

Mid-Year Real Estate Review

With Paul Brewbaker ...update for today, tomorrow & beyond!

By invitation
only

Thursday, August 31, 2023
11:30 a.m. – 1:30 p.m.
Waialae Country Club
Lunch & Presentation – \$30.00
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After the fire: Oahu housing when a pandemic isn't enough

a presentation prepared for the
Luxury Homes International Forum
Waialae Country Club

August 31, 2023

by Paul H. Brewbaker, Ph.D., CBE
TZ Economics, Kailua, Hawaii

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Paul H. Brewbaker, Ph.D., CBE



You thought you had problems?



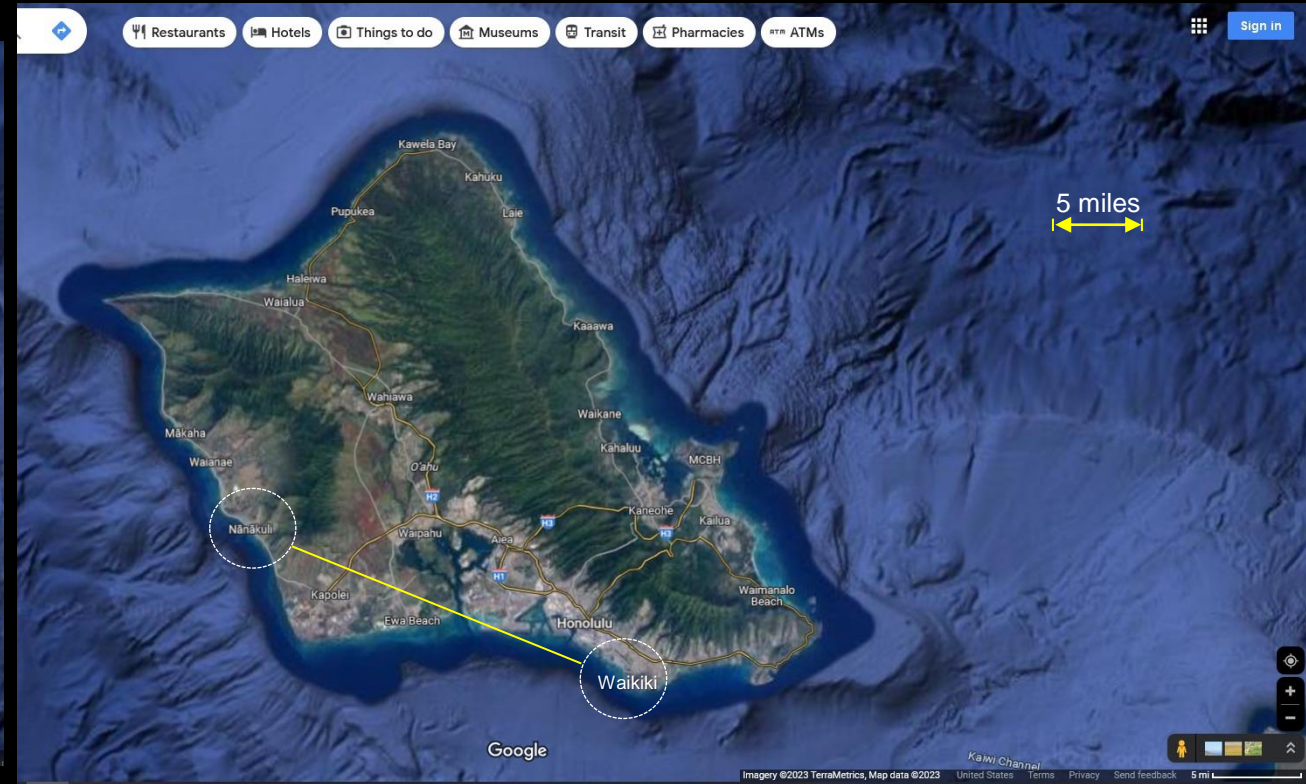
WHAT PEOPLE IMAGINE THE HAWAII LAVA FLOWS LOOK LIKE



WHAT THE HAWAII LAVA FLOWS LOOK LIKE

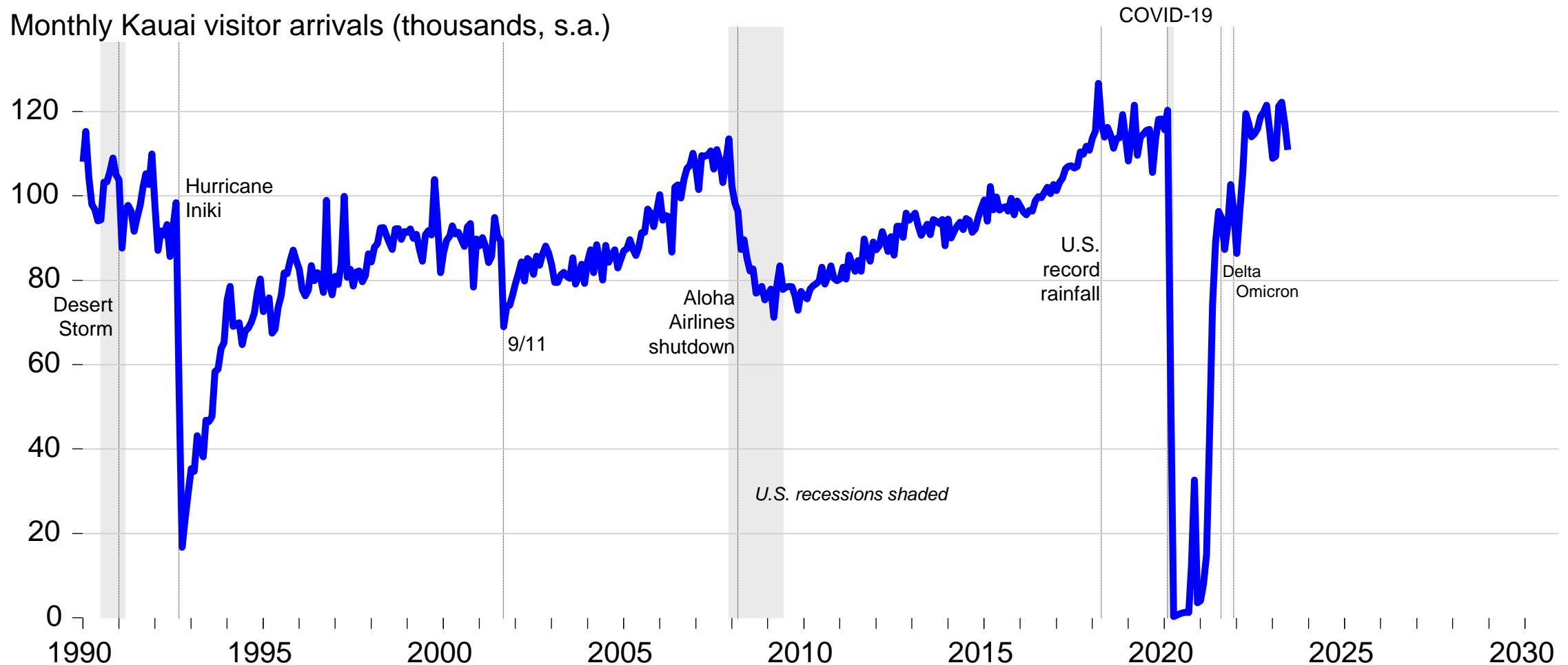


Implying that people should not travel to Wailea, Maui because of a wildfire in Lahaina is like saying that people should not travel to Waikiki, Oahu because of a wildfire in Nanakuli.



Performative righteousness is not helpful for victims of tragedy and people in the community

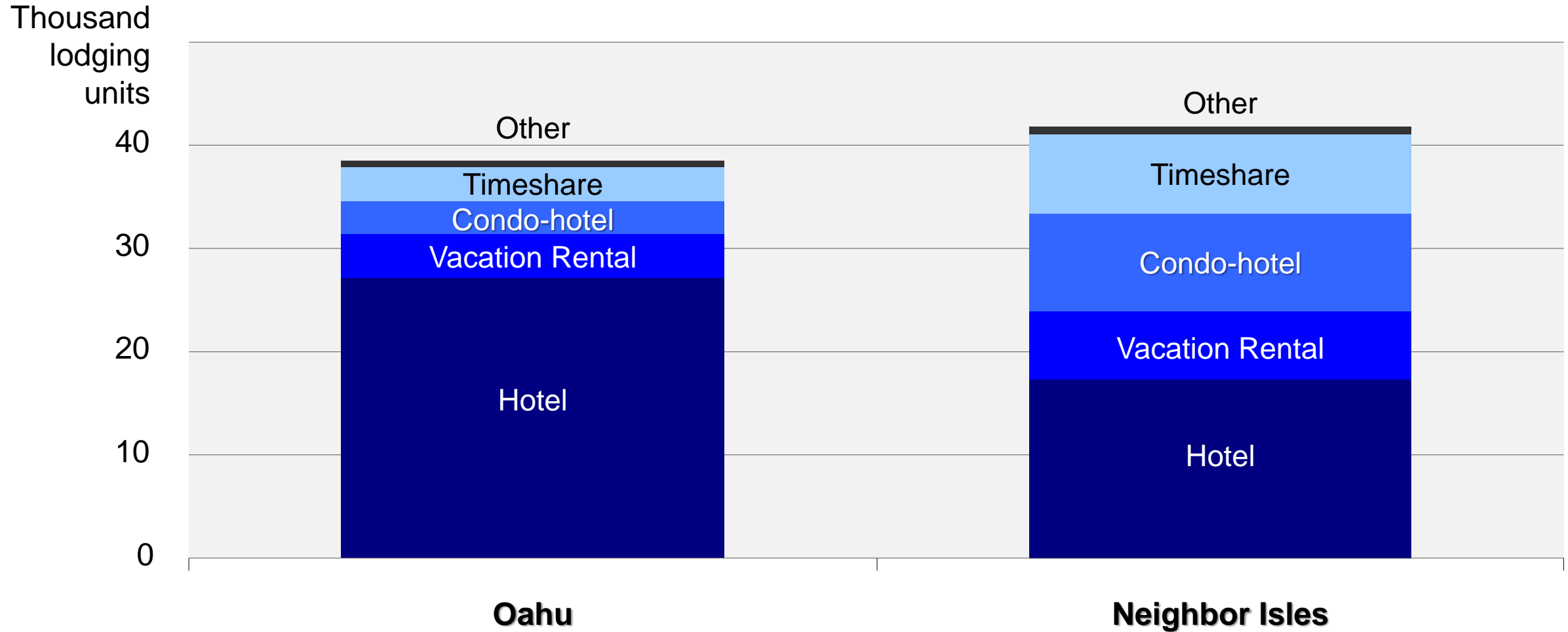
For Kauai, covid was not their first rodeo, Iniki not even their first hurricane! Their rebuild: timeshare, condos (securitization)



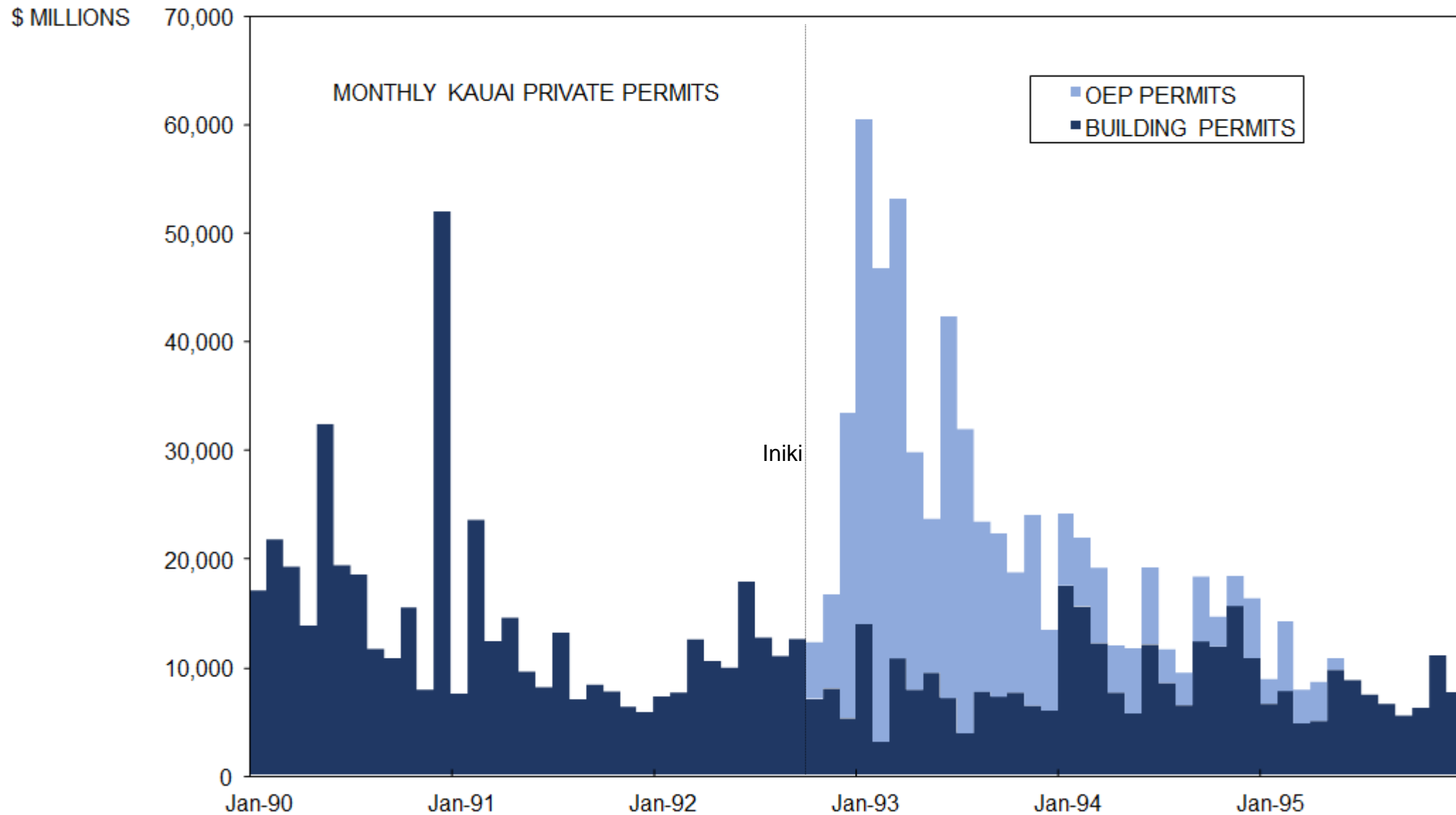
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Sources: Hawaii Tourism Authority, Hawaii DBEDT (<http://dbedt.hawaii.gov/economic/mei/>); seasonal adjustment using Census X-13 ARIMA filter by TZE; see also National Weather Service *Record Kauai and Oahu Rainfall and Flooding—April 2018* (<https://www.weather.gov/hfo/RecordKauaiandOahuRainfallAndFlooding-April2018>) and National Climate Extremes Committee (December 2018) National Record 24-Hour Precipitation at Waipā Garden, Hawai'i (<https://www.ncdc.noaa.gov/monitoring-content/extremes/nccec/reports/precip-24hr-kauai-2018.pdf>).

Two distinct markets, Oahu reliant on urban agglomeration, N. Isles reliant on securitized lodging formats (risk-pooling)



Kauai's rebuild could commence almost immediately: not Lahaina's



After the Lahaina Wildfire, information asymmetry: locals know more about the situation than tourists, investors, celebrities, influencers

- Classic problem of crisis communications: lack of impulse control amplifies misinformation
 1. Only your first message lands—there are no do-overs
 2. A celebrity Aquamansplains to the world: “DO NOT TRAVEL TO MAUI”*
 3. A TikTok influencer gets > 2 million views: “Do not come to Maui. Cancel your trip. Now.”†
- Opportunistic anti-tourism denialist disestablishmentarianism does not aid economic recovery
- Governor Green: “I will try to allow no one from outside the state to buy any land until we get through this crisis and decide what Lahaina should be in the future.”‡
- Uh:
 - (a) Check with the Interstate Commerce Clause of the U.S. Constitution
 - (b) Prevent owners of vaporized buildings from exercising their property rights?
 - (c) Understand the role capital mobility plays in efficient asset allocation?

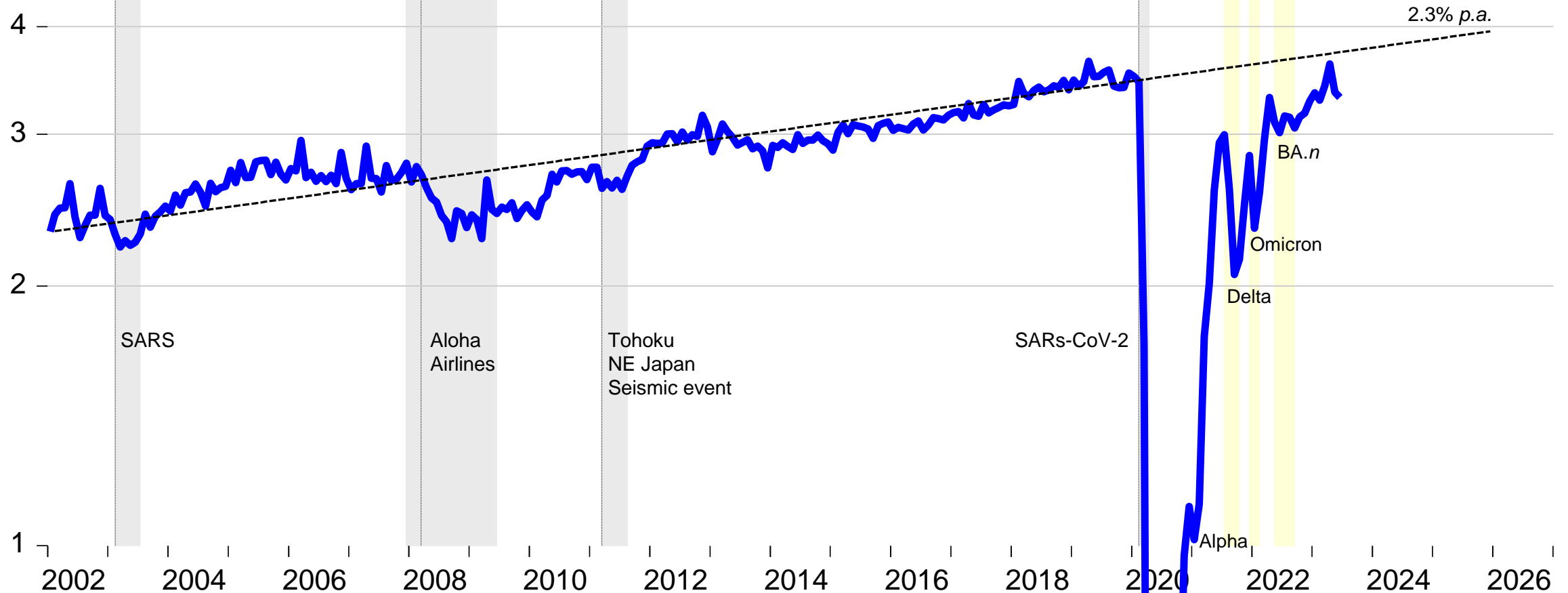
*NBC News (August 14, 2023) (<https://www.nbcnews.com/news/asian-america/jason-momoa-tells-tourists-not-travel-maui-deadly-fires-devastate-isla-rcna99820>)

†Christine Chung and Madison Malone Kircher (August 17, 2023 updated August 22, 2023), "After Maui Wildfires, Travelers Ask: Would a Trip Help or Hurt?" *The New York Times*

‡David R. Baker (August 14, 2023) "Hawaii Governor Doesn't Want Developers Buying Burned Lahaina," Bloomberg (<https://www.bloomberg.com/news/articles/2023-08-15/hawaii-governor-doesn-t-want-developers-buying-burned-lahaina#xj4y7vzkg>)

Oahu tourism shocks post-9/11: displacement from longer-run trend but ultimately reconvergence—Omicron sub-variants still a factor

Monthly, million Oahu visitor days, s.a. (log scale)

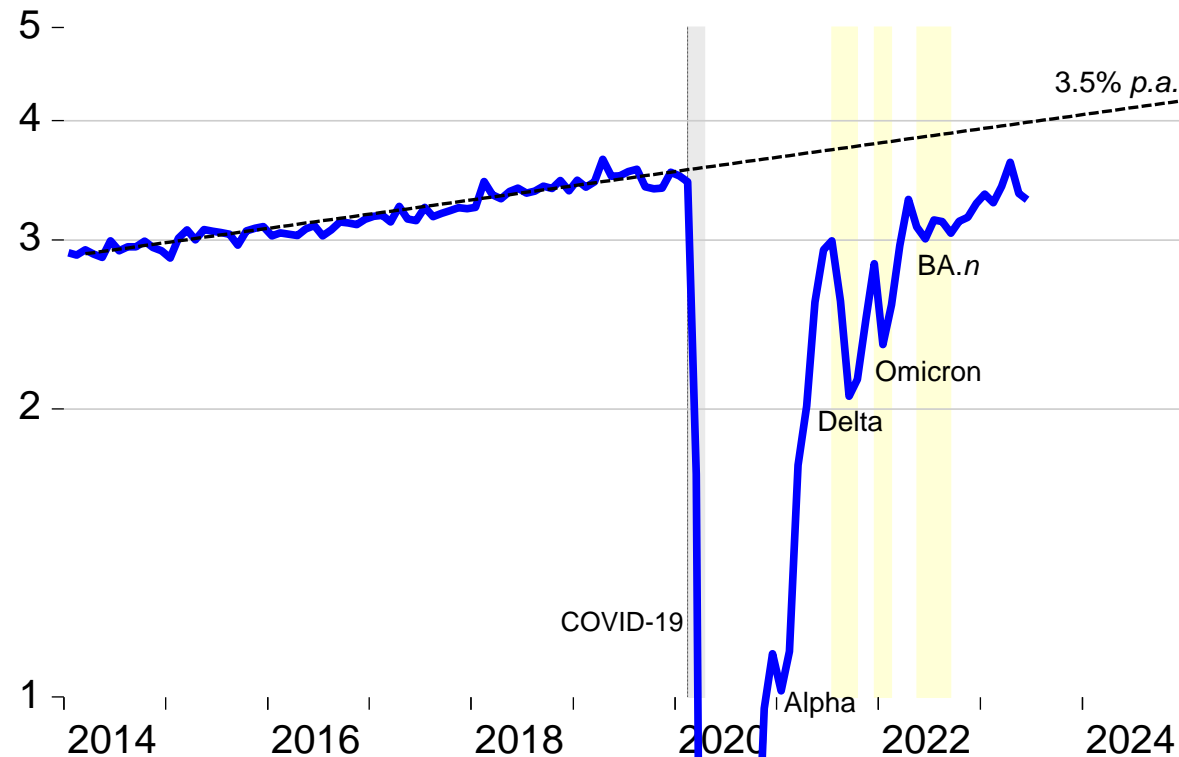


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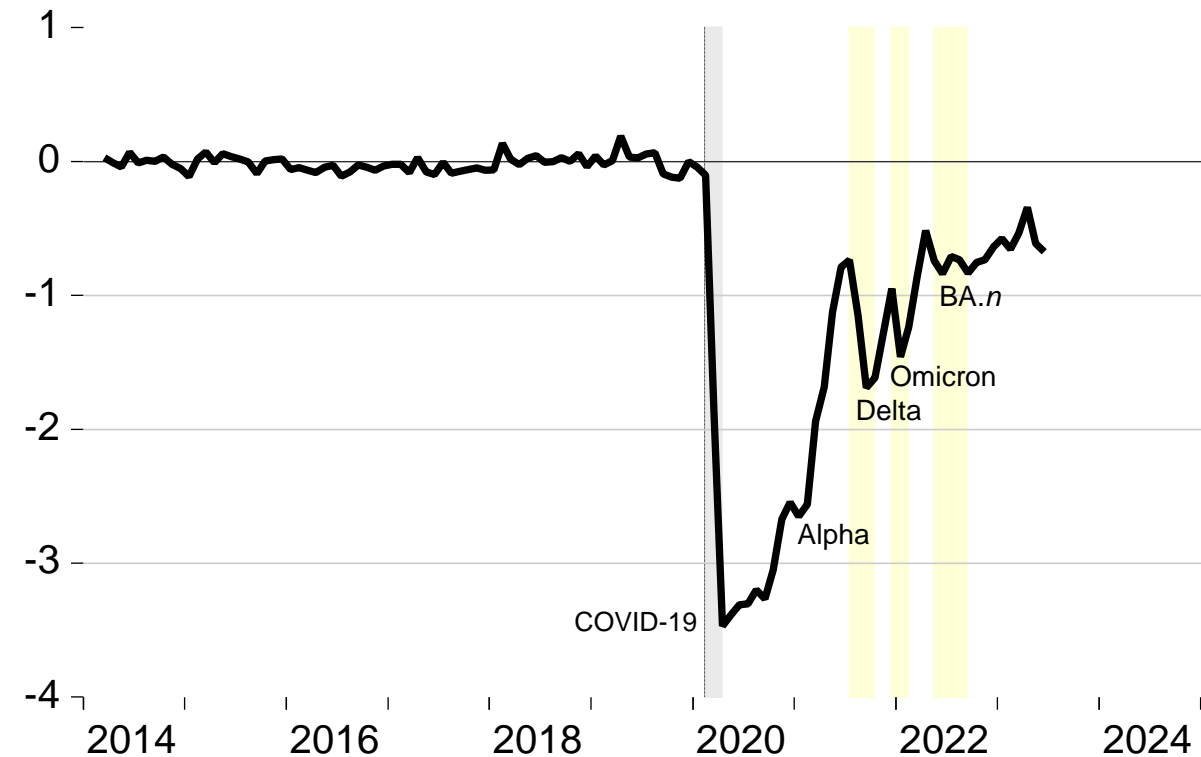
Sources: Hawaii Tourism Authority, Hawaii DBEDT (<https://dbedt.hawaii.gov/economic/datawarehouse/>, https://files.hawaii.gov/dbedt/economic/data_reports/mei/2023-06-honolulu.xls), seasonal adjustment and trend estimate on the stationary component of monthly Oahu visitor days, 2002(Feb) – 2018(Dec) by TZE.

Currently (summer 2023), Oahu monthly visitor days are running about 0.75 million/month below trend after seasonal adjustment

Monthly Oahu visitor days, millions, s.a. (log scale)



Deviations from pre-pandemic trend in million visitor days, s.a.



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Sources: Hawaii Tourism Authority, Hawaii DBEDT (<https://dbedt.hawaii.gov/economic/datawarehouse/>, https://files.hawaii.gov/dbedt/economic/data_reports/mei/2023-06-honolulu.xls), seasonal adjustment and trend estimate on the stationary component of Oahu visitor days, 2014(Mar)-2019 (Dec) by TZE; volumes in mid-2023 were about 5 percentage points below mid-2019 and about 10+ percentage points below trend.

