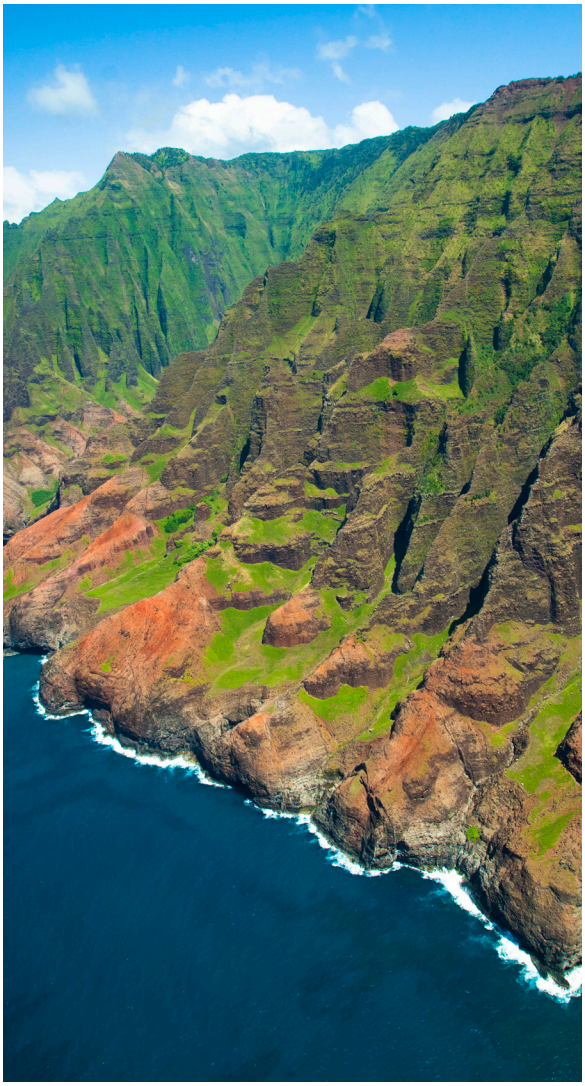
UHERO

THE ECONOMIC RESEARCH ORGANIZATION
AT THE UNIVERSITY OF HAWAIʻI

UHERO FORECAST FOR THE STATE OF HAWAII

Global war on inflation will hinder Hawaii growth

DECEMBER 16, 2022



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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

Sadichchha Shresta
Graduate Research Assistant

Aimie Katayama
Undergraduate Research Assistant

Anhvy Tran
Undergraduate Research Assistant

Victoria Rhinebolt
Graphic Design and Layout

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

Executive Summary

The global outlook continues to darken, but prospects for Hawaii remain largely unchanged from our last report. Rising interest rates, dwindling pandemic era savings, and the coming US downturn will cause a pause in growth next year. But the belated recovery of the Japanese visitor market and surging public sector construction will prevent a recession in the Islands.

- The global outlook continues to deteriorate. Persistent high inflation is driving aggressive interest rate hikes, slowing growth. Energy constraints from Russia's war in Ukraine are sending Europe into recession. While supply chain woes have receded, China's COVID-19 struggles threaten further disruptions. The weak yen is weighing on Japanese consumer spending, including on vacations in Hawaii.

- The sharp rise in interest rates is battering the US housing market. Transient factors that contributed to high inflation have eased, and core inflation will trend lower. While the labor market remains tight, job growth is easing and signs of broader economic slowing are emerging. The US economy will enter a mild recession by the middle of next year.

- Mixed control of Congress following the midterm elections will mean no major policy changes. The biggest risk is of temporary government shutdowns resulting from disputes over budget extensions and the federal debt ceiling.

- By some measures, Hawaii visitor numbers have recovered to pre-pandemic levels. The return of Japan visitors, which has been hindered by the late removal of travel restrictions and the weak yen, will offset a pullback of mainland arrivals next year. Rising room rates in Hawaii have stabilized, even as occupancy remains below the 2019 level. The Mauna Loa eruption is boosting Hawaii Island tourism, but the potential breaching of the Daniel K. Inouye highway threatens the broader Big Island economy.

- Hawaii inflation remains high, if lower than for the US overall. Rising housing costs have yet to feed through fully, but the slowing of rent appreciation will bring relief. Together with declining energy and food costs, this will allow inflation to ease to less than 4% in 2023, cooling to roughly 2.5% by 2024.

- Hawaii's labor market is not as tight as the mainland, with employment in some sectors still below their pre-COVID level. Still, excess demand for workers is driving up wages, even as inflation undercuts the purchasing power of income. Pandemic school closures and abundant employment opportunities have reduced the rate of college enrollment, particularly among lower-income students. This will reduce future earnings and widen inequality.

- The drag from high prices and interest rates, coupled with the US recession, will cause a pause in job growth next year and an uptick in unemployment, before growth resumes in 2024. Inflation-adjusted income will rise just 1% in 2023, but improve to about 2% thereafter.

- Housing affordability has taken a big hit from soaring mortgage interest rates. As a result, home prices have begun to fall. Reduced affordability will increase the cost of developments with affordable unit requirements, likely resulting in some project delays or cancellations. Permitting delays also add to development costs. Large federal contracts and new hotel projects will support the construction sector, more than offsetting softer residential building.

- Forecast uncertainty has increased since our last report. A best case scenario would see rapid decline in US inflation, allowing an early interest rate retreat. If inflation proves intractable, the Fed will raise rates higher and longer. A stepped-up Ukraine War and greater COVID challenges in China could further worsen global conditions. Poorer external and local demand might then precipitate an outright contraction here. Even in that case, a severe downturn remains unlikely.

Forecast Summary

MAJOR ECONOMIC INDICATORS
BASELINE FORECAST

	2020	2021	2022	2023	2024	2025
STATE OF HAWAII						
Nonfarm Payrolls (Thou)	559.7	581.4	615.5	629.1	632.7	639.8
% Change	-15.0	3.9	5.9	2.2	0.6	1.1
Unemployment Rate (%)	12.0	5.8	3.8	3.6	3.8	3.2
Real Personal Income (Mil 2021$)	86,250.5	87,918.6	82,308.6	83,354.7	84,883.8	86,819.5
% Change	2.7	1.9	-6.4	1.3	1.8	2.3
Real GDP (Mil 2021$)	85,664.6	91,058.4	92,901.7	95,474.9	96,675.7	98,651.8
% Change	-11.6	6.3	2.0	2.8	1.3	2.0
Total Visitor Arrivals by Air (Thou)	2,708.3	6,777.0	9,277.0	9,652.9	9,491.6	9,608.2
% Change	-73.9	150.2	36.9	4.1	-1.7	1.2
Visitor Days (Thou)	28,515.8	65,309.7	85,321.4	84,731.4	83,689.6	85,880.9
% Change	-68.2	129.0	30.6	-0.7	-1.2	2.6
Real Visitor Expenditures (Mil 2021$)	5,233.5	13,127.0	18,197.3	17,865.5	17,444.0	17,845.2
% Change	-71.9	150.8	38.6	-1.8	-2.4	2.3
HONOLULU COUNTY						
Nonfarm Payrolls (Thou)	411.1	419.1	442.9	452.9	454.9	459.5
% Change	-13.2	1.9	5.7	2.3	0.4	1.0
Unemployment Rate (%)	10.5	5.4	3.7	3.5	3.9	3.4
Inflation Rate, Honolulu MSA (%)	1.6	3.8	6.6	3.7	2.7	2.5
Real Personal Income (Mil 2021$)	63,211.1	63,968.6	60,169.0	60,846.1	61,945.0	63,331.2
% Change	2.3	1.2	-5.9	1.1	1.8	2.2
Total Visitor Arrivals by Air (Thou)	1,506.2	3,326.2	4,917.9	5,494.1	5,519.9	5,648.4
% Change	-75.5	120.8	47.9	11.7	0.5	2.3
HAWAII COUNTY						
Nonfarm Payrolls (Thou)	61.0	65.0	68.5	69.8	70.2	70.9
% Change	-13.9	6.6	5.4	1.9	0.7	1.0
Unemployment Rate (%)	11.8	5.5	3.9	3.4	3.3	2.9
Real Personal Income (Mil 2021$)	9,805.7	10,153.0	9,353.2	9,509.0	9,665.9	9,885.8
% Change	6.8	3.5	-7.9	1.7	1.7	2.3
Total Visitor Arrivals by Air (Thou)	482.0	1,183.5	1,692.5	1,779.0	1,735.0	1,778.8
% Change	-73.0	145.5	43.0	5.1	-2.5	2.5
MAUI COUNTY						
Nonfarm Payrolls (Thou)	61.2	69.5	73.7	75.2	76.0	77.2
% Change	-23.9	13.5	6.0	2.0	1.0	1.6
Unemployment Rate (%)	18.4	7.4	4.5	4.2	3.9	2.9
Real Personal Income (Mil 2021$)	9,161.3	9,615.1	8,942.1	9,094.1	9,302.8	9,534.2
% Change	0.8	5.0	-7.0	1.7	2.3	2.5
Total Visitor Arrivals by Air (Thou)	844.8	2,340.9	2,962.5	2,958.9	2,925.2	3,011.8
% Change	-72.9	177.1	26.6	-0.1	-1.1	3.0
KAUAI COUNTY						
Nonfarm Payrolls (Thou)	26.4	27.8	30.4	31.2	31.6	32.2
% Change	-20.9	5.6	9.3	2.6	1.3	1.7
Unemployment Rate (%)	16.6	7.8	4.6	3.8	3.6	3.0
Real Personal Income (Mil 2021$)	4,072.5	4,121.0	3,844.4	3,905.5	3,970.1	4,068.4
% Change	3.8	1.2	-6.7	1.6	1.7	2.5
Total Visitor Arrivals by Air (Thou)	339.0	813.6	1,341.8	1,341.3	1,315.8	1,344.0
% Change	-75.4	140.0	64.9	0.0	-1.9	2.1

Note: Source is UHERO. Nonfarm Payrolls for 2021 are UHERO estimates of the benchmark revision. Figures for 2022-2025 are forecasts.

Fourth Quarter Hawaii Forecast

External conditions facing Hawaii have worsened in recent months. Inflation is proving stubbornly persistent, forcing the Fed to continue raising interest rates. The economic situation abroad is worse, with fallout from the Ukraine War weighing on Europe and COVID on China. Although inflation may now have peaked, signs of US slowing are emerging, and the country will enter a mild recession by the middle of next year.

Hawaii is feeling the effects of the national economic challenges. Higher mortgage rates are battering the housing market and inflation is undercutting household purchasing power. But the ongoing recovery of international travel—particularly from Japan—will provide support for tourism as the mainland market softens in 2023. Public construction and planned resort building will offset any weakness in residential investment. As a result, Hawaii growth will pause next year, but the state still looks likely to escape a recession.

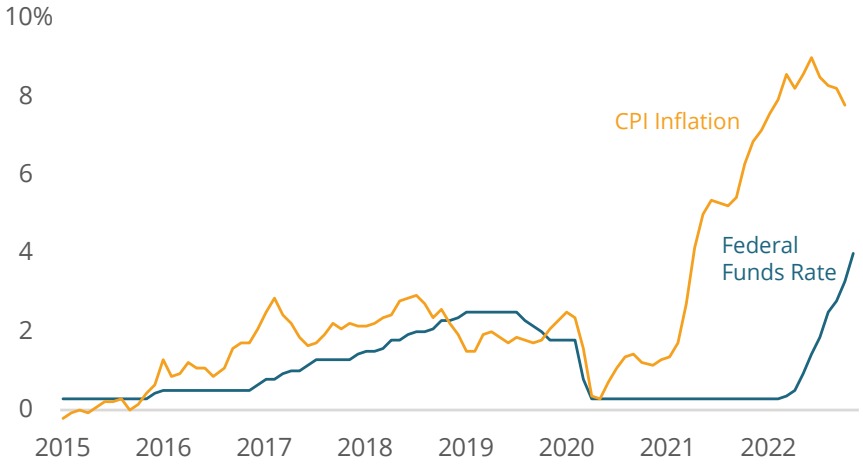
Stubborn inflation worsens global outlook

The past quarter has been marked by ongoing aggressive interest rate hikes by the US Federal Reserve. This represents the most rapid pace of Fed tightening since the early 1980s. And more rate hikes are in the works. Chairman Powell has indicated that the federal funds rate may need to go above the FOMC's September median projection of about 4.5% before all is said and done.

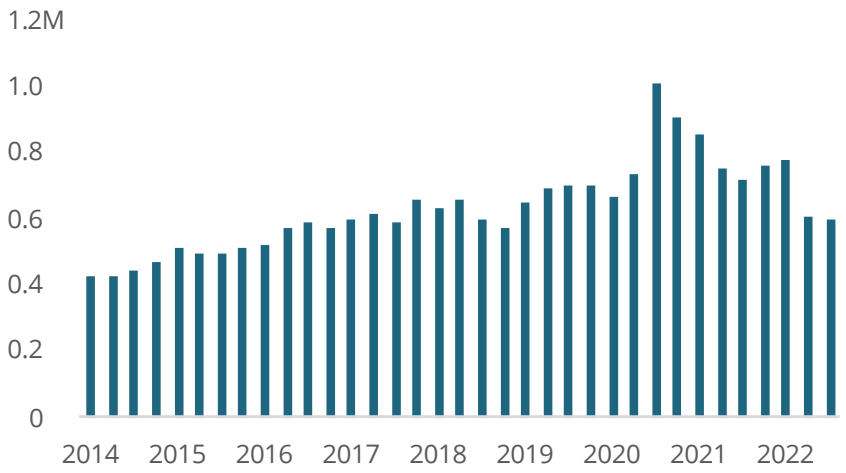
Unexpectedly persistent inflation is behind the sharp monetary policy tightening now underway. While monthly inflation eased in the October consumer price numbers, year-on-year headline inflation remained at nearly 8%, and core inflation above 6%. The latter strips out the volatile food and energy categories, which have been important drivers of inflation over the past two years. Some sectors have seen a significant fallback in price pressure in recent months, for example new and used autos, whose prices had soared during the pandemic because of supply bottlenecks.

The path ahead for prices remains uncertain. Inflation is widespread across many types of goods and services. Wages continue to rise at a rapid clip, with average hourly earnings up nearly 5% in the most recent data. Higher

US CPI INFLATION AND THE FEDERAL FUNDS RATE
The Fed has hiked interest rates sharply to address high inflation.



