

UHERO ANNUAL REPORT: RESPONSE TO COVID-19

OCTOBER 11, 2021



1. INTRODUCTION

By the end of 2020, The University of Hawai'i Economic Research Organization (UHERO) received \$1.2 million in private support to fund critical economic research, and help Hawai'i on the path to recovery. Donors include Hawai'i Community Foundation, Bank of Hawai'i Foundation, Kamehameha Schools, First Hawaiian Bank Foundation, DGM Group, Hawaiian Electric Industries Charitable Foundation, Hawai'i Medical Service Association, Hawai'i Pacific Health, American Savings Bank, Stanford Carr Development, HPM Building Supply Foundation, First Insurance Charitable Foundation, Hawai'i Government Employees Association, Hawai'i State AFL-CIO, Island Insurance Foundation, and the Harold K.L. Castle Foundation. The purpose of the \$1.2 million was to enable UHERO to hire two full-time faculty and build capacity for applied research on the most pressing issues facing Hawai'i.

In addition to successfully hiring the first faculty member, Dr. Steven Bond-Smith, in August of 2021, UHERO conducted a variety of COVID-related analyses over the past year that has resulted in over three dozen policy briefs/blog posts (detailed below). Much of these research results have been presented by UHERO faculty and research fellows to a variety of audiences since the start of the pandemic. As a member of the House Select Committee on COVID-19 Economic and Financial Preparedness, Executive Director Carl Bonham has attended nearly 30 meetings and given over a dozen presentations. In 2021 alone, he has given 37 presentations in total to businesses, community groups, and government agencies. One of UHERO's housing economists, Dr. Philip Garboden, was appointed to the House Select Committee on COVID-19, Housing and Homeless Subcommittee, as well as the House Committee on Eviction Moratorium and Landlord Mediation, where he has worked to assist in the design of the State's rent relief program and determine best practices for when the eviction moratorium was lifted. Along with participating in a number of committee meetings, Dr. Garboden has given 7 public talks on affordable housing issues in Hawai'i over the past year. Several UHERO faculty and fellows (Drs. Carl Bonham, Makena Coffman, Philip Garboden, and Justin Tyndall) also presented research findings at UH's Better Tomorrow Speaker Series with Matt Desmond, which had over 1,000 registrants. As a member of COVID Pau, a hui of private businesses and nonprofit organizations dedicated to helping fulfill an unmet need in public health information, UHERO has also contributed to the creation and daily maintenance of a daily data dashboard. As we all look forward to an eventual return to normalcy, UHERO will continue to contribute economic intelligence to the community through applied research, participation in committees, public presentations, and sharing/maintenance of data.

2. OVERALL ECONOMIC CONDITIONS

COVID-19 has greatly increased the pace and magnitude of economic fluctuations and led to unprecedented [policy responses](#). Decision making in such a volatile environment required data and tools that supported (nearly) real-time monitoring of conditions. The rapidly-changing circumstances posed a challenge to forecasters around the world. UHERO took several steps to adjust to the new reality.

We acquired high-frequency data from non-standard sources to help us understand day-to-day economic conditions. The sources included private sector companies dealing with [restaurant reservations](#), payroll processing, payment processing for merchants and others. The collected variables covered various facets of the economy, including the labor market, consumer behavior, locally important business conditions in the tourism and restaurant industries, and measures of mobility capturing the change in behavior in the wake of the COVID-19 outbreak. We added this data to the [UHERO data portal](#) and used it to construct the UHERO Pulse index described below and to inform our quarterly economic forecasts.

We developed the [UHERO Pulse](#), a weekly coincident index of economic activity for the state of Hawai'i. Due to its timeliness, the UHERO Pulse index is an excellent tool to nowcast the recovery from the COVID-19 recession. The index captures both the steep drop and sluggish recovery seen across many economic indicators in the wake of the COVID-19 outbreak. The tight relationship between the index and nonfarm payrolls is also useful for [predicting labor](#)

[market conditions](#). Needless to say, timely information of this kind has been essential for informing businesses and public leaders faced with policy choices in these turbulent times.

During this time of uncharted epidemiological and economic risks, there was exceptional uncertainty about the particular path that the recovery would take. The differing assumptions about [pandemic control](#) and macroeconomic damage implied different recovery paths for tourism, the locally-oriented economy, and overall macroeconomic conditions. To provide our readers a reasonable range of alternative outcomes, we began publishing [forecast scenarios](#). In formulating our baseline scenario, we made our best judgment about developments that will determine the path ahead, but augmented it with optimistic and pessimistic alternative scenarios. Note that we did not view these alternatives as worst-case and best-case outcomes, but rather as reasonably likely alternative paths that the Hawai'i economy could follow depending on developments in and outside Hawai'i.