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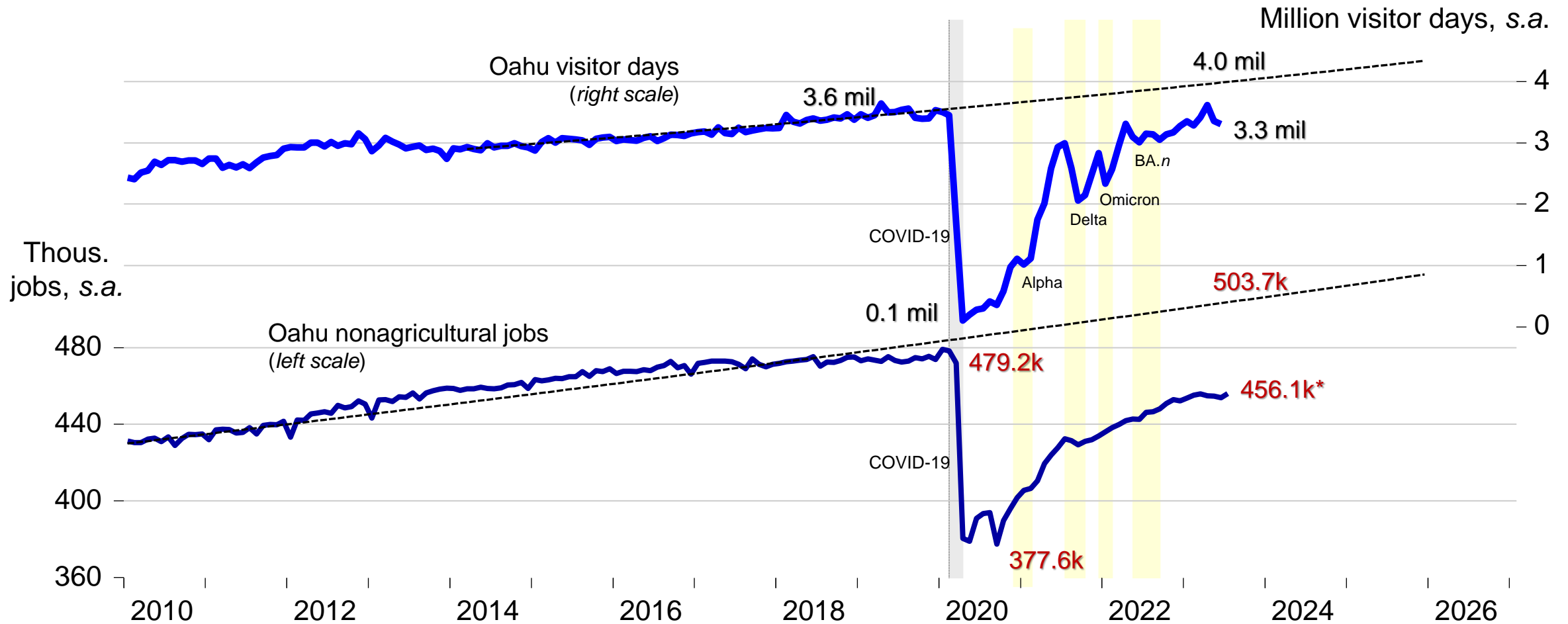
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At 15-20 percent below potential, Oahu visitor day shortfall echoed in c. 10 percent shortfall in Oahu jobs vs. 2010s longer-run trend



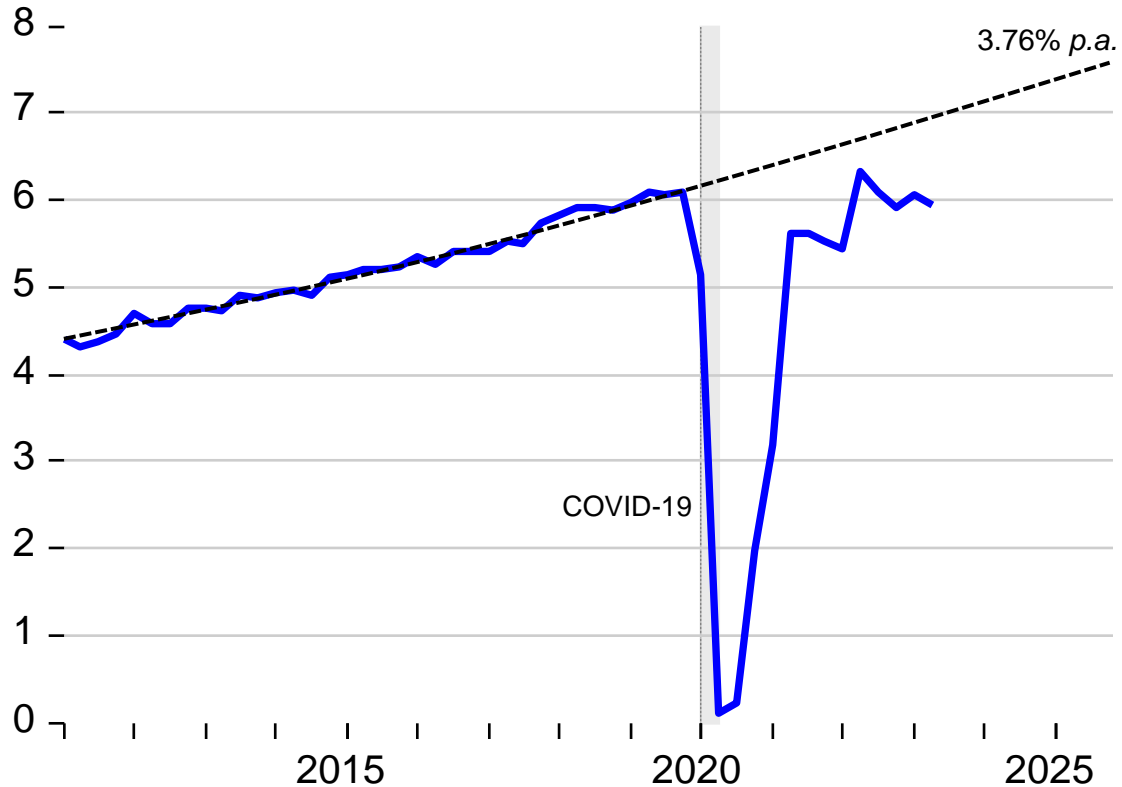
*The difference between Oahu jobs in mid-2023 and at end-2019, about 23,000, is similar to all construction jobs (26,400), finance, insurance and real estate jobs combined (21,000), and transportation, warehousing, and utilities jobs combined (24,600); relative to pre-pandemic potential (47,600) the difference is similar to all food services jobs (47,100).

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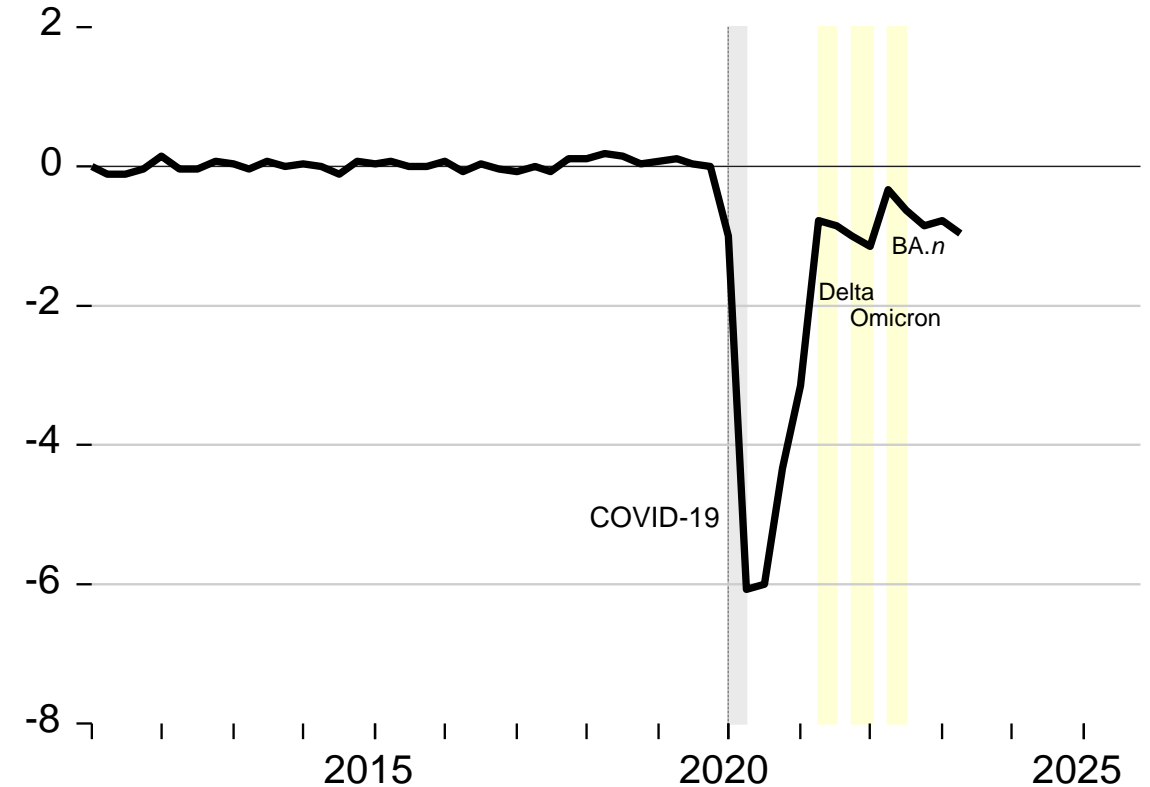
Sources: Hawaii Tourism Authority, Hawaii DBEDT (<https://dbedt.hawaii.gov/economic/datawarehouse/>, https://files.hawaii.gov/dbedt/economic/data_reports/mei/2023-06-honolulu.xls), seasonal adjustment and trend estimate on the stationary component of monthly Oahu visitor days, 2014(Mar)-2019 (Dec) by TZE.

Maui visitor days (arrivals X average length of stay): failing to return to pre-pandemic trend, falling short by 4 million/year (@\$200/day)

Quarterly Maui visitor days, millions, s.a. (log scale)

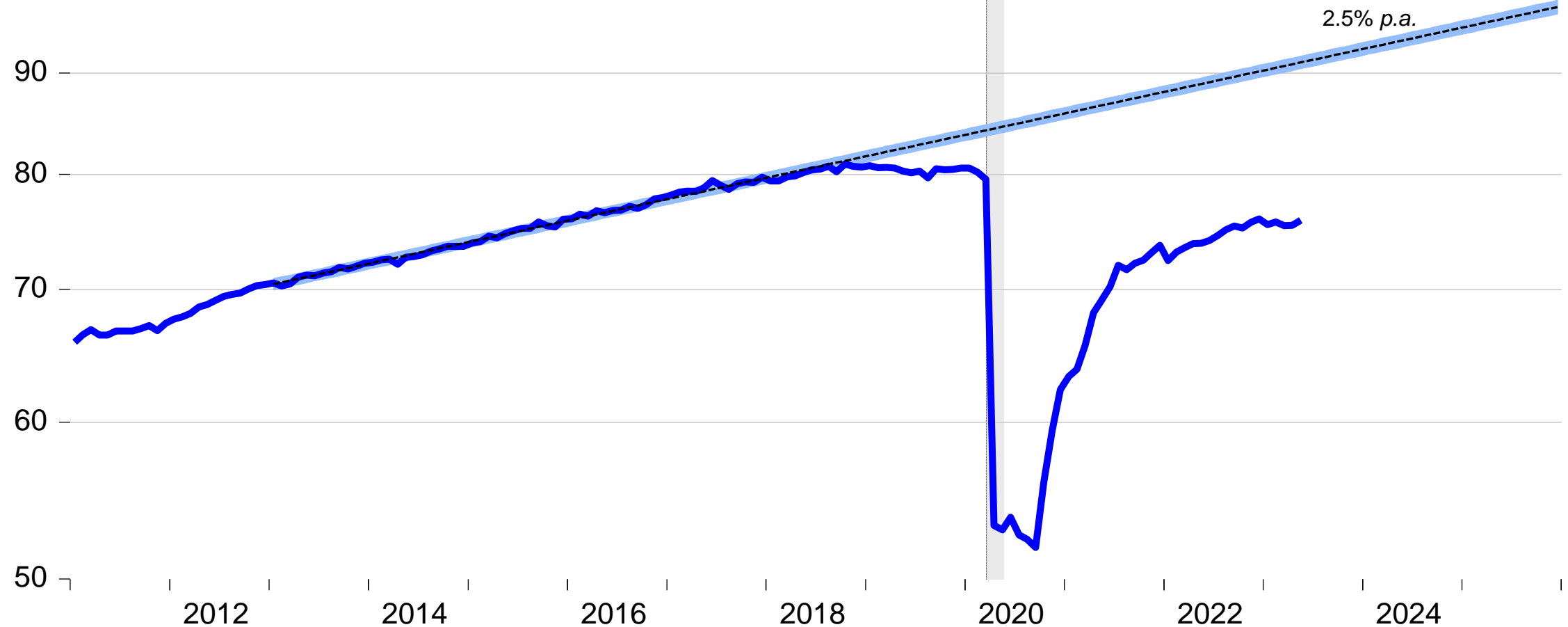


Deviations from pre-pandemic trend in million visitor days, s.a.



Of greater concern: Maui payroll employment detached from 2010s growth trend by mid-2018, pre-pandemic, further behind by mid-2023

Monthly Maui nonagricultural jobs, s.a. (thousands, log scale)



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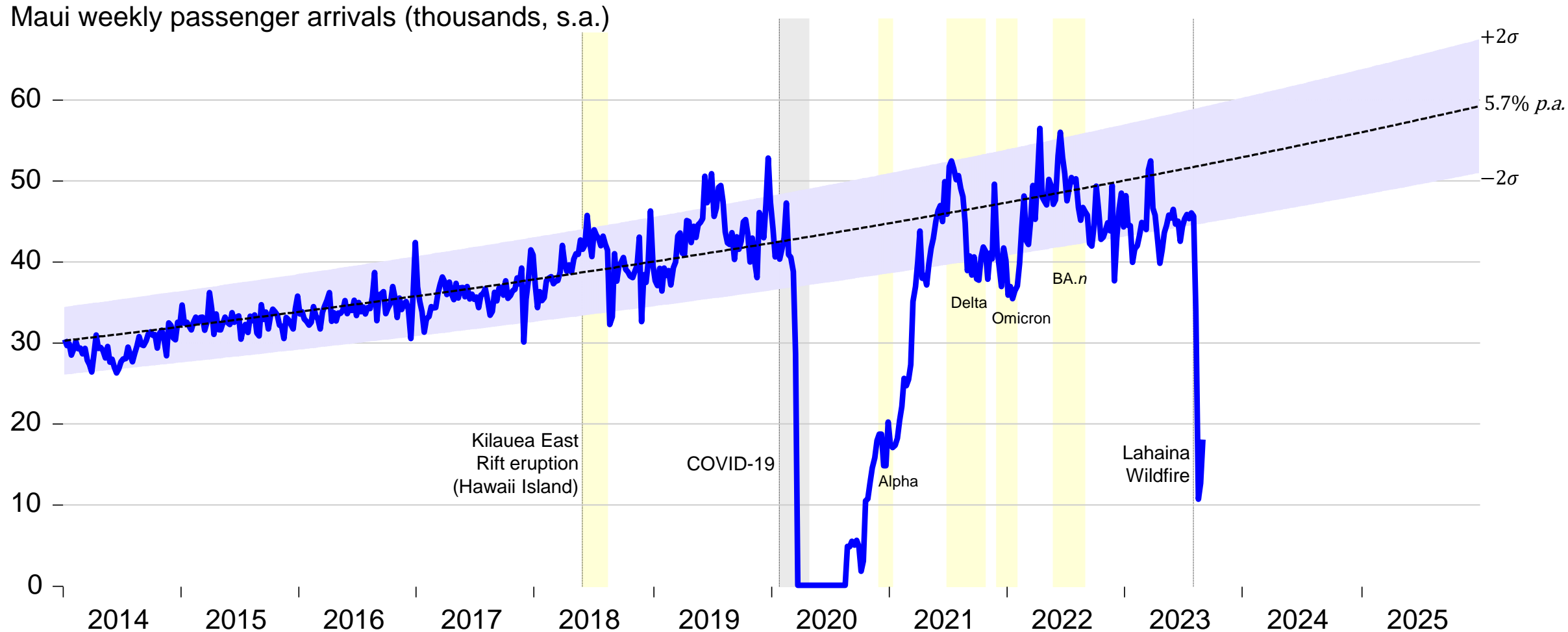
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Mahalo Jason Momoa for that advice on staying away from Maui: that's a big, big help—weekly Maui domestic passenger arrivals

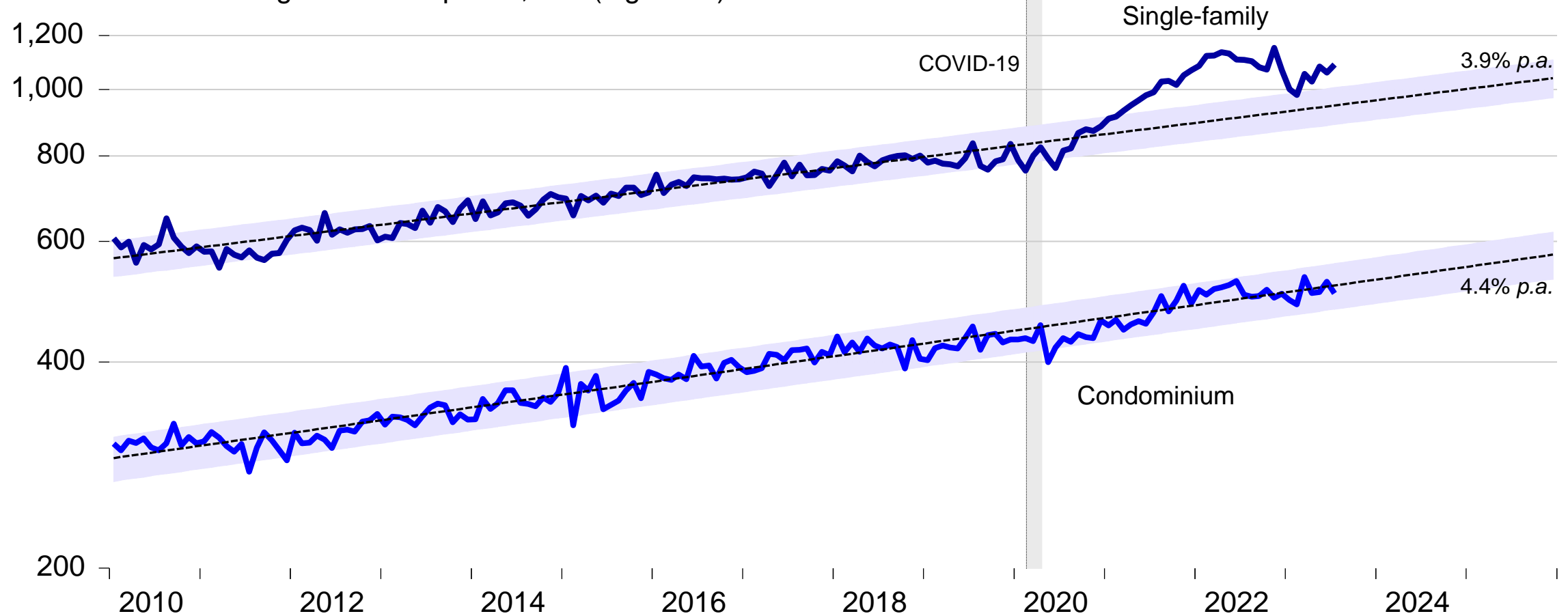


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Source: Hawaii DBEDT (<https://dbedt.hawaii.gov/visitor/daily-passenger-counts/>), daily Maui passenger counts through August 30, 2023 at weekly frequencies, seasonally-adjusted 2010-2019 with an STF Decomposition, near-zeroed out from late-March 2020 – August 2020, seasonal adjustment factors from the 2010s applied to the 2020s weekly data; 2010s nonstationary trend depicted with 2 standard-error bandwidth.

Comparatively tranquil 2010s appreciation (within ± 2 s.e.); post-covid divergence: single-family surge, less condominium bubbliciousness

Median Oahu existing home sale prices, s.a. (log scale)

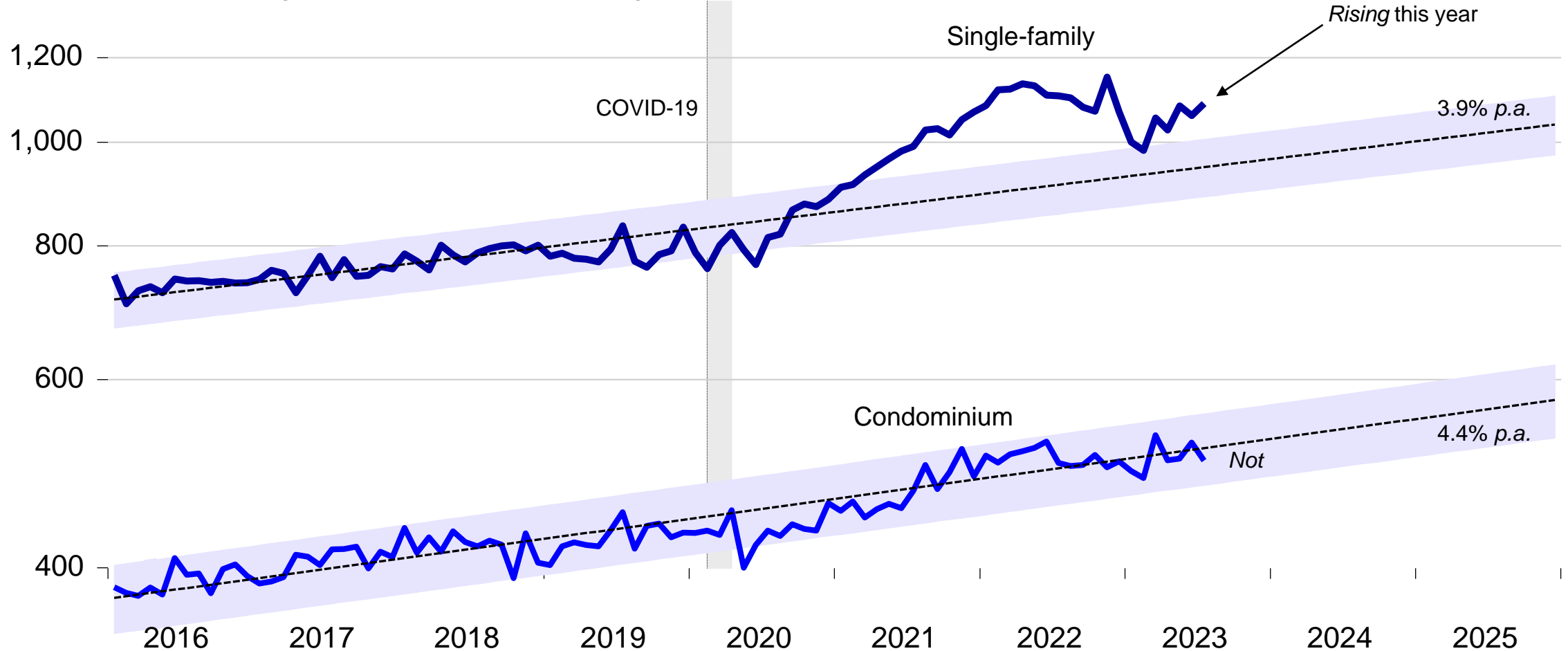


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Sources: Honolulu Board of Realtors, Hawaii DBEDT (<http://dbedt.hawaii.gov/economic/mei/>); monthly, seasonally adjusted through July 2023, trend regressions on pre-pandemic interval 2010-2019(June) by TZ Economics.

Oahu SF prices had *larger* deviations from pre-pandemic trend than condo prices. Bubbles *detach* from fundamentals, but WFH is real

Median Oahu existing home sale prices, s.a. (log scale)

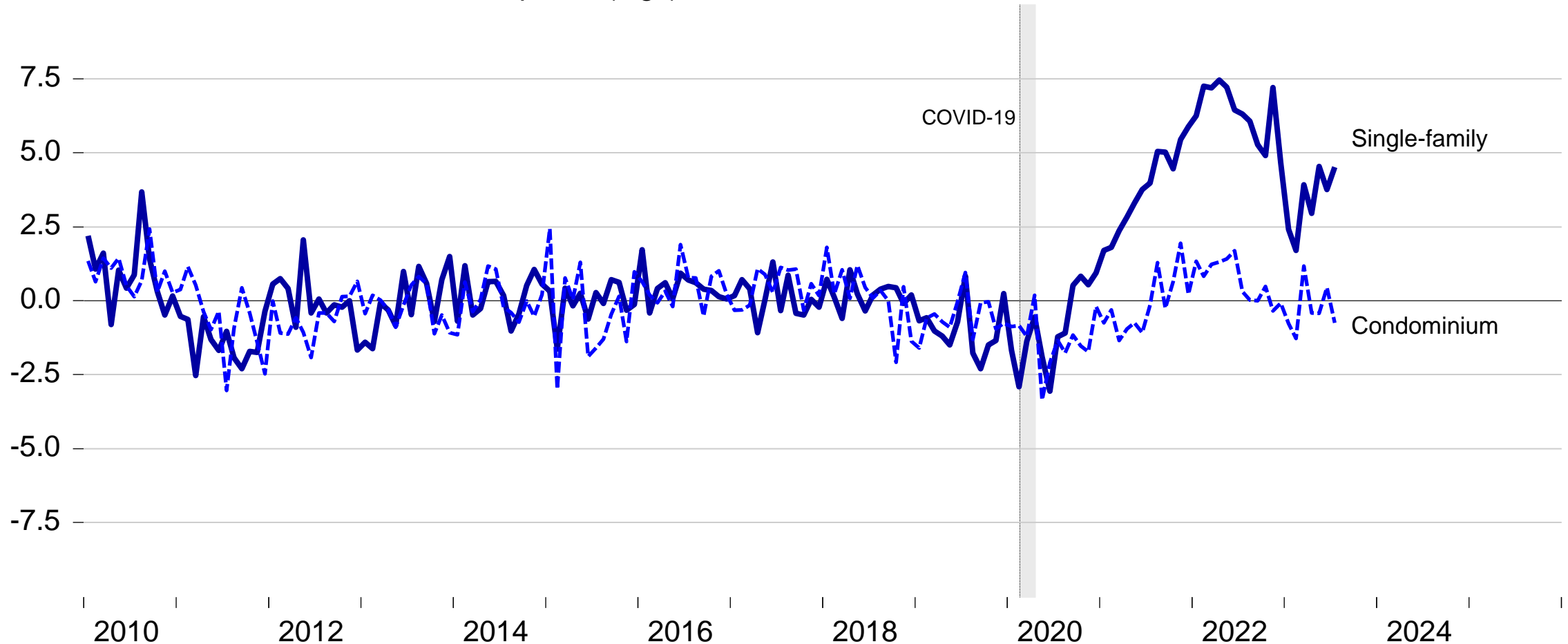


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Sources: Honolulu Board of Realtors, Hawaii DBEDT (<http://dbedt.hawaii.gov/economic/mei/>); monthly, seasonally adjusted through July 2023, trend regressions on pre-pandemic interval 2010-2019(June) by TZ Economics.

More movement in detrended, post-pandemic Oahu single-family valuations than in condos (in standard deviations) relative to 2010s

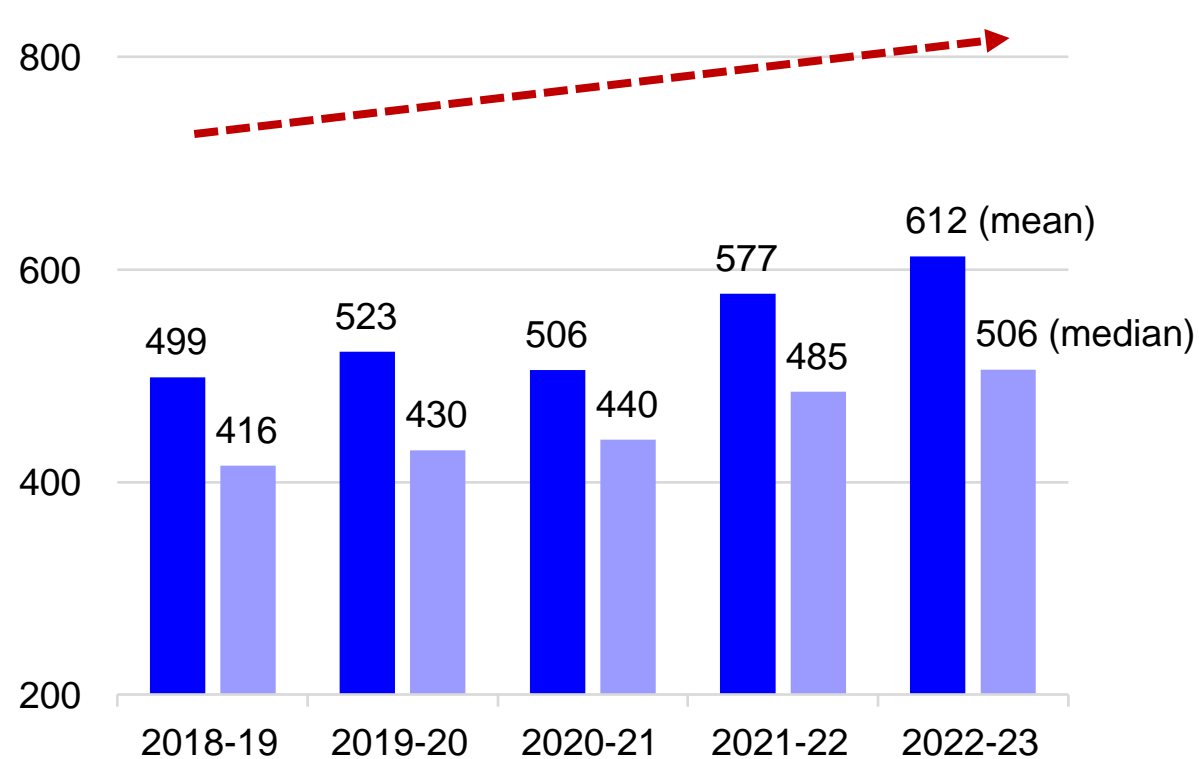
Ratio of detrended Oahu median home prices (logs) to their unconditional s.d. 2010-2019



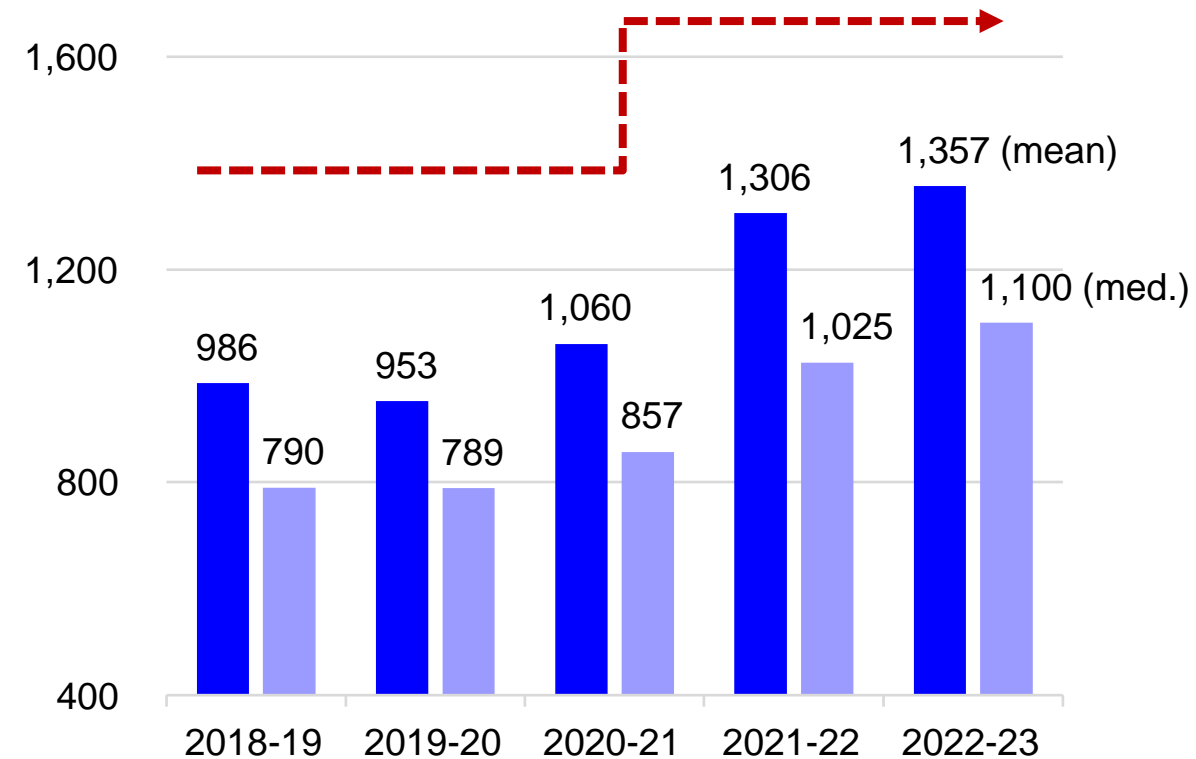
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“Years” April-March: mean (dark) and median (light) Oahu existing SF home prices jumped upward more abruptly—working from home

