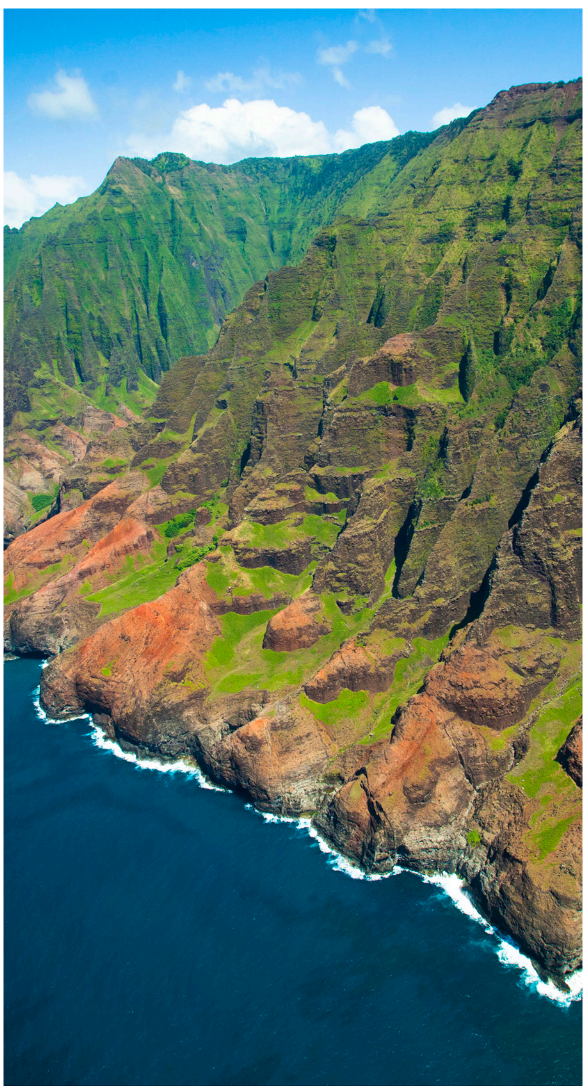
UHERO

THE ECONOMIC RESEARCH ORGANIZATION AT THE UNIVERSITY OF HAWAI'I

UHERO FORECAST FOR THE STATE OF HAWAII

RECOVERY RESUMES, BUT OMICRON LOOMS

DECEMBER 17, 2021



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Executive Summary

Economic recovery resumed with the end of Hawaii's late-summer COVID-19 Delta wave. But now Omicron appears as a new and uncertain threat. Already, renewed international travel restrictions have reduced the near-term visitor outlook. Once the situation eases, the return of international tourists will permit a broader industry recovery in 2022. We expect ongoing moderate job gains heading into the New Year, but several factors will weigh on progress, including continuing labor shortages, the end of pandemic fiscal and monetary support, and higher inflation.

- The US and global economies saw a modest summer slowdown during the Delta wave. Labor market gains have been slow to arrive, and now consumer price inflation has surged. This is due both to supply chain bottlenecks and increased demand from pandemic support policies, accumulated savings, and robust spending. In response, the US Federal Reserve has signaled a more rapid phase-out of supportive policies.

- Hawaii's own COVID-19 crisis finally came this summer, but high vaccination rates and rapid protective measures made it relatively short-lived. Cases are forecast to remain steady at or just above pre-Delta levels, but the rapid global spread of the Omicron variant poses risks. New travel restrictions have pushed back our forecast for the return of international visitors. Even after they begin to rejoin the strong US market in 2022, a full recovery of the visitor industry will remain several years down the road.

- Broader economic recovery has resumed. Employment gains over the past two years have brought unemployment down sharply. But many workers who left the labor force during the pandemic have yet to return. This has led to a tight labor market and upward pressure on wages. Unit labor costs increased by 5% year-over-year nationally, but inflation surged above 5% in both Hawaii and the US, reducing purchasing power. The payroll job count will expand at a moderate pace over the next two years, but that will still leave the job base in 2023 about 5% lower than its 2019 level.

- Federal support during the pandemic was vital to sustaining incomes; the ending of these programs will now weigh on recovery. The recently-passed Infrastructure Investment and Jobs Act and the Build Back Better Act still under consideration by the Senate have the potential to support families, labor force participation, and long-term economic growth.

- Home prices have surged this year, mirroring a national trend. Together with high rents and higher consumer price inflation, this is posing challenges for families. Construction activity continues at a healthy pace. The industry will benefit from new and pending federal infrastructure spending.

- An unusual degree of uncertainty continues to exist, centered both on pending government policy and the emergence of the Omicron variant. Our baseline scenario sees current overseas travel restrictions lasting through January, followed by cautious liberalization that permits a gradual return of international visitors. Our pessimistic scenario assumes a longer period of Omicron-related international travel restrictions and further waves thereafter. Our optimistic scenario sees an end to travel restrictions early in the New Year, leading to a strong winter tourism season. Greater labor force gains arise from adoption of the Build Back Better Act.

- At this point, more is unknown than known about Omicron. We do not yet know whether it is more or less virulent than earlier variants, or whether it can evade the protection of existing vaccines. The good news for Hawaii is our very high vaccination rate, which will surely provide some protection. And new treatments will reduce the severity of health impacts. Our underlying economic fundamentals are strong. But it is increasingly clear that COVID-19 will not just go away, and that efforts to adapt to ongoing risks will be key to a sustained recovery.

Forecast Summary

MAJOR ECONOMIC INDICATORS
BASELINE FORECAST

	2019	2020	2021	2022	2023	2024
STATE OF HAWAII						
Nonfarm Payrolls (Thou)	658.6	560.9	574.0	600.2	627.1	639.4
% Change	0.1	-14.8	2.3	4.6	4.5	2.0
Unemployment Rate (%)	2.5	11.8	7.7	5.4	3.4	2.8
Real Personal Income (Mil 2020$)	79,748.2	82,526.4	83,184.6	78,453.9	80,372.4	81,995.1
% Change	1.4	3.5	0.8	-5.7	2.4	2.0
Real GDP (Mil 2020$)	93,221.5	82,884.4	87,664.1	90,059.2	93,326.9	95,542.0
% Change	0.0	-11.1	5.8	2.7	3.6	2.4
Total Visitor Arrivals by Air (Thou)	10,385.8	2,708.3	6,749.2	8,286.5	9,321.2	9,570.6
% Change	5.0	-73.9	149.2	22.8	12.5	2.7
Visitor Days (Thou)	89,690.4	28,515.8	64,833.2	77,476.8	85,127.4	86,279.8
% Change	2.2	-68.2	127.4	19.5	9.9	1.4
Real Visitor Expenditures (Mil 2020$)	17,994.2	4,840.8	12,561.8	16,460.4	17,892.1	17,535.7
% Change	-0.4	-73.1	159.5	31.0	8.7	-2.0
HONOLULU COUNTY						
Nonfarm Payrolls (Thou)	473.8	412.5	418.4	437.1	456.3	464.1
% Change	0.1	-12.9	1.4	4.5	4.4	1.7
Unemployment Rate (%)	2.3	10.3	7.1	5.1	3.1	2.6
Inflation Rate, Honolulu MSA (%)	1.6	1.6	3.9	3.8	3.1	2.8
Real Personal Income (Mil 2020$)	58,663.5	60,521.9	60,810.0	57,708.9	59,195.4	60,353.1
% Change	0.8	3.2	0.5	-5.1	2.6	2.0
Total Visitor Arrivals by Air (Thou)	6,153.9	1,506.2	3,304.8	4,468.5	5,321.5	5,514.4
% Change	5.0	-75.5	119.4	35.2	19.1	3.6
HAWAII COUNTY						
Nonfarm Payrolls (Thou)	70.9	61.0	63.1	64.9	67.1	68.4
% Change	-0.2	-13.9	3.5	2.8	3.4	1.8
Unemployment Rate (%)	3.1	11.5	7.6	6.3	4.4	3.6
Real Personal Income (Mil 2020$)	8,737.5	9,410.8	9,619.3	8,953.7	9,126.0	9,311.3
% Change	2.3	7.7	2.2	-6.9	1.9	2.0
Total Visitor Arrivals by Air (Thou)	1,763.9	477.8	1,180.2	1,473.5	1,639.7	1,696.3
% Change	3.4	-72.9	147.0	24.9	11.3	3.5
MAUI COUNTY						
Nonfarm Payrolls (Thou)	80.7	62.0	66.8	70.7	74.1	76.2
% Change	0.2	-23.2	7.7	5.9	4.8	2.8
Unemployment Rate (%)	2.4	18.1	10.1	5.2	3.4	3.2
Real Personal Income (Mil 2020$)	8,611.5	8,708.3	8,767.0	8,118.1	8,302.9	8,513.9
% Change	4.0	1.1	0.7	-7.4	2.3	2.5
Total Visitor Arrivals by Air (Thou)	3,111.1	846.8	2,352.3	2,927.0	3,103.4	3,156.0
% Change	5.0	-72.8	177.8	24.4	6.0	1.7
KAUAI COUNTY						
Nonfarm Payrolls (Thou)	33.3	26.1	25.7	27.7	29.6	30.8
% Change	1.6	-21.6	-1.6	7.6	7.1	4.1
Unemployment Rate (%)	2.4	16.3	11.0	7.4	4.0	3.1
Real Personal Income (Mil 2020$)	3,737.1	3,886.4	3,988.4	3,673.2	3,748.2	3,816.7
% Change	3.3	4.0	2.6	-7.9	2.0	1.8
Total Visitor Arrivals by Air (Thou)	1,370.0	345.1	818.8	1,246.8	1,319.6	1,338.1
% Change	-1.3	-74.8	137.2	52.3	5.8	1.4

Note: Source is UHERO. Nonfarm Payrolls for 2020 and 2021 are UHERO estimates of the benchmark revision. Figures for 2021-2024 are forecasts.

Fourth Quarter Hawaii Forecast

The Delta wave slowed recovery progress in Hawaii. Visitor numbers dropped and employment gains stalled in late summer as COVID-19 numbers surged to record levels in the Islands. As the local virus situation has dramatically improved, so have economic conditions. We expect moderate employment growth to resume in coming months and tourism to pick up once international visitors are able to return in significant numbers in 2022. While pandemic-related federal support is now largely over, the new infrastructure act will offset some losses. The pending Build Back Better Act, if approved, would provide more wide-reaching benefits.

Familiar impediments to Hawaii's recovery remain, and now a new risk looms. Labor is still hard to come by, and global supply bottlenecks are hampering business expansion, while raising consumer prices. These will only gradually ease. And just as Delta recedes, the Omicron variant is a rapidly emerging threat. Foreign travel restrictions already imposed in response to the new COVID-19 strain will delay the return of international visitors to some extent, and the full impacts in Hawaii remain uncertain.

Global outlook improved but vulnerable

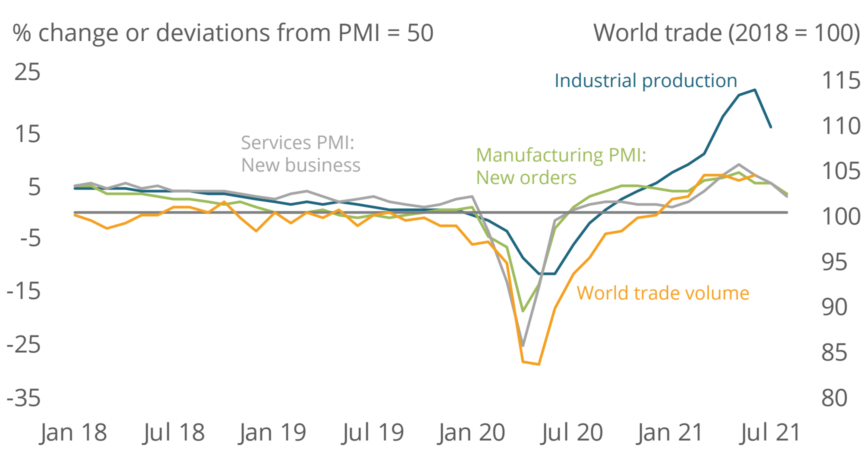
The US and global recovery from the COVID-19 pandemic is at an important stage. Despite significant progress since the full-shutdown days of early 2020, employment recovery has taken longer, and supply bottlenecks continue to bedevil many firms. A restive public with built-up savings is spending at a rapid clip, but their buoyant demand now presses up against shortages, driving wage and price inflation. Federal policies are in transition away from generous pandemic support. And, while the extent of vaccination is rising in many first-world countries, Europe's current COVID-19 surge and the rapid emergence of the Omicron variant are troubling. Progress toward controlling COVID-19 lags badly in the developing world.

A modest summer slowdown

The summer surge in COVID-19 cases caused a notable, if not particularly large, reduction in economic activity in the US and abroad. Industrial production, manufacturing orders, and international trade fell in July and August. These changes were not dramatic in the US. Consumers pulled back

GLOBAL ACTIVITY INDICATORS

Economic activity hit a speed bump this summer.



only slightly from the time spent outside the home and continued to spend at a healthy clip. Output growth receded from about 6.5% in the first half of the year to a 2% annual pace in the third quarter.

The pullback in economic growth has had as much to do with supply constraints as any softening of demand. The bottlenecks are now well-known. The shipping backlog and semiconductor chip shortage continue to constrain manufacturers and consumers. Industry specialists now expect shortages of some parts and components to last well into the New Year. Prices of many key commodities have risen sharply over the past year. Surging oil prices have been a particular concern, doubling since the middle of last year to more than $80 per barrel in October before dropping back in recent weeks as Omicron concerns came to the fore.

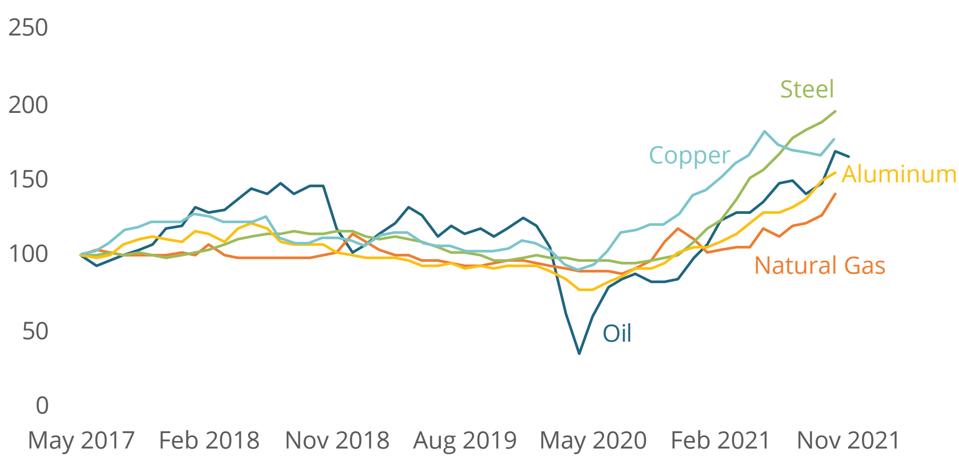
Labor is also in short supply. In the US, the share of working-age people who are employed or looking for work remains well down from its pre-pandemic level, so that while unemployment has fallen impressively, the actual number of employed workers remains more than 2% below its level in February 2020. This partly reflects early retirements that may or may not reverse as the economy strengthens. It also reflects child care shortages, career changes, and lingering concerns about COVID-19 risk. For example, there is a shortage of working long-haul truckers, who face low pay and a challenging lifestyle on the road, and COVID concerns weigh on food service staffing. As a result, the number of job openings is now at a record high, exceeding the number of hires by about 4 million per month. Job "quits" are also at an all-time high as people take advantage of the tight labor market to look for better employment opportunities and higher pay. Wages are now spiking, although on average they trail recent inflation numbers.

The *shortage economy* has pushed up prices

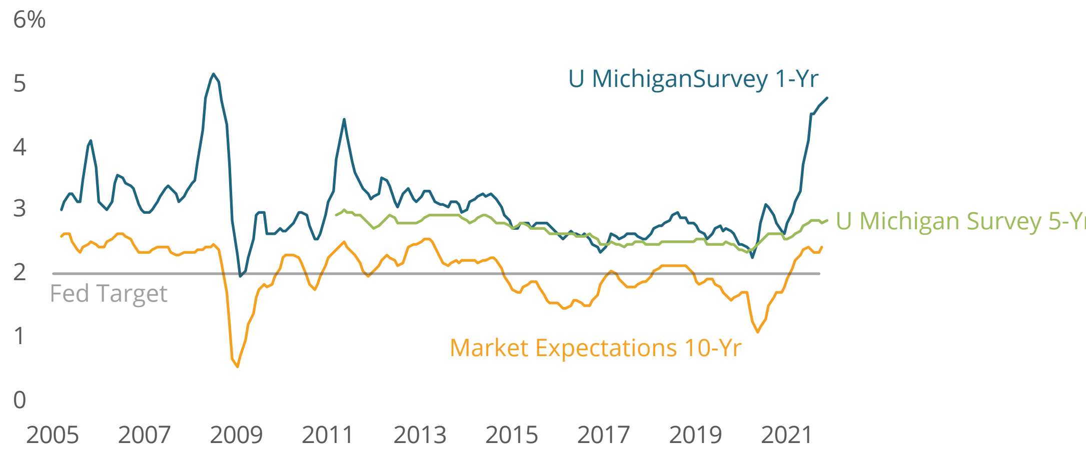
Labor and component shortages have combined with strong demand to push up wages and prices. US consumer price inflation rose to 6.8% in November, the most rapid rate of average price increase since 1982. Price pressures have spread from a few industries earlier in the year, such as new and used vehicles, to a broad array of goods and services. This suggests that souped-up demand from earlier pandemic support programs and delayed spending may be driving inflation as much as supply-side factors. Whether the inflation surge persists will depend on peoples' expectations about

COMMODITY PRICES (INDEX, MAY 2017 = 100)

Surging commodity prices reflect supply-demand imbalance.



