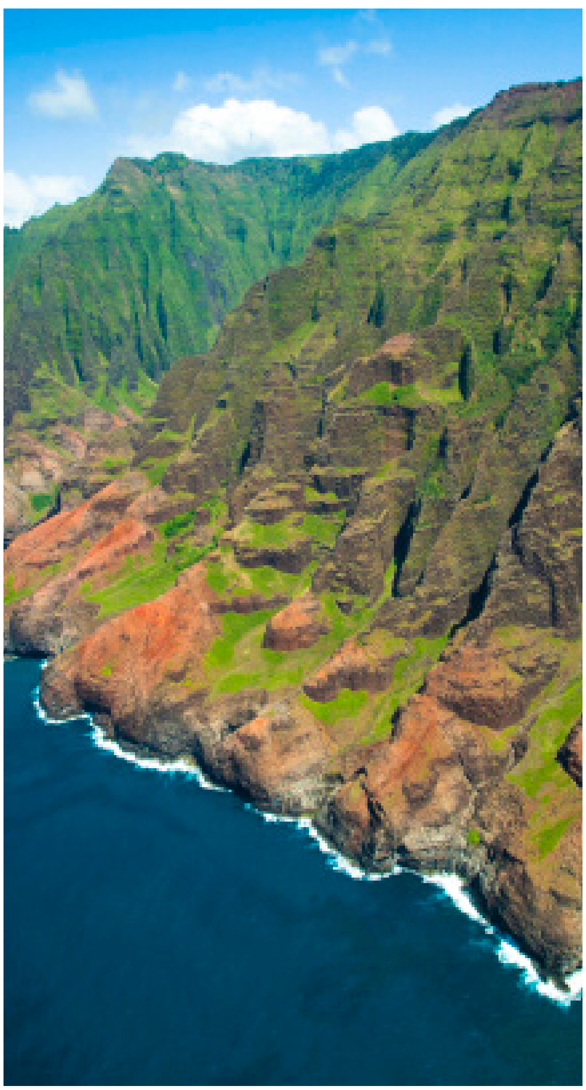
UHERO
THE ECONOMIC RESEARCH ORGANIZATION
AT THE UNIVERSITY OF HAWAIʻI

UHERO FORECAST FOR THE STATE OF HAWAII

Hawaii's Soft Landing Still in the Cards

MARCH 10, 2023



UHERO

THE ECONOMIC RESEARCH ORGANIZATION
AT THE UNIVERSITY OF HAWAIʻI

UHERO FORECAST FOR THE STATE OF HAWAII

Carl S. Bonham, Ph.D.
Executive Director

Byron Gangnes, Ph.D.
Senior Research Fellow

Steven Bond-Smith, Ph.D.
Economist

Peter Fuleky, Ph.D.
Economist

Justin Tyndall, Ph.D.
Economist

Rachel Inafuku, Ph.D.
UHERO Research Economist

Adib Rahman
Graduate Research Assistant

Victoria Rhinebolt
Graphic Design and Layout

2424 Maile Way, Room 540 • Honolulu, Hawaii 96822 • (808) 956-2325 • uhero@hawaii.edu

Executive Summary

Our Hawaii outlook continues to see economic slowing but no recession. While international tourism will continue to recover, domestic travel will soften as the US economy contracts later this year. Combined with high interest rates and prices, this will cause local growth to weaken through the first half of 2024. The cooling of inflation in Hawaii and nationally is welcome news. Whether it continues to recede will determine if the Fed pushes interest rates higher and for longer, which could result in a sharper slowdown here.

- Prospects for the US and global economies have improved somewhat over the past few months. Progress has been made in reducing US inflation without signs of a sharp falloff in economic activity. But still-tight labor markets are challenging the Fed. In Europe, lower-than-expected winter energy prices are softening a slowdown. Globally, China's restart promises to boost trade over the coming year. Even so, recession risks remain for many countries.

- The tourism industry made substantial progress after last winter's Omicron-induced lull. Inflation-adjusted visitor spending had fully recovered by the second quarter, and the average daily census did so by September. Recovery of the Japanese market continues to fall short of expectations, rising to just a quarter of its pre-pandemic level.

- Worsening macro conditions mean a more challenging environment for Hawaii tourism this year. US arrivals will decline slightly, even as further international visitor recovery helps offset the overall tourism impact. Restrictions on transient vacation rentals will limit visitor capacity, which could support already-high hotel room rates and other tourism prices even in the face of softening US travel demand. After expanding by more than 4% this year, the average daily visitor census will contract by nearly 2% in 2024, before a modest pickup. Real visitor spending will also turn from a moderate gain this year to a small decline next year.

- After several years of economic expansion, Hawaii's labor market continues to make recovery progress. Payroll employment still lags pre-pandemic levels, but tourism-heavy Kauai and Maui counties have now caught up with Oahu and Hawaii Island. While overall labor market conditions are no tighter than before the pandemic, some sectors are seeing more acute worker shortages. Recent wage gains have been largest in tourism, where employment still lags pre-pandemic levels by a considerable margin.

- Many sectors will see weaker job growth over the next two years. There will be some firming of growth as we move into 2025. The construction industry has notably healthy prospects, with a very large stock of public construction projects in the works. This strength will offset some of the drag coming for the weakening domestic visitor industry.

- Education losses during the pandemic disproportionately burdened students from lower-income households, raising concerns about increased future income inequality. A number of plans announced in the Governor's State of the State address would address such concerns, including income tax reform and various housing initiatives.

- Inflation in the Islands has been less severe than on the mainland, but has still taken a big bite out of purchasing power. Together with the effects of the ending of pandemic support programs, we estimate that real personal income declined more than 6% last year. As inflation continues to recede—averaging about 3% for this year overall—real income will pick back up, firming to the 2% range by 2024-2025.

- The near-term outlook is not without risks, particularly more aggressive Fed tightening. Still, our state's relatively healthy footing puts us in a position to begin the hard work of addressing longer-term challenges. These include the visitor experience, questions of tourism capacity, housing cost and availability, our aging population, and adjustment to climate change.

Forecast Summary

MAJOR ECONOMIC INDICATORS
BASELINE FORECAST

	2020	2021	2022	2023	2024	2025
STATE OF HAWAII						
Nonfarm Payrolls (Thou)	559.7	583.1	615.4	628.2	633.8	641.6
% Change	-15.0	4.2	5.5	2.1	0.9	1.2
Unemployment Rate (%)	11.8	6.0	3.5	4.1	4.2	3.7
Real Personal Income (Mil 2022$)	91,846.7	93,623.1	87,308.2	88,338.8	90,198.1	92,189.7
% Change	2.7	1.9	-6.7	1.2	2.1	2.2
Real GDP (Mil 2022$)	91,222.8	96,966.6	99,438.1	101,171.9	102,470.2	104,136.1
% Change	-11.6	6.3	2.5	1.7	1.3	1.6
Total Visitor Arrivals by Air (Thou)	2,708.3	6,777.0	9,247.8	9,863.2	9,721.1	9,863.5
% Change	-73.9	150.2	36.5	6.7	-1.4	1.5
Visitor Days (Thou)	28,515.8	65,309.7	84,791.7	88,530.5	86,783.9	88,543.0
% Change	-68.2	129.0	29.8	4.4	-2.0	2.0
Real Visitor Expenditures (Mil 2022$)	5,573.1	13,978.7	19,255.4	19,653.5	18,924.6	19,221.0
% Change	-71.9	150.8	37.7	2.1	-3.7	1.6
HONOLULU COUNTY						
Nonfarm Payrolls (Thou)	411.1	420.7	442.5	451.2	455.0	460.4
% Change	-13.2	2.3	5.2	2.0	0.8	1.2
Unemployment Rate (%)	10.3	5.6	3.3	4.0	4.1	3.6
Inflation Rate, Honolulu MSA (%)	1.6	3.8	6.5	2.9	2.5	2.3
Real Personal Income (Mil 2022$)	67,312.4	68,119.1	63,645.8	64,193.2	65,574.7	67,060.9
% Change	2.3	1.2	-6.6	0.9	2.2	2.3
Total Visitor Arrivals by Air (Thou)	1,506.2	3,326.2	4,864.7	5,617.1	5,674.2	5,826.6
% Change	-75.5	120.8	46.3	15.5	1.0	2.7
HAWAII COUNTY						
Nonfarm Payrolls (Thou)	61.0	65.1	68.2	69.4	70.0	70.9
% Change	-13.9	6.7	4.8	1.8	0.9	1.2
Unemployment Rate (%)	11.5	5.8	3.5	4.1	4.2	3.7
Real Personal Income (Mil 2022$)	10,441.9	10,811.7	9,890.9	10,062.3	10,242.5	10,456.1
% Change	6.8	3.5	-8.5	1.7	1.8	2.1
Total Visitor Arrivals by Air (Thou)	482.0	1,183.5	1,674.1	1,820.4	1,781.8	1,833.9
% Change	-73.0	145.5	41.5	8.7	-2.1	2.9
MAUI COUNTY						
Nonfarm Payrolls (Thou)	61.2	69.6	74.1	75.9	76.8	78.0
% Change	-23.9	13.7	6.4	2.5	1.1	1.5
Unemployment Rate (%)	18.2	7.6	4.0	4.3	4.5	4.0
Real Personal Income (Mil 2022$)	9,755.7	10,238.9	9,633.6	9,844.7	10,073.7	10,266.8
% Change	0.8	5.0	-5.9	2.2	2.3	1.9
Total Visitor Arrivals by Air (Thou)	844.8	2,340.9	2,955.2	3,056.5	3,009.7	3,095.1
% Change	-72.9	177.1	26.2	3.4	-1.5	2.8
KAUAI COUNTY						
Nonfarm Payrolls (Thou)	26.4	27.8	30.6	31.7	32.0	32.4
% Change	-20.9	5.4	10.1	3.5	1.0	1.3
Unemployment Rate (%)	16.4	8.1	4.2	4.5	4.5	3.8
Real Personal Income (Mil 2022$)	4,336.7	4,388.4	4,137.9	4,238.5	4,307.2	4,405.9
% Change	3.8	1.2	-5.7	2.4	1.6	2.3
Total Visitor Arrivals by Air (Thou)	339.0	813.6	1,345.5	1,388.2	1,354.0	1,383.0
% Change	-75.4	140.0	65.4	3.2	-2.5	2.1

Note: Source is UHERO. Nonfarm Payrolls for 2021-2022 are UHERO estimates of the 2023 benchmark revision. County unemployment rates for 2020-2022 are UHERO estimates of upcoming official BLS revisions. Figures for income and GDP for 2022 are UHERO estimates. Figures for 2023-2025 are forecasts.

First Quarter Hawaii Forecast

Our Hawaii outlook continues to feature economic slowing but no recession. Despite ongoing international tourism recovery, domestic travel will soften as the US economy contracts later this year. Together with the unfavorable impacts of high interest rates and prices, local growth will weaken a bit for the remainder of this year and into the beginning of 2024. At the same time, cooling inflation is welcome news. This soft landing for Hawaii could be derailed if the Fed decides a sharper upward interest rate path is needed to quash a stubbornly strong US labor market and its upward effects on inflation.

A gradually improving global picture

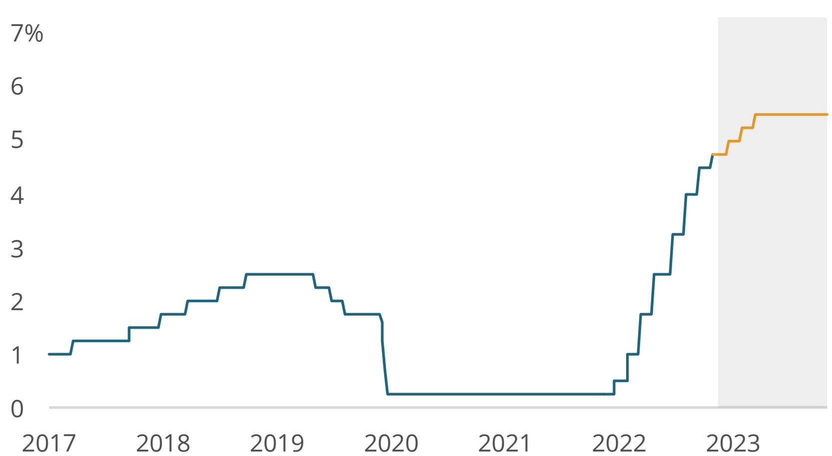
Prospects for the US and global economies have improved somewhat over the past few months. Progress has been made in reducing US inflation without signs of a sharp falloff in economic activity. In Europe, lower-than-expected winter energy prices are softening a slowdown. And, globally, China's restart promises to boost trade over the coming year. Nevertheless, recession risks remain for many countries.

US inflation has generally continued to decelerate, although it remains very high by historical standards. Year-on-year growth in consumer prices has eased from nearly 9% in July to 6.4% in December and January. Month-to-month changes have tapered much more rapidly, averaging about 2% in November and December on an annualized basis. However, the new year has seen disconcerting upward movements. From December to January, the CPI jumped to a more than 6% annual rate. And the Federal Reserve's preferred inflation measure, the personal consumption expenditure deflator, ticked up to 5.4%, compared with a year earlier. These developments confirm that the disinflation process still has a ways to go.

The Federal Reserve has made it clear that inflation remains its primary concern, and that further interest rate hikes—and a prolonged period of high rates—will be needed before the war on inflation can be concluded. The Fed's policy-making Federal Open Market Committee has raised rates at eight consecutive meetings, and several additional hikes are expected, bringing the rate to about 5.5%. Markets expect rates to remain at or above this level throughout the rest of the year.

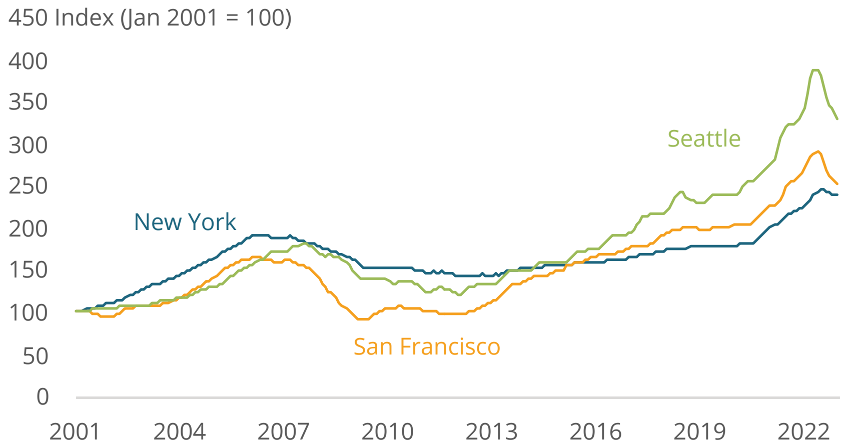
FEDERAL FUNDS RATE (UPPER BOUND) AND FINANCIAL MARKET EXPECTATIONS FROM CME FEDWATCH TOOL

Interest rates are set to rise higher and for longer.



MEDIAN US RESALE PRICE FOR A SINGLE-FAMILY HOME

US home prices have fallen for six straight months.



US Inflation fight is far from over

Whether interest rates will then begin to decline will depend on further progress in reducing inflation. While most temporary factors have eased or fallen back, core service inflation remains high, and many of these are labor-intensive sectors, influenced by rising labor costs. Wage inflation has declined only gradually and remained above 4% in January.

