

# Economic Outlook for the State of Hawaii

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# Welcome and Introductions

- REMI models
- Big Picture: REMI Regional Growth Matrix
- Economic outlook
  - Short-term forecast
  - Long-term forecast
- Model demonstration

# Model



Regional Economic Models, Inc. (REMI) was founded in 1980 on a transformative idea: *government decision-makers should test the economic effects of their policies before they're implemented.* We are the nation's leader in dynamic local, state and national policy modeling. Our clients use REMI models to perform rigorous economic analysis that critically influences local, state and national policies.

## OUR CLIENTS:

Business Roundtable • Sandia National Laboratories • Ernst & Young • Texas Comptroller  
University of Michigan • Tennessee Valley Authority • National Education Association  
South Coast Air Quality Management District • Florida Legislature  
North Carolina Department of Commerce • Wyoming Department of Administration & Information  
California Environmental Protection Agency • U.S. Army Corps of Engineers

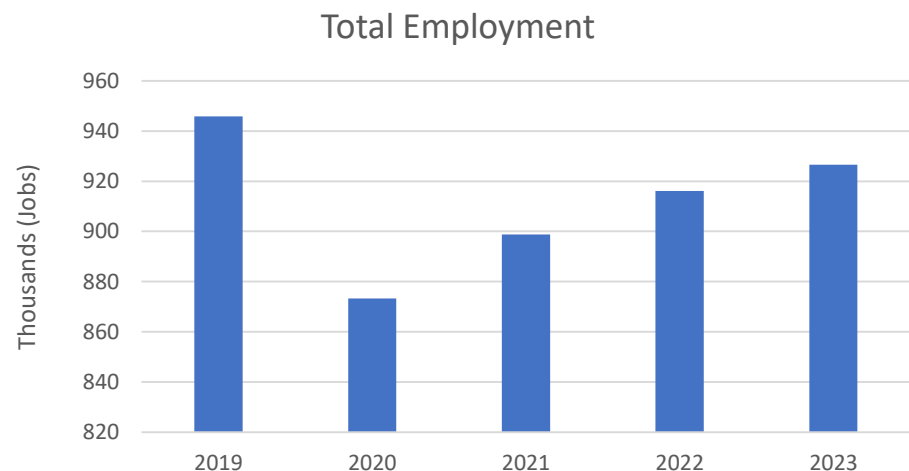
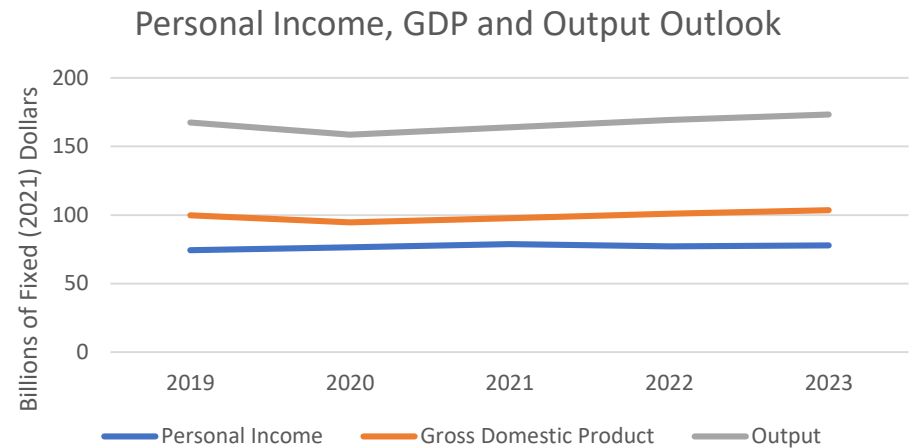
# Hawaii State Economy

- Only state outside North America, the only island state
- The 13th-most densely populated state with 1.4 million residents
- Economy has gradually diversified since the mid 20th century
  - Tourism & military defense

# Short-Term Outlook: Hawaii



- Years 2019-2023
- Growth 2020-2021
  - Personal income: 3.0%
  - GDP: 3.4%
  - Output: 3.4%
  - Employment: +26 thousands
- Uncertainty



# REMI Regional Growth Matrix: Economic & Demographic Factors



## Economic Factors

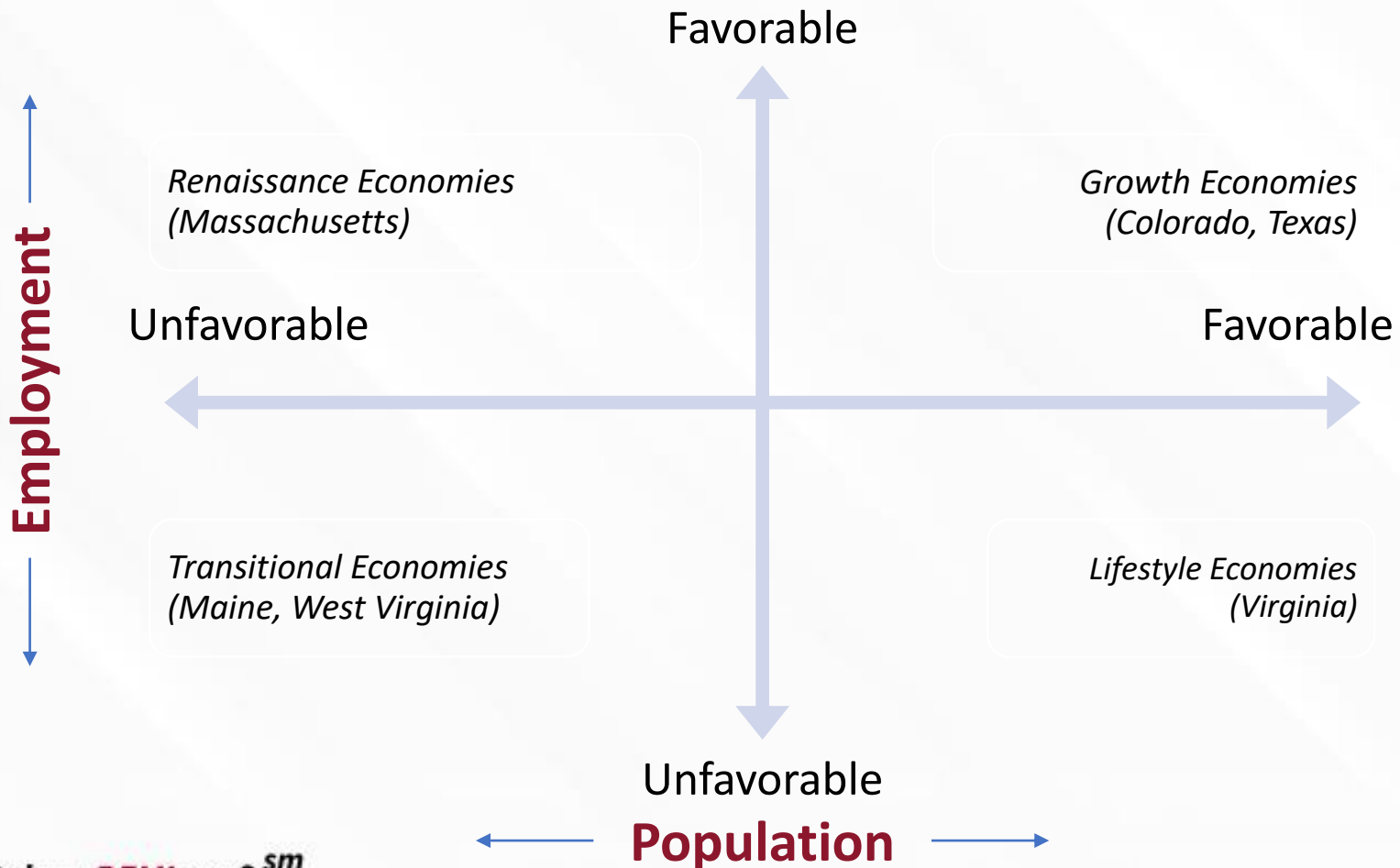
|             | Industry Growth | Industry Clusters | Pay                  | Productivity | Business Cost |
|-------------|-----------------|-------------------|----------------------|--------------|---------------|
| Favorable   | Growing         | Strong            | High-paid industries | High         | Low           |
| Unfavorable | Declining       | Weak              | Low-paid industries  | Low          | High          |