EXPECTED INFLATION
Long-term inflation expectations have edged up only modestly.



future inflation. This is because anticipated inflation tends to get built into wage agreements and other contracted prices. At present, the evidence on expectations is mixed: near-term inflation expectations have indeed risen significantly, but expectations of longer-term inflation have edged up only modestly.

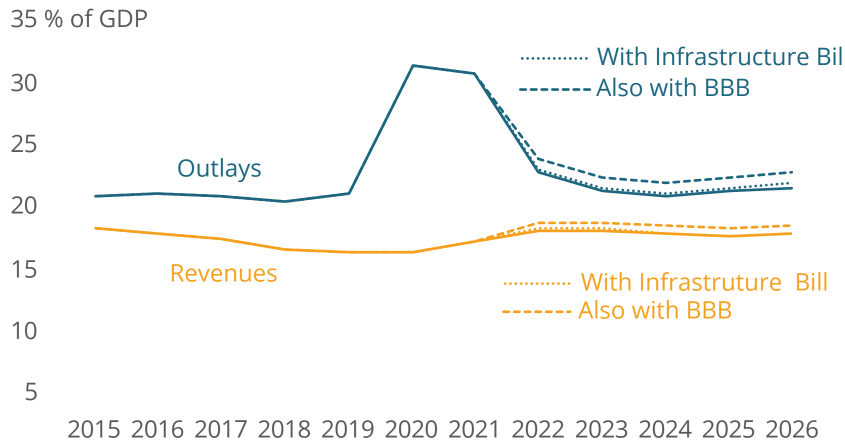
Surging inflation is causing central banks to reconsider their policy stance. The US Federal Reserve began to taper bond purchases in November, and financial markets reflect expectations that interest rate hikes will begin in 2022. How rapidly expansionary monetary policy is unwound will depend importantly on how persistent cost and price inflation prove to be. In recent comments, Fed Chairman Jerome Powell has indicated that the balance between the targets of maintaining growth and controlling inflation is now shifting toward the latter concern, and that the Federal Open Market Committee may need to accelerate its pace of tapering in coming months.

Fiscal policy—changes in taxes and spending—has been important throughout the pandemic in supporting household and business finances and the general economy. Much of that support has now been phased out in the US and many other countries. At their peak, outlays in the US were raised by about $2 trillion dollars in both 2020 and 2021, more than 10% of GDP. Now that most programs have ended, outlays are falling rapidly, reducing a huge source of income and spending stimulus. The recently approved Infrastructure Investment and Jobs Act will have only a small effect on overall federal spending. The Build Back Better bill, if adopted, would have a somewhat greater impact, although total federal spending would remain well below pandemic levels. The longer-term benefits for families, future productivity, and labor force participation will be much more important than the increment to near term GDP.

An array of factors influence the overall outlook for the US in coming years, some positive for growth and others negative. Consumer confidence has languished, but the labor market continues to improve and households are sitting on a large pool of accumulated savings. So there is a strong impetus for consumer spending. At the same time, supply constraints will only ebb slowly, maintaining upward pressure on prices. Inflation will eat into spending power in the near term, although we expect that price pressures will recede over the next couple of years. Fiscal policy will be a marked negative for the overall economy in the near term, becoming more neutral thereafter. In sum, we expect that US GDP will expand by 4.3% in 2022, compared with 5.6% this year. Growth will taper toward a long-run trend of about 1.8% annual growth by 2024.

US FEDERAL OUTLAYS AND REVENUES

Federal spending will remain well below pandemic levels.



Uneven global recovery will continue

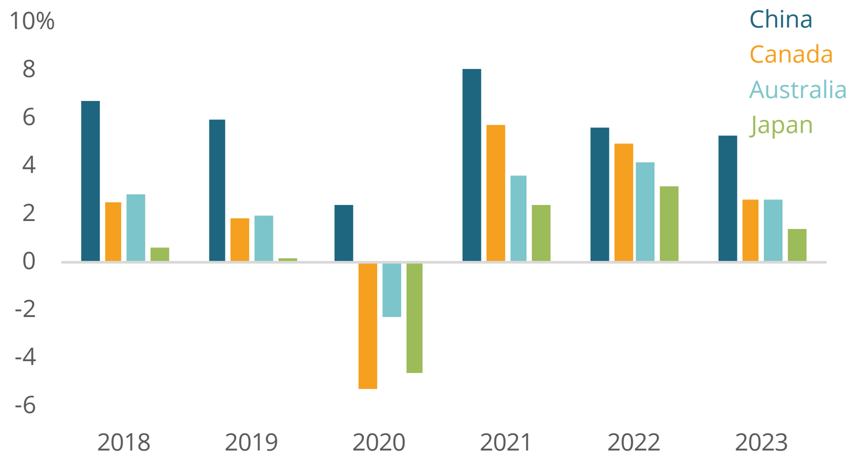
Around the globe, countries that fare worse in controlling COVID-19 surges are likely to underperform. Heavy reliance on supply chain inputs will also be a hindrance through the first half of next year. Germany is a prime example of both: its all-important auto sector was hit hard by the parts shortage; now COVID-19 infections have surged to record levels, depressing the near-term outlook. China's "Zero COVID" policy means that even a minor outbreak could shut down key businesses or ports, with spillovers abroad. This will impose growth costs on an economy that is reeling from a debt crisis in the sprawling property sector. Reductions in fiscal support will weigh heavily on growth in some countries, even as the overall global economy benefits from a gradual easing of this year's supply constraints.

Conditions are generally better in the economies that are most important to Hawaii. Growth has resumed in Canada after a second quarter output decline tied to weak exports. A late-summer surge in COVID-19 cases has eased, although cases remain relatively high. Canada's relatively high vaccination rate will help facilitate further recovery, although there will be a drag from government support programs ending. Fewer port closures and the recovery of semiconductor supplies will support Japanese manufacturing. Extremely low inflation in Japan will permit accommodative monetary policy longer than in many other countries. Korea has made significant progress in vaccination. The country is also benefiting from the surge in semiconductor demand and general recovery of world exports. Australia saw its highest COVID-19 case counts this past Australian winter, resulting in lockdowns and a sharp contraction in output. But this also led to an end of Australia's COVID-zero policy in New South Wales and Victoria, and the economy has reopened with improved prospects for 2022. With Omicron, some restrictions have been reimposed. In all of these countries, further travel liberalization or renewed shutdowns will have a crucial impact on Hawaii, a topic we return to below.

Whither global COVID?

Prospects for the global COVID-19 pandemic remain uncertain. The surge in cases in Europe is a burden in the West and an unfolding catastrophe in the East. High rates of vaccine hesitancy can explain much of the tragedy in Eastern Europe, but there are also unexpected surges in some of the most vaccinated countries, such as the Netherlands and Ireland. The resulting partial or total shutdowns being implemented will exact a human and economic cost on the continent. The infection surges themselves serve as a cautionary tale. Only very high rates of vaccination seem able to prevent

REAL GDP GROWTH
National rate of economic growth will vary considerably.



new variants from rapidly working their way through groups of unvaccinated people. And now the Omicron variant is here. The low rate of vaccination in many US states makes us particularly vulnerable to the new COVID-19 strain, even before the Delta wave is under control.

Despite the recent surge in Europe and the so-far milder upswing in the US, there are reasons to be optimistic. There are now enough doses of vaccines to fully immunize populations in wealthy countries. And despite deep pockets of vaccine reluctance in the US and abroad, data on excess deaths—the number of deaths during the pandemic period compared with typical years—suggest that there is a far greater number of people who have already been infected than have been counted in the official counts. Based on such data, the *Economist* magazine estimates that COVID-19 has already infected 1.5 to 3.6 billion people globally, providing some level of acquired immunity. Reinfections are possible, but vaccination progress and very promising new treatments mean that death rates are far lower than in past waves. The story is very different in the developing world, where vaccination rates remain very low or in some countries non-existent. Getting access to vaccines will be crucial to saving lives and to permit a return to something like normal for world trade and commerce.

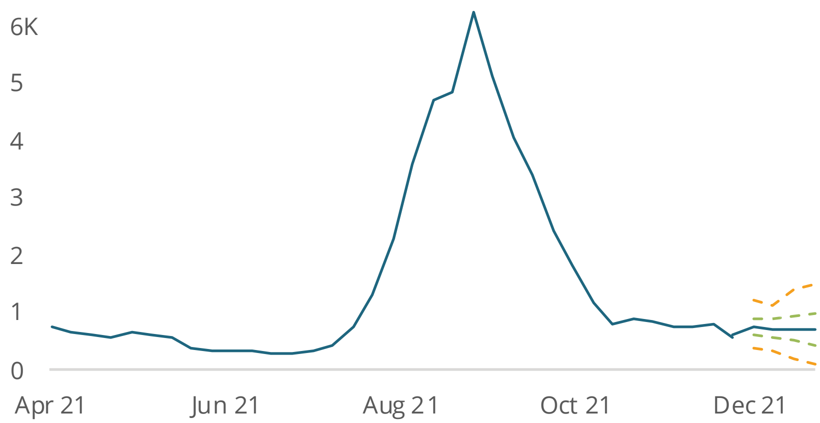
Hawaii's COVID tide turned in September

At its peak, the Delta outbreak tested Hawaii's healthcare system and threatened the economic recovery. But a high vaccination rate—nearly 70% at the time—and reduced activity eased the number of infections and the strain on hospitals relatively quickly. Both the hospital beds in use and the 7-day average of new hospitalizations have fallen dramatically from their peaks in late August and early September. The seven-day average number of new cases is now just a bit above pre-Delta levels on Oahu and the Big Island, while remaining somewhat elevated on Maui and Kauai.

By early December, 88% of Hawaii's residents aged 12 and over had received at least one vaccine shot. The approval of Pfizer's vaccine for 5-11 year olds is supporting further gains in vaccination rates in Hawaii. While the near-term outlook is for case counts to remain low, the emergence of the Omicron variant introduces new uncertainty. Nonetheless, the high vaccination rate may help avert significant hospitalizations if the Omicron variant leads to a rise in cases in the Islands.

HAWAII WEEKLY COVID-19 CASES AND CDC ENSEMBLE FORECAST WITH 50% AND 95% PREDICTION INTERVALS

COVID-19 cases expected to remain stable.



The State and Honolulu and Maui Counties have now removed many of the restrictions that have been in place since early in the pandemic. Governor Ige invited visitors to resume non-essential travel to Hawaii beginning November 1. Since November 8, capacity limits no longer apply to bars, restaurants, and gyms if counties require proof of vaccination or a recent negative coronavirus test. As of December 1, statewide social distancing requirements no longer apply, allowing venues to return to full capacity. The statewide indoor mask mandate and Safe Travels program for domestic arrivals remain in place, along with varying county restrictions such as proof of vaccination or a negative COVID-19 test result for entry to establishments.

At the time of writing, the Omicron variant has just appeared in Hawaii. It has already sparked policy reactions in the US and abroad. After liberalizing travel restrictions on visitors from most countries in early November, the United States has now banned arrivals from southern African countries in response to the emergence of Omicron in that region. The US will also now require from all visitors a negative COVID-19 test taken within 24 hours of departure. More significantly, perhaps, returning travel restrictions have been tightened in some major tourism markets, which we will return to below.

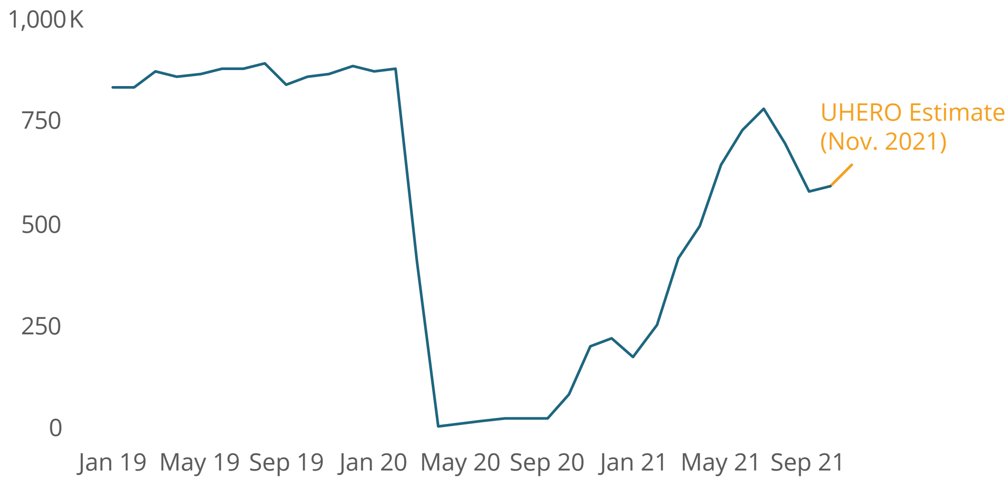
Riding the tourism roller coaster

The beginning of summer this year saw a strong rebound in Hawaii tourism, fueled by robust US income growth, pent-up demand, and easing travel restrictions. However, the tourism upswing stalled by mid-August in response to the Delta wave of COVID-19 cases. Relative to the July peak, seasonally adjusted visitor arrivals fell by a tenth in August and by a quarter in September. While the Delta outbreak posed significant risks to the economic recovery, by early October infections and hospitalizations came off their peaks and the tourism industry stabilized. In October, total visitor arrivals lagged 31% behind the October 2019 level, but with a slightly longer length of stay, total visitor days approached 80% of their pre-pandemic level. The number of deplaning visitors picked up further in November.

The tourism industry recovery has been almost exclusively a US visitor story so far, with international travel restrictions only beginning to liberalize in recent months. Unfortunately, the Omicron variant's emergence will delay near-term progress in international market recovery. Some recent improvements in international mobility have already been reversed. Japan now requires all residents to quarantine for two weeks upon their return from abroad; foreign visitors are not allowed into the country. South Korea

SEASONALLY ADJUSTED VISITOR ARRIVALS

Visitor arrivals dropped during the Delta surge.



recently imposed a mandatory ten-day quarantine upon arrival for all travelers. For now, fully vaccinated travelers to Canada are not required to quarantine unless they visited a country with an outbreak of the Omicron variant in southern Africa. While high vaccination rates in Japan, Korea, and Canada could limit the extent of an Omicron-fueled virus surge, it is unclear how long the new variant may delay travel liberalization in these major markets. Progress in this regard will play a prominent role in the different forecast scenarios we will discuss below.

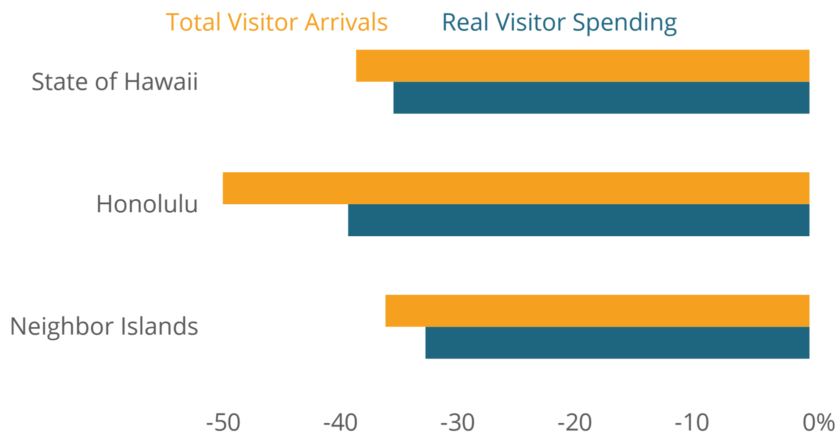
Hawaii has replaced its own Safe Travels mandate for international visitors with the new federal requirement for a negative COVID-19 test and vaccination. Safe Travels requirements remain in place for domestic arrivals, including international travelers arriving via domestic routes. Continuing regulation of inbound visitors may have some dampening effect on tourists' decision to travel to Hawaii, although the mainland market recovery we have seen suggests that these discouraging effects are limited.