US NEW HOMES SALES
High interest rates have caused a downturn in home sales.



labor costs inevitably feed through into consumer prices to some extent. At the same time, merchandise inflation has moderated significantly. Supply chain disruptions have eased, even though China's recent lockdowns in key manufacturing regions demonstrates that they may yet pose problems. We expect US inflation to moderate as we move into 2023, easing from an annual rate of roughly 8% this year to 4.7% in 2023, dropping below 3% by 2024.

Areas that are sensitive to interest rates have taken a beating. The housing markets are front and center. Rates on a conventional thirty-year mortgage soared from about 3% at the start of the year to more than 7% in late October, before pulling back somewhat. Have mortgage rates have dramatically eroded affordability. As a result new applications for home mortgages have fallen to half their level at the start of the year; markets for mortgage refinance have all but disappeared. Home resales had fallen nearly a third by October, but the mortgage data implies a significant additional decline in coming months.

The sharp falloff in home demand has caused resale prices to turn downward, although not dramatically so far. Sales of new homes have fallen off to roughly the level seen in early 2019, and residential construction has begun to turn downward.

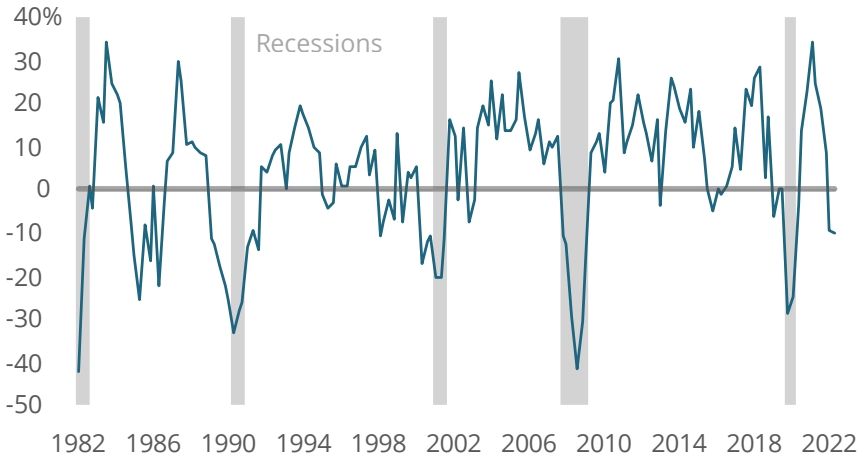
Other interest-sensitive sectors have also begun to feel the adverse effects of higher interest rates. Auto sales have actually risen in recent months, however, reflecting the easing of supply constraints on auto parts that prevailed during the pandemic. Auto prices have receded from their pandemic peaks. Other sectors that benefitted from exceptionally strong demand during the pandemic are now seeing some pullback, reflected for example in the limited layoffs announced by Amazon and Meta. The semiconductor industry and the broader tech sectors have also entered a slump.

Nevertheless, conditions in the US labor market remain very tight. There continue to be roughly two job openings for every unemployed person, compared with just over one prior to the pandemic. The rate of unemployment remains a very low 3.7% nationally.

Amid still-healthy overall conditions, there are emerging signs of slowing. Businesses report declining sales and profitability. Manufacturing activity contracted in November for the first time since May 2020, with the ISM Purchasing Managers Index falling into contraction territory along with sub-

NET PROPORTION OF FIRMS WITH RISING PROFIT MARGINS, NABE OCTOBER BUSINESS CONDITIONS SURVEY

The slowing economy has caused a sharp drop in business profits.



indices for employment and future sales. The number of net jobs added to US employment has been on a generally downward trend for the past year. The outlook for holiday sales is uncertain. The five-day Black Friday shopping period saw strong sales in nominal terms, although purchases were down in inflation-adjusted terms.

At this point, two central questions frame the US forecast: first, how long will it take before inflation eases significantly, and second, how long will spending hold up given rising interest rates and softening overall economic conditions?

The persistence of inflation will determine how much higher the Fed will need to push rates before it is comfortable that price pressures are well in hand. The central bank's primary concern is to prevent inflation from getting baked into the economy for the long run. Here, a key factor is whether households and firms begin to anticipate future inflation, resulting in ongoing wage and price increases. The news here continues to be fairly promising. While near-term inflation expectations of households are high—4.6 - 5.0% in recent consumer sentiment surveys from the University of Michigan—longer term expectations remain considerably lower. In the December survey, participants on average expected 3% inflation over the next five years. While this is higher than the Fed's 2% target, it still provides hope that the current surge of inflation is not a permanent trend.

For now, the consumer continues to spend and drive aggregate demand forward. Consumer spending growth has fallen off from the period of robust post-pandemic recovery, but is still expanding at a roughly 2% annual rate. Underpinning strong household spending are tight labor markets and a hoard of cash accumulated during the pandemic, when federal support programs boosted incomes and the lack of opportunities restrained spending. But at some point cash reserves will be exhausted, and broader economic weakening will cause labor markets to soften. And consumer spending is clearly vulnerable given low optimism by households about future economic conditions.

The midterm elections did not result in the Republican wave that some expected, meaning that no major economic policy changes are likely for the next two years. The primary economic impact of the elections might be increased risk of disruptive *fiscal cliffs*, if the new Republican majority in the House attempts to force spending cuts by threatening a government shutdown. (See the box, *Midterm election results: How will they matter?*)

Midterm election results: How will they matter?

The party of the president nearly always loses in midterm elections—and often quite badly. But this year the Democrats managed to fight their opponents to a draw. It became clear that the Senate would remain under Democratic control with Catherine Cortez Masto's victory over Adam Laxalt in Nevada, but a net gain of only 9 seats means that Republicans will take control of the House with a very slim majority. While the result likely precludes significant policy changes, the mixed leadership of the new Congress may lead to heightened risk of fiscal cliffs.

Fortunately, there have been few contested results or widespread accusations of voter fraud. At this point, nearly all races have been certified or have been designated for recounts. And courts are likely to step in to force certification of remaining results unless there is clear evidence of election irregularities. But attitudes toward the election process are a cause for concern. Republican voters have little trust in the security of elections. An October Pew Research study found that only 56% of GOP voters thought that elections would be administered well. This division over election integrity will continue to be a challenge for future elections.

The incoming Congress will be one of the most narrowly divided in American history, limiting legislative options. We expect the small Republican majority in the House to prevent Democrats from passing any new major legislation or spending bills. Senate Democrats, in turn, will refuse to hear most legislation from the House.

There are two primary sources of risk for the coming term: (1) There is a moderate likelihood of "fiscal cliffs", where a continuing budget resolution cannot be agreed upon without a government shutdown; and (2) House Republicans will pepper the Administration with public hearings on various topics, in retaliation for the Jan. 6 committee.

The federal government is currently funded by a stopgap measure that expires on December 16. A short-term funding bill will likely bridge the gap to the new Congress. This will create an early test for the Republican House majority. An extended shutdown is unlikely, but it would be inconvenient to Hawaii's large federal workforce. An issue of more concern is the looming debt limit. The current ceiling of $31.4 trillion is likely to be reached in early 2023. Some Republicans are proposing to use this as leverage to force spending cuts. A first-ever failure to increase the debt ceiling could be catastrophic for the US and global economies.

We expect a far less dramatic result. The small Republican majority is likely unable to credibly threaten to shut down the government or block an increase to the debt ceiling. The majority depends on the cooperation of several newly elected members from moderate Northeastern districts, which will make party discipline especially difficult to maintain. In short, the Republican majority is simply too small to effectively execute this high-stakes strategy to achieve major concessions from Democrats. We expect gridlock and combative Congressional hearings, but no major crises from partisan gamesmanship.

The state legislature remains firmly in Democratic Party control, with the traditional huge majorities in the Hawaii House of Representatives (45-6) and Senate (23-2), and Josh Green sailed to an easy victory over Republican Duke Aiona. Although Democrats continue to dominate politics in Hawaii, Republicans gained two seats in the House and one in the Senate. While small, Republican gains might enable them to be more active participants in all legislative processes. Hawaii would surely benefit from a more active opposition.

—Colin Moore

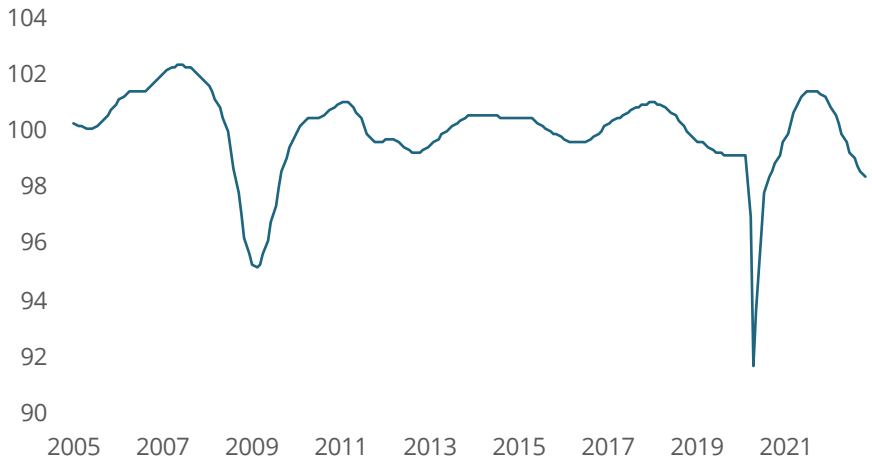
We continue to believe that the US economy will be unable to avoid a recession in 2023, even if it is a mild one by historical standards. We see essentially zero overall growth for the year, following this year's roughly 2% growth. The US economy will resume growth by the fourth quarter of next year.

Outside of the US, economic conditions have turned much weaker. The poorest prospects are in Europe, where the Russian war on Ukraine has sent natural gas prices soaring. Germany, the continent's largest economy, is also suffering from its dependence on exports to China, which have cooled substantially this year. The short-lived conservative government in the United Kingdom compounded problems when it tried to implement an unfunded Reagan-style supply-side package of tax cuts and deregulation. The adverse reaction of bond markets to the implied public deficits forced a swift end to the Liz Truss Prime Ministership and the abandonment of the policy package. But the damage on top of high inflation and waning growth has sent the UK into a recession that the Bank of England expects to last two years. For the UK and continental Europe, the most promising recent development has been the partial pullback in natural gas and other energy prices. If this can be sustained through the winter, conditions may not deteriorate as much as currently expected.

Japan's economy contracted unexpectedly in the third quarter, as moderate but unfamiliar inflation and the extremely weak yen weighed heavily on consumer spending. While the plunging yen may eventually stimulate exports, it has also raised prices of imported components, challenging manufacturers. Still, business conditions remain more favorable in Japan than in many other developed economies. We expect a recovery of growth in the fourth quarter and positive, if tepid, growth for 2023 overall. Australia will remain relatively strong among advanced economies, but will nevertheless slow below 2% growth for the next two years.

China, which aggressively battled the pandemic with its *Zero COVID* policy, now finds itself with record-high case counts. Despite this, demonstrations against COVID shutdowns across the country have prompted national and local authorities to remove a number of restrictions. Still, sporadic shutdowns in key manufacturing areas may continue. These impose a hefty cost on Chinese industry but also reduce Chinese demand for foreign

OECD COMPOSITE LEADING INDICATOR (INDEX, LONG-TERM AVERAGE = 100)
Leading indicators signal more global slowing in 2023.



goods and disrupt supply chains for foreign producers. Disarray in property markets is also causing turmoil. China's growth will struggle to reach 3% for this year as a whole, well below the official target of about 5%.

The global economy has softened to about 3% growth this year. Leading indicators signal further slowing in 2023. Aside from the 2020 pandemic contraction, this will likely be the deepest global slowdown since the 2008-2009 global financial crisis. Moderate growth will resume in 2024.

Overall, the US and global outlook represents a very unfavorable external environment for Hawaii's economy. Slower growth in major markets and higher US interest rates and inflation will weigh on the local economy for the next two years.

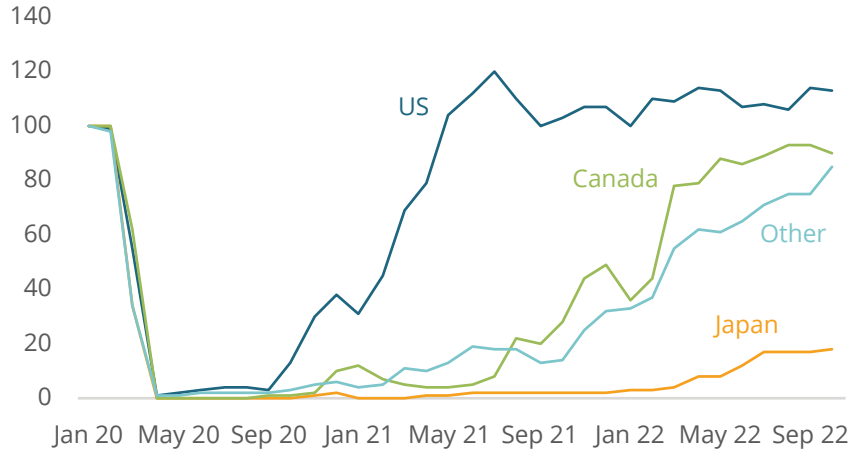
North Americans still driving Hawaii tourism

Hawaii visitor numbers fully recovered in the third quarter, measured by the average daily census and visitor days. Visitor arrivals remained a bit below pre-pandemic levels, at 93% of the number that Hawaii hosted during the summer of 2019. (Visitor census and days were higher because of a longer length of stay.) Data on passenger counts, available with a shorter time lag, show arrivals continuing to rise in November.

As we have noted in past reports, US visitors, who currently account for nearly 80% of all arrivals, have driven the tourism recovery so far. In October, US arrivals remained more than 15% above their 2019 peak. The overall number of international visitors climbed to 60% of its October 2019 level, with Canadian arrivals only seven hundred visitors short of their 2019 level. Canadians now represent more than a third of all international tourists. Japanese visitors are at less than 20% of their pre-pandemic level. Visitors from all other international markets have recovered to more than 80% of their number before the pandemic began.

The return of Japanese travelers has continued to lag behind our expectations. In part, this can be explained by slower-than-anticipated easing of Japan's strict travel restrictions. On October 11, the government finally eliminated testing requirements for vaccinated travelers and removed the daily cap on the number of entrants into the country. In subsequent weeks, passenger counts from Japan rose from about 20% to 25% of the pre-pandemic level.

