Inflation, disarticulation, recovery

Slides prepared for the

Kakaako Improvement Association
General Membership Meeting

by Paul H. Brewbaker, Ph.D., CBE
TZ Economics, Kailua, Hawaii
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Sudden Stop: recession, recovery, and countercyclical fiscal policy

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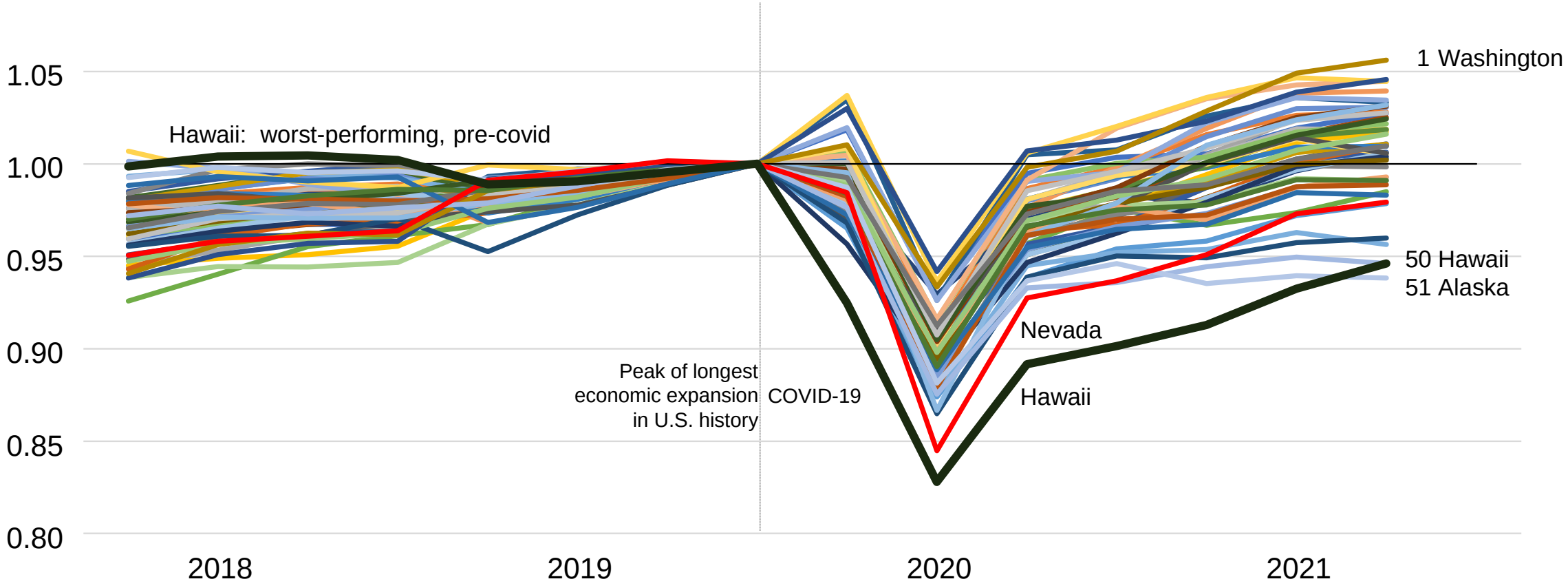
State real GDP: Hawaii, Nevada (leisure, tourism-based) hit hardest by COVID-19; Hawaii still among slowest to mount recovery

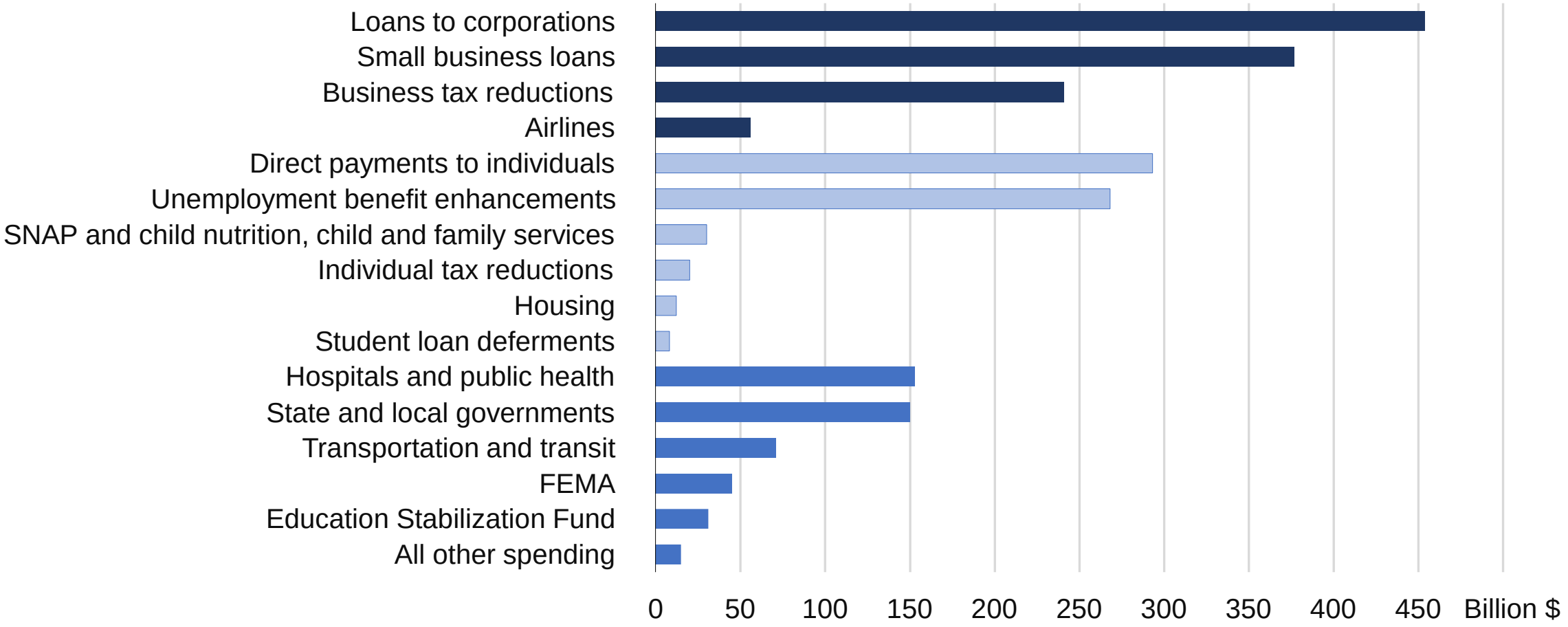
Real GDP by state indexed to peak (2019Q4 = 100)