Price hikes in tourism push up visitor spending

The recovery of real visitor spending has slightly outpaced total visitor arrivals. Spending turned down again with the late-summer virus surge. From a peak in July, visitor spending in inflation-adjusted terms dropped by about 15% in September and remains more than a fifth lower than its pre-pandemic level. While all four counties experienced a decline in real visitor spending during the Delta outbreak, Honolulu lagged the other counties. This weakness is largely due to Oahu's special appeal to higher-spending international visitors who have been absent since the pandemic began. At the same time, spending by US visitors, who had limited opportunities to travel elsewhere, bolstered spending on the Neighbor Islands. While the lack of international visitors weighs heavily on the industry, and particularly Waikiki, the real per-person daily spending by US travelers has increased substantially from its historical average since the launch of Safe-Travels more than a year ago.

The prices faced by visitors are also on the rise. Oil and jet fuel prices have increased sharply this year, pushing up costs for the airline industry, which, if sustained, would eventually be passed on to consumers in the form of higher airline ticket prices. The recent pullback in oil prices is therefore very encouraging. In addition, lagging passenger counts currently provide incentives for carriers to promote travel with low fares.

REAL VISITOR SPENDING AND ARRIVALS THROUGH SEPTEMBER COMPARED WITH THE SAME PERIOD IN 2019. Price hikes in tourism have pushed up visitor spending.



In 2020 rental car companies dramatically reduced their fleet sizes to reduce pandemic-related losses. The surge in tourism demand this year then led to skyrocketing rental car prices in the spring and summer. Nationally, car rental rates more than doubled, and in Hawaii they quadrupled during the first half of this year. While car rental rates in Hawaii have fallen sharply from those summer highs, they remain above their January 2021 levels. Recently, lawmakers in Maui county proposed capping the number of rental cars to address long standing concerns of "over-tourism." The resulting higher rental car prices would both discourage visitors from coming to Hawaii and encourage alternative modes of transportation during their stays.

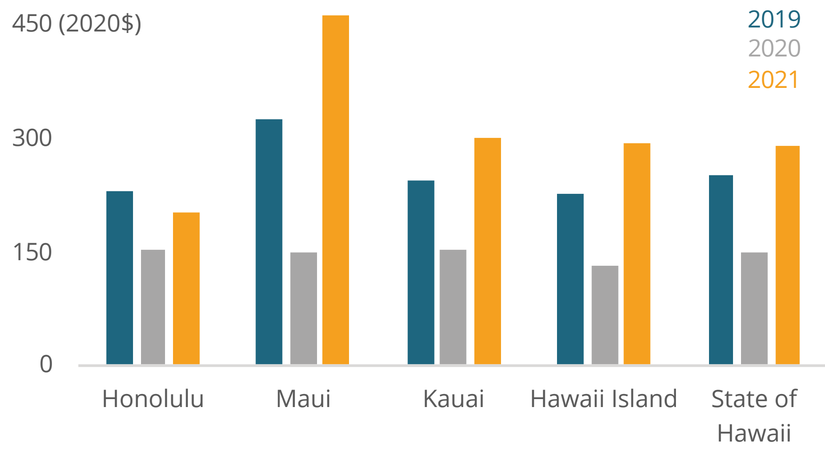
Growing travel demand combined with supply constraints in accommodations have permitted both hoteliers and hosts of transient vacation rentals and bed and breakfast units (the two categories summarized as TVR hereafter) to make substantial hikes in room rates. In the third quarter, inflation-adjusted hotel room rates rose about 15% above pre-pandemic levels statewide and jumped a dramatic 40% in Maui County. In the third quarter, inflation adjusted revenue per available room (RevPAR) came in just 6% below the pre-pandemic level. Occupancy rates for hotels and TVRs averaged 70% and 72%, respectively.

TVRs face continued opposition from residential neighbors. This has resulted in regulatory pushback that has limited the recovery of supply of these accommodations. In October, the number of TVRs advertised statewide was 34% below its 2019 level. The most recent effort to limit vacation rentals is Bill 41, currently under review by the Honolulu City Council. With a few exceptions for special cases, the proposed legislation would prohibit owners of homes on Oahu from renting their property for fewer than 180 days, and it limits TVR properties to designated resort zones. In addition, owners of permitted TVRs would face application fees of $5,000, plus $2,500 in annual renewal fees. Regardless of the outcome of this effort, the general move to tighten regulations and enforcement will constrain the supply of accommodations, particularly on Oahu, in coming years and put upward pressure on room rates. The increased costs of accommodation will help to constrain overall visitor numbers and likely tilt the mix of travelers toward higher-income visitors who are less price sensitive. On the other hand, greater profitability of hotels will lead to efforts to increase hotel and timeshare capacity over the long run.

The visitor industry will continue to recover as economic conditions improve and fears of the pandemic subside. Visitor arrivals and spending will

REAL HOTEL ROOM RATES

Hotel prices are back above 2019 levels, except on Oahu.



strengthen in 2022 and subsequent years, even as restrictions on the supply of TVRs constrain visitor capacity in the medium-term. Surging prices of transportation, accommodation, and other local services will support gains in nominal visitor spending but inflation will offset some of the growth in revenues and profits.

Job recovery resumes

The spread of the Delta variant halted Hawaii's economic recovery in late summer and early fall. After regaining 78 thousand jobs by July of this year, the payroll count fell back 1% in the August-September period. The falloff was very mild compared with past COVID-19 surges, and now that new COVID cases and hospitalizations in Hawaii have receded to low levels, the labor market has stabilized. Payrolls edged up slightly in October. (References to payroll jobs are to UHERO's estimates of future government benchmark revisions and may differ from currently published government statistics.)

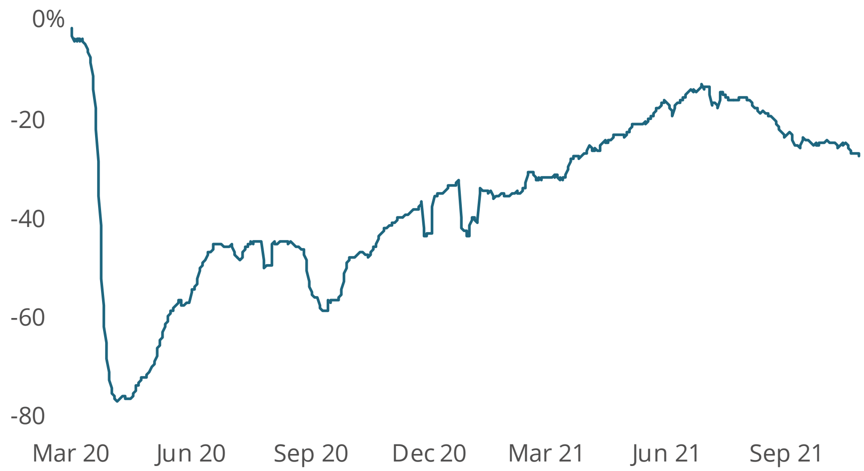
Total nonfarm payrolls increased by one percent per month on average during the first half of 2021, a recovery pace that exceeded the national average. At the same time, Hawaii has regained only half of the jobs lost during the pandemic, compared with about 75% recovery nationwide. Because of Hawaii's heavy reliance on tourism, the accommodations and food service industry has contributed most to the fluctuations in Hawaii's job counts both during the 2020 contraction and the ongoing recovery. This year, job growth in the accommodations and food service industry exceeded total nonfarm job growth by more than twenty percentage points.

Compared with the decline in payroll employment, work hours took a much larger hit during the Delta wave. Data from Homebase.com showed that by early summer work hours across all industries had risen to within 20% of January 2020 levels, but they declined nearly ten percentage points as infections surged. Local 5, one of Hawaii's largest unions, reported that approximately 30% of its employees in the hotel industry saw reductions in work hours. A cut to below 80 hours per month is especially problematic, since workers lose access to employer-sponsored health care. Work hours outside the hotel industry saw smaller losses during this period.

Since its April 2020 peak, the headline unemployment rate has trended lower as the economy improved, and it now sits at 6.3%. The lower unemployment rate reflects in part increased employment, but also a decline in the labor force. After initial gains as the economy began reopening in late 2020, the

HOURS WORKED (PERCENT CHANGE RELATIVE TO JANUARY 2020, 7-DAY MOVING AVERAGE)

Work hours of Hawaii employees fell back during the Delta Surge.



labor force has declined, leaving the workforce nearly twenty-five thousand workers short of 2019 levels. Hawaii's U6 unemployment rate, which includes the underemployed, and discouraged workers, is currently 15%, compared with 7% before the pandemic.

Many workers still sitting it out

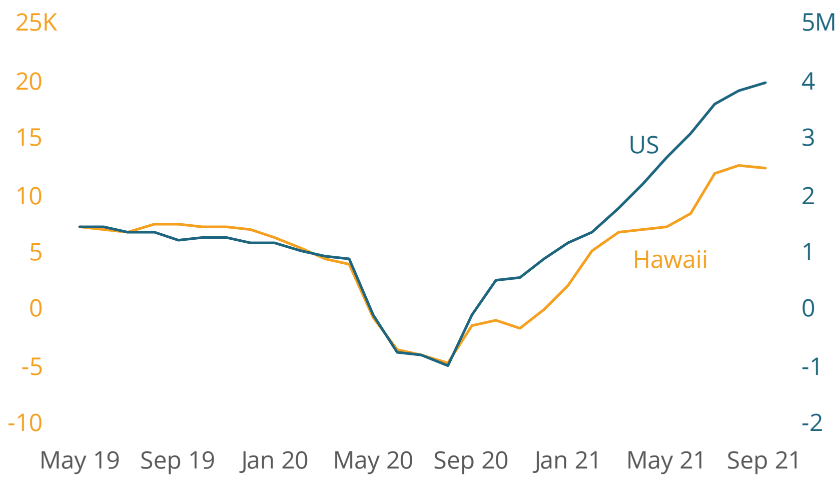
The declining labor force has contributed to a shortage of workers. Between May and August in 2019, Hawaii saw on average about 7.5 thousand more monthly job openings than hires. In 2021, this gap increased by nearly 70% to 12.5 thousand jobs.

However, Hawaii's aggregate labor shortage is not nearly as acute as it is nationally. At the national level, the gap between job openings and hires has roughly tripled over the same time period. This difference largely reflects the continuing struggle of visitor-related industries because of the start-stop nature of the tourism recovery. As a result, Hawaii's higher overall unemployment rate remains considerably higher than that of the US overall.

The failure of Hawaii's labor force to recover to 2019 levels reflects many of the same factors at play in the US as a whole. The past two years have seen a surge in retirements nationally, accounting for roughly half of the reduction in the US labor force. The older among these may have left because of their especially high COVID-19 risk. Rising home values and 401(k) balances have made earlier retirements feasible for some people. School and day care closures temporarily forced some women out of the labor market. There has also been an increase in people, especially women, reporting that they are simply "burned out" by work and other responsibilities. Overall, the number of people in the US quitting their jobs is at an all-time high. Among those still in the labor force, the excess demand for labor has provided incentives to quit one job and move to another. These "job switchers" have garnered much larger wage increases than those who have remained in their existing job.

There are also factors unique to Hawaii. The state's population was already declining before the pandemic began. A number of issues appear to be at play. More than half of respondents to a 2019 Pacific Resource Partnership survey reported that they or another household member had seriously considered leaving the state, citing as primary causes Hawaii's high cost of living, better job opportunities elsewhere, and housing that is too expensive.

GAP BETWEEN JOB OPENINGS AND HIRES
Hawaii's labor shortage is not nearly as acute as it is nationally.



These concerns may have intensified during the pandemic as job losses deepened. Last year, the state saw a three-tenths of a percent decline in its resident population, the highest percentage decrease since 1999.

Tight labor markets have pushed up wages. At the national level, unit labor costs (the ratio of hourly compensation to labor productivity) increased by nearly 5% year-over-year in the third quarter. Rising labor costs are a burden for businesses and could feed into higher prices for goods and services. But while these increases are substantial, they have not quite kept pace with inflation, which surged above 5% for both the US and Hawaii in the third quarter of 2021. The primary drivers of local inflation this year have been costs of shelter and transportation (principally gasoline). As for the US overall, current high inflation is likely to fall back to some extent as supply-side constraints ease.

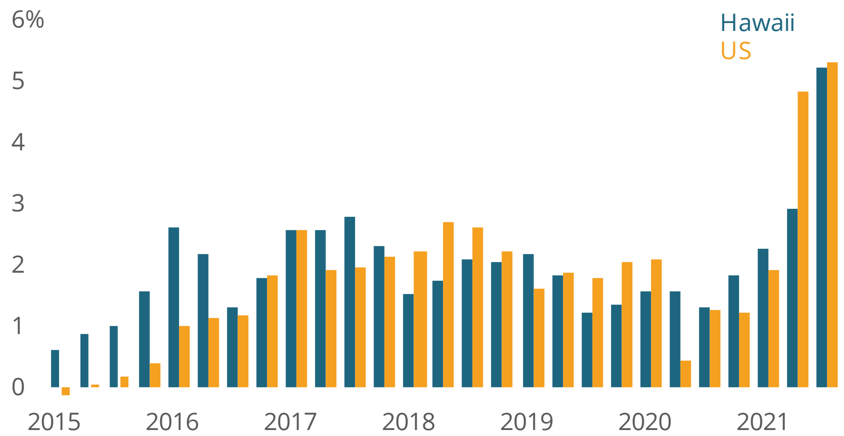
Federal pandemic support—and investments in the future

Labor earnings fell by more than 6% in inflation-adjusted terms last year, but total real personal income increased by 3.5% due to extensive federal pandemic income support. While programs such as enhanced unemployment benefits and federal support for firms affected by pandemic shutdowns have now ended, the *American Rescue Plan* (ARP) passed in March introduced important support for families. Whether ARP programs continue depends on the passage and ultimate form of the *Build Back Better* (BBB) Act, now pending in the US Senate.

The ARP temporarily extended the federal child tax credit to include 17-year-old children, increased the credit to $3,000 per child and $3,600 per child under the age of 6, increased the income ceiling for eligibility, and made the credit fully refundable. These expansions currently end in December, but the BBB Act would extend the expansion through 2022 and permanently allow the credits to be fully refundable. The BBB Act would also extend through 2022 an ARP expansion of the earned income tax credit (EITC). In 2020, the EITC reached approximately 94,000 Hawaii residents. The BBB Act would also make permanent the expanded child and dependent care credit. The Act would introduce universal pre-K schooling for 3- and 4-year-olds, funded for the next six years. Childcare subsidies would also be provided for families making up to 250% of a state's median income, with funding included through the end of 2027. By making early childhood education accessible to more families, these programs will increase labor force participation, particularly among women. They also represent an important investment

INFLATION RATES FOR HAWAII AND THE US OVERALL

Inflation accelerated above 5% in the third quarter.



in the development of the country's future human capital and in the fight against poverty.

Construction continues unabated

Across the state, permitting for residential buildings has continued at a strong pace. During the second and third quarters, the counties issued more than $1.3 billion in permits, a level that has not been seen since the mid-2000s boom. (We note, however, that residential permit issuance tends to be noisy, depending on when a particular tower receives its permits.) Government contracts surpassed $1.5 billion in 2021 after the state was awarded half of a $500 million Navy contract in September to modernize infrastructure at Pearl Harbor and at the Puget Sound Naval Shipyard.

Among large residential projects, Kakaako development is continuing with Ulana in Ward Village beginning to sell units. This 41-story mixed-use project will have condo units available to kamaaina whose income exceeds limits for federal assistance but earn less than what would afford them a market-priced home. The $600 million mixed-use Kukuiula project on Keeaumoku saw sales of $119 million in the first half of 2021. The $500 million Sky Ala Moana project will boast 474 condominium units on top of commercial space. The $4.6 billion Hoopili project on the Ewa Plain continues to add to Oahu's lowrise housing stock. In the resort sphere, Hilton Hawaiian Village recently proposed expanding their 22 acre and eight tower property by an additional half acre to accommodate a new tower with 515 timeshare and hotel units, a 13% increase in the resort's capacity. Throughout the pandemic, some resort businesses, including Turtle Bay and the Halekulani, have taken the opportunity to temporarily shut down facilities for much-needed remodeling.

In the public sphere, the first half of the $555 million Kapalama Container Terminal project was completed in March. The second half of the six-year project is expected to be completed in early 2024. The largest portion of State Capital Improvement Project funds released in mid-2021 was dedicated to the recently-opened $377 million Consolidated Rental Car Facility at the Daniel K. Inouye International Airport. Rail construction on Oahu continues to be a source of capital investment. The recent infrastructure bill secured an extension of the deadline to use $493 million in federal rail funding, which has been withheld by the Federal Transportation Administration due to concerns over project delays. The city council also passed a 3% transient accommodation tax, bringing the hotel and vacation rental tax up to 13%, that would help fund the rail budget shortfall. As for the Aloha Stadium redevelopment, the selection of developers is still underway, but a current timeline puts construction to begin in early 2023.