## Demographic Factors

|             | Population Age | Retirees       | Immigration                | Amenities | Housing Cost |
|-------------|----------------|----------------|----------------------------|-----------|--------------|
| Favorable   | Younger        | Gains retirees | Immigration gateway        | High      | Low          |
| Unfavorable | Older          | Loses retirees | Low internat'l immigration | Low       | High         |

what does **REMI** say? <sup>sm</sup>

# Regional Growth Matrix



# Growth Matrix

## Difference in Growth from US Average (2021-2022)





# Data Sources

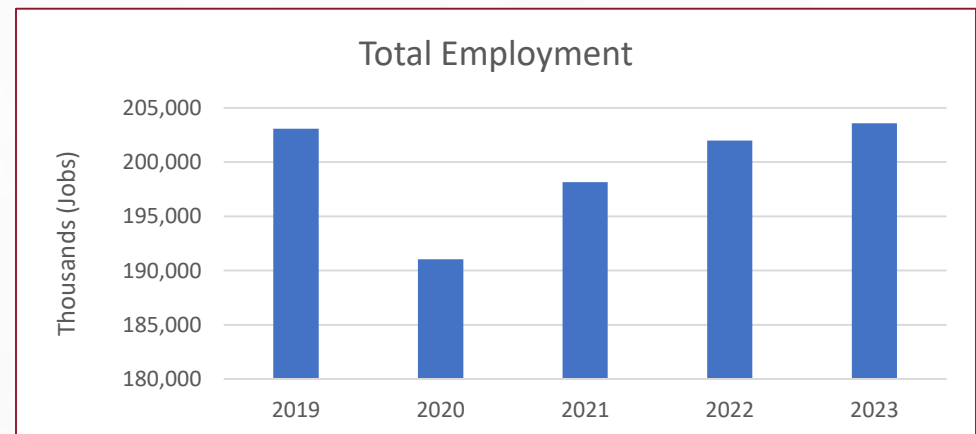
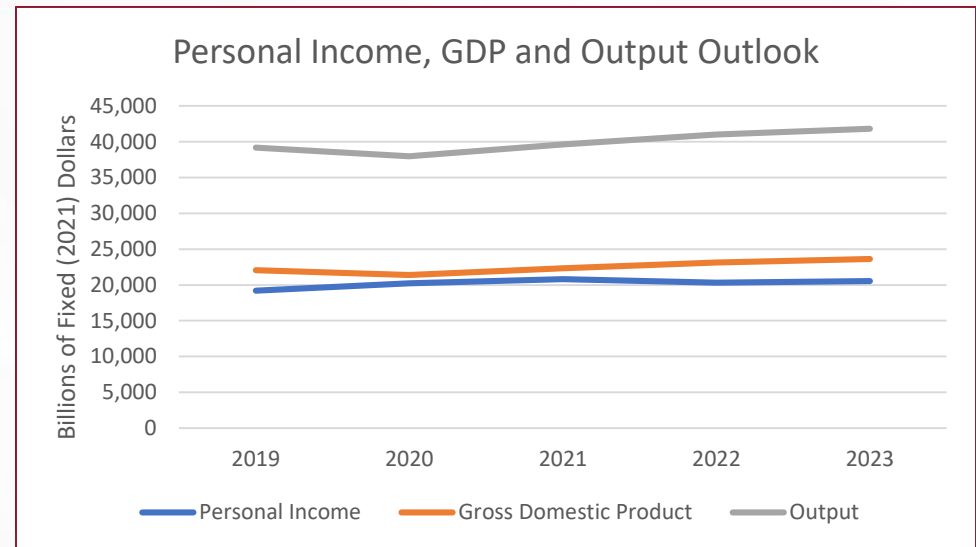
- Baseline (Standard National Control)
  - BLS Forecast Data
- Economic Forecast Update March 2021
  - 2019-2020 historical data from BEA
  - The U.S. Economic Outlook for 2020-2022 from the University of Michigan's Research Seminar in Quantitative Economics (RSQE)
  - An update to the Economics Outlook from CBO
  - Includes \$1.6 trillion stimulus, additional vaccination, and additional consumer spending<sup>1</sup>