As of January 17, 2022 the highest per capita COVID-19 death rates (deaths per 100,000) were in Mississippi (357), Arizona (346), and Alabama (341), while Hawaii was *lowest* (79). Among states and the District of Columbia (ninth at 178), Washington state, the best performing in terms of quarterly real GDP relative to the end-2019 cyclical peak, was fifth (134). (https://www.statista.com/statistics/1109011/coronavirus-covid19-death-rates-us-by-state/)

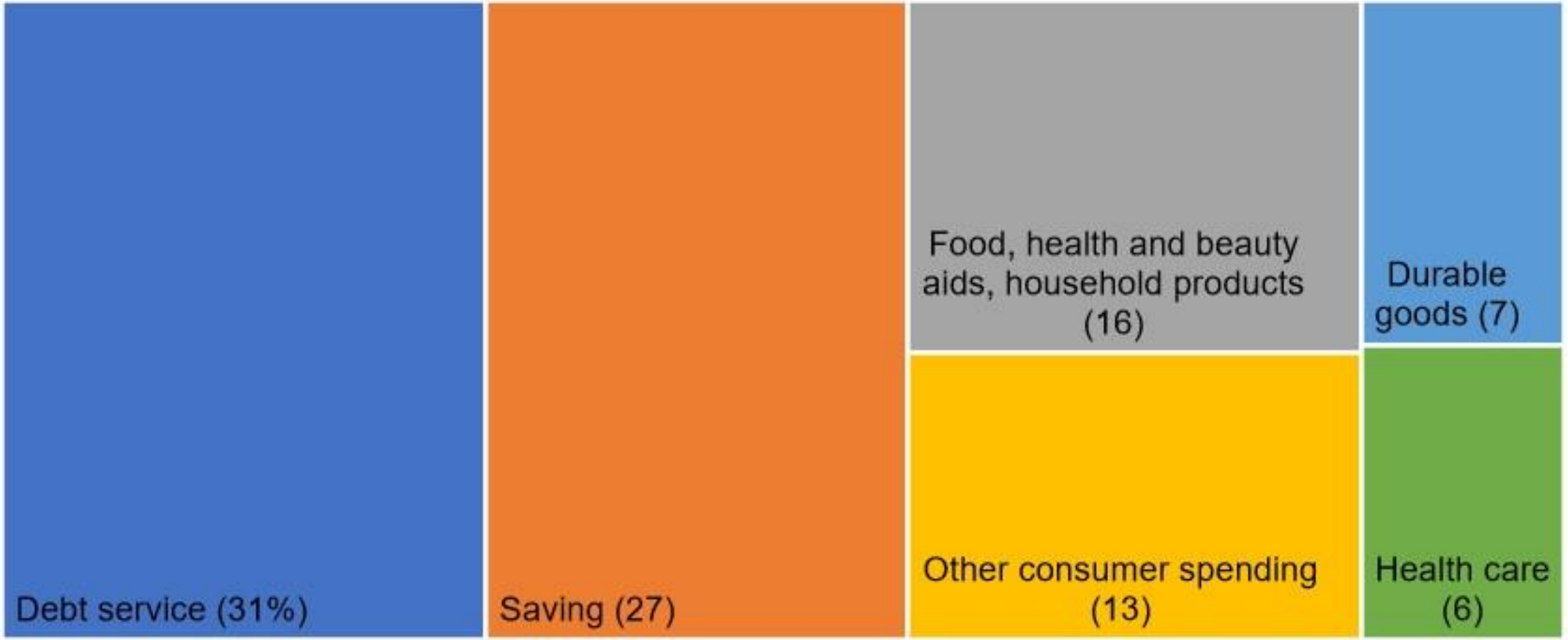
Source: U.S. Bureau of Economic Analysis, December 23, 2021 release (https://www.bea.gov/data/gdp/gdp-state)

Original Cares Act (March 2020) was rapid fiscal policy relief response of $2.2 trillion in support to businesses, individuals, governments