Lots of federal infrastructure funding on the way

The newly-passed $1.2 trillion federal *Infrastructure Investment and Jobs Act* (IIJA) will add $550 billion of spending on infrastructure nationwide over the next five years. This significant increase in spending is intended as an investment that supports long-term growth. Hawaii is expected to receive $2.8 billion in infrastructure investment ranging from road and bridge repairs to expanding broadband access and clean energy initiatives.

For comparison, the $1.5 billion for highways and bridges over five years is more than 50% higher than under current law, and funding for public transport is a third higher than the 2021 level of funding. Hawaii will also have the opportunity to apply for additional contestable funding for various projects.

IIJA funding comes on top of $386 million in infrastructure funding allocated to Hawaii under the earlier American Rescue Plan (ARP) Act. $193 million of ARP funding was distributed to Honolulu in June, with the rest expected in 2022. The City and County have until 2024 to allocate funds and until 2026 to use all of the money. Currently, the City administration plans to allot $50 million to infrastructure and $170 million to affordable housing.

The extensive federal infrastructure investment will provide a boost to Hawaii's construction sector. However, large portions of the investment are also linked to non-construction activities, such as buses for public transport. In addition, more than half of the spending simply replaces existing expenditure, so the actual increases in transfers to the state are not quite as large as they might seem. We should also note that this new spending authority comes at a time where new construction laborers are hard to come by, building costs are high, and there are short-term disruptions to materials supply arising from global bottlenecks. These issues are already delaying the completion of some public and private sector construction projects and may also constrain future infrastructure spending.

INFRASTRUCTURE INVESTMENT AND JOBS ACT ALLOCATIONS FOR HAWAII
The infrastructure spending is intended to support long-term growth.

Infrastructure Type	Proposed Spending ($ Millions)
Highways and Bridges	1,500
Public Transport	316
Airport	246
Water Infrastructure	200
Broadband	160
Reduce transport related emissions	27
Electric Vehicles	18
Highway Safety Traffic Programs	15
Clean Energy and Grid	3

Rising housing costs are a problem

A surge in the price of single-family homes had the median price topping $1 million by the third quarter of the year in all counties except the Big Island. On Oahu, single-family home prices have increased 20% over the past year, exceeding the national rate of 14%. Condominium prices have risen a less dramatic 8% over the past year.

The number of transactions in the first three quarters of 2021 was up more than 50% compared with the same period last year and up 33% compared with 2019. However, much of the increase has been at the luxury end of the market. Transactions above $3 million increased by 28% from 2019 to 2020. Comparing the first three quarters of 2020 and 2021, sales in this market have tripled. Kauai saw the largest increase in high-end sales volume, with 75 homes sold in the $3 million-plus market in the first three quarters of the year, compared with only 15 in the same period of 2020.

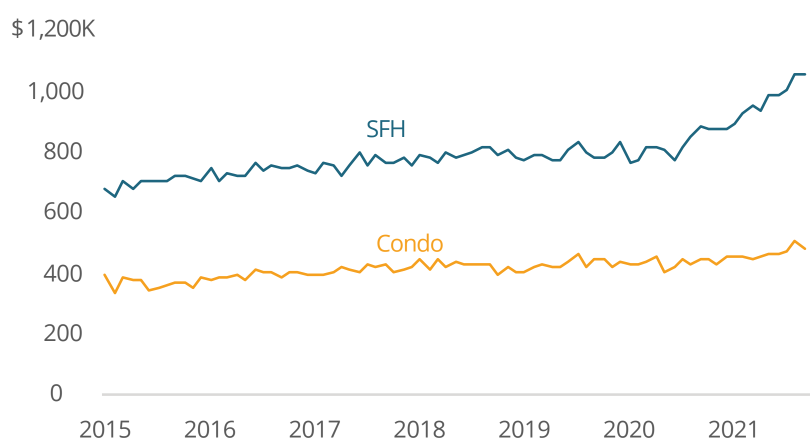
An influx of mainland buyers has fueled price increases. The number of homes in Hawaii purchased by mainland buyers in the first half of 2021 was more than double the sales in the first half of 2020 and more than 50% higher than during the first half of 2019. The number of offshore purchases will still fall short of 2010 levels for the year as a whole.

Low interest rates continue to support robust demand for mortgages and home purchases. Together with income gains from pandemic support programs, low rates have provided opportunities for local buyers to enter the market despite record-high prices. A move to higher policy interest rates by the Fed and higher inflation expectations will put upward pressure on mortgage rates over the next few years, which will reduce home affordability. Declining affordability will sufficiently reduce housing demand to bring home price appreciation to a standstill in the next few years.

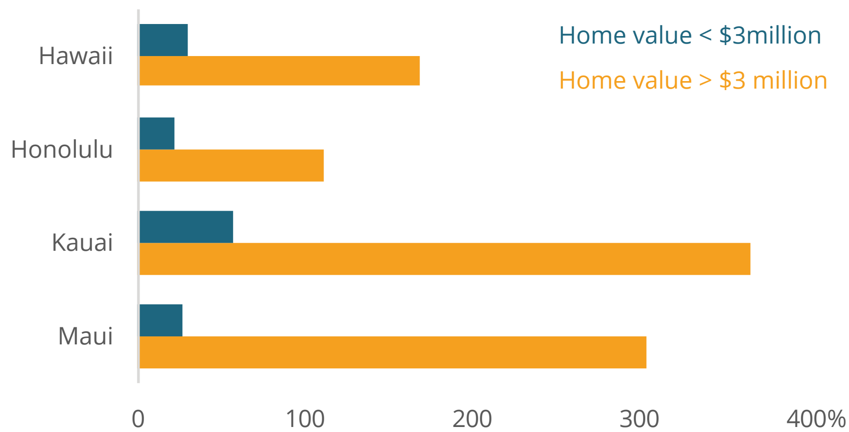
Home and apartment rents have also increased significantly over the past year. Zillow estimates that the median rent for Honolulu in September was 9% higher than a year ago. Statewide, advertised rents on Craigslist for one-bedroom units have increased by 14% over the past year, while advertised rents for two-bedroom units rose by 35%. The continued increase in rents is exacerbating the hardship for renters struggling to make payments or facing possible eviction. In October, 20% of Hawai'i residents had missed their

OAHU MEDIAN HOME RESALE PRICE, 3-MONTH MOVING AVERAGE

Median single-family prices on Oahu surged by 20% over the past year



TRANSACTIONS BY HOME VALUE THROUGH SEPTEMBER (PERCENT CHANGE FROM 2020)
The market for high-end homes has expanded significantly.



most recent mortgage or rent payment, or they expected to miss their next payment. This figure has remained relatively constant over the past year. But the share of renters who believe they are "very" or "somewhat" likely to be evicted within the next two months declined from 48% in September to 29% in October.

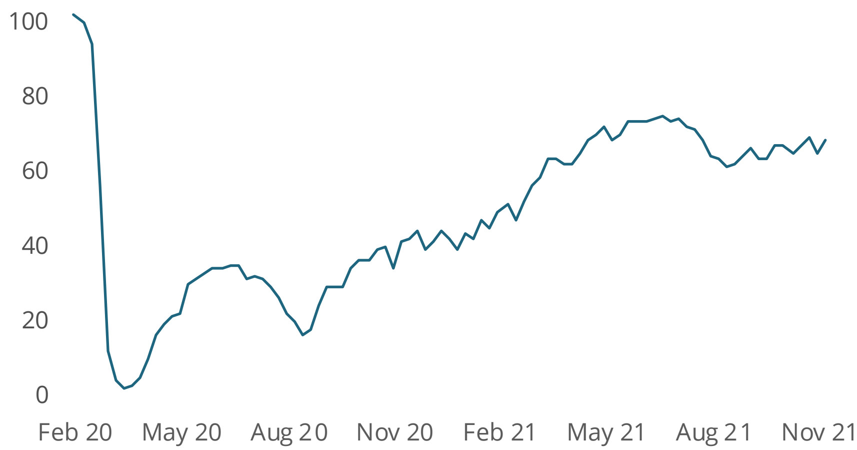
The federally funded Homeowner Assistance Fund has also directed money to support homeowners in financially distressed areas. Hawai'i will receive a minimum of $50 million through this program. The funding has begun to flow to Hawai'i residents through state and county programs and will continue to provide support as funds are approved and allocated.

The federal Build Back Better Act includes a proposed $166 billion nationally for public housing repair programs, for housing vouchers for low-income families, and for down-payment assistance programs for first-time home buyers. This spending could provide much-needed help for struggling households. At the same time, there is a marked shortage of new housing. As little as $15 billion has been dedicated nationally to incentives for the construction of new housing, which is insufficient to meaningfully reduce home prices or rents.

THE HAWAII OUTLOOK

Just as the Delta wave was receding in the rear-view mirror, Omicron has reared its ugly head. Whether this will turn out to be a painful or relatively benign episode in the pandemic, its immediate impact on travel restrictions within key visitor markets means a poorer near-term outlook for international visitor recovery. At the same time, prospects for the US mainland market remain good, with traveling appetite and purchasing power strong. On net, the tourism outlook is poorer than we saw in our last forecast. This will spill over to the broader local economy, suppressing the pace of gains in the labor market and overall economic activity. Hawaii's high vaccination rate places us in a better position to weather an Omicron wave than many other US states. Still, if the COVID-19 variant proves severe or able to jump vaccination protections, tourism and the local economy will see setbacks in coming months.

WEEKLY UHERO ECONOMIC PULSE (INDEX, MAR 2020 = 100)
UHERO's high-frequency indicators show Hawaii's Delta wave setback.



Because of the continuing unusual degree of uncertainty, in this report we follow our recent practice of presenting a baseline forecast as well as optimistic and pessimistic alternative scenarios. Note that we do not view these alternatives as worst-case and best-case outcomes, but rather as reasonably likely alternative paths that the Hawaii economy could follow depending on developments in and outside Hawaii.

- Our baseline path assumes that, as COVID-19 waves ebb in the New Year, international travel will begin to build, augmenting what has been strong US market performance. The completed phaseout of federal pandemic support will weigh on the economy, although the Infrastructure and Jobs Act will support construction growth. The Build Back Better Act is not included in the baseline forecast assumptions.
- The pessimistic scenario assumes further adverse fallout from the Omicron COVID-19 surge and additional waves thereafter, albeit milder in their effects than past waves. Continuing or reimposed foreign travel restrictions would further delay recoveries of key international markets. Hawaii's very high rate of COVID-19 vaccination would prevent renewed local shutdowns, but the unrelenting epidemic would still slow recovery progress.
- The optimistic scenario sees removal of national travel restrictions in key foreign markets early in the New Year, resulting in a healthy winter tourism season. Reopening of some shuttered TVRs in resort zones would incrementally raise room capacity to accommodate the larger visitor numbers. The Build Back Better plan would support larger labor force gains and overall economic recovery.

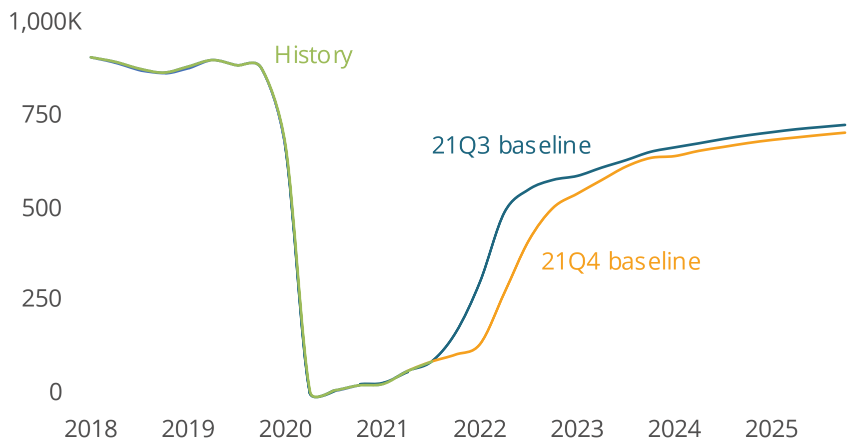
The differing assumptions about COVID-19 control, tourism reopening and the outcome of US federal spending plans imply different recovery paths for tourism and overall macroeconomic conditions in Hawaii.

Full visitor recovery awaits lifting of travel restrictions

Visitor numbers surprised to the upside for most of this year. But the industry took a hit from the Delta wave of COVID-19 during August and September, and conditions have only recently begun to edge back up. It continues to be the case that the Neighbor Islands are faring better than Oahu because of the dearth of international travelers.

UHERO FORECAST FOR INTERNATIONAL VISITOR ARRIVALS

Omicron has pushed back our forecast for international visitor recovery



Despite periodic COVID-19 waves, people are increasingly embracing a return to normalcy, including vacations involving long-haul airline travel. Whether because of wider vaccination reach or Covid fatigue, high case counts for the US as a whole appear unlikely to deter most travelers—or not for long—and we think persistent pent-up demand will bring a strong holiday season for US visitors, with momentum continuing into the New Year. Our baseline forecast now shows real visitor expenditures increasing to nearly four billion dollars in the fourth quarter, up from our previous forecast of $3.3 billion. US arrivals in 2022 will end up slightly above their 2019 level, and buoyant activity will continue for the next several years.

Canadians have been the first international visitors to return to Hawaii, edging up to about 20% of their pre-pandemic numbers by the end of the third quarter. Barring new Omicron-related travel restrictions for returning residents, arrivals from Canada will continue to rise gradually. But Omicron has thrown a monkey wrench into other international markets, where reapplied restrictions will prevent a holiday return. We now think the recovery of the Japanese and many other international markets will not begin in earnest until the spring. Even after it does, COVID-19 flare-ups and mixed global economic conditions will keep international visitor numbers below 2019 levels, weighing on Oahu and the Big Island markets in particular. The dearth of high-spending international visitors will hold inflation-adjusted visitor spending somewhat below its previous peak level for a number of years.

Additional increments to tourism recovery will be slower as we move beyond next year, reflecting still-struggling overseas markets, economic hardship for some US families—particularly now that many federal support programs have been phased out—and the loss of some tourism infrastructure due to small-business failures and barriers to the reentry of transient vacation rentals. The restart of cruise ship travel will provide a needed boost. Hawaii's overall daily visitor census, which had recovered 84% of pandemic-era losses by the third quarter, will finally reclaim its pre-pandemic peak late in the forecast period.

Omicron a new downside risk for tourism

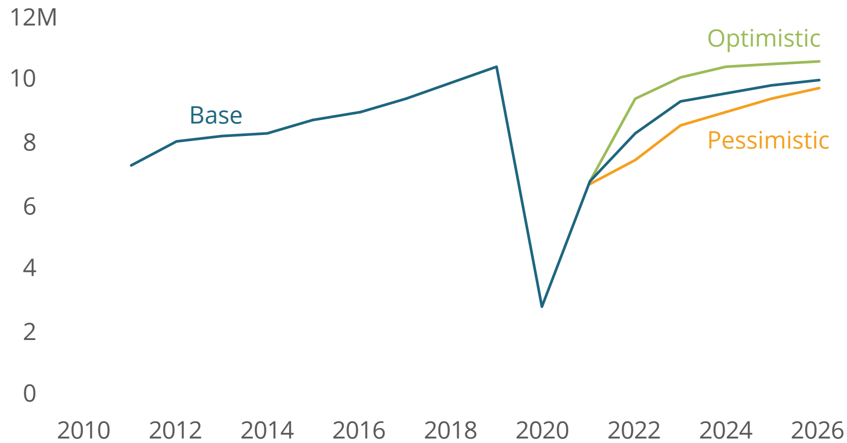
The US mainland visitor market took a hit from this summer's COVID-19 Delta wave, but numbers stabilized fairly quickly and are edging back up. Our pessimistic scenario allows for the possibility that an Omicron surge may adversely affect US travel, but focuses primarily on potential impacts on international visitor markets. More severe and prolonged Omicron outbreaks could lead to an extension of the renewed travel restrictions that have been imposed in Japan, South Korea, and some Australian states, and the imposition of heightened restrictions in other countries. Of particular concern would be the reimposition of a broad quarantine for returning Canadian travelers or heightened restrictions in populous Australian provinces. Slow vaccination progress in the developing world represents another downside risk, particularly as an incubator for new and potentially more virulent virus strains.

In our pessimistic scenario, the return of Japanese visitors does not begin until the second quarter of 2022, and their numbers remain well below baseline at year's end. Visitors from other international markets—these have been primarily Canadian tourists so far—fall back significantly in early 2022, beginning to recover in the second quarter, again at a slower pace than in the baseline. The total number of visitors falls to about 16% below third-quarter levels in the first quarter of 2022, and for the year as a whole grows 12 percentage points less than in the baseline forecast. The economic drag from the end of pandemic-era federal support programs weighs more severely on US visitor travel appetite. Slower growth for the industry extends out several years.

