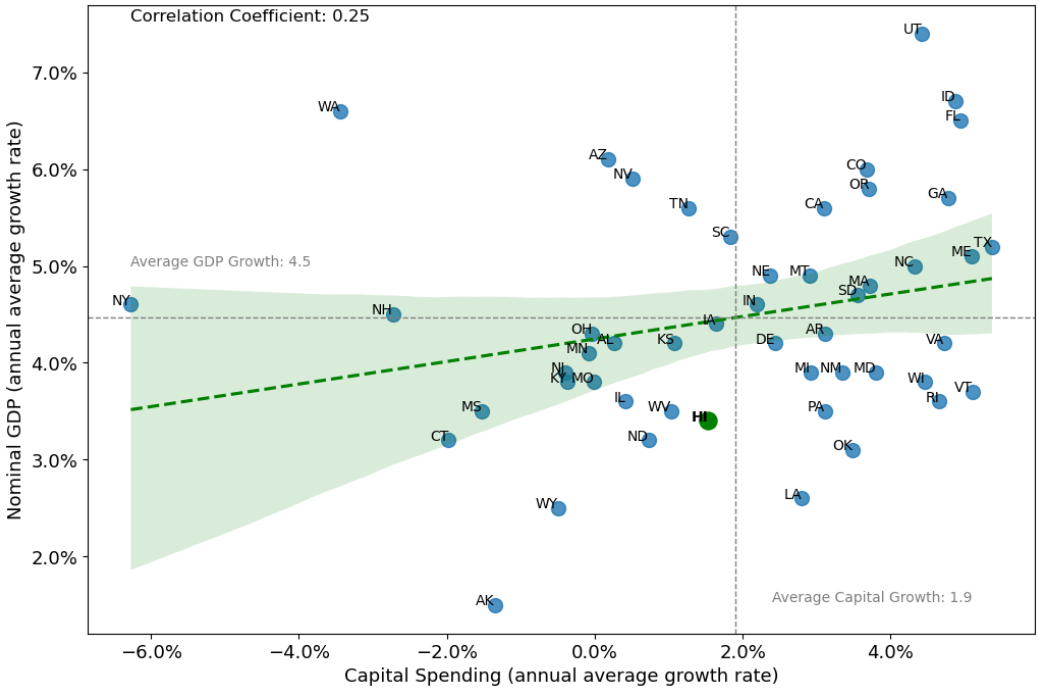
Figure 33.Capital Spending as Share of Total State Spending, 2022



Source: U.S Census Bureau, Annual Surveys of State and Local Government Finances. READ Estimation.

Using state level spending on capital as a metric, we analyze capital spending and GDP (nominal) growth patterns across states for the 2013-2022 period. Figure 34 shows that around 25% of the states with higher annual growth in capital spending experienced higher GDP (nominal) growth during the period. Hawai'i is among the states with relatively low growth in both capital spending and GDP. This finding highlights that capital investment is an important player for economic performance and growth.

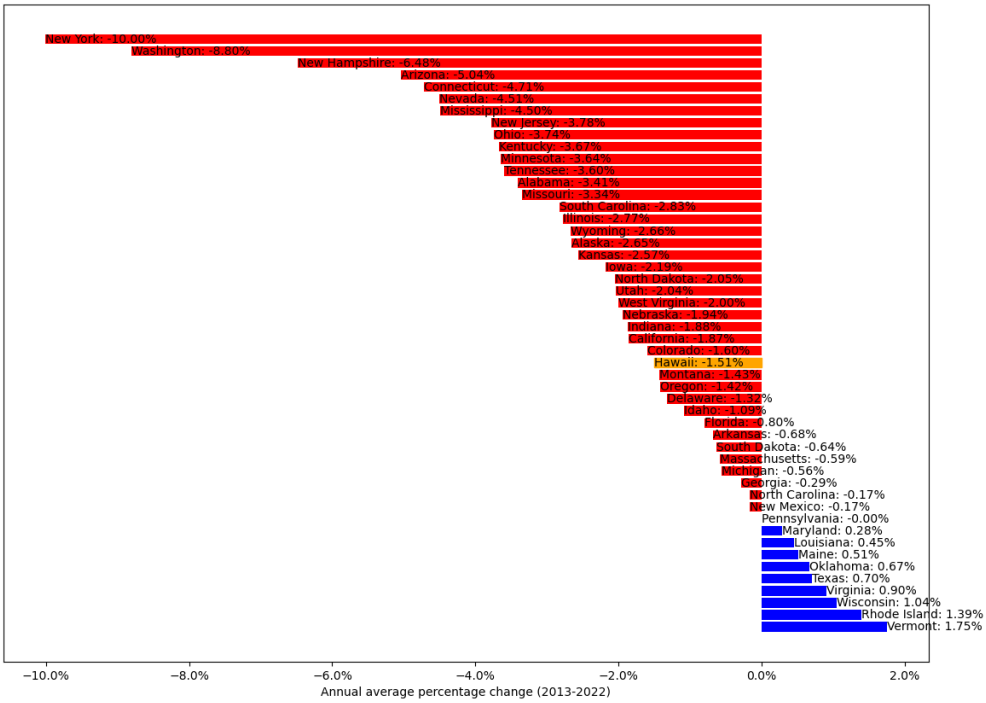
Figure 34. Annual Average Growth Rate, Capital Spending vs Nominal GDP (2013-2022)



Source: U.S Census Bureau, Annual Surveys of State and Local Government Finances. Bureau of Economic Analysis, State Annual Summary Statistics: GDP State. READ estimation.