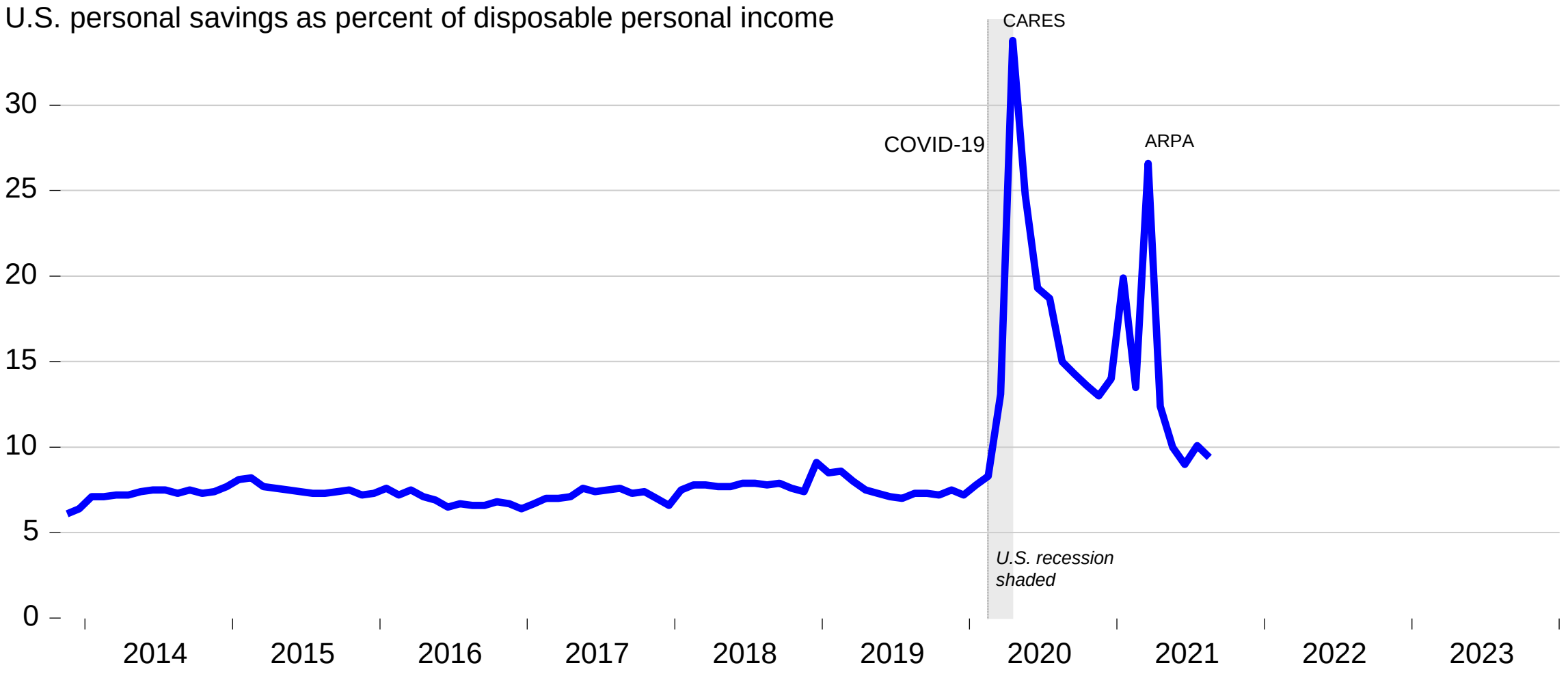
Sources: Committee for a Responsible Federal Budget (March 25, 2020) with CBO estimates (April 2020) (https://www.crfb.org/blogs/whats-2-trillion-coronavirus-relief-package, https://www.cbo.gov/publication/56334), SevenandForty (March 2020) (https://www.reddit.com/r/dataisbeautiful/comments/fppc7v/oc_where_the_money_goes_in_the_us_senates_2t/), JP Morgan (https://www.jpmorgan.com/insights/research/cares-act).

CARES Act stimulus mostly affected *savings* (like tax rebates 2001, 2008; payroll tax increase 2012): how 2020 relief was allocated



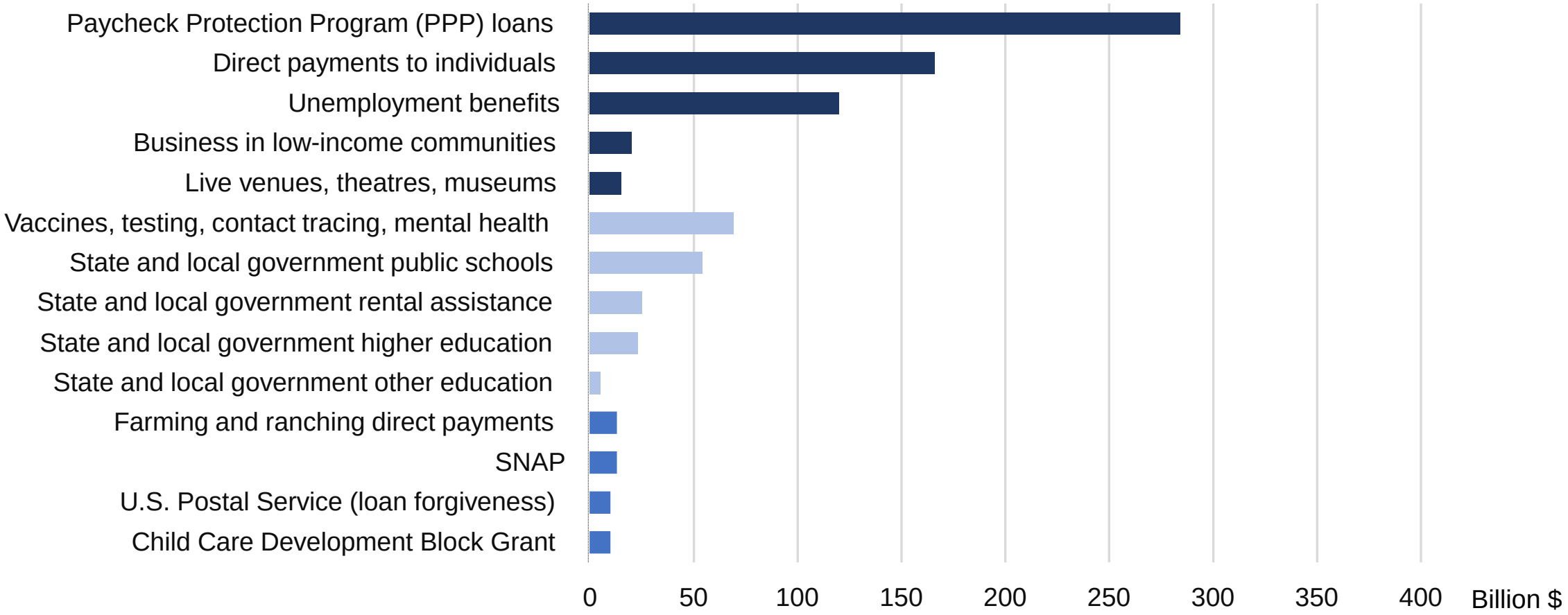
Source: Olivier Coibion, Yuriy Gorodnichenko & Michael Weber (August 2020) "How Did U.S. Consumers Use Their Stimulus Payments?" *NBER working paper 27693* (https://www.nber.org/system/files/working_papers/w27693/w27693.pdf)

As economic theory predicts: transitory income windfalls are associated with increases in *savings* rather than consumption