VISITORS ARRIVALS (INDEX, JAN 2020 = 100)
The Japanese market still lags badly.



The makeup of the Japanese visitor pool differs somewhat from its typical composition. The proportion of first time visitors and those traveling on package trips remains lower than in the past, with more independent and return visitors. During their trip, Japanese visitors are spending slightly more than before the pandemic, but they are staying longer, so that their daily spending is below that seen three years ago. A weak yen and the return to domestic inflation also constrains the purchasing power of the traditionally high-spending Japanese visitors.

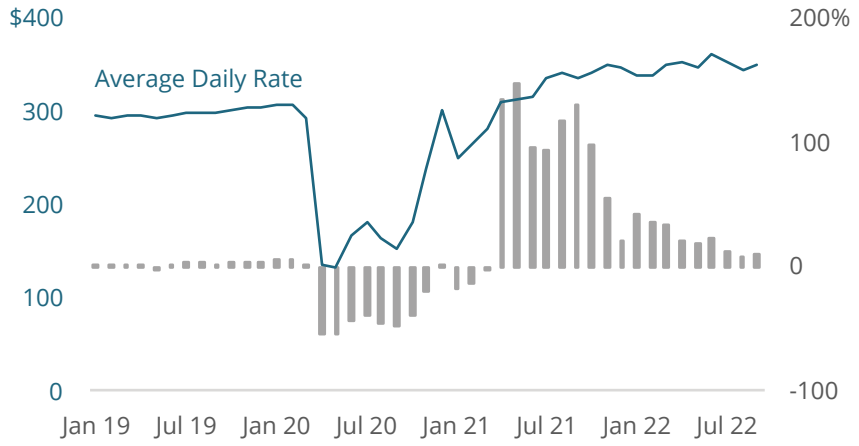
Airlines are providing sufficient airlift to support the recovery of visitor arrivals. But while capacity utilization on domestic routes has approached historic highs, airliners on international routes, especially from Japan, are underutilized. Accordingly, airlines are choosing to restore further capacity gradually, and they have responded to lower-than-anticipated demand from Japan by reducing lift accordingly.

Room rates have stabilized at a high level

The hotel industry has continued to post solid gains. In the third quarter, the occupancy rate climbed to 77%, or within 5% of the rate experienced in the fourth quarter of 2019. Room rates, propelled higher in early summer by robust demand, have now stabilized. Since June, the statewide average daily room rate has remained essentially flat, about 20% above the 2019 level in inflation-adjusted terms. There are similar results for revenue per available room (RevPAR), which is often used by the industry to evaluate hotel performance. Among the counties, Maui has seen the strongest hotel performance, followed by Kauai. Oahu hotel revenues have so far been underwhelming, with RevPAR still nearly 10% below the pre-pandemic level when adjusted for inflation. This is consistent with the delayed recovery of Japanese travel.

Oahu hotels will benefit from stricter regulation of transient vacation rentals (TVRs). New rules on short-term rentals went into effect in late October, aimed at eliminating TVRs from most non-resort neighborhoods. TVRs are now permitted only in resort-zoned areas, some specifically-designated apartment-zoned areas, and "grandfathered" units. Owners of short-term rentals must register, pay registration fees of $1,000 per unit (or per room, where a host is present), and carry $1 million of commercial liability insurance. For now, the regulations on short-term rentals apply to all rentals

HOTEL ROOM RATES
Hotel room prices have stabilized.



of up to thirty days, following a Federal District Court ruling that threw out a more restrictive provision that would have applied to rentals of fewer than ninety days.

There has been a surge in the volume of planned resort development. On Oahu, more than a dozen hotels are in the planning stage, with a handful currently under construction. Two large hotel projects are slated for Waikiki, including a 515-room tower at the Hilton Hawaiian Village. There are also plans to add hotels in neighborhoods that are less frequented by tourists, for example in Chinatown and West Oahu.

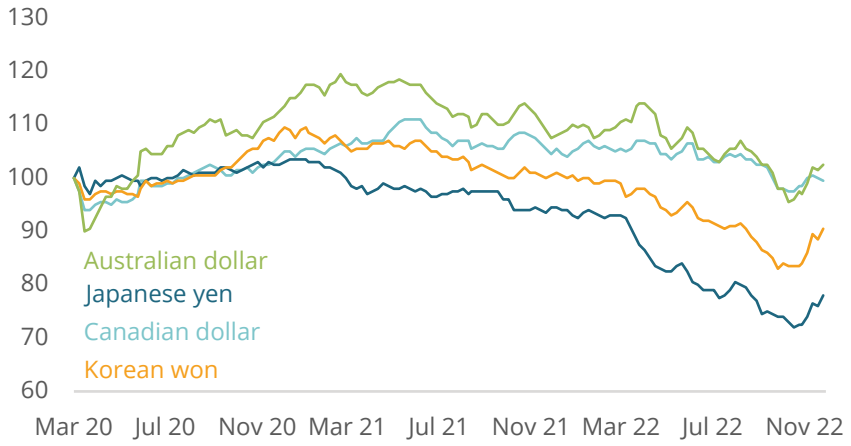
Weak currencies weigh on discretionary travel spending

The growth in visitor spending has been impressive throughout the year, even though international visitor numbers are still recovering. Total visitor spending, adjusted for seasonality and inflation, has now fully recovered, climbing a couple percentage points above its 2019 level. But the strength of total spending masks differences across categories. Visitors typically spend 55% of their budget on accommodation and car rentals. Both of these categories have experienced 20-30% price increases, squeezing out discretionary spending on other less-essential items, such as shopping and to a lesser extent restaurant dining. While these categories typically account for a combined 30% of visitor spending, they are currently among the categories experiencing lagging revenues.

Worsening economic conditions and weak foreign currencies are limiting the number of international visitors and their spending. This is most dramatic for the yen, which declined more than 30% between January 2021 and late October of this year, before a bounce of more than 10% in recent weeks. While the recent rally against the dollar—shared by many major currencies—is encouraging, poor macro fundamentals will weigh on international markets going forward. At the same time, the coming US recession will reduce the US demand for Hawaii travel, moving us back toward a more typical visitor mix.

On November 27, Mauna Loa erupted for the first time since 1984. At the time of this writing, no property is in imminent danger, but the flow from fissure 3 is only 1.5 miles from reaching the Daniel K. Inouye (Saddle Road) Highway. Big Island residents and businesses are bracing for the potential closure of this important East-West transportation corridor. In the meantime, the rare

EXCHANGE RATES (INDEX, 1ST WEEK OF MARCH 2020 = 100)
The very weak yen weighs on Japanese visitor spending.



dual eruption from both Kilauea and Mauna Loa will continue to attract more visitors in the coming months.

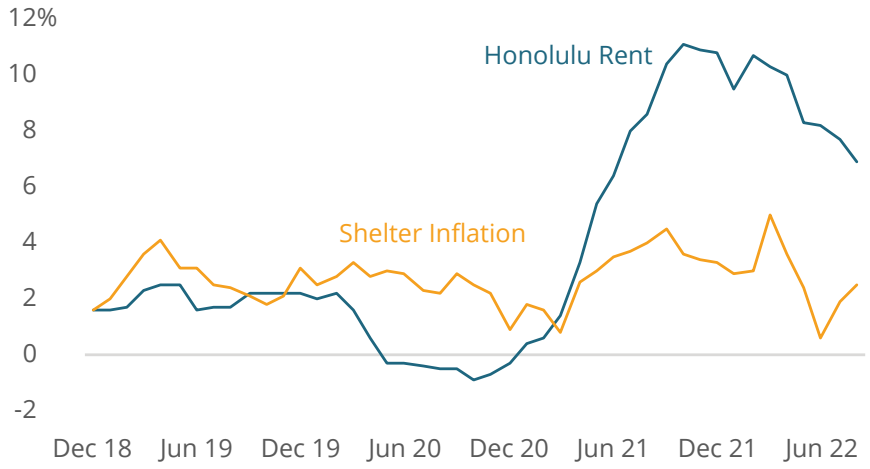
Hawaii inflation remains high

Inflation in Hawaii remains elevated at just under 7%. This is somewhat lower than for the US overall, reflecting Hawaii's lagging economic recovery and the relatively muted growth of wages and rents compared with the rest of the country. Energy continues to be the biggest factor in year-on-year inflation, representing nearly three percentage points, with food and shelter contributing another three percentage points. Although inflation has surpassed 6% for three consecutive quarters this year, there are signs that price increases are beginning to slow. Overall consumer prices rose by just 0.4% in both July and August, equivalent to 5% on an annualized basis. Higher housing costs have yet to feed through fully into the shelter component of the CPI. Since housing represents about 30% of all household spending, this will impart some additional upward inflationary pressure. Because the growth of rents has slowed, that upward contribution will then fade, reducing overall inflation going forward.

Although the pace of consumer price gains has begun to ease slightly, nominal wages have risen sharply at both the national and local level. This is a concern going forward, since higher labor costs tend to be passed through to final prices of goods and services, maintaining upward pressure on prices. At the same time, nominal wage increases are falling short of inflation, so the purchasing power of wages has fallen. Data for September shows average hourly wages in nominal terms are up 6% from the previous year, but in real terms hourly earnings are down nearly 2%. The decline in real wages follows national trends; inflation-adjusted hourly earnings are down 3% for the US as a whole.

Real wages are falling because of a combination of two forces. First, the surprise surge in inflation to record high levels makes it difficult for wages to keep up. Buying an item or service is typically a one-off transaction, allowing prices to fluctuate between transactions. Wages tend to be stickier, or less flexible, since they are typically set for longer time periods. The decline in real wages is also due to a compositional effect. Service industry positions, with more in-person contact, tend to be lower-paid positions.

GROWTH OF HOME RENTAL PRICES
Rising rents are not yet fully reflected in consumer price inflation.



When pandemic social-distancing and lockdowns limited in-person contact, workers in these lower paid positions were more likely to lose their jobs, leading to an increase in measured average wages across remaining employees. As in-person contact has recovered, these service industry jobs have also returned, bringing down overall average hourly earnings.

As the tourism industry has recovered, related sectors have seen above average wage gains. These gains have outpaced inflation, so that real earnings in these sectors have risen. Data for September shows that the trade, and transportation and utilities sectors saw a 6% increase in inflation-adjusted hourly earnings from a year ago. The leisure and hospitality industry saw a 5% increase in real hourly earnings. But of all the tourism related industries, only food service wages are higher in real terms than they were in 2019.

Payrolls in these industries still have room to grow. Jobs in the trade, and transportation and utilities sectors are both 10% below their pre-COVID peak, as are accommodation jobs. But the food service industry is doing better, with employment now within 3% of pre-pandemic levels.

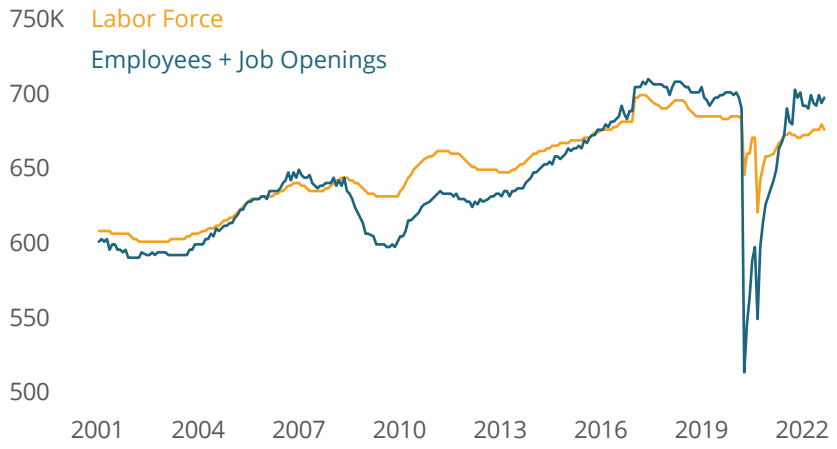
Tight labor markets, but not exceptionally so

The combination of lagging payroll recovery and increased real wages is due in part to relatively tight labor market conditions. As we mentioned in our third quarter report, the effects of *Long COVID* may be preventing some people from returning to work, especially to second jobs. And because Hawaii's economy has faced a much slower recovery than the US overall, service industry workers who left during the pandemic for better job opportunities outside the state may be slow to return.

The extent of labor market tightness can be gauged using government statistics. By such measures, Hawaii's labor market conditions are certainly challenging for firms, but not exceptionally tight compared with recent history. Since the start of the year, Hawaii's unemployment rate has declined from 4.3% in January to 3.4% in October, but this remains higher than we have seen in past periods of strong growth. The number of employed persons plus open job positions has exceeded the available labor force by about 20,000 people over the past six months. This is high, but not much higher than the gap of 16,000 people seen at the end of 2019. By these measures,

NUMBER OF EMPLOYED PERSONS AND OPEN JOBS RELATIVE TO THE LABOR FORCE

Hawaii's labor market is only a little tighter than before the pandemic.



Hawaii's labor market is not substantially tighter than during the pre-pandemic era. And it remains much less restrictive than the US overall.

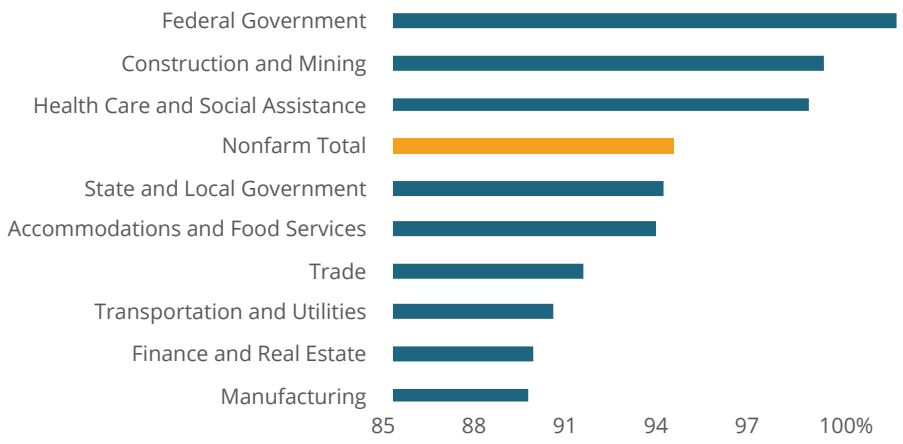
Outside of tourism, payroll trends in other industries are mixed. Employment in the construction and mining sector and the health and social assistance industry are just shy of their pre-pandemic levels. Government jobs are also relatively strong, with federal government payrolls above pre-COVID levels. Employment in the manufacturing, finance, and real estate sectors has been slightly weaker, with payrolls roughly 10% below where they were prior to the pandemic.