The Fed's interest rate hikes are designed to slow borrowing and spending, and so to take the heat off wages and prices. Not surprisingly, rate hikes are having their biggest effect in housing markets, where resales have plummeted and prices have begun to move downward after a pandemic-era run-up. The home resale volume nationally has fallen by half. While overall US home prices have eased only slightly so far, they have fallen sharply in some markets, down 15% in Seattle and 13% in San Francisco. The number of new homes starting construction has fallen back to the level seen in early 2019.

Signs of broader slowing are also evident. Manufacturing activity has been falling for several months. Provision of services—everything from education to leisure and hospitality—has held up better, although purchasing managers reported a contraction of activity in December before a bounce-back. Businesses report that profits have fallen to a level typically associated with recessions.

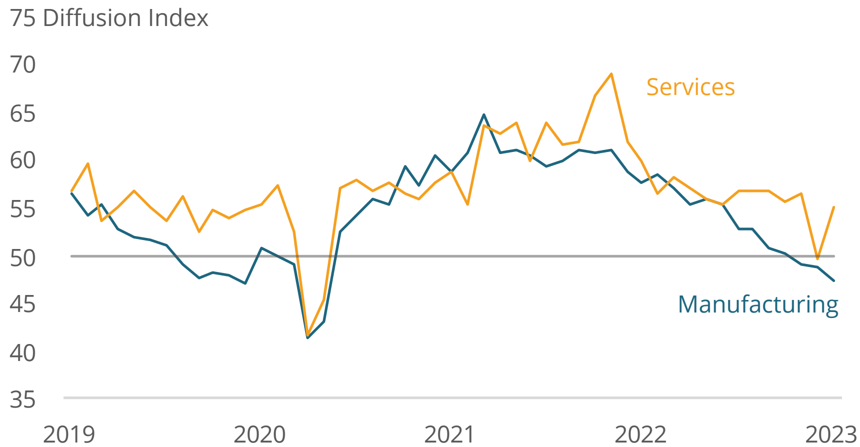
At the same time, the labor market remains exceptionally strong, too strong to be consistent with stable inflation. There continue to be about two job openings for each available worker, twice the level in 2018. The unemployment rate has fallen to its lowest level since 1969! Some softening of these ultra-tight labor markets will be necessary for further progress in reducing wage growth and hiring bottlenecks that have plagued many firms. Still-healthy labor markets and rising consumer confidence have maintained consumer spending at a fairly robust level, even as pandemic-era savings are being rapidly drawn down.

Trust the government to get in the way

A significant risk to the near-term US outlook is the looming battle over the Federal Government budget and borrowing limit. The US hit the debt ceiling in late January, and the Treasury is now taking extraordinary measures to avoid a first-ever US debt default. These actions are intended to give Congress time to negotiate a bipartisan solution, but the measures will be

ISM PURCHASING MANAGERS INDEX FOR THE US

Activity is now contracting among US manufacturers, and flirting with contraction in service industries.



exhausted by June. The GOP-controlled House of Representatives is pushing for cuts to Federal spending as a condition for any increase in the debt ceiling, a position agreed to by Kevin McCarthy in order to secure the votes for Speakership. Achieving such an agreement appears unlikely, given the Democrat control of the Senate and White House.

The result could well be a government shutdown this summer. As in past shutdowns, Treasury Secretary Yellen indicates that those temporarily missing pay or benefits will be "made whole," so that while some routine government work may not get done, it is likely to be a temporary hiccup. Nonetheless, the sharp divisions in Congress may lead to a longer shutdown than in the past. And as the Treasury has warned, even a temporary shutdown could spook financial markets, spiking borrowing rates across the economy, with follow-on effects for real activity. With the Federal Government employing more than 7% of workers in Hawaii, even a temporary hiccup will be felt more severely here than elsewhere in the US.

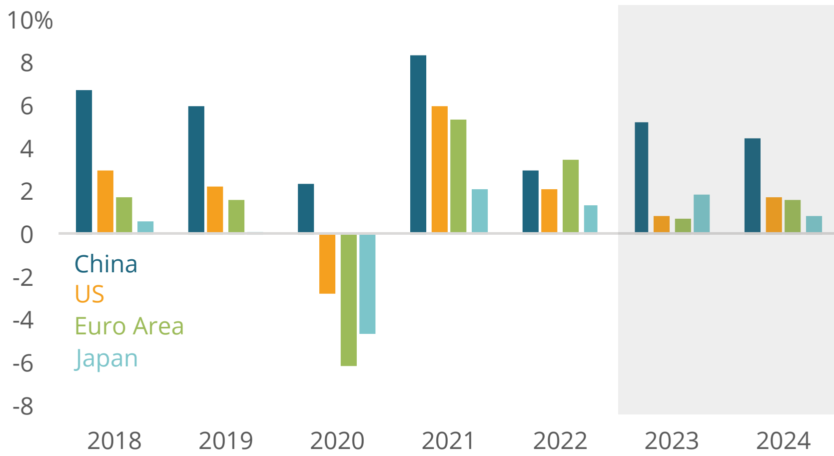
The overall outlook for the US economy has shifted just a bit from the time of our last report. The persistence of strength in employment and consumer spending reduces the risk of an imminent recession, pushing it back to later in the year. We continue to expect the recession to be particularly mild and short-lived by historical standards. At the same time, recent data have shown that getting inflation down to the Fed's target will not be without its fits and starts. This raises the risk that the central bank may need to push interest rates higher and keep them up longer than had been anticipated even a few months ago. This would have the potential to tip the economy into a deeper downturn further down the road.

A tough global year, but not quite as tough as feared

Conditions have also improved outside the US. After Russia's war on Ukraine caused natural gas prices in Europe to quadruple during the summer, they trended sharply downward from September on, with only a moderate uptick in December, in part because of an unusually mild winter. As a result, the economic drag from energy prices has turned out to be much less damaging than anticipated. Trade-dependent Germany is still expected to pass through a mild recession this year, after contracting slightly in last year's fourth quarter. Many other European countries will avoid an outright contraction. The United Kingdom is having a particularly difficult time reigning in inflation, and tight monetary and fiscal policies will drag the country into the deepest downturn of any major developed economy this year.

PERCENT GROWTH IN REAL GROSS DOMESTIC PRODUCT (SOURCE: UHERO AND IMF)

This year's global slowing will be less severe than feared.



Japan's economy has fared relatively well. A sharp drop in the value of the yen has undercut household purchasing power, but government policies have provided offsetting support. The weak yen has led to a pickup of inflation to 4% in December, its highest level in four decades. This has led to speculation that the Bank of Japan will move away from its decades-long exceptionally loose monetary policy, although incoming Governor Kazuo Ueda has indicated that the current policy stance will continue for now.

In China, the recent surge in COVID appears to be past its peak, although lack of clarity on data makes this hard to assess. China's economic reopening will drive rapid expansion of the economy this year. The International Monetary Fund projects about 5% growth this year, although that may well be too low an estimate given the apparent rapid retreat of COVID recently. Stronger Chinese growth will benefit many trade-dependent Asian economies, although it will also put upward pressure on commodity prices.

For the first time in this business cycle, we are beginning to see upward, rather than downward, revisions to near-term forecasts. In January, the IMF marked up their forecast for global growth by two-tenths of a percent, to 2.9% for 2023. Growth thereafter will still be constrained by the battle to tame inflation.

Japanese visitors making modest gains as US market cools

The tourism industry made substantial progress after last winter's Omicron-induced lull. Inflation-adjusted visitor spending had fully recovered by the second quarter, and the average daily census did so by September. But after a very strong early-fall performance, most statewide tourism indicators drifted sideways in the fourth quarter. Room rates stabilized and occupancy rates gave up some of their earlier gains. Total visitor arrivals ended the year within 8% of the 2019 level.

While last year's strong arrivals were driven largely by the North American market, the long-awaited removal of Japanese travel restrictions has finally enabled a modest improvement in Japanese visitor arrivals for the first time since the pandemic began. Growth between September and December brought the number of Japanese visitors to a quarter of their pre-pandemic level. Japanese visitor arrivals increased a little in January, but there is still a long way to go in resurrecting this market. Part of the end-of-year strength may be attributed to returning Hawaii residents who took advantage of the relatively strong dollar and relaxed travel regulations.

Canadian arrivals ended the year about 10% short of their 2019 level, but the gap narrowed further in January. Other international markets also made headway, climbing within 14% of their 2019 level in January. The number of US visitors remained strong throughout last year. In the fourth quarter, seasonally-adjusted US arrivals exceeded their 2019 level by more than 10%. There are signs of moderation ahead as excess savings built up by households during the pandemic continue to dwindle and rising interest rates and prices cut into purchasing power. Further gradual recovery in Canadian, Japanese, and other international markets will help offset relative weakness in US arrivals this year, as we discuss further, below.

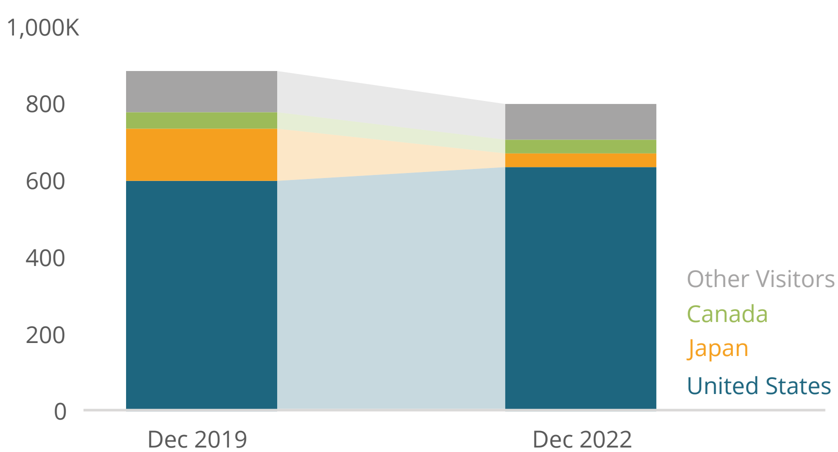
Honolulu has a special appeal to international visitors, whose delayed recovery has resulted in the county's underperformance relative to the Neighbor Islands. By the second quarter, the average daily census had fully recovered on the Neighbor Islands, while in Honolulu County it was still lagging by 12%. This imbalance across counties is in part due to the current tilt of the visitor mix towards the US market, but the budding recovery of Japanese arrivals in the fourth quarter has lifted visitor numbers on Oahu. Seasonally-adjusted visitor numbers for the Neighbor Islands (and for the state overall) peaked in October, before easing back a bit.

Inflation-adjusted real visitor spending was strong throughout last year, supported by room price gains and a strong visitor census. We will say more about accommodations prices below, but prices of other tourism related services, such as air travel and restaurant dining, have also risen more rapidly than overall inflation in the Islands. Total real visitor spending ended the year just 3% below its 2019 level.

Per visitor, spending now exceeds its pre-pandemic level by 2.6%. A rapid rise in per capita US spending has partly offset the low number of traditionally higher-spending Japanese visitors. However, with savings accumulated by US households during the pandemic now dwindling, continued recovery of the Japanese market remains crucial to maintaining a robust level of travel spending. Thankfully, the partial reversal of last year's dollar rally should make a US trip at least slightly less painful for international travelers.

COMPOSITION OF VISITOR ARRIVALS BY MARKET

A surge in US visitors has only partly replaced lagging international travel.



High room rates are beginning to be felt

The inflation-adjusted average daily room rate has stabilized after peaking in July. In December, the statewide average stood at $373, up 15% from the 2019 level. Room rate strength is a Neighbor Island story. Real room rates on Maui and the Big Island were up by more than a third compared with 2019. Honolulu hotels continue to lag behind the other counties, with room rates 1.4% lower than their level in 2019.

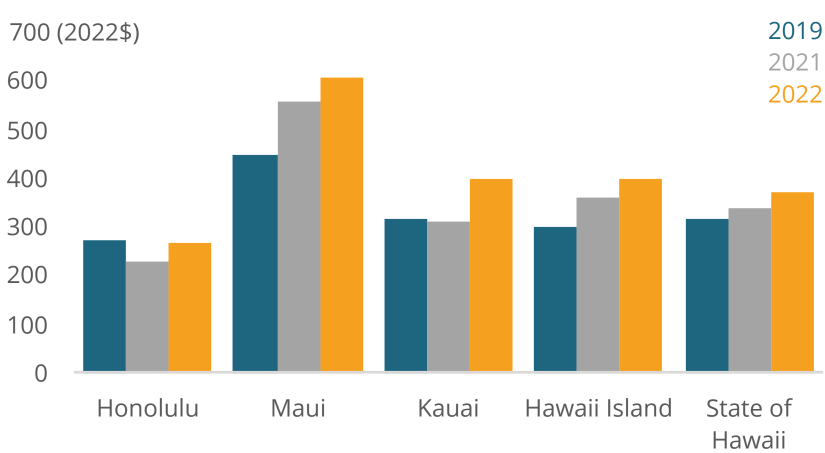
Statewide seasonally-adjusted hotel occupancy rates edged down from the September high of 77% to 74% in December, ending last year seven percentage points below their 2019 level. Slowing demand from US visitors in the fall was only slightly offset by the nascent recovery of Japanese arrivals. Across the Islands, Kauai is the only county whose occupancy rate exceeds the 2019 level, up five percentage points. On Maui, record-high room prices are weighing on occupancy rates, which stood at just 67% in December, far below pre-pandemic levels.

Transient Vacation Rental prices and occupancy have followed patterns that are similar to those of hotel rooms. But TVR supply is more than 20% lower than in 2019. New stricter rules on short-term rentals went into effect in late October on Oahu, and the Neighbor Islands are following suit. In October, the Maui County Council passed Bill 159 that will continue to restrict new transient accommodations on the island. In Hawaii County, politicians have proposed legislation requiring TVR hosts to register with the County, and prohibiting the owners from renting their property for fewer than 180 days, although this could face court challenges. The general move to tighten regulations and enforcement at the county level could put further upward pressure on TVR rental rates and hotel room rates as the supply of accommodations is constrained. However, the experience on Oahu shows that passing and enforcing such regulations is a slow and very difficult process.

Worsening macroeconomic conditions mean a more challenging environment for Hawaii tourism. US visitors arrivals are expected to decline slightly this year, but further recovery of international visitor arrivals will help offset the relative weakness in the domestic market. Ongoing efforts to restrict the supply of TVRs statewide, if successful, will serve to limit visitor capacity in the near term, which could support hotel room rates and other tourism prices even in the face of softening US arrivals and bookings.

REAL HOTEL ROOM RATES

Room rates have surged, except on Japan-dependent Oahu.



Labor markets are easing toward normal

Although Hawaii's labor market has seen significant growth since the depths of the pandemic, there are signs of some slowing. The labor force and employment peaked in the summer of last year, and growth has been flat since then. And labor market conditions by county are beginning to normalize. After seeing the most detrimental effects during the pandemic, tourism-heavy Kauai and Maui counties have now caught up with Oahu and Hawaii Island. Unemployment rates are now below 3.5% across all counties.