Our optimistic scenario for tourism acknowledges the considerable progress that has been made in vaccinating Hawaii's population, the resilience of mainland arrivals, and the possibility of an early end to the existing COVID-19 travel restrictions in key overseas markets. The latter would be possible if Omicron cases end up being relatively mild and hospitalization numbers remain limited. The high and still-rising reach of vaccination in Hawaii greatly reduces the chances of another severe outbreak here. High rates of vaccination in Canada may bring those visitors back even faster than anticipated in our baseline forecast. A more rapid strengthening of the US and global economy would provide economic support for would-be travelers from all markets. In our optimistic scenario, these factors combine to drive a robust winter tourism season, with strength continuing into next year. The return of some lost TVR and hotel capacity would accommodate this faster recovery. Total visitor arrivals would reclaim their 2019 peak by 2024. Note that even in the optimistic scenario, we do not assume that COVID-19 is over, and dealing with periodic limited surges will impose some ongoing costs for the visitor industry.

VISITOR ARRIVAL SCENARIOS

The length of Omicron travel restriction will influence the tourism path.



The labor market will see further gradual improvement

If we have tended to underestimate the strength and resiliency of this year's visitor arrivals recovery, unfortunately we have been spot on in our concern that labor markets would continue to under-perform. As we noted above, this has not been unique to Hawaii, but it has nevertheless imposed a heavy burden on both workers and businesses in the Islands. In particular, while the unemployment rate has declined markedly, the recovery of labor force participation has been slower than anticipated. Because labor force constraints are in part structural, the smaller pool of available workers will remain a hindrance, and federal retrenchment will weigh on the demand side. The labor-saving gains that some firms have made over the past two years will also weigh on job creation.

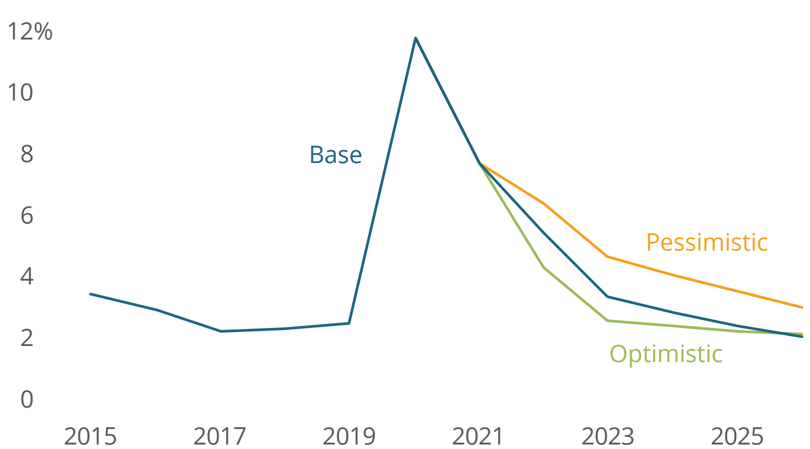
As a result, our forecast for 2022 employment growth remains relatively weak. The overall number of payroll jobs will expand by about 4.5% in each of the next two years, but that will still leave the total job base in 2023 about 5% lower than its level in 2019.

The temporary decline in visitor spending and local activity that occurred during this summer's Delta wave halted labor market gains in many sectors. While growth has now resumed, near-term weakness will mean a slow pace of overall labor market improvement. The unemployment rate, which has declined from more than 10% in January to 6.3% in October, will edge up for the next few months before resuming its decline to below 5% by the end of next year. As we have noted, the decline in unemployment somewhat overstates the extent of labor market recovery, since the labor force—both those employed and those looking for work—remains unusually low. Whether and when these people return to the labor force will be an important determinant of employment recovery and the future path of the unemployment rate.

The process of labor market improvement beyond 2022 will remain slow by historical standards, reflecting a lengthy period of international tourism recovery, the cost to new and existing businesses of coping with ongoing COVID-19 prevention costs, and the slow return of workers who were sidelined during the pandemic. The non-farm payroll job base will average 1.5% growth from 2023 to 2025, and it will take until the end of 2026 to approach the pre-COVID-19 level. Production, as measured by real gross

UNEMPLOYMENT RATE

High joblessness persists beyond the forecast horizon in the pessimistic scenario.



domestic product, will recover much faster than employment due to rising visitor spending and productivity gains from the labor-saving changes that many companies have made during the pandemic. GDP will surpass its pre-COVID-19 peak by the fourth quarter of 2023.

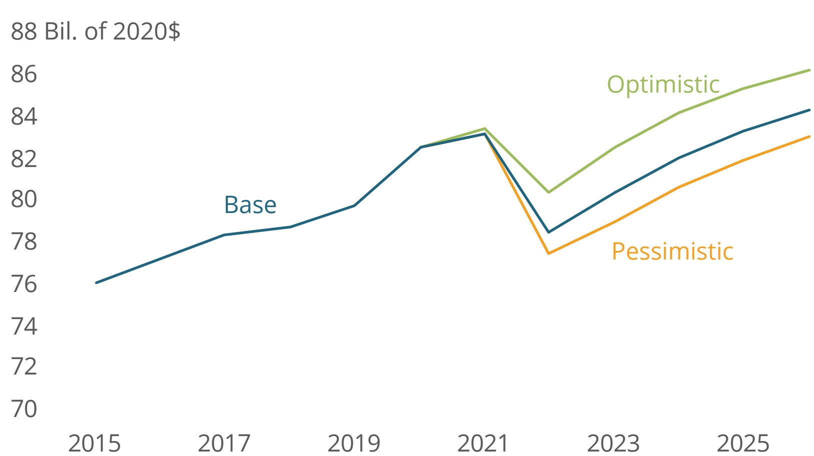
Omicron raises the stakes for the overall local economy

Our pessimistic scenario describes a much weaker near-term path for the overall state economy, before a moderate pace of recovery resumes. The Omicron wave results in renewed mobility restrictions and more guarded individual behavior. In addition to the temporary pullback in tourism that we have described above, local activity would take a larger hit from a further delay in the return of workers to the labor force. Over the medium term, ongoing COVID-19 surges, and the persistent demands on firms to prepare for and deal with periodic virus flare ups, would act as more significant constraints on the full recovery of both tourism-related companies and other local service businesses. Periodic concerns about the spread of new variants would also dampen local consumer spending. The aggregate effect would be persistently weak Hawaii employment and income, with unemployment remaining above 4% through 2024. While real gross domestic product would surpass its 2019 level by that year, payroll employment would still remain twenty thousand jobs below its previous peak at the end of the current forecast period. The lengthy period of persistent weakness would impose considerable additional pain on local households and businesses.

In our optimistic scenario, Hawaii dodges a local Omicron wave and there is a shorter and shallower near-term pullback in tourism. A more rapid US economic recovery and a new wave of federal funding through the Build Back Better Act would support a quick resumption of the recovery path of the broad local economy. Program elements such as the extended child tax credit, child care support, and universal pre-K education would bring more workers back into the labor force and drive a more rapid recovery of Island jobs. Households would maintain a strong spending pace, buoyed by their savings amassed over the past two years. Even in this case, labor markets would recover rather slowly, reflecting persistent costs facing businesses that must anticipate potential pandemic disruptions, as well as lagging labor force participation and, even in the optimistic scenario, a loss of population compared with 2019 levels. The unemployment rate would fall below 3% by

REAL PERSONAL INCOME

Stronger tourism and the Build Back Better Act would drive a quicker recovery in the optimistic scenario.



2023, but the number of payroll jobs would not approach its pre-crisis level until 2025. The stronger tourism rebound and buoyant consumer spending would permit real gross domestic product to reclaim its 2019 level by the end of 2022, a year earlier than in the baseline forecast.

Again with you, COVID?

Every time we write one of these reports we hope it will be the last to feature COVID-19. Once again, our hopes have been dashed. This time, the rapid emergence of the Omicron variant necessitated nearly real-time forecast updates. We'll see if we got it right.

At this point, more is unknown than known about Omicron. Early evidence from South Africa is not encouraging: the variant appears to be highly contagious and more readily able to infect people who have contracted earlier strains of the disease. We do not yet know whether it will end up being more or less virulent than earlier COVID, or whether it can evade the protection of existing vaccines. In any event, its timing could not be worse, as Europe and large swaths of the US are still in the middle of their struggle to overcome the Delta variant. Clearly COVID is going nowhere fast.

If COVID-19 is (for now) here to stay, Job One may be to shift from prevention to adaptation. The vaccination rate may be rapidly reaching its limit in the US, the victim of a political battle that should never have been joined. People are returning to life as normal, either because they are more confident of vaccine protection or because they are just plain tired of it all. Likely both are true. The Biden Administration is moving to adapt, focusing this winter's efforts on increased testing, while still making the plea for mask use and more caution by the public.

Is there any good news? For Hawaii, the answer is clearly yes. Hawaii's very high rate of vaccination will certainly provide more protection for its residents than many other states enjoy, even if it turns out to be somewhat less effective against the Omicron virus strain. For the visitor industry and its many employees, the picture is a mixed bag: new travel restrictions will hurt visitor numbers in the short run, but the US market has proved surprisingly resilient. This should help us limp through a little longer until international visitors return. And there is no doubt that these higher-spending visitors will be back; it's just a question of when and how quickly.

And Hawaii shares with the US an economy that, while far from recovered, has strong underlying fundamentals. Consumer spending is robust, and households and small businesses have accumulated a hoard of cash that should keep it so, even as fiscal and monetary policies begin to act as a drag. New government programs like the Infrastructure Investment and Jobs Act and, if it survives the Senate, the Build Back Better Act have the potential to return more workers to the labor force, drive construction, and build greater financial security and productivity. Better days are ahead, even if COVID-19 is not done with us yet.

TABLE 1: MAJOR ECONOMIC INDICATORS

STATE OF HAWAII BASELINE FORECAST

	2019	2020	2021	2022	2023	2024
Nonfarm Payrolls (Thou)	658.6	560.9	574.0	600.2	627.1	639.4
% Change	0.1	-14.8	2.3	4.6	4.5	2.0
Unemployment Rate (%)	2.5	11.8	7.7	5.4	3.4	2.8
Population (Thou)	1,459.5	1,455.3	1,453.7	1,450.8	1,448.0	1,448.6
% Change	-0.1	-0.3	-0.1	-0.2	-0.2	0.0
Personal Income (Mil$)	78,514.7	82,526.4	86,410.7	84,579.9	89,371.5	93,706.5
% Change	3.1	5.1	4.7	-2.1	5.7	4.9
Inflation Rate, Honolulu MSA (%)	1.6	1.6	3.9	3.8	3.1	2.8
Real Personal Income (Mil 2020$)	79,748.2	82,526.4	83,184.6	78,453.9	80,372.4	81,995.1
% Change	1.4	3.5	0.8	-5.7	2.4	2.0
Real Per Capita Income (Thou 2020$)	54.6	56.7	57.2	54.1	55.5	56.6
% Change	1.6	3.8	0.9	-5.5	2.6	2.0
Real GDP (Mil 2020$)	93,221.5	82,884.4	87,664.1	90,059.2	93,326.9	95,542.0
% Change	0.0	-11.1	5.8	2.7	3.6	2.4
TOURISM SECTOR DETAIL						
Total Visitor Arrivals by Air (Thou)	10,385.8	2,708.3	6,749.2	8,286.5	9,321.2	9,570.6
% Change - Total Visitor Arrivals by Air	5.0	-73.9	149.2	22.8	12.5	2.7
U.S. Visitors	6,871.3	1,987.3	6,435.5	6,981.5	6,980.1	6,958.5
% Change - U.S. Visitors	7.8	-71.1	223.8	8.5	0.0	-0.3
Japanese Visitors	1,576.2	289.1	22.1	483.2	1,013.0	1,101.6
% Change - Japanese Visitors	5.8	-81.7	-92.4	2,088.9	109.7	8.8
Other Visitors	1,938.3	389.6	249.2	821.8	1,328.2	1,510.6
% Change - Other Visitors	-4.2	-79.9	-36.1	229.8	61.6	13.7
Visitor Days (Thou)	89,690.4	28,515.8	64,833.2	77,476.8	85,127.4	86,279.8
% Change	2.2	-68.2	127.4	19.5	9.9	1.4
Average Daily Room Rate ($)	282.6	208.3	312.6	341.1	359.2	370.1
% Change	1.8	-26.3	50.1	9.1	5.3	3.0
Occupancy Rate (%)	80.8	31.7	58.5	69.4	75.4	76.2
Real Visitor Expenditures (Mil 2020$)	17,994.2	4,840.8	12,561.8	16,460.4	17,892.1	17,535.7
% Change	-0.4	-73.1	159.5	31.0	8.7	-2.0

Note: Source is UHERO. Nonfarm Payrolls for 2020 and 2021 are UHERO estimates of the benchmark revision. Occupancy rate includes UHERO's estimate of TVR occupancy. Figures for 2021-2024 are forecasts.

TABLE 2: JOBS BY INDUSTRY
STATE OF HAWAII BASELINE FORECAST

	2019	2020	2021	2022	2023	2024
Nonfarm Payrolls (Thou)	658.6	560.9	574.0	600.2	627.1	639.4
% Change	0.1	-14.8	2.3	4.6	4.5	2.0
Construction and Mining	37.3	36.4	37.0	37.5	38.4	39.2
% Change	0.2	-2.4	1.8	1.4	2.2	2.2
Manufacturing	14.0	12.0	11.9	12.3	12.7	13.0
% Change	-2.9	-14.3	-1.4	3.5	3.3	2.2
Trade	89.7	78.0	77.8	80.1	83.2	84.6
% Change	-1.1	-13.1	-0.3	3.0	4.0	1.6
Transportation and Utilities	35.5	27.3	27.6	29.1	31.6	32.5
% Change	5.5	-23.1	1.1	5.3	8.6	2.8
Finance, Insurance and Real Estate	30.0	27.4	27.2	28.2	28.9	29.0
% Change	1.3	-8.6	-0.6	3.4	2.6	0.6
Services	325.9	258.5	271.3	289.1	306.8	314.9
% Change	-0.2	-20.7	5.0	6.5	6.1	2.7
Health Care and Soc. Assistance	73.1	70.5	70.4	70.7	72.6	73.9
% Change	0.7	-3.5	-0.2	0.5	2.6	1.8
Accommodation and Food	113.0	70.6	80.2	91.3	100.1	103.9
% Change	-0.3	-37.6	13.7	13.9	9.6	3.8
Other	139.8	117.4	120.7	127.0	134.1	137.1
% Change	-0.5	-16.0	2.8	5.2	5.6	2.2
Government	126.3	121.3	121.1	124.0	125.5	126.2
% Change	0.5	-4.0	-0.1	2.4	1.2	0.5
Federal Government	34.4	35.2	34.7	34.7	34.7	34.7
% Change	1.7	2.4	-1.3	0.0	0.1	-0.2
State and Local Government	91.9	86.1	86.4	89.3	90.8	91.5
% Change	0.0	-6.3	0.4	3.4	1.7	0.8

Note: Source is UHERO. Industry job counts for 2020 and 2021 are UHERO estimates of the benchmark revision. Figures for 2021-2024 are forecasts.

TABLE 3: PERSONAL INCOME BY INDUSTRY

STATE OF HAWAII BASELINE FORECAST

	2019	2020	2021	2022	2023	2024
Real Personal Income (Mil 2020$)	79,748.2	82,526.4	83,184.6	78,453.9	80,372.4	81,995.1
% Change	1.4	3.5	0.8	-5.7	2.4	2.0
Labor & Proprietors' Income	57,950.6	54,276.3	55,197.4	55,650.6	57,623.8	58,934.3
% Change	1.4	-6.3	1.7	0.8	3.5	2.3
Construction	4,704.1	4,798.6	4,622.8	4,646.0	4,769.7	4,889.5
% Change	3.9	2.0	-3.7	0.5	2.7	2.5
Manufacturing	1,028.7	958.3	949.3	923.1	931.5	953.8
% Change	-0.5	-6.8	-0.9	-2.8	0.9	2.4
Trade	4,870.0	4,538.2	4,676.6	4,561.1	4,715.1	4,797.5
% Change	-0.4	-6.8	3.1	-2.5	3.4	1.7
Transportation and Utilities	3,314.8	2,861.3	2,915.2	2,909.0	3,136.9	3,245.2
% Change	4.8	-13.7	1.9	-0.2	7.8	3.5
Finance, Insurance & Real Estate	3,953.7	4,015.7	4,152.3	3,931.5	3,946.6	3,994.8
% Change	9.9	1.6	3.4	-5.3	0.4	1.2
Services	23,731.5	20,523.7	21,463.7	22,299.7	23,553.5	24,304.4
% Change	0.6	-13.5	4.6	3.9	5.6	3.2
Health Care & Soc. Assist. (% ch.)	3.0	4.2	-3.2	0.1	3.5	3.4
Accommodation & Food (% ch.)	5.0	-44.1	24.5	13.7	11.4	4.7
Other (% ch.)	-2.8	-6.3	2.7	2.2	4.2	2.4
Government	16,053.5	16,224.7	16,063.8	16,020.6	16,202.8	16,377.3
% Change	0.0	1.1	-1.0	-0.3	1.1	1.1
Federal, civilian (% ch.)	2.6	2.1	-2.0	1.0	0.9	0.6
State & Local (% ch.)	0.9	0.0	0.2	-1.1	1.3	1.6
Less Social Security Taxes (-)	6,671.3	6,286.9	6,406.4	6,402.7	6,630.6	6,782.3
% Change	3.0	-5.8	1.9	-0.1	3.6	2.3
Transfer Payments	12,888.3	19,362.6	19,606.0	14,469.2	14,514.4	14,750.8
% Change	2.6	50.2	1.3	-26.2	0.3	1.6
Dividends, Interest and Rent	15,580.6	15,174.3	14,786.6	14,736.6	14,865.1	15,092.9
% Change	1.3	-2.6	-2.6	-0.3	0.9	1.5
Population (Thou)	1,459.5	1,455.3	1,453.7	1,450.8	1,448.0	1,448.6
% Change	-0.1	-0.3	-0.1	-0.2	-0.2	0.0
Real Per Capita Income (Thou 2020$)	54.6	56.7	57.2	54.1	55.5	56.6
% Change	1.6	3.8	0.9	-5.5	2.6	2.0
Inflation Rate, Honolulu MSA (%)	1.6	1.6	3.9	3.8	3.1	2.8
Nominal Personal Income (Mil. $)	78,514.7	82,526.4	86,410.7	84,579.9	89,371.5	93,706.5
% Change	3.1	5.1	4.7	-2.1	5.7	4.9

Note: Source is UHERO. Figures for 2021-2024 are forecasts.