Thousand dollars



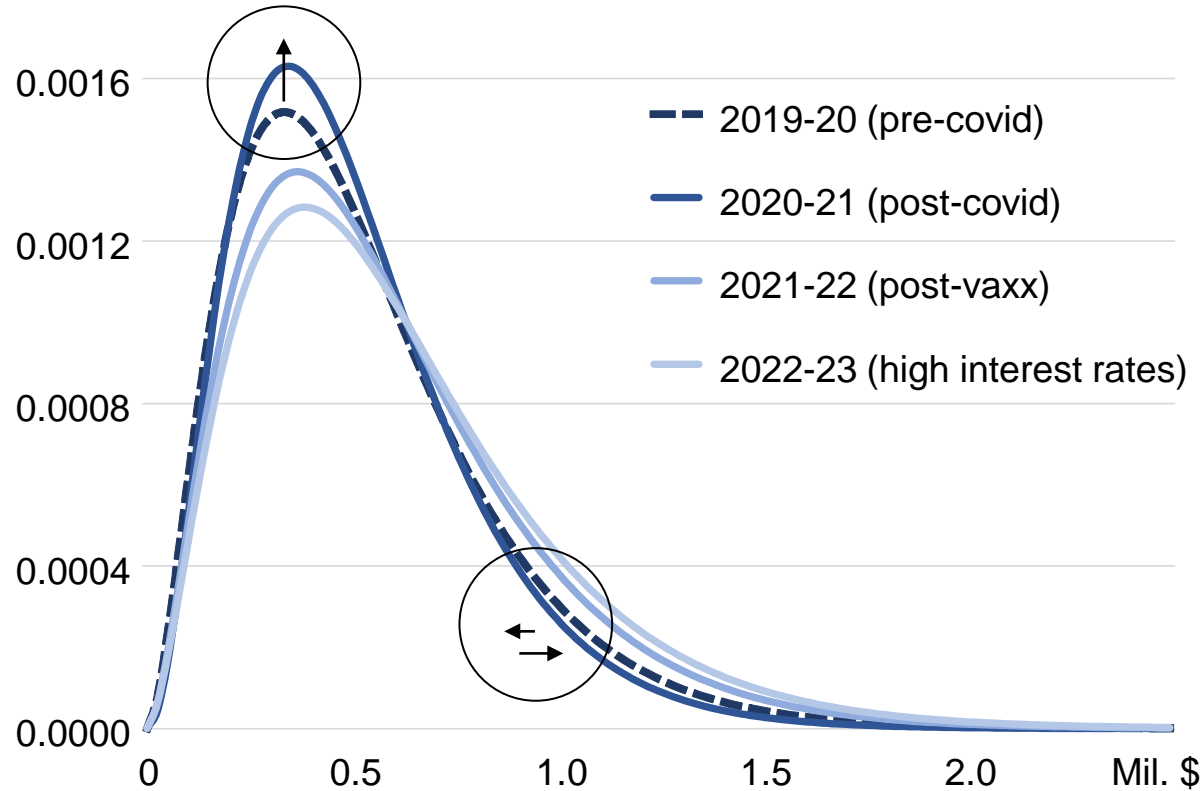
Condominium (April-March years)



Single-family (April-March years)

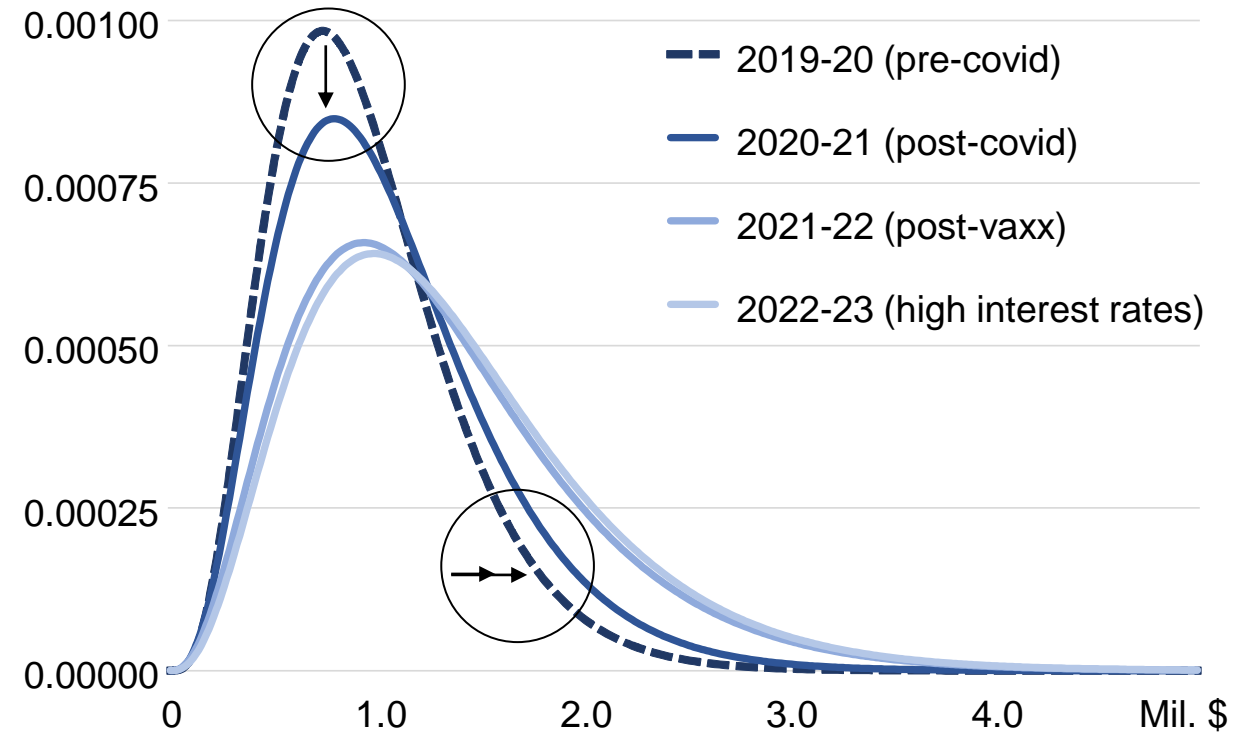
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Oahu existing home sales price density functions: SF prices busted a bigger move to high side, post-covid, post-vaxx, than condo prices



Condominium (April-March)

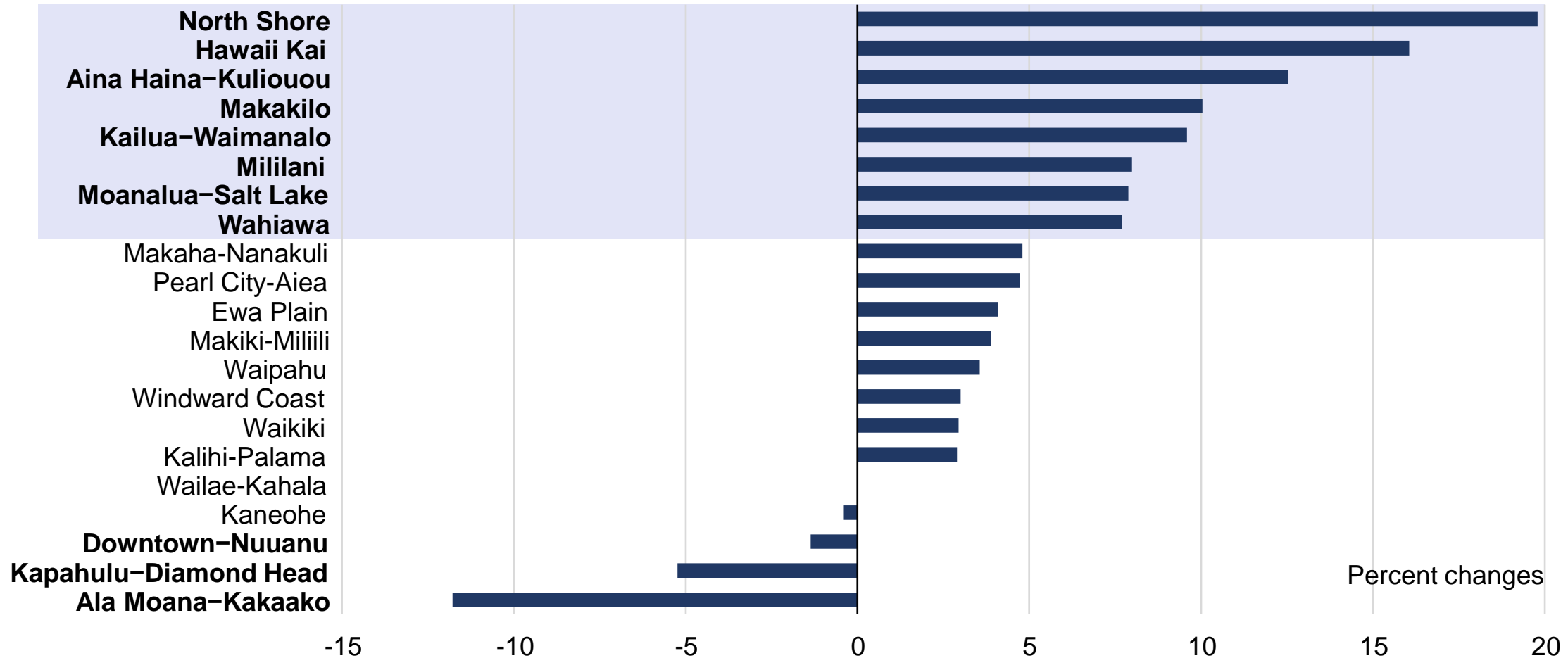
Post-covid sales below \$½ mil. *rose*; \$½ - 1 million small decrease



Single-family (April-March)

Post-covid sales below \$1 mil. *fell*; \$1-2 mil. rose sharply

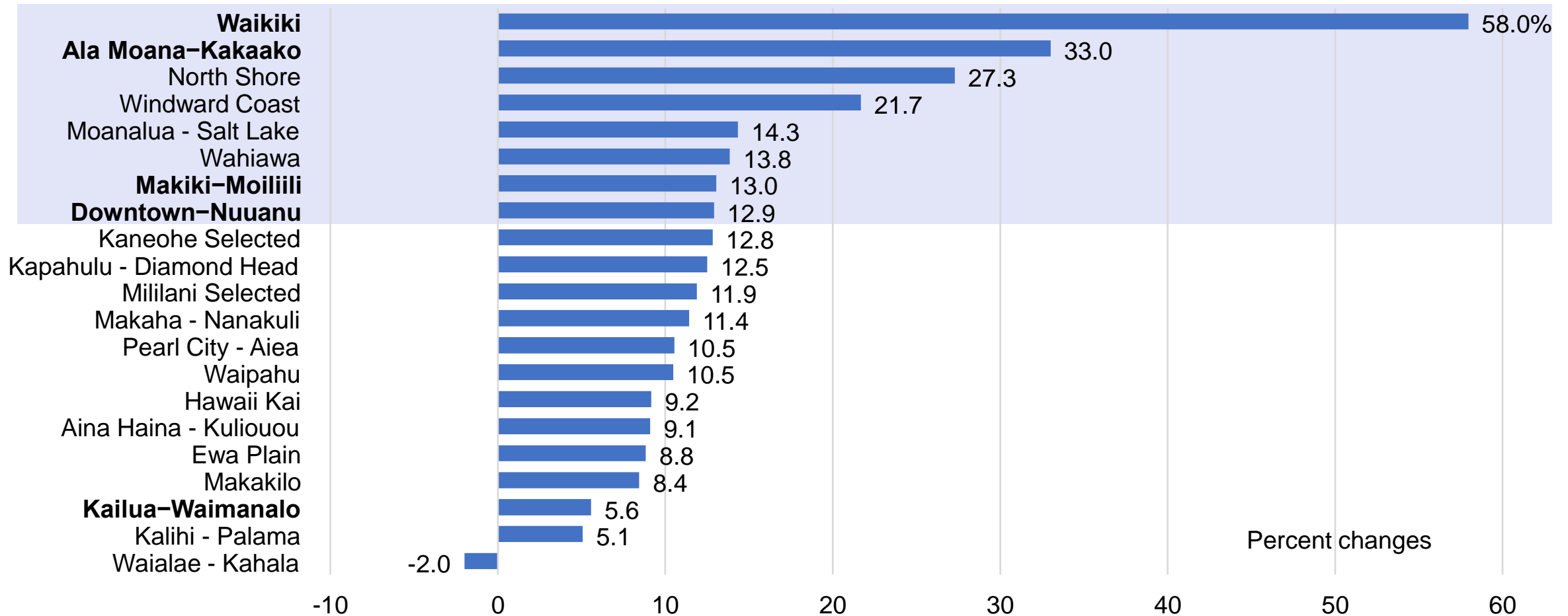
Oahu single-family home price appreciation in 2020: distinct spatial COVID shift to exurbs, suburbs from urban core—The Donut Effect*



*Arjun Ramani, Nicholas Bloom (January 2021), "The donut effect: How COVID-19 shapes real estate," *Stanford Institute for Economic Policy Research Policy Brief* (<https://siepr.stanford.edu/research/publications/donut-effect-how-covid-19-shapes-real-estate>)

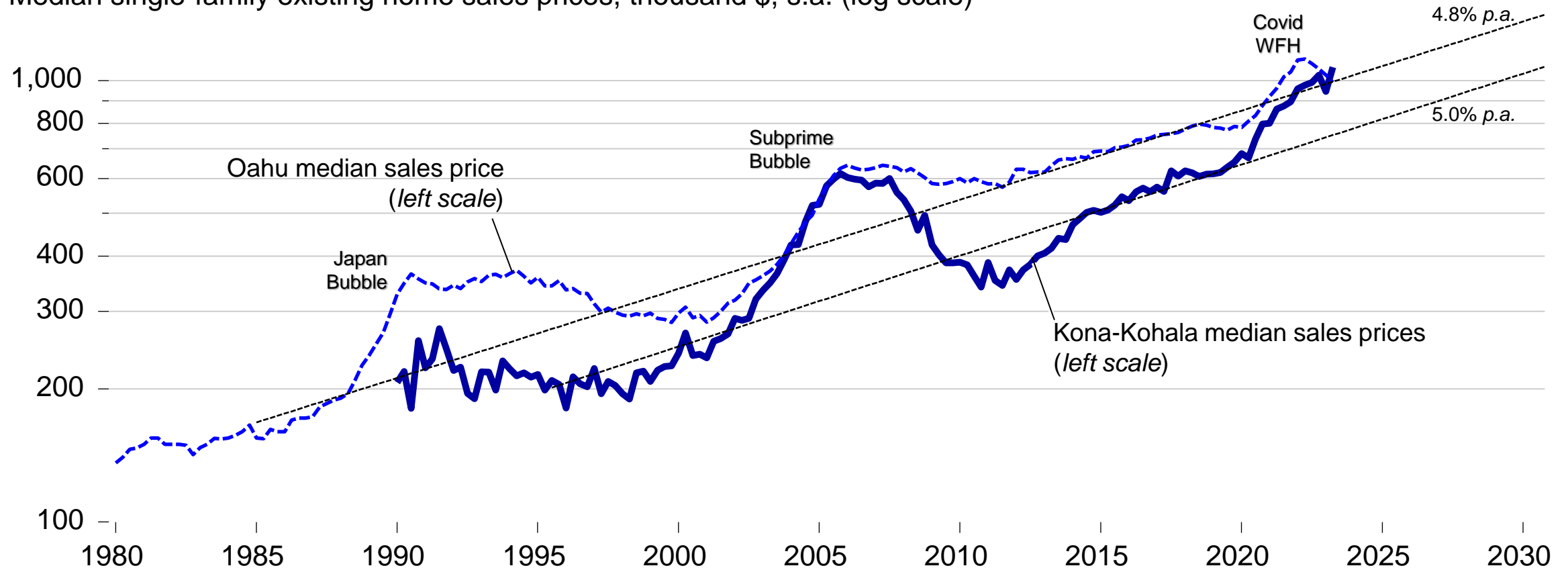
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Oahu single-family home price appreciation 2022: “backwash” after COVID wave to exurbs/suburbs, return to urban core—*relative* prices



Some LR corroboration comparing Kona-Kohala to Oahu dynamics (arbitrage should equate long-run risk-adjusted returns, theoretically)

Median single-family existing home sales prices, thousand \$, s.a. (log scale)

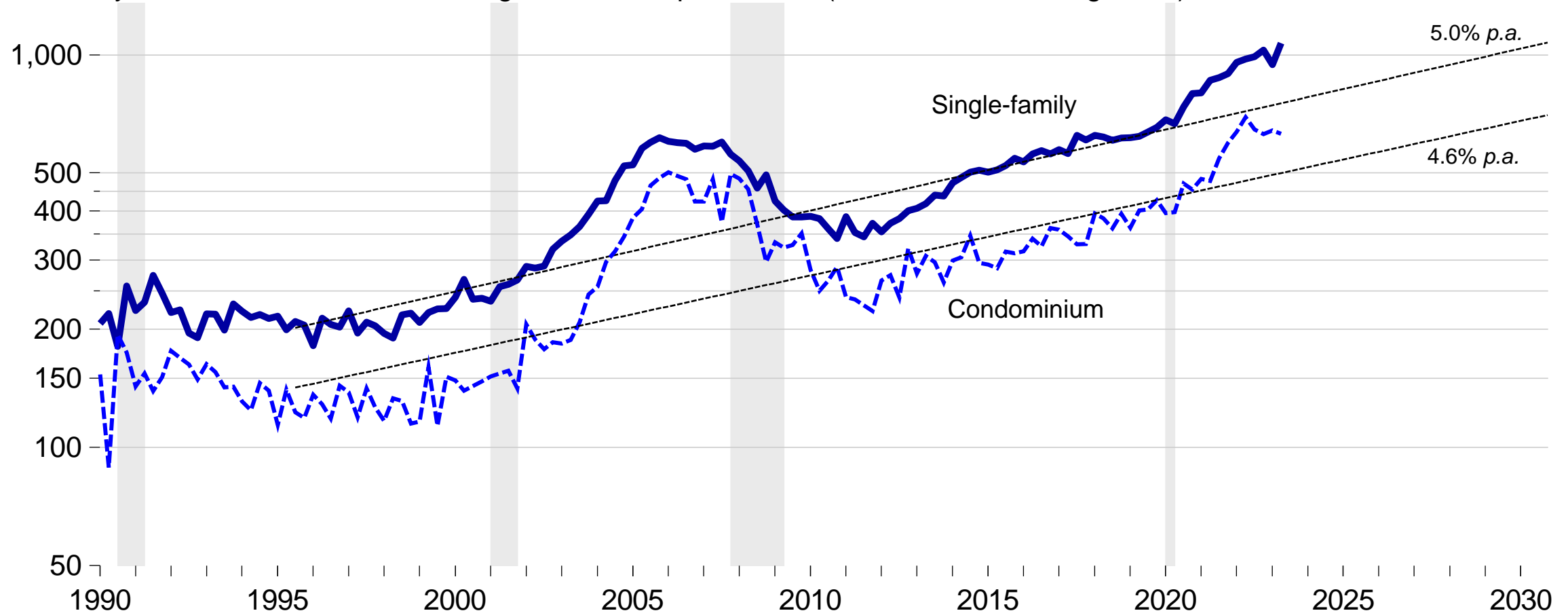


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Source: Hawaii Information Service, Honolulu Board of Realtors, Hawaii DBEDT (<https://dbedt.hawaii.gov/economic/mei/>); seasonally-adjusted transforms Census X-13 ARIMA filter and trend estimates from stationary components by TZE..

Looking more closely at recent Kona-Kohala median prices: unlike Oahu, West Hawaii single-family *and* condo prices jumped post-covid

Quarterly Kona-Kohala median existing home sales prices, s.a. (thousand dollars; log scale)

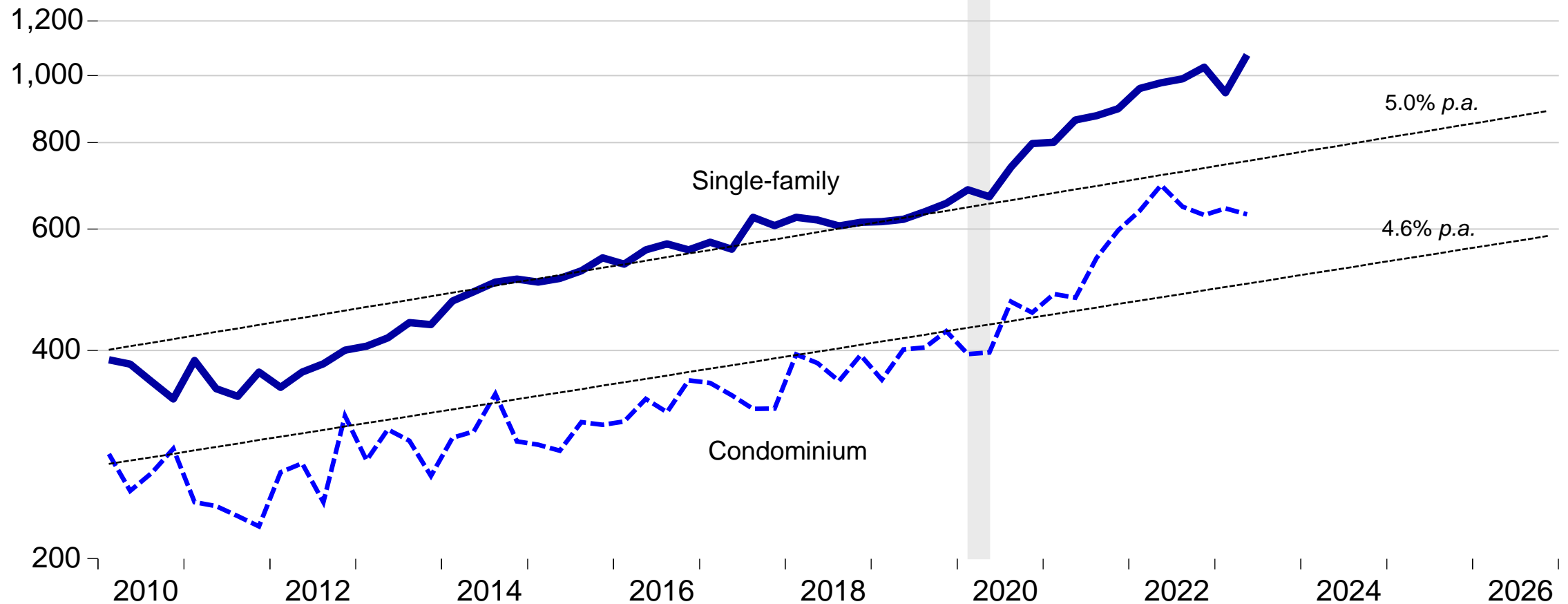


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Source: Hawaii Information Service; all analytics and errors by TZ Economics. Raw data are aggregated by Tax Map Key (TMK) and segregated into TMKs 1-4 (Hilo Side), 5-8 (Kohala through Kona), and 9 (Ka'u), organized into quarterly time series, moments calculated from seasonally-adjusted transforms using Census X-13 ARIMA filter, with trend estimate on stationary component, 1995Q3-2019Q4.

Kona-Kohala valuations rose sharply post-covid: remote work = vagabond workers? Makes sense if condos are in *resort* areas

Quarterly Kona-Kohala median existing home sales prices, s.a. (thousand dollars; log scale)

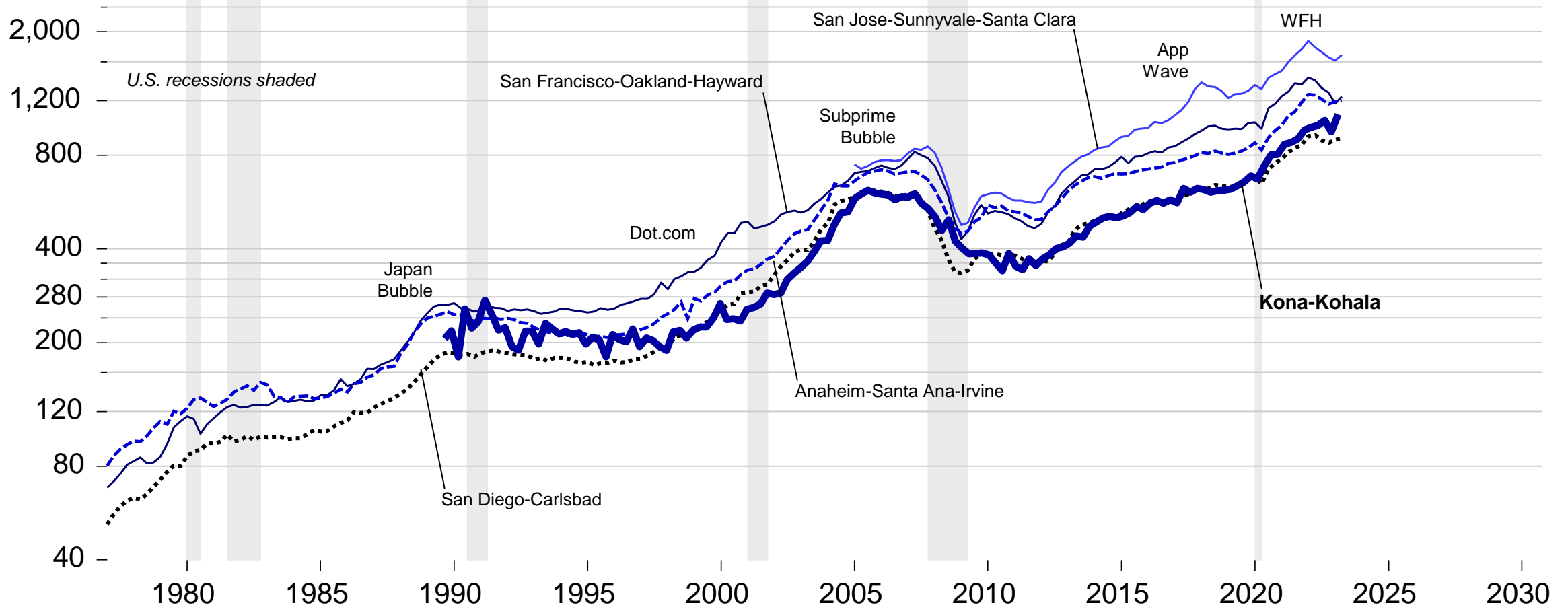


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Source: Hawaii Information Service; all analytics and errors by TZ Economics. Raw data are aggregated by Tax Map Key (TMK) and segregated into TMKs 1-4 (Hilo Side), 5-8 (Kohala through Kona), and 9 (Ka'u), organized into quarterly time series, moments calculated from seasonally-adjusted transforms using Census X-13 ARIMA filter, with trend estimate on stationary component, 1995Q3-2019Q4.