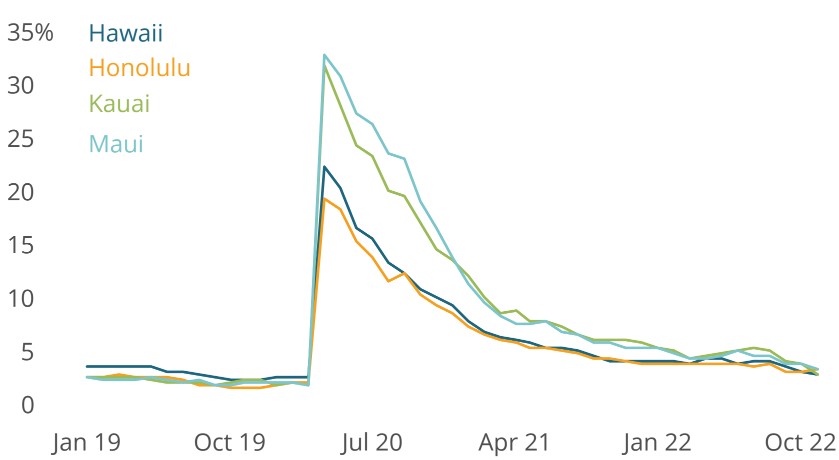
Although the labor market as a whole is normalizing, the pandemic has had differential effects on workers by industry, income class, and age group. With the return of visitors to the Islands, workers in tourism-related industries have seen the biggest wage gains over the past year. While the average year-over-year increase in hourly wages across all nonfarm jobs was 4% in November, the accommodations and food industry saw a double-digit increase, jumping 16% from the previous year. (Note that after adjusting for inflation, real wages are not higher than before the pandemic.) The substantial gains in nominal earnings may reflect a worker shortage in the industry. This mirrors a national pattern. According to a study from Harvard University's Opportunity Insights Lab, 20% of low-income workers are still missing from the pre-pandemic labor force, precisely the types of workers dominating the leisure and hospitality workforce.

The lagging return of lower-income workers likely reflects Hawaii's lag in economic recovery compared with other regions of the country. Many workers in industries heavily affected by the pandemic may have relocated to states with better job opportunities. This is consistent with Hawaii's population data. While the state's population began to decrease prior to the pandemic, COVID-19 accelerated the decline. Since the fourth quarter of 2019, Hawaii has seen a loss of more than fourteen thousand residents. The outflow of lower-income workers means that the pandemic has had a disproportionately negative effect on this income class. See the box, *The pandemic's aftermath: Greater income inequality.*

While some industries like accommodations and food services are still experiencing worker shortages, conditions across the labor market as a whole have normalized. Back in October 2021, the demand for workers exceeded the available labor supply by 40,000 people. Since then, job openings have declined by 20,000 and the labor supply has grown by 16,000,

UNEMPLOYMENT RATES BY COUNTY

Tourism-dependent counties have taken longer to see labor market recovery.

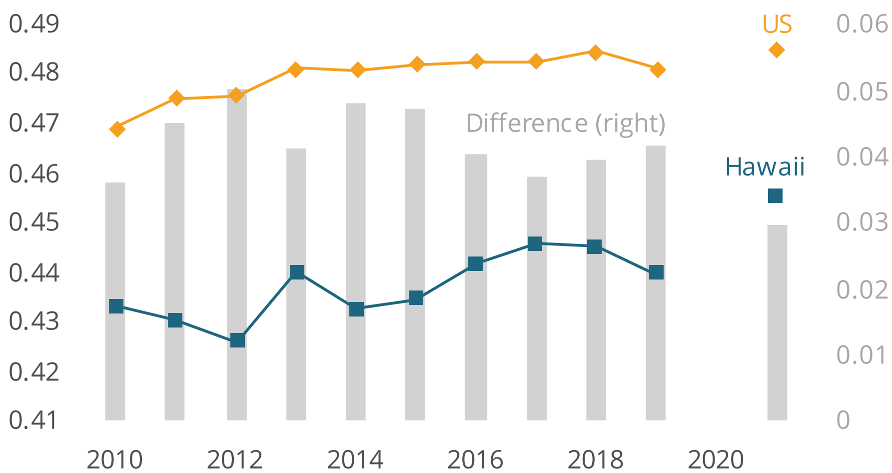


The pandemic's aftermath: Greater income inequality

While the pandemic disrupted the lives of everyone, its effect on the labor market was unequal across income classes. Most higher-skilled workers saw little disruption to their employment, with the transition to remote work. On the other hand, lower-paid service industry jobs were put on hold because many involve in-person contact. Although government relief helped to mitigate the financial strain on households, Hawaii's lag in economic recovery and larger share of service industry workers inevitably led to an increase in income inequality.

The Gini coefficient is a measure of the income distribution across a population. A value of 0 represents perfect equality, while a value of 1 represents complete inequality. Therefore, a higher value indicates more income inequality, with higher earning individuals claiming a larger share of the population's total income. While data for the past decade show that Hawaii has had less income inequality than the national average, the state's Gini coefficient surged in 2021, bringing Hawaii inequality closer to the national average.

GINI COEFFICIENT OF INCOME INEQUALITY FOR HAWAII AND THE US

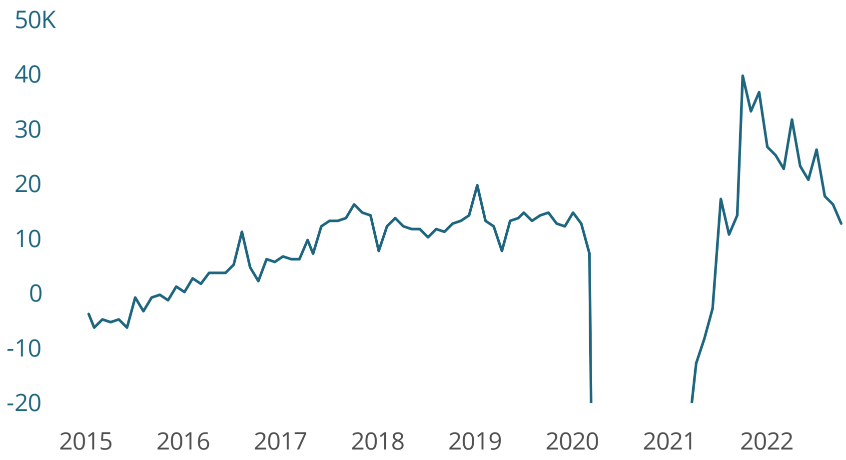


Wages in the accommodations and food industry, which tends to have a large share of lower-income workers, have increased substantially over the past year, outpacing inflation. But at the same time there were substantial employment losses. Due to its relatively large share of service industry payrolls and slower pace of economic recovery, Hawaii experienced a larger increase in income inequality relative to the rest of the US. Federal support programs helped to mitigate the initial financial strain, but income inequality in the state surged nonetheless.

Not only is income inequality a concern in the near term, but also for the future. COVID-19 may have persistent adverse effects on inequality because of learning losses incurred during the pandemic. Several studies have found that economically disadvantaged students experienced greater learning losses than their peers. Those who came from higher socioeconomic backgrounds saw the smallest learning losses, in part because they had more resources that could be used to minimize the impact of reduced in-person learning. Using web search data, Bacher-Hicks et al. found that web search intensity for school-centered resources increased by 15% for every $10,000 increase in median household income. These at-home support systems greatly influenced learning during COVID-19. A study from the Netherlands found that learning losses were 60% greater for students from less educated households. As alarming as this statistic is, the Netherlands experienced only a brief eight-week school closure, while Hawaii's school suspension lasted much longer, implying that learning losses in the state may be even larger.

Because the pandemic negatively affected lower income students more than their peers, learning losses are likely to disproportionately affect their achievement in the future, further widening the gap between income classes. To prevent persistently higher inequality, more resources should be allocated to schools to support catch-up by all students who have faced educational struggles since the pandemic began.

THE JOBS-WORKER GAP. EXCESS OF EMPLOYMENT AND OPEN JOBS OVER THE TOTAL LABOR FORCE
The excess demand for labor has retreated to its pre-pandemic level.



reducing the excess demand for workers by nearly 70%. Although labor demand still exceeds supply, the shortfall in the fourth quarter of 2022 was actually smaller than it was in the same period in 2019.

Data at the national level shows that while the labor force participation rate is within roughly 1-2% of its pre-COVID level across all age groups, the rate for those 65 and older is still down 5%. The decline is driven in part by lingering COVID-19 health concerns, which have disproportionately affected older workers, and has accelerated retirements. Furthermore, this Baby Boom age group has gotten older and is less likely to return to work following a bout of unemployment.

Inflationary pressures are easing in Hawaii

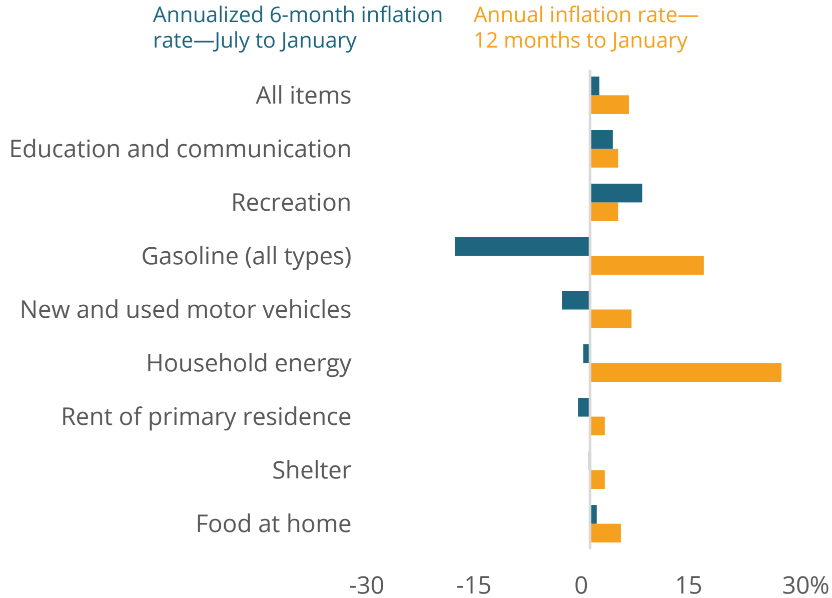
The year-on-year inflation rate for Honolulu was 5.2% in January, down from a peak of 7.5% in March. The change in prices over the past six months shows recent slowing. The CPI in January increased by just 0.5% from July, equivalent to an annualized rate of 1.0%, compared with 4.7% in the previous six month period, an annualized rate of 9.5%. (The CPI for Hawaii is only available for the Honolulu metropolitan statistical area.) The dramatic fall of the annualized six-month inflation rate is primarily due to a drop of 2.6% in the cost of shelter from its September peak. Shelter makes up the largest share of the CPI and includes rent, imputed rent of homeowners, and utilities. Several other spending categories have also seen significant declines in prices, reversing earlier gains.

This does not mean that the latest burst of inflation is over. But it does mean that the official twelve-month inflation measure will begin to decline significantly, as the price highs of March and May 2022 move out of the annual average calculation. While inflation is higher nationally than in Hawaii, the same decline will appear in the national inflation rate when earlier peaks are no longer reflected in the annual inflation rate, although recent data suggest that inflation at the national level will recede more slowly.

Overall inflation data for Hawaii is reported only every two months. But some expenditure categories for Honolulu are reported monthly, providing more data points that describe more persistent declines in prices. For example, there were declines in the cost of rent, electricity, and gasoline in October, November, and December. The housing section below provides more detail on housing cost declines, but other costs are declining too, including a drop in the cost of used cars and trucks, meat, and transportation.

HONOLULU INFLATION BY SPENDING CATEGORY

Inflation is easing in Hawaii, with prices declining in several categories over the past six months.



A core inflation measure excludes food and energy. Honolulu's annual core inflation rate was 3.7% in January, two percentage points below the overall inflation rate. That said, the national core inflation rate watched closely by the Fed is still elevated, ticking up to 5.5% in January, and was 5.3% on a six-month annualized basis, well above the Fed's long run target of 2%. So even though inflation has come down in Hawaii, Fed policy will remain tight and interest rates high for some time to come.

State budget surplus offers opportunities

In his first State of the State address Governor Josh Green outlined a number of new policy initiatives focused on affordable housing and homelessness (see Housing section below), the cost-of-living, environment, economic development, and mental health. The Governor proposed $1 billion in funding for housing initiatives and $300 million in tax relief (see the box *Who would benefit most from the GAP*?) While these policy proposals would need to pass the legislature to be implemented, they represent an ambitious roadmap for social investment.

The Governor also announced the development of plans to diversify the economy and expand the international reach of Hawaii businesses. In particular, his strategy advocates for local interests and diversifying agriculture into traditional Hawaiian foodstuffs such as taro, breadfruit, and sweet potatoes. This approach of building on local knowledge is also a key theme of the economic development strategy design outlined by UHERO.

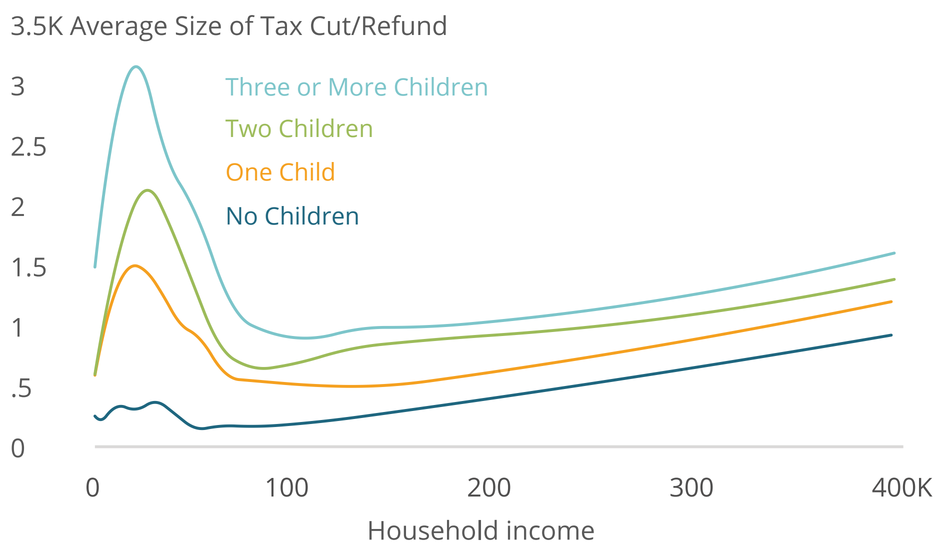
The State is also applying to the Federal Government to host a regional hydrogen hub in Hawaii. If awarded, the project could fund more than $1 billion in public and private sector investments. This initiative would take advantage of Hawaii's strategic geographic location, since hydrogen is viewed as an important future energy source by the military, and there will likely be a growing export market in Japan. Geography is an important economic development factor also identified by UHERO. But Hawaii's hydrogen hub proposal may still be a long-shot, given that other states' lower energy costs may make their bids more competitive.

Who would benefit most from the GAP?

If passed, the recently proposed Green Affordability Plan (GAP) [SB1347/HB1049] would be the largest income tax reform in Hawaii's recent history. The GAP would provide tax relief to nearly all Hawaii residents, but is intended to particularly benefit so-called ALICE households (Asset-Limited, Income-Constrained, Employed). The bill attempts to accomplish this by making a number of tweaks to the state's tax code, including increasing the size of several tax credits, and increasing the amount of income that is exempt from the state income tax.

Does the proposed GAP effectively target relief to ALICE households? Who would benefit most from this reform? To answer these and other questions about the reform, UHERO has developed a new model of Hawaiian households and their interactions with the state's tax and transfer system. The figure below displays estimates of the impact of the GAP generated by this model. Specifically, the figure shows the average increase in disposable income that different types of households would receive under the GAP. The figure displays estimates for working age households only, those with primary earners aged 18-65.