# National Outlook

# Short-Term Outlook: the U.S.



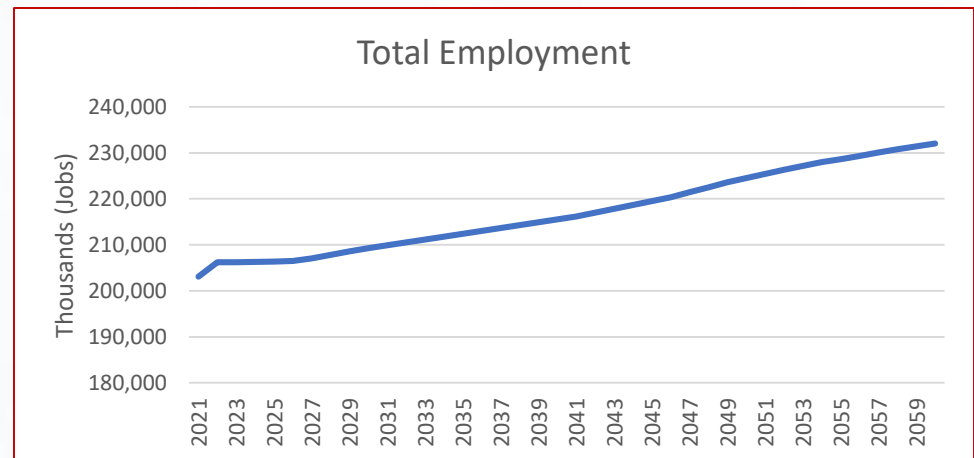
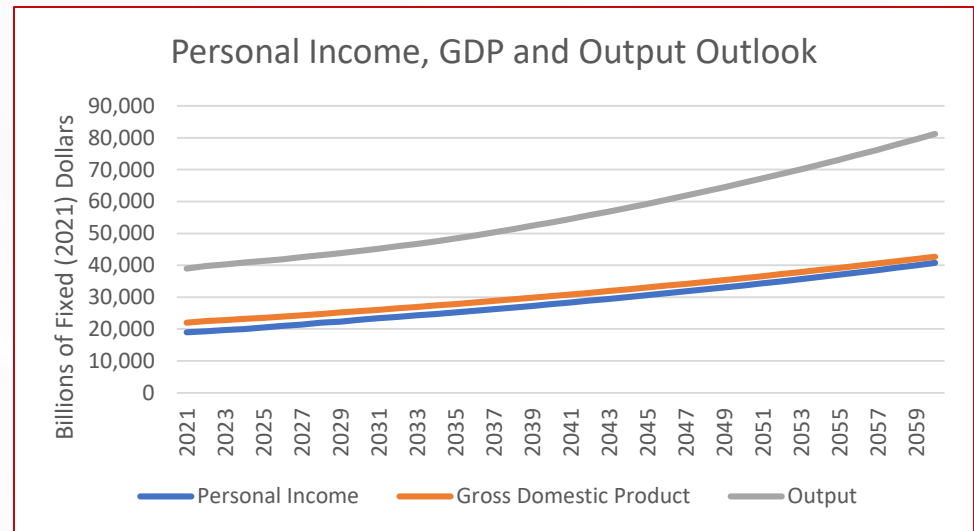
- Years 2019-2023
- Growth 2020-2021
  - Personal income (nominal dollars): 2.9%
  - GDP: 4.4%
  - Output: 4.4%
  - Employment: +7,099 thousand jobs



# Long-Term Outlook: The U.S.



- Years 2021-2060
- Average growth / year
  - Personal income: 1.9%
  - GDP: 1.8%
  - Output: 1.9%
- Total employment:  
+741 thousand jobs



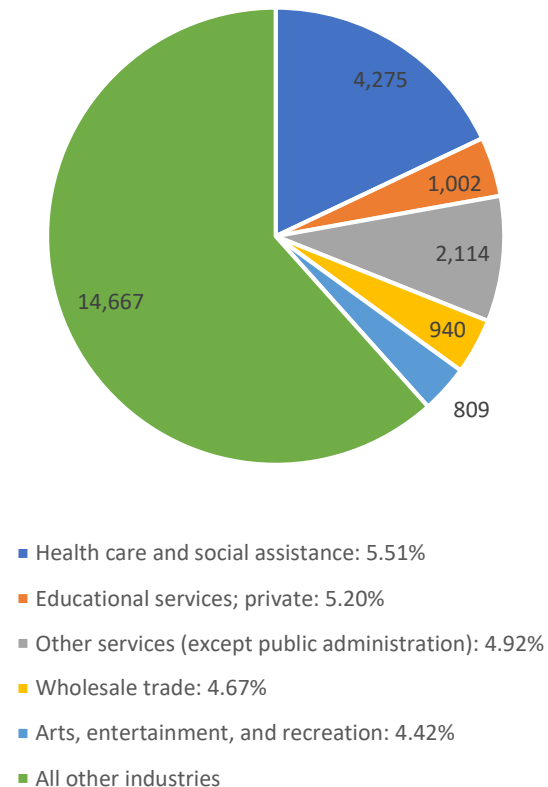
# Regional Outlook: Hawaii

# Short-Term Outlook: Employment by Industry



- Industries with largest employment growth rates in 2021
- 2020 - 2021: 9,140 jobs increasing in the top 5 fast growing industries