Understanding the impact of the pandemic on the local labor market has been a focus of recent research at UHERO. Analysis of employment data has provided insight into the complex impacts of the pandemic. Our [analysis](#) catalogued the huge toll that business closures took on the employment prospects of those in the accommodation, food service and retail sectors. What we know about these industries is that they not only hire a disproportionate number of women (something we can see in the data) but also higher numbers of folks without a college or graduate degree (a finding that is prevalent in national analyses). As the State works to develop policies to help weather what promises to be a drawn-out recovery, it will be important to keep these differential impacts in mind. We were also able to provide [rapid information](#) on the spatial distribution of new unemployment claims during the early stages of the pandemic. Data from a sample of 150,000 initial unemployment claims from the Department of Labor and Industrial Relations (DLIR), were used to generate a map that provides a first indication of the severity of the labor market downturn, organized by zip code. Claims were more concentrated on the neighbor islands than on O'ahu and tended to be clustered in zip codes where the tourism industry is a particularly important source of employment. We worked to put the [developments of the labor market](#) in the context of longer-term labor conditions in Hawai'i, such as the consequences of economic reliance on the tourism sector.

The pandemic caused [residents to avoid businesses](#) where they would be in close contact with other people, which had important consequences for the broader economy. Through a data sharing arrangement with the mobility data services firm Safegraph, we were able to prepare a [public dashboard and analysis](#) that made use of anonymized cell phone data to provide information on the daily movement of Hawai'i residents. We were able to use this information to monitor real time developments in people's willingness to visit particular businesses. Also on the topic of mobility, we made use of frequently updated traffic data from across O'ahu to [understand the effect the pandemic had on vehicle congestion](#). The sudden decline in commuters offered an opportunity to rethink how traffic management is approached in Hawai'i. The public was engaged in this research through an essay [published in local media](#), and through [a live, public discussion](#).

3. RESPONDING TO THE HOUSING CRISIS

The COVID-19 pandemic exposed vast inadequacies in our housing system both locally and nationally. In the midst of the crisis, having the support of UHERO's Response to COVID-19 fund proved critical in allowing Dr. Garboden and UHERO to assist state and county decision makers around rent relief and affordable housing preservation.

The UHERO/DURP HCRC Professor in Affordable Housing Economics, Policy, and Planning Dr. Phil Garboden was appointed to the House Select Committee on COVID-19, Housing and Homelessness Subcommittee, which was tasked with providing guidance to the state legislature on matters related to the pandemic and housing. The committee included researchers, advocates, and practitioners, and spent the bulk of 2020 and 2021 assisting in the design of the State's rent relief programs.

Our main contribution to the committee has been forecasting the need for assistance and tracking housing market trends. Most critically, we conducted [an assessment of the need for rental assistance](#) using ACS microdata that allowed us to simulate job losses through the population. This report, we have been told, was widely circulated by policymakers and was partially responsible for the substantial allocation of CARES money to rent relief, and was followed in December

with another report [estimating rental hardship](#). This analysis was updated throughout the year through two blog posts ([August](#) and [November](#)) analyzing rental market trends.

Dr. Garboden was also appointed to the House Committee on Eviction Moratorium and Landlord Mediation which worked with a variety of stakeholders to determine best practices for when the eviction moratorium was lifted. The committee's work resulted in legislation ensuring that all tenants receive mediation services which, ideally, will connect them to rent relief support thus reducing displacement. To support this committee, we drafted a series of internal memos outlining the risks of eviction faced by struggling families as well as the long-term consequences of the crisis on the state's rental housing stock. Many of these topics were also covered in a blog post that laid out strategies for [preserving housing stability during the COVID crisis](#).

Finally, we have worked closely with the Hawai'i Housing Finance and Development Corporation (HHFDC) to draft the application for Homeownership Assistance Funds from the US Treasury. Using data on mortgage forbearance and delinquency, we have assisted the State in estimating demand and making allocations.

Throughout the crisis, we have endeavored to publicly disseminate best practices to ensure housing stability during the crisis, giving numerous talks about the pandemic and housing (including as a part of UH's Better Tomorrow Speak Series with Matt Desmond which had over 1,000 registrants). Our analyses have been quoted in nearly all local media as our work is trusted as both objective and data-driven.