BENEFITS OF THE GREEN AFFORDABILITY PLAN (2023 DOLLARS)



The figure shows that, indeed, the GAP would provide the largest benefits to ALICE households. In particular, the biggest benefits would go to households with incomes below $50,000 (but above zero), and these benefits would scale up with the number of children in the household. On the other hand, the figure also suggests that for households with incomes above $100,000 or those without children, the GAP would provide the greatest benefit to higher income households. In addition to helping ALICE households, would the GAP also provide a tax cut to the rich?

The answer is a partial yes. Some provisions in the GAP, such as the increase in the standard deduction and personal exemption, would provide a much larger tax cut for high income households than for low income ones. However, a large share of the GAP's benefits for the highest income households is due to the introduction of a new inflation-adjustment procedure to the state's income tax code. Currently, the absence of such adjustments leads to an effective tax hike at the end of every year (that is, taxes go up in "real" or inflation-adjusted terms). So, in part, the GAP's benefits for the rich are due to the elimination of a previously scheduled tax hike, rather than a tax cut.

—Dylan Moore

A steep drop for Hawaii housing markets

Housing market activity has declined sharply. While prices have not fallen dramatically, other measures of market activity have shown record declines. Mortgage interest rates have remained above 6%, causing new mortgage originations to plummet. Statewide, the number of home mortgage originations was down 43% in January, compared with the same month in 2021. Over the same period, sales of single-family homes fell 45%. Nationally, single-family home sales have fallen by 36%.

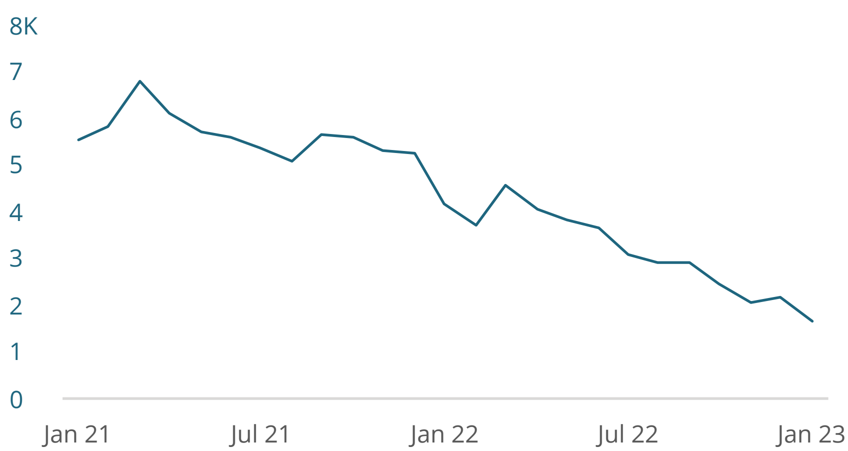
After several months of falling resales and month-to-month declines in prices, the median resale price for a single-family home on Oahu has edged below $1 million, down 8% from a year ago. Maui resale prices had followed a similar pattern until experiencing a rebound over the past couple of months, and prices on Hawaii Island have yet to change significantly. The very small number of transactions on Kauai makes discerning trends in median price more difficult.

The contraction in sales volume is dramatic by historical standards and will contribute to additional resale price declines. The 46% year-over-year drop in single-family home sales on Oahu is larger than any month on record since 1991. The current contraction in sales volume is already larger than what was experienced during the subprime mortgage crisis that began in 2007; from the second quarter of 2007, the median single-family home price on Oahu fell by just 14% over the next two years. However, the current market has not suffered from the same panicked conditions that accompanied the subprime crisis. The inventory of for-sale housing has increased only modestly. Existing homeowners with fixed-rate mortgages are generally not exposed to higher rates.

The Neighbor Islands have also experienced significant declines in home sale transactions, with the single-family home resales volume down about 35% on both Maui and the Big Island. Kauai recorded only nineteen home sales in January, marking the lowest number of monthly sales since 2009.

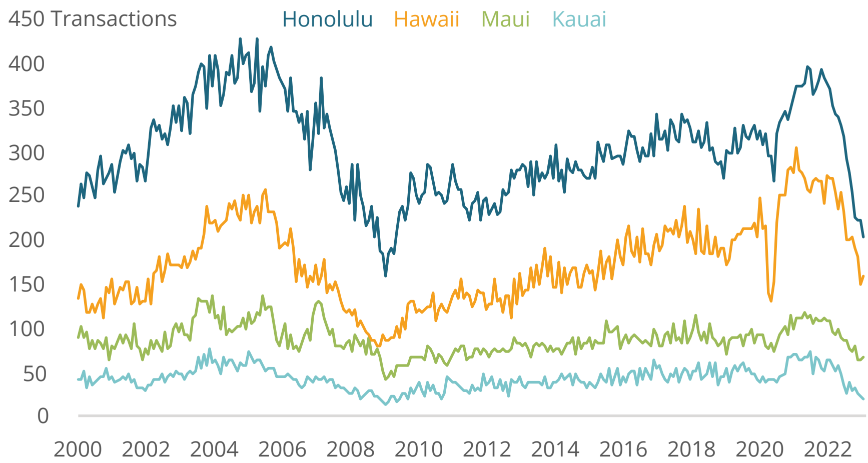
Despite a softening housing market, the prevailing high mortgage interest rates means that housing affordability in the state has deteriorated significantly. Solutions to the state's housing crisis were a centerpiece of Governor Josh Green's State of the State address. Governor Green outlined

MONTHLY HAWAII MORTGAGE ORIGINATIONS
The number of new mortgages in Hawaii has plummeted over the past year.



MONTHLY RESALES OF EXISTING HAWAII SINGLE-FAMILY HOMES

Home resales have fallen at a record pace.



proposals for both direct public investments and regulatory reform to expedite the production of affordable housing. At least $1 billion in funding for housing initiatives was proposed, spread across several priorities. The Governor hopes to expand *kauhale villages* to accommodate those experiencing homelessness, with plans for twelve new projects. Significant new investment in the Hawaii Public Housing Authority would be used to renovate existing housing stock. $900 million would be made available through the Hawaii Housing Finance and Development Corporation to facilitate new private housing construction. While potentially marking meaningful investments in housing, these proposals still need to be debated and enacted by the Legislature. The House Speaker has voiced general support for these initiatives.

More affordable housing on the way?

Governor Green also announced regulatory reforms to speed private housing construction in his State of the State address. The production of housing in Hawaii is heavily regulated compared with other states, as discussed in a recent UHERO report. A specific target for reform or expansion is the 201H affordable housing program, which allows waivers from certain permits and regulations for projects that provide a significant amount of affordable housing.

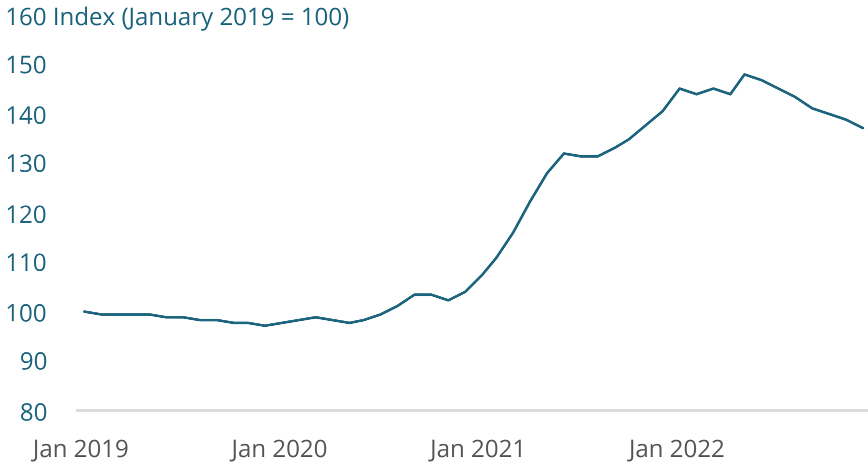
Accompanying the legislative proposals was an Emergency Proclamation Relating to Homelessness. The proclamation immediately exempts new housing developments from several laws, including the need for an environmental impact assessment and for approval by the State Land Use Commission, in cases where the project is designed exclusively for those experiencing or at risk of becoming homeless.

Overall permits for new housing are up considerably. In the final quarter of 2022, the total value of Hawaii residential building permits was more than double that of the final quarter of 2021 and of the same quarter in 2019. Developments in Kakaako continue to constitute a large share of all permits issued. The value of permits issued for these Kakaako projects tends to dwarf other market activity in the state. The timing of their official approvals adds volatility to permit levels. Permits for the 350 unit, $359 million Victoria Place project in Ward Village were recently finalized.

The City and County of Honolulu recently approved a condo development in Moiliili that would provide 1,000 units of new housing. The project was fast-tracked through the County approval process and was green-lighted despite

NATIONAL CONSTRUCTION COST INDEX

The cost of construction materials soared 40% during the pandemic.



strong opposition from the local Neighborhood Board. The project may serve as a model for county and State efforts to ramp up housing production that has previously been derailed by local homeowner groups.

Even with political will, the ability to construct significant amounts of new housing could be limited by high interest rates and construction costs, which have both inflated the cost of housing production. After rising sharply in 2021, construction costs remained relatively stable during 2022. However, a national index of construction material costs shows prices remain 40% higher than they were at the start of 2019. The level of construction employment is also high by historical standards, suggesting that additional construction plans may face high and rising labor costs and difficulty finding qualified workers.

Depending on government contracts

Development plans for the Aloha Stadium site and a new Oahu Community Correctional facility could add additional demand for construction workers and materials. A timeline for the new Aloha Stadium site is uncertain as the State considers options for entering into a public-private partnership. Plans for the construction of a new $500 million correctional facility have been delayed after critics, including the Governor, have called for efforts to reduce the prison population through criminal justice reform, which could enable a smaller facility.

Government contracts have continued to flow to the construction industry, fuelled by expansive federal infrastructure funding. More than $6 billion in government contracts were awarded in Hawaii in 2022, down from $10 billion in 2021, but still extremely high by historical standards. Several large contracts for road upgrades have recently been signed. A $138 million contract for improvements to Farrington Highway and a $22 million contract for road work around Daniel K. Inouye International Airport were recently signed with the construction firm Nan Inc.

Prospects for the global economy have brightened a little since the time of our last forecast, but the Hawaii outlook remains largely unchanged. The recovery of Japanese tourism continues to lag behind expectations. Nevertheless, we expect this market to resume its gradual recovery over the coming year, buoyed by a somewhat stronger yen and government support at home. This will impart some lift to the visitor industry as the coming US slowdown causes a modest pullback in mainland visitor demand. As we have noted in past reports, public construction activity is on a tear, and will therefore act as another important economic support. Across the broader local economy, the adverse effects of higher interest rates, dwindling pandemic-era savings, and gradual softening of labor market conditions will cause a virtual pause in growth over much of this year.

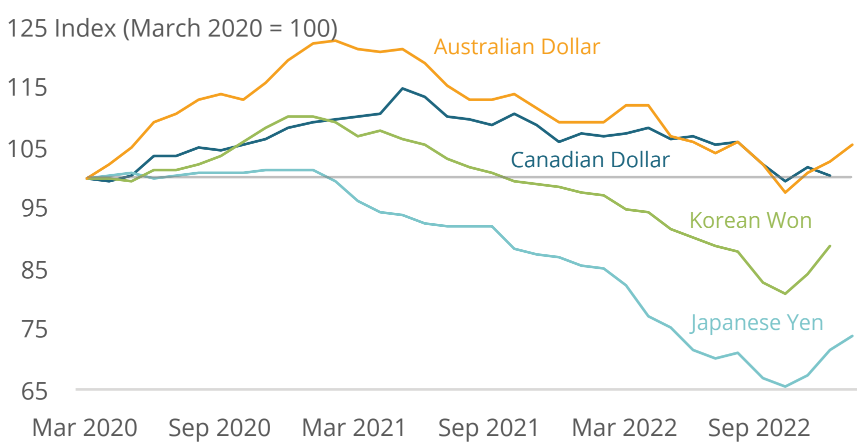
Japanese visitor return is achingly slow

Most international visitor markets made a significant comeback in 2022. So far the recovery has been centered in markets other than Japan, including Canada, Australia, and other Asian markets. By the end of last year, international arrivals other than from Japan had recovered 82% of their pandemic-era losses, while Japanese arrivals still languished 78% below their 2019 level. The recovery of Japanese arrivals continues to trend behind our previous forecasts, but we anticipate further gradual recovery for this market in 2023. The Japanese market will have recouped more than half of its pandemic era losses by the fourth quarter of this year, with further incremental gains thereafter.

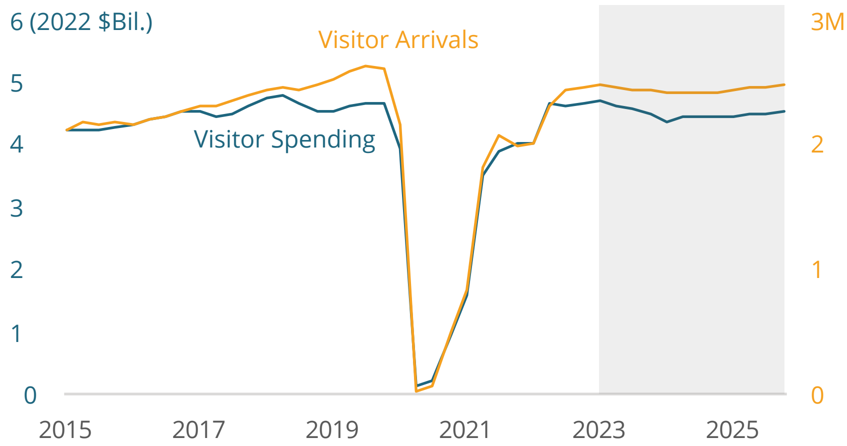
Visitor arrivals from the US are quite resilient and appear to be holding steady at the start of the year. After that, they will decline slightly with the coming mild US downturn, but remain above the pre-recession peak on an annual basis throughout the forecast horizon. Some of last fall's dollar rally, which substantially increased the cost of Hawaii trips for international visitors, has partially reversed in recent months. This bodes well not just for Japanese travel but for international travel from many markets. Despite the effect of a slowing global economy, we expect the international visitor census to continue its recovery this year, paving the way for a more diverse visitor mix.

REAL VALUE OF FOREIGN CURRENCIES AGAINST THE DOLLAR

The partial rebound of the yen and won will support international tourism recovery.



HAWAII VISITOR SPENDING AND ARRIVALS
Visitor spending will take more of a hit than arrivals as the US economy slows.



The overall number of Hawaii visitors measured by the average daily census rose to within 1% of pre-pandemic levels by the end of last year, and it will remain at similar levels throughout the forecast horizon.

Among international markets, Australia, New Zealand, and Korea have made significant recovery progress. In contrast, the number of Chinese visitors remains less than a fifth of its pre-pandemic level. The country's reopening from COVID-19 restrictions will accelerate domestic economic recovery and support global demand growth. The exit from *Zero COVID* policies could benefit Hawaii tourism, although the lack of direct flights and ongoing US-China geopolitical tensions will hold back recovery. At this point it appears that COVID-19 will no longer be a significant barrier to international travel to Hawaii, barring some unexpectedly-severe virus resurgence.

Real visitor spending for this year as a whole will essentially match its 2019 level. The ongoing rise in the number of overseas Pacific travelers, a welcome return to a more diversified visitor mix, will support spending. As we have noted, the dollar has given up some of last year's gains, but will still weigh on the budgets of some international travelers. In real terms, the Japanese yen remains about 25% lower in value than before the pandemic began; the Korean won is more than 10% weaker. For these markets, the real value of goods and services that these travelers can afford—and their contribution to industry fortunes—will continue to be more limited than in the past.