The decision by Amazon to beef up its presence in the Islands will result in some additional job growth. The online retailer has purchased a 15% stake in Hawaiian Airlines in exchange for the carrier operating ten Airbus A330-300 freighters, giving Amazon more control over its supply chain to Hawaii. The Airbus planes will be converted from passenger airliners to cargo carriers and are expected to enter service in fall 2023. The increased cargo capacity will put competitive pressure on other shipping companies such as UPS and FedEx. New jobs will be created here in Hawaii as Hawaiian airlines expands local maintenance and other ground crew. Amazon will also build a new warehouse on Oahu.

Nominal personal income for the first half of the year was about 3% lower than in the first half of 2021, in part reflecting the phase-out of pandemic-era federal support programs. Similar to wage trends, as prices continue to rise, inflation-adjusted income has taken a hit. Real personal income in the first half of the year was down more than 9% compared with the same period a year ago.

The pandemic has raised concerns about persistent damage to the earning potential of new workers. Following national trends, the COVID-19 pandemic induced a decline in college entrance among Hawaii's high school graduates. Because research shows that college degree holders earn more on average over the long run, the drop in college entrance rates could have significant implications for future income inequality. See the box, *Pandemic learning losses threaten further inequality*.

OCTOBER PAYROLLS RELATIVE TO JANUARY 2020
Many sectors have yet to reclaim their pre-pandemic employment.



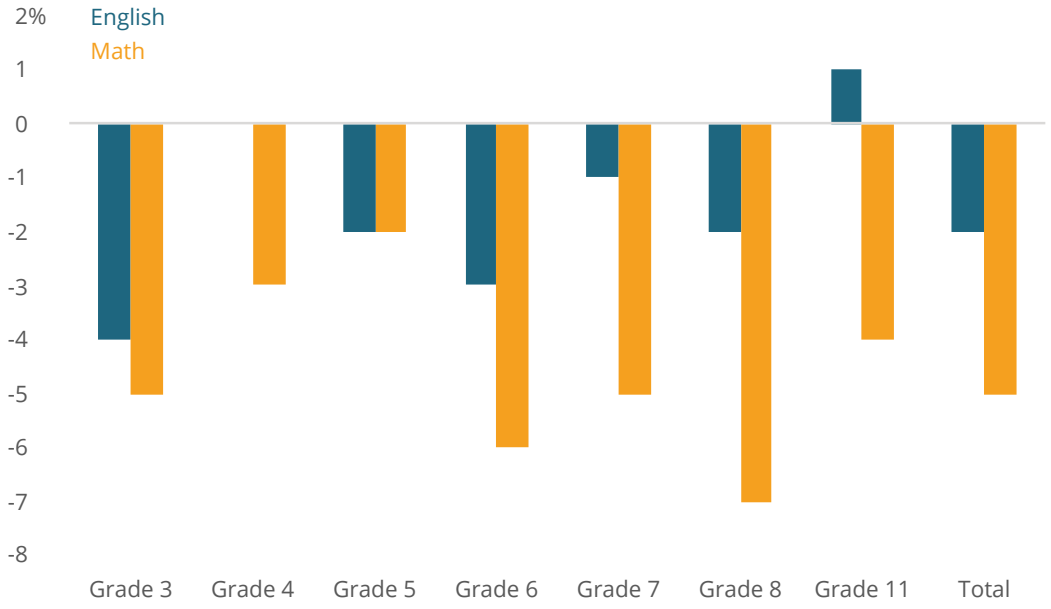
Pandemic learning losses threaten further inequality

Remote learning and labor market tightness during the pandemic accelerated an ongoing decline in college entrance, with potentially far-reaching economic consequences.

The disruption to in-person schooling brought on by COVID-19 set back learning. Data from the National Assessment of Educational Progress (NAEP) shows students performed much worse than in years prior to the pandemic. Nationally, the average fourth grade student scored 5 points lower than in 2019 and the average eighth-grader scored eight points lower. These were the largest declines in NAEP test scores thus far. Reading scores were also lower than the 2019 test results.

Hawaii is no exception to this trend. Students in Hawaii experienced the longest school closures in the country. Local data shows they also suffered from learning losses. 2022 standardized test results from the Smarter Balanced Assessment reveal that the proportion of students who met the DOE's achievement standard was two percentage points lower in reading and five percentage points lower in math.

DIFFERENCES IN PROPORTION OF HAWAII DOE STUDENTS MEETING THE ACHIEVEMENT STANDARD FOR THE SBA, 2021-2022 SCHOOL YEAR RELATIVE TO 2018-2019.



Poorer primary and secondary education performance could mean that fewer students are qualified to enter college than in the past. We are already seeing worrying signs for current cohorts. Data from the National Student Clearinghouse Research Center shows the number of fall 2021 first-time college freshmen falling more than 9% compared with 2019—a loss of more than 200,000 students nationally. In Hawaii, data from the DOE shows college entrance rates for 2020 and 2021 public school graduates were about 50%, down five percentage points from 2019.

While learning losses likely influenced decreased college entrance, there are also labor market factors at work. Employees have greater bargaining power and better job opportunities when the labor market is strong. So the opportunity cost of a college education increases, and fewer students pursue higher education. In contrast, college enrollment increases during recessions as job openings become scarce and the need for better skills rises. Because Hawaii's labor market is healthy, more high school students are likely to enter the labor market and forgo or delay higher education.

The effects of lower pandemic-era learning appear to be more damaging for lower-income students. According to national data, in the 2019 school year, the number of high school graduates entering college declined by less than 2% from the previous year for students from both high and low-poverty schools. However, in 2020 high-poverty high schools saw an 11% drop in college enrollments, while the enrollment of students from low-poverty schools dropped by 5%. It appears that high school graduates from higher-income families were better able to overcome the learning and economic challenges posed by the pandemic.

The decline in the number of students pursuing higher education will weigh on future economic performance. The larger adverse impact on lower-income students is of particular concern for these students' futures. Studies have consistently found that obtaining a higher education degree has a positive and persistent effect on future earnings. The loss of learning and lower college entrance rates will likely contribute to growing income inequality as fewer low-income students enter college while wealthier students remain less affected by the pandemic and its aftermath.

Pricey mortgages a burden for housing markets and development

The housing market has weakened significantly and faces the possibility of a sharper downturn. Sale prices have already begun to fall: On Oahu, the median sale price of an existing single-family home has dropped by 9% from its May peak. Prices on Maui have fallen 13% since May. Several factors indicate weak demand for new housing. The number of home sales has fallen dramatically, with single-family home sales on Oahu down more than 40% year-on-year, and condo sales down nearly 30%. The median days on market for a single-family home on Oahu has nearly doubled over the past year, from 11 to 19 days, essentially back to the level prevailing before the start of the pandemic.

While falling home prices may appear to be a welcome development for potential new homebuyers, increased interest rates have significantly reduced overall housing affordability. Despite some pullback from a nearly twenty-year high of 7.1% in November, high mortgage rates have pushed many potential buyers out of the market. One year ago, to purchase the median-priced single-family home on Oahu with a 20% down payment and a 30-year fixed-rate mortgage would require $3,390 in monthly mortgage payments. Today, the same transaction would require $5,560 in monthly mortgage payments. Nationally, applications for new mortgages have fallen by more than 40%, and figures for Hawaii showed a 56% year-over-year drop in October.

Rents have flattened after a long period of sustained rise. Data from Zillow indicate that the median rent in Honolulu is up 4% over the past year, compared with 9% nationally. For the US as a whole, rents declined slightly from September to October, while Honolulu rents have not registered an increase since July. Statewide data for asking rents posted on Craigslist show a 5% increase over the past year, a modest rate of increase compared with the 21% surge in asking rents experienced during 2021.

Falling home prices and rising interest rates are likely to create significant headwinds for new housing construction. High mortgage interest rates mean fewer potential home buyers, and higher lending rates will result in increased costs for developers financing new construction. On the demand

MAXIMUM SALE PRICE OF A HONOLULU "AFFORDABLE" HOUSING UNIT (HOUSEHOLDS EARNING 80% OF AREA MEDIAN INCOME)
Surging mortgage rates have severely undercut housing affordability.

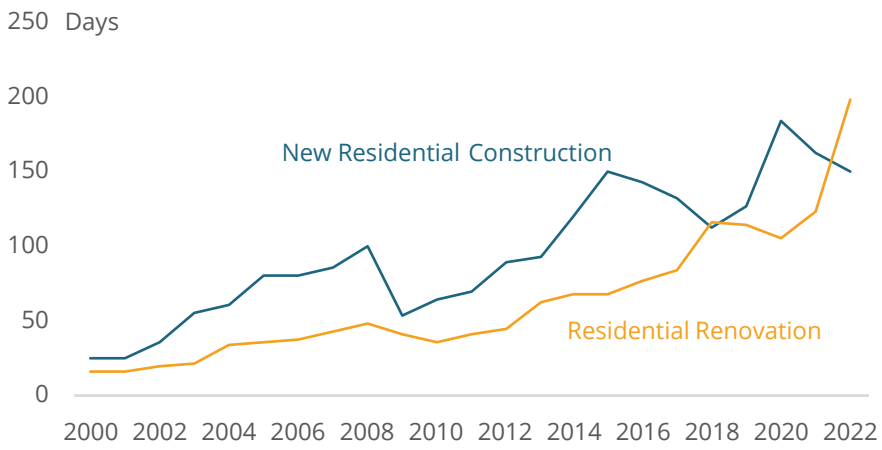
side, developers of new homes are reporting that they are selling properties on a first-come first-served basis, rather than using lotteries to deal with the shortages that typically prevail here. Nationally, new starts of single-family homes have already fallen 18% year-over-year. (No comparable data is available for Hawaii.)

The interplay between extremely restrictive local housing laws and falling affordability will likely result in some new housing developments being postponed or canceled. Affordable housing requirements mean that multi-family projects must set aside a share of new units to be "affordable" for local households. When interest rates were low and mortgages relatively cheap, developers could recoup much of the cost of building affordable units. But, as we have noted, the sharp increase in mortgage rates means a substantial decrease in the mortgage a typical family can afford. And this leads to a sharp decrease in what developers are allowed to charge for a new affordable unit. For a two-person household earning 80% of the area median income (AMI) with mortgage payments capped at 33% of the households income, the maximum sale price has dropped 30% over the past year, significantly reducing the total revenues generated by new developments. Some projects will simply fail to pencil out and will not move forward, resulting in a smaller future housing supply.

Given the significant time it takes for permitting and securing financing, the adverse impact of the new market conditions is not yet apparent in the current flow of new housing. And in fact, there has been some recent progress on new affordable housing development on Oahu. $142 million in state funding was extended to finance the construction of four affordable housing towers, with a combined 759 units. The County completed a $38 million purchase of a Waikiki building that was formerly owned by Hawaii Tokai International College, with plans to convert it to 100 units of affordable housing. The Kakaako and Waikiki areas have seen several recent announcements of major development projects, including significant residential towers. However, the pace of development may slow in the face of rising borrowing costs and softening demand for new housing.

Permitting delays represent further barriers to new housing supply, and these delays have increased dramatically over the past decade. In Honolulu, the median processing time for residential permits issued in 2022 has been 150 days, down slightly from 162 days in 2021, but up 70% over the past decade. The median permit delay for a residential renovation has reached

MEDIAN WAIT TIMES FOR HONOLULU BUILDING PERMITS
Permit wait times in Honolulu have risen steadily over the past two decades.



198 days, with wait times more than quadrupling over the past decade. The uncertainty introduced by permitting delays adds an additional layer of cost for developers already facing economic headwinds, and for homeowners looking to expand or restore living space. The issue of burdensome permit delays is present across all of Hawaii's counties. Overcoming reported staffing shortages and technical barriers at county permitting offices will be important to enabling the needed growth of the housing supply.

Nonresidential side of construction is strong

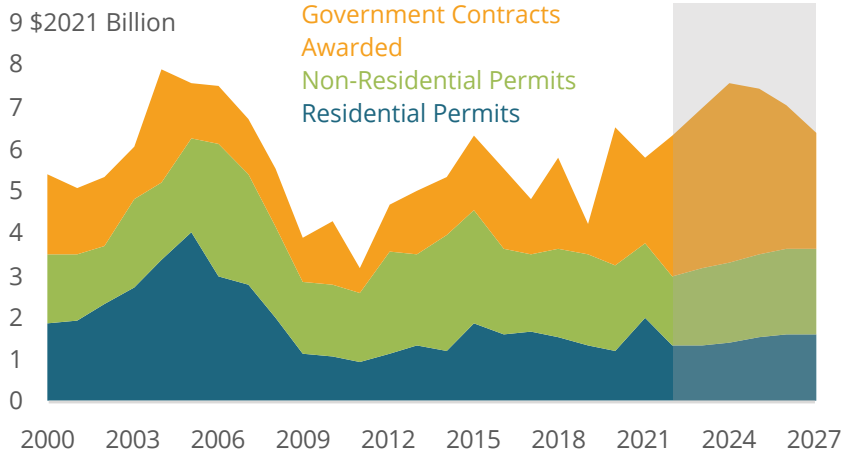
Significant investments in hotel capacity have been announced recently, which will impact both the construction and tourism industries. The Hilton Hawaiian Village in Waikiki released plans to expand its operations by 515 rooms with a proposed 36-story tower on Ala Moana Boulevard. Across Oahu, at least a dozen new hotels are in various stages of planning. Plans for hotels in Chinatown, Ewa, and Kapolei are moving forward, with each project including more than 200 rooms.

Several major public projects continue to face uncertain futures. The nature and financing of the Aloha Stadium project remain unresolved. Former Governor Ige decided to pause progress on the established site plans, while Governor Green has expressed his interest in seeing the project completed quickly and in line with prior proposals. Plans to replace the aging Oahu Correctional Facility have not made significant progress. The Hawaii Correctional System Oversight Commission continues to delay the project and is considering less costly alternatives to the current construction plan.