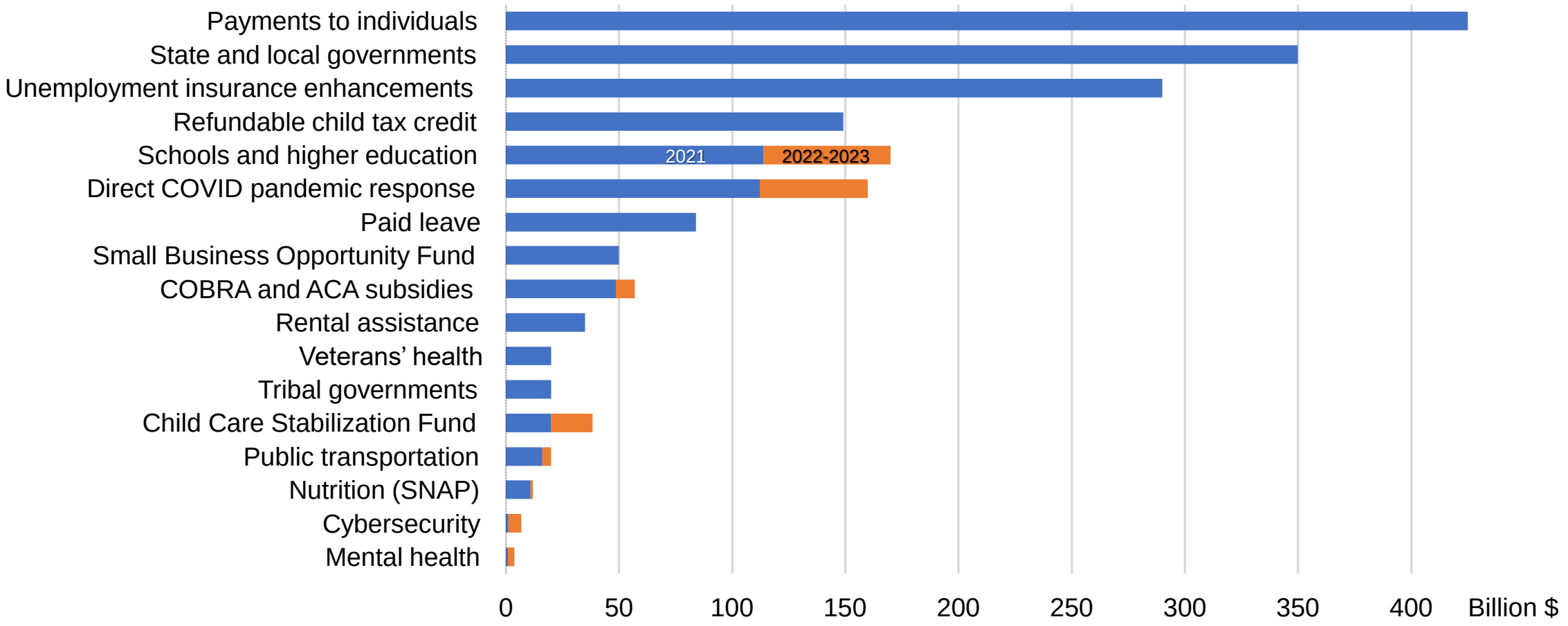
Source: U.S. Bureau of Economic Analysis, Personal Saving Rate [PSAVERT], retrieved from FRED, Federal Reserve Bank of St. Louis; https://fred.stlouisfed.org/series/PSAVERT, October 6, 2021

December 2020 $900 billion supplemental provisions to Consolidated Appropriations Act refilled the tank on some prior CARES measures



Sources: Congressional Budget Office (CBO) (https://en.wikipedia.org/wiki/Consolidated_Appropriations_Act,_2021, https://www.cbo.gov/system/files/2021-01/PL_116-260_Summary.pdf, https://www.cbo.gov/system/files/2020-12/Cost%20Estimate%20for%20Division%20M%20of%20H.R.%20133%20the%20Coronavirus%20Response%20and%20Relief%20Supplemental%20Appropriations%20Act%202021.pdf)

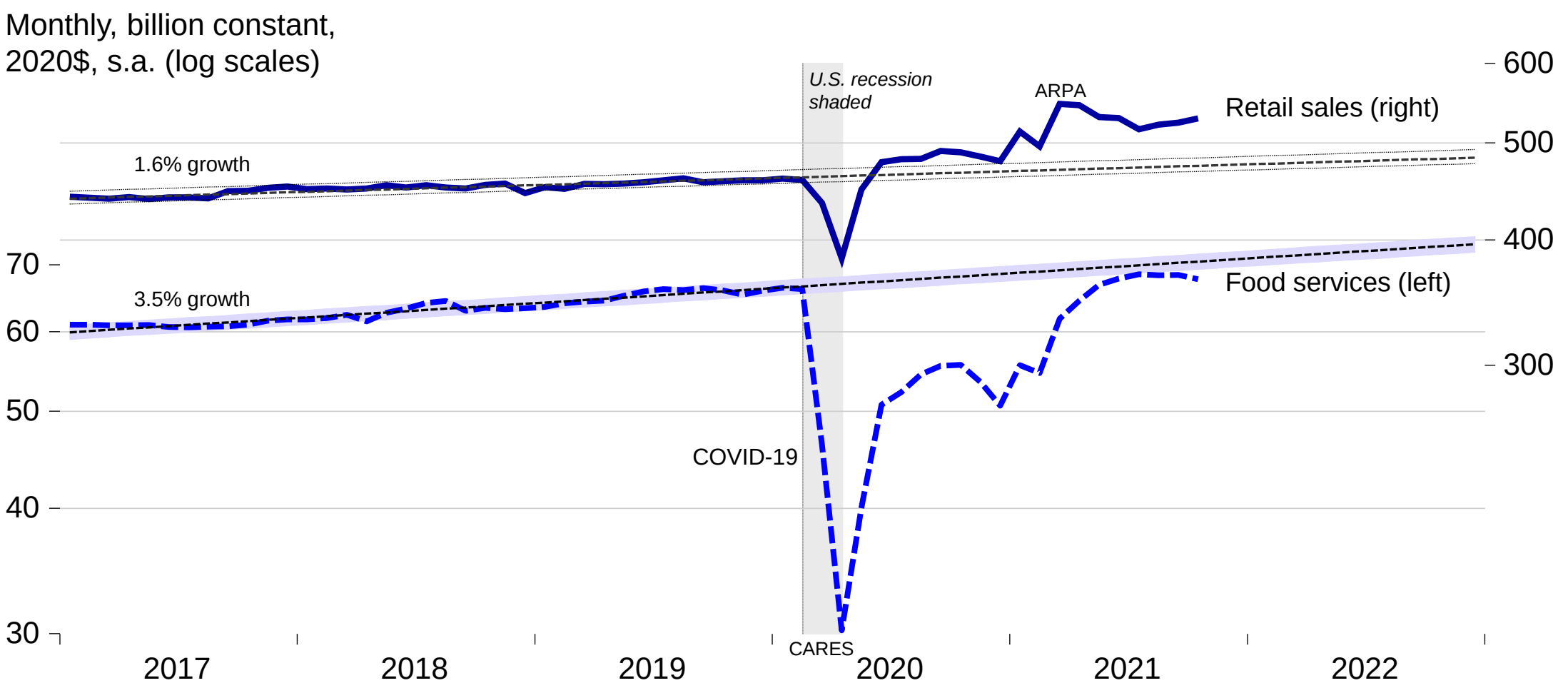
Biden Administration American Rescue Plan details ($1.895 trillion), ranked by 2021 outlay, emphasizes individuals, state governments