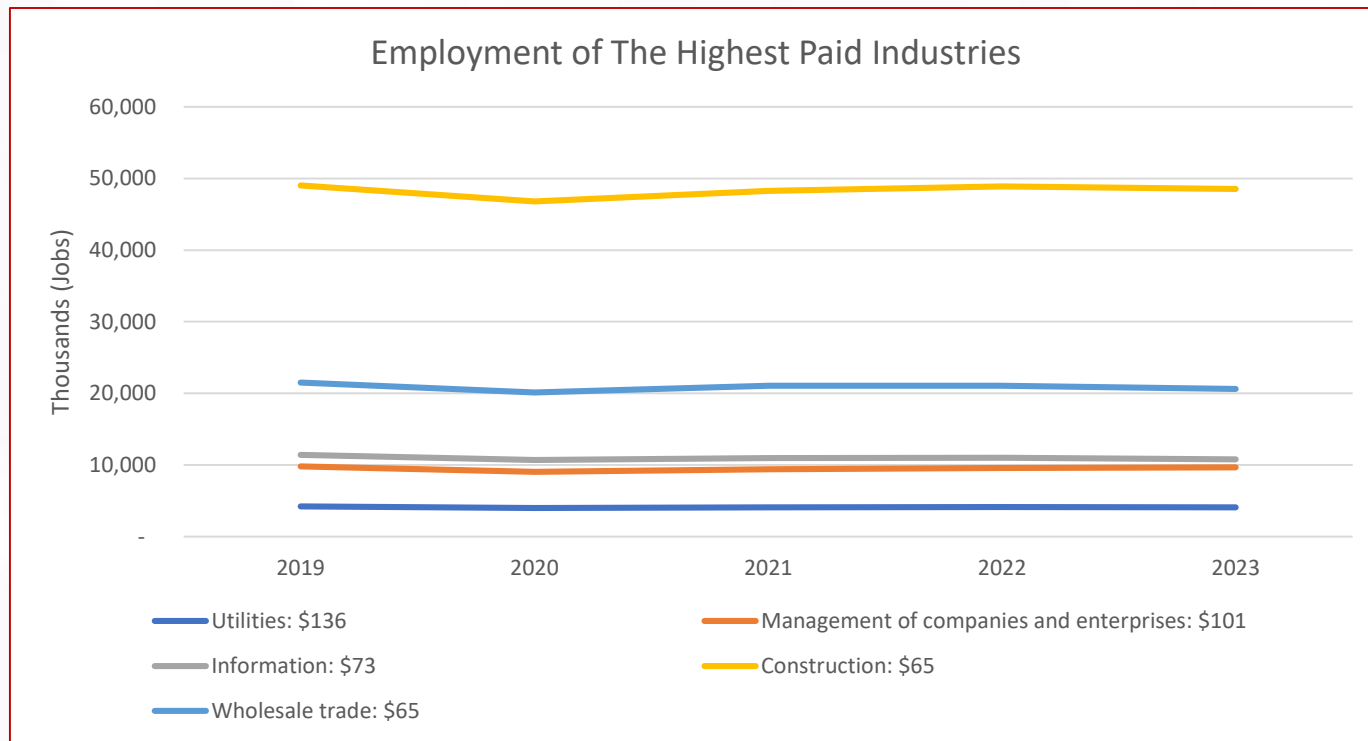
Job Increase in The Fastest Growing Industries in 2021



# Short-Term Outlook: Employment by Industry

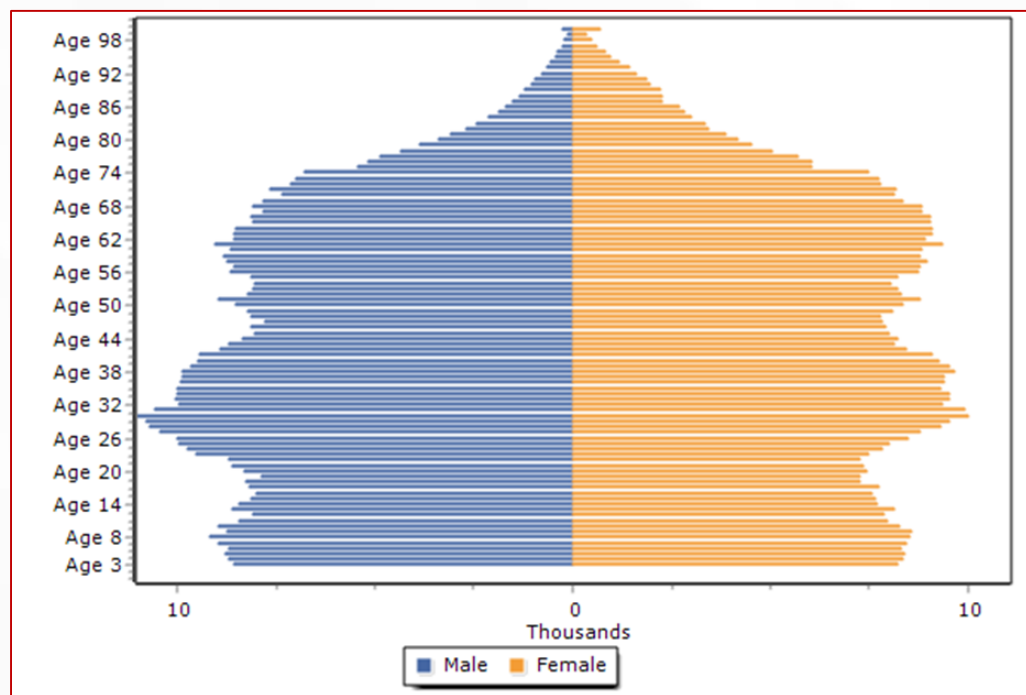


- Industries with highest average annual compensation rates in 2021



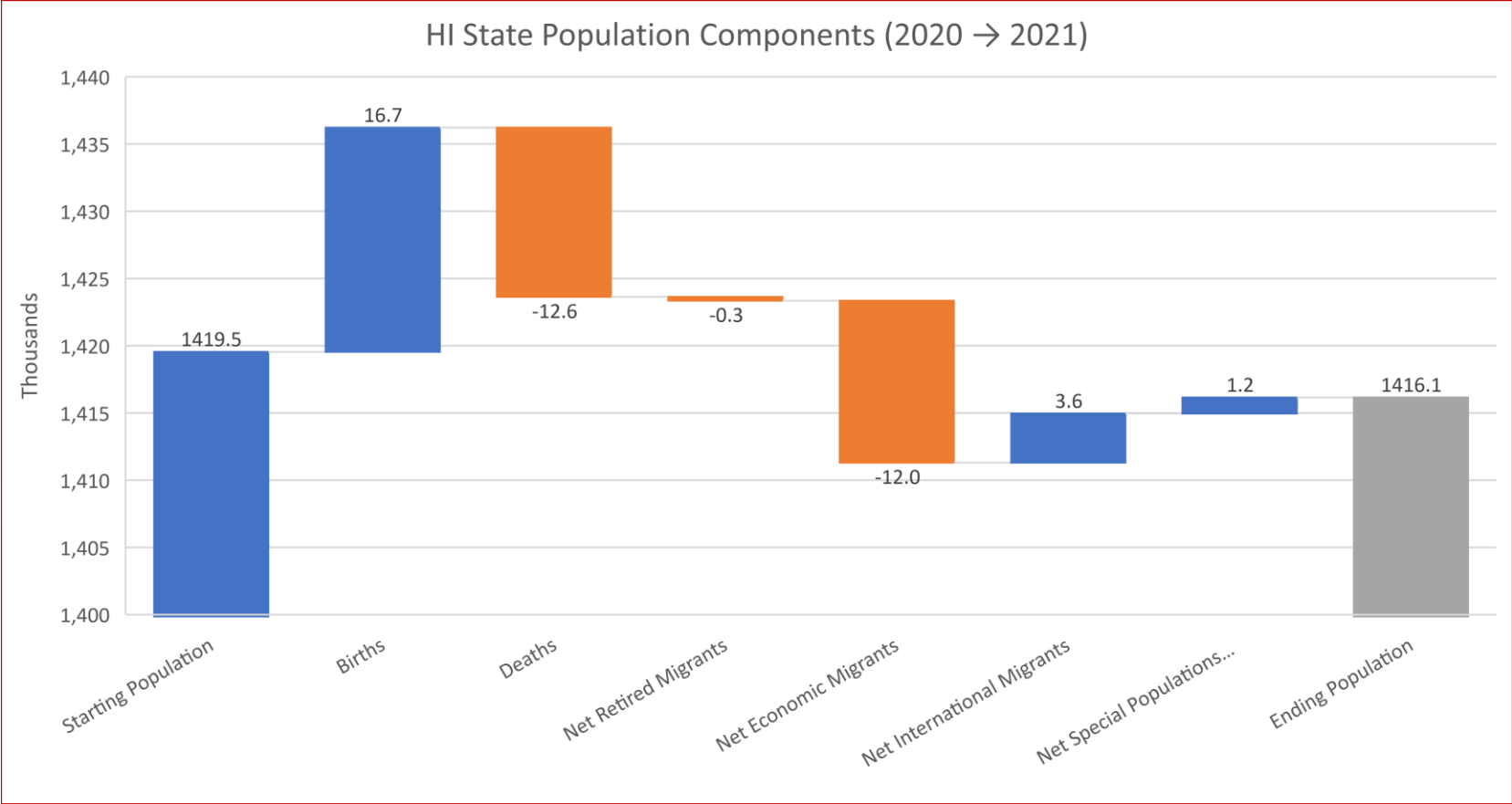
# Short-Term Outlook: Population Pyramid