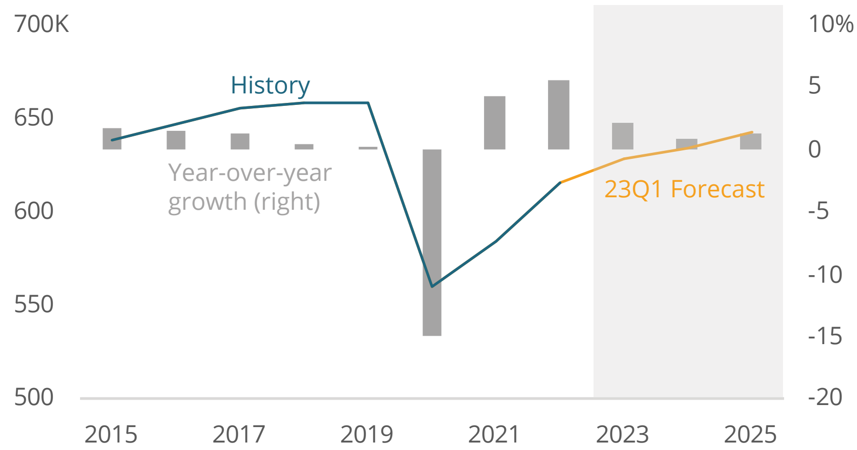
Overall real visitor spending will fall off a bit in 2024, amid softening global economic conditions and weaker US visitor numbers. Total visitor spending will also be constrained by the long-term downward trend in per-person real daily spending. As a result of this decline, total real visitor spending is essentially the same today as it was three decades ago.

Economic gains will decelerate in 2023

Hawaii's domestic economy will face headwinds in 2023 from weakening US tourism, higher interest rates, and high consumer prices. Unlike the US mainland, Hawaii will escape an outright decline in economic activity, in part because of the still-ongoing visitor industry recovery, a robust construction pipeline, and the spending of flush state government coffers. Worsening macro conditions will nevertheless slow growth as the year progresses.

There is limited evidence of labor market softening so far, but this year will bring a noticeable slowdown. Net payroll job growth will decelerate to just over 2% in 2023, compared with last year's 5.5% expansion. These annual

HAWAII NONFARM PAYROLL JOBS
Overall job gains will moderate for the next two years.



figures mask greater underlying weakness. From the fourth quarter of last year through the fourth quarter of this year, there will be only a half-percent growth in the total nonfarm job count. The pace of job gains will gradually pick up over the course of 2024. The softer labor market will result in a slight uptick in the unemployment rate. The statewide average will edge up from 3.3% in the fourth quarter of last year to 4% at the end of this year. Unemployment will begin to recede in the second half of 2024.

Slower labor force growth will weigh on the economy throughout the forecast period. Slower trend growth of the workforce is due both to the pandemic-related retirements that have already occurred and the absence of significant population gains, especially on Oahu. As a result, the number of filled jobs will not approach the pre-pandemic level until late in the decade.

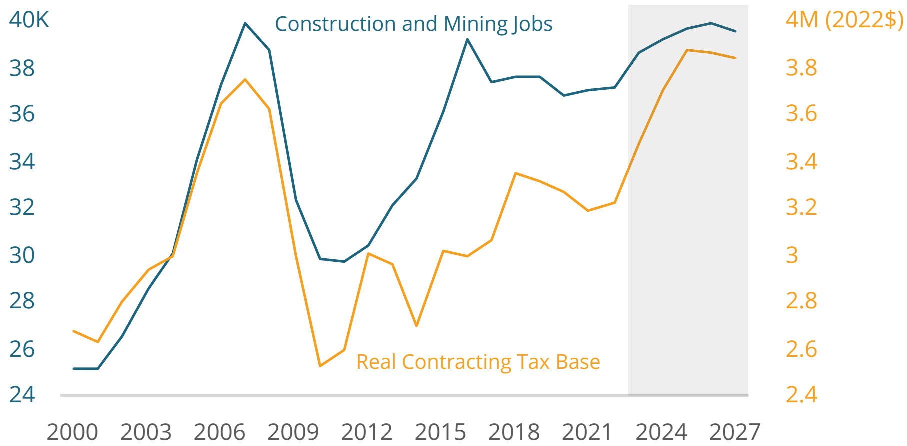
Nearly all sectors will experience slower job growth over the next two years than they did in 2022. In part this simply reflects slowing from the more robust hiring of the post-pandemic recovery period, but poorer macro conditions also play a role. Tourism-related industries will see sharply lower growth rates, although they will nevertheless lead all other industries as they continue to recover from their deep pandemic job losses. The accommodations and food service sector will add 6,500 jobs in 2023, slightly more than half of all net job gains.

The job base in the construction industry had fully recovered by late last year, and the healthcare industry will be next, regaining its 2019 employment by 2024. Growth in the large "other services" sector, which includes everything from business services to education, will slow sharply in 2023 after a nearly 8% gain this year. Finance, insurance, and real estate will contract, pulled down in part by the lagging real estate market. State and local government hiring will expand modestly, continuing the gradual rebuilding from pandemic-era contraction. There will be some firming of job growth in many sectors as we move into 2025.

As we have noted above, the macroeconomic environment exerts pressures on the construction industry, both on the cost side and in terms of housing affordability. However, building activity has been buoyed by a substantial volume of new projects, most important of which are several very large federally-funded projects. Construction employment ended the year within a thousand jobs of the previous high reached in 2016, and the sector will continue to expand this year. A large pipeline of pending projects will sustain a high level of construction employment over the forecast period. Strength in

CONSTRUCTION EMPLOYMENT AND THE REAL CONTRACTING TAX BASE

Construction activity will remain high, buoyed by government contracts.



public contracting will more than offset an anticipated decline in residential building, and healthy construction activity overall will help to offset the adverse macro effects of the anticipated decline in real visitor spending.

Some relief from high inflation is on the way

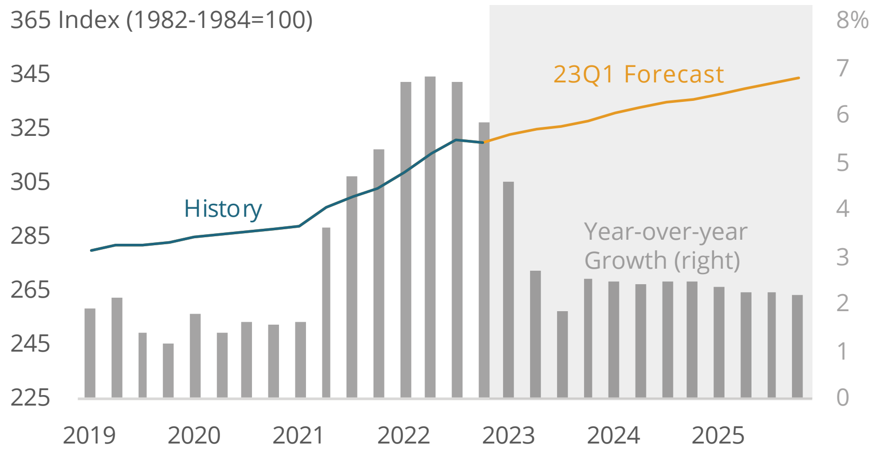
High inflation has imposed a heavy toll on the Hawaii economy over the past two years. Honolulu inflation averaged just under 4% in 2021, then nearly doubled in pace early last year, reaching 7.5% in March. High and persistent inflation has undercut local purchasing power. Current-dollar personal income stabilized last year, following steep losses as the massive pandemic-era federal support ended. But we estimate that inflation-adjusted real income plunged 6.7% in 2022. In the third quarter of last year, real income was running about 4% lower than its level at the end of 2019.

But, as we discussed above, inflation is now subsiding in the Islands. Inflation has retreated to a roughly 5% pace, with particularly encouraging progress over the past six months. Oil prices, the largest source of energy in Hawaii, have reversed all of their 2022 gains. Food price appreciation is also expected to decline as global supply conditions continue to improve. Shelter costs have already started to ease; growth in asking rents has declined and home resale prices have dropped 10% from their peak.

We expect further rapid cooling of inflation, with the rate averaging less than 3% for this year as a whole and dropping to 2.3% by 2025. The wild card is the tight labor market. If wage increases prove more persistent than expected, it may take a bit longer for inflation to recede. In any case, lower inflation will enable a return to moderate real income growth, firming to the 2% range by 2024-2025.

The pace of employment and income gains will converge toward their long-run growth paths by mid-decade. The non-farm payroll job base will average just over 1% growth in the 2025-2027 period. At that point, it will finally have recovered to roughly its 2019 level. The lengthy period of job recovery partly reflects the loss of population and labor force that began even before the pandemic. Real personal income growth will settle at a roughly 1.5% annual pace by 2027. Production, as measured by real gross domestic product, is somewhat further along in the recovery process than are the labor market and income. Real GDP will average 1.5% growth over the 2023-2025 period.

HONOLULU CONSUMER PRICES
Inflation will retreat rapidly this year.



A still-healthy Hawaii outlook, but...

Hawaii's prospects continue to look better than those of the nation as a whole. Our ongoing international tourism recovery will drive enough new spending here to cushion the impact of somewhat weaker US travel demand. And the surprising resilience of the US consumer means even that pullback will be muted in comparison to past US downturns. As always, mainland developments are nevertheless felt here. Higher interest rates are weighing on housing; inflation, while more restrained than at the national level, is cutting into local purchasing power.

And the precarious position of the Fed's inflation fight poses risks here, as well. The central bank's rapid drive to higher interest rates has yet to quell US consumer spending or to materially weaken labor demand. That puts monetary policy on a knife edge, where further rate hikes could be either insufficient to prevent a reacceleration of inflation or too restrictive to avoid a deep US recession. And behind the tight-labor conundrum lurks the specter of a shrinking labor pool, which threatens to restrain economic growth potentially well into the future.

If the expected US visitor decline materializes, then Hawaii tourism's fortunes will rest in part on a meaningful recovery of the key Japanese market. That recovery has been maddeningly slow, imposing stiff costs on Waikiki tourism businesses in particular. We understand some of the reasons behind this: a soft Japanese economy, a weak yen, and travel hesitancy in a post-COVID world. But there is a real risk that Japanese travel might never reclaim past levels. We have seen in past crises that Japanese pullback from travel can be persistent. And the generation that popularized travel to Hawaii is aging; will the next be as keen to visit here? We do not anticipate Japanese travel returning to previous levels within this forecast horizon. Along with the anticipated decline in US visitors this year and next, that will leave total visitors 5% below 2019 levels at the end of 2025.

Satisfaction surveys illustrate the challenges facing Hawaii as a travel destination. While overall satisfaction remains high, many visitors cite Hawaii's high vacation costs and the desire to travel to other destinations as prime reasons that might discourage them from a return visit. Crowding and congestion are also concerns, particular for visitors from the all-important western US region. Another challenge is the limit to capacity coming from the regulation of transient vacation rentals. We estimate that the total stock of visitor accommodations of all types has declined by approximately 7,000 units since 2019. This is admittedly a complex issue that combines visitor industry concerns with those of affected local communities and property owners. And limits to capacity certainly have the advantage of limiting tourism's big footprint in the Islands. Still, to the extent that limited capacity caps the number of visitors, we need to think hard again about our failure to raise at all the real spending contribution of each visitor to the Hawaii economy.

And key challenges to Hawaii's future go well beyond tourism. Housing costs and limits loom large. And an aging population and adaptation to climate change will impose large fiscal and social costs, just as they will on the mainland and global scene. Dealing with these challenges will take time, commitment, and money well into the future.

Perhaps it is the relatively good business cycle position of our economy that permits us to focus on these longer-run concerns, rather than the prospect of higher unemployment and dwindling tax revenue. They say you should never waste a good crisis, since it can motivate productive change. Equally important is not wasting times of relative health that can enable progress to address critical social challenges.

TABLE 1: MAJOR ECONOMIC INDICATORS

STATE OF HAWAII BASELINE FORECAST

	2020	2021	2022	2023	2024	2025
Nonfarm Payrolls (Thou)	559.7	583.1	615.4	628.2	633.8	641.6
% Change	-15.0	4.2	5.5	2.1	0.9	1.2
Unemployment Rate (%)	11.8	6.0	3.5	4.1	4.2	3.7
Population (Thou)	1,451.0	1,447.2	1,440.2	1,438.8	1,438.9	1,439.8
% Change	-0.3	-0.3	-0.5	-0.1	0.0	0.1
Personal Income (Mil$)	83,109.4	87,918.6	87,308.2	90,897.1	95,084.3	99,379.9
% Change	4.3	5.8	-0.7	4.1	4.6	4.5
Inflation Rate, Honolulu MSA (%)	1.6	3.8	6.5	2.9	2.5	2.3
Real Personal Income (Mil 2022$)	91,846.7	93,623.1	87,308.2	88,338.8	90,198.1	92,189.7
% Change	2.7	1.9	-6.7	1.2	2.1	2.2
Real Per Capita Income (Thou 2022$)	63.3	64.7	60.6	61.4	62.7	64.0
% Change	3.0	2.2	-6.3	1.3	2.1	2.1
Real GDP (Mil 2022$)	91,222.8	96,966.6	99,438.1	101,171.9	102,470.2	104,136.1
% Change	-11.6	6.3	2.5	1.7	1.3	1.6
TOURISM SECTOR DETAIL						
Total Visitor Arrivals by Air (Thou)	2,708.3	6,777.0	9,247.8	9,863.2	9,721.1	9,863.5
% Change - Total Visitor Arrivals by Air	-73.9	150.2	36.5	6.7	-1.4	1.5
U.S. Visitors	1,987.3	6,468.9	7,759.8	7,574.4	7,056.8	6,955.5
% Change - U.S. Visitors	-71.1	225.5	20.0	-2.4	-6.8	-1.4
Japanese Visitors	289.1	18.9	199.8	661.8	923.8	1,081.2
% Change - Japanese Visitors	-81.7	-93.5	954.9	231.3	39.6	17.0
Other Visitors	403.3	289.1	1,294.2	1,627.0	1,740.6	1,826.8
% Change - Other Visitors	-79.2	-28.3	347.6	25.7	7.0	5.0
Visitor Days (Thou)	28,515.8	65,309.7	84,791.7	88,530.5	86,783.9	88,543.0
% Change	-68.2	129.0	29.8	4.4	-2.0	2.0
Average Daily Room Rate ($)	208.3	315.8	370.6	387.6	394.6	403.9
% Change	-26.3	51.6	17.3	4.6	1.8	2.4
Occupancy Rate (%)	31.7	57.1	73.7	74.6	73.1	74.9
Real Visitor Expenditures (Mil 2022$)	5,573.1	13,978.7	19,255.4	19,653.5	18,924.6	19,221.0
% Change	-71.9	150.8	37.7	2.1	-3.7	1.6

Note: Source is UHERO. Nonfarm Payrolls for 2021-2022 are UHERO estimates of the 2023 benchmark revision. Figures for income and GDP for 2022 are UHERO estimates. Occupancy rate includes UHERO's estimate of TVR occupancy. Figures for 2023-2025 are forecasts.