See also Jared Bernstein and Heather Boushey, Council of Economic Advisers (February 3, 2021) *The Economics of the American Rescue Plan* (https://www.whitehouse.gov/briefing-room/blog/2021/02/03/the-economics-of-the-american-rescue-plan/) and Congressional Budget Office (February 20, 2021) *Estimated Budget Effects of the American Rescue Plan Act of 2021* (https://www.cbo.gov/publication/57012)

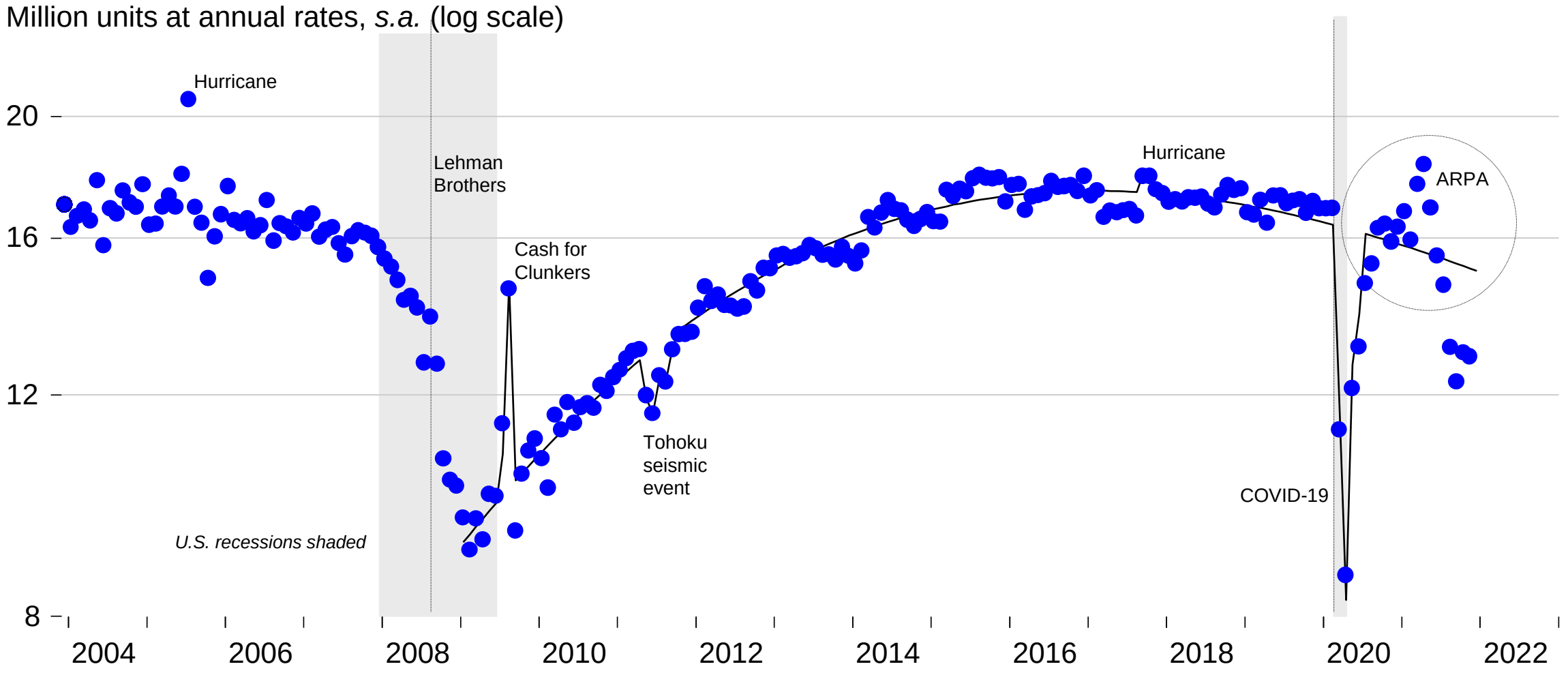
Sources: Mark Zandi and Bernard Yanos (January 15, 2021), *The Biden Fiscal Rescue Package: Light on the Horizon*, Moody's Analytics (https://www.moodysanalytics.com/-/media/article/2021/economic-assessment-of-biden-fiscal-rescue-package.pdf)

Retail sales—about 10X food services sales—boosted more by federal fiscal stimuli, suggesting post-pandemic structural changes in eating



Sources: U.S. Census Bureau, U.S. Bureau of Labor Statistics, retrieved from FRED, Federal Reserve Bank of St. Louis (https://fred.stlouisfed.org/series/RSAFS, https://fred.stlouisfed.org/series/RSXFS, https://fred.stlouisfed.org/series/CPIAUCSL), trend regressions on constant-dollar data, January 2015 – January 2020, and projections through 2022 depicted with 99% confidence intervals.

Both demand and supply factors disrupted auto and light truck sales: deep Covid sales decline, production hiatus, temporary ARPA surge



Source: U.S. BEA, Light Weight Vehicle Sales: Autos and Light Trucks, retrieved from FRED, Federal Reserve Bank of St. Louis (https://fred.stlouisfed.org/series/ALTSALES), data through November 2021.