Federal contracts continue to play an outsized role in major infrastructure funding within the state. Multi-billion dollar military contracts that have been signed in recent years will boost construction demand for the next decade. The bulk of these investments are concentrated on improvements to infrastructure at Pearl Harbor. At the state level, HART finalized a $500 million contract with construction firm Nan Inc to relocate utility infrastructure away from the future rail corridor. A mid-2023 opening date is still planned for the first segment of the rail system, which will run from East Kapolei to the Aloha Stadium site.

REAL AUTHORIZATIONS TO BUILD

A surge in contracts for government construction will offset softer residential building.



THE HAWAII OUTLOOK

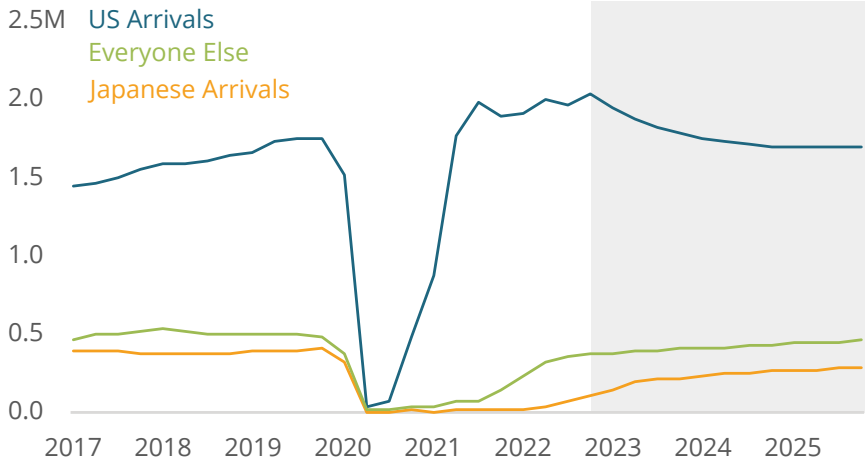
If prospects for the global economy have darkened since the time of our last forecast, the Hawaii outlook remains largely unchanged. The recovery of Japanese tourism is taking longer than expected, likely reflecting the severe loss of Japanese purchasing power from rising inflation at home and the yen's depreciation. Nevertheless, we expect this market to resume clawing its way back over the next year. This will provide a partial offset for the visitor industry as the coming US recession causes a pullback in mainland visitor demand. Surging public construction activity will also act as an important local 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 pause in growth next year.

Japanese visitor return will take more time

A significant recovery of international visitor markets has been underway for the past year. So far the recovery has been centered in markets other than Japan, including Canada, Australia, and other Asian markets. As of October, international arrivals other than from Japan had recovered 80%, while Japanese arrivals still languished at 18% of their pre-pandemic level. And the Japanese market recovery is trending behind our previous forecasts. We continue to anticipate a stronger pace of recovery for this market in 2023, with Japanese visitors representing a larger share of overall visitors going forward. The Japanese market will have recouped roughly half of its pandemic-era losses by the third quarter of next year, with further incremental gains thereafter.

Gains beyond this level will be constrained to some degree by weak currencies and poor macroeconomic conditions, but also by limits to industry capacity. As we noted above, the number of visitors measured by visitor days has already edged above pre-pandemic levels. Robust numbers of US visitors replaced international travelers during the pandemic. We expect arrivals from the US to fall back somewhat as visitors from international

UHERO FORECAST FOR HAWAII VISITOR ARRIVALS
The return of international visitors will help offset a softening US market.



markets return to Hawaii in greater numbers. US economic weakness will also weigh on the mainland market.

COVID-19 has receded as a major visitor industry challenge. US households have largely decided that the virus will no longer prevent them from returning to familiar spending habits. This appears to be the case for consumers in many countries. Important exceptions to this have been Japan and China. Until recently, Chinese leadership has clung to their damaging *Zero COVID* policies, and existing quarantine requirements suggest that prospects for a return of Chinese travelers is remote. While small in numbers, Chinese visitors typically spend more daily than guests from most other markets. Japan has experienced a significant pickup in COVID cases as well, although there has not yet been a reimposition of travel restrictions. Unless we see an unexpectedly-severe virus surge in major markets this winter, COVID-19 should not prevent further growth of the visitor industry.

Total visitor arrivals likely peaked in the third quarter at about 94% of their pre-pandemic level. The average daily visitor census, which takes into account length of stay, is fully back to its level in late 2019. From here on, the number of visitors will edge downward a bit as the coming US recession causes a modest pullback in the mainland market over the next two years. Continuing recovery of the Japanese and other international markets will partially offset US weakness. This pattern of relative strength abroad will favor Honolulu, which has lagged the Neighbor Islands in the tourism recovery so far. In turn, Neighbor Island tourism will take a bigger hit as the US economy slows.

Real visitor spending for this year as a whole will rise to within 2% of its 2019 level. The ongoing rise in the number of overseas Pacific travelers, while a welcome return to a more diversified visitor mix, will not provide much of a spending boost next year. The strong dollar is weighing heavily on the budgets of international travelers. 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 visitor spending will begin to fall off a bit in 2023, amid softening global economic conditions. Weaker US visitor numbers and a resumption of the long-term trend of declining per-person real daily spending will weigh on spending in coming years. This is consistent with historical experience, where, despite periodic upward and downward movements, real visitor spending in recent years has been no higher than it was back in 1989.

Economic gains will largely stall in 2023

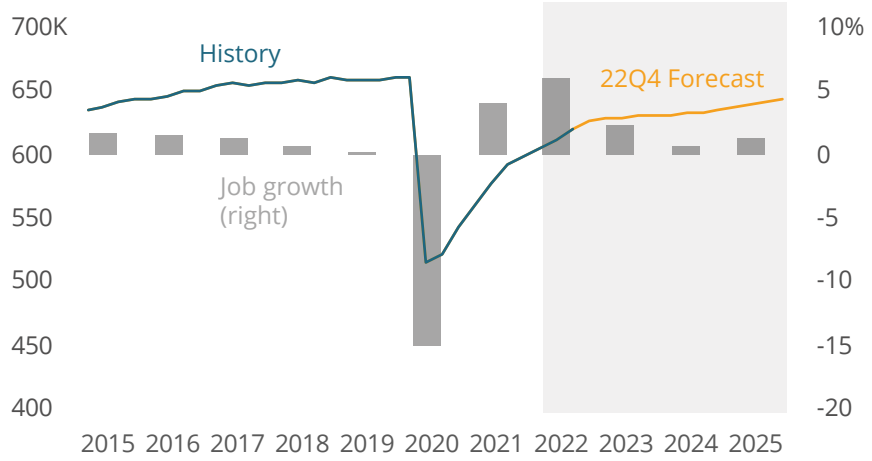
Hawaii's domestic economy will slow in 2023 under the pressure of weakening US tourism, higher interest rates, and high consumer prices. We continue to believe that, unlike the US mainland, Hawaii will escape an outright decline in economic activity, in part because of the still-ongoing visitor industry recovery and robust construction pipeline, but worsening macro conditions will nevertheless bring growth to a near-standstill as the new year progresses.

There is no sign yet of the labor market softening, but next year will bring a marked slowdown. Net payroll job growth will decelerate to just over 2% in 2023, compared with this year's roughly 6% expansion. These annual figures mask greater underlying weakness. From the fourth quarter of this year through the fourth quarter of next year, there will be less than a half-percent growth in the total nonfarm job count. Weakness will continue through much of 2024, with a return to moderate job gains only late in the year. The softening labor market will mean a slight uptick in the unemployment rate. The statewide average will edge up from 3.2% in the fourth quarter of this year to 3.9% at the end of 2023. Unemployment will begin to recede in the second quarter of 2024.

Looking further out, pandemic-related retirements and the absence of significant population growth on Oahu will weigh on labor force growth though the end of the forecast period. As a result, the number of filled jobs will not approach the pre-pandemic level until late in the decade.

Most sectors will see slower job growth in 2023-2024 than they have this year. Tourism dependent industries, which remain furthest from pre-pandemic levels of employment, will account for the largest number of new jobs. The accommodation and food service sector will add nearly 7,000 jobs in 2023, more than half of all net job gains. Even with these gains, the sector's job base will remain about 5% below pre-pandemic levels. Transportation and utilities will lag by a similar amount, and retail trade will remain 10% below its 2019 level of employment. The healthcare industry is the only sector that will fully recover to its 2019 employment by the end of 2023. Growth in the large "other services" sector, which includes everything from business services to waste management, will slow sharply in 2023 after a 9% gain this year. There will be some firming of job growth in many sectors as we move into 2024 and 2025.

HAWAII NONFARM PAYROLL JOBS
Job gains will flatten in 2023.



As we have noted above, the construction industry saw modest net job losses in the first part of the year, before rebounding over the past three months. These fluctuations likely reflect the ebb and flow of particular projects. A significant pipeline of pending projects will sustain a high level of construction employment over the forecast period. Most important in this are several very large federally-funded projects. That strength will fully offset an anticipated decline in residential building. Pressures on the construction industry do exist, both on the cost side and in terms of housing affordability.

Reversing inflation's big bite out of income will take time

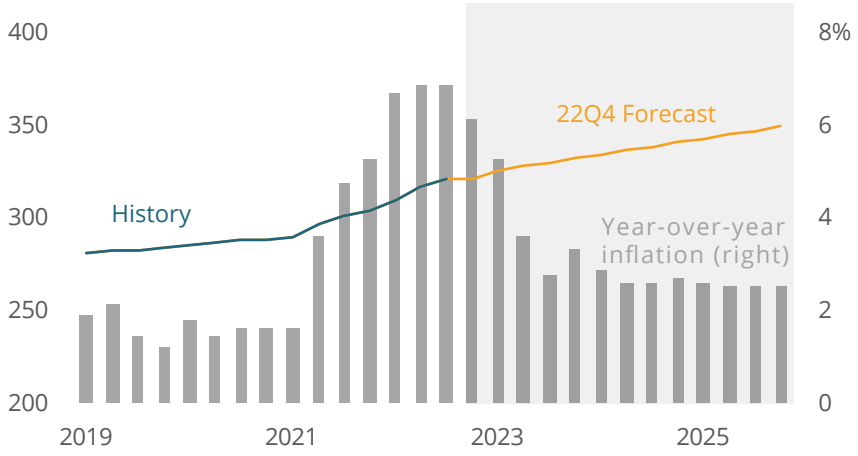
It is hard to overestimate the adverse effects of recent inflation on the Hawaii economy. Personal income in nominal terms made headway this year, stabilizing after the losses taken last year as the massive pandemic-era fiscal support ended. By the second quarter, income in current dollars was more than 7% higher than the pre-pandemic level. But inflation has severely undercut the purchasing power of income. Inflation over the past three quarters has averaged 6.7%, falling off only a little over this period. As a result, inflation-adjusted real income is running about 6% behind last year and roughly 4% lower than before the pandemic began.

The good news is that inflation is now set to ease significantly. Many of the transitory factors that have lifted consumer prices are receding. Oil prices have reversed all of their 2022 gains. Because oil is the largest source of energy in the Islands this will substantially reduce price pressures. Food price appreciation is also expected to decline in the new year as global supply conditions continue to improve. The inflationary impact of rising shelter costs will also ease once the recent run-up in prices and rents has fully fed through the economy. Growth in asking rents has declined and home resale prices have already turned downward.

Overall Honolulu inflation will ease off this year's 6.6% annual pace to less than 4% in 2023, cooling to roughly 2.5% by 2024, just a bit above its long-run average. If labor cost appreciation proves more persistent than expected, this could mean a somewhat longer period of significant price pressures, but in any case the current period of high inflation will soon be behind us.

As inflation recedes, real income will stage a recovery. From its 6% drop this year, real personal income will expand by about one percent in 2023. As

HONOLULU CONSUMER PRICE INDEX (INDEX, 1982 - 1984 = 100)
Inflation will retreat rapidly in 2023.



inflation drops further and demand and employment begin to recover, real personal income growth will regain its 2019 level by 2024 and growth will firm to the 2% range by 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 about 1% growth in the 2025-2027 period. At that point, it will still be 6,000 jobs shy of its pre-pandemic level, but in part this reflects the loss of population and labor force that started even before the pandemic began. 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 especially income. Real GDP will average roughly 2% growth for the 2023-2025 period.

What could go right or wrong?

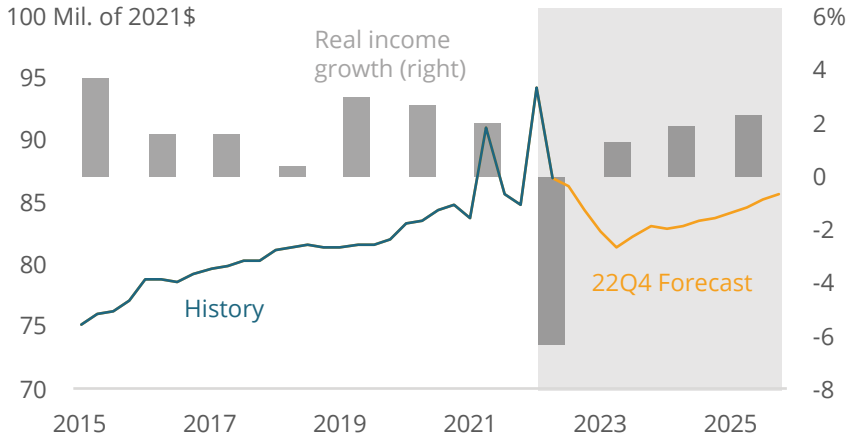
Hawaii's outlook has not changed substantially over the past quarter. As the US enters a mild recession next year, tourism activity will slow, but the gradual return of Japanese visitors will cushion the blow. The higher interest rates and prices that are beginning to drag on the US mainland economy are weighing on Hawaii, too. Their burden on spending will combine with somewhat weaker tourism to cause a year-long pause in job gains in the Islands, before growth begins to edge back onto a positive track in 2024.

If Hawaii's anticipated path remains largely unchanged from our third-quarter forecast, uncertainty around that path has increased. US inflation is proving stubbornly persistent, and conditions abroad have deteriorated more rapidly. Foreign purchasing power has tanked. At the same time, the Fed is signaling smaller hikes may be coming soon, and lower energy prices will help ease the global slowdown. So what could go right? Or wrong?

In a best case, US inflation recedes rapidly. This buttresses already-healthy consumer spending, and moderating costs buoy business profitability. The Fed is able to stop its tightening cycle quickly, setting the stage for a rapid recovery of housing markets and construction. China's COVID management improves, easing any remaining global supply constraints. The Fed gets its "soft landing". As Fed tightening eases, foreign currencies recover and support stronger tourism-related spending here.