- Year 2021
- Near stationary
  - Low birth rates
  - High overall quality of life





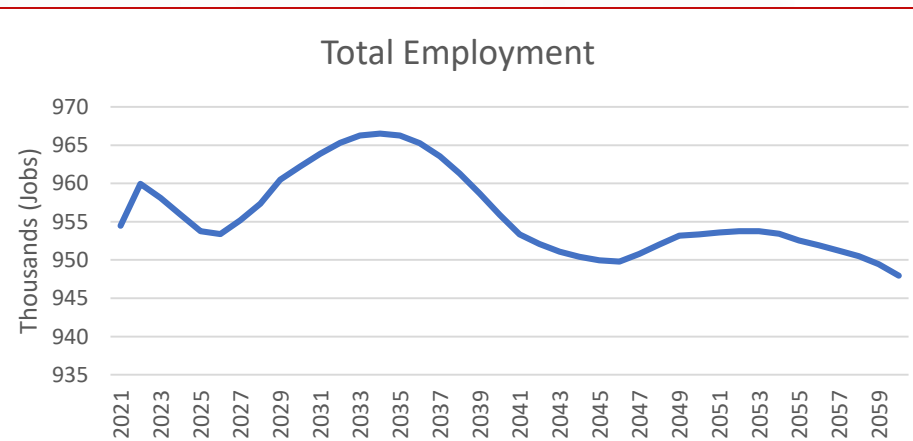
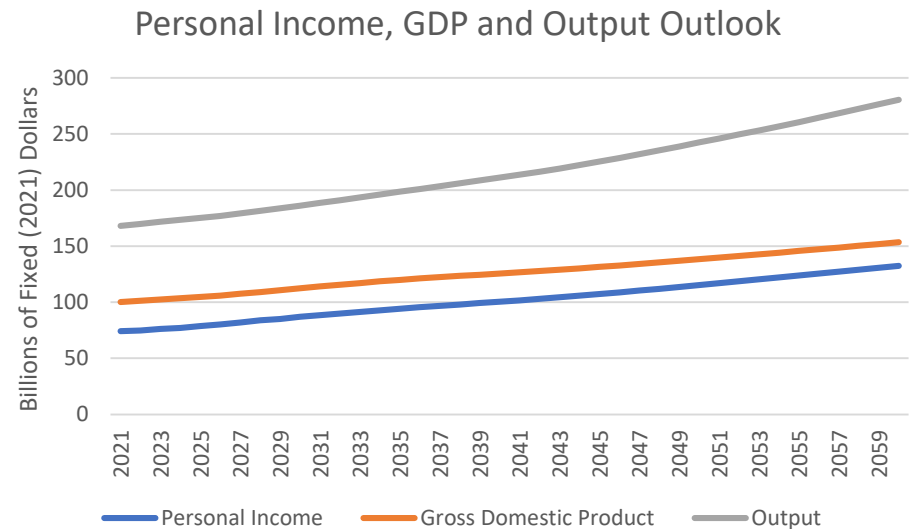
# Short-Term Outlook: Population Components



# Long-Term Outlook: Hawaii



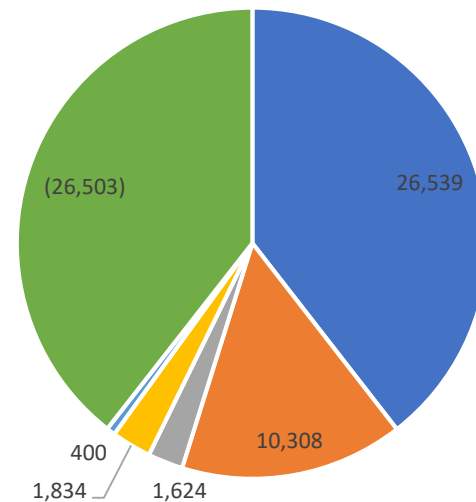
- Years 2021-2060
- Average growth / year
  - Personal income: 1.4%
  - GDP: 1.2%
  - Output: 1.4%
  - Total employment: no significant change



# Long-Term Outlook: Employment by Industry

- Industries with fastest employment increasing
- 2020 - 2060: 1.7 million jobs increasing in the top 5 fast growing industries