TABLE 2: JOBS BY INDUSTRY
STATE OF HAWAII BASELINE FORECAST

	2020	2021	2022	2023	2024	2025
Nonfarm Payrolls (Thou)	559.7	583.1	615.4	628.2	633.8	641.6
% Change	-15.0	4.2	5.5	2.1	0.9	1.2
Construction and Mining	36.7	37.0	37.2	38.6	39.2	39.7
% Change	-2.3	0.7	0.4	3.9	1.4	1.3
Manufacturing	12.0	12.0	12.4	12.5	12.7	12.9
% Change	-14.7	0.1	2.8	1.0	1.5	1.7
Trade	77.8	79.7	81.9	81.9	82.5	84.0
% Change	-13.3	2.3	2.8	-0.1	0.8	1.8
Transportation and Utilities	27.3	29.6	32.6	33.6	34.0	34.6
% Change	-23.0	8.5	10.3	3.1	1.0	1.8
Finance, Insurance and Real Estate	27.4	27.2	27.2	26.7	27.1	27.5
% Change	-8.9	-0.6	0.0	-2.0	1.6	1.7
Services	257.3	277.5	302.3	311.6	314.0	317.6
% Change	-20.9	7.9	8.9	3.1	0.8	1.2
Health Care and Soc. Assistance	71.1	71.9	72.4	73.3	73.8	74.5
% Change	-3.3	1.1	0.6	1.3	0.7	1.0
Accommodation and Food	69.6	85.0	100.1	106.6	108.0	109.4
% Change	-38.5	22.2	17.7	6.5	1.3	1.3
Other	116.6	120.6	129.9	131.7	132.2	133.7
% Change	-15.9	3.4	7.7	1.4	0.4	1.2
Government	121.2	120.1	121.8	123.4	124.5	125.4
% Change	-4.1	-0.9	1.4	1.3	0.9	0.7
Federal Government	35.2	34.7	34.9	35.3	35.3	35.3
% Change	2.4	-1.3	0.6	1.0	0.0	0.0
State and Local Government	86.0	85.4	86.8	88.1	89.2	90.0
% Change	-6.5	-0.7	1.7	1.4	1.3	1.0

Note: Source is UHERO. Industry job counts for 2021 and 2022 are UHERO estimates of the 2023 benchmark revision. Figures for 2023-2025 are forecasts.

TABLE 3: PERSONAL INCOME BY INDUSTRY

STATE OF HAWAII BASELINE FORECAST

	2020	2021	2022	2023	2024	2025
Real Personal Income (Mil 2022$)	91,846.7	93,623.1	87,308.2	88,338.8	90,198.1	92,189.7
% Change	2.7	1.9	-6.7	1.2	2.1	2.2
Labor & Proprietors' Income	59,615.5	61,657.7	61,290.8	63,030.9	64,529.5	66,015.2
% Change	-7.3	3.4	-0.6	2.8	2.4	2.3
Construction	5,110.2	5,011.4	4,764.0	4,986.6	5,154.9	5,298.9
% Change	-1.9	-1.9	-4.9	4.7	3.4	2.8
Manufacturing	1,047.0	1,009.9	1,024.2	1,040.7	1,062.3	1,087.6
% Change	-8.0	-3.5	1.4	1.6	2.1	2.4
Trade	4,948.3	5,131.1	5,131.5	5,234.9	5,334.2	5,459.8
% Change	-8.2	3.7	0.0	2.0	1.9	2.4
Transportation and Utilities	3,159.7	3,207.4	3,498.6	3,599.6	3,682.3	3,784.0
% Change	-13.7	1.5	9.1	2.9	2.3	2.8
Finance, Insurance & Real Estate	4,199.2	4,315.2	3,991.3	3,912.5	4,063.0	4,215.6
% Change	-4.1	2.8	-7.5	-2.0	3.8	3.8
Services	22,518.2	24,413.4	25,369.1	26,435.0	26,917.1	27,515.0
% Change	-14.1	8.4	3.9	4.2	1.8	2.2
Health Care & Soc. Assist. (% ch.)	4.5	0.1	-3.0	2.5	2.2	1.7
Accommodation & Food (% ch.)	-44.1	39.0	14.3	8.9	3.0	3.3
Other (% ch.)	-7.8	4.6	2.5	2.5	1.0	2.0
Government	18,312.0	18,191.8	17,166.9	17,452.2	17,940.6	18,275.5
% Change	1.9	-0.7	-5.6	1.7	2.8	1.9
Federal, civilian (% ch.)	2.3	-0.1	-3.6	1.1	1.1	0.8
State & Local (% ch.)	1.9	-3.6	-6.3	2.5	4.0	2.9
Less Social Security Taxes (-)	6,894.1	7,051.2	7,114.0	7,360.0	7,529.0	7,696.8
% Change	-6.1	2.3	0.9	3.5	2.3	2.2
Transfer Payments	21,356.4	21,585.9	16,115.0	16,042.2	16,399.7	16,780.2
% Change	49.8	1.1	-25.3	-0.5	2.2	2.3
Dividends, Interest and Rent	17,768.9	17,430.8	17,016.9	16,626.1	16,798.8	17,092.1
% Change	-2.7	-1.9	-2.4	-2.3	1.0	1.7
Population (Thou)	1,451.0	1,447.2	1,440.2	1,438.8	1,438.9	1,439.8
% Change	-0.3	-0.3	-0.5	-0.1	0.0	0.1
Real Per Capita Income (Thou 2022$)	63.3	64.7	60.6	61.4	62.7	64.0
% Change	3.0	2.2	-6.3	1.3	2.1	2.1
Inflation Rate, Honolulu MSA (%)	1.6	3.8	6.5	2.9	2.5	2.3
Nominal Personal Income (Mil. $)	83,109.4	87,918.6	87,308.2	90,897.1	95,084.3	99,379.9
% Change	4.3	5.8	-0.7	4.1	4.6	4.5

Note: Source is UHERO. Figures for 2022 are UHERO estimates. Figures for 2023-2025 are forecasts.

TABLE 4: CONSTRUCTION INDICATORS
STATE OF HAWAII BASELINE FORECAST

	2020	2021	2022	2023	2024	2025
BUILDING PERMITS (Mil 2022$)						
Total Commitments to Build	6,889	14,499	7,050	7,432	8,184	8,132
% Change	55.0	110.5	-51.4	5.4	10.1	-0.6
Real Private Building Permits	3,460	3,969	3,579	3,432	3,732	3,950
% Change	-5.8	14.7	-9.8	-4.1	8.7	5.9
Real Residential Building Permits	1,274	2,113	1,797	1,444	1,706	1,903
% Change	-7.8	65.8	-14.9	-19.7	18.2	11.6
Real Non-Residential Building Permits	2,186	1,856	1,782	1,988	2,026	2,047
% Change	-4.6	-15.1	-4.0	11.6	1.9	1.0
Real Government Contracts Awarded	3,429	10,530	3,471	4,000	4,452	4,182
% Change	345.4	207.1	-67.0	15.2	11.3	-6.1
CONSTRUCTION ACTIVITY						
Real GE Contracting Tax Base (Mil 2022$)	10,811	10,564	10,666	11,502	12,283	12,780
% Change	-1.6	-2.3	1.0	7.8	6.8	4.0
Nominal GE Contracting Tax Base (Mil $)	9,712	9,973	10,666	12,089	13,418	14,434
% Change	0.8	2.7	6.9	13.3	11.0	7.6
Construction Job Count (Thou)	36.7	37.0	37.2	38.6	39.2	39.7
% Change	-2.3	0.7	0.4	3.9	1.4	1.3
Real Construction Income (Mil 2022$)	5,110	5,011	4,764	4,987	5,155	5,299
% Change	-1.9	-1.9	-4.9	4.7	3.4	2.8
PRICES & COSTS (HONOLULU)						
Honolulu Median Home Price (Thou $)	822.6	987.3	1102.4	1024.3	1025.5	1071.3
% Change	4.1	20.0	11.7	-7.1	0.1	4.5
Honolulu Median Condominium Price (Thou $)	432.6	470.6	506.5	475.8	473.6	497.4
% Change	1.2	8.8	7.6	-6.1	-0.5	5.0
Honolulu Housing Affordability Index	92.3	81.7	56.7	55.3	62.0	63.6
% Change	8.5	-11.5	-30.5	-2.5	12.1	2.6
Honolulu Construction Cost Index (2022=100)	89.8	94.4	100.0	105.1	109.2	112.9
% Change	2.5	5.1	5.9	5.1	3.9	3.4
30-Year Mortgage Rate (%)	3.1	3.0	5.3	6.4	5.7	5.4

Note: Source is UHERO. Construction job counts for 2021 and 2022 are UHERO estimates of the 2023 benchmark revision. Figures for 2023-2025 are forecasts. Commitments to Build are the sum of private permits and public contracts awarded. Permits and tax base are deflated by Honolulu Construction Cost Index. Income is deflated by Honolulu CPI. Housing affordability index is the ratio of median family income to qualifying income for a loan for the median-priced home (times 100).

TABLE 5: MAJOR ECONOMIC INDICATOR SUMMARY
HONOLULU COUNTY BASELINE FORECAST

	2020	2021	2022	2023	2024	2025
Non-farm Payrolls (Thou)	411.1	420.7	442.5	451.2	455.0	460.4
% Change	-13.2	2.3	5.2	2.0	0.8	1.2
Unemployment Rate (%)	10.3	5.6	3.3	4.0	4.1	3.6
Population (Thou)	1,012.6	1,004.8	1,001.4	999.3	998.3	998.1
% Change	-0.5	-0.8	-0.3	-0.2	-0.1	0.0
Personal Income (Mil $)	60,909.1	63,968.6	63,645.8	66,052.3	69,127.0	72,291.2
% Change	3.9	5.0	-0.5	3.8	4.7	4.6
Inflation Rate, Honolulu MSA (%)	1.6	3.8	6.5	2.9	2.5	2.3
Real Personal Income (Mil 2022 $)	67,312.4	68,119.1	63,645.8	64,193.2	65,574.7	67,060.9
% Change	2.3	1.2	-6.6	0.9	2.2	2.3
Real Per Capita Income (Thou 2022 $)	66.4	68.1	63.6	64.2	65.7	67.2
% Change	2.7	2.4	-6.6	1.1	2.3	2.3
TOURISM SECTOR DETAIL						
Total Visitor Arrivals by Air (Thou)	1,506.2	3,326.2	4,864.7	5,617.1	5,674.2	5,826.6
% Change - Total Visitor Arrivals by Air	-75.5	120.8	46.3	15.5	1.0	2.7
U.S. Visitors	1,024.3	3,142.0	3,834.5	3,810.1	3,524.4	3,451.7
% Change - U.S. Visitors	-69.0	206.7	22.0	-0.6	-7.5	-2.1
Japanese Visitors	269.4	18.0	193.6	643.3	890.0	1,041.0
% Change - Japanese Visitors	-82.0	-93.3	975.3	232.4	38.3	17.0
Other Visitors	273.9	166.2	836.6	1,163.6	1,259.8	1,333.9
% Change - Other Visitors	-79.5	-39.3	403.4	39.1	8.3	5.9
Visitor Days (Thou)	12,829.5	26,897.4	36,203.7	39,488.7	39,126.8	39,846.1
% Change	-69.3	109.7	34.6	9.1	-0.9	1.8
Occupancy Rate (%)	32.8	54.9	75.4	77.7	76.9	79.0

Note: Source is UHERO. Nonfarm Payrolls for 2021 and 2022 are UHERO estimates of the 2023 benchmark revision. The unemployment rate for 2020-2022 is a UHERO estimate of the upcoming official BLS revision. Figures for income and GDP for 2022 are UHERO estimates. Occupancy rate includes UHERO's estimate of TVR occupancy. Figures for 2023-2025 are forecasts.

TABLE 6: JOBS BY DETAILED SECTOR (THOUSANDS)
HONOLULU COUNTY BASELINE FORECAST

	2020	2021	2022	2023	2024	2025
Non-farm Payrolls (Thou)	411.1	420.7	442.5	451.2	455.0	460.4
% Change	-13.2	2.3	5.2	2.0	0.8	1.2
Construction and Mining	26.8	27.0	26.8	27.8	28.2	28.6
% Change	-1.7	0.9	-0.8	3.8	1.5	1.5
Manufacturing	9.4	9.2	9.2	9.3	9.4	9.6
% Change	-14.7	-2.5	0.4	1.0	1.7	2.0
Trade	53.5	54.2	56.1	56.2	56.6	57.7
% Change	-13.9	1.3	3.4	0.2	0.8	1.8
Transportation and Utilities	20.7	21.6	23.8	24.6	24.9	25.4
% Change	-20.7	4.4	10.1	3.4	1.1	1.9
Finance, Insurance and Real Estate	21.7	21.2	20.8	20.2	20.5	20.9
% Change	-5.9	-2.2	-1.7	-3.1	1.7	1.9
Services	186.0	195.0	211.8	217.7	219.1	221.4
% Change	-18.2	4.8	8.6	2.8	0.7	1.1
Health Care and Soc. Assistance	52.8	53.6	54.4	54.9	55.2	55.7
% Change	-2.8	1.5	1.4	0.9	0.6	0.9
Accommodation and Food	43.1	49.9	59.4	63.5	64.4	64.9
% Change	-36.2	16.0	18.9	7.0	1.3	0.8
Other	90.1	91.5	98.0	99.3	99.5	100.9
% Change	-14.6	1.5	7.1	1.3	0.3	1.3
Government	93.0	92.5	94.1	95.4	96.2	96.8
% Change	-4.1	-0.6	1.7	1.4	0.8	0.6
Federal Government	32.3	32.1	32.2	32.6	32.6	32.6
% Change	2.3	-0.8	0.5	1.1	0.0	0.0
State and Local Government	60.7	60.4	61.8	62.8	63.6	64.2
% Change	-7.2	-0.5	2.4	1.6	1.2	0.9

Note: Source is UHERO. Industry job counts for 2021 and 2022 are UHERO estimates of the 2023 benchmark revision. Figures for 2023-2025 are forecasts.