REAL PERSONAL INCOME

It will take a few years for real income to recover.



In a downside outcome, core US inflation proves intractable. The Fed's tightening cycle is more severe and prolonged, sharply undercutting consumer spending, capital investment, and construction. Russia increases its strangle-hold on European energy and China fails to control COVID, public discontent, and supply disruptions. A US "hard landing" occurs, with a sharp drop in economic activity. Falling US and global demand drag hard on tourism, local consumer and business spending drop, and Hawaii joins the US in an outright decline in economic activity.

While we can hope that things go right and worry they could go wrong, we continue to see the middle ground as most likely. Hawaii skates along the growth edge in 2023, slowing, but avoiding a local recession. But even if things were to go wrong, some perspective is essential. As we noted in our last report, economic conditions now are very different from the developments that drove the past two deep recessions. Performance will get worse before it gets better, but a severe downturn—for the US or Hawaii—remains unlikely.

TABLE 1: MAJOR ECONOMIC INDICATORS
STATE OF HAWAII BASELINE FORECAST

	2020	2021	2022	2023	2024	2025
Nonfarm Payrolls (Thou)	559.7	581.4	615.5	629.1	632.7	639.8
% Change	-15.0	3.9	5.9	2.2	0.6	1.1
Unemployment Rate (%)	12.0	5.8	3.8	3.6	3.8	3.2
Population (Thou)	1,451.9	1,441.6	1,438.2	1,438.6	1,439.5	1,440.6
% Change	-0.3	-0.7	-0.2	0.0	0.1	0.1
Personal Income (Mil$)	83,109.4	87,918.6	87,719.8	92,118.9	96,300.4	100,995.5
% Change	4.3	5.8	-0.2	5.0	4.5	4.9
Inflation Rate, Honolulu MSA (%)	1.6	3.8	6.6	3.7	2.7	2.5
Real Personal Income (Mil 2021$)	86,250.5	87,918.6	82,308.6	83,354.7	84,883.8	86,819.5
% Change	2.7	1.9	-6.4	1.3	1.8	2.3
Real Per Capita Income (Thou 2021$)	59.4	61.0	57.2	57.9	59.0	60.3
% Change	2.9	2.7	-6.2	1.2	1.8	2.2
Real GDP (Mil 2021$)	85,664.6	91,058.4	92,901.7	95,474.9	96,675.7	98,651.8
% Change	-11.6	6.3	2.0	2.8	1.3	2.0
TOURISM SECTOR DETAIL						
Total Visitor Arrivals by Air (Thou)	2,708.3	6,777.0	9,277.0	9,652.9	9,491.6	9,608.2
% Change - Total Visitor Arrivals by Air	-73.9	150.2	36.9	4.1	-1.7	1.2
U.S. Visitors	1,987.3	6,468.9	7,844.1	7,378.1	6,876.7	6,764.1
% Change - U.S. Visitors	-71.1	225.5	21.3	-5.9	-6.8	-1.6
Japanese Visitors	289.1	18.9	211.2	743.0	956.5	1,080.5
% Change - Japanese Visitors	-81.7	-93.5	1,015.1	251.9	28.7	13.0
Other Visitors	403.3	289.1	1,244.9	1,531.7	1,658.4	1,763.6
% Change - Other Visitors	-79.2	-28.3	330.6	23.0	8.3	6.3
Visitor Days (Thou)	28,515.8	65,309.7	85,321.4	84,731.4	83,689.6	85,880.9
% Change	-68.2	129.0	30.6	-0.7	-1.2	2.6
Average Daily Room Rate ($)	208.3	315.8	372.9	394.2	400.7	412.9
% Change	-26.3	51.6	18.1	5.7	1.7	3.0
Occupancy Rate (%)	31.2	57.1	74.5	74.2	73.6	75.6
Real Visitor Expenditures (Mil 2021$)	5,233.5	13,127.0	18,197.3	17,865.5	17,444.0	17,845.2
% Change	-71.9	150.8	38.6	-1.8	-2.4	2.3

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

TABLE 2: JOBS BY INDUSTRY
STATE OF HAWAII BASELINE FORECAST

	2020	2021	2022	2023	2024	2025
Nonfarm Payrolls (Thou)	559.7	581.4	615.5	629.1	632.7	639.8
% Change	-15.0	3.9	5.9	2.2	0.6	1.1
Construction and Mining	36.7	36.9	36.5	37.4	37.8	38.2
% Change	-2.3	0.6	-1.1	2.5	1.0	1.0
Manufacturing	12.0	12.0	12.4	12.6	12.8	13.1
% Change	-14.7	0.2	2.7	1.9	1.6	1.9
Trade	77.8	79.3	81.5	81.8	82.3	83.9
% Change	-13.3	1.9	2.8	0.3	0.6	2.0
Transportation and Utilities	27.3	29.5	32.5	33.4	33.5	34.1
% Change	-23.0	8.3	10.2	2.6	0.2	1.8
Finance, Insurance and Real Estate	27.4	27.2	27.2	27.0	27.2	27.6
% Change	-8.9	-0.7	0.1	-0.9	0.8	1.7
Services	257.3	276.7	303.2	313.2	314.5	317.7
% Change	-20.9	7.6	9.6	3.3	0.4	1.0
Health Care and Soc. Assistance	71.1	71.6	72.8	74.0	74.4	75.0
% Change	-3.3	0.7	1.7	1.6	0.5	0.9
Accommodation and Food	69.6	85.1	100.7	107.6	107.9	108.9
% Change	-38.5	22.3	18.3	6.8	0.4	0.9
Other	116.6	120.1	129.7	131.7	132.2	133.7
% Change	-15.9	3.0	8.1	1.5	0.4	1.2
Government	121.2	119.7	122.1	123.7	124.6	125.2
% Change	-4.1	-1.3	2.0	1.3	0.8	0.5
Federal Government	35.2	34.7	35.0	35.3	35.3	35.3
% Change	2.4	-1.4	0.9	0.8	0.0	0.0
State and Local Government	86.0	85.0	87.1	88.4	89.3	89.9
% Change	-6.5	-1.2	2.5	1.5	1.1	0.7

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

TABLE 3: PERSONAL INCOME BY INDUSTRY
STATE OF HAWAII BASELINE FORECAST

	2020	2021	2022	2023	2024	2025
Real Personal Income (Mil 2021$)	86,250.5	87,918.6	82,308.6	83,354.7	84,883.8	86,819.5
% Change	2.7	1.9	-6.4	1.3	1.8	2.3
Labor & Proprietors' Income	55,983.2	57,900.9	57,901.3	59,664.5	60,910.8	62,322.9
% Change	-7.3	3.4	0.0	3.0	2.1	2.3
Construction	4,798.8	4,706.0	4,495.0	4,684.9	4,806.5	4,911.6
% Change	-1.9	-1.9	-4.5	4.2	2.6	2.2
Manufacturing	983.2	950.3	964.9	990.8	1,012.8	1,038.8
% Change	-8.0	-3.3	1.5	2.7	2.2	2.6
Trade	4,646.8	4,818.5	4,742.6	4,812.2	4,895.2	5,016.8
% Change	-8.2	3.7	-1.6	1.5	1.7	2.5
Transportation and Utilities	2,967.2	3,012.0	3,459.2	3,581.6	3,612.2	3,692.5
% Change	-13.7	1.5	14.8	3.5	0.9	2.2
Finance, Insurance & Real Estate	3,943.4	4,052.3	3,860.9	3,856.7	3,936.8	4,055.3
% Change	-4.1	2.8	-4.7	-0.1	2.1	3.0
Services	21,146.2	22,925.9	23,802.8	24,816.2	25,364.2	26,077.0
% Change	-14.1	8.4	3.8	4.3	2.2	2.8
Health Care & Soc. Assist. (% ch.)	4.5	0.1	-1.0	3.5	2.6	2.4
Accommodation & Food (% ch.)	-44.1	39.0	11.3	8.9	3.9	4.8
Other (% ch.)	-7.8	4.1	2.9	2.3	1.2	2.0
Government	17,196.2	17,083.4	16,282.7	16,588.7	16,945.9	17,190.1
% Change	1.9	-0.7	-4.7	1.9	2.2	1.4
Federal, civilian (% ch.)	2.3	-0.1	-4.1	0.4	0.9	0.8
State & Local (% ch.)	1.9	-3.6	-4.6	2.6	2.8	2.0
Less Social Security Taxes (-)	6,474.1	6,621.6	6,719.4	6,945.2	7,084.8	7,243.6
% Change	-6.1	2.3	1.5	3.4	2.0	2.2
Transfer Payments	20,055.2	20,270.6	15,197.1	15,179.5	15,502.7	15,839.3
% Change	49.8	1.1	-25.0	-0.1	2.1	2.2
Dividends, Interest and Rent	16,686.2	16,368.8	15,930.0	15,456.2	15,555.8	15,901.9
% Change	-2.7	-1.9	-2.7	-3.0	0.6	2.2
Population (Thou)	1,451.9	1,441.6	1,438.2	1,438.6	1,439.5	1,440.6
% Change	-0.3	-0.7	-0.2	0.0	0.1	0.1
Real Per Capita Income (Thou 2021$)	59.4	61.0	57.2	57.9	59.0	60.3
% Change	2.9	2.7	-6.2	1.2	1.8	2.2
Inflation Rate, Honolulu MSA (%)	1.6	3.8	6.6	3.7	2.7	2.5
Nominal Personal Income (Mil. $)	83,109.4	87,918.6	87,719.8	92,118.9	96,300.4	100,995.5
% Change	4.3	5.8	-0.2	5.0	4.5	4.9

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

TABLE 4: CONSTRUCTION INDICATORS
STATE OF HAWAII BASELINE FORECAST

	2020	2021	2022	2023	2024	2025
BUILDING PERMITS (Mil 2021$)						
Total Commitments to Build	6,504	5,769	6,298	6,977	7,636	7,576
% Change	55.0	-11.3	9.2	10.8	9.4	-0.8
Real Private Building Permits	3,267	3,747	2,951	3,166	3,391	3,604
% Change	-5.8	14.7	-21.2	7.3	7.1	6.3
Real Residential Building Permits	1,203	1,995	1,346	1,330	1,480	1,657
% Change	-7.8	65.8	-32.5	-1.1	11.2	12.0
Real Non-Residential Building Permits	2,063	1,752	1,605	1,836	1,911	1,947
% Change	-4.6	-15.1	-8.4	14.4	4.1	1.9
Real Government Contracts Awarded	3,238	2,022	3,347	3,811	4,245	3,972
% Change	345.4	-37.6	65.5	13.9	11.4	-6.4
CONSTRUCTION ACTIVITY						
Real GE Contracting Tax Base (Mil 2021$)	10,207	9,973	10,050	10,483	11,603	12,176
% Change	-1.6	-2.3	0.8	4.3	10.7	4.9
Nominal GE Contracting Tax Base (Mil $)	9,713	9,973	10,505	11,416	13,131	14,260
% Change	0.8	2.7	5.3	8.7	15.0	8.6
Construction Job Count (Thou)	36.7	36.9	36.5	37.4	37.8	38.2
% Change	-2.3	0.6	-1.1	2.5	1.0	1.0
Real Construction Income (Mil 2021$)	4,799	4,706	4,495	4,685	4,807	4,912
% Change	-1.9	-1.9	-4.5	4.2	2.6	2.2
PRICES & COSTS (HONOLULU)						
Honolulu Median Home Price (Thou $)	822.6	987.3	1102.0	1017.2	998.6	1022.7
% Change	4.1	20.0	11.6	-7.7	-1.8	2.4
Honolulu Median Condominium Price (Thou $)	432.6	470.6	507.2	478.0	470.7	486.5
% Change	1.2	8.8	7.8	-5.8	-1.5	3.4
Honolulu Housing Affordability Index	92.2	81.7	57.0	56.9	64.6	67.4
% Change	8.4	-11.4	-30.3	-0.1	13.4	4.4
Honolulu Construction Cost Index (2021=100)	95.2	100.0	104.5	108.9	113.2	117.1
% Change	2.5	5.1	4.5	4.2	3.9	3.5
30-Year Mortgage Rate (%)	3.1	3.0	5.0	6.3	5.7	5.4

Note: Source is UHERO. Figures for 2022-2025 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	419.1	442.9	452.9	454.9	459.5
% Change	-13.2	1.9	5.7	2.3	0.4	1.0
Unemployment Rate (%)	10.5	5.4	3.7	3.5	3.9	3.4
Population (Thou)	1,013.2	1,000.9	996.6	996.0	995.9	995.9
% Change	-0.4	-1.2	-0.4	-0.1	0.0	0.0
Personal Income (Mil $)	60,909.1	63,968.6	64,124.6	67,243.7	70,276.4	73,672.0
% Change	3.9	5.0	0.2	4.9	4.5	4.8
Inflation Rate, Honolulu MSA (%)	1.6	3.8	6.6	3.7	2.7	2.5
Real Personal Income (Mil 2021 $)	63,211.1	63,968.6	60,169.0	60,846.1	61,945.0	63,331.2
% Change	2.3	1.2	-5.9	1.1	1.8	2.2
Real Per Capita Income (Thou 2021 $)	62.4	63.9	60.4	61.1	62.2	63.6
% Change	2.7	2.4	-5.5	1.2	1.8	2.2
TOURISM SECTOR DETAIL						
Total Visitor Arrivals by Air (Thou)	1,506.2	3,326.2	4,917.9	5,494.1	5,519.9	5,648.4
% Change - Total Visitor Arrivals by Air	-75.5	120.8	47.9	11.7	0.5	2.3
U.S. Visitors	1,024.3	3,142.0	3,876.6	3,656.5	3,387.8	3,314.3
% Change - U.S. Visitors	-69.0	206.7	23.4	-5.7	-7.3	-2.2
Japanese Visitors	269.4	18.0	203.0	724.5	921.9	1,040.4
% Change - Japanese Visitors	-82.0	-93.3	1,027.7	256.9	27.3	12.8
Other Visitors	273.9	166.2	836.6	1,113.1	1,210.2	1,293.7
% Change - Other Visitors	-79.5	-39.3	403.4	33.0	8.7	6.9
Visitor Days (Thou)	12,829.5	26,897.4	36,298.1	37,811.6	37,816.0	38,655.5
% Change	-69.3	109.7	35.0	4.2	0.0	2.2
Occupancy Rate (%)	32.8	54.9	75.8	76.2	76.8	79.0