4. HEALTH AND VIRUS CONTROL

At the outset of the pandemic, UHERO researchers collaborated with infectious disease specialists at UH to develop a [plan to control and halt the spread of the coronavirus](#) that takes into account Hawai'i's special characteristics. The plan had four steps: 1) stem the influx of new infections; 2) rapidly slow the spread of the epidemic in local populations; 3) once the spread has stopped, conduct wider testing of those with symptoms and at elevated risk and proactively trace contacts of any who are positive; and 4) based on active monitoring of the testing done set triggers to reimpose shelter-in-place orders if the epidemic resurges.

By March 2020, the State had closed schools and many workplaces, while residents were urged to shelter at home. As a result, the economy was contracting rapidly. UHERO research fellows analyzed the tradeoffs for [two alternative exit strategies from the shutdowns and social distancing](#): 1) herd immunity and 2) containment through test and trace. Further analysis of the [second strategy](#), suggested that increased testing, comprehensive historical contact tracing, and isolation of exposed and infected individuals could lead to a rapid reduction in new infections and hospitalizations. Such a system, if put into place and operated successfully for several weeks, would likely enable Governor Ige to gradually relax his stay-at-home order and for individuals to gradually relax some social distancing restrictions.

As the State prepared to reopen the economy to tourists, many in the community voiced concerns. UHERO researchers, in collaboration with other UH faculty members, developed and proposed a [plan to limit travel-related reintroduction](#) of COVID-19 into Hawai'i, averting further local transmission of the virus from travelers to the community. According to this plan, individuals clearing both (1) temperature and symptom screening in their departure city and (2) a COVID-19 test in their departure city would not be required to quarantine for 14 days on arrival in Hawai'i. The same group of researchers also looked at the challenge of how best to safely [reopen the state specifically to Japanese tourism](#), in view of the fact that Hawai'i has been a favored destination for Japanese tourists since the early 1960s.

In October 2020, the State initiated a pre-travel testing program that exempted travelers from a 14-day quarantine upon arrival if they tested negative for the COVID-19 virus within 72-hours of their final leg of departure. [UHERO's estimates of daily visitors and passengers](#) arriving in Hawai'i, using data from HTA's Safe Travels Hawai'i data collection program, suggested that the state government's pre-travel testing protocol alone may not bring visitors back quickly and in large numbers.

The Pacific Alliance Against COVID-19 (PAAC) is co-led by Dr. Ruben Juarez at UHERO and a multidisciplinary team of researchers at the John A. Burns School of Medicine and the College of Education, University of Hawai'i, as well as the AHARO Community Health Centers in partnership with the Department of Health and the Department of Education. The collective goal is to expand testing in the community and empower educators, students and their families with COVID-19 education tools and more effective connections with public health services, especially those provided by the AHARO Community Health Centers, including the Wai'anae Coast Comprehensive Health Center and the Waimanalo Health Center on O'ahu, Bay Clinic and Hamakua-Kohala Health Center on Hawai'i Island, and Moloka'i Health Center on Moloka'i. In August 2021, faced with the largest increase in cases since the beginning of the COVID-19 pandemic, UHERO and PAAC conducted [a representative survey of businesses and community organizations in the state](#) to (1) understand their willingness to adopt restrictions at their workplaces for employees and customers and (2) understand barriers to effectively execute these restrictions if implemented.

For the first survey, before the approval of the Pfizer vaccine and mandates by the City and County of Honolulu and Maui, 884 businesses participated from all sectors in the state, with 95% located on O'ahu. The survey included questions about vaccination rates of employees and safety protocols taken by businesses and their perspectives on further mandates from the State to increase safety measures. The results showed that over 80% of businesses had 80% or more of their employees vaccinated and 64.5% were willing to or already had a vaccine mandate for their workers. Nearly half of the respondents said they would not impose their own vaccine passport or negative test requirement for customers, mostly due to concerns about customer resistance, logistical feasibility, and personal preferences. Almost 50% of businesses indicated they needed additional educational material about testing and vaccination events for both employees and customers.