Of course, Kona-Kohala *is* San Diego, California (and vice versa)

Quarterly median single-family home prices, s.a. (log scale)



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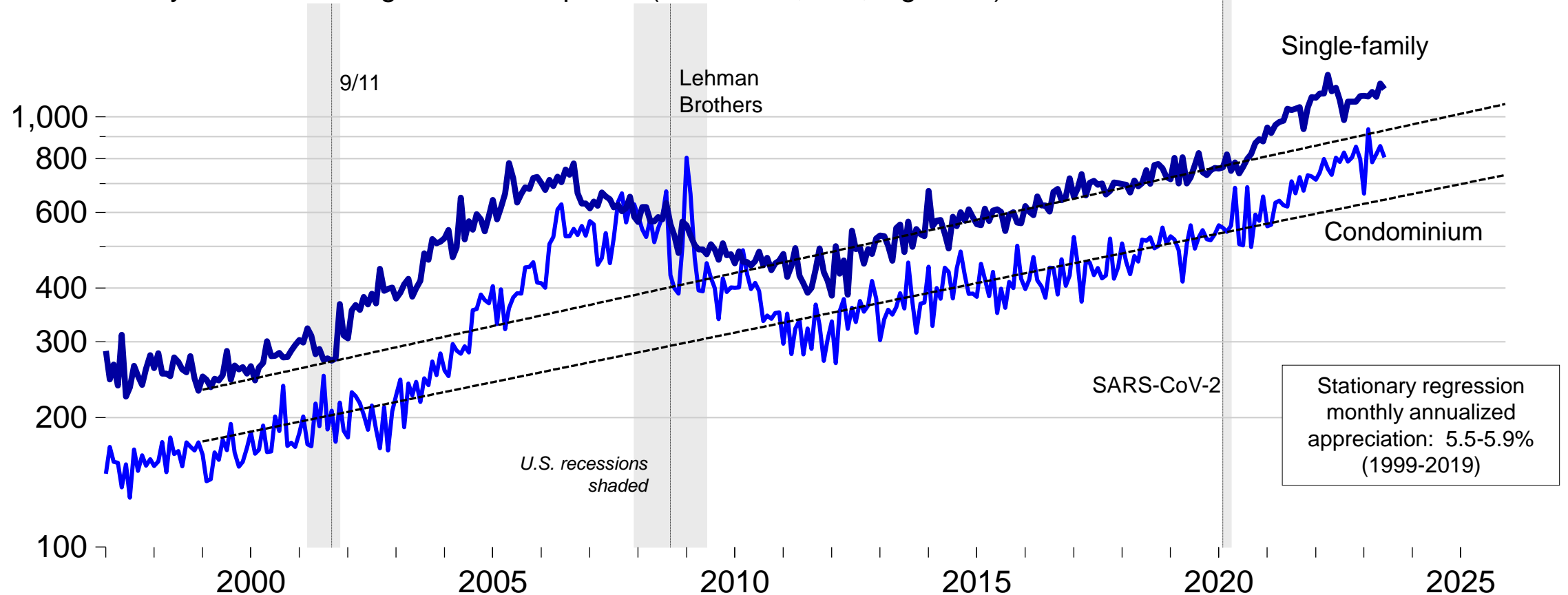
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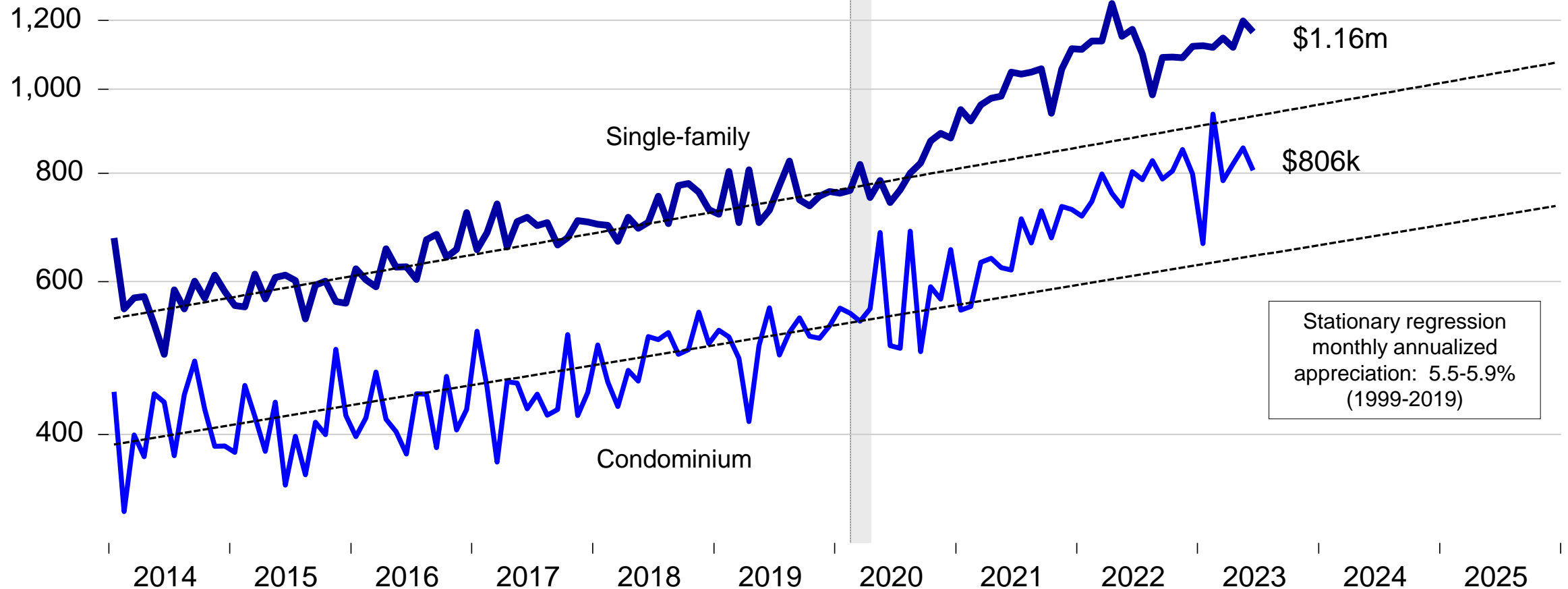
Maui median home prices above pre-covid trend, too; a bubble? No: fundamentals—remote work, working from home—*vagabond* workers

Maui monthly median existing home sales prices (thousand\$, s.a., log scale)



Unlike Oahu, *both* Maui median single-family *and* condo prices are on post-covid, above-trend trajectories, decelerating through mid-2023

Maui monthly median existing home sales prices (thous. \$, s.a., log scale)



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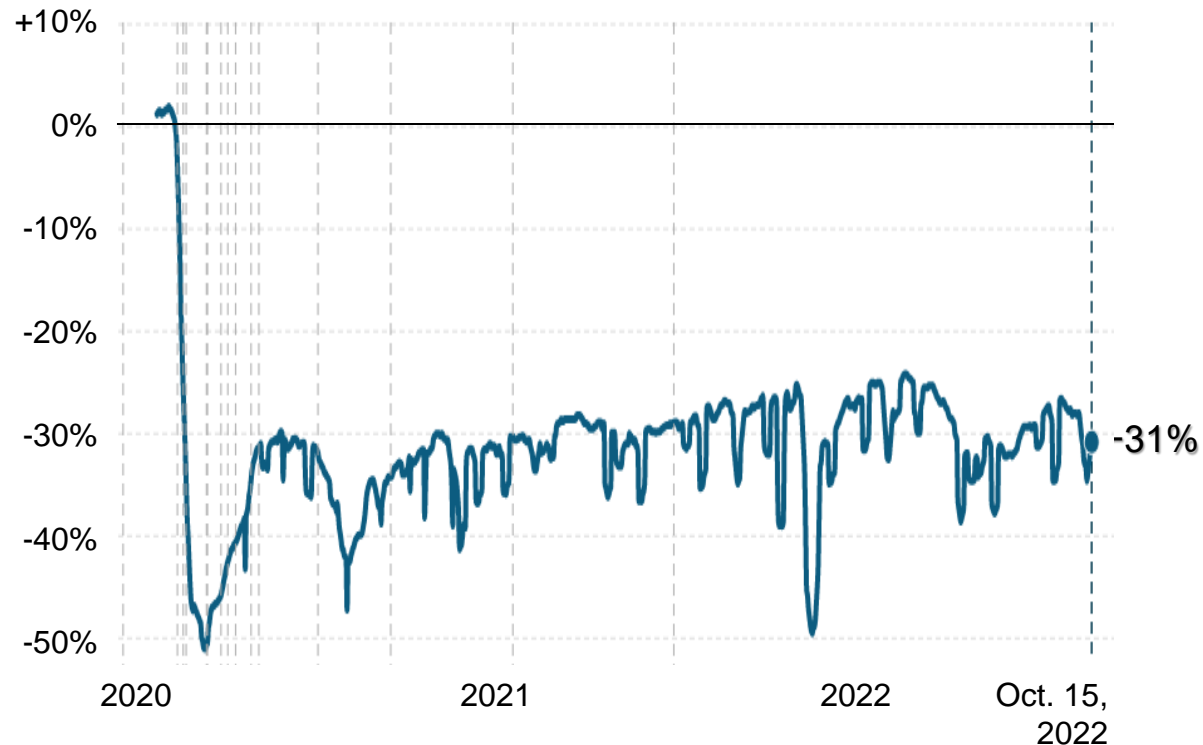


Conjecture: remote work/WFH favored suburbs/exurbs on Oahu, not as much urban core, but residential *and* resorts in Maui, Kona-Kohala

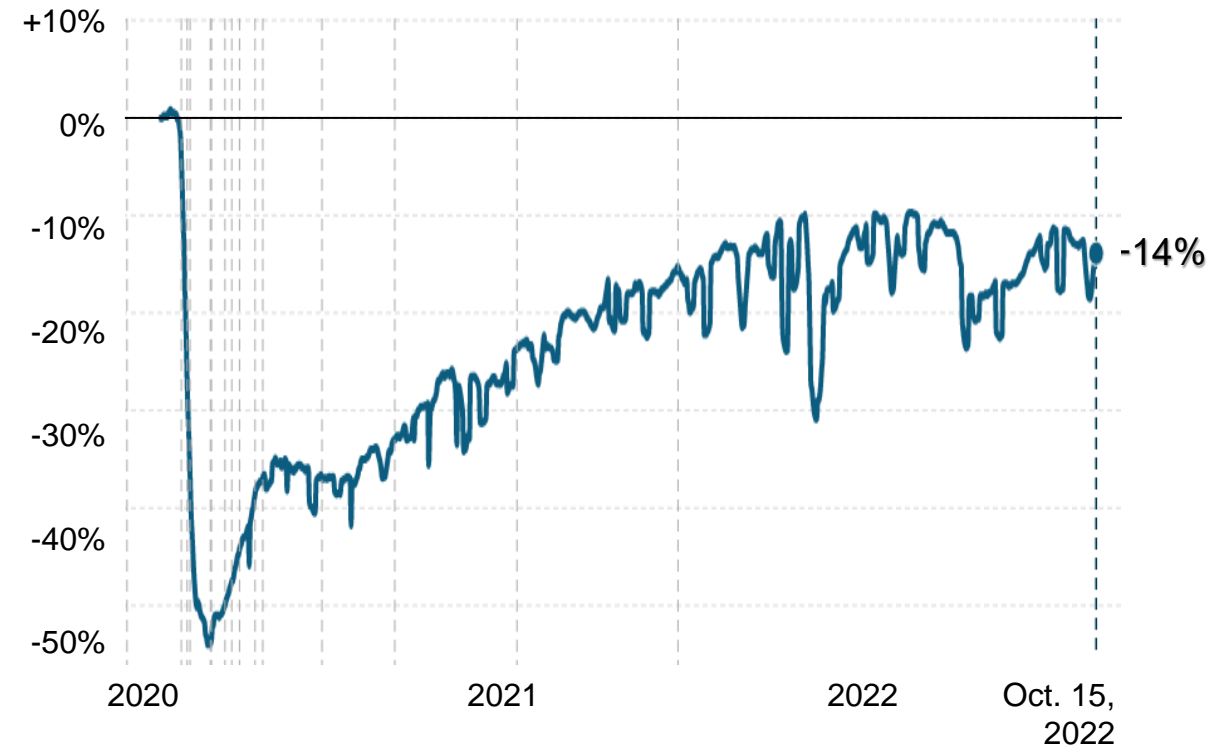
- What explains dichotomous outcome?
 1. Oahu (mostly suburban) single-family home median prices well *above* trend, post-covid
 2. Oahu (mostly urban core) condominium median prices *on* trend, not above, post-covid
 3. N. “Islands”—Maui and West Hawaii—*both* single-family, condo prices above trend, post-covid
- The “Donut Effect” apparent in Urban Honolulu MSA (literally the name of Oahu in U.S. statistics), consistent with post-covid increase in remote work, working from home, decrease in commuting
- Maui, Kona-Kohala resorts may be picking up vagabond worker housing demand in resort areas (disproportionately the location of condominiums in both Neighbor Island sub-markets)
- Corroborating evidence:* Maui exhibited only *half* of Oahu’s “time spent at workplace locations” in anonymized Google mobility when discontinued in mid-October, 2022 (next slide)—no donuts (except for Krispee Kreme)

Working from home more enduring in daily smartphone mobility data on Oahu (office space, relatively) than on Maui (tourism, relatively)

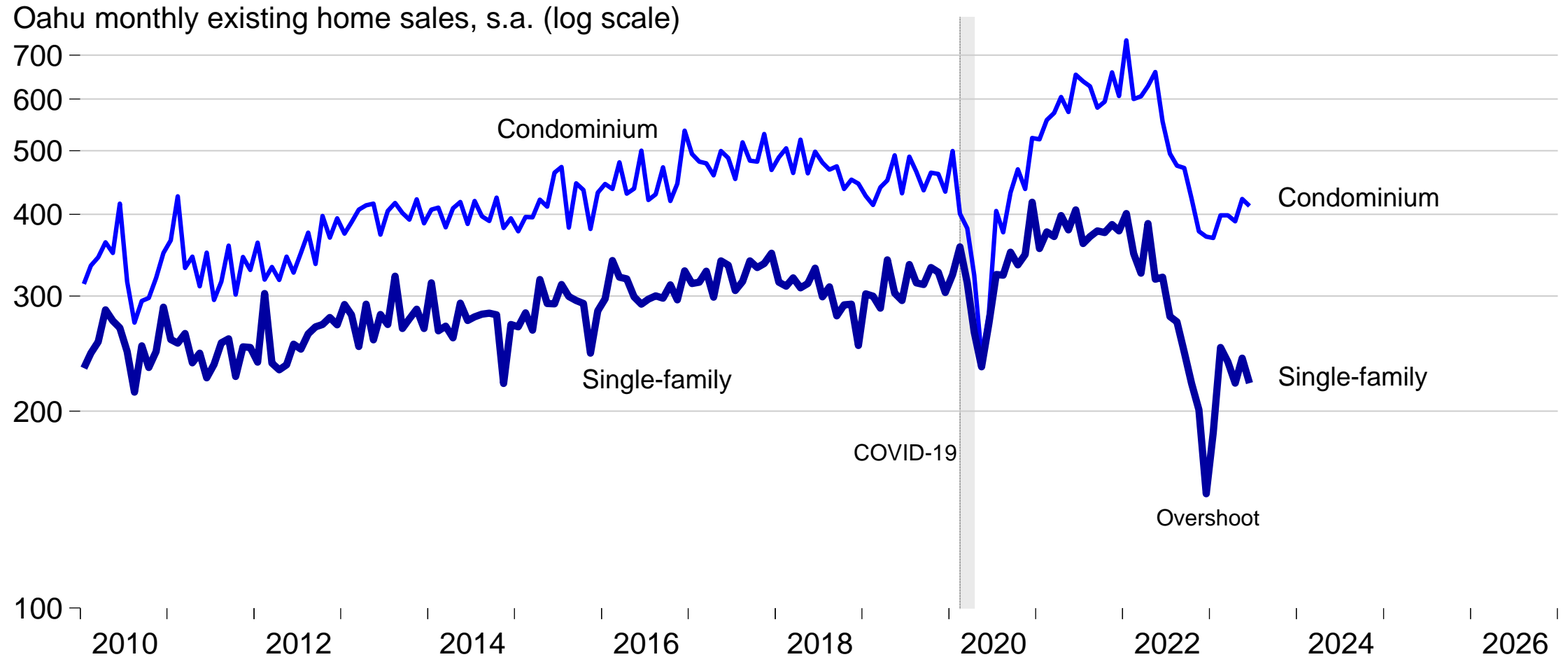
Honolulu time spent at workplace locations compared to January 2020



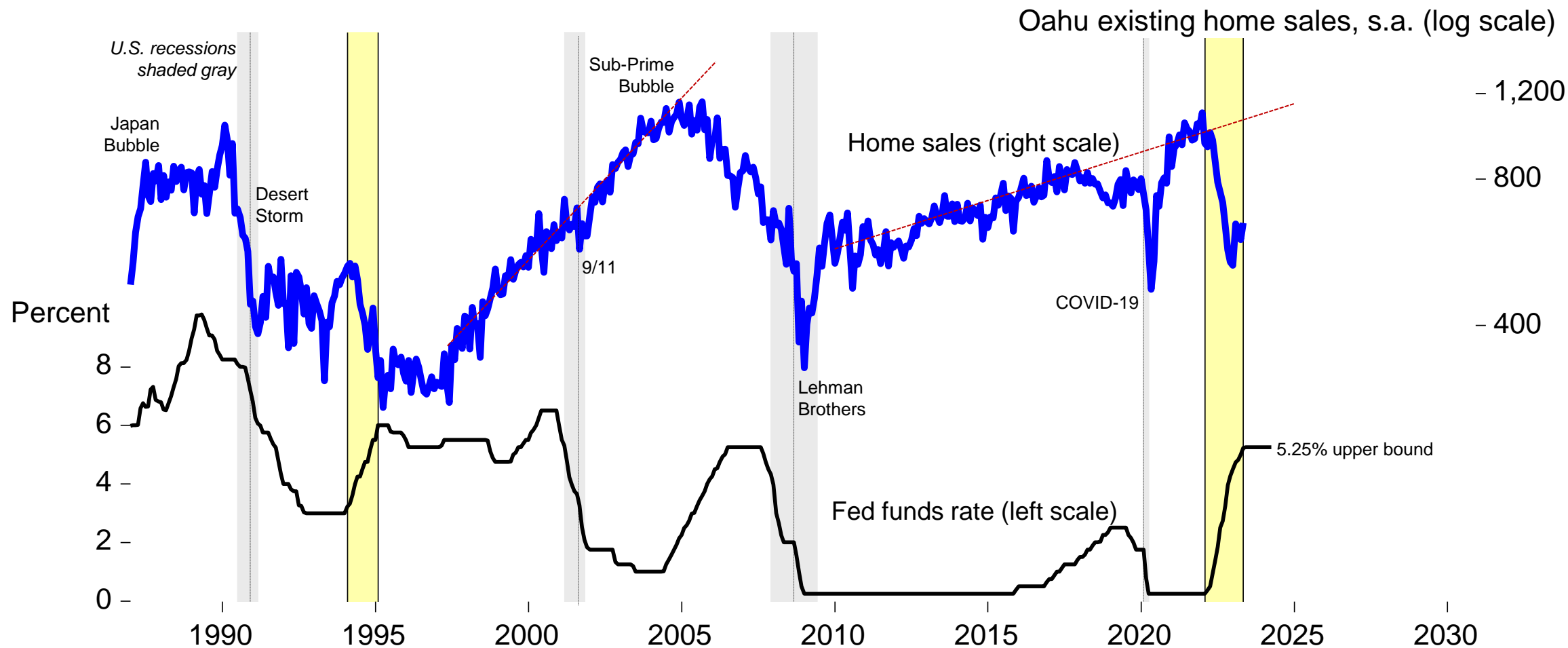
Maui time spent at workplace locations compared to January 2020



Drop in Oahu existing home sales since 2021 from rising mortgage interest rates; bottom equals mid-2010s for condos, 2010 for SF



FOMC lowers fed funds rates in recessions, but not all fed funds rate increases *cause* recessions*: 2022-23 as 1994-95 Soft Landing?



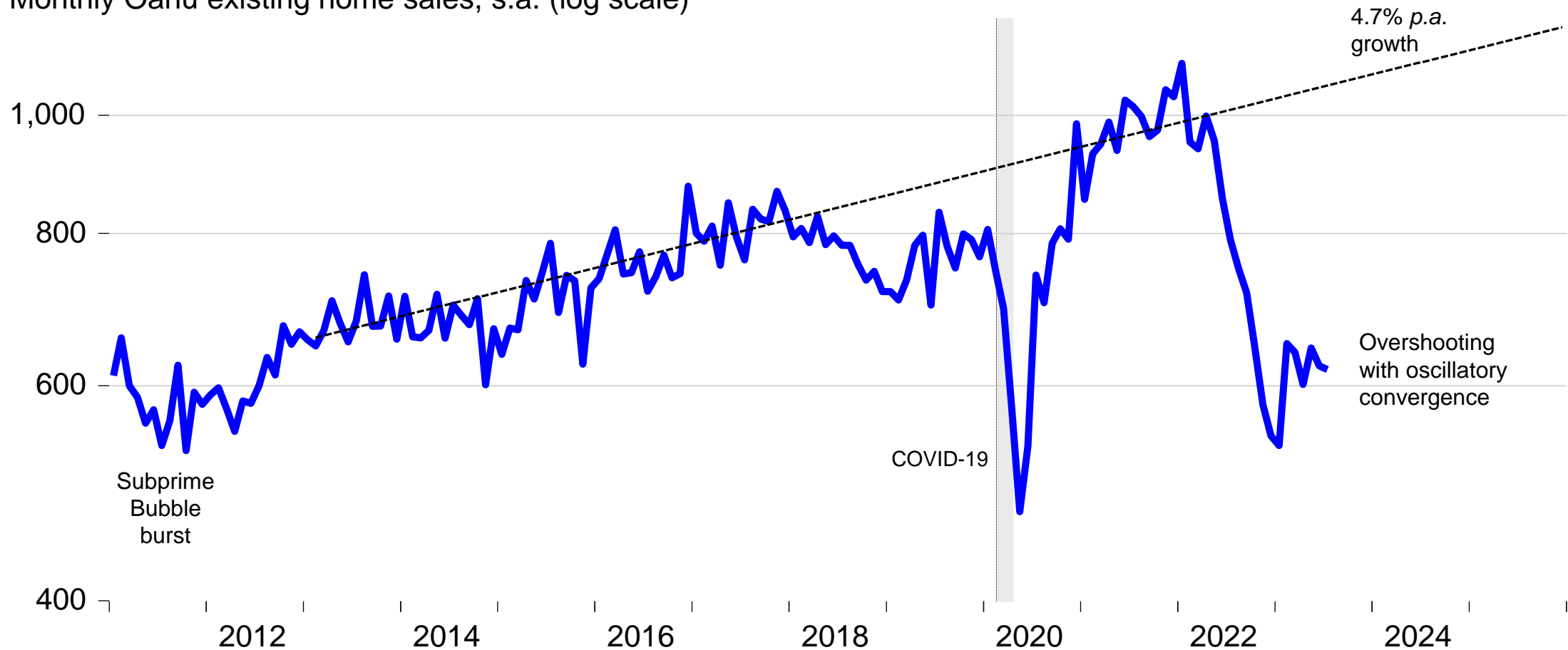
*Ellen E. Meade, Yoshio Nozawa, Lubomir Petrasek, and Joyce K. Zickler (September 24, 2015), "The Effects of FOMC Communications before Policy Tightening in 1994 and 2004," *FEDS Notes* (<https://www.federalreserve.gov/econresdata/notes/feds-notes/2015/effects-of-fomc-communications-before-policy-tightening-in-1994-and-2004-20150924.html>).

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Sources: Honolulu Board of Realtors, Hawaii, existing home sales through May 2023; DBEDT Board of Governors of the Federal Reserve System (US), Federal Funds Target (to 2008) and Target Range - Upper Limit [DFEDTAR and DFEDTARU] through early June 2023, retrieved from FRED, Federal Reserve Bank of St. Louis (<http://dbedt.hawaii.gov/economic/mei/>, <https://fred.stlouisfed.org/series/DFEDTARU>).

Generally tranquil character of 2010s expansion, low interest rate environment (= affordability) consistent with steady sales growth

Monthly Oahu existing home sales, s.a. (log scale)



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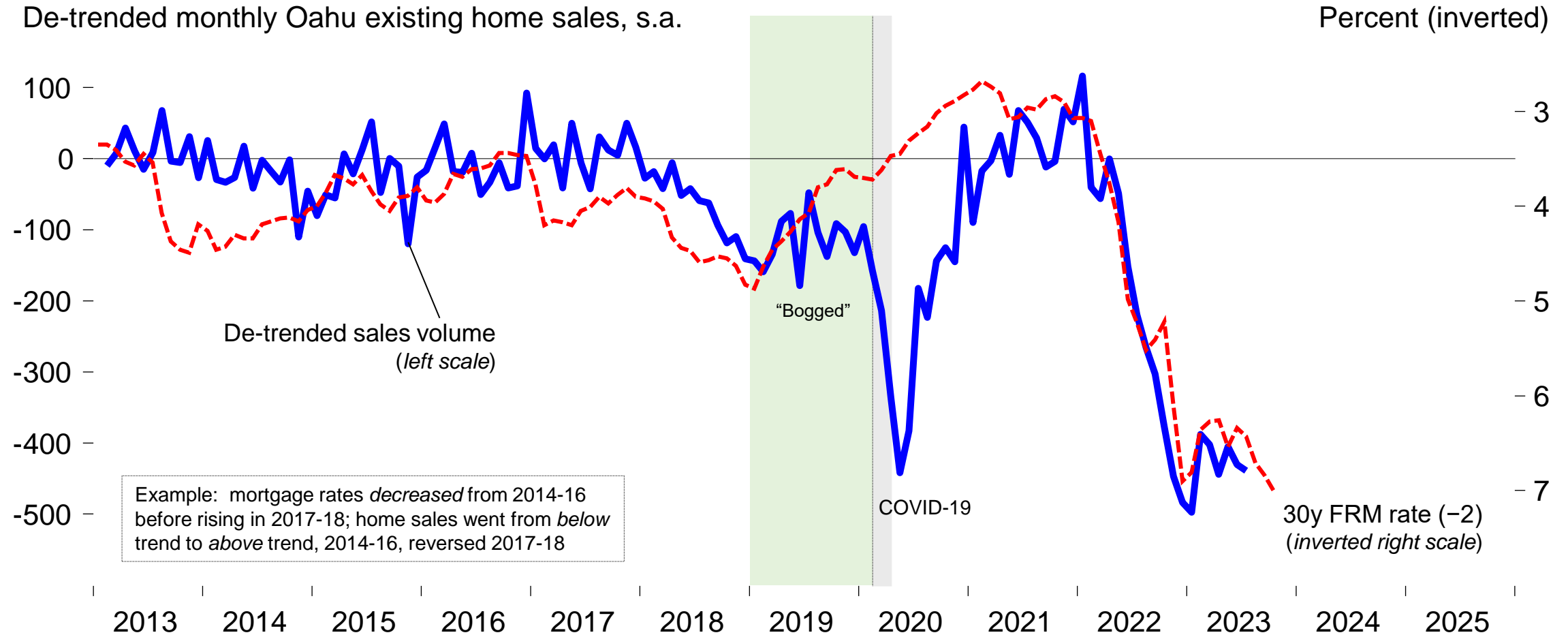
Appeared on all four **Top 25** lists of:

PACIFIC
BUSINESS NEWS

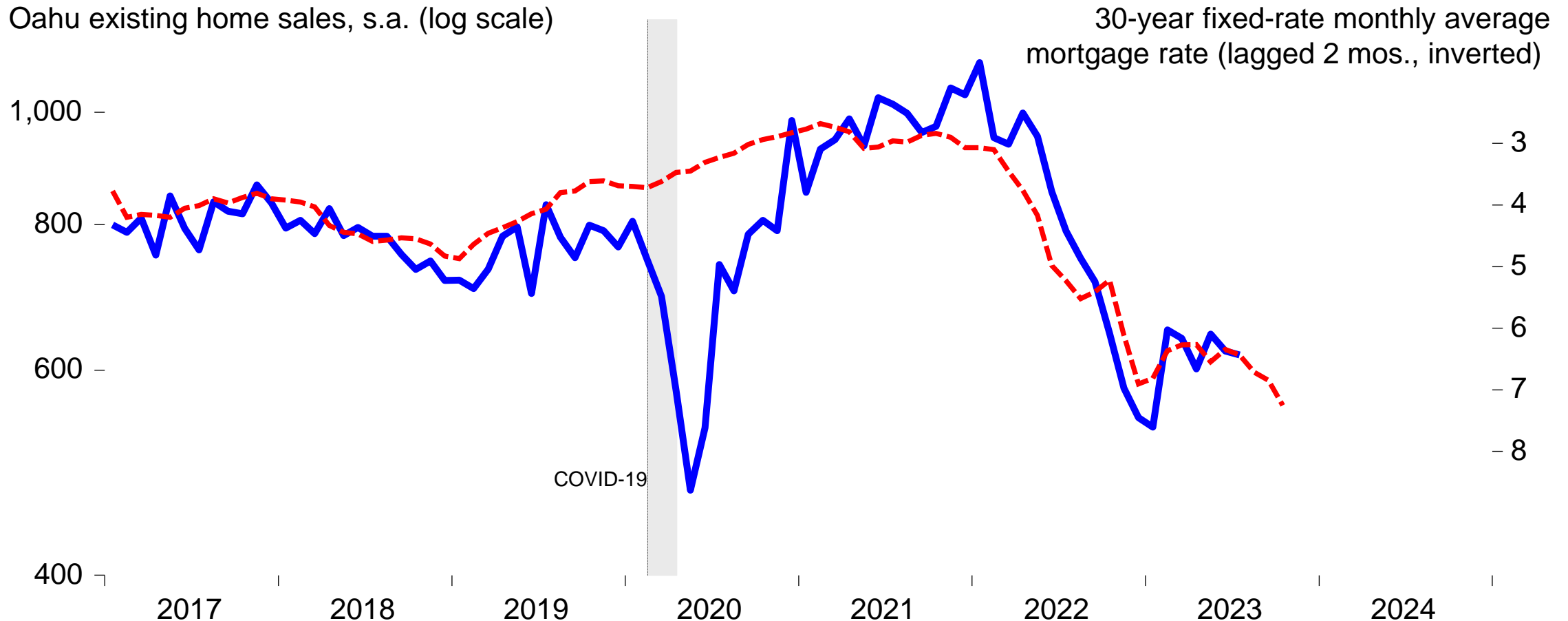
- Top 25 **Real Estate Companies in Hawaii**
 - Top 25 **Residential Sales in Hawaii**
 - Top 25 **Commercial Sales in Hawaii**
 - Top 25 **Vacant Land Sales in Hawaii**

Pacific Business News rankings include appearances from 2016-present.
All information is approximate and subject to change. Luxury Homes International RB-18777

Remove the 4.7% sales growth trend, what's left either rate-driven, from exogenous shock (covid), or pre-pandemic (2019) stagnation