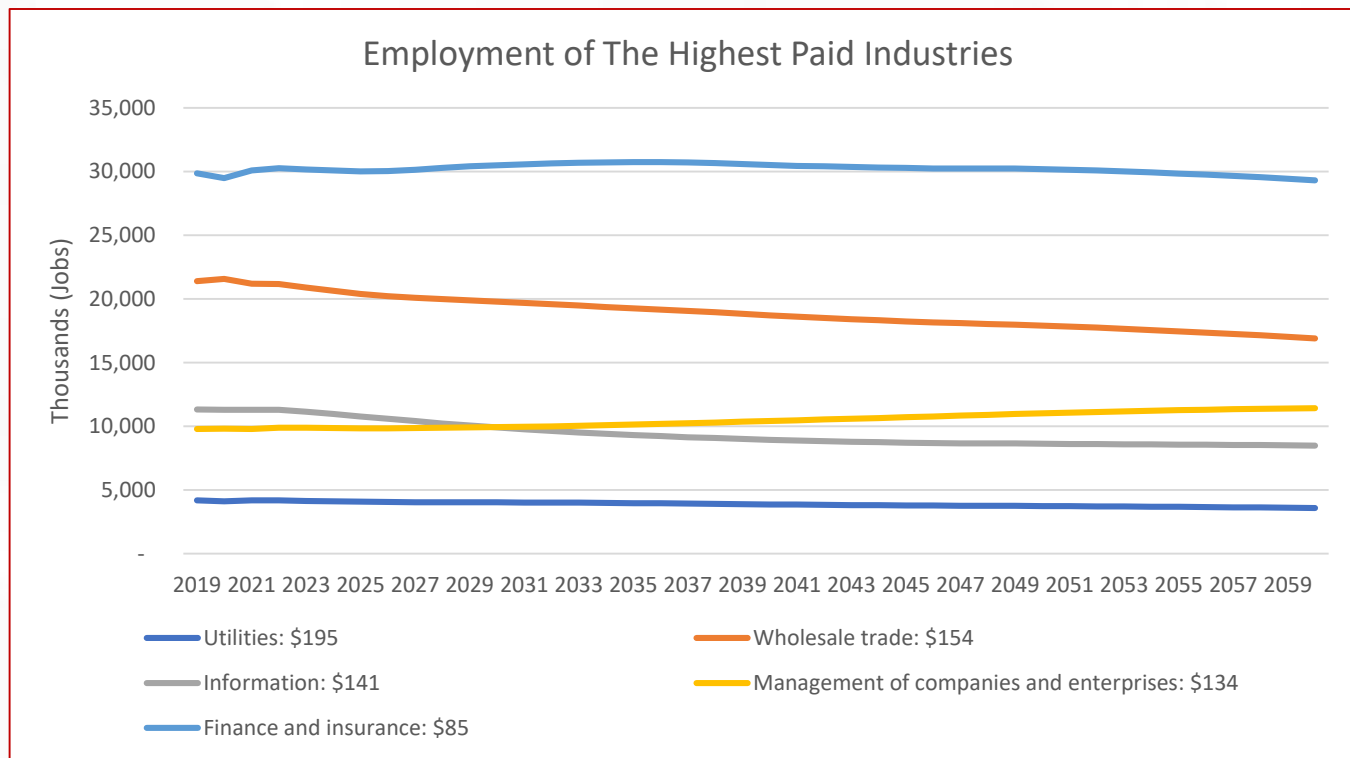
Job Increase in The Fastest Growing Industries (2020 → 2060)



- Health care and social assistance: 0.69%
- Professional, scientific, and technical services: 0.48%
- Management of companies and enterprises: 0.38%
- Farm: 0.32%
- Forestry, fishing, and hunting: 0.22%
- All other industries

# Long-Term Outlook: Employment by Industry

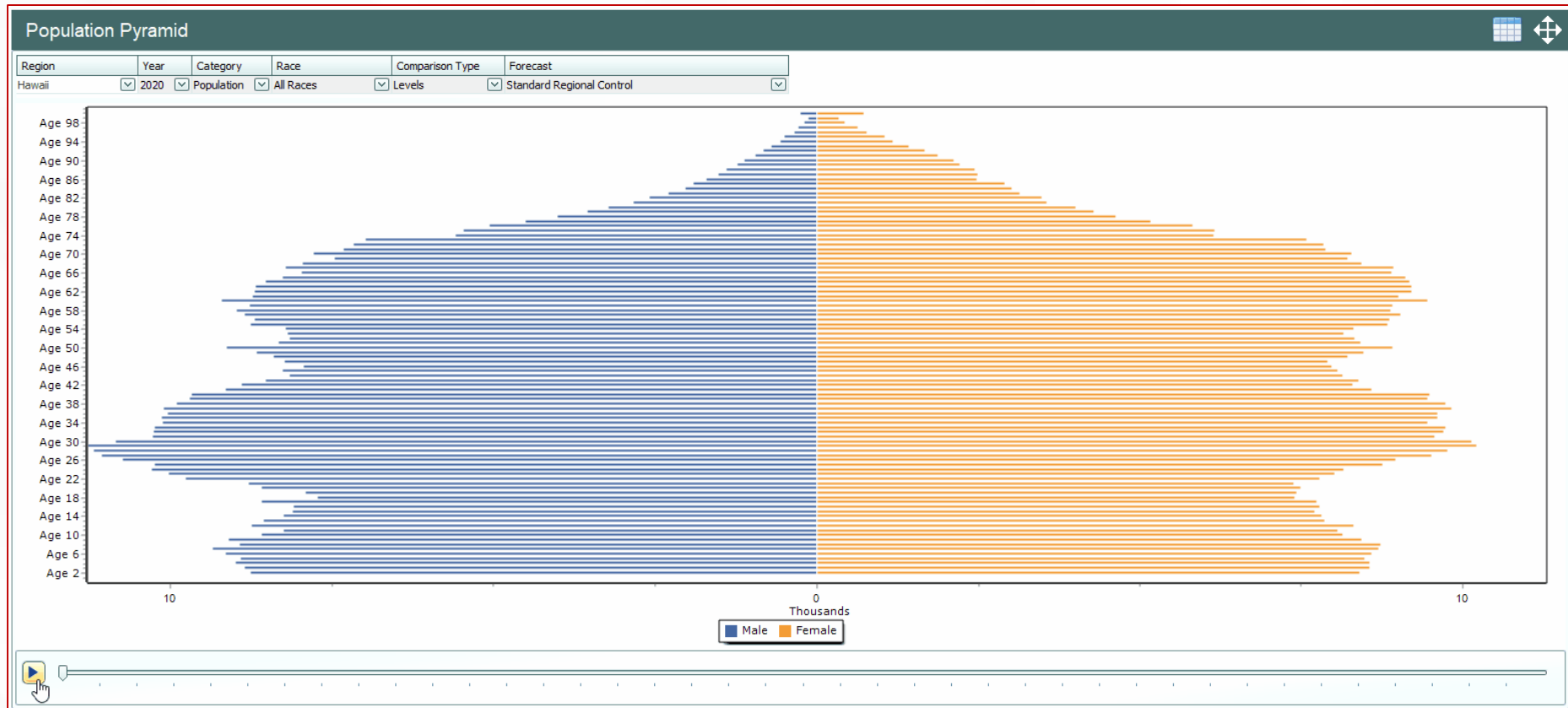
- Employment of industries with highest average annual compensation rates in 2060