A second survey was conducted following the announcement of the City and County of Honolulu to require certain businesses to have proof of vaccination or regular testing for customers and employees. The impacted businesses include restaurants, bars, gyms and fitness centers, and entertainment centers among others. Of the 1,907 businesses surveyed, a little over one-quarter were directly impacted by the new mandate. Over half of respondents that have implemented mandates for employees indicated that it was due to the new regulation (50.33%) and willingness to help the community (53.45%). Most businesses indicated that they anticipated the regulation would have no impact on the number of customers, number of employees, number of open stores, revenue, or customer resistance/complaints. Over one-third did indicate they expected a decrease in the number of customers (35.3%) and in revenue (39.61%). The highest response for concerns of businesses included confirming the vaccination or testing status of employees and customers and customer and employee resistance. A majority of businesses indicated agreement to statements stating the mandate makes their businesses safer. Most businesses support the mandate for employees (71.1%) and the passport for customers (62.28%). Around half of businesses requested technical support for checking vaccination or testing status and for funding to provide take-home tests for employees.

5. HAWAII'S BUSINESS, LABOR FORCE, AND UNEMPLOYMENT ISSUES

Everyone made sacrifices during the state's economic shutdown in early 2020, but some people and places were hit harder than others. To better understand these dynamics, UHERO partnered with the Chamber of Commerce Hawai'i and a dozen other industry associations across the state to field a survey of the impact of the COVID-19 shutdown on businesses and their employees. In just a week, data was collected from 623 businesses. These data provided otherwise unavailable [insight into the impacts of the economic crisis](#). While this was a first look at the numbers, the statistics suggested that the impact of the crisis will hit hardest the very people and places who are already the most vulnerable. Breaking down the [survey data by county](#), it is also clear that businesses on neighbor islands are doing worse than those in Honolulu in nearly every respect. Although the data only showed the what, not the why, one significant factor is that the neighbor island economies are more reliant on tourism than those on O'ahu, who have the benefit of serving a larger resident population.

The topline findings of an [August 2020 update to the survey of local businesses](#) are troubling. With the exception of jobs in information technology and other services, no industry category saw a meaningful increase from the devastating April 2020 job numbers. Most industries plateaued or continued to shed jobs including double-digit declines in education services, arts and entertainment, and manufacturing. More positively, the opening of the kama'aina economy

seems to have halted the decline in food services, retail, and real estate, although there was no sign at that point of significant recovery. Survey results also showed that, with a few exceptions, the bulk of [women owned businesses have been harder hit than those owned by men](#). Women entrepreneurs are represented in nearly every industry sector, but appear to be somewhat overrepresented in service based industries that have been particularly hard hit by the pandemic.

Exactly how long the recession will last is difficult to predict, but UHERO's 2020 Q2 forecast noted that total employment in Hawai'i may not return to its pre-pandemic level for at least several years. Social safety net programs and job re-training and education programs all deserve more attention to [avoid a lost decade for Hawai'i's underemployed](#). Data released by the U.S. Bureau of Labor Statistics (BLS) in early 2021 showed that in December 2020 Hawai'i had the unenviable distinction of having the highest state unemployment rate in the nation (10.3%). For the entire year, [Hawai'i's unemployment rate was the second highest in the nation \(11.6%\)](#) after Nevada (12.8%). Although this was a substantial improvement since April 2020 despite drastic restrictions imposed on economic activities in order to curb the spread of the COVID-19 pandemic, we continue to expect that further improvement in the job market will be drawn out over the coming years.

In addition to hurting those who were already in the workforce prior to the pandemic, the current crisis in Hawai'i will likely have lasting negative effects on current high school and college students hoping to enter the job market in the near future. Finding a job will be a daunting task for newly minted graduates over the coming years with unemployment in Hawai'i still substantially above pre-pandemic levels. Even for those who aspire to go to college, the devastation of family finances due to the pandemic may make it difficult for them to pay for post-secondary education. To prevent a lost generation of Hawai'i graduates permanently scarred by the COVID-19 crisis, UHERO researchers detailed how the state should consider providing ["last-dollar" tuition assistance](#) at UH campuses.

6. FISCAL FOCUS

It was clear by April 2020 that the state and county governments would face unprecedented budget shortfalls in FY2021 and FY2022. While a combination of carry-over funds and monies from various special funds could tide the State over in the very short run, tax revenue declines that could easily top 15-20% would almost certainly require reductions in some public programs, given balanced budget rules. The best possible solution to the sharp near-term decline in revenues would be for the Federal Government to borrow in bond markets to make large direct grants to the states. However, given the uncertainty surrounding the Federal Government's next move, UHERO researchers took a look at the entire fiscal situation and the [full range of options](#) that the state and county governments may be able to take advantage of to get through this unprecedented shut-down.