TABLE 4: CONSTRUCTION INDICATORS

STATE OF HAWAII BASELINE FORECAST

	2019	2020	2021	2022	2023	2024
BUILDING PERMITS (Mil 2020$)						
Total Commitments to Build	3,909	6,189	5,607	5,806	5,843	5,875
% Change	-29.0	58.3	-9.4	3.6	0.6	0.5
Real Private Building Permits	3,301	3,108	3,959	3,668	3,447	3,429
% Change	-4.4	-5.8	27.4	-7.4	-6.0	-0.5
Real Residential Building Permits	1,241	1,145	2,076	1,753	1,380	1,309
% Change	-15.8	-7.8	81.3	-15.5	-21.3	-5.1
Real Non-Residential Building Permits	2,059	1,964	1,883	1,914	2,067	2,120
% Change	4.1	-4.6	-4.1	1.7	8.0	2.6
Real Government Contracts Awarded	608	3,081	1,648	2,138	2,396	2,446
% Change	-70.4	406.4	-46.5	29.8	12.1	2.1
CONSTRUCTION ACTIVITY						
Real GE Contracting Tax Base (Mil 2020$)	9,845	9,757	10,551	10,851	10,703	10,897
% Change	-1.4	-0.9	8.1	2.8	-1.4	1.8
Nominal GE Contracting Tax Base (Mil $)	9,609	9,757	10,955	11,878	12,311	13,081
% Change	1.6	1.5	12.3	8.4	3.6	6.3
Construction Job Count (Thou)	37.3	36.4	37.0	37.5	38.4	39.2
% Change	0.2	-2.4	1.8	1.4	2.2	2.2
Real Construction Income (Mil 2020$)	4,704	4,799	4,623	4,646	4,770	4,889
% Change	3.9	2.0	-3.7	0.5	2.7	2.5
PRICES & COSTS (HONOLULU)						
Honolulu Median Home Price (Thou $)	790.4	822.4	991.0	1066.8	1064.7	1065.0
% Change	0.2	4.1	20.5	7.7	-0.2	0.0
Honolulu Median Condominium Price (Thou $)	427.6	433.1	470.9	510.6	515.7	513.3
% Change	1.1	1.3	8.7	8.4	1.0	-0.5
Honolulu Housing Affordability Index	85.0	94.1	83.3	68.5	68.4	68.8
% Change	7.7	10.7	-11.5	-17.8	-0.1	0.6
Honolulu Construction Cost Index (2020=100)	97.6	100.0	103.8	109.5	115.0	120.0
% Change	3.1	2.5	3.8	5.4	5.1	4.4
30-Year Mortgage Rate (%)	3.9	3.1	2.9	3.6	4.0	4.2

Note: Source is UHERO. Figures for 2021-2024 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

	2019	2020	2021	2022	2023	2024
Non-farm Payrolls (Thou)	473.8	412.5	418.4	437.1	456.3	464.1
% Change	0.1	-12.9	1.4	4.5	4.4	1.7
Unemployment Rate (%)	2.3	10.3	7.1	5.1	3.1	2.6
Population (Thou)	1,003.7	996.9	993.9	990.5	987.4	986.7
% Change	-0.4	-0.7	-0.3	-0.3	-0.3	-0.1
Personal Income (Mil $)	57,756.1	60,521.9	63,168.4	62,215.0	65,823.3	68,973.4
% Change	2.4	4.8	4.4	-1.5	5.8	4.8
Inflation Rate, Honolulu MSA (%)	1.6	1.6	3.9	3.8	3.1	2.8
Real Personal Income (Mil 2020 $)	58,663.5	60,521.9	60,810.0	57,708.9	59,195.4	60,353.1
% Change	0.8	3.2	0.5	-5.1	2.6	2.0
Real Per Capita Income (Thou 2020 $)	58.4	60.7	61.2	58.3	60.0	61.2
% Change	1.2	3.9	0.8	-4.8	2.9	2.0
TOURISM SECTOR DETAIL						
Total Visitor Arrivals by Air (Thou)	6,153.9	1,506.2	3,304.8	4,468.5	5,321.5	5,514.4
% Change - Total Visitor Arrivals by Air	5.0	-75.5	119.4	35.2	19.1	3.6
U.S. Visitors	3,326.5	1,014.9	3,131.2	3,436.5	3,428.9	3,410.0
% Change - U.S. Visitors	9.3	-69.5	208.5	9.8	-0.2	-0.6
Japanese Visitors	1,492.8	269.4	21.2	464.0	972.7	1,057.8
% Change - Japanese Visitors	6.7	-82.0	-92.1	2,087.1	109.6	8.8
Other Visitors	1,334.6	263.6	152.4	568.0	919.9	1,046.7
% Change - Other Visitors	-6.0	-80.2	-42.2	272.7	62.0	13.8
Visitor Days (Thou)	41,827.3	12,829.5	26,562.6	32,799.3	37,839.7	38,456.3
% Change	3.3	-69.3	107.0	23.5	15.4	1.6
Occupancy Rate (%)	84.0	32.5	57.7	69.3	78.8	80.1

Note: Source is UHERO. Nonfarm Payrolls for 2020 and 2021 are UHERO estimates of the benchmark revision. Figures for 2021 - 2024 are forecasts.

TABLE 6: JOBS BY DETAILED SECTOR (THOUSANDS)

HONOLULU COUNTY BASELINE FORECAST

	2019	2020	2021	2022	2023	2024
Non-farm Payrolls (Thou)	473.8	412.5	418.4	437.1	456.3	464.1
% Change	0.1	-12.9	1.4	4.5	4.4	1.7
Construction and Mining	27.0	26.6	27.1	27.5	28.0	28.6
% Change	-0.1	-1.6	2.1	1.3	2.0	2.0
Manufacturing	11.0	9.4	9.1	9.5	9.8	10.1
% Change	-4.6	-14.3	-2.7	3.7	3.5	2.4
Trade	62.0	53.6	53.4	55.2	57.5	58.5
% Change	-1.6	-13.5	-0.4	3.4	4.1	1.7
Transportation and Utilities	25.8	20.3	20.2	21.2	22.8	23.4
% Change	7.1	-21.5	-0.2	4.6	7.9	2.6
Finance, Insurance and Real Estate	23.0	21.7	21.6	22.1	22.4	22.5
% Change	1.4	-5.7	-0.4	2.2	1.7	0.2
Services	227.9	187.7	193.6	205.9	219.0	223.9
% Change	-0.1	-17.6	3.1	6.4	6.4	2.2
Health Care and Soc. Assistance	54.1	52.4	52.5	52.8	54.1	55.0
% Change	0.1	-3.2	0.3	0.4	2.5	1.8
Accommodation and Food	67.4	43.8	48.1	55.6	61.5	63.4
% Change	-0.4	-35.0	9.8	15.6	10.6	3.1
Other	106.4	91.5	93.0	97.5	103.4	105.4
% Change	0.0	-14.0	1.6	4.9	6.0	1.9
Government	97.0	93.3	93.3	95.7	96.7	97.2
% Change	0.1	-3.9	0.1	2.6	1.0	0.5
Federal Government	31.6	32.4	32.0	32.0	32.0	31.9
% Change	1.6	2.5	-1.2	-0.1	0.0	-0.2
State and Local Government	65.4	60.9	61.3	63.8	64.7	65.2
% Change	-0.7	-7.0	0.8	4.0	1.5	0.8

Note: Source is UHERO. Industry job counts for 2020 and 2021 are UHERO estimates of the benchmark revision. Figures for 2021 - 2024 are forecasts.

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

	2019	2020	2021	2022	2023	2024
Real Personal Income (Mil 2020 $)	58,663.5	60,521.9	60,810.0	57,708.9	59,195.4	60,353.1
% Change	0.8	3.2	0.5	-5.1	2.6	2.0
Labor & Proprietors' Income	43,898.1	41,757.2	42,104.9	42,412.8	43,867.5	44,762.0
% Change	0.6	-4.9	0.8	0.7	3.4	2.0
Construction	3,468.0	3,566.8	3,425.2	3,442.8	3,522.7	3,603.7
% Change	4.4	2.8	-4.0	0.5	2.3	2.3
Manufacturing	829.7	771.2	755.8	738.1	744.6	761.5
% Change	-1.8	-7.0	-2.0	-2.3	0.9	2.3
Trade	3,420.3	3,196.4	3,281.4	3,224.4	3,326.0	3,390.9
% Change	-2.1	-6.5	2.7	-1.7	3.2	2.0
Transportation and Utilities	2,581.0	2,260.9	2,288.4	2,275.3	2,449.3	2,529.2
% Change	5.8	-12.4	1.2	-0.6	7.6	3.3
Finance, Insurance & Real Estate	3,126.5	3,193.3	3,299.2	3,113.1	3,120.9	3,150.2
% Change	9.3	2.1	3.3	-5.6	0.3	0.9
Services	16,908.6	15,067.3	15,485.9	16,069.5	17,001.6	17,480.0
% Change	-0.6	-10.9	2.8	3.8	5.8	2.8
Health Care & Soc. Assist. (% ch.)	2.5	3.6	-2.6	-0.1	3.6	3.1
Accommodation & Food (% ch.)	4.5	-44.5	22.3	15.9	13.0	4.2
Other (% ch.)	-3.9	-5.4	1.4	2.6	4.7	2.2
Government	13,465.3	13,592.1	13,446.6	13,429.7	13,580.9	13,724.5
% Change	-0.7	0.9	-1.1	-0.1	1.1	1.1
Federal, civilian (% ch.)	2.5	2.1	-2.0	1.0	0.8	0.6
State & Local (% ch.)	-0.3	-0.6	0.3	-1.0	1.4	1.7
Less Social Security Taxes (-)	5,031.0	4,813.6	4,859.6	4,860.9	5,026.4	5,127.8
% Change	2.1	-4.3	1.0	0.0	3.4	2.0
Transfer Payments	8,630.1	12,702.1	12,597.1	9,633.3	9,703.1	9,837.9
% Change	2.6	47.2	-0.8	-23.5	0.7	1.4
Dividends, Interest and Rent	11,216.9	10,928.8	10,677.7	10,654.8	10,743.8	10,890.9
% Change	0.9	-2.6	-2.3	-0.2	0.8	1.4
Population (Thou)	1,003.7	996.9	993.9	990.5	987.4	986.7
% Change	-0.4	-0.7	-0.3	-0.3	-0.3	-0.1
Real Per Capita Income (Thou 2020 $)	58.4	60.7	61.2	58.3	60.0	61.2
% Change	1.2	3.9	0.8	-4.8	2.9	2.0
Inflation Rate, Honolulu MSA (%)	1.6	1.6	3.9	3.8	3.1	2.8
Nominal Personal Income (Mil $)	57,756.1	60,521.9	63,168.4	62,215.0	65,823.3	68,973.4
% Change	2.4	4.8	4.4	-1.5	5.8	4.8

Note: Source is UHERO. Figures for 2021 - 2024 are forecasts.

TABLE 8: MAJOR ECONOMIC INDICATOR SUMMARY

HAWAII COUNTY BASELINE FORECAST

	2019	2020	2021	2022	2023	2024
Non-farm Payrolls (Thou)	70.9	61.0	63.1	64.9	67.1	68.4
% Change	-0.2	-13.9	3.5	2.8	3.4	1.8
Unemployment Rate (%)	3.1	11.5	7.6	6.3	4.4	3.6
Population (Thou)	208.4	210.3	211.2	211.5	211.7	212.4
% Change	0.3	0.9	0.4	0.2	0.1	0.3
Personal Income (Mil $)	8,602.4	9,410.8	9,992.3	9,652.9	10,147.8	10,641.2
% Change	3.9	9.4	6.2	-3.4	5.1	4.9
Inflation Rate, Honolulu MSA (%)	1.6	1.6	3.9	3.8	3.1	2.8
Real Personal Income (Mil 2020 $)	8,737.5	9,410.8	9,619.3	8,953.7	9,126.0	9,311.3
% Change	2.3	7.7	2.2	-6.9	1.9	2.0
Real Per Capita Income (Thou 2020 $)	41.9	44.7	45.5	42.3	43.1	43.8
% Change	1.9	6.7	1.8	-7.1	1.8	1.7
TOURISM SECTOR DETAIL						
Total Visitor Arrivals by Air (Thou)	1,763.9	477.8	1,180.2	1,473.5	1,639.7	1,696.3
% Change - Total Visitor Arrivals by Air	3.4	-72.9	147.0	24.9	11.3	3.5
U.S. Visitors	1,250.6	375.0	1,142.3	1,285.9	1,290.6	1,289.4
% Change - U.S. Visitors	5.7	-70.0	204.6	12.6	0.4	-0.1
Japanese Visitors	170.7	38.3	1.2	55.6	118.2	130.4
% Change - Japanese Visitors	-3.3	-77.6	-96.8	4,401.3	112.8	10.3
Other Visitors	342.6	64.5	36.7	132.0	230.9	276.5
% Change - Other Visitors	-1.0	-81.2	-43.2	260.2	74.9	19.8
Visitor Days (Thou)	12,977.7	4,625.5	10,868.4	11,792.1	12,799.2	13,009.6
% Change	1.5	-64.4	135.0	8.5	8.5	1.6
Occupancy Rate (%)	77.0	33.2	57.3	66.2	70.3	70.7

Note: Source is UHERO. Nonfarm Payrolls for 2020 and 2021 are UHERO estimates of the benchmark revision. Figures for 2021 - 2024 are forecasts.

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

	2019	2020	2021	2022	2023	2024
Non-farm Payrolls (Thou)	70.9	61.0	63.1	64.9	67.1	68.4
% Change	-0.2	-13.9	3.5	2.8	3.4	1.8
Construction and Mining	3.8	3.6	3.6	3.7	3.7	3.8
% Change	-2.4	-5.2	1.0	0.4	2.2	2.3
Manufacturing	1.4	1.3	1.4	1.4	1.4	1.4
% Change	2.4	-8.5	8.0	1.7	1.8	1.1
Trade	11.5	10.6	10.7	10.7	11.0	11.1
% Change	0.2	-7.9	0.6	0.2	2.8	1.0
Transportation and Utilities	3.3	2.5	2.6	2.8	3.0	3.1
% Change	-1.0	-21.9	3.0	5.5	9.6	2.3
Finance, Insurance and Real Estate	2.7	2.3	2.3	2.4	2.5	2.6
% Change	1.9	-13.0	-3.0	6.6	4.6	1.0
Services	33.2	26.4	28.3	29.6	30.9	31.8
% Change	-1.6	-20.4	7.1	4.5	4.3	3.0
Health Care and Soc. Assistance	7.9	7.4	7.3	7.3	7.4	7.6
% Change	1.3	-5.8	-1.5	-0.7	2.2	1.5
Accommodation and Food	12.9	9.2	10.2	11.0	11.8	12.2
% Change	-2.9	-28.5	10.6	8.3	6.6	4.1
Other	12.4	9.8	10.8	11.3	11.7	12.0
% Change	-2.1	-21.3	10.2	4.5	3.5	2.7
Government	15.0	14.2	14.1	14.2	14.3	14.3
% Change	3.0	-5.1	-0.8	0.5	1.1	0.1
Federal Government	1.3	1.3	1.2	1.2	1.2	1.2
% Change	0.0	0.5	-5.0	0.1	-0.5	-0.6
State and Local Government	13.7	12.9	12.9	12.9	13.1	13.1
% Change	3.3	-5.6	-0.4	0.6	1.3	0.2

Note: Source is UHERO. Industry job counts for 2020 and 2021 are UHERO estimates of the benchmark revision. Figures for 2021 - 2024 are forecasts.