TABLE 7: PERSONAL INCOME BY DETAILED SECTOR

HONOLULU COUNTY BASELINE FORECAST

	2020	2021	2022	2023	2024	2025
Real Personal Income (Mil 2022 $)	67,312.4	68,119.1	63,645.8	64,193.2	65,574.7	67,060.9
% Change	2.3	1.2	-6.6	0.9	2.2	2.3
Labor & Proprietors' Income	45,902.1	46,792.4	46,237.8	47,416.6	48,506.2	49,577.3
% Change	-5.8	1.9	-1.2	2.5	2.3	2.2
Construction	3,797.3	3,701.8	3,478.5	3,642.6	3,769.0	3,879.0
% Change	-1.1	-2.5	-6.0	4.7	3.5	2.9
Manufacturing	841.7	794.7	790.0	803.0	820.6	842.3
% Change	-8.3	-5.6	-0.6	1.7	2.2	2.6
Trade	3,420.8	3,497.0	3,519.1	3,590.6	3,659.4	3,743.3
% Change	-9.6	2.2	0.6	2.0	1.9	2.3
Transportation and Utilities	2,504.2	2,494.0	2,713.3	2,803.2	2,868.7	2,947.8
% Change	-12.2	-0.4	8.8	3.3	2.3	2.8
Finance, Insurance & Real Estate	3,214.6	3,291.4	3,053.9	2,977.0	3,091.7	3,213.0
% Change	-7.1	2.4	-7.2	-2.5	3.9	3.9
Services	16,685.8	17,620.1	18,022.7	18,690.5	19,002.8	19,400.8
% Change	-10.8	5.6	2.3	3.7	1.7	2.1
Health Care & Soc. Assist. (% ch.)	4.5	0.7	-2.4	2.0	2.1	1.6
Accommodation & Food (% ch.)	-42.1	29.8	14.7	10.0	3.1	2.7
Other (% ch.)	-6.6	1.8	2.1	2.5	0.9	2.2
Government	15,336.4	15,303.6	14,548.2	14,793.0	15,176.3	15,432.6
% Change	1.7	-0.2	-4.9	1.7	2.6	1.7
Federal, civilian (% ch.)	2.2	-0.1	-3.6	1.1	1.1	0.8
State & Local (% ch.)	1.3	-3.5	-4.6	2.8	3.9	2.8
Less Social Security Taxes (-)	5,284.9	5,365.9	5,403.5	5,590.1	5,717.4	5,847.3
% Change	-4.7	1.5	0.7	3.5	2.3	2.3
Transfer Payments	13,979.2	14,243.1	10,735.8	10,740.1	10,982.9	11,239.1
% Change	46.6	1.9	-24.6	0.0	2.3	2.3
Dividends, Interest and Rent	12,774.9	12,502.0	12,204.3	11,915.6	12,048.3	12,278.1
% Change	-2.8	-2.1	-2.4	-2.4	1.1	1.9
Population (Thou)	1,012.6	1,004.8	1,001.4	999.3	998.3	998.1
% Change	-0.5	-0.8	-0.3	-0.2	-0.1	0.0
Real Per Capita Income (Thou 2022 $)	66.4	68.1	63.6	64.2	65.7	67.2
% Change	2.7	2.4	-6.6	1.1	2.3	2.3
Inflation Rate, Honolulu MSA (%)	1.6	3.8	6.5	2.9	2.5	2.3
Nominal Personal Income (Mil $)	60,909.1	63,968.6	63,645.8	66,052.3	69,127.0	72,291.2
% Change	3.9	5.0	-0.5	3.8	4.7	4.6

Note: Source is UHERO. Figures for 2022 are UHERO estimates. Figures for 2023-2025 are forecasts.

TABLE 8: MAJOR ECONOMIC INDICATOR SUMMARY
HAWAII COUNTY BASELINE FORECAST

	2020	2021	2022	2023	2024	2025
Non-farm Payrolls (Thou)	61.0	65.1	68.2	69.4	70.0	70.9
% Change	-13.9	6.7	4.8	1.8	0.9	1.2
Unemployment Rate (%)	11.5	5.8	3.5	4.1	4.2	3.7
Population (Thou)	200.6	203.7	201.1	201.5	202.2	202.8
% Change	0.4	1.5	-1.3	0.2	0.3	0.3
Personal Income (Mil $)	9,448.6	10,153.0	9,890.9	10,353.7	10,797.3	11,271.6
% Change	8.4	7.5	-2.6	4.7	4.3	4.4
Inflation Rate, Honolulu MSA (%)	1.6	3.8	6.5	2.9	2.5	2.3
Real Personal Income (Mil 2022 $)	10,441.9	10,811.7	9,890.9	10,062.3	10,242.5	10,456.1
% Change	6.8	3.5	-8.5	1.7	1.8	2.1
Real Per Capita Income (Thou 2022 $)	52.0	53.3	49.2	49.9	50.7	51.6
% Change	6.3	2.4	-7.7	1.5	1.5	1.8
TOURISM SECTOR DETAIL						
Total Visitor Arrivals by Air (Thou)	482.0	1,183.5	1,674.1	1,820.4	1,781.8	1,833.9
% Change - Total Visitor Arrivals by Air	-73.0	145.5	41.5	8.7	-2.1	2.9
U.S. Visitors	381.3	1,137.2	1,448.0	1,439.1	1,342.9	1,350.8
% Change - U.S. Visitors	-69.7	198.2	27.3	-0.6	-6.7	0.6
Japanese Visitors	35.5	1.0	16.2	72.6	110.0	135.9
% Change - Japanese Visitors	-79.2	-97.2	1,516.9	349.2	51.5	23.5
Other Visitors	70.9	45.3	211.1	308.7	328.9	347.3
% Change - Other Visitors	-79.0	-36.1	366.0	46.2	6.6	5.6
Visitor Days (Thou)	4,584.8	10,964.9	13,847.0	14,104.6	13,439.0	13,660.3
% Change	-64.9	139.2	26.3	1.9	-4.7	1.6
Occupancy Rate (%)	34.2	60.8	74.9	73.9	70.7	72.3

Note: Source is UHERO. Nonfarm Payrolls for 2021 and 2022 are UHERO estimates of the 2023 benchmark revision. The unemployment rate for 2020-2022 is a UHERO estimate of the upcoming official BLS revision. Figures for income and GDP for 2022 are UHERO estimates. Occupancy rate includes UHERO's estimate of TVR occupancy. Figures for 2023-2025 are forecasts.

TABLE 9: JOBS BY DETAILED SECTOR (THOUSANDS)
HAWAII COUNTY BASELINE FORECAST

	2020	2021	2022	2023	2024	2025
Non-farm Payrolls (Thou)	61.0	65.1	68.2	69.4	70.0	70.9
% Change	-13.9	6.7	4.8	1.8	0.9	1.2
Construction and Mining	3.6	3.7	3.8	3.9	4.0	4.0
% Change	-5.0	1.6	3.1	4.0	1.2	1.0
Manufacturing	1.3	1.4	1.5	1.5	1.5	1.5
% Change	-9.1	12.0	5.4	1.3	1.0	0.8
Trade	10.6	11.1	11.2	11.1	11.2	11.4
% Change	-8.0	4.7	0.9	-0.9	0.6	1.7
Transportation and Utilities	2.5	2.9	3.0	3.1	3.1	3.1
% Change	-23.3	15.5	5.4	0.7	0.6	1.5
Finance, Insurance and Real Estate	2.3	2.4	2.5	2.5	2.6	2.6
% Change	-13.6	2.3	5.1	0.8	1.3	1.0
Services	26.3	29.5	31.8	32.8	33.0	33.5
% Change	-20.9	12.4	7.7	3.1	0.8	1.3
Health Care and Soc. Assistance	7.5	7.5	7.4	7.6	7.6	7.7
% Change	-5.5	0.5	-1.7	2.6	0.8	1.2
Accommodation and Food	8.3	10.8	12.4	13.0	13.2	13.4
% Change	-35.8	30.2	15.3	5.0	1.0	1.9
Other	10.5	11.3	12.0	12.2	12.2	12.3
% Change	-15.2	6.8	6.6	1.4	0.7	0.6
Government	14.4	14.1	14.4	14.5	14.7	14.8
% Change	-4.2	-1.9	2.0	0.9	1.3	0.9
Federal Government	1.4	1.2	1.3	1.3	1.3	1.3
% Change	4.5	-9.8	4.4	2.0	0.6	0.1
State and Local Government	13.0	12.8	13.1	13.2	13.4	13.5
% Change	-5.1	-1.1	1.8	0.8	1.4	1.0

Note: Source is UHERO. Industry job counts for 2021 and 2022 are UHERO estimates of the 2023 benchmark revision. Figures for 2023-2025 are forecasts.

TABLE 10: PERSONAL INCOME BY DETAILED SECTOR

HAWAII COUNTY BASELINE FORECAST

	2020	2021	2022	2023	2024	2025
Real Personal Income (Mil 2022 $)	10,441.9	10,811.7	9,890.9	10,062.3	10,242.5	10,456.1
% Change	6.8	3.5	-8.5	1.7	1.8	2.1
Labor & Proprietors' Income	5,482.6	5,820.0	5,837.7	6,022.0	6,177.2	6,333.6
% Change	-6.0	6.2	0.3	3.2	2.6	2.5
Construction	—	431.9	—	—	—	—
% Change	—	—	—	—	—	—
Manufacturing	—	100.7	—	—	—	—
% Change	—	—	—	—	—	—
Trade	—	—	—	—	—	—
% Change	—	—	—	—	—	—
Transportation and Utilities	—	—	—	—	—	—
% Change	—	—	—	—	—	—
Finance, Insurance & Real Estate	320.0	315.4	—	—	—	—
% Change	—	-1.4	—	—	—	—
Services	—	—	—	—	—	—
% Change	—	—	—	—	—	—
Health Care & Soc. Assist. (% ch.)	—	—	—	—	—	—
Accommodation & Food (% ch.)	—	—	—	—	—	—
Other (% ch.)	—	—	—	—	—	—
Government	1,485.7	1,440.9	1,337.9	1,354.8	1,408.4	1,448.6
% Change	3.0	-3.0	-7.2	1.3	4.0	2.9
Federal, civilian (% ch.)	3.5	-0.7	0.5	0.6	1.7	0.9
State & Local (% ch.)	3.0	-3.6	-8.3	1.4	4.4	3.2
Less Social Security Taxes (-)	655.6	709.6	715.9	738.6	756.7	773.1
% Change	-4.5	8.2	0.9	3.2	2.5	2.2
Transfer Payments	3,384.8	3,507.5	2,626.9	2,587.1	2,643.4	2,704.6
% Change	42.9	3.6	-25.1	-1.5	2.2	2.3
Dividends, Interest and Rent	2,196.5	2,162.8	2,112.6	2,067.3	2,085.3	2,113.4
% Change	-1.5	-1.5	-2.3	-2.1	0.9	1.3
Population (Thou)	200.6	203.7	201.1	201.5	202.2	202.8
% Change	0.4	1.5	-1.3	0.2	0.3	0.3
Real Per Capita Income (Thou 2022 $)	52.0	53.3	49.2	49.9	50.7	51.6
% Change	6.3	2.4	-7.7	1.5	1.5	1.8
Inflation Rate, Honolulu MSA (%)	1.6	3.8	6.5	2.9	2.5	2.3
Nominal Personal Income (Mil $)	9,448.6	10,153.0	9,890.9	10,353.7	10,797.3	11,271.6
% Change	8.4	7.5	-2.6	4.7	4.3	4.4

Note: Source is UHERO. Figures for 2022 are UHERO estimates. Figures for 2023-2025 are forecasts. Because of data disclosure rules, industry-level income is not available for some sectors.

TABLE 11: MAJOR ECONOMIC INDICATOR SUMMARY
MAUI COUNTY BASELINE FORECAST

	2020	2021	2022	2023	2024	2025
Non-farm Payrolls (Thou)	61.2	69.6	74.1	75.9	76.8	78.0
% Change	-23.9	13.7	6.4	2.5	1.1	1.5
Unemployment Rate (%)	18.2	7.6	4.0	4.3	4.5	4.0
Population (Thou)	164.6	164.9	164.4	164.6	164.9	165.3
% Change	-0.1	0.2	-0.3	0.1	0.2	0.2
Personal Income (Mil $)	8,827.7	9,615.1	9,633.6	10,129.8	10,619.5	11,067.5
% Change	2.4	8.9	0.2	5.2	4.8	4.2
Inflation Rate, Honolulu MSA (%)	1.6	3.8	6.5	2.9	2.5	2.3
Real Personal Income (Mil 2022 $)	9,755.7	10,238.9	9,633.6	9,844.7	10,073.7	10,266.8
% Change	0.8	5.0	-5.9	2.2	2.3	1.9
Real Per Capita Income (Thou 2022 $)	59.2	62.3	58.6	59.8	61.1	62.1
% Change	0.9	5.2	-6.0	2.1	2.1	1.7
TOURISM SECTOR DETAIL						
Total Visitor Arrivals by Air (Thou)	844.8	2,340.9	2,955.2	3,056.5	3,009.7	3,095.1
% Change - Total Visitor Arrivals by Air	-72.9	177.1	26.2	3.4	-1.5	2.8
U.S. Visitors	726.0	2,239.4	2,562.5	2,572.8	2,487.3	2,540.3
% Change - U.S. Visitors	-70.8	208.4	14.4	0.4	-3.3	2.1
Japanese Visitors	8.3	0.8	6.0	14.0	18.9	22.9
% Change - Japanese Visitors	-83.0	-90.6	676.2	133.2	34.9	21.0
Other Visitors	115.7	100.7	390.9	469.7	503.5	531.9
% Change - Other Visitors	-79.8	-12.9	288.0	20.2	7.2	5.6
Visitor Days (Thou)	7,754.3	20,442.3	24,278.9	24,474.8	24,007.1	24,623.8
% Change	-68.7	163.6	18.8	0.8	-1.9	2.6
Occupancy Rate (%)	27.9	59.9	67.7	68.2	67.2	69.0

Note: Source is UHERO. Nonfarm Payrolls for 2021 and 2022 are UHERO estimates of the 2023 benchmark revision. The unemployment rate for 2020-2022 is a UHERO estimate of the upcoming official BLS revision. Figures for income and GDP for 2022 are UHERO estimates. Occupancy rate includes UHERO's estimate of TVR occupancy. Figures for 2023-2025 are forecasts.

TABLE 12: JOBS BY DETAILED SECTOR (THOUSANDS)
MAUI COUNTY BASELINE FORECAST

	2020	2021	2022	2023	2024	2025
Non-farm Payrolls (Thou)	61.2	69.6	74.1	75.9	76.8	78.0
% Change	-23.9	13.7	6.4	2.5	1.1	1.5
Construction and Mining	4.4	4.3	4.5	4.7	4.7	4.8
% Change	-2.0	-2.6	4.8	4.3	1.3	1.1
Manufacturing	1.0	1.0	1.1	1.1	1.1	1.1
% Change	-20.1	4.4	11.6	-1.4	1.1	0.9
Trade	9.7	10.3	10.3	10.3	10.3	10.5
% Change	-15.9	6.2	0.0	-0.5	0.9	1.9
Transportation and Utilities	2.9	3.7	4.1	4.2	4.2	4.3
% Change	-34.6	27.3	10.5	2.1	0.7	1.6
Finance, Insurance and Real Estate	2.4	2.7	2.9	2.9	3.0	3.0
% Change	-22.8	12.5	6.2	2.9	1.3	1.1
Services	32.1	39.0	42.6	44.2	44.7	45.4
% Change	-31.0	21.6	9.3	3.7	1.1	1.6
Health Care and Soc. Assistance	8.0	8.0	8.0	8.2	8.3	8.4
% Change	-3.7	0.2	0.0	2.5	1.0	1.3
Accommodation and Food	13.0	18.1	20.2	21.3	21.6	22.1
% Change	-44.4	38.8	11.9	5.5	1.3	2.2
Other	11.1	12.9	14.4	14.7	14.8	14.9
% Change	-25.2	16.7	11.6	1.8	1.0	0.8
Government	8.8	8.7	8.5	8.6	8.7	8.8
% Change	-4.4	-1.0	-1.5	0.6	1.5	1.1
Federal Government	0.9	0.8	0.8	0.8	0.8	0.8
% Change	0.0	-5.3	-0.6	-3.2	0.7	0.2
State and Local Government	7.9	7.8	7.7	7.8	7.9	8.0
% Change	-4.8	-0.6	-1.6	1.1	1.6	1.2

Note: Source is UHERO. Industry job counts for 2021 and 2022 are UHERO estimates of the 2023 benchmark revision. Figures for 2023-2025 are forecasts.