The actual inflation data: "your mileage may vary" (NYC and Tokyo are the same distance from Honolulu)

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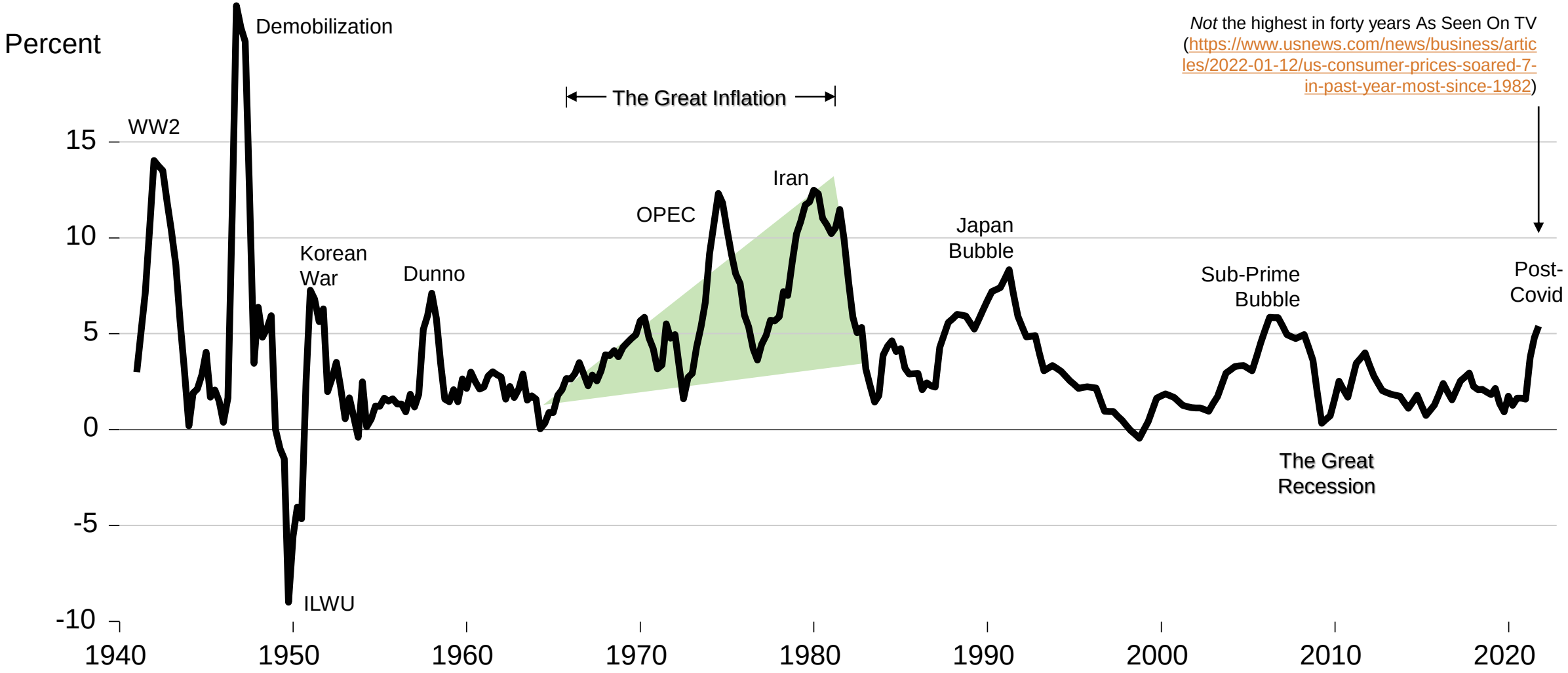
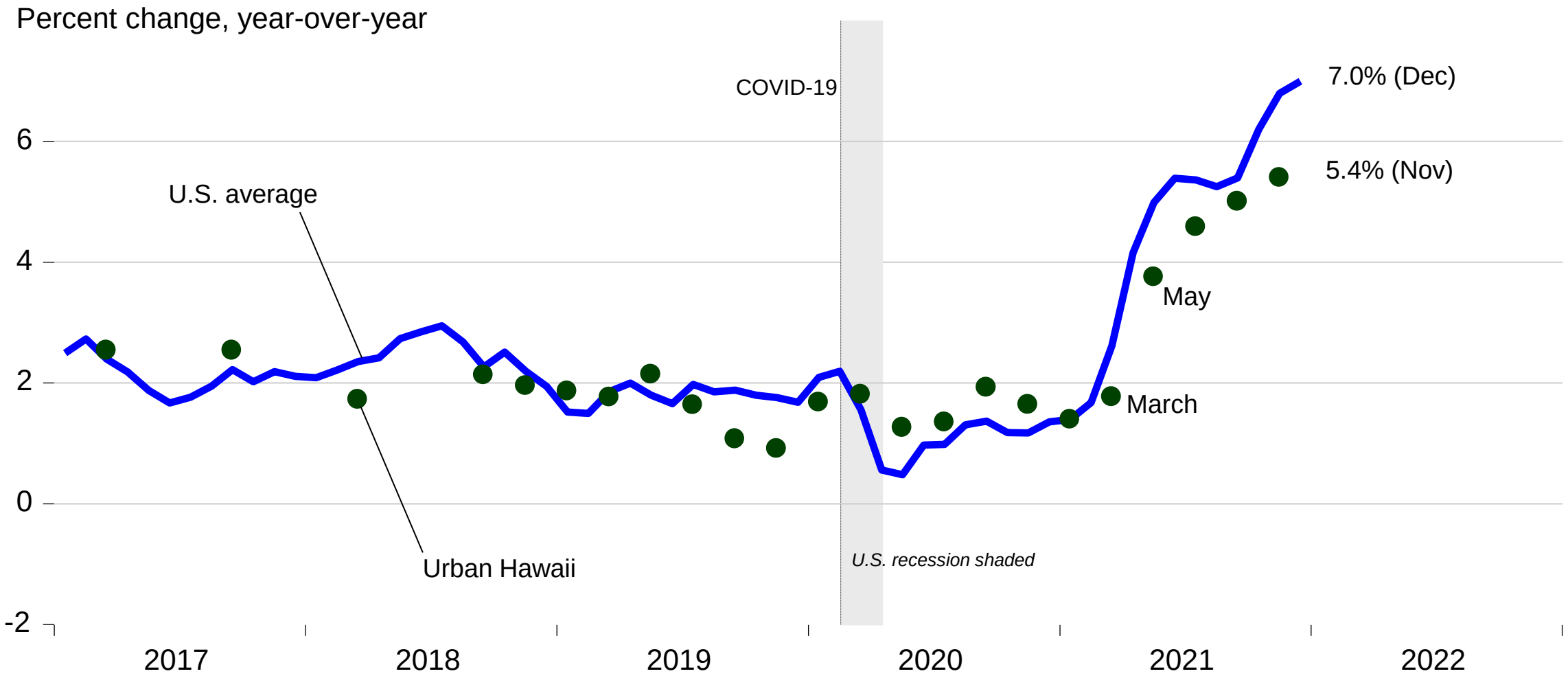
Quarterly Urban Hawaii *consumer* price inflation 1940-2021: *not* the highest in 40 years; not long percolation like macroeconomic surges