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

	2019	2020	2021	2022	2023	2024
Real Personal Income (Mil 2020 $)	8,737.5	9,410.8	9,619.3	8,953.7	9,126.0	9,311.3
% Change	2.3	7.7	2.2	-6.9	1.9	2.0
Labor & Proprietors' Income	5,273.1	5,046.7	5,148.4	5,177.2	5,303.3	5,409.2
% Change	1.4	-4.3	2.0	0.6	2.4	2.0
Construction	—	—	—	—	—	—
% Change	—	—	—	—	—	—
Manufacturing	—	—	—	—	—	—
% Change	—	—	—	—	—	—
Trade	—	—	—	—	—	—
% Change	—	—	—	—	—	—
Transportation and Utilities	—	—	—	—	—	—
% Change	—	—	—	—	—	—
Finance, Insurance & Real Estate	—	284.8	—	—	—	—
% Change	—	—	—	—	—	—
Services	—	—	—	—	—	—
% Change	—	—	—	—	—	—
Health Care & Soc. Assist. (% ch.)	—	—	—	—	—	—
Accommodation & Food (% ch.)	—	—	—	—	—	—
Other (% ch.)	—	—	—	—	—	—
Government	1,294.2	1,313.1	1,299.2	1,270.5	1,278.1	1,286.9
% Change	4.3	1.5	-1.1	-2.2	0.6	0.7
Federal, civilian (% ch.)	2.7	3.4	-5.2	0.4	0.4	0.2
State & Local (% ch.)	4.7	1.1	-0.3	-2.5	0.7	0.8
Less Social Security Taxes (-)	626.1	602.4	617.0	611.7	627.4	640.7
% Change	4.0	-3.8	2.4	-0.9	2.6	2.1
Transfer Payments	2,135.1	3,046.3	3,250.9	2,272.4	2,261.2	2,309.4
% Change	1.8	42.7	6.7	-30.1	-0.5	2.1
Dividends, Interest and Rent	1,924.1	1,890.1	1,809.3	1,817.7	1,830.5	1,860.5
% Change	5.8	-1.8	-4.3	0.5	0.7	1.6
Population (Thou)	208.4	210.3	211.2	211.5	211.7	212.4
% Change	0.3	0.9	0.4	0.2	0.1	0.3
Real Per Capita Income (Thou 2020 $)	41.9	44.7	45.5	42.3	43.1	43.8
% Change	1.9	6.7	1.8	-7.1	1.8	1.7
Inflation Rate, Honolulu MSA (%)	1.6	1.6	3.9	3.8	3.1	2.8
Nominal Personal Income (Mil $)	8,602.4	9,410.8	9,992.3	9,652.9	10,147.8	10,641.2
% Change	3.9	9.4	6.2	-3.4	5.1	4.9

Note: Source is UHERO. Figures for 2021 - 2024 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

	2019	2020	2021	2022	2023	2024
Non-farm Payrolls (Thou)	80.7	62.0	66.8	70.7	74.1	76.2
% Change	0.2	-23.2	7.7	5.9	4.8	2.8
Unemployment Rate (%)	2.4	18.1	10.1	5.2	3.4	3.2
Population (Thou)	173.0	173.8	174.1	174.1	174.1	174.5
% Change	0.6	0.5	0.2	0.0	0.0	0.2
Personal Income (Mil $)	8,478.3	8,708.3	9,107.0	8,752.0	9,232.6	9,730.0
% Change	5.7	2.7	4.6	-3.9	5.5	5.4
Inflation Rate, Honolulu MSA (%)	1.6	1.6	3.9	3.8	3.1	2.8
Real Personal Income (Mil 2020 $)	8,611.5	8,708.3	8,767.0	8,118.1	8,302.9	8,513.9
% Change	4.0	1.1	0.7	-7.4	2.3	2.5
Real Per Capita Income (Thou 2020 $)	49.8	50.1	50.4	46.6	47.7	48.8
% Change	3.4	0.7	0.5	-7.4	2.3	2.3
TOURISM SECTOR DETAIL						
Total Visitor Arrivals by Air (Thou)	3,111.1	846.8	2,352.3	2,927.0	3,103.4	3,156.0
% Change - Total Visitor Arrivals by Air	5.0	-72.8	177.8	24.4	6.0	1.7
U.S. Visitors	2,488.6	729.0	2,275.5	2,653.0	2,652.4	2,644.2
% Change - U.S. Visitors	7.5	-70.7	212.1	16.6	0.0	-0.3
Japanese Visitors	48.5	7.9	0.6	14.9	31.8	35.1
% Change - Japanese Visitors	-3.0	-83.7	-91.8	2,203.4	112.9	10.5
Other Visitors	574.0	109.9	76.1	259.1	419.2	476.7
% Change - Other Visitors	-4.1	-80.9	-30.8	240.6	61.8	13.7
Visitor Days (Thou)	24,776.6	7,754.3	20,408.3	23,364.1	24,216.8	24,265.1
% Change	2.9	-68.7	163.2	14.5	3.7	0.2
Occupancy Rate (%)	77.8	27.6	61.1	70.4	72.9	73.2

Note: Source is UHERO. Nonfarm Payrolls for 2020 and 2021 are UHERO estimates of the benchmark revision. Figures for 2020 - 2023 are forecasts.

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

	2019	2020	2021	2022	2023	2024
Non-farm Payrolls (Thou)	80.7	62.0	66.8	70.7	74.1	76.2
% Change	0.2	-23.2	7.7	5.9	4.8	2.8
Construction and Mining	4.4	4.3	4.3	4.4	4.6	4.7
% Change	0.9	-2.3	1.0	2.3	2.8	2.8
Manufacturing	1.2	1.0	0.9	1.0	1.0	1.0
% Change	7.4	-19.3	-3.0	3.6	2.9	2.0
Trade	11.5	9.8	9.9	10.1	10.5	10.6
% Change	-0.2	-15.1	0.9	2.5	3.6	1.6
Transportation and Utilities	4.8	3.3	3.6	3.9	4.4	4.5
% Change	4.1	-30.8	9.0	7.6	10.9	3.2
Finance, Insurance and Real Estate	3.1	2.4	2.4	2.6	2.7	2.8
% Change	0.5	-21.8	-1.4	8.6	5.6	1.8
Services	46.5	32.4	36.2	39.0	41.2	42.8
% Change	-0.3	-30.3	11.9	7.7	5.6	3.8
Health Care and Soc. Assistance	8.1	7.9	7.7	7.8	8.1	8.2
% Change	3.5	-3.0	-1.8	1.4	2.9	2.0
Accommodation and Food	23.4	13.1	16.2	18.0	19.4	20.4
% Change	0.7	-43.9	23.1	11.5	7.9	5.1
Other	15.0	11.4	12.3	13.2	13.7	14.1
% Change	-3.6	-24.0	8.5	6.7	4.0	3.1
Government	9.1	8.8	8.8	9.1	9.2	9.3
% Change	-0.4	-4.1	0.5	2.7	1.8	0.6
Federal Government	0.9	0.9	0.9	0.9	0.9	0.9
% Change	1.0	-1.3	2.0	1.9	0.6	0.2
State and Local Government	8.3	7.9	7.9	8.2	8.3	8.4
% Change	-0.5	-4.3	0.4	2.8	2.0	0.7

Note: Source is UHERO. Industry job counts for 2020 and 2021 are UHERO estimates of the benchmark revision. Figures for 2021 - 2024 are forecasts.

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

	2019	2020	2021	2022	2023	2024
Real Personal Income (Mil 2020 $)	8,611.5	8,708.3	8,767.0	8,118.1	8,302.9	8,513.9
% Change	4.0	1.1	0.7	-7.4	2.3	2.5
Labor & Proprietors' Income	6,216.0	5,214.5	5,603.9	5,684.0	5,975.2	6,216.0
% Change	5.3	-16.1	7.5	1.4	5.1	4.0
Construction	557.0	565.4	568.2	561.0	572.4	587.1
% Change	6.0	1.5	0.5	-1.3	2.0	2.6
Manufacturing	78.4	73.3	70.7	70.1	72.7	75.2
% Change	8.8	-6.5	-3.6	-0.7	3.6	3.5
Trade	605.7	535.8	541.4	526.5	558.1	581.3
% Change	4.0	-11.5	1.0	-2.7	6.0	4.2
Transportation and Utilities	319.4	259.7	284.3	294.0	329.4	344.8
% Change	4.7	-18.7	9.5	3.4	12.1	4.7
Finance, Insurance & Real Estate	408.3	389.8	386.5	394.8	407.2	413.9
% Change	17.3	-4.5	-0.8	2.1	3.2	1.6
Services	3,400.4	2,471.3	2,787.9	2,886.7	3,071.9	3,238.0
% Change	4.8	-27.3	12.8	3.5	6.4	5.4
Health Care & Soc. Assist. (% ch.)	7.3	1.9	-2.1	-2.9	3.3	3.3
Accommodation & Food (% ch.)	6.8	-47.1	30.0	8.5	10.1	7.6
Other (% ch.)	1.0	-16.4	7.9	2.2	4.2	4.1
Government	818.5	827.9	833.1	832.9	844.1	854.6
% Change	3.5	1.1	0.6	0.0	1.3	1.2
Federal, civilian (% ch.)	3.9	0.6	1.8	2.3	1.5	1.1
State & Local (% ch.)	3.2	0.9	0.4	-0.3	1.4	1.3
Less Social Security Taxes (-)	715.3	606.2	648.6	650.0	685.7	715.6
% Change	6.9	-15.3	7.0	0.2	5.5	4.4
Transfer Payments	1,406.2	2,455.5	2,538.8	1,723.6	1,716.1	1,753.6
% Change	5.7	74.6	3.4	-32.1	-0.4	2.2
Dividends, Interest and Rent	1,674.0	1,614.6	1,568.5	1,553.1	1,589.0	1,637.5
% Change	-0.6	-3.6	-2.9	-1.0	2.3	3.0
Population (Thou)	173.0	173.8	174.1	174.1	174.1	174.5
% Change	0.6	0.5	0.2	0.0	0.0	0.2
Real Per Capita Income (Thou 2020 $)	49.8	50.1	50.4	46.6	47.7	48.8
% Change	3.4	0.7	0.5	-7.4	2.3	2.3
Inflation Rate, Honolulu MSA (%)	1.6	1.6	3.9	3.8	3.1	2.8
Nominal Personal Income (Mil $)	8,478.3	8,708.3	9,107.0	8,752.0	9,232.6	9,730.0
% Change	5.7	2.7	4.6	-3.9	5.5	5.4

Note: Source is UHERO. Figures for 2021 - 2024 are forecasts. Because of data disclosure rules, industry-level income is not available for some sectors.

TABLE 14: MAJOR ECONOMIC INDICATOR SUMMARY

KAUAI COUNTY BASELINE FORECAST

	2019	2020	2021	2022	2023	2024
Non-farm Payrolls (Thou)	33.3	26.1	25.7	27.7	29.6	30.8
% Change	1.6	-21.6	-1.6	7.6	7.1	4.1
Unemployment Rate (%)	2.4	16.3	11.0	7.4	4.0	3.1
Population (Thou)	74.4	74.3	74.6	74.7	74.8	75.0
% Change	0.2	-0.2	0.3	0.2	0.1	0.3
Personal Income (Mil $)	3,679.3	3,886.4	4,143.0	3,960.0	4,167.8	4,361.9
% Change	4.9	5.6	6.6	-4.4	5.2	4.7
Inflation Rate, Honolulu MSA (%)	1.6	1.6	3.9	3.8	3.1	2.8
Real Personal Income (Mil 2020 $)	3,737.1	3,886.4	3,988.4	3,673.2	3,748.2	3,816.7
% Change	3.3	4.0	2.6	-7.9	2.0	1.8
Real Per Capita Income (Thou 2020 $)	50.2	52.3	53.5	49.2	50.1	50.9
% Change	3.0	4.2	2.3	-8.1	1.9	1.5
TOURISM SECTOR DETAIL						
Total Visitor Arrivals by Air (Thou)	1,370.0	345.1	818.8	1,246.8	1,319.6	1,338.1
% Change - Total Visitor Arrivals by Air	-1.3	-74.8	137.2	52.3	5.8	1.4
U.S. Visitors	1,135.7	300.2	794.9	1,144.9	1,149.3	1,144.9
% Change - U.S. Visitors	0.1	-73.6	164.8	44.0	0.4	-0.4
Japanese Visitors	25.3	3.3	0.4	8.2	17.6	19.4
% Change - Japanese Visitors	2.1	-86.8	-88.8	2,098.0	113.6	10.4
Other Visitors	209.0	41.5	23.5	93.7	152.7	173.7
% Change - Other Visitors	-8.9	-80.1	-43.5	298.9	63.0	13.8
Visitor Days (Thou)	10,108.8	2,939.2	6,995.2	9,521.4	10,271.7	10,548.8
% Change	-2.7	-70.9	138.0	36.1	7.9	2.7
Occupancy Rate (%)	73.3	30.1	55.6	71.4	75.7	76.8

Note: Source is UHERO. Nonfarm Payrolls for 2020 and 2021 are UHERO estimates of the benchmark revision. Figures for 2021 - 2024 are forecasts.

TABLE 15: JOBS BY DETAILED SECTOR (THOUSANDS)

KAUAI COUNTY BASELINE FORECAST

	2019	2020	2021	2022	2023	2024
Non-farm Payrolls (Thou)	33.3	26.1	25.7	27.7	29.6	30.8
% Change	1.6	-21.6	-1.6	7.6	7.1	4.1
Construction and Mining	2.1	1.9	1.9	2.0	2.1	2.2
% Change	7.8	-8.7	2.0	3.7	5.0	4.2
Manufacturing	0.5	0.4	0.4	0.4	0.4	0.5
% Change	0.0	-18.3	-2.0	4.6	4.8	3.1
Trade	4.6	3.9	3.8	3.9	4.1	4.3
% Change	-0.4	-14.0	-4.5	4.1	5.9	2.9
Transportation and Utilities	1.6	1.1	1.1	1.2	1.3	1.4
% Change	-1.0	-28.5	-3.9	8.7	12.7	4.3
Finance, Insurance and Real Estate	1.2	1.0	0.9	1.0	1.1	1.1
% Change	0.7	-20.3	-2.5	9.7	7.5	3.0
Services	18.2	12.0	12.7	13.9	15.1	15.9
% Change	1.5	-34.3	5.6	10.1	8.5	5.4
Health Care and Soc. Assistance	3.0	2.8	2.8	2.9	3.0	3.1
% Change	2.6	-4.1	-1.2	2.9	5.1	3.3
Accommodation and Food	9.3	4.4	5.3	6.1	6.8	7.3
% Change	1.7	-52.6	19.0	15.2	11.9	7.2
Other	6.0	4.7	4.6	5.0	5.3	5.5
% Change	0.6	-20.6	-2.7	8.5	6.4	4.2
Government	5.1	5.0	4.9	5.1	5.3	5.4
% Change	2.8	-2.5	-1.6	4.3	4.0	1.8
Federal Government	0.6	0.6	0.6	0.6	0.6	0.6
% Change	13.3	4.1	-4.5	2.8	2.2	1.2
State and Local Government	4.6	4.4	4.4	4.5	4.7	4.8
% Change	1.7	-3.4	-1.2	4.5	4.2	1.9

Note: Source is UHERO. Industry job counts for 2020 and 2021 are UHERO estimates of the benchmark revision. Figures for 2021 - 2024 are forecasts.