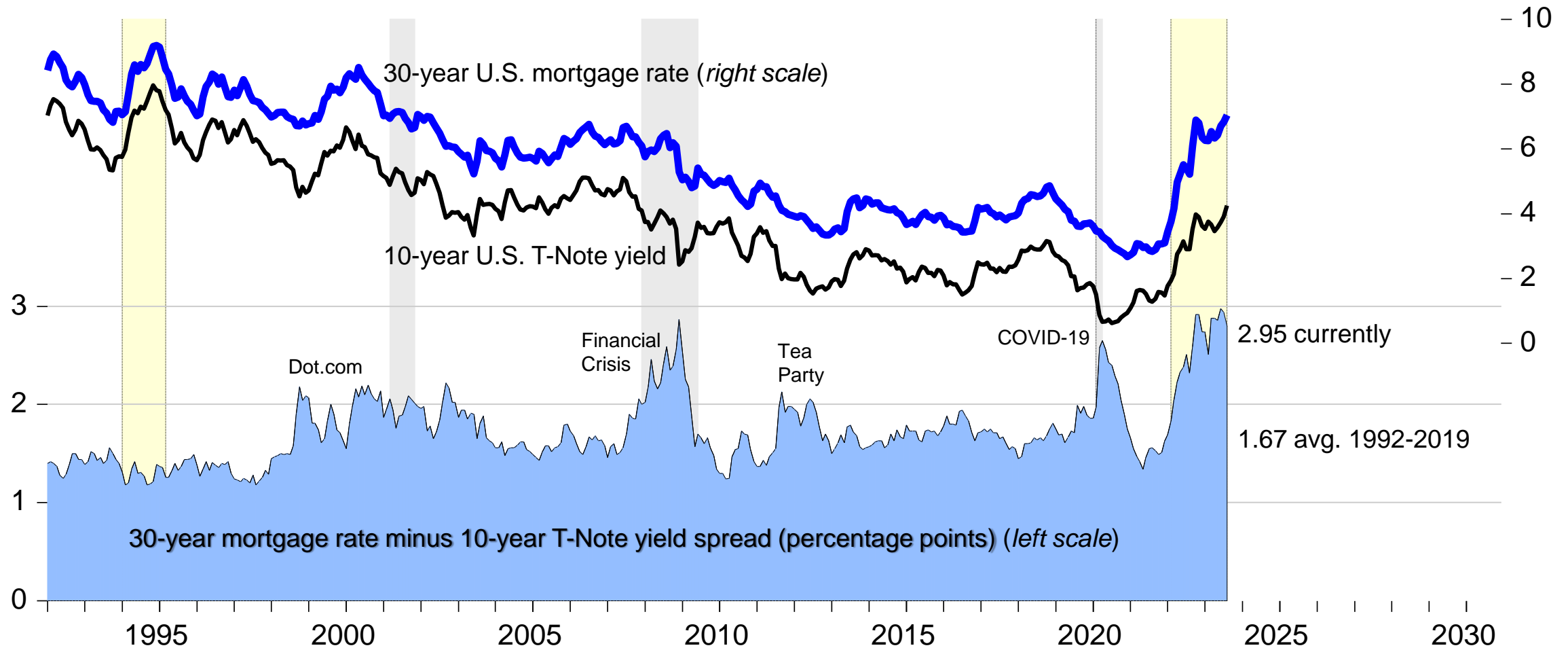


Total Oahu home sales volumes inverse movement with mortgage rates (lagged 2 months) suggest persistent low 2023 volumes



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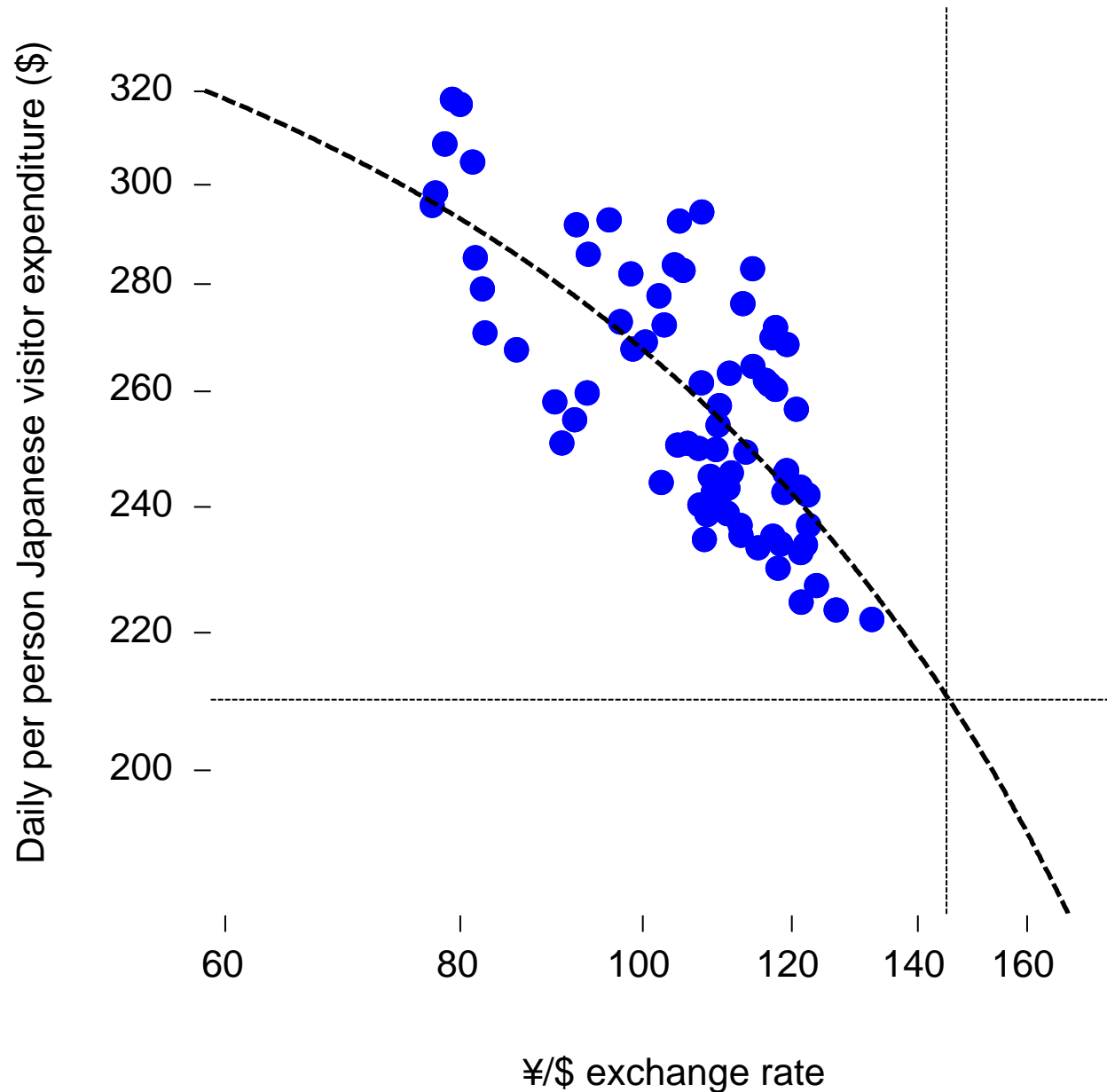
Recent credit tightening: increase in one version of the “external finance premium”—spread from mortgage rates to risk-free rates*



*Ben Bernanke (December 2022), “Banking, credit, and economic fluctuations: Nobel Prize lecture” (<https://www.brookings.edu/blog/up-front/2022/12/12/banking-credit-and-economic-fluctuations-bernanke-nobel-prize-lecture/>) and <https://www.youtube.com/watch?v=BB Cp28YF-hg>.

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Sources: Freddie Mac, 30-Year Fixed Rate Mortgage Average in the United States [MORTGAGE30US]; Board of Governors of the Federal Reserve System (US), Market Yield on U.S. Treasury Securities at 10-Year Constant Maturity, Quoted on an Investment Basis [DGS10], retrieved from FRED (<https://fred.stlouisfed.org/series/MORTGAGE30US>, <https://fred.stlouisfed.org/series/DGS10>).



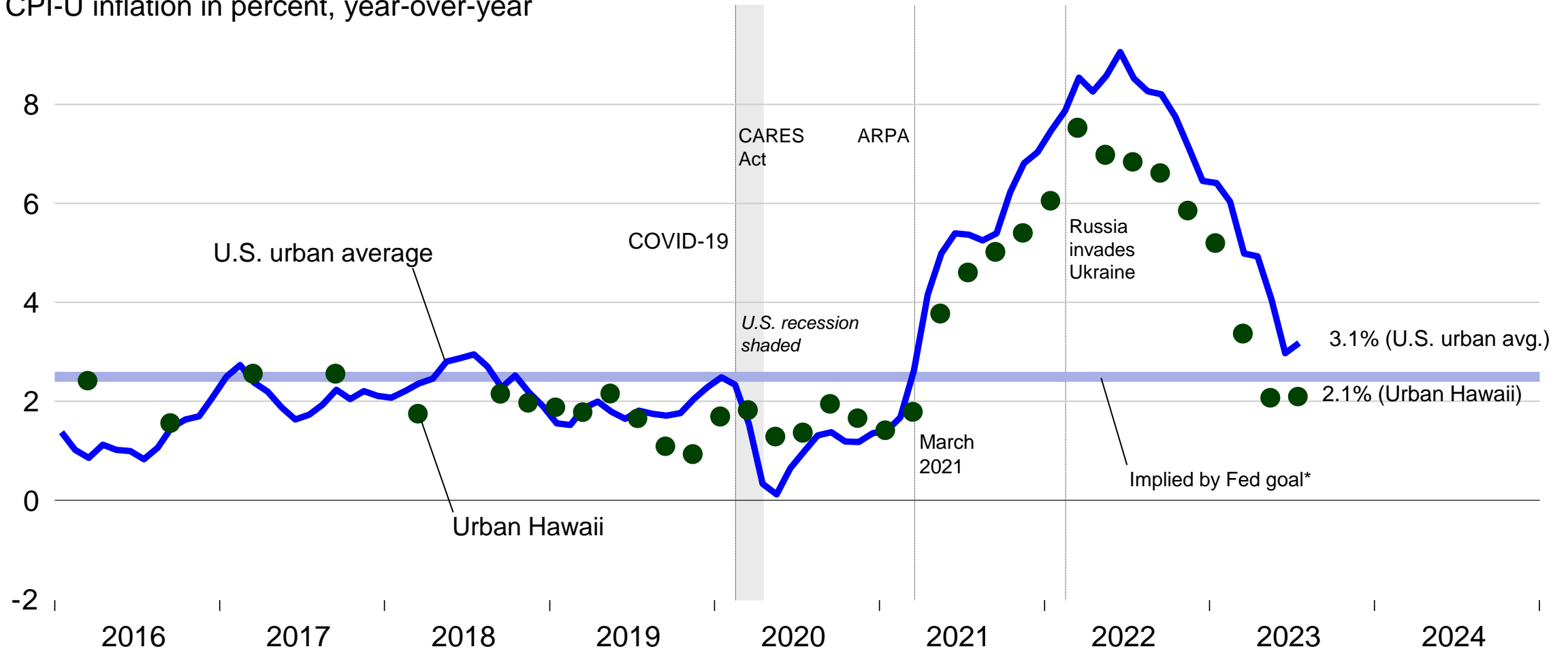
Impediment to Japanese travel revival:

At 145 ¥/\$, Hawaii is a very expensive destination for Japanese travelers

Historical relationship between yen/dollar exchange rate (y-axis) and Japanese visitor per person per day expenditure in Hawaii (2002-2019) implies low outlay in current exchange rate environment.

CPI inflation has fallen as fast as it rose, stabilizing—*special* factors: pandemic supply chain breaks, fiscal stimuli, geopolitical shocks

CPI-U inflation in percent, year-over-year



*Federal Reserve Board (https://www.federalreserve.gov/monetarypolicy/files/FOMC_LongerRunGoals.pdf)

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Source: U.S. Bureau of Labor Statistics (<https://data.bls.gov/cgi-bin/surveymost?r9>); to facilitate comparison semiannual inflation rates for 2017 and most of 2018 are included with the newer year-over-year inflation estimates for Urban Hawaii inflation at bi-monthly frequencies; monthly data through July 2023.

Thank you!

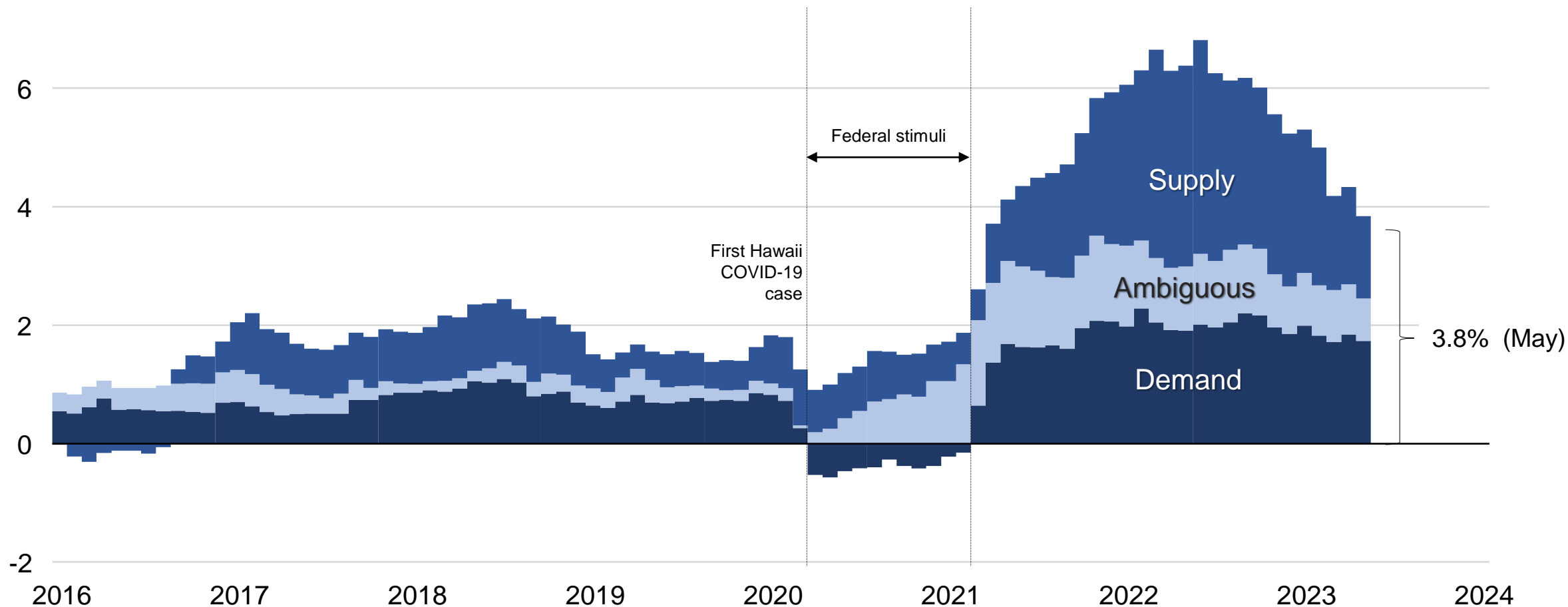
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Contributions to PCE deflator headline inflation, divided into supply- and demand-driven, isolate *unexpected* component (not LR factors)

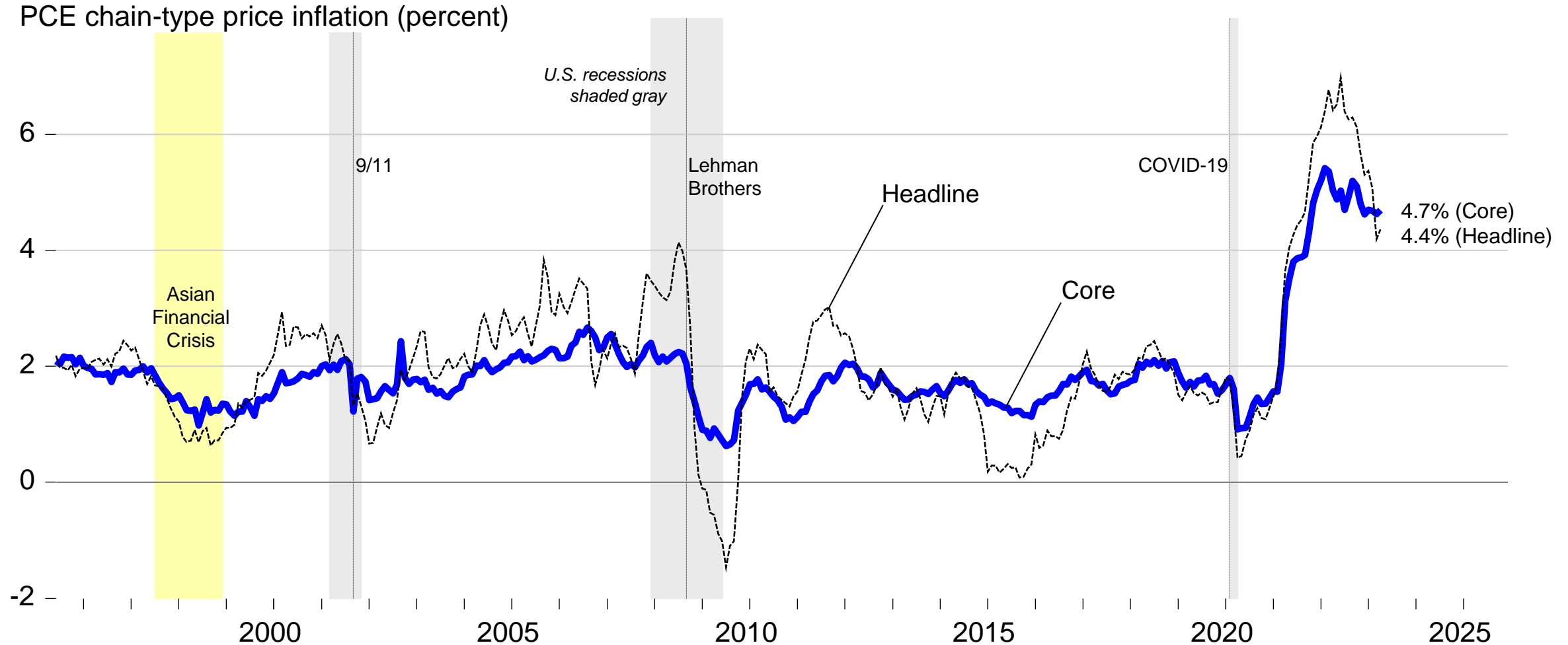
Percent changes stacked (in) U.S. headline PCE deflator components (year-over-year)



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Source: Federal Reserve Bank of San Francisco (<https://www.frbsf.org/economic-research/indicators-data/supply-and-demand-driven-pce-inflation/>), monthly data through May 2023. See Adam Hale Shapiro (June 2022), "A Simple Framework to Monitor Inflation," *FRB San Francisco Working Paper 2020-29* (<https://www.frbsf.org/economic-research/publications/working-papers/2020/29/>).

The Fed's inflation goal: 2 percent core U.S. PCE inflation (AIT (2020)), but post-pandemic, core PCE inflation "sticky downward"

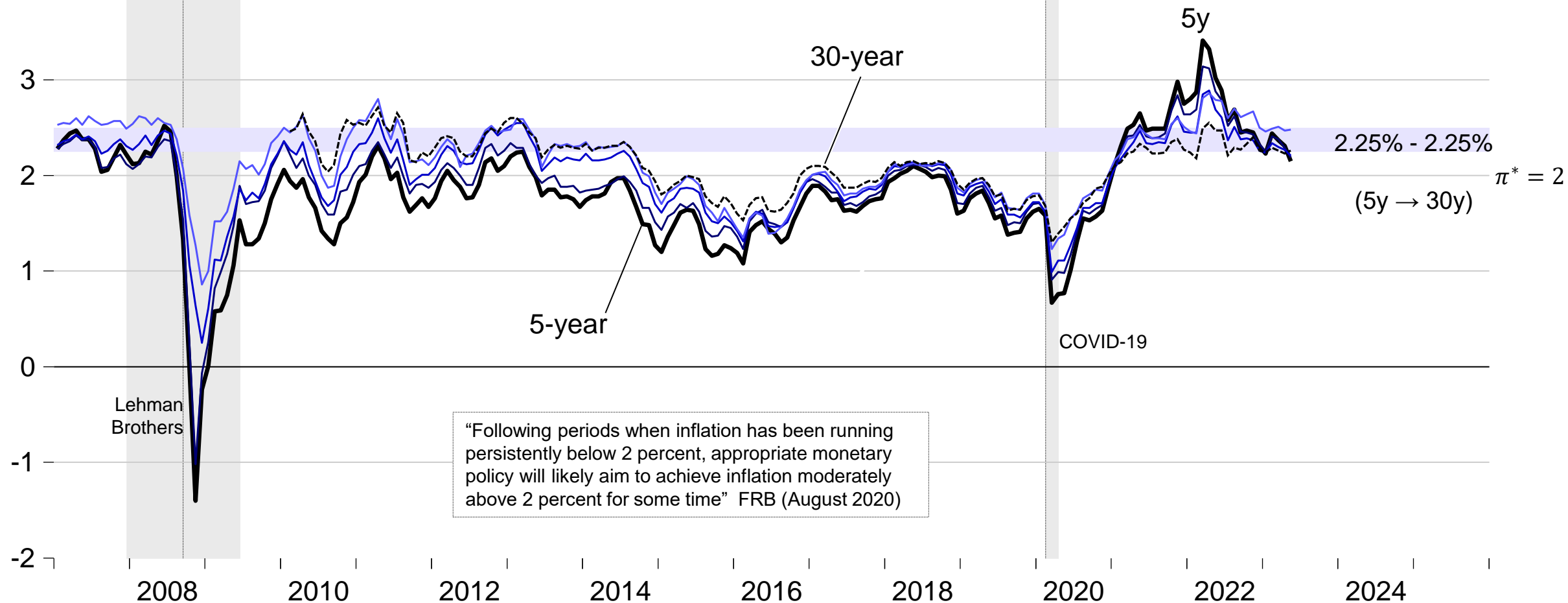


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Source: U.S. Bureau of Economic Analysis, Personal Consumption Expenditures: Chain-type Price Index [PCEPI], and Personal Consumption Expenditures Excluding Food and Energy (Chain-Type Price Index) [PCEPILFE], retrieved from FRED, Federal Reserve Bank of St. Louis; (<https://fred.stlouisfed.org/series/PCEPI>), and (<https://fred.stlouisfed.org/series/PCEPILFE>).

Why this is not the 1970s: (nominal minus real) U.S. Treasury yields: long-run inflation expectations $2.25\% \leq \pi^e \leq 2.50\%$ well-anchored

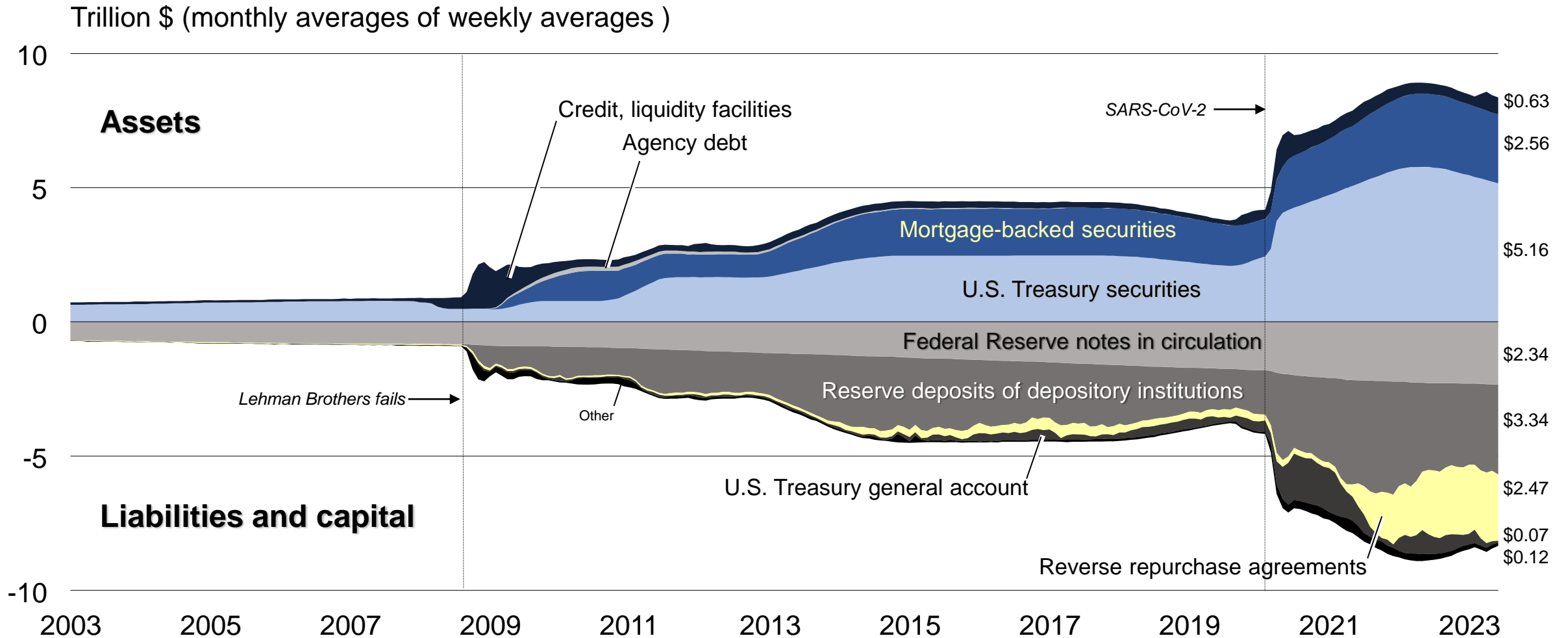
Term structure of expected inflation from nominal Treasury yields minus TIPS yields



*Nominal U.S. Treasury yields minus TIPS yields at same maturities

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Quantitative tightening (Treasury, MBS run-off); SVB failure led to BTFP* for re-injection of bank reserves, reverse repos (liquidity)

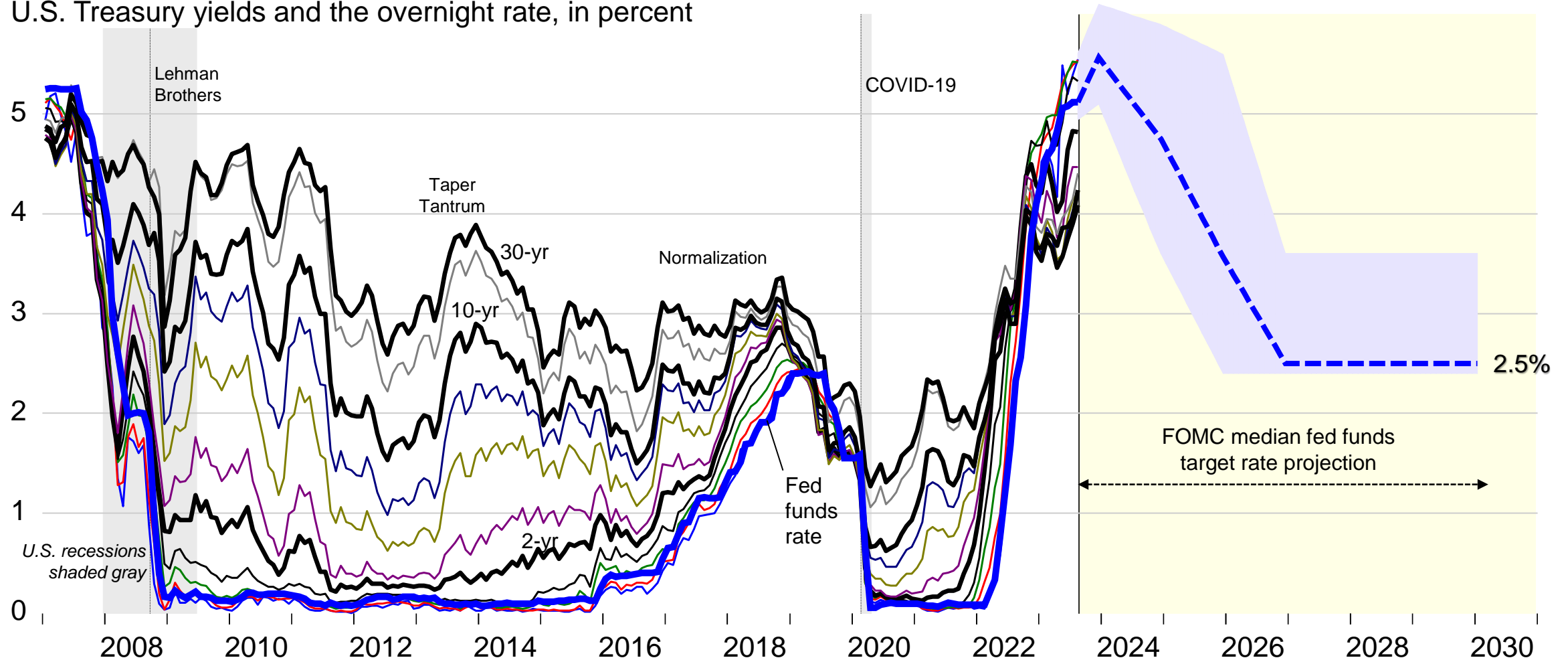


*Federal Reserve Board (<https://www.federalreserve.gov/financial-stability/bank-term-funding-program.htm>)

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U.S. Treasury yield curve: FOMC moved aggressively to contain inflation, anchor expectations; now approaching peak for disinflation

U.S. Treasury yields and the overnight rate, in percent



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Sources: Board of Governors of the Federal Reserve System (<https://www.federalreserve.gov/datadownload/>), data through August 9, 2023; Federal Open Market Committee (FOMC) (June 14, 2023) (<https://www.federalreserve.gov/monetarypolicy/fomcprojtabl20230614.htm>), and National Bureau of Economic Research (<https://www.nber.org/research/data/us-business-cycle-expansions-and-contractions>).