TABLE 13: PERSONAL INCOME BY DETAILED SECTOR
MAUI COUNTY BASELINE FORECAST

	2020	2021	2022	2023	2024	2025
Real Personal Income (Mil 2022 $)	9,755.7	10,238.9	9,633.6	9,844.7	10,073.7	10,266.8
% Change	0.8	5.0	-5.9	2.2	2.3	1.9
Labor & Proprietors' Income	5,738.2	6,457.8	6,514.7	6,761.7	6,943.5	7,128.5
% Change	-16.4	12.5	0.9	3.8	2.7	2.7
Construction	607.4	592.3	589.1	609.2	621.2	630.8
% Change	-1.6	-2.5	-0.5	3.4	2.0	1.5
Manufacturing	84.1	87.4	91.2	92.5	95.0	97.1
% Change	-3.0	3.9	4.4	1.4	2.8	2.2
Trade	604.5	656.6	606.7	613.5	635.4	664.1
% Change	-9.9	8.6	-7.6	1.1	3.6	4.5
Transportation and Utilities	282.0	315.9	333.1	346.7	355.1	365.6
% Change	-20.1	12.0	5.4	4.1	2.4	3.0
Finance, Insurance & Real Estate	479.0	518.1	522.6	529.1	536.6	542.7
% Change	5.9	8.2	0.9	1.2	1.4	1.1
Services	2,725.6	3,360.0	3,488.3	3,677.2	3,783.1	3,894.7
% Change	-27.2	23.3	3.8	5.4	2.9	3.0
Health Care & Soc. Assist. (% ch.)	2.8	-0.6	-5.5	4.0	2.6	2.6
Accommodation & Food (% ch.)	-49.4	58.6	7.0	8.3	3.4	4.0
Other (% ch.)	-17.0	15.2	5.5	2.9	2.4	1.9
Government	935.1	899.8	801.8	814.8	848.1	873.0
% Change	2.6	-3.8	-10.9	1.6	4.1	2.9
Federal, civilian (% ch.)	0.7	0.3	-7.1	0.8	1.8	1.0
State & Local (% ch.)	2.8	-4.6	-11.6	1.8	4.6	3.4
Less Social Security Taxes (-)	663.2	672.1	684.9	710.5	726.7	741.3
% Change	-15.0	1.4	1.9	3.7	2.3	2.0
Transfer Payments	2,710.8	2,506.1	1,827.6	1,804.4	1,842.4	1,883.9
% Change	73.9	-7.6	-27.1	-1.3	2.1	2.3
Dividends, Interest and Rent	1,936.4	1,916.6	1,871.0	1,831.0	1,846.5	1,871.1
% Change	-3.2	-1.0	-2.4	-2.1	0.8	1.3
Population (Thou)	164.6	164.9	164.4	164.6	164.9	165.3
% Change	-0.1	0.2	-0.3	0.1	0.2	0.2
Real Per Capita Income (Thou 2022 $)	59.2	62.3	58.6	59.8	61.1	62.1
% Change	0.9	5.2	-6.0	2.1	2.1	1.7
Inflation Rate, Honolulu MSA (%)	1.6	3.8	6.5	2.9	2.5	2.3
Nominal Personal Income (Mil $)	8,827.7	9,615.1	9,633.6	10,129.8	10,619.5	11,067.5
% Change	2.4	8.9	0.2	5.2	4.8	4.2

Note: Source is UHERO. Figures for 2022 are UHERO estimates. Figures for 2023-2025 are forecasts.

TABLE 14: MAJOR ECONOMIC INDICATOR SUMMARY

KAUAI COUNTY BASELINE FORECAST

	2020	2021	2022	2023	2024	2025
Non-farm Payrolls (Thou)	26.4	27.8	30.6	31.7	32.0	32.4
% Change	-20.9	5.4	10.1	3.5	1.0	1.3
Unemployment Rate (%)	16.4	8.1	4.2	4.5	4.5	3.8
Population (Thou)	73.2	73.7	73.2	73.3	73.5	73.7
% Change	-0.3	0.8	-0.7	0.1	0.2	0.2
Personal Income (Mil $)	3,924.2	4,121.0	4,137.9	4,361.3	4,540.5	4,749.5
% Change	5.5	5.0	0.4	5.4	4.1	4.6
Inflation Rate, Honolulu MSA (%)	1.6	3.8	6.5	2.9	2.5	2.3
Real Personal Income (Mil 2022 $)	4,336.7	4,388.4	4,137.9	4,238.5	4,307.2	4,405.9
% Change	3.8	1.2	-5.7	2.4	1.6	2.3
Real Per Capita Income (Thou 2022 $)	59.2	59.7	56.5	57.8	58.6	59.8
% Change	4.1	0.8	-5.4	2.3	1.4	2.0
TOURISM SECTOR DETAIL						
Total Visitor Arrivals by Air (Thou)	339.0	813.6	1,345.5	1,388.2	1,354.0	1,383.0
% Change - Total Visitor Arrivals by Air	-75.4	140.0	65.4	3.2	-2.5	2.1
U.S. Visitors	295.4	785.1	1,206.2	1,211.5	1,160.8	1,172.0
% Change - U.S. Visitors	-74.2	165.8	53.6	0.4	-4.2	1.0
Japanese Visitors	3.6	0.4	3.0	8.5	13.0	15.8
% Change - Japanese Visitors	-85.7	-90.0	718.7	188.6	52.6	21.4
Other Visitors	42.9	28.2	137.6	168.2	180.2	195.2
% Change - Other Visitors	-79.4	-34.2	387.8	22.3	7.2	8.3
Visitor Days (Thou)	2,859.6	7,005.8	10,458.9	10,462.4	10,211.1	10,412.8
% Change	-71.7	145.0	49.3	0.0	-2.4	2.0
Occupancy Rate (%)	30.6	57.0	78.3	80.9	78.0	78.8

Note: Source is UHERO. Nonfarm Payrolls for 2021 and 2022 are UHERO estimates of the 2023 benchmark revision. The unemployment rate for 2020-2022 is a UHERO estimate of the upcoming official BLS revision. Figures for income and GDP for 2022 are UHERO estimates. Occupancy rate includes UHERO's estimate of TVR occupancy. Figures for 2023-2025 are forecasts.

TABLE 15: JOBS BY DETAILED SECTOR (THOUSANDS)
KAUAI COUNTY BASELINE FORECAST

	2020	2021	2022	2023	2024	2025
Non-farm Payrolls (Thou)	26.4	27.8	30.6	31.7	32.0	32.4
% Change	-20.9	5.4	10.1	3.5	1.0	1.3
Construction and Mining	2.0	2.1	2.1	2.2	2.2	2.2
% Change	-6.0	4.8	2.6	4.2	1.3	1.0
Manufacturing	0.4	0.5	0.6	0.6	0.6	0.6
% Change	-16.7	12.0	23.2	5.0	1.0	0.8
Trade	3.9	4.1	4.3	4.3	4.3	4.4
% Change	-14.8	5.1	4.9	0.3	0.7	1.7
Transportation and Utilities	1.1	1.4	1.7	1.7	1.8	1.8
% Change	-29.2	20.6	22.3	4.5	0.6	1.5
Finance, Insurance and Real Estate	1.0	1.0	1.0	1.0	1.0	1.0
% Change	-18.6	-2.8	6.9	-0.3	1.3	1.1
Services	12.9	14.0	16.1	16.9	17.1	17.3
% Change	-29.2	8.2	15.4	5.1	0.9	1.4
Health Care and Soc. Assistance	2.8	2.8	2.6	2.7	2.7	2.7
% Change	-4.5	-0.7	-6.3	2.1	0.9	1.3
Accommodation and Food	5.2	6.2	8.1	8.7	8.8	9.0
% Change	-43.9	19.2	29.3	7.8	1.1	2.0
Other	4.9	4.9	5.4	5.6	5.6	5.6
% Change	-18.6	1.6	10.1	2.4	0.8	0.7
Government	5.1	4.9	4.8	4.9	4.9	5.0
% Change	-1.5	-2.6	-1.9	1.1	1.3	0.9
Federal Government	0.6	0.6	0.6	0.6	0.6	0.6
% Change	7.4	0.6	-4.4	3.4	0.6	0.1
State and Local Government	4.4	4.3	4.2	4.3	4.3	4.4
% Change	-2.6	-3.0	-1.5	0.8	1.4	1.0

Note: Source is UHERO. Industry job counts for 2021 and 2022 are UHERO estimates of the 2023 benchmark revision. Figures for 2023-2025 are forecasts.

TABLE 16: PERSONAL INCOME BY DETAILED SECTOR

KAUAI COUNTY BASELINE FORECAST

	2020	2021	2022	2023	2024	2025
Real Personal Income (Mil 2022 $)	4,336.7	4,388.4	4,137.9	4,238.5	4,307.2	4,405.9
% Change	3.8	1.2	-5.7	2.4	1.6	2.3
Labor & Proprietors' Income	2,487.2	2,609.0	2,700.5	2,830.7	2,902.6	2,975.7
% Change	-12.4	4.9	3.5	4.8	2.5	2.5
Construction	—	285.0	—	—	—	—
% Change	—	—	—	—	—	—
Manufacturing	—	—	—	—	—	—
% Change	—	—	—	—	—	—
Trade	—	—	—	—	—	—
% Change	—	—	—	—	—	—
Transportation and Utilities	—	—	—	—	—	—
% Change	—	—	—	—	—	—
Finance, Insurance & Real Estate	185.7	189.7	—	—	—	—
% Change	—	2.2	—	—	—	—
Services	—	—	—	—	—	—
% Change	—	—	—	—	—	—
Health Care & Soc. Assist. (% ch.)	—	—	—	—	—	—
Accommodation & Food (% ch.)	—	—	—	—	—	—
Other (% ch.)	—	—	—	—	—	—
Government	555.0	540.0	479.4	489.9	508.1	521.6
% Change	4.7	-2.7	-11.2	2.2	3.7	2.6
Federal, civilian (% ch.)	5.5	3.6	-7.5	1.2	1.8	1.0
State & Local (% ch.)	4.8	-4.3	-12.0	2.5	4.2	3.1
Less Social Security Taxes (-)	289.5	306.1	309.8	320.9	328.3	335.0
% Change	-11.4	5.7	1.2	3.6	2.3	2.1
Transfer Payments	1,287.0	1,246.7	924.7	910.6	931.0	952.8
% Change	62.1	-3.1	-25.8	-1.5	2.2	2.3
Dividends, Interest and Rent	860.3	847.9	829.0	812.2	818.7	829.5
% Change	-2.7	-1.4	-2.2	-2.0	0.8	1.3
Population (Thou)	73.2	73.7	73.2	73.3	73.5	73.7
% Change	-0.3	0.8	-0.7	0.1	0.2	0.2
Real Per Capita Income (Thou 2022 $)	59.2	59.7	56.5	57.8	58.6	59.8
% Change	4.1	0.8	-5.4	2.3	1.4	2.0
Inflation Rate, Honolulu MSA (%)	1.6	3.8	6.5	2.9	2.5	2.3
Nominal Personal Income (Mil $)	3,924.2	4,121.0	4,137.9	4,361.3	4,540.5	4,749.5
% Change	5.5	5.0	0.4	5.4	4.1	4.6

Note: Source is UHERO. Figures for 2022 are UHERO estimates. Figures for 2023-2025 are forecasts. Because of data disclosure rules, industry-level income is not available for some sectors.

TABLE 17: EXTERNAL INDICATORS

STATE OF HAWAII FORECAST

	2020	2021	2022	2023	2024	2025
U.S. FACTORS						
Employment (Thou)	147,794.8	152,580.7	158,291.1	158,134.4	158,489.0	160,107.8
% Change	-6.2	3.2	3.7	-0.1	0.2	1.0
Unemployment Rate (%)	8.1	5.4	3.7	4.5	4.9	4.4
Inflation Rate (%)	1.3	4.7	8.0	4.2	2.8	2.6
Real GDP (Bil chained 2012$)	18,509.1	19,609.8	20,018.0	20,182.4	20,531.1	21,036.3
% Change	-2.8	5.9	2.1	0.8	1.7	2.5
Population (Thou)	331,761.0	332,213.0	333,595.0	334,991.6	336,165.4	337,403.6
% Change	0.4	0.1	0.4	0.4	0.4	0.4
JAPAN FACTORS						
Employment (Thou)	66,765.8	66,665.8	67,225.8	67,265.5	66,979.4	66,603.3
% Change	-0.7	-0.2	0.8	0.1	-0.4	-0.6
Unemployment Rate (%)	2.8	2.8	2.6	2.5	2.4	2.3
Inflation Rate (%)	0.0	-0.2	2.5	3.7	1.9	1.1
Real GDP (Bil chained 2011 yen)	526,957.9	535,922.5	543,028.0	546,706.7	553,408.3	558,318.0
% Change	-4.7	1.7	1.3	0.7	1.2	0.9
Population (Thou)	126,261.0	125,681.6	125,053.3	124,393.2	123,728.7	123,058.2
% Change	-0.3	-0.5	-0.5	-0.5	-0.5	-0.5
Exchange Rate (Yen/$)	106.8	109.8	131.5	129.9	123.4	118.3

Note: Source is UHERO. Figures for Japanese population and GDP for 2022 are UHERO estimates. Figures for 2023-2025 are forecasts.

UHERO
THE ECONOMIC RESEARCH ORGANIZATION
AT THE UNIVERSITY OF HAWAIʻI

UHERO THANKS THE FOLLOWING SUPPORTERS:

KA WĒKIU - THE TOPMOST SUMMIT

Bank of Hawaii
DGM Group
First Hawaiian Bank
Hawaii Business Roundtable
Hawaii Community Foundation
HMSA
Kamehameha Schools
Queen's Health Systems

KILOHANA - A LOOKOUT, HIGH POINT

American Savings Bank
Castle Foundation
Central Pacific Bank
D.R. Horton
First Insurance Company of Hawaii, Ltd.
Hawaii Pacific Health
Hawaiian Airlines
Hawaiian Electric Industries
Island Holdings, Inc.
Matson
Stanford Carr Development

KUAHIWI - A HIGH HILL, MOUNTAIN

Alexander & Baldwin
Better Homes and Gardens Real Estate Advantage Realty
Castle & Cooke Hawaii
Chamber of Commerce
Halekulani Corporation
Hawaii Gas
Hawaii Hotel Alliance
Hawaiian Dredging Construction Company
HGEA
Honolulu Board of Water Supply
The Howard Hughes Corporation
HPM Building Supply
Kaiser Permanente Hawaii
Nordic PCL Construction
Servco Pacific, Inc.
United Public Workers

ADDITIONAL SUPPORTERS

Architects Hawaii, Ltd.
Charles Wathen Company (Pier Investments)
Chartwell Financial Advisory
Finance Factors
Foodland Super Market, Ltd.
The Hawaii Laborers & Employers Cooperation and Education Trust Fund
Hawaii National Bank
Hawaii Tourism Authority
HC&D, LLC
Honolulu Board of Realtors
The Natural Energy Laboratory of Hawaii Authority
Pacific Cost Engineering
The Pacific Resource Partnership
Trinity Investments

Kulia I Ka Nuu (literally "Strive for the summit") is the value of achievement, those who pursue personal excellence. This was the motto of Hawaii's Queen Kapiolani. Supporters help UHERO to continually reach for excellence as the premier organization dedicated to rigorous, independent economic and policy research on issues that are both central to Hawaiʻi and globally relevant.

Over its more than twenty year history, UHERO research has informed decision making on some of the most important issues facing our community, including the ever-changing economic outlook, challenges to our environment, and policies affecting water, housing, energy, and many other areas.

Contributions from generous supporters like you make it possible for UHERO to fulfill this mission. Your financial commitment also allows us to distribute UHERO forecast reports to all Hawaii stakeholders.