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

	2019	2020	2021	2022	2023	2024
Real Personal Income (Mil 2020 $)	3,737.1	3,886.4	3,988.4	3,673.2	3,748.2	3,816.7
% Change	3.3	4.0	2.6	-7.9	2.0	1.8
Labor & Proprietors' Income	2,564.7	2,259.5	2,340.3	2,376.5	2,477.8	2,547.1
% Change	5.7	-11.9	3.6	1.5	4.3	2.8
Construction	—	—	—	—	—	—
% Change	—	—	—	—	—	—
Manufacturing	—	—	—	—	—	—
% Change	—	—	—	—	—	—
Trade	—	—	—	—	—	—
% Change	—	—	—	—	—	—
Transportation and Utilities	—	—	—	—	—	—
% Change	—	—	—	—	—	—
Finance, Insurance & Real Estate	—	148.2	—	—	—	—
% Change	—	—	—	—	—	—
Services	—	—	—	—	—	—
% Change	—	—	—	—	—	—
Health Care & Soc. Assist. (% ch.)	—	—	—	—	—	—
Accommodation & Food (% ch.)	—	—	—	—	—	—
Other (% ch.)	—	—	—	—	—	—
Government	475.9	491.1	481.5	488.4	504.8	516.8
% Change	3.3	3.2	-2.0	1.4	3.4	2.4
Federal, civilian (% ch.)	5.9	5.4	-4.7	3.0	3.0	2.1
State & Local (% ch.)	2.8	2.8	-1.4	1.2	3.5	2.5
Less Social Security Taxes (-)	299.1	264.8	281.1	280.1	291.1	298.2
% Change	6.8	-11.5	6.2	-0.4	3.9	2.5
Transfer Payments	717.2	1,158.8	1,219.2	839.8	834.1	849.9
% Change	0.4	61.6	5.2	-31.1	-0.7	1.9
Dividends, Interest and Rent	765.6	740.1	731.2	711.0	701.8	704.0
% Change	-0.4	-3.3	-1.2	-2.8	-1.3	0.3
Population (Thou)	74.4	74.3	74.6	74.7	74.8	75.0
% Change	0.2	-0.2	0.3	0.2	0.1	0.3
Real Per Capita Income (Thou 2020 $)	50.2	52.3	53.5	49.2	50.1	50.9
% Change	3.0	4.2	2.3	-8.1	1.9	1.5
Inflation Rate, Honolulu MSA (%)	1.6	1.6	3.9	3.8	3.1	2.8
Nominal Personal Income (Mil $)	3,679.3	3,886.4	4,143.0	3,960.0	4,167.8	4,361.9
% Change	4.9	5.6	6.6	-4.4	5.2	4.7

Note: Source is UHERO. Figures for 2021 - 2024 are forecasts. Because of data disclosure rules, industry-level income is not available for some sectors.

TABLE 17: BASELINE FORECAST SCENARIO

STATE OF HAWAII FORECAST

	2019	2020	2021	2022	2023	2024
STATE OF HAWAII						
Nonfarm Payrolls (Thou)	658.6	560.9	574.0	600.2	627.1	639.4
% Change	0.1	-14.8	2.3	4.6	4.5	2.0
Unemployment Rate (%)	2.5	11.8	7.7	5.4	3.4	2.8
Real Personal Income (Mil 2020$)	79,748.2	82,526.4	83,184.6	78,453.9	80,372.4	81,995.1
% Change	1.4	3.5	0.8	-5.7	2.4	2.0
Real GDP (Mil 2020$)	93,221.5	82,884.4	87,664.1	90,059.2	93,326.9	95,542.0
% Change	0.0	-11.1	5.8	2.7	3.6	2.4
Total Visitor Arrivals by Air (Thou)	10,385.8	2,708.3	6,749.2	8,286.5	9,321.2	9,570.6
% Change	5.0	-73.9	149.2	22.8	12.5	2.7
Visitor Days (Thou)	89,690.4	28,515.8	64,833.2	77,476.8	85,127.4	86,279.8
% Change	2.2	-68.2	127.4	19.5	9.9	1.4
Real Visitor Expenditures (Mil 2020$)	17,994.2	4,840.8	12,561.8	16,460.4	17,892.1	17,535.7
% Change	-0.4	-73.1	159.5	31.0	8.7	-2.0
HONOLULU COUNTY						
Nonfarm Payrolls (Thou)	473.8	412.5	418.4	437.1	456.3	464.1
% Change	0.1	-12.9	1.4	4.5	4.4	1.7
Unemployment Rate (%)	2.3	10.3	7.1	5.1	3.1	2.6
Inflation Rate, Honolulu MSA (%)	1.6	1.6	3.9	3.8	3.1	2.8
Real Personal Income (Mil 2020$)	58,663.5	60,521.9	60,810.0	57,708.9	59,195.4	60,353.1
% Change	0.8	3.2	0.5	-5.1	2.6	2.0
Total Visitor Arrivals by Air (Thou)	6,153.9	1,506.2	3,304.8	4,468.5	5,321.5	5,514.4
% Change	5.0	-75.5	119.4	35.2	19.1	3.6
HAWAII COUNTY						
Nonfarm Payrolls (Thou)	70.9	61.0	63.1	64.9	67.1	68.4
% Change	-0.2	-13.9	3.5	2.8	3.4	1.8
Unemployment Rate (%)	3.1	11.5	7.6	6.3	4.4	3.6
Real Personal Income (Mil 2020$)	8,737.5	9,410.8	9,619.3	8,953.7	9,126.0	9,311.3
% Change	2.3	7.7	2.2	-6.9	1.9	2.0
Total Visitor Arrivals by Air (Thou)	1,763.9	477.8	1,180.2	1,473.5	1,639.7	1,696.3
% Change	3.4	-72.9	147.0	24.9	11.3	3.5
MAUI COUNTY						
Nonfarm Payrolls (Thou)	80.7	62.0	66.8	70.7	74.1	76.2
% Change	0.2	-23.2	7.7	5.9	4.8	2.8
Unemployment Rate (%)	2.4	18.1	10.1	5.2	3.4	3.2
Real Personal Income (Mil 2020$)	8,611.5	8,708.3	8,767.0	8,118.1	8,302.9	8,513.9
% Change	4.0	1.1	0.7	-7.4	2.3	2.5
Total Visitor Arrivals by Air (Thou)	3,111.1	846.8	2,352.3	2,927.0	3,103.4	3,156.0
% Change	5.0	-72.8	177.8	24.4	6.0	1.7
KAUAI COUNTY						
Nonfarm Payrolls (Thou)	33.3	26.1	25.7	27.7	29.6	30.8
% Change	1.6	-21.6	-1.6	7.6	7.1	4.1
Unemployment Rate (%)	2.4	16.3	11.0	7.4	4.0	3.1
Real Personal Income (Mil 2020$)	3,737.1	3,886.4	3,988.4	3,673.2	3,748.2	3,816.7
% Change	3.3	4.0	2.6	-7.9	2.0	1.8
Total Visitor Arrivals by Air (Thou)	1,370.0	345.1	818.8	1,246.8	1,319.6	1,338.1
% Change	-1.3	-74.8	137.2	52.3	5.8	1.4

Note: Source is UHERO. Nonfarm Payrolls for 2020 and 2021 are UHERO estimates of the benchmark revision. Figures for 2021-2024 are forecasts.

TABLE 18: OPTIMISTIC FORECAST SCENARIO

STATE OF HAWAII FORECAST

	2019	2020	2021	2022	2023	2024
STATE OF HAWAII						
Nonfarm Payrolls (Thou)	658.6	560.9	574.5	610.8	639.2	651.7
% Change	0.1	-14.8	2.4	6.3	4.6	2.0
Unemployment Rate (%)	2.5	11.8	7.7	4.4	2.6	2.4
Real Personal Income (Mil 2020$)	79,748.2	82,526.4	83,362.5	80,394.3	82,536.2	84,120.5
% Change	1.4	3.5	1.0	-3.6	2.7	1.9
Real GDP (Mil 2020$)	93,221.5	82,884.4	88,081.3	92,228.5	95,786.6	98,060.1
% Change	0.0	-11.1	6.3	4.7	3.9	2.4
Total Visitor Arrivals by Air (Thou)	10,385.8	2,708.3	6,799.2	9,356.0	10,062.1	10,381.6
% Change	5.0	-73.9	151.1	37.6	7.5	3.2
Visitor Days (Thou)	89,690.4	28,515.8	65,383.6	86,352.0	89,277.9	90,658.8
% Change	2.2	-68.2	129.3	32.1	3.4	1.5
Real Visitor Expenditures (Mil 2020$)	17,994.2	4,840.8	12,916.9	19,093.4	19,052.0	18,730.3
% Change	-0.4	-73.1	166.8	47.8	-0.2	-1.7
HONOLULU COUNTY						
Nonfarm Payrolls (Thou)	473.8	412.5	418.9	444.4	463.2	470.5
% Change	0.1	-12.9	1.5	6.1	4.2	1.6
Unemployment Rate (%)	2.3	10.3	7.1	4.2	2.4	2.2
Inflation Rate, Honolulu MSA (%)	1.6	1.6	3.9	4.3	3.6	3.1
Real Personal Income (Mil 2020$)	58,663.5	60,521.9	60,958.5	58,955.6	60,505.1	61,595.4
% Change	0.8	3.2	0.7	-3.3	2.6	1.8
Total Visitor Arrivals by Air (Thou)	6,153.9	1,506.2	3,338.4	5,224.6	5,826.9	6,054.1
% Change	5.0	-75.5	121.6	56.5	11.5	3.9
HAWAII COUNTY						
Nonfarm Payrolls (Thou)	70.9	61.0	63.2	66.3	69.1	70.4
% Change	-0.2	-13.9	3.5	5.0	4.2	1.9
Unemployment Rate (%)	3.1	11.5	7.6	4.8	3.2	2.8
Real Personal Income (Mil 2020$)	8,737.5	9,410.8	9,631.6	9,249.7	9,470.6	9,653.2
% Change	2.3	7.7	2.3	-4.0	2.4	1.9
Total Visitor Arrivals by Air (Thou)	1,763.9	477.8	1,187.8	1,637.4	1,759.8	1,830.4
% Change	3.4	-72.9	148.6	37.9	7.5	4.0
MAUI COUNTY						
Nonfarm Payrolls (Thou)	80.7	62.0	66.8	71.9	76.1	78.7
% Change	0.2	-23.2	7.7	7.7	5.8	3.4
Unemployment Rate (%)	2.4	18.1	10.1	4.2	2.6	2.6
Real Personal Income (Mil 2020$)	8,611.5	8,708.3	8,779.0	8,382.4	8,632.2	8,863.7
% Change	4.0	1.1	0.8	-4.5	3.0	2.7
Total Visitor Arrivals by Air (Thou)	3,111.1	846.8	2,366.0	3,190.5	3,297.8	3,372.3
% Change	5.0	-72.8	179.4	34.8	3.4	2.3
KAUAI COUNTY						
Nonfarm Payrolls (Thou)	33.3	26.1	25.8	28.3	30.8	32.2
% Change	1.6	-21.6	-1.3	9.6	9.0	4.4
Unemployment Rate (%)	2.4	16.3	11.0	5.7	3.0	2.8
Real Personal Income (Mil 2020$)	3,737.1	3,886.4	3,993.4	3,806.6	3,928.3	4,008.3
% Change	3.3	4.0	2.8	-4.7	3.2	2.0
Total Visitor Arrivals by Air (Thou)	1,370.0	345.1	824.1	1,353.9	1,400.1	1,429.4
% Change	-1.3	-74.8	138.8	64.3	3.4	2.1

Note: Source is UHERO. Nonfarm Payrolls for 2020 and 2021 are UHERO estimates of the benchmark revision. Figures for 2021-2024 are forecasts.

TABLE 19: PESSIMISTIC FORECAST SCENARIO
STATE OF HAWAII FORECAST

	2019	2020	2021	2022	2023	2024
STATE OF HAWAII						
Nonfarm Payrolls (Thou)	658.6	560.9	573.8	592.1	613.9	625.7
% Change	0.1	-14.8	2.3	3.2	3.7	1.9
Unemployment Rate (%)	2.5	11.8	7.7	6.4	4.7	4.0
Real Personal Income (Mil 2020$)	79,748.2	82,526.4	83,165.5	77,484.5	78,957.9	80,577.9
% Change	1.4	3.5	0.8	-6.8	1.9	2.1
Real GDP (Mil 2020$)	93,221.5	82,884.4	87,725.7	88,729.0	91,301.8	93,419.0
% Change	0.0	-11.1	5.8	1.1	2.9	2.3
Total Visitor Arrivals by Air (Thou)	10,385.8	2,708.3	6,709.2	7,452.4	8,557.4	9,012.7
% Change	5.0	-73.9	147.7	11.1	14.8	5.3
Visitor Days (Thou)	89,690.4	28,515.8	64,417.2	70,144.1	79,973.0	83,367.0
% Change	2.2	-68.2	125.9	8.9	14.0	4.2
Real Visitor Expenditures (Mil 2020$)	17,994.2	4,840.8	12,556.5	14,686.0	16,993.5	17,335.2
% Change	-0.4	-73.1	159.4	17.0	15.7	2.0
HONOLULU COUNTY						
Nonfarm Payrolls (Thou)	473.8	412.5	418.4	431.5	446.7	454.6
% Change	0.1	-12.9	1.4	3.1	3.5	1.8
Unemployment Rate (%)	2.3	10.3	7.1	5.9	4.1	3.6
Inflation Rate, Honolulu MSA (%)	1.6	1.6	3.9	3.9	2.9	2.6
Real Personal Income (Mil 2020$)	58,663.5	60,521.9	60,821.5	57,046.6	58,200.8	59,362.7
% Change	0.8	3.2	0.5	-6.2	2.0	2.0
Total Visitor Arrivals by Air (Thou)	6,153.9	1,506.2	3,280.6	3,923.2	4,791.3	5,143.3
% Change	5.0	-75.5	117.8	19.6	22.1	7.3
HAWAII COUNTY						
Nonfarm Payrolls (Thou)	70.9	61.0	63.1	63.9	65.7	66.8
% Change	-0.2	-13.9	3.4	1.2	2.9	1.6
Unemployment Rate (%)	3.1	11.5	7.6	7.0	5.5	5.0
Real Personal Income (Mil 2020$)	8,737.5	9,410.8	9,618.5	8,844.8	8,969.6	9,154.9
% Change	2.3	7.7	2.2	-8.0	1.4	2.1
Total Visitor Arrivals by Air (Thou)	1,763.9	477.8	1,173.7	1,338.2	1,514.9	1,600.5
% Change	3.4	-72.9	145.6	14.0	13.2	5.7
MAUI COUNTY						
Nonfarm Payrolls (Thou)	80.7	62.0	66.7	69.6	72.7	74.5
% Change	0.2	-23.2	7.6	4.3	4.4	2.5
Unemployment Rate (%)	2.4	18.1	10.2	7.8	6.3	5.1
Real Personal Income (Mil 2020$)	8,611.5	8,708.3	8,737.5	7,983.1	8,124.6	8,334.6
% Change	4.0	1.1	0.3	-8.6	1.8	2.6
Total Visitor Arrivals by Air (Thou)	3,111.1	846.8	2,340.0	2,684.2	2,898.8	2,995.4
% Change	5.0	-72.8	176.3	14.7	8.0	3.3
KAUAI COUNTY						
Nonfarm Payrolls (Thou)	33.3	26.1	25.7	27.1	28.8	29.8
% Change	1.6	-21.6	-1.9	5.6	6.3	3.7
Unemployment Rate (%)	2.4	16.3	11.0	8.7	5.8	4.3
Real Personal Income (Mil 2020$)	3,737.1	3,886.4	3,988.0	3,610.0	3,662.9	3,725.8
% Change	3.3	4.0	2.6	-9.5	1.5	1.7
Total Visitor Arrivals by Air (Thou)	1,370.0	345.1	813.7	1,148.4	1,237.6	1,273.2
% Change	-1.3	-74.8	135.8	41.1	7.8	2.9

Note: Source is UHERO. Nonfarm Payrolls for 2020 and 2021 are UHERO estimates of the benchmark revision. Figures for 2021-2024 are forecasts.

TABLE 20: EXTERNAL INDICATORS
STATE OF HAWAII FORECAST

	2019	2020	2021	2022	2023	2024
U.S. FACTORS						
Employment (Thou)	157,538.1	147,794.8	152,448.8	157,701.7	159,927.0	160,832.2
% Change	1.1	-6.2	3.1	3.4	1.4	0.6
Unemployment Rate (%)	3.7	8.1	5.5	4.3	3.8	3.8
Inflation Rate (%)	1.8	1.2	4.5	4.2	2.8	2.1
Real GDP (Bil chained 2012$)	19,032.7	18,384.7	19,406.2	20,241.4	20,779.4	21,163.4
% Change	2.3	-3.4	5.6	4.3	2.7	1.8
Population (Thou)	328,527.0	330,152.0	331,380.7	332,534.5	333,761.4	335,059.8
% Change	0.5	0.5	0.4	0.3	0.4	0.4
JAPAN FACTORS						
Employment (Thou)	67,245.0	66,765.8	66,791.8	67,042.5	66,964.8	66,733.8
% Change	0.9	-0.7	0.0	0.4	-0.1	-0.3
Unemployment Rate (%)	2.4	2.8	2.8	2.7	2.7	2.7
Inflation Rate (%)	0.5	0.0	0.4	1.8	1.4	1.0
Real GDP (Bil chained 2011 yen)	554,472.4	528,335.0	541,731.5	554,785.0	562,690.7	568,598.0
% Change	0.0	-4.7	2.5	2.4	1.4	1.1
Population (Thou)	126,264.9	125,836.0	125,444.3	125,052.7	124,635.4	124,196.9
% Change	-0.2	-0.3	-0.3	-0.3	-0.3	-0.4
Exchange Rate (Yen/$)	109.0	106.8	109.7	110.8	106.8	103.2

Note: Source is UHERO. Figures for 2021-2024 are forecasts.

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