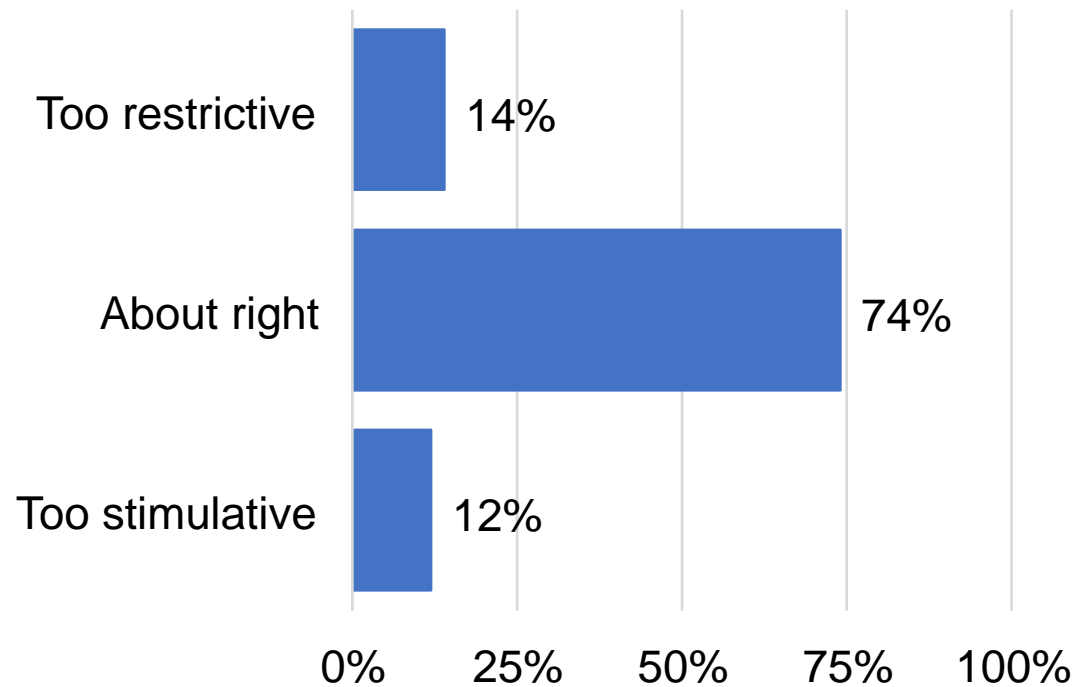
Thank you!

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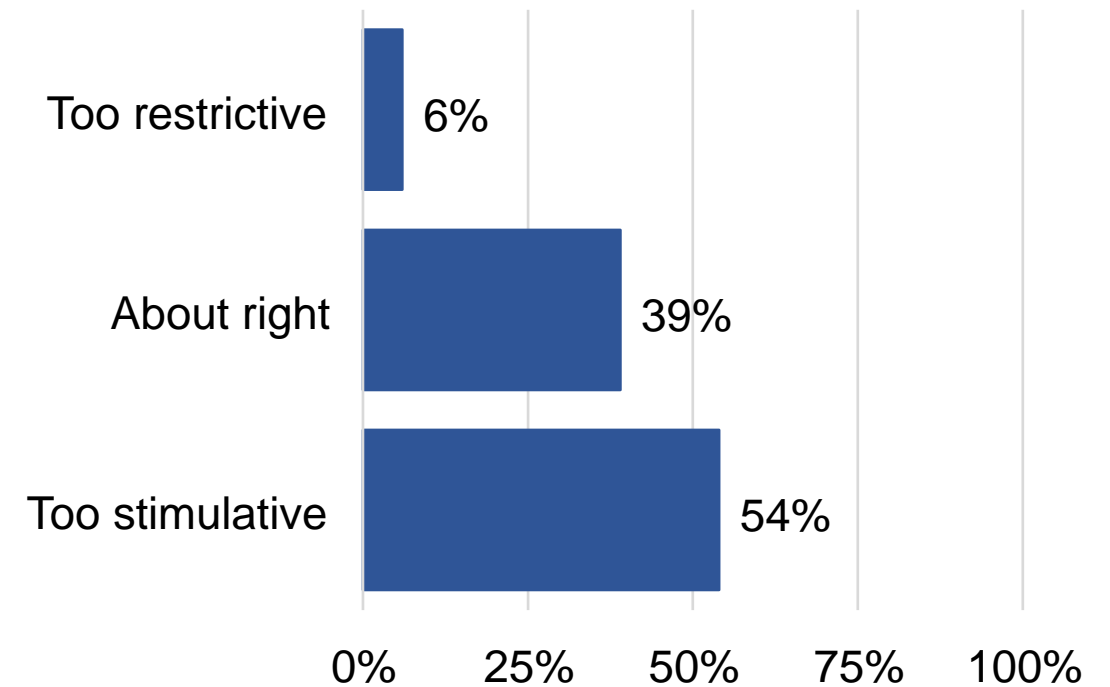
The logo for Ala Moana is written in a fluid, brown script font. The word 'Ala' is connected to 'Moana', with a small dot above the 'i' in 'Moana'.

888 ALA MOANA

National economists largely agree on monetary policy, somewhat concerned that federal fiscal stimuli remain excessive (Aug 2023)

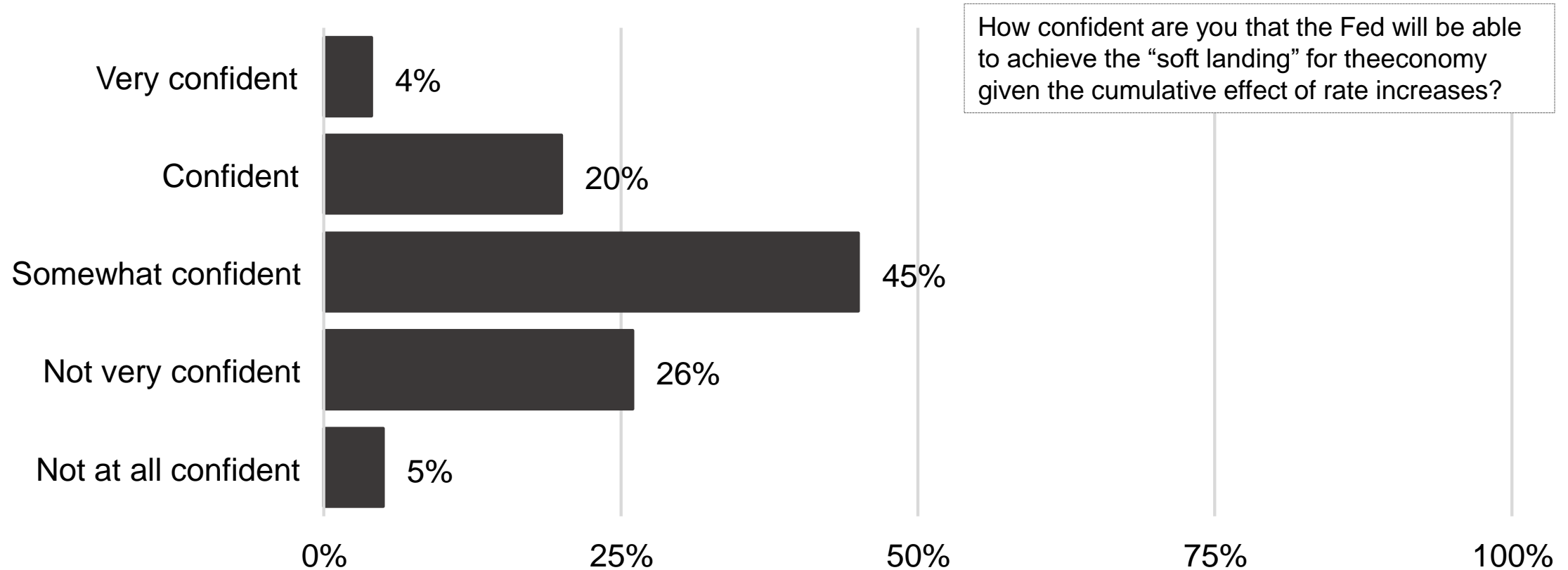


Monetary Policy

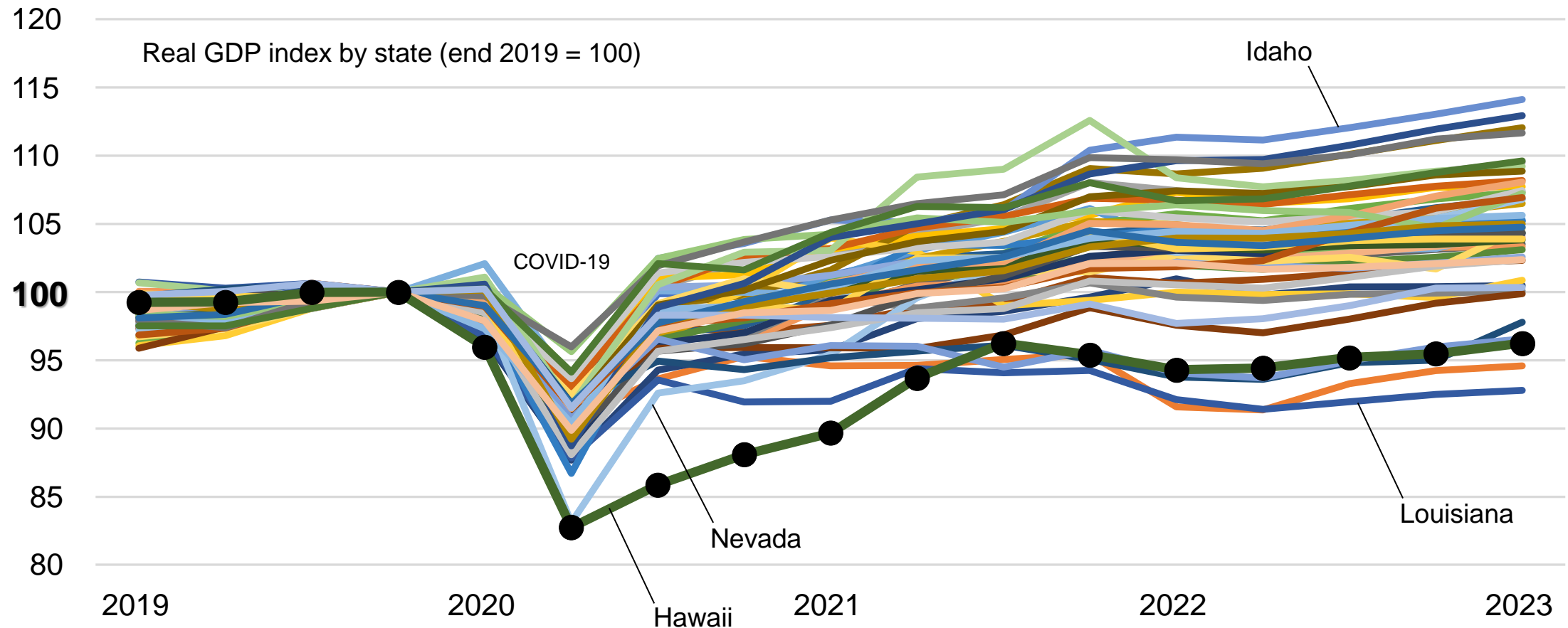


Fiscal Policy

More than 2/3 of national economists somewhat to very confident of economic “Soft Landing” 1/3 of respondents less or not confident

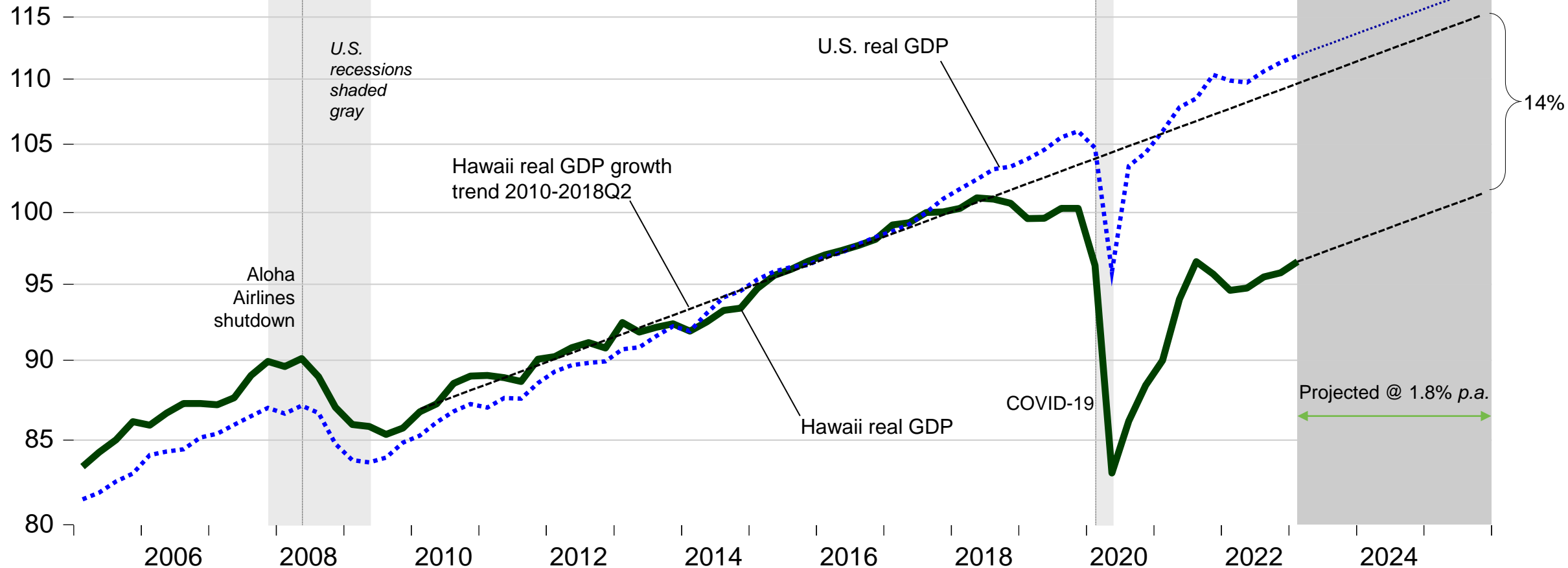


Extrinsic risk (pandemic), intrinsic structural risk (tourism), COVID-19 hit NV, HI harder than other states—but why is Hawaii *still* a laggard?



Hawaii real GDP took economic growth off-ramp mid-2017, six years ago (pre-covid); real Hawaii output now 14-15 percent below potential

Real GDP indexes (2017Q3 = 100) (log scale)

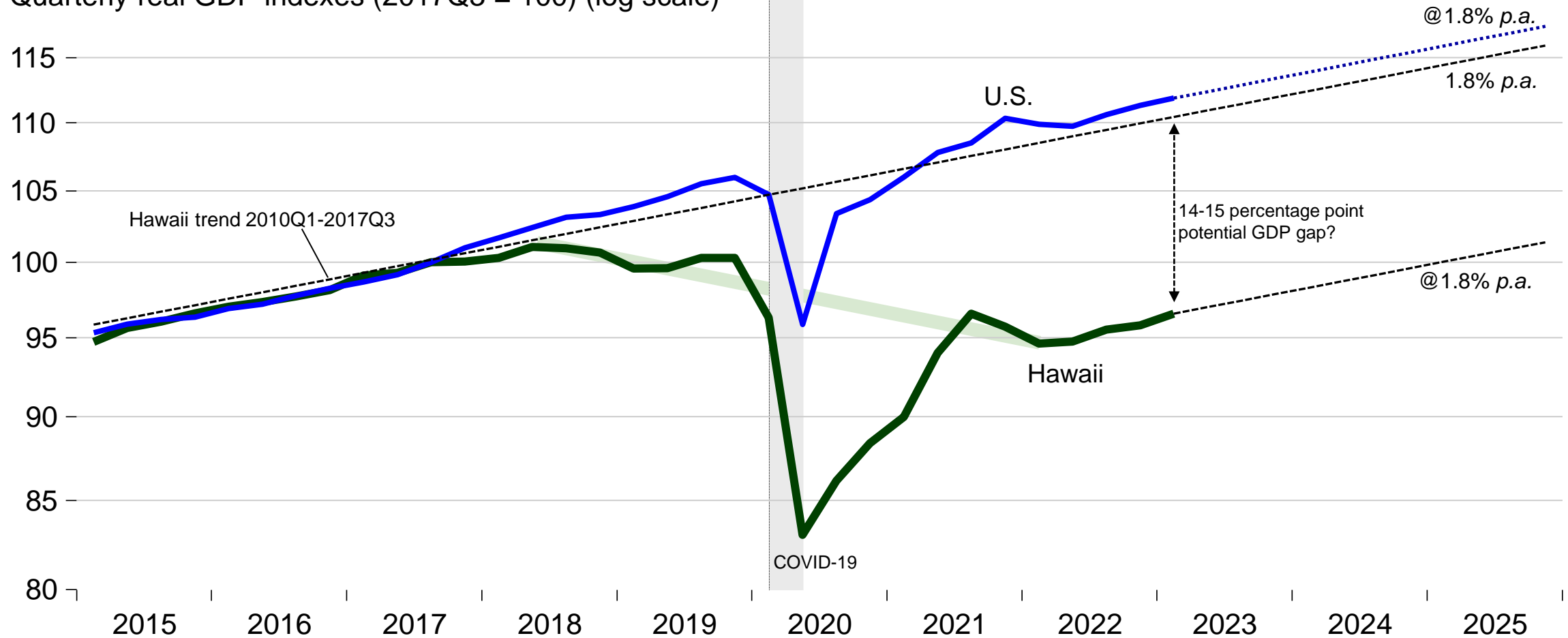


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Sources: U.S. Bureau of Economic Analysis (<https://www.bea.gov/data/gdp/gdp-state>, <https://www.bea.gov/itable/national-gdp-and-personal-income>), re-indexing and trend regression estimate by TZ Economics; potential U.S. real GDP growth estimates range from 1.7-1.9 percent *per annum* for the 2020s, see Congressional Budget Office (<https://www.cbo.gov/data/budget-economic-data#4>) and Federal Reserve Open Market Committee (<https://www.federalreserve.gov/monetarypolicy/fomcproptabl20230614.htm>); data through 2023Q1 including release June 30, 2023.

Hawaii real GDP took economic growth off-ramp mid-2017, six years ago (pre-covid); real Hawaii output now 14-15 percent below potential

Quarterly real GDP indexes (2017Q3 = 100) (log scale)



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Sources: U.S. Bureau of Economic Analysis (<https://www.bea.gov/data/gdp/gdp-state>, <https://www.bea.gov/itable/national-gdp-and-personal-income>), re-indexing and trend regression estimate by TZ Economics; potential U.S. real GDP growth estimates range from 1.7-1.9 percent *per annum* for the 2020s, see Congressional Budget Office (<https://www.cbo.gov/data/budget-economic-data#4>) and Federal Reserve Open Market Committee (<https://www.federalreserve.gov/monetarypolicy/fomcprojtabl20230614.htm>); data through 2023Q1 including release June 30, 2023.

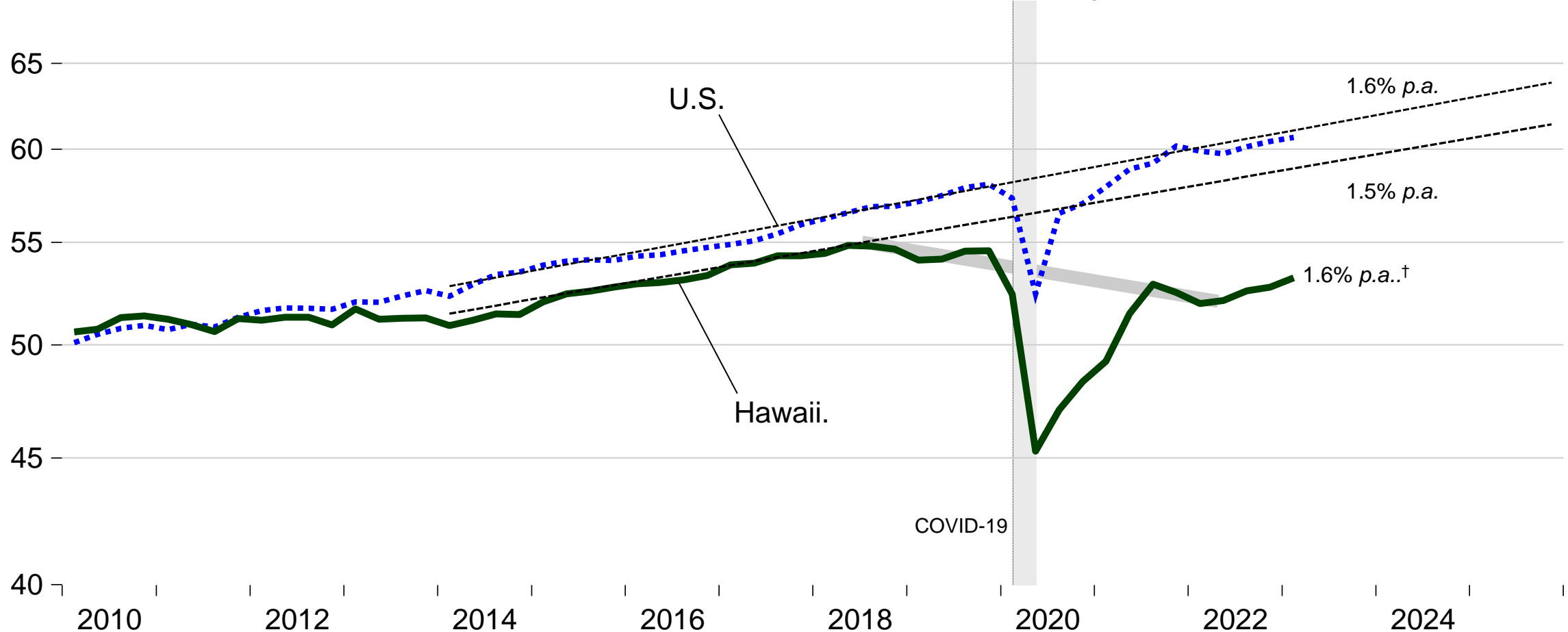
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No this is not about population: *per capita* real Hawaii GDP is now about 10% below its 2010s potential and 13% below U.S. actual

Thousand chained 2012 dollars of per capita GDP and mid- to late-2010s trends (log scale)*



* Regressions on the stationary component (log changes) of per capita real GDP, 2014Q1 – 2018Q2

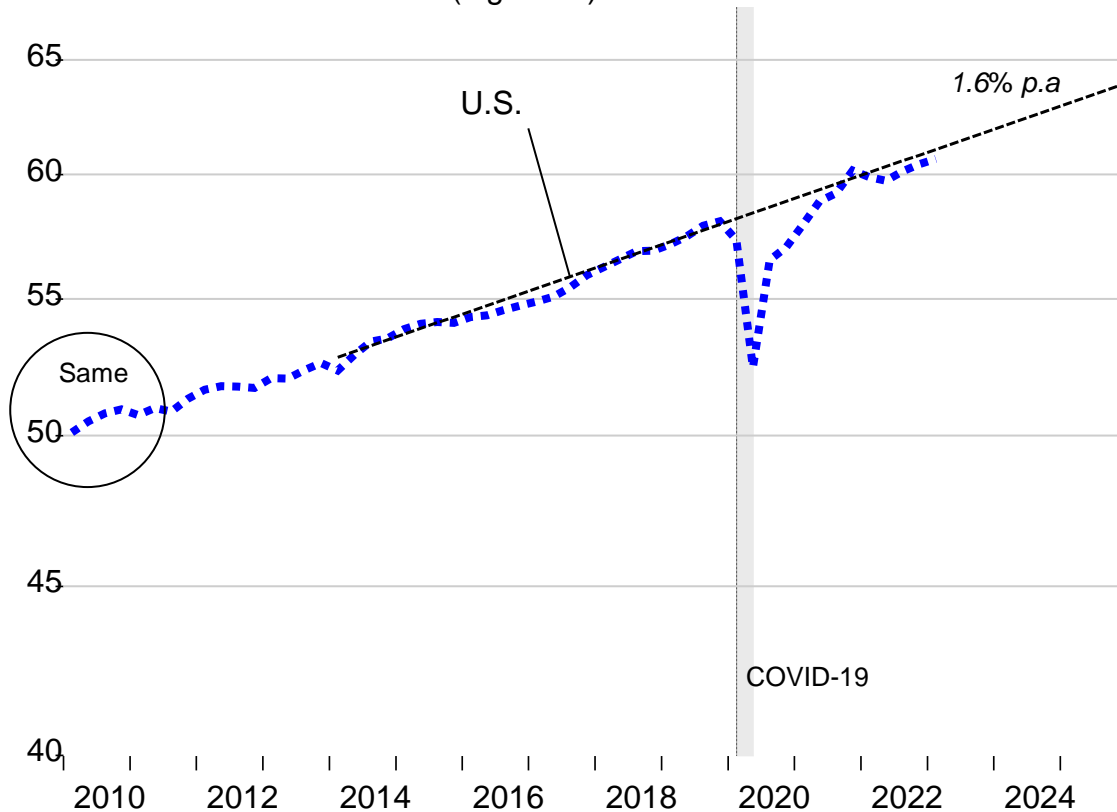
† Annualized quarterly growth rate 2022Q2 – 2023Q1

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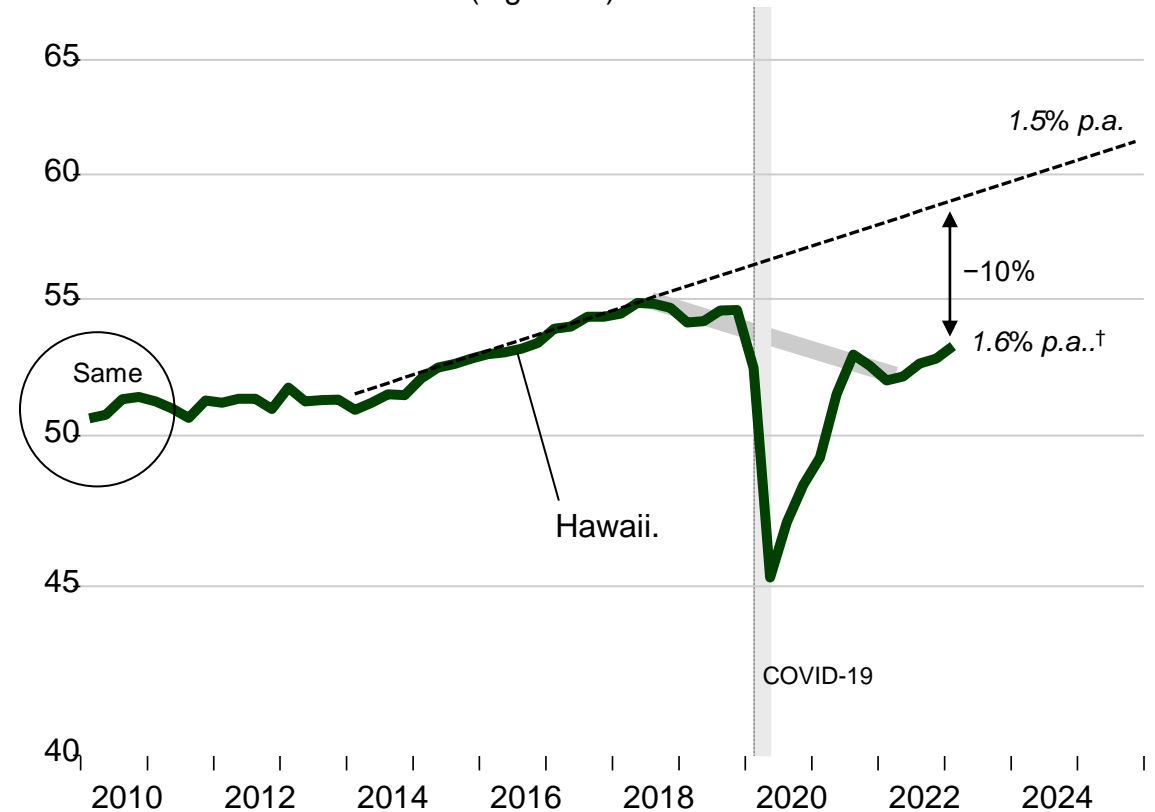
Sources: U.S. Bureau of Economic Analysis (<https://www.bea.gov/data/gdp/gdp-state>), stationary trend regressions estimated by TZ Economics; potential U.S. real GDP growth estimates range from 1.7-1.9 percent per annum for the 2020s, see Congressional Budget Office (<https://www.cbo.gov/data/budget-economic-data#4>) and Federal Reserve Open Market Committee (<https://www.federalreserve.gov/monetarypolicy/fomcprojtab120230614.htm>); data through 2023Q1 including release June 30, 2023.