Note: Source is UHERO. Nonfarm Payrolls for 2021 are UHERO estimates of the benchmark revision. Figures for 2022 - 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	419.1	442.9	452.9	454.9	459.5
% Change	-13.2	1.9	5.7	2.3	0.4	1.0
Construction and Mining	26.8	27.0	26.4	27.3	27.6	27.9
% Change	-1.7	0.8	-2.0	3.2	1.0	1.2
Manufacturing	9.4	9.2	9.1	9.3	9.4	9.7
% Change	-14.7	-2.5	-0.4	1.5	2.0	2.6
Trade	53.5	53.9	55.8	56.1	56.5	57.6
% Change	-13.9	0.7	3.5	0.6	0.6	2.0
Transportation and Utilities	20.7	21.6	23.8	24.5	24.6	25.0
% Change	-20.7	4.3	10.4	2.9	0.1	1.7
Finance, Insurance and Real Estate	21.7	21.1	20.9	20.6	20.8	21.1
% Change	-5.9	-2.3	-1.3	-1.2	0.8	1.5
Services	186.0	194.2	212.7	219.7	220.2	221.9
% Change	-18.2	4.4	9.5	3.3	0.2	0.8
Health Care and Soc. Assistance	52.8	53.3	54.5	55.4	55.6	56.0
% Change	-2.8	0.9	2.2	1.5	0.4	0.8
Accommodation and Food	43.1	49.9	60.0	64.8	64.7	64.7
% Change	-36.2	15.9	20.1	8.0	-0.1	0.0
Other	90.1	91.0	98.2	99.6	99.9	101.2
% Change	-14.6	0.9	8.0	1.4	0.3	1.3
Government	93.0	92.0	94.1	95.3	95.9	96.4
% Change	-4.1	-1.1	2.2	1.3	0.6	0.5
Federal Government	32.3	32.0	32.3	32.6	32.6	32.6
% Change	2.3	-0.9	1.0	0.9	0.0	0.0
State and Local Government	60.7	60.0	61.7	62.7	63.3	63.8
% Change	-7.2	-1.2	2.9	1.6	1.0	0.8

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

TABLE 7: PERSONAL INCOME BY DETAILED SECTOR
HONOLULU COUNTY BASELINE FORECAST

	2020	2021	2022	2023	2024	2025
Real Personal Income (Mil 2021 $)	63,211.1	63,968.6	60,169.0	60,846.1	61,945.0	63,331.2
% Change	2.3	1.2	-5.9	1.1	1.8	2.2
Labor & Proprietors' Income	43,105.3	43,941.4	43,846.2	45,119.7	45,990.6	46,969.6
% Change	-5.8	1.9	-0.2	2.9	1.9	2.1
Construction	3,566.0	3,476.2	3,290.0	3,455.4	3,547.1	3,629.1
% Change	-1.1	-2.5	-5.4	5.0	2.7	2.3
Manufacturing	790.4	746.7	737.6	754.2	773.5	798.3
% Change	-8.3	-5.5	-1.2	2.3	2.6	3.2
Trade	3,212.4	3,283.9	3,277.1	3,327.3	3,387.5	3,470.8
% Change	-9.6	2.2	-0.2	1.5	1.8	2.5
Transportation and Utilities	2,351.6	2,342.0	2,684.0	2,777.2	2,796.1	2,853.8
% Change	-12.2	-0.4	14.6	3.5	0.7	2.1
Finance, Insurance & Real Estate	3,018.8	3,090.8	2,961.4	2,956.4	3,020.1	3,106.4
% Change	-7.1	2.4	-4.2	-0.2	2.2	2.9
Services	15,669.1	16,546.5	17,078.4	17,768.6	18,109.2	18,556.6
% Change	-10.8	5.6	3.2	4.0	1.9	2.5
Health Care & Soc. Assist. (% ch.)	4.5	0.7	-0.7	3.1	2.4	2.3
Accommodation & Food (% ch.)	-42.1	29.8	13.1	10.9	3.5	3.8
Other (% ch.)	-6.6	2.6	2.5	2.3	1.1	2.1
Government	14,402.0	14,371.1	13,714.8	13,974.7	14,250.7	14,447.5
% Change	1.7	-0.2	-4.6	1.9	2.0	1.4
Federal, civilian (% ch.)	2.2	-0.1	-4.1	0.5	0.9	0.7
State & Local (% ch.)	1.3	-3.5	-4.2	2.8	2.5	2.1
Less Social Security Taxes (-)	4,962.9	5,039.0	5,090.8	5,234.1	5,331.5	5,441.4
% Change	-4.7	1.5	1.0	2.8	1.9	2.1
Transfer Payments	13,127.5	13,375.3	10,104.8	10,138.9	10,338.5	10,545.6
% Change	46.6	1.9	-24.5	0.3	2.0	2.0
Dividends, Interest and Rent	11,996.6	11,740.2	11,430.8	11,094.6	11,178.9	11,433.4
% Change	-2.8	-2.1	-2.6	-2.9	0.8	2.3
Population (Thou)	1,013.2	1,000.9	996.6	996.0	995.9	995.9
% Change	-0.4	-1.2	-0.4	-0.1	0.0	0.0
Real Per Capita Income (Thou 2021 $)	62.4	63.9	60.4	61.1	62.2	63.6
% Change	2.7	2.4	-5.5	1.2	1.8	2.2
Inflation Rate, Honolulu MSA (%)	1.6	3.8	6.6	3.7	2.7	2.5
Nominal Personal Income (Mil $)	60,909.1	63,968.6	64,124.6	67,243.7	70,276.4	73,672.0
% Change	3.9	5.0	0.2	4.9	4.5	4.8

Note: Source is UHERO. Figures for 2022 - 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	65.0	68.5	69.8	70.2	70.9
% Change	-13.9	6.6	5.4	1.9	0.7	1.0
Unemployment Rate (%)	11.6	5.6	3.9	3.4	3.3	2.9
Population (Thou)	200.7	202.9	203.9	204.4	204.9	205.5
% Change	0.4	1.1	0.5	0.2	0.3	0.3
Personal Income (Mil $)	9,448.6	10,153.0	9,968.1	10,508.8	10,965.9	11,500.0
% Change	8.4	7.5	-1.8	5.4	4.4	4.9
Inflation Rate, Honolulu MSA (%)	1.6	3.8	6.6	3.7	2.7	2.5
Real Personal Income (Mil 2021 $)	9,805.7	10,153.0	9,353.2	9,509.0	9,665.9	9,885.8
% Change	6.8	3.5	-7.9	1.7	1.7	2.3
Real Per Capita Income (Thou 2021 $)	48.8	50.0	45.9	46.5	47.2	48.1
% Change	6.3	2.4	-8.3	1.4	1.4	2.0
TOURISM SECTOR DETAIL						
Total Visitor Arrivals by Air (Thou)	482.0	1,183.5	1,692.5	1,779.0	1,735.0	1,778.8
% Change - Total Visitor Arrivals by Air	-73.0	145.5	43.0	5.1	-2.5	2.5
U.S. Visitors	381.3	1,137.2	1,459.3	1,401.8	1,308.6	1,313.6
% Change - U.S. Visitors	-69.7	198.2	28.3	-3.9	-6.7	0.4
Japanese Visitors	35.5	1.0	19.9	81.3	110.8	129.9
% Change - Japanese Visitors	-79.2	-97.2	1,887.1	309.2	36.3	17.2
Other Visitors	70.9	45.3	222.3	295.9	315.6	335.3
% Change - Other Visitors	-79.0	-36.1	390.7	33.1	6.7	6.2
Visitor Days (Thou)	4,584.8	10,964.9	14,008.8	13,598.8	13,004.1	13,260.6
% Change	-64.9	139.2	27.8	-2.9	-4.4	2.0
Occupancy Rate (%)	34.2	60.8	75.7	72.6	69.6	71.0

Note: Source is UHERO. Nonfarm Payrolls for 2021 are UHERO estimates of the benchmark revision. Figures for 2022 - 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	65.0	68.5	69.8	70.2	70.9
% Change	-13.9	6.6	5.4	1.9	0.7	1.0
Construction and Mining	3.6	3.7	3.7	3.7	3.8	3.8
% Change	-5.0	1.4	1.3	0.6	0.9	0.4
Manufacturing	1.3	1.4	1.6	1.6	1.6	1.6
% Change	-9.1	11.7	11.2	3.0	0.6	-0.1
Trade	10.6	11.1	11.2	11.2	11.3	11.4
% Change	-8.0	4.7	1.2	-0.1	0.3	1.6
Transportation and Utilities	2.5	2.9	3.1	3.2	3.2	3.3
% Change	-23.3	14.6	9.4	1.7	0.5	1.8
Finance, Insurance and Real Estate	2.3	2.4	2.5	2.5	2.5	2.6
% Change	-13.6	2.4	3.6	0.1	0.9	2.3
Services	26.3	29.5	32.2	33.2	33.4	33.7
% Change	-20.9	12.4	8.9	3.2	0.6	1.0
Health Care and Soc. Assistance	7.5	7.5	7.5	7.7	7.7	7.8
% Change	-5.5	0.3	0.1	2.1	0.8	1.0
Accommodation and Food	8.3	10.8	12.5	13.1	13.2	13.5
% Change	-35.8	30.7	15.5	5.2	0.6	1.7
Other	10.5	11.2	12.2	12.4	12.5	12.5
% Change	-15.2	6.6	8.4	1.8	0.4	0.3
Government	14.4	14.0	14.2	14.4	14.5	14.5
% Change	-4.2	-2.3	1.1	1.3	1.0	0.1
Federal Government	1.4	1.2	1.2	1.2	1.2	1.2
% Change	4.5	-9.8	0.1	0.3	0.5	0.1
State and Local Government	13.0	12.8	12.9	13.1	13.3	13.3
% Change	-5.1	-1.5	1.2	1.4	1.1	0.1

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

TABLE 10: PERSONAL INCOME BY DETAILED SECTOR
HAWAII COUNTY BASELINE FORECAST

	2020	2021	2022	2023	2024	2025
Real Personal Income (Mil 2021 $)	9,805.7	10,153.0	9,353.2	9,509.0	9,665.9	9,885.8
% Change	6.8	3.5	-7.9	1.7	1.7	2.3
Labor & Proprietors' Income	5,148.5	5,465.4	5,448.5	5,633.6	5,767.6	5,914.8
% Change	-6.0	6.2	-0.3	3.4	2.4	2.6
Construction	—	405.6	—	—	—	—
% Change	—	—	—	—	—	—
Manufacturing	—	94.6	—	—	—	—
% Change	—	—	—	—	—	—
Trade	—	—	—	—	—	—
% Change	—	—	—	—	—	—
Transportation and Utilities	—	—	—	—	—	—
% Change	—	—	—	—	—	—
Finance, Insurance & Real Estate	300.5	296.2	—	—	—	—
% Change	—	-1.4	—	—	—	—
Services	—	—	—	—	—	—
% Change	—	—	—	—	—	—
Health Care & Soc. Assist. (% ch.)	—	—	—	—	—	—
Accommodation & Food (% ch.)	—	—	—	—	—	—
Other (% ch.)	—	—	—	—	—	—
Government	1,395.2	1,353.1	1,280.2	1,304.0	1,342.4	1,363.0
% Change	3.0	-3.0	-5.4	1.9	2.9	1.5
Federal, civilian (% ch.)	3.5	-0.7	-4.8	-0.6	1.5	1.4
State & Local (% ch.)	3.0	-3.6	-5.3	2.2	3.2	1.6
Less Social Security Taxes (-)	615.6	666.3	678.9	709.8	725.9	743.7
% Change	-4.5	8.2	1.9	4.5	2.3	2.5
Transfer Payments	3,178.6	3,293.8	2,584.4	2,554.3	2,615.5	2,681.2
% Change	42.9	3.6	-21.5	-1.2	2.4	2.5
Dividends, Interest and Rent	2,062.7	2,031.0	1,971.3	1,913.8	1,921.1	1,960.4
% Change	-1.5	-1.5	-2.9	-2.9	0.4	2.0
Population (Thou)	200.7	202.9	203.9	204.4	204.9	205.5
% Change	0.4	1.1	0.5	0.2	0.3	0.3
Real Per Capita Income (Thou 2021 $)	48.8	50.0	45.9	46.5	47.2	48.1
% Change	6.3	2.4	-8.3	1.4	1.4	2.0
Inflation Rate, Honolulu MSA (%)	1.6	3.8	6.6	3.7	2.7	2.5
Nominal Personal Income (Mil $)	9,448.6	10,153.0	9,968.1	10,508.8	10,965.9	11,500.0
% Change	8.4	7.5	-1.8	5.4	4.4	4.9

Note: Source is UHERO. Figures for 2022 - 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	69.5	73.7	75.2	76.0	77.2
% Change	-23.9	13.5	6.0	2.0	1.0	1.6
Unemployment Rate (%)	18.4	7.4	4.5	4.2	3.9	2.9
Population (Thou)	164.7	164.3	164.2	164.5	164.8	165.1
% Change	-0.1	-0.3	-0.1	0.2	0.2	0.2
Personal Income (Mil $)	8,827.7	9,615.1	9,530.0	10,050.3	10,554.0	11,090.9
% Change	2.4	8.9	-0.9	5.5	5.0	5.1
Inflation Rate, Honolulu MSA (%)	1.6	3.8	6.6	3.7	2.7	2.5
Real Personal Income (Mil 2021 $)	9,161.3	9,615.1	8,942.1	9,094.1	9,302.8	9,534.2
% Change	0.8	5.0	-7.0	1.7	2.3	2.5
Real Per Capita Income (Thou 2021 $)	55.6	58.5	54.5	55.3	56.5	57.7
% Change	0.9	5.2	-6.9	1.5	2.1	2.3
TOURISM SECTOR DETAIL						
Total Visitor Arrivals by Air (Thou)	844.8	2,340.9	2,962.5	2,958.9	2,925.2	3,011.8
% Change - Total Visitor Arrivals by Air	-72.9	177.1	26.6	-0.1	-1.1	3.0
U.S. Visitors	726.0	2,239.4	2,583.7	2,495.4	2,418.0	2,468.9
% Change - U.S. Visitors	-70.8	208.4	15.4	-3.4	-3.1	2.1
Japanese Visitors	8.3	0.8	5.5	15.5	21.1	25.3
% Change - Japanese Visitors	-83.0	-90.6	614.7	178.8	36.3	20.1
Other Visitors	115.7	100.7	367.9	448.1	486.1	517.6
% Change - Other Visitors	-79.8	-12.9	265.2	21.8	8.5	6.5
Visitor Days (Thou)	7,754.3	20,442.3	24,368.2	23,379.4	23,099.5	23,899.1
% Change	-68.7	163.6	19.2	-4.1	-1.2	3.5
Occupancy Rate (%)	27.9	59.9	69.8	70.8	70.1	72.4