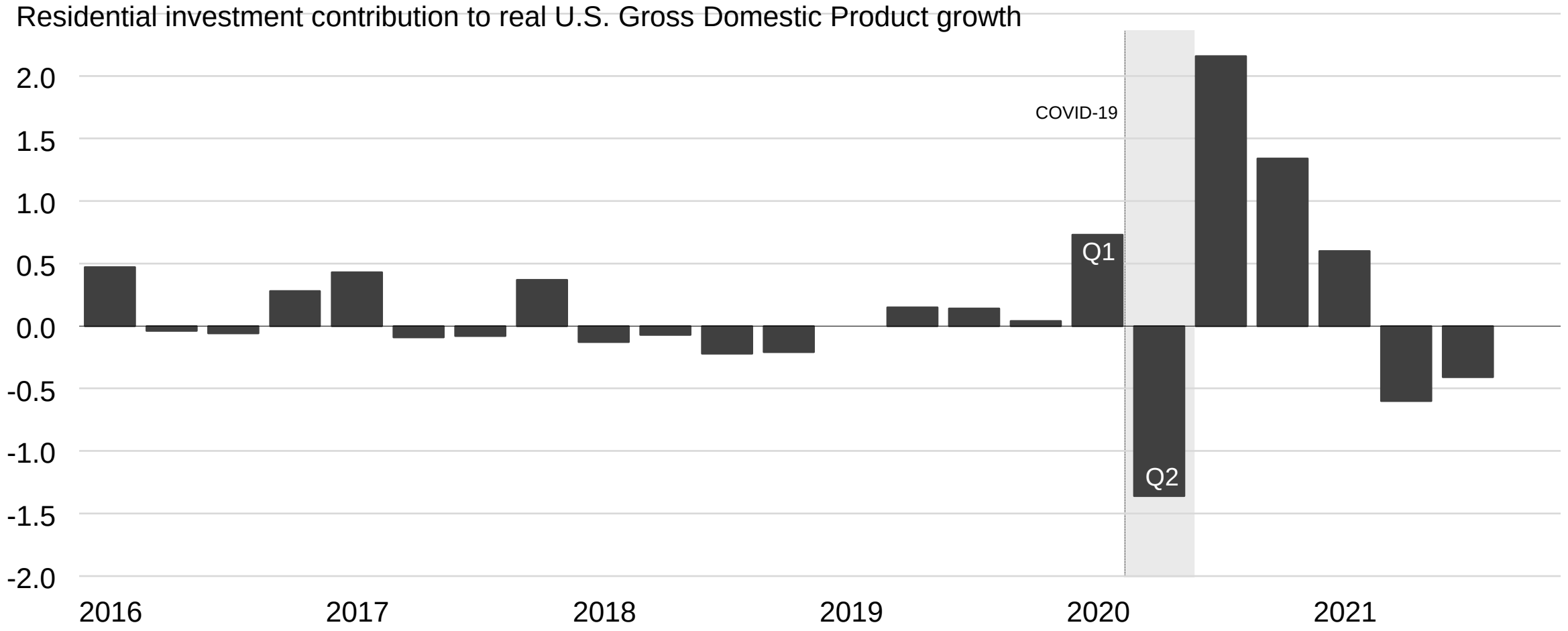
Source: U.S. Bureau of Labor Statistics (https://data.bls.gov/cgi-bin/surveymost?r9), quarterly interpolation based on monthly and bi-monthly averages through 2021Q3

Inflation up from supply chain constraints during 2021, pandemic disruptions, mix of supply (oil, labor) and demand (fiscal) shocks