No this is not about population: *per capita* real Hawaii GDP is now about 10% below its 2010s potential and 13% below U.S. actual

Thousand chained (constant) 2012 dollars of *per capita* U.S. GDP and mid- to late-2010s trends (log scale)*



Thousand chained (constant) 2012 dollars of *per capita* Hawaii GDP and mid- to late-2010s trends (log scale)*



* Regressions on the stationary component (log changes) of per capita real GDP, 2014Q1 – 2018Q2

* Regressions on the stationary component (log changes) of per capita real GDP, 2014Q1 – 2018Q2

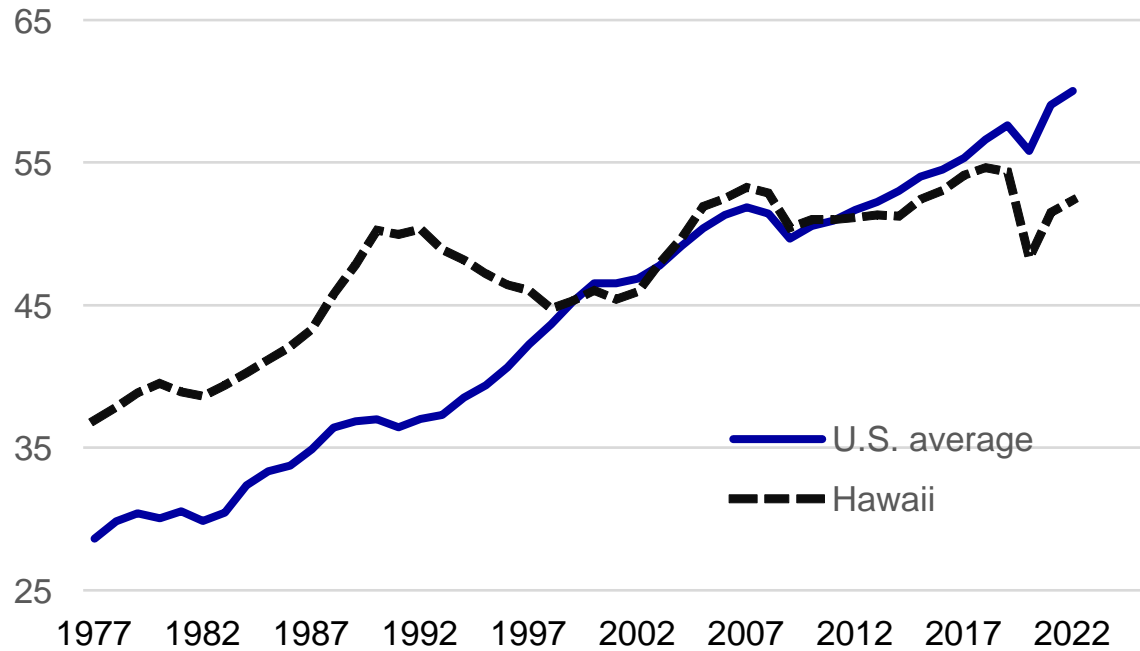
† Annualized quarterly growth rate 2022Q2 – 2023Q1

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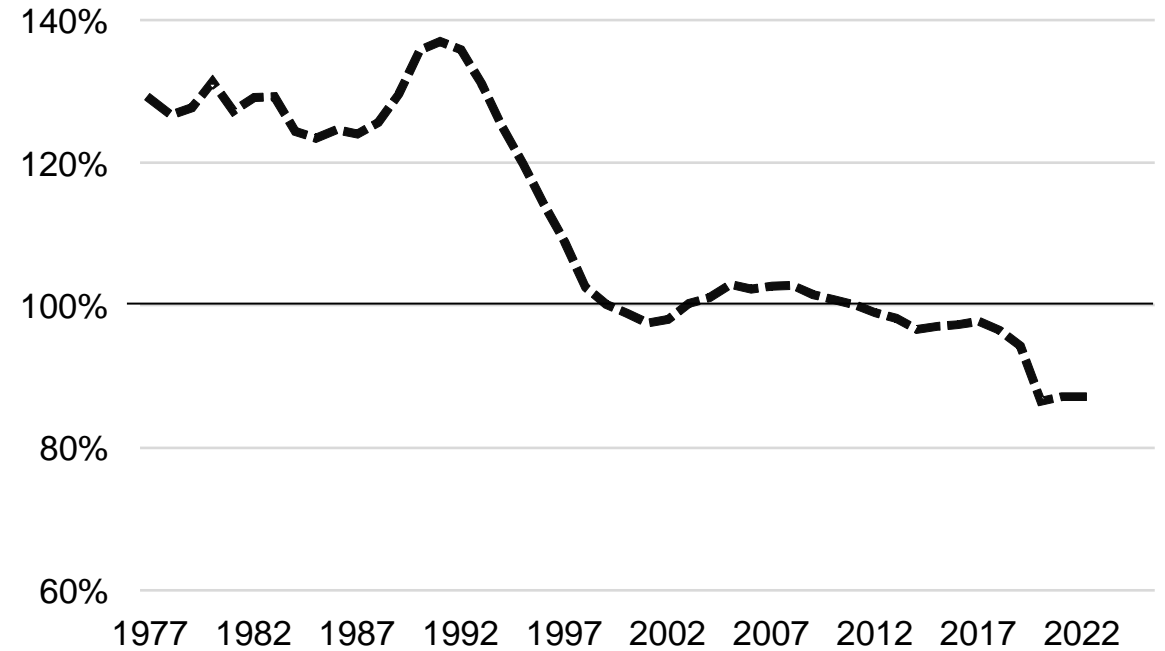
Sources: U.S. Bureau of Economic Analysis (<https://www.bea.gov/data/gdp/gdp-state>), stationary trend regressions estimated by TZ Economics; potential U.S. real GDP growth estimates range from 1.7-1.9 percent per annum for the 2020s, see Congressional Budget Office (<https://www.cbo.gov/data/budget-economic-data#4>) and Federal Reserve Open Market Committee (<https://www.federalreserve.gov/monetarypolicy/fomcprojtabl20230614.htm>); data through 2023Q1 including release June 30, 2023.

Baby Boomers graduated in 1970s, returned when per capita Hawaii GDP 25-40% higher than U.S. average; today 10-15% lower: *refund*

Per capita GDP in thousand chained 2012 dollars



Hawaii per capita GDP as percent of U.S. average



Why commercial banks don't need as many economists: FOMC projections

$$\hat{y} = 1.0\% (2023), 1.8\% (LR)$$

$$\hat{p} = 3.2\% (2023), 2.0\% (LR)$$

$$i_{FF} = 5.6\% (2023), 2.5\% (LR)$$

Table 1. Economic projections of Federal Reserve Board members and Federal Reserve Bank presidents, under their individual assumptions of projected appropriate monetary policy, June 2023
Percent

Variable	Median ¹				Central Tendency ²				Range ³			
	2023	2024	2025	Longer run	2023	2024	2025	Longer run	2023	2024	2025	Longer run
Change in real GDP	1.0	1.1	1.8	1.8	0.7–1.2	0.9–1.5	1.6–2.0	1.7–2.0	0.5–2.0	0.5–2.2	1.5–2.2	1.6–2.5
March projection	0.4	1.2	1.9	1.8	0.0–0.8	1.0–1.5	1.7–2.1	1.7–2.0	-0.2–1.3	0.3–2.0	1.5–2.2	1.6–2.5
Unemployment rate	4.1	4.5	4.5	4.0	4.0–4.3	4.3–4.6	4.3–4.6	3.8–4.3	3.9–4.5	4.0–5.0	3.8–4.9	3.5–4.4
March projection	4.5	4.6	4.6	4.0	4.0–4.7	4.3–4.9	4.3–4.8	3.8–4.3	3.9–4.8	4.0–5.2	3.8–4.9	3.5–4.7
PCE inflation	3.2	2.5	2.1	2.0	3.0–3.5	2.3–2.8	2.0–2.4	2.0	2.9–4.1	2.1–3.5	2.0–3.0	2.0
March projection	3.3	2.5	2.1	2.0	3.0–3.8	2.2–2.8	2.0–2.2	2.0	2.8–4.1	2.0–3.5	2.0–3.0	2.0
Core PCE inflation ⁴	3.9	2.6	2.2		3.7–4.2	2.5–3.1	2.0–2.4		3.6–4.5	2.2–3.6	2.0–3.0	
March projection	3.6	2.6	2.1		3.5–3.9	2.3–2.8	2.0–2.2		3.5–4.1	2.1–3.1	2.0–3.0	
Memo: Projected appropriate policy path												
Federal funds rate	5.6	4.6	3.4	2.5	5.4–5.6	4.4–5.1	2.9–4.1	2.5–2.8	5.1–6.1	3.6–5.9	2.4–5.6	2.4–3.6
March projection	5.1	4.3	3.1	2.5	5.1–5.6	3.9–5.1	2.9–3.9	2.4–2.6	4.9–5.9	3.4–5.6	2.4–5.6	2.3–3.6

Note: Projections of change in real gross domestic product (GDP) and projections for both measures of inflation are percent changes from the fourth quarter of the previous year to the fourth quarter of the year indicated. PCE inflation and core PCE inflation are the percentage rates of change in, respectively, the price index for personal consumption expenditures (PCE) and the price index for PCE excluding food and energy. Projections for the unemployment rate are for the average civilian unemployment rate in the fourth quarter of the year indicated. Each participant's projections are based on his or her assessment of appropriate monetary policy. Longer-run projections represent each participant's assessment of the rate to which each variable would be expected to converge under appropriate monetary policy and in the absence of further shocks to the economy. The projections for the federal funds rate are the value of the midpoint of the projected appropriate target range for the federal funds rate or the projected appropriate target level for the federal funds rate at the end of the specified calendar year or over the longer run. The March projections were made in conjunction with the meeting of the Federal Open Market Committee on March 21–22, 2023. One participant did not submit longer-run projections for the change in real GDP, the unemployment rate, or the federal funds rate in conjunction with the March 21–22, 2023, meeting, and one participant did not submit such projections in conjunction with the June 13–14, 2023, meeting.

1. For each period, the median is the middle projection when the projections are arranged from lowest to highest. When the number of projections is even, the median is the average of the two middle projections. [Return to table](#)
2. The central tendency excludes the three highest and three lowest projections for each variable in each year. [Return to table](#)
3. The range for a variable in a given year includes all participants' projections, from lowest to highest, for that variable in that year. [Return to table](#)
4. Longer-run projections for core PCE inflation are not collected. [Return to table](#)



Hawaii's *real* economy is its own private Idaho—idiosyncratic—but U.S. asset markets arbitrage under perfect factor mobility

- Broader implication: current Hawaii real (under)performance is idiosyncratic systemic risk (but is that in your economic cost of capital?)
- Regardless of whether Hawaii is having a good or bad hair decade, the Interstate Commerce Clause guarantees perfect factor mobility—the U.S. *is* an economic union! (The EU *wishes*!)
Labor, capital, technology, goods, services, information freely move about the economy
- Economic union means monetary union—your inflation cannot permanently deviate from the national average; your interest rates are the same up to idiosyncratic regional performance
- Small open economies take prices as given, exogenously, export in their comparative advantage, face unusual challenges establishing strategic advantage (*i.e.* first-mover, scalability, *etc.*)
- Doesn't mean you're not a player: the whole lesson from remote work/WFH is that you can be anywhere—anywhere *is* everywhere
- Tourism hang-up? Does Disney, as does the Hawaii Tourism Authority, seek to “decrease the total number of visitors to Oahu [*Disneyland*]?” (Official Hawaii policy.*) No: Disney deploys better apps to manage volumes and leverages merch and content exports *to you...forever.*



Pau

Tourism in Oahu economy

<i>Billion current dollars or as noted; blanks unavailable</i>	2018	2019	2020	2021	2022
GDP: Honolulu (Oahu)	\$67.008	\$67.682	\$61.769	\$67.383	
Total visitor expenditure	\$7.969	\$8.140		\$5.709	\$8.517
Tourism Price Index (2017 = 100)	103.9	105.7	106.7	121.9	133.8
Urban Hawaii CPI-U (1982-84 = 100)	277.078	281.585	286.008	296.818	316.076
Real Oahu tourism receipts (TPI), billion 2022\$	\$10.262	\$10.304		\$6.266	\$8.517
Real Oahu tourism receipts (CPI-U), billion 2022\$	\$9.091	\$9.137		\$6.079	\$8.517
Ratio of nominal tourism receipts/GDP	11.9%	12.0%		8.5%	
Oahu tourism share of economy*	9.5%	9.6%		6.8%	

*Does not use Dr. Tian's calculation methodology applied to the Hawaii Intercounty Input-Output Model but, instead, applies the 80 percent statewide ratio of tourism direct and indirect effects to nominal total visitor expenditures to Oahu total visitor expenditures and divides by nominal GDP for Honolulu County.

Tourism in Maui County economy

<i>Billion current dollars or as noted; blanks unavailable</i>	2018	2019	2020	2021	2022
GDP: Kahului-Wailuku-Lahaina, HI (Metropolitan Statistical Area)	\$10.443	\$10.872	\$8.750	\$10.356	
Total visitor expenditure	\$5.002	\$5.128		\$4.043	\$5.690
Tourism Price Index (2017 = 100)	103.9	105.7	106.7	121.9	133.8
Urban Hawaii CPI-U (1982-84 = 100)	277.078	281.585	286.008	296.818	316.076
Real Maui tourism receipts (TPI), billion 2022\$	\$6.442	\$6.491		\$4.438	\$5.690
Real Maui tourism receipts (CPI-U), billion 2022\$	\$5.706	\$5.756		\$4.305	\$5.690
Ratio of nominal tourism receipts/GDP	47.9%	47.2%		39.0%	
Maui tourism share of economy*	38.3%	37.7%		31.2%	

*Does not use Dr. Tian's calculation methodology applied to the Hawaii Intercounty Input-Output Model but, instead, applies the 80 percent statewide ratio of tourism direct and indirect effects to nominal total visitor expenditures to Maui County total visitor expenditures and divides by nominal GDP for Maui County.

Tourism in Big Island economy

<i>Billion current dollars or as noted; blanks unavailable</i>	2018	2019	2020	2021	2022
Big Island	\$8.719	\$9.027	\$8.313	\$9.187	
Total visitor expenditure	\$2.326	\$2.326		\$1.837	\$2.675
Tourism Price Index (2017 = 100)	103.9	105.7	106.7	121.9	133.8
Urban Hawaii CPI-U (1982-84 = 100)	277.078	281.585	286.008	296.818	316.076
Real Big Island tourism receipts (TPI), billion 2022\$	\$2.995	\$2.944		\$2.017	\$2.675
Real Big Island tourism receipts (CPI-U), billion 2022\$	\$2.653	\$2.611		\$1.956	\$2.675
Ratio of nominal tourism receipts/GDP	26.7%	25.8%		20.0%	
Big Island tourism share of economy*	21.3%	20.6%		16.0%	

*Does not use Dr. Tian's calculation methodology applied to the Hawaii Intercounty Input-Output Model but, instead, applies the 80 percent statewide ratio of tourism direct and indirect effects to nominal total visitor expenditures to Big Isle total visitor expenditures and divides by nominal GDP for Hawaii County.

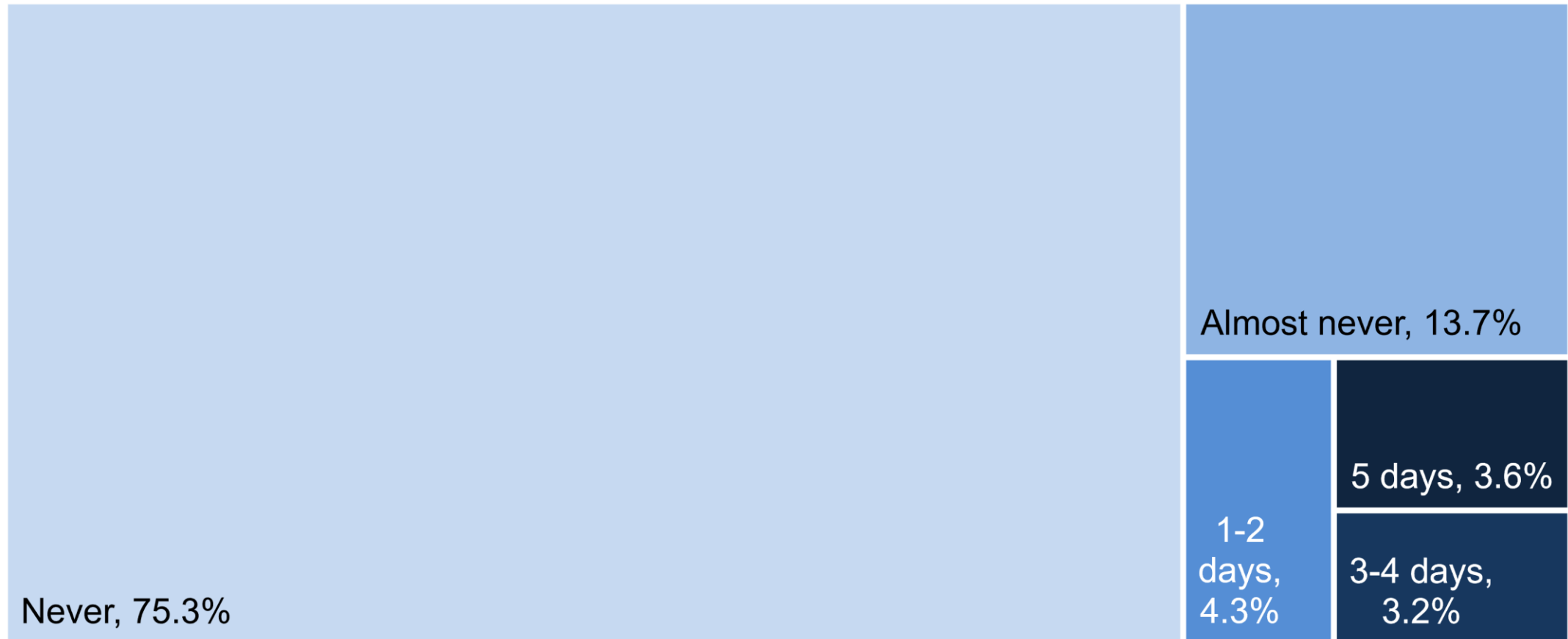
Sources:

U.S. Bureau of Economic Analysis	https://www.bea.gov/data/gdp/gdp-county-metro-and-other-areas
U.S. Bureau of Labor Statistics	https://data.bls.gov/cgi-bin/surveymost?r9
Hawaii DBEDT	https://dbedt.hawaii.gov/visitor/tourism/ https://files.hawaii.gov/dbedt/visitor/tourism/2022/Dec%202022.xlsx https://files.hawaii.gov/dbedt/visitor/tourism/2019/Dec19.xls https://dbedt.hawaii.gov/visitor/tourism-price-index/

Eugene Tian, James Mak, and PingSun Leung, “The direct and indirect contributions of tourism to regional GDP: Hawaii,” *UHERO Working Paper* No. 2011-5 (July 28, 2011) (http://www.uhero.hawaii.edu/assets/WP_2011-5.pdf).

Contact: Paul H. Brewbaker, Ph.D., CBE (808)220-1538 paulbrewbaker@tzeconomics.com

Pre-pandemic distribution of U.S. workers who worked at home and how often, 2017-2018: almost 90% never or almost never WFH

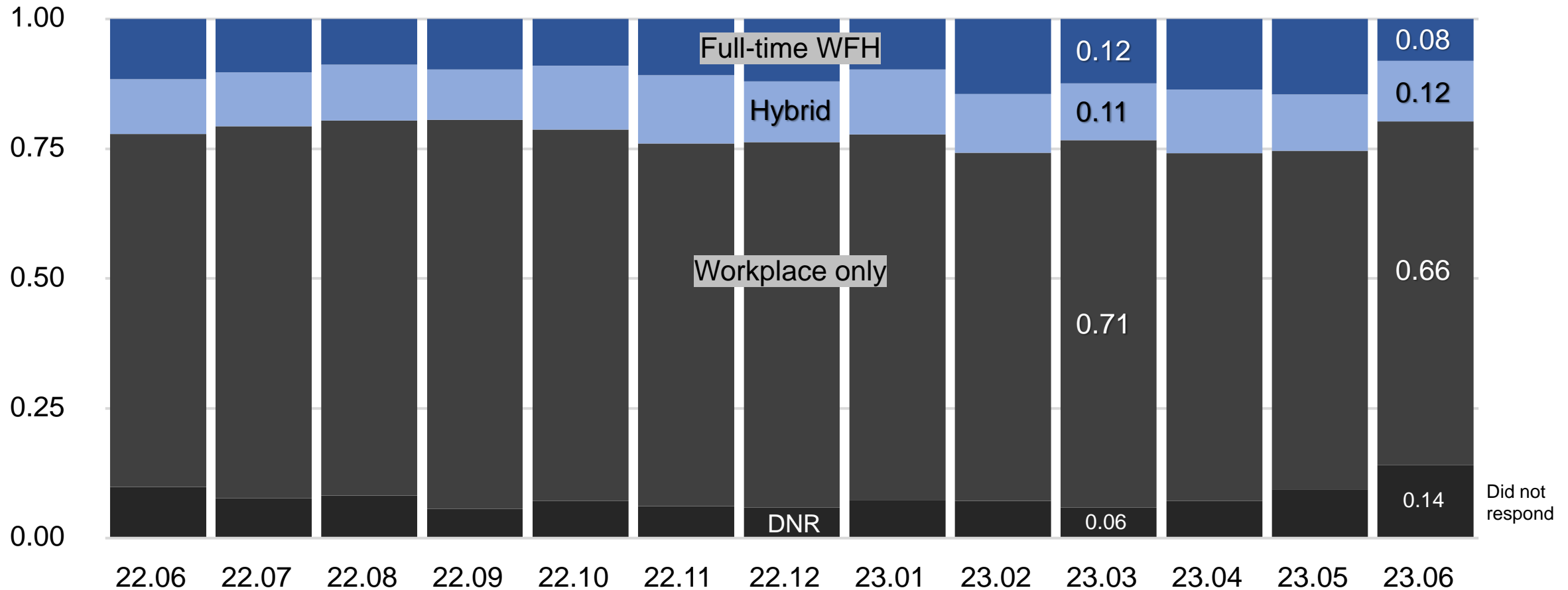


Hawaii International Real Estate Council



www.HIREC.org

Proportions of Hawaii WFH—full-time and hybrid—and in-person in workplace steady, 2022-23 Census Bureau Household Pulse Surveys



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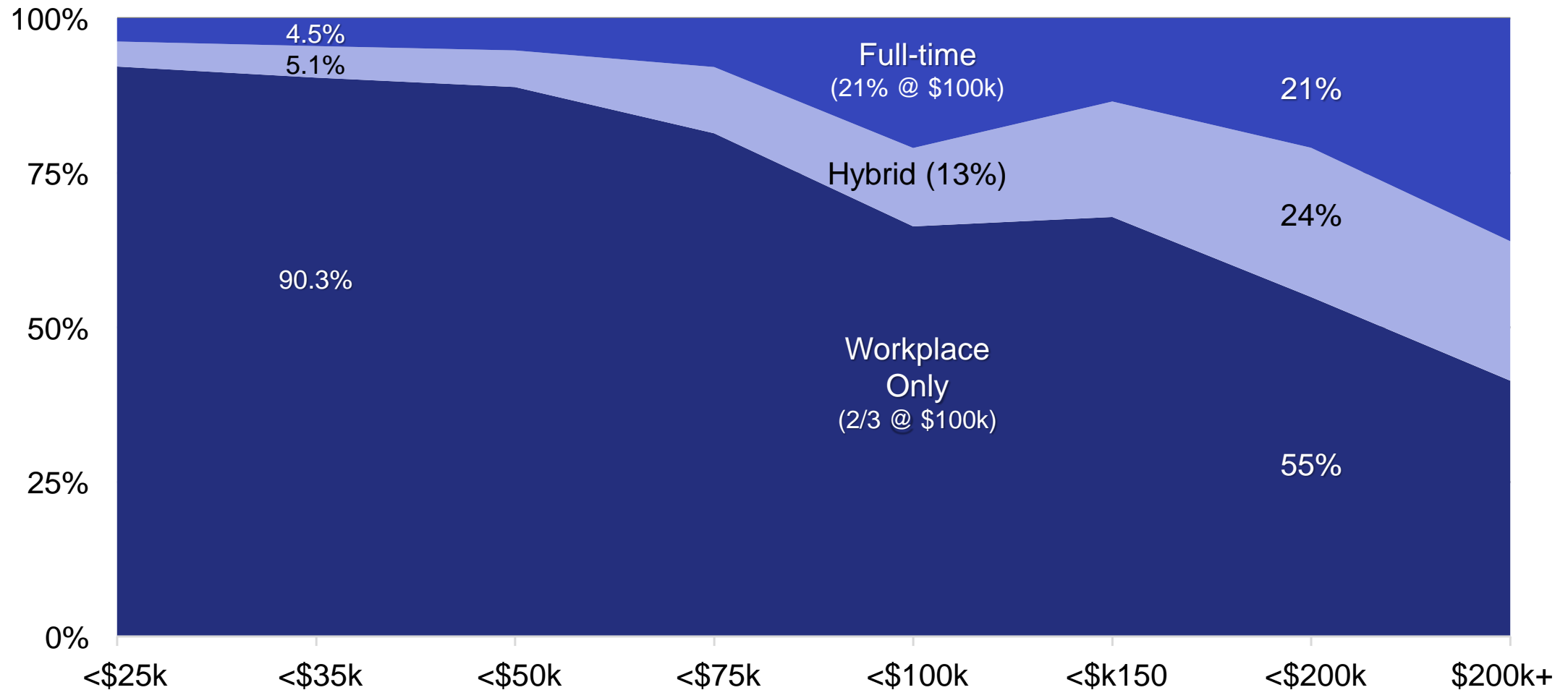


Hysteresis: changes thought temporary which are permanent

- WFH around the world: pandemic = simultaneous, unplanned, universal shift in working arrangements
 - Hybrid WFH: 1.5 days/week (27 country sample); workers want 1.7 days, firms want 0.7 days
 - WFH 2-3 days/week option value = 5% of pay; higher for women (6%), parents, long commuters
- “We’re not going to go back to normal because the changes already are noticeably permanent in certain areas. That’s what our surveys...are beginning to shed light on this—I don’t what to call it—maybe it’s The New Economy” (William Beach, U.S. Bureau of Labor Statistics Commissioner)
- “[...]in surveys] the near- and medium-term effect on firm-level TFP [total factor productivity] was more likely to be positive for firms where more of the work can be done from home, and where sales do not depend as much on face-to-face contact with customers.” (John Fernald, Federal Reserve Bank of San Francisco and Professor, INSEAD)

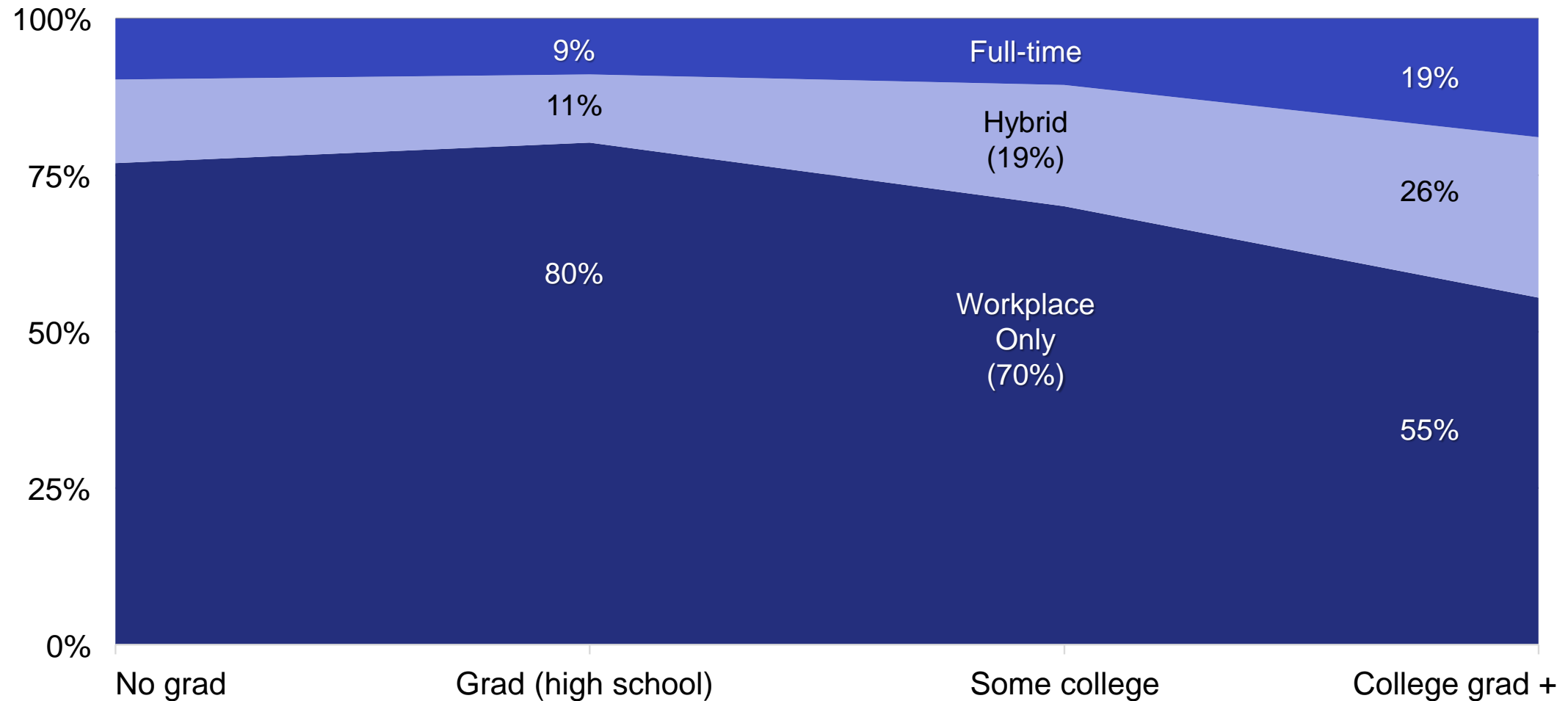
Sources: Cevat Giray Aksoy *et al* (August 2022), “Working from home around the world,” prepared for the *Brookings Papers on Economic Activity* (<https://wfhrefsearch.com/wp-content/uploads/2022/09/Working-from-Home-Around-the-World-23-August-2022.pdf>), Nicholas Bloom *et al* (July 2022) “How hybrid working from home works out,” *NBER Working Paper 30292* (<http://www.nber.org/papers/w30292>); comments of William Beach, Commissioner, U.S. Bureau of Labor Statistics, National Association for Business Economics 2021 Economic Measurement Seminar (August 9-11, 2021), 31:41 of panel discussion on “Maintaining the Quality and Integrity of U.S. Government Data” (August 11, 2021); John Fernald and Huiyu Li (August 8, 2022) “The Impact of COVID on Productivity and Potential Output” (https://www.kansascityfed.org/Jackson%20Hole/documents/9032/JH_Paper_Fernald.pdf), presented at the Jackson Hole Economic Policy Symposium: Reassessing Constraints on the Economy and Policy (Thursday, August 25, 2022),