As feared, by the summer of 2020, the impact of COVID-19 and the efforts taken to contain it had led to a rapid deterioration in the State's short- and medium-term fiscal outlooks. At its May 28 meeting, the State Council on Revenue (COR) cut its general fund tax revenue forecast for FY2020-FY2026 by almost \$10 billion. UHERO researchers evaluated [several options for addressing the budget gap](#), including strategies for reducing the cost of government and raising more revenue. Related to the latter, states are having to confront the challenge of determining how best to tax the incomes of employees who live in one state but work remotely for employers located in another state, as teleworking/telecommuting continues to grow during the pandemic. In Hawai'i a resident is taxed on income from all sources (some of that may be taxed by other tax jurisdictions as well) while the nonresident is taxed on income from Hawai'i sources only. UHERO researchers examined the [pros and cons of two competing approaches](#)—factor apportionment and taxation on the basis of residence—including implications for the Hawai'i state treasury.

7. TOURISM IN THE COVID ERA

Although the economic pain of tourism's collapse has been excruciating, the COVID crisis has given us an opportunity to think about what Hawai'i should look like as it recovers. Around the world, tourism organizations are building "smart destinations" using technology to manage resources, enhance destination competitiveness, and improve the lives of residents. Based on what has been learned so far about successful technology-based "smart tourism" approaches in other locales, Dr. James Mak and Frank Haas assess [Hawai'i's potential to become a smart destination](#).

To curb the spread of the COVID-19 virus, Hawai'i imposed a 14-day travel quarantine requirement for trans-Pacific passengers arriving in Hawai'i; the new rule went into effect on March 26, 2020. Despite the fact that the visitor numbers reported in the media often likely [understated the actual numbers](#) arriving in Hawai'i during the summer of 2020, it was clear by the fall that the pandemic turned 2020 into a lost year for the U.S. travel industry. A group of researchers, including one of UHERO's fellows, examined what the [future of travel and tourism](#) might look like primarily in the U.S. and future implications for Hawai'i tourism. They concluded that the long-term success of tourism in any destination (including Hawai'i) requires that three conditions be met: (1) a long-term strategic view, (2) authority to take action, and (3) sufficient resources to implement actions.

8. ECONOMIC DIVERSIFICATION

In August of 2021 UHERO was able to make the first hire funded by the COVID Response campaign and welcomed Dr. Steven Bond-Smith as an Assistant Professor. Steven is an applied economist specializing in regional and urban economics and the economics of innovation and growth.

Hawai'i's extreme specialization in the visitor industry exposes the state to economic shocks along with risks and volatility when events such as a pandemic or recession trigger a collapse in visitor numbers. This vulnerability has become a paramount concern during the pandemic. Through Dr. Bond-Smith's brief on [economic diversification](#), UHERO investigates the ability to balance visitor concentration and risk while promoting diversification, growth and prosperity. This research brief sketched out the reasons why Hawai'i's economy is so concentrated in the visitor industry based on principles in economics and geography. Using this diagnosis, the report considers how policy-makers, industry, and communities in Hawai'i could support diversification. The proposed approach requires significant research and consultation. This sets a possible research agenda for UHERO and a roadmap for policy-makers to implement an effective strategy.

LINKS TO BLOGS AND BRIEFS SUPPORTED BY UHERO'S RESPONSE TO COVID-19 FUND (BY SECTION NUMBER)

2. OVERALL ECONOMIC CONDITIONS

[The Agony of Restaurant Workers](#) by Peter Fuleky. March 24, 2020.

[COVID-19: Developing Economic Recovery Scenarios for Hawaii](#) by Carl Bonham, Peter Fuleky, and Byron Gangnes. May 4, 2020.

[Multipliers and the effectiveness of government policies](#) by Byron Gangnes, Rachel Inafuku, and Peter Fuleky. June 4, 2020.

[Nowcasting the Trajectory of the COVID-19 Recovery: The Weekly UHERO Economic Pulse](#) by Peter Fuleky. September 9, 2020.

[Estimating economic conditions during the COVID-19 crisis](#) by Carl Bonham and Peter Fuleky. October 15, 2020.

[COVID-19 infections, vaccines, and economic recovery](#) by Carl Bonham, Peter Fuleky, Byron Gangnes, and Justin Tyndall. April 16, 2021.

[Mapping Unemployment Claims in Hawai'i](#) by Justin Tyndall. May 22, 2020

[Early UI Data Reveals Differential Impacts of the Economic Shutdown](#) by Justin Tyndall and Philip Garboden. June 10, 2020.

[Unemployment and Underemployment in Hawaii: A Troubling Picture](#) by James Mak, Justin Tyndall and Carl Bonham. July 14, 2020

[Are Hawai'i Residents Staying at Home?](#) by Justin Tyndall and Joshua Hu. December 9, 2020.