# Long-Term Outlook: Population Pyramid



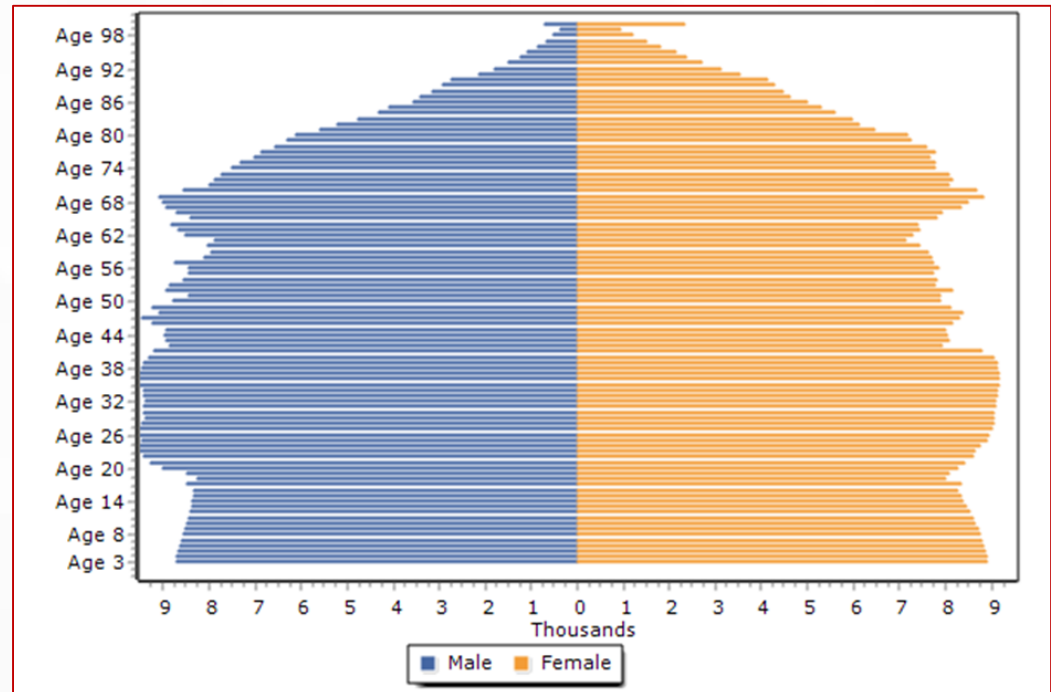
- Year 2060



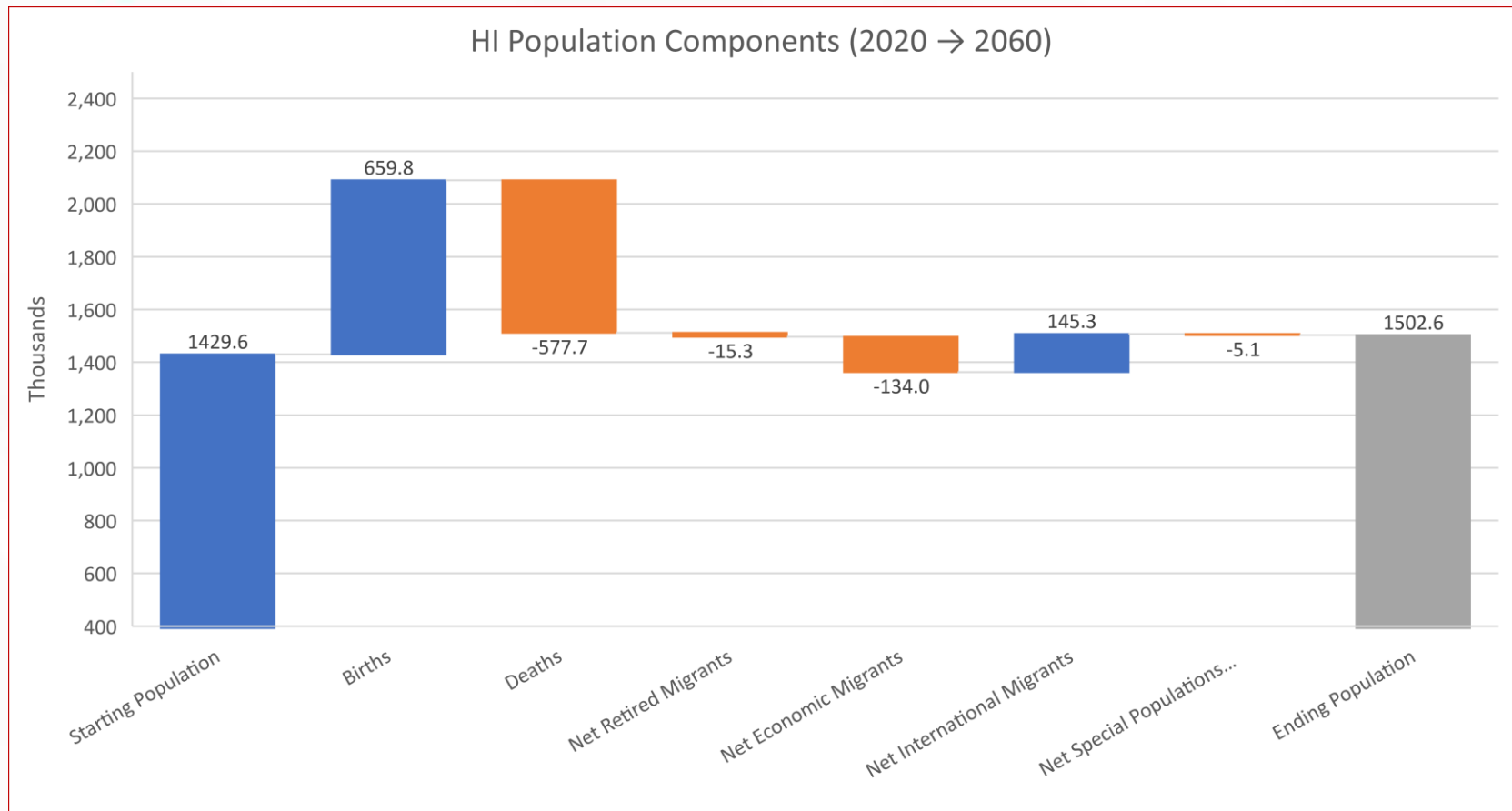
what does **REMI** say? <sup>sm</sup>

# Long-Term Outlook: Population Pyramid

- Year 2060
- Near stationary
  - High overall quality of life
  - Aging population