We further analyze capital spending considering the size of the economy across all states. Our finding highlights that most states experienced a decrease in their capital spending as a share of their GDP (Nominal) during the 2013-2022 period. Hawai'i capital spending as a ratio of its nominal GDP experienced an annual average decrease of 1.5% during this period

Figure 35. Capital Spending as Share of Gross Domestic Product (Nominal), Annual Average Percentage Change (2013-2022)



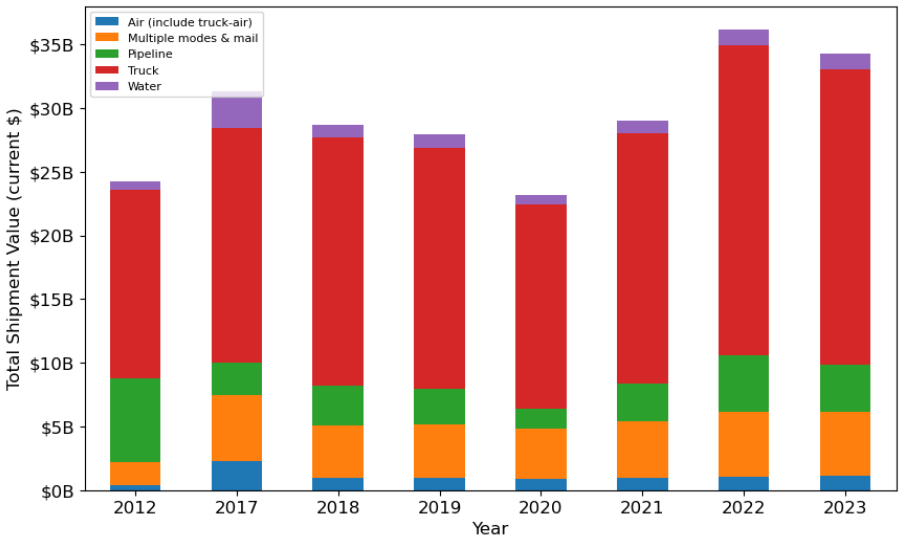
Source: U.S Census Bureau, Annual Surveys of State and Local Government Finances. Bureau of Economic Analysis, State Annual Summary Statistics: GDP State. READ estimation.

7.2 Transportation Infrastructure

A state's investment in transportation structures exerts a direct impact on the efficient movement of goods, services, and people. A developed transportation system reduces both cost and time associated with the transit, and accessibility to a broader market for businesses. Facilitating access to wider market significantly enhances business climate.

In this section, we first analyze the trends in goods and services shipment modes in Hawai'i. Figure 36 shows that a large share of goods and services were shipped and transported within Hawai'i by trucks during the 2012-2023 period. It highlights the importance and vitality of road structures and networks in supporting economic and business activities in Hawai'i. It emphasizes that investments in road and bridge infrastructure have a significant and positive impact on the volume of goods and services shipped and transported within and from Hawai'i.

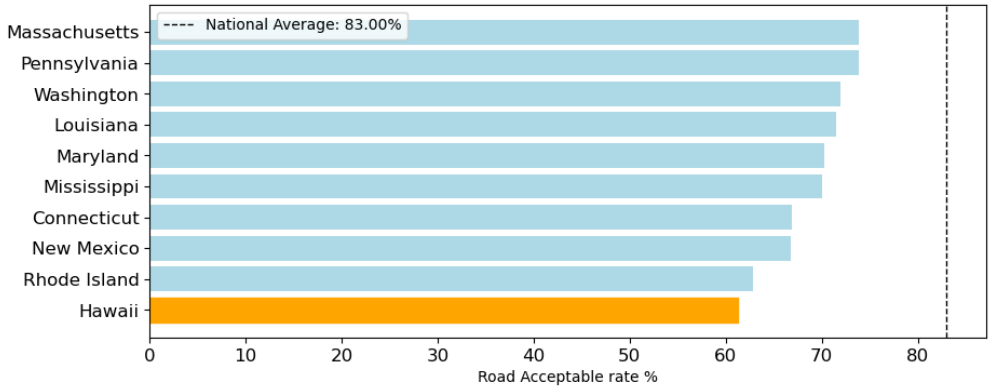
Figure 36. Total Shipment Value by Transportation Mode within the Hawai'i in current dollar (2012-2023).



Source: Freight Analysis Framework and National Bureau of Transportation. Freight data is generated based on a combination of survey data, administrative records, and economic modeling.

The state's transportation infrastructure, particularly its roads, faces challenges. As Figure 37 indicates, the road condition acceptability rate in Hawai'i rank's the lowest across the nation. Only 61% of the roads in Hawai'i were rated acceptable for goods and services shipments and transportation of people. The data suggest that there is a clear need for a more developed ground transportation infrastructure and network in Hawai'i to meet current and future needs.

Figure 37. Road Acceptable Rate, 10 Lowest-Ranked States, Year 2022.



Source: Bureau of Transportation Statistics (includes all highway, arterials and expressways).

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