Hawaii statewide remote work and working from home by income: to the extent productivity drives income it raises odds of remote/WFH



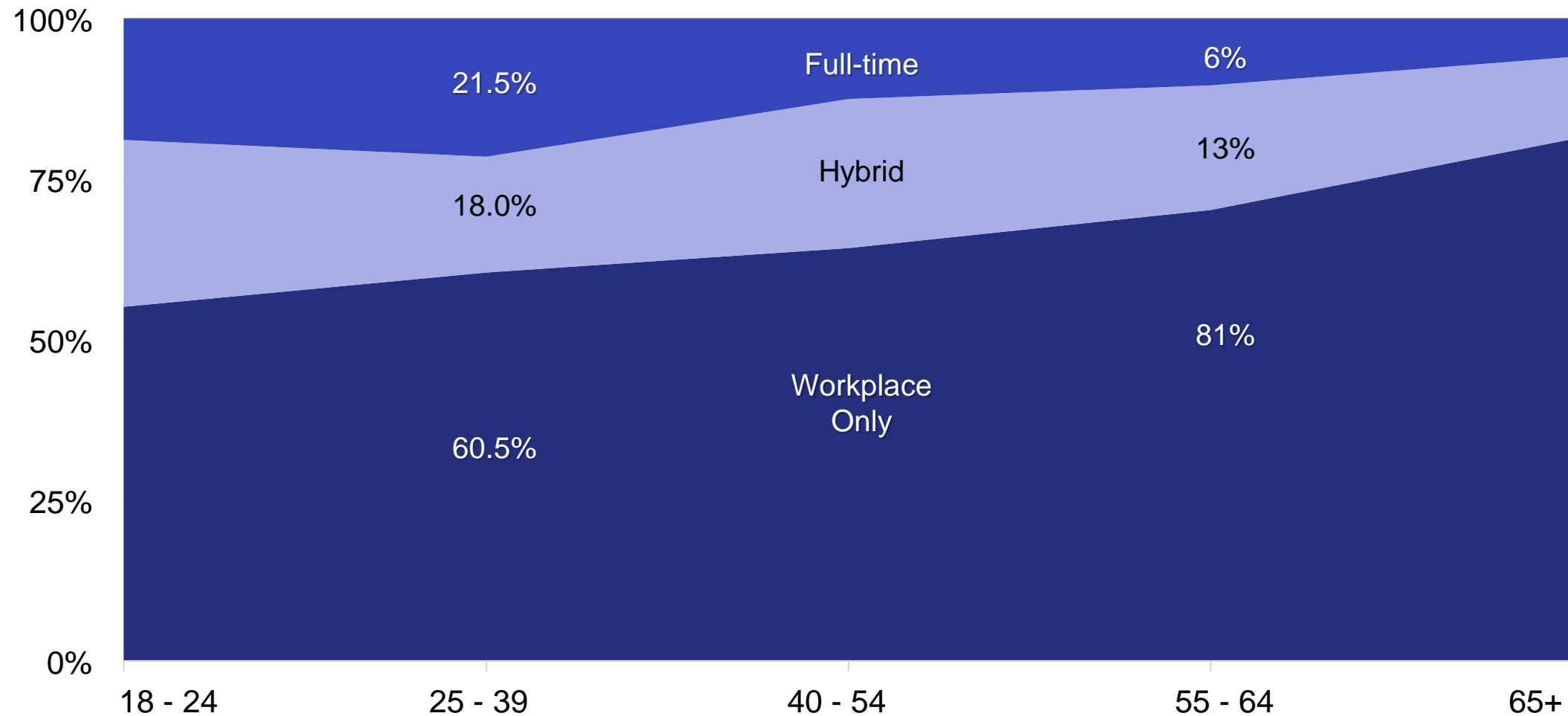
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Hawaii statewide remote work and working from home by educational attainment: human capital prevalence in IT, STEM, professions



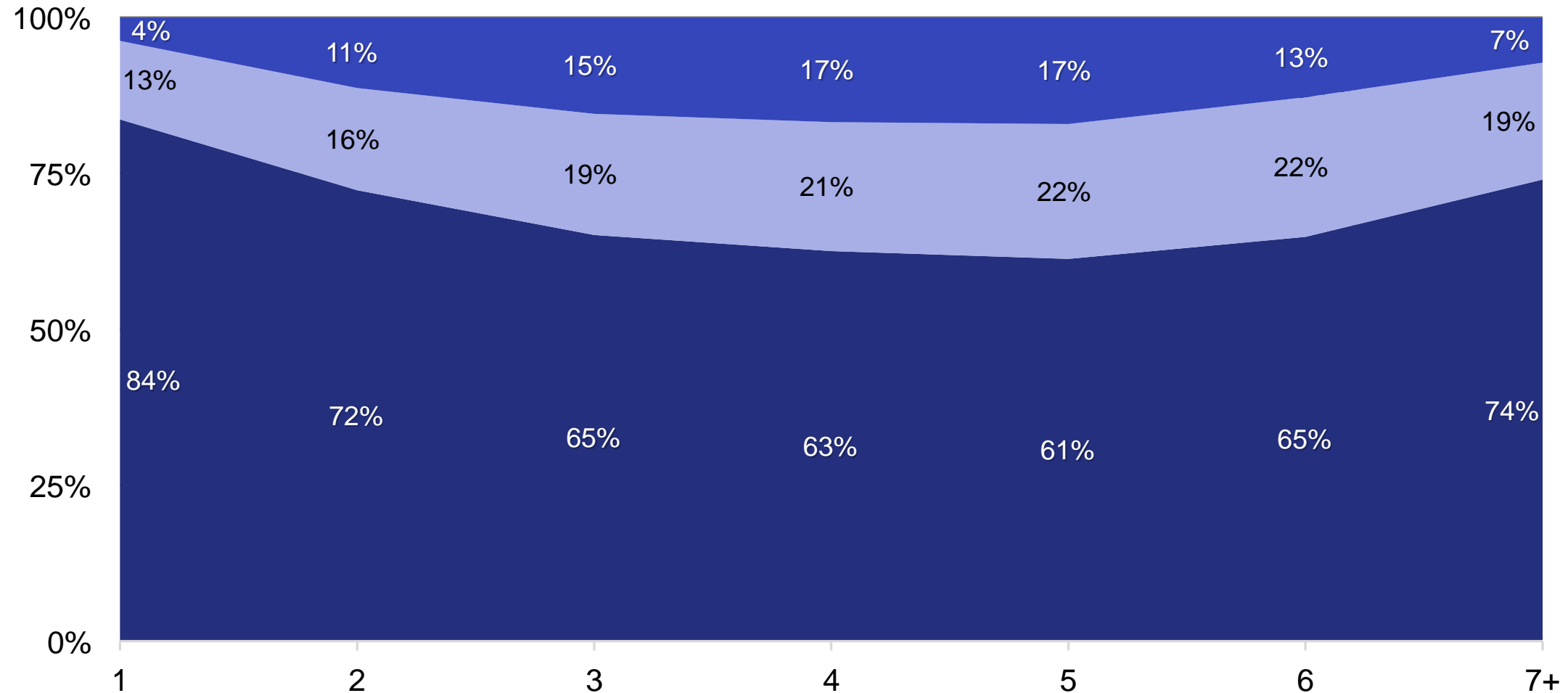
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Hawaii statewide remote work and working from home by age cohort: more Millennials than Boomers working remotely (latter at Wal-Mart)



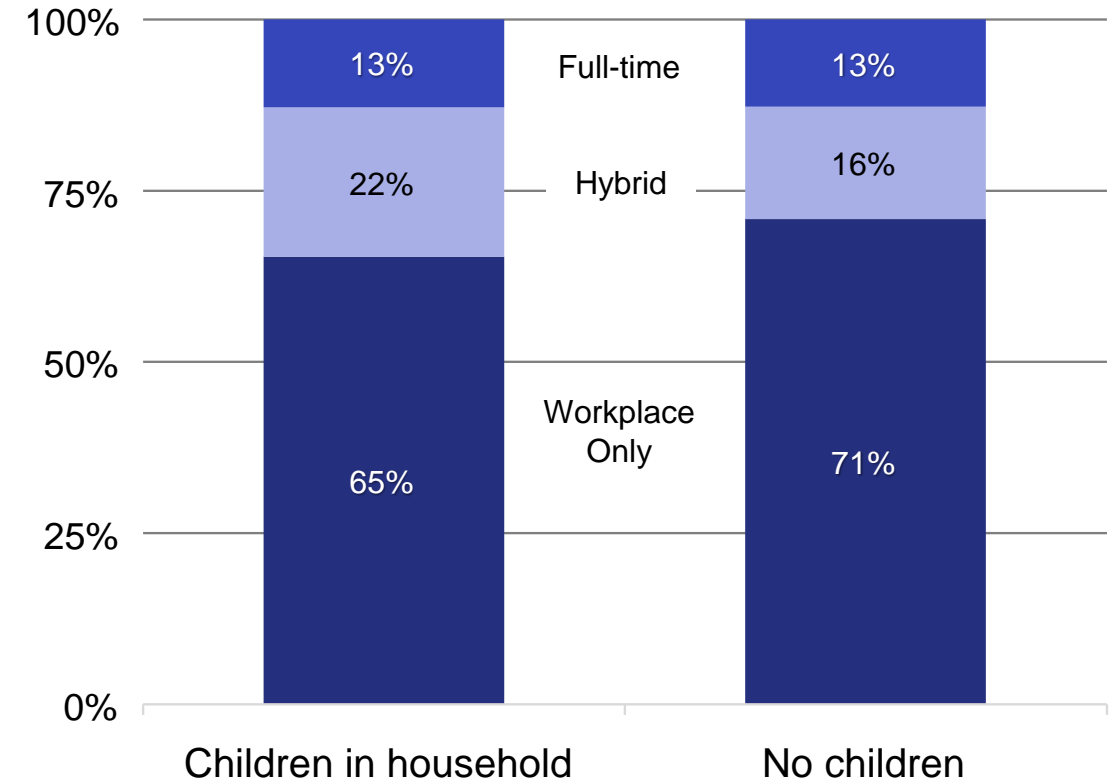
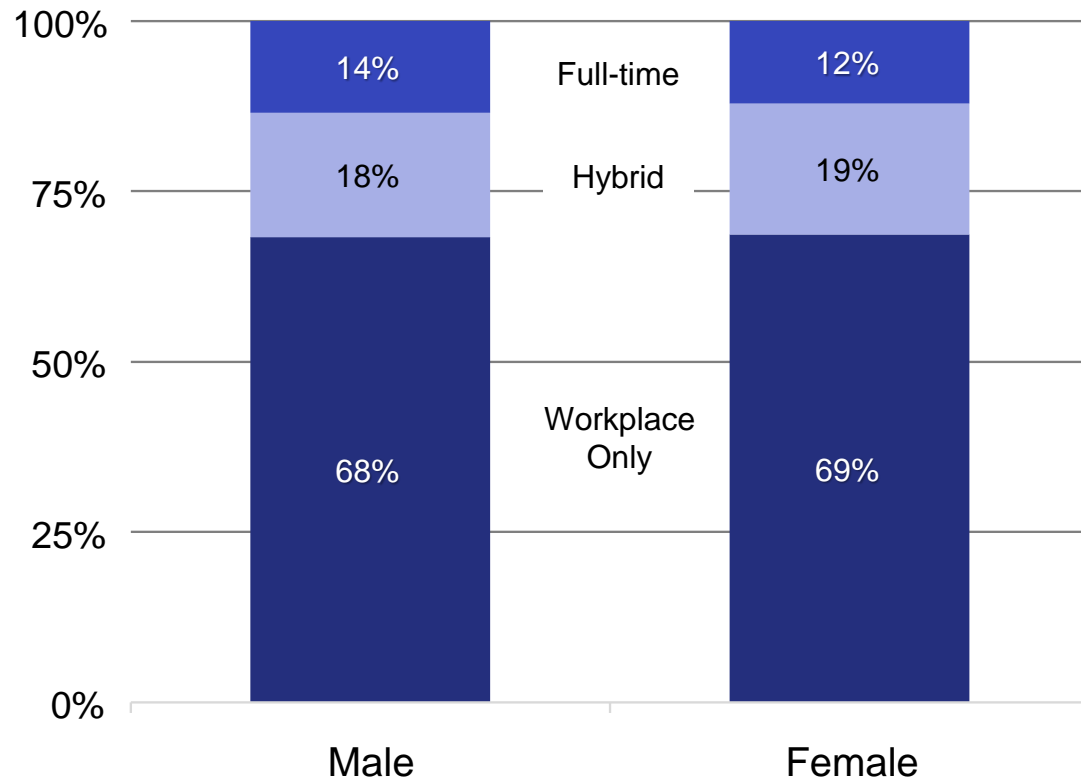
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Hawaii statewide remote work and WFH by household size: U-shaped pattern, larger households more likely; largest, smallest less likely



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Hawaii statewide remote work and WFH by gender and presence of children in household: hybrid arrangements provide flexibility



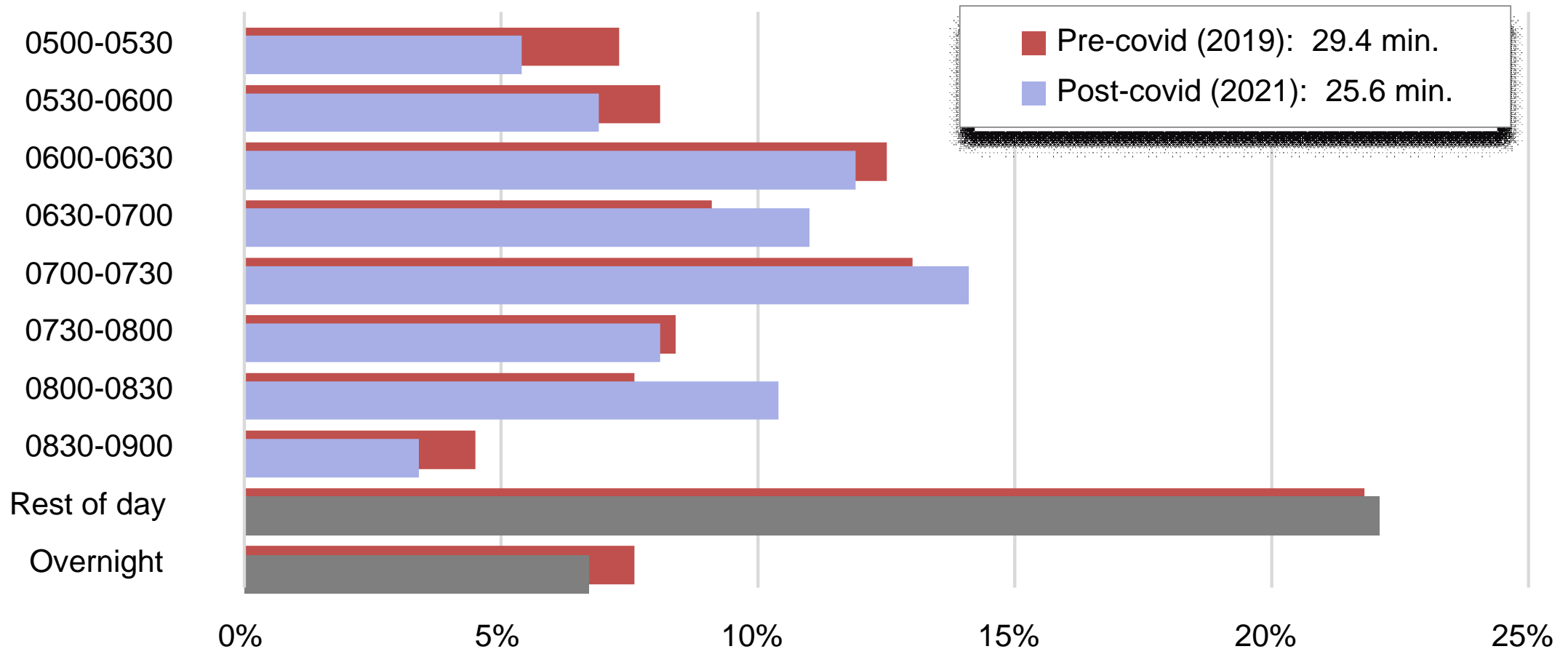


Remote work and working from home (WFH) inferences from Hawaii census data with fairly stable proportions, December 2022 – May 2023

- Remote work/WFH associated with higher incomes,
- with higher educational attainment,
- more with younger than with older workers,
- more with larger households, less with largest and smallest households.
- Presence of children associated with more hybrid but not more full-time remote work/WFH.
- *Slightly* more women exercise hybrid options; *slightly* more men overall remote and WFH.

Pandemic may have altered Oahu commuting by: (1) shrinking the economy; (2) increasing WFH; 3-min. shorter and later commutes

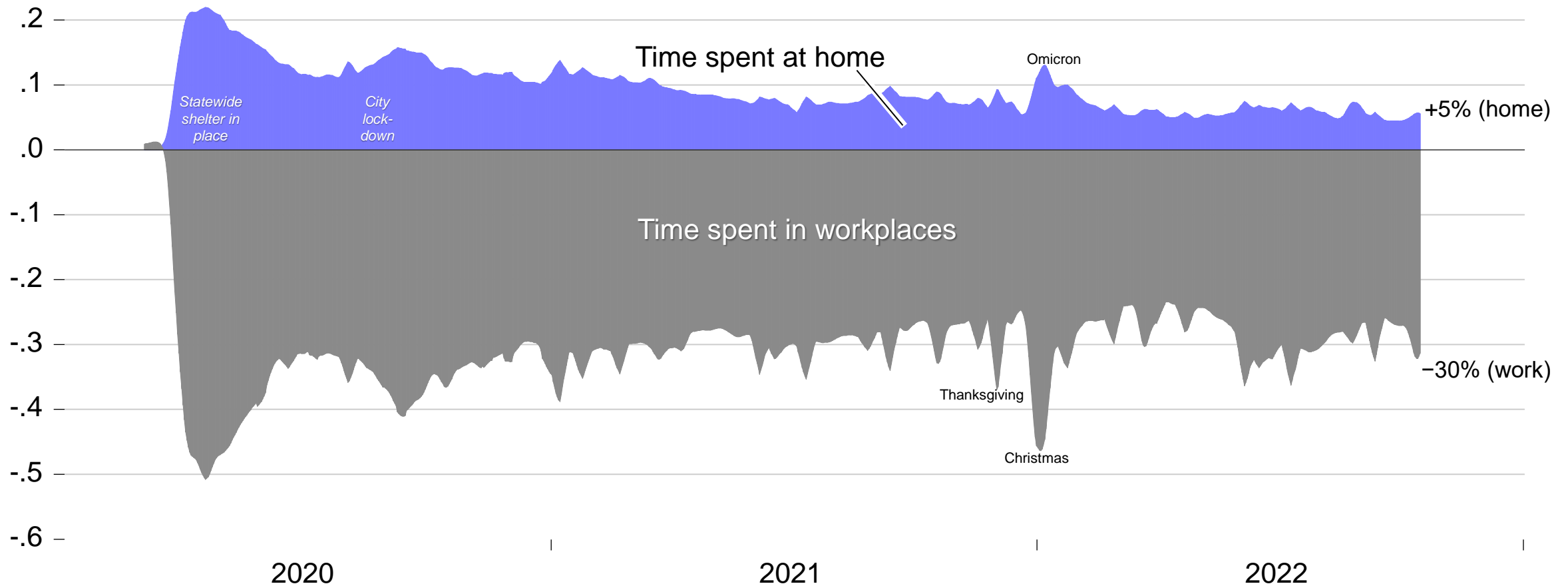
Time of departure
from home for work



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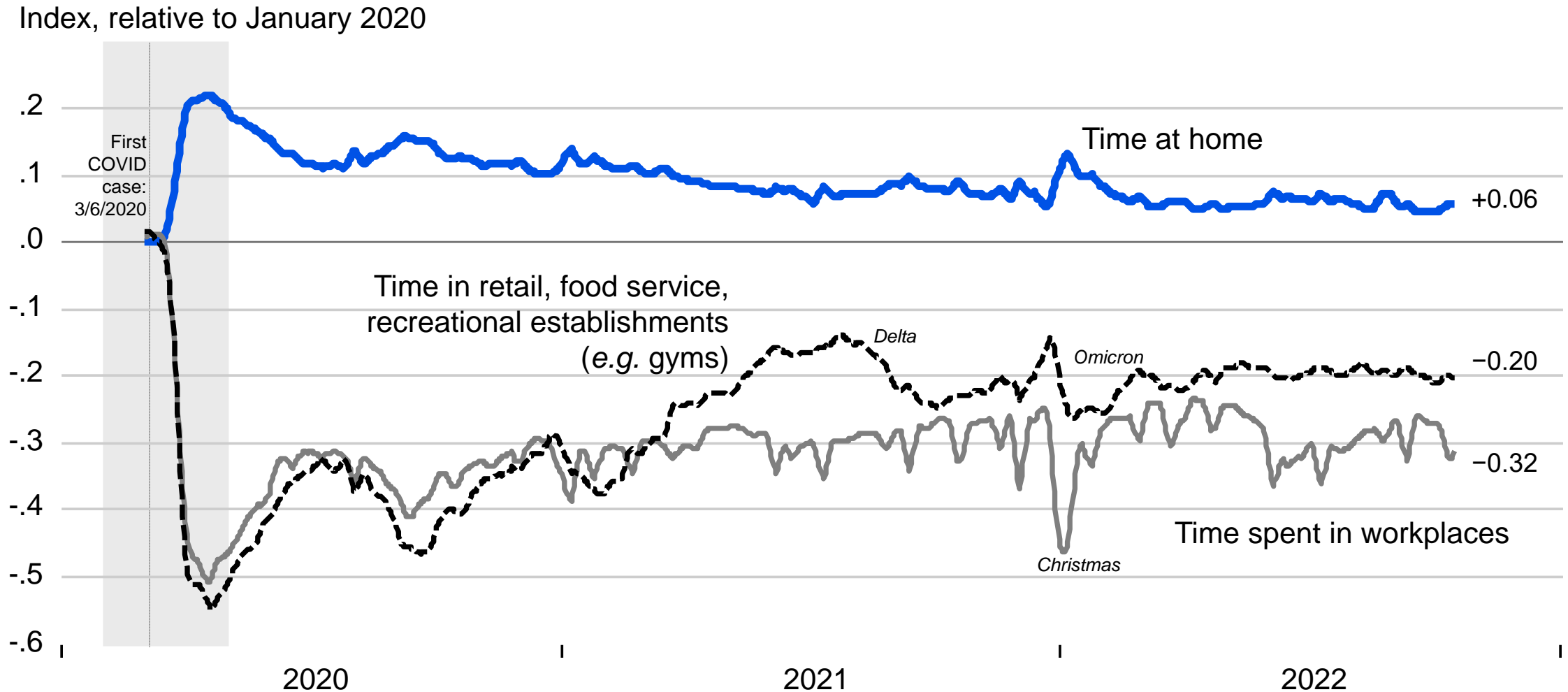
Daily Google smartphone mobility data (pau Oct 2022): Hawaii residents spend 30 percent less time in workplaces, post-vaxx

Google smartphone GPS mobility indexes for Hawaii residents, relative to January 2020



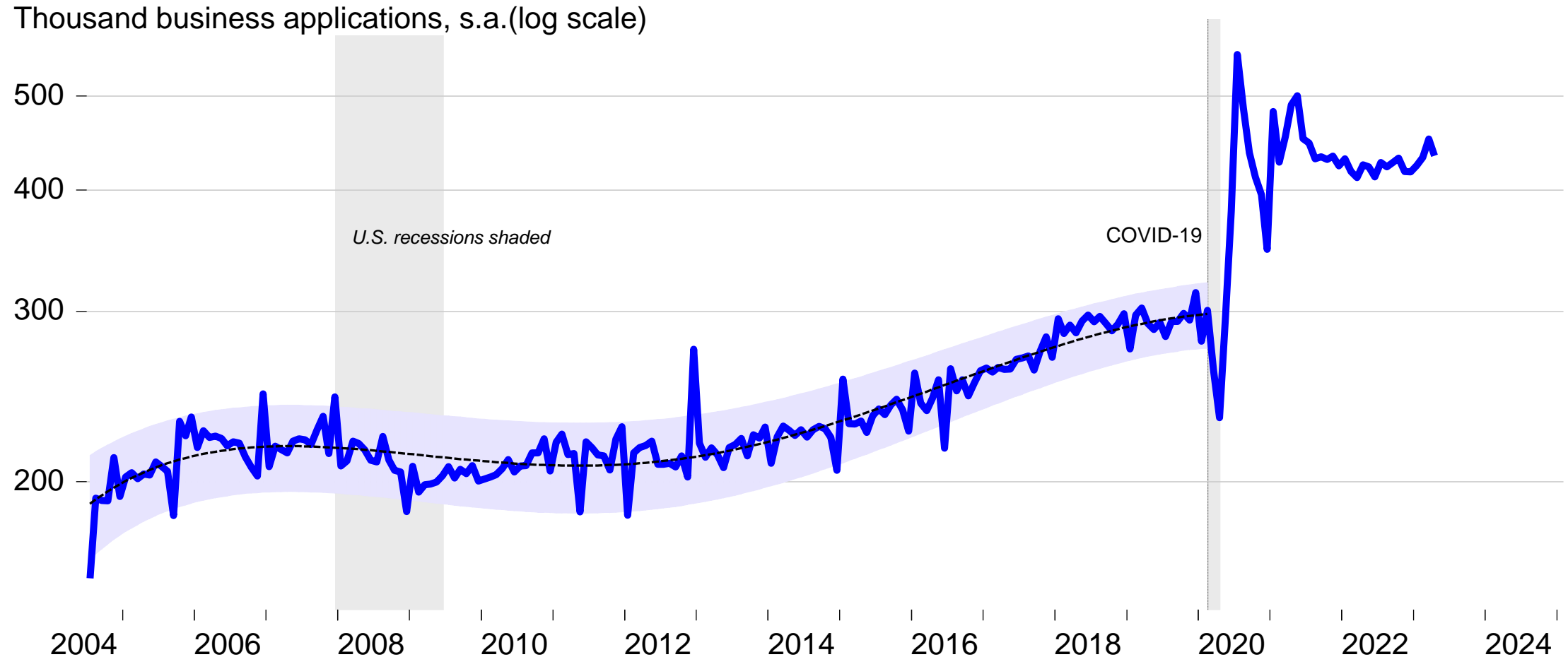
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First round v. second round impacts: less time in workplace means fewer stops at day-care, mall, restaurant, gym—*spillover* impacts



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Applications for federal EIN, a business formation measure, took a huge leap after the pandemic, as if a permanent structural change



The series correspond to a subset of all applications for an Employer Identification Number (EIN) excluding applications for tax liens, estates, trusts, certain financial filings, applications outside of the 50 states and DC or with no state-county geocodes, applications with certain NAICS codes in sector 11 (agriculture, forestry, fishing and hunting) or 92 (public administration) that have low transition rates, and applications in certain industries (e.g. private households, civic and social organizations).

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Remote work, working from home (WFH), vagabond workers, and Hawaii post-covid housing and commercial real estate

- Pre-pandemic, < 4 percent full-time WFH, ≤ 7 percent hybrid WFH in U.S.
- Now, 20-25 percent of *Hawaii* workers are in hybrid or full-time WFH arrangements (half:half)
- Higher on mainland (Hawaii on threshold of *bottom ten* states between WV, SD, for full-time WFH)
- Years starting in April 2019 (pre-covid, pre-vaxx, post-vaxx, high interest rates):
 1. Oahu SF home demand surged after covid, condo demand stayed on-trend
 2. Donut Effect in Oahu suburbs and exurbs, and in Zoomtowns (Maui, Kona-Kohala are California Zoomtowns where *both* single-family *and* condo prices surged (latter in resorts)
 3. Backwash in 2022: Triumph of the City—lower *relative* condo prices sustained Oahu demand
- Secondary effects:
 1. Decreased demand for CRE especially office space, retail anchors, strip malls
 2. Associated rise in e-commerce, BOPIS, new business formation (virtual), food delivery, *etc.*
 3. Cutbacks in food services, personal services, *etc.*

Urban spatial equilibrium has been altered, slightly flattening valuation gradients

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