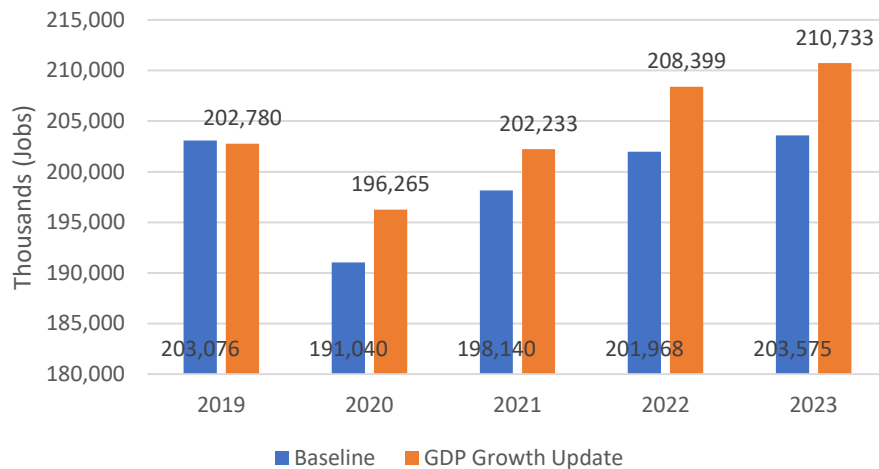
# Population Components



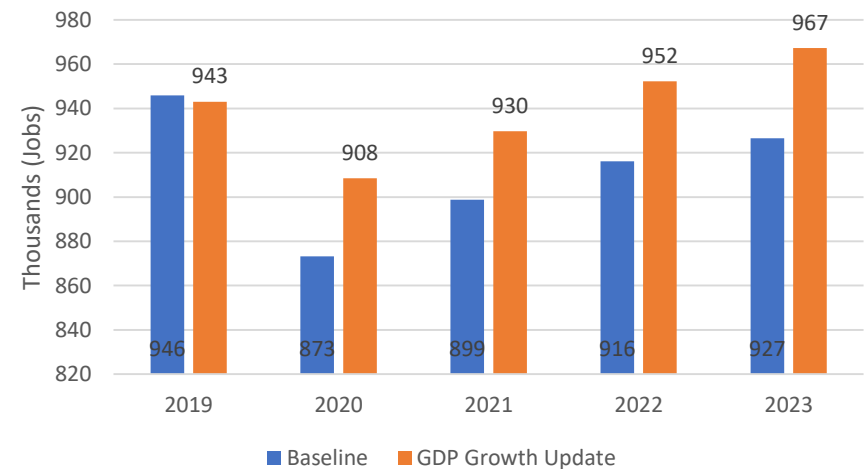
# Optimistic Outlook

- Year 2019-2023

Total Employment of the US



Total Employment of Hawaii





# Policy Simulation: Food Security

# The Scenario, Assumptions, & Methodology



- Hawaii imports 85-90% of its food
- Government is hoping to enhance food security<sup>2</sup>
- Kalera plans to open a vertical farm in 2021<sup>3</sup>
- Simulation: shift 10% of Hawaiian farm imports to Hawaiian production from the rest of the nation

# Conclusion

- Points to consider
  - Technology
  - Cost: public or private
  - Imports from the rest of the world
- Economic forecasts can be difficult
  - The outbreak of COVID-19
  - The election of a new president
  - General uncertainty about the economy
- REMI can help
  - Forecasts: Macro modeling used to clarify, calculate, and communicate
  - Simulations: What-if scenarios
  - Dynamic results

# Citations

1. Ehrlich, Gabriel M. “The U.S. Economic Outlook for 2021-2022 -- Executive Summary: February 2021.” *College of Literature, Science, and the Arts, University of Michigan*, Research Seminar of Quantitative Economics, University of Michigan, 19 Feb. 2021, [lsa.umich.edu/content/dam/econ-assets/Econdocs/RSQE%20PDFs/Exec\\_Sum\\_Feb\\_2021.pdf](https://lsa.umich.edu/content/dam/econ-assets/Econdocs/RSQE%20PDFs/Exec_Sum_Feb_2021.pdf).
2. “Increased Food Security and Food Self-Sufficiency Strategy.” *Hawaii.gov*, Office of Planning, Department of Business Economic Development & Tourism, 2012, [files.hawaii.gov/dbedt/op/spb/INCREASED\\_FOOD\\_SECURITY\\_AND\\_FOOD\\_SELF\\_SUFFICIENCY\\_STRATEGY.pdf](https://files.hawaii.gov/dbedt/op/spb/INCREASED_FOOD_SECURITY_AND_FOOD_SELF_SUFFICIENCY_STRATEGY.pdf).
3. Kalera. “Kalera to Open Hawaii's Largest Vertical Farming Facility, Bringing Fresh, Locally-Grown Greens and Food Supply Chain Security to the Island.” *Perishable News*, Phoenix Media Network, 24 Dec. 2020, [www.perishablenews.com/produce/kalera-to-open-hawaiis-largest-vertical-farming-facility-bringing-fresh-locally-grown-greens-and-food-supply-chain-security-to-the-island/](https://www.perishablenews.com/produce/kalera-to-open-hawaiis-largest-vertical-farming-facility-bringing-fresh-locally-grown-greens-and-food-supply-chain-security-to-the-island/).

# Q & A

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# Long-Term Outlook: Employment by Industry

- Leading economic sectors: government, real estate and rental leasing, and information; manufacturing.