Note: Source is UHERO. Nonfarm Payrolls for 2021 are UHERO estimates of the benchmark revision. Figures for 2022 - 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	69.5	73.7	75.2	76.0	77.2
% Change	-23.9	13.5	6.0	2.0	1.0	1.6
Construction and Mining	4.4	4.3	4.3	4.3	4.4	4.4
% Change	-2.0	-2.7	1.1	0.5	1.1	0.7
Manufacturing	1.0	1.0	1.1	1.2	1.2	1.2
% Change	-20.1	6.5	10.7	3.0	0.7	0.1
Trade	9.7	10.2	10.2	10.2	10.3	10.5
% Change	-15.9	5.2	0.4	-0.4	0.7	2.2
Transportation and Utilities	2.9	3.7	4.0	4.1	4.1	4.2
% Change	-34.6	26.5	8.4	1.6	0.7	2.0
Finance, Insurance and Real Estate	2.4	2.7	2.8	2.8	2.8	2.9
% Change	-22.8	11.9	4.1	0.1	1.1	2.5
Services	32.1	38.9	42.4	43.8	44.2	45.0
% Change	-31.0	21.3	9.1	3.1	1.0	1.8
Health Care and Soc. Assistance	8.0	7.9	7.9	8.0	8.1	8.2
% Change	-3.7	-0.9	-0.6	1.8	1.1	1.5
Accommodation and Food	13.0	18.1	20.7	21.7	21.9	22.5
% Change	-44.4	38.7	14.6	4.7	1.1	2.4
Other	11.1	12.9	13.9	14.1	14.2	14.3
% Change	-25.2	16.7	7.4	1.4	0.9	0.9
Government	8.8	8.7	8.8	8.8	9.0	9.0
% Change	-4.4	-0.6	0.6	1.1	1.4	0.6
Federal Government	0.9	0.8	0.8	0.8	0.8	0.8
% Change	0.0	-5.7	-1.3	0.3	0.6	0.3
State and Local Government	7.9	7.9	7.9	8.0	8.1	8.2
% Change	-4.8	0.0	0.8	1.1	1.5	0.6

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

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

	2020	2021	2022	2023	2024	2025
Real Personal Income (Mil 2021 $)	9,161.3	9,615.1	8,942.1	9,094.1	9,302.8	9,534.2
% Change	0.8	5.0	-7.0	1.7	2.3	2.5
Labor & Proprietors' Income	5,388.5	6,064.3	6,072.1	6,276.3	6,447.1	6,662.3
% Change	-16.4	12.5	0.1	3.4	2.7	3.3
Construction	570.4	556.2	537.1	543.6	553.9	562.8
% Change	-1.6	-2.5	-3.4	1.2	1.9	1.6
Manufacturing	79.0	82.0	87.8	91.9	94.2	96.0
% Change	-3.0	3.9	7.0	4.6	2.5	1.9
Trade	567.7	616.6	570.3	577.6	598.2	632.2
% Change	-9.9	8.6	-7.5	1.3	3.6	5.7
Transportation and Utilities	264.8	296.6	304.4	314.1	322.2	335.2
% Change	-20.1	12.0	2.6	3.2	2.6	4.1
Finance, Insurance & Real Estate	449.8	486.5	480.6	483.8	490.3	500.4
% Change	5.9	8.2	-1.2	0.7	1.3	2.1
Services	2,559.5	3,155.3	3,258.6	3,414.8	3,514.9	3,645.0
% Change	-27.2	23.3	3.3	4.8	2.9	3.7
Health Care & Soc. Assist. (% ch.)	2.8	-0.6	-6.2	3.3	2.9	3.3
Accommodation & Food (% ch.)	-49.4	58.6	9.7	7.3	3.3	4.8
Other (% ch.)	-17.0	15.2	1.4	2.6	2.5	2.5
Government	878.1	845.0	795.7	808.4	834.9	851.5
% Change	2.6	-3.8	-5.8	1.6	3.3	2.0
Federal, civilian (% ch.)	0.7	0.3	-4.2	-0.6	1.7	1.6
State & Local (% ch.)	2.8	-4.6	-6.1	1.9	3.6	2.1
Less Social Security Taxes (-)	622.8	631.2	645.7	680.3	698.1	720.9
% Change	-15.0	1.4	2.3	5.4	2.6	3.3
Transfer Payments	2,545.7	2,353.4	1,662.6	1,650.4	1,691.5	1,733.4
% Change	73.9	-7.6	-29.4	-0.7	2.5	2.5
Dividends, Interest and Rent	1,818.4	1,799.8	1,753.2	1,697.8	1,703.8	1,741.6
% Change	-3.2	-1.0	-2.6	-3.2	0.4	2.2
Population (Thou)	164.7	164.3	164.2	164.5	164.8	165.1
% Change	-0.1	-0.3	-0.1	0.2	0.2	0.2
Real Per Capita Income (Thou 2021 $)	55.6	58.5	54.5	55.3	56.5	57.7
% Change	0.9	5.2	-6.9	1.5	2.1	2.3
Inflation Rate, Honolulu MSA (%)	1.6	3.8	6.6	3.7	2.7	2.5
Nominal Personal Income (Mil $)	8,827.7	9,615.1	9,530.0	10,050.3	10,554.0	11,090.9
% Change	2.4	8.9	-0.9	5.5	5.0	5.1

Note: Source is UHERO. Figures for 2022 - 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	30.4	31.2	31.6	32.2
% Change	-20.9	5.6	9.3	2.6	1.3	1.7
Unemployment Rate (%)	16.6	7.8	4.6	3.8	3.6	3.0
Population (Thou)	73.2	73.5	73.6	73.7	73.9	74.1
% Change	-0.3	0.3	0.2	0.2	0.2	0.2
Personal Income (Mil $)	3,924.2	4,121.0	4,097.2	4,316.2	4,504.1	4,732.6
% Change	5.5	5.0	-0.6	5.3	4.4	5.1
Inflation Rate, Honolulu MSA (%)	1.6	3.8	6.6	3.7	2.7	2.5
Real Personal Income (Mil 2021 $)	4,072.5	4,121.0	3,844.4	3,905.5	3,970.1	4,068.4
% Change	3.8	1.2	-6.7	1.6	1.7	2.5
Real Per Capita Income (Thou 2021 $)	55.6	56.1	52.2	53.0	53.7	54.9
% Change	4.1	0.8	-6.9	1.4	1.4	2.2
TOURISM SECTOR DETAIL						
Total Visitor Arrivals by Air (Thou)	339.0	813.6	1,341.8	1,341.3	1,315.8	1,344.0
% Change - Total Visitor Arrivals by Air	-75.4	140.0	64.9	0.0	-1.9	2.1
U.S. Visitors	295.4	785.1	1,210.4	1,180.1	1,131.1	1,139.8
% Change - U.S. Visitors	-74.2	165.8	54.2	-2.5	-4.1	0.8
Japanese Visitors	3.6	0.4	3.1	9.6	13.5	15.8
% Change - Japanese Visitors	-85.7	-90.0	769.6	204.3	41.2	17.2
Other Visitors	42.9	28.2	124.8	151.7	171.2	188.5
% Change - Other Visitors	-79.4	-34.2	342.3	21.6	12.8	10.1
Visitor Days (Thou)	2,859.6	7,005.8	10,502.0	9,941.7	9,770.0	10,065.7
% Change	-71.7	145.0	49.9	-5.3	-1.7	3.0
Occupancy Rate (%)	30.6	57.0	79.0	78.2	76.0	77.4

Note: Source is UHERO. Nonfarm Payrolls for 2021 are UHERO estimates of the benchmark revision. Figures for 2022 - 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	30.4	31.2	31.6	32.2
% Change	-20.9	5.6	9.3	2.6	1.3	1.7
Construction and Mining	2.0	2.0	2.1	2.1	2.1	2.1
% Change	-6.0	3.1	2.5	0.9	1.3	0.7
Manufacturing	0.4	0.5	0.6	0.6	0.6	0.6
% Change	-16.7	12.0	21.8	3.1	0.8	0.1
Trade	3.9	4.1	4.2	4.3	4.3	4.4
% Change	-14.8	5.1	3.6	0.2	0.9	2.2
Transportation and Utilities	1.1	1.4	1.6	1.6	1.6	1.6
% Change	-29.2	21.0	13.0	1.9	0.8	2.0
Finance, Insurance and Real Estate	1.0	1.0	1.1	1.1	1.1	1.1
% Change	-18.6	-3.2	12.0	0.3	1.2	2.5
Services	12.9	14.1	15.9	16.5	16.7	17.0
% Change	-29.2	8.9	12.8	4.0	1.4	1.9
Health Care and Soc. Assistance	2.8	2.8	2.9	2.9	3.0	3.0
% Change	-4.5	0.7	1.1	2.3	1.2	1.5
Accommodation and Food	5.2	6.3	7.5	8.0	8.1	8.3
% Change	-43.9	20.1	19.8	5.9	1.5	2.7
Other	4.9	4.9	5.4	5.6	5.6	5.7
% Change	-18.6	1.5	10.7	2.2	1.2	1.0
Government	5.1	4.9	5.1	5.2	5.2	5.3
% Change	-1.5	-2.6	3.3	1.6	1.6	0.7
Federal Government	0.6	0.6	0.6	0.6	0.6	0.6
% Change	7.4	0.3	4.0	0.5	0.7	0.3
State and Local Government	4.4	4.3	4.4	4.5	4.6	4.6
% Change	-2.6	-3.0	3.2	1.8	1.7	0.7

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

TABLE 16: PERSONAL INCOME BY DETAILED SECTOR
KAUAI COUNTY BASELINE FORECAST

	2020	2021	2022	2023	2024	2025
Real Personal Income (Mil 2021 $)	4,072.5	4,121.0	3,844.4	3,905.5	3,970.1	4,068.4
% Change	3.8	1.2	-6.7	1.6	1.7	2.5
Labor & Proprietors' Income	2,335.6	2,450.0	2,534.5	2,634.8	2,705.5	2,776.0
% Change	-12.4	4.9	3.4	4.0	2.7	2.6
Construction	—	267.6	—	—	—	—
% Change	—	—	—	—	—	—
Manufacturing	—	—	—	—	—	—
% Change	—	—	—	—	—	—
Trade	—	—	—	—	—	—
% Change	—	—	—	—	—	—
Transportation and Utilities	—	—	—	—	—	—
% Change	—	—	—	—	—	—
Finance, Insurance & Real Estate	174.4	178.2	—	—	—	—
% Change	—	2.2	—	—	—	—
Services	—	—	—	—	—	—
% Change	—	—	—	—	—	—
Health Care & Soc. Assist. (% ch.)	—	—	—	—	—	—
Accommodation & Food (% ch.)	—	—	—	—	—	—
Other (% ch.)	—	—	—	—	—	—
Government	521.2	507.1	492.3	501.9	518.3	528.4
% Change	4.7	-2.7	-2.9	2.0	3.3	2.0
Federal, civilian (% ch.)	5.5	3.6	-1.7	-0.5	1.8	1.7
State & Local (% ch.)	4.8	-4.3	-3.1	2.4	3.6	2.1
Less Social Security Taxes (-)	271.9	287.5	304.0	321.0	329.4	337.7
% Change	-11.4	5.7	5.8	5.6	2.6	2.5
Transfer Payments	1,208.6	1,170.8	845.4	836.0	857.3	879.2
% Change	62.1	-3.1	-27.8	-1.1	2.6	2.5
Dividends, Interest and Rent	807.9	796.2	774.6	750.0	752.0	766.6
% Change	-2.7	-1.4	-2.7	-3.2	0.3	1.9
Population (Thou)	73.2	73.5	73.6	73.7	73.9	74.1
% Change	-0.3	0.3	0.2	0.2	0.2	0.2
Real Per Capita Income (Thou 2021 $)	55.6	56.1	52.2	53.0	53.7	54.9
% Change	4.1	0.8	-6.9	1.4	1.4	2.2
Inflation Rate, Honolulu MSA (%)	1.6	3.8	6.6	3.7	2.7	2.5
Nominal Personal Income (Mil $)	3,924.2	4,121.0	4,097.2	4,316.2	4,504.1	4,732.6
% Change	5.5	5.0	-0.6	5.3	4.4	5.1

Note: Source is UHERO. Figures for 2022 - 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	158,370.6	158,006.1	158,557.6	160,960.2
% Change	-6.2	3.2	3.8	-0.2	0.3	1.5
Unemployment Rate (%)	8.1	5.4	3.7	4.8	5.3	4.3
Inflation Rate (%)	1.2	4.7	8.1	4.7	2.8	2.3
Real GDP (Bil chained 2012$)	18,509.1	19,609.8	19,995.2	19,990.4	20,331.8	20,933.8
% Change	-2.8	5.9	2.0	0.0	1.7	3.0
Population (Thou)	331,761.0	332,213.0	333,113.5	334,245.6	335,442.9	336,709.4
% Change	0.4	0.1	0.3	0.3	0.4	0.4
JAPAN FACTORS						
Employment (Thou)	66,765.8	66,665.8	67,240.9	67,265.8	66,952.6	66,582.6
% Change	-0.7	-0.2	0.9	0.0	-0.5	-0.6
Unemployment Rate (%)	2.8	2.8	2.6	2.6	2.5	2.4
Inflation Rate (%)	0.0	-0.3	2.4	2.8	1.7	1.1
Real GDP (Bil chained 2011 yen)	526,957.9	535,922.5	543,084.1	546,654.2	553,131.6	558,089.1
% Change	-4.7	1.7	1.3	0.7	1.2	0.9
Population (Thou)	126,261.0	125,681.6	125,053.3	124,393.2	123,728.7	123,058.2
% Change	-0.3	-0.5	-0.5	-0.5	-0.5	-0.5
Exchange Rate (Yen/$)	106.8	109.8	130.3	131.6	122.9	116.7

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

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