[Mobility Data Shows Fewer Residents Staying at Home](#) by Joshua Hu and Justin Tyndall. April 15, 2021.

[Traffic in Honolulu: How to Make Transitory Pandemic Gains Permanent](#) by Justin Tyndall and Sumner La Croix. April 26, 2021.

3. RESPONDING TO THE HOUSING CRISIS

[Preserving Housing Stability During Hawaii's COVID Crisis](#) by Philip Garboden. April 30, 2020.

[Estimating the Need for Rental Assistance in Hawaii](#) by Philip Garboden and Isabelle Picciotto. June 17, 2020.

[The August Rental Market: Struggling Tenants and Rising Vacancies](#) by Philip Garboden. October 5, 2020.

[Estimating COVID-19 Induced Rental Housing Hardship in 2021](#) by Philip ME Garboden and Isabelle Picciotto. December 15, 2020.

[November Rental Market: Troubling Signs Remain As State Prepares for an Uncertain 2021](#) by Philip ME Garboden. January 14, 2021.

4. HEALTH AND VIRUS CONTROL

[Using Extensive Testing and Geographical Isolation to Mitigate the Coronavirus Crisis in Hawaii](#) by Sumner La Croix and Tim Brown. March 25, 2020.

[Herd Immunity or Containment through Test and Trace?](#) by Timothy Halliday and Michael J. Roberts. March 31, 2020.

[How to Control Hawaii's Coronavirus Epidemic and Bring Back the Economy: The Next Steps](#) by Sumner La Croix and Tim Brown. April 3, 2020.

[Prevention of Travel-related Reintroduction of COVID-19 Infection in the State of Hawaii](#) by Tim Brown, Sumner La Croix, and F. DeWolfe Miller. June 9, 2020.

[The Impact of the Medicaid Expiration on COFA Migrants and COVID19](#) by Timothy Halliday. July 27, 2020.

[Reopening Japanese Tourism in Hawaii: Is it Safe?](#) by Sumner La Croix, Tim Brown, and F. DeWolfe Miller. October 29, 2020.

[Pre-Travel Testing and Hawaii's Daily Trans-Pacific Visitors](#) by James Mak and Carl Bonham. November 6, 2020.

[COVID-19 Mandates: Recommendations for Hawai'i Businesses](#) by Ruben Juarez, Alikea Maunakea, May Okihiro, and Carl Bonham. August 23, 2021.

5. HAWAII'S BUSINESS, LABOR FORCE, AND UNEMPLOYMENT ISSUES

[COVID-19's Uneven Impact on Businesses and Workers: Results from a UHERO-Chamber of Commerce Hawaii Survey](#) by Philip Garboden. April 27, 2020.

[County Results from Small Business Survey](#) by Philip Garboden. May 5, 2020.

[Saving the Class of 2020 From the COVID-19 Economic Crisis](#) by Sumner La Croix and James Mak. May 11, 2020.

[Survey update shows widespread hardship for local businesses](#) by Philip Garboden and Isabelle Picciotto. August 14, 2020.

[Survey results for woman owned businesses](#) by Philip Garboden and Isabelle Picciotto. August 26, 2020.

[How Bad? Labor Underutilization in Hawaii During the Pandemic](#) by James Mak. April 27, 2021.

6. FISCAL FOCUS

[Tap Fed Lending Facilities to Support Local Economy](#) by Carl Bonham, Byron Gangnes, Sumner La Croix, and James Mak. April 21, 2020.

[How Can the State Government Restore Fiscal Balance?](#) by James Mak, Robert D. Ebel, and Carl Bonham. June 18, 2020.

[Taxing Income in the New World of Teleworking](#) by Robert D. Ebel and James Mak. May 28, 2021.

7. TOURISM IN THE COVID ERA

[Can Hawai'i Rise from the Ashes of COVID-19 as a Smart Destination?](#) by Frank Haas and James Mak. April 29, 2020.

[How Many Visitors Are Coming to Hawaii During this Pandemic? Making Sense of Hawaii's Visitor Arrival Data](#) by James Mak. August 28, 2020.

[The Future of Travel and Tourism After the COVID-19 Pandemic and Implications for Hawai'i](#) by Paul Brewbaker, Frank Haas, and James Mak. October 1, 2020.

8. ECONOMIC DIVERSIFICATION

[Location, Location, Location! A uniquely Hawai'i economic development strategy](#) by Steven Bond-Smith. April 9, 2021.