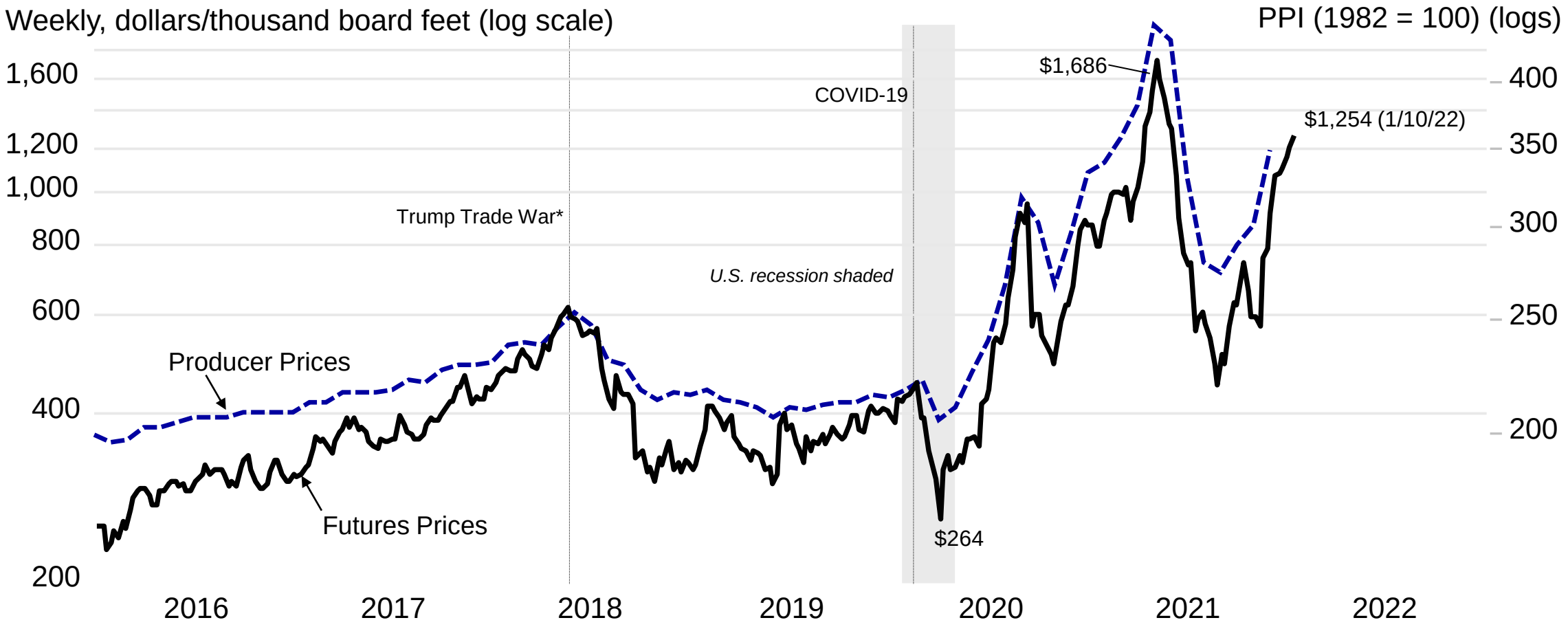
Source: U.S. Bureau of Labor Statistics (https://data.bls.gov/cgi-bin/surveymost?r9), to facilitate comparison semiannual inflation rates for 2017 and most of 2018 are included with the newer year-over-year inflation estimates for Urban Hawaii inflation at bi-monthly frequencies through November 2021, U.S. data through December 2021.

Big surprise after the initial Covid shock: surge in U.S. real GDP growth from *residential* investment, homebuilding increase (incl. renovations)



Source: Bureau of Economic Analysis, U.S. Department of Commerce (https://www.bea.gov/data/gdp/gross-domestic-product), data through third quarter 2021.

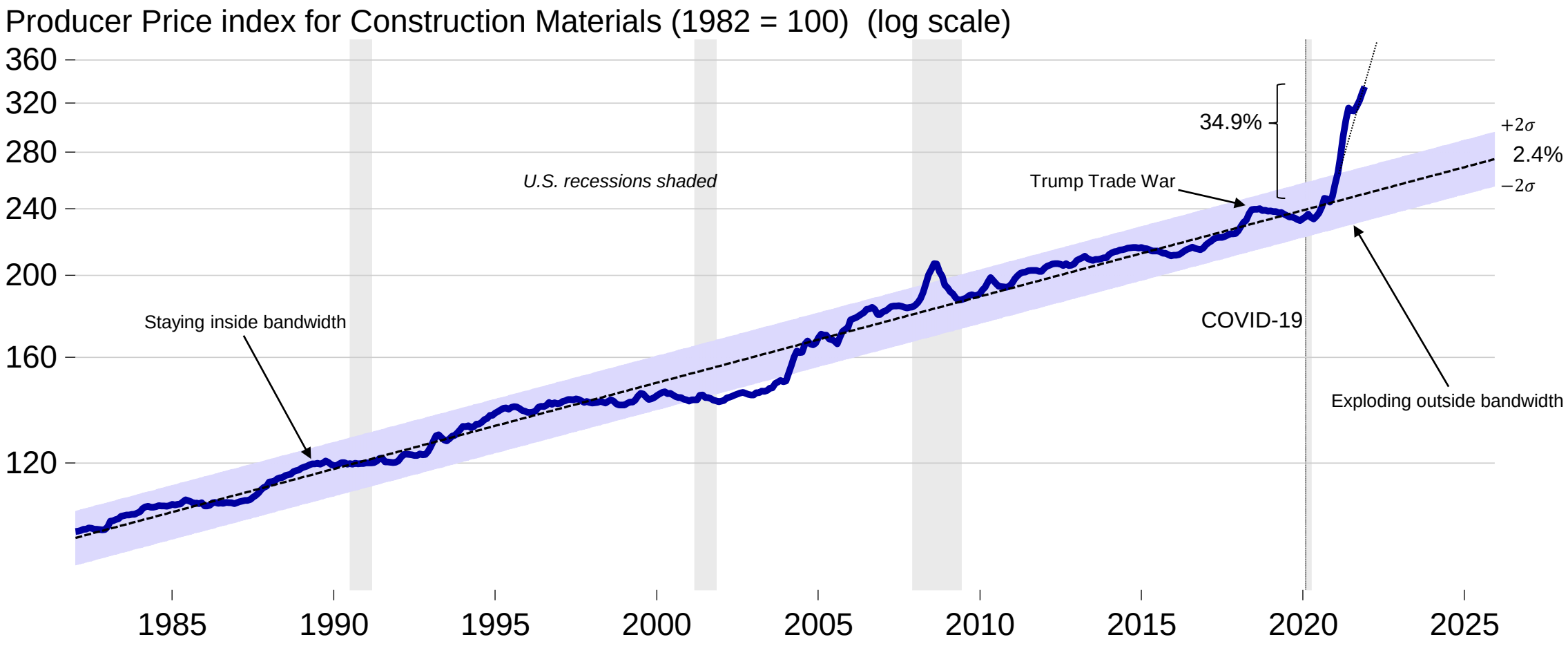
Lumber futures contracts prices fell in mid-2021 as resolution of covid supply chain disruptions began, but unraveled during the second half



* White House releases a statement that it would impose tariffs on $50 billion of goods from China shortly after announcing the final list of covered imports on June 15, 2018; Peterson Institute for International Economics (https://www.piie.com/blogs/trade-investment-policy-watch/trump-trade-war-china-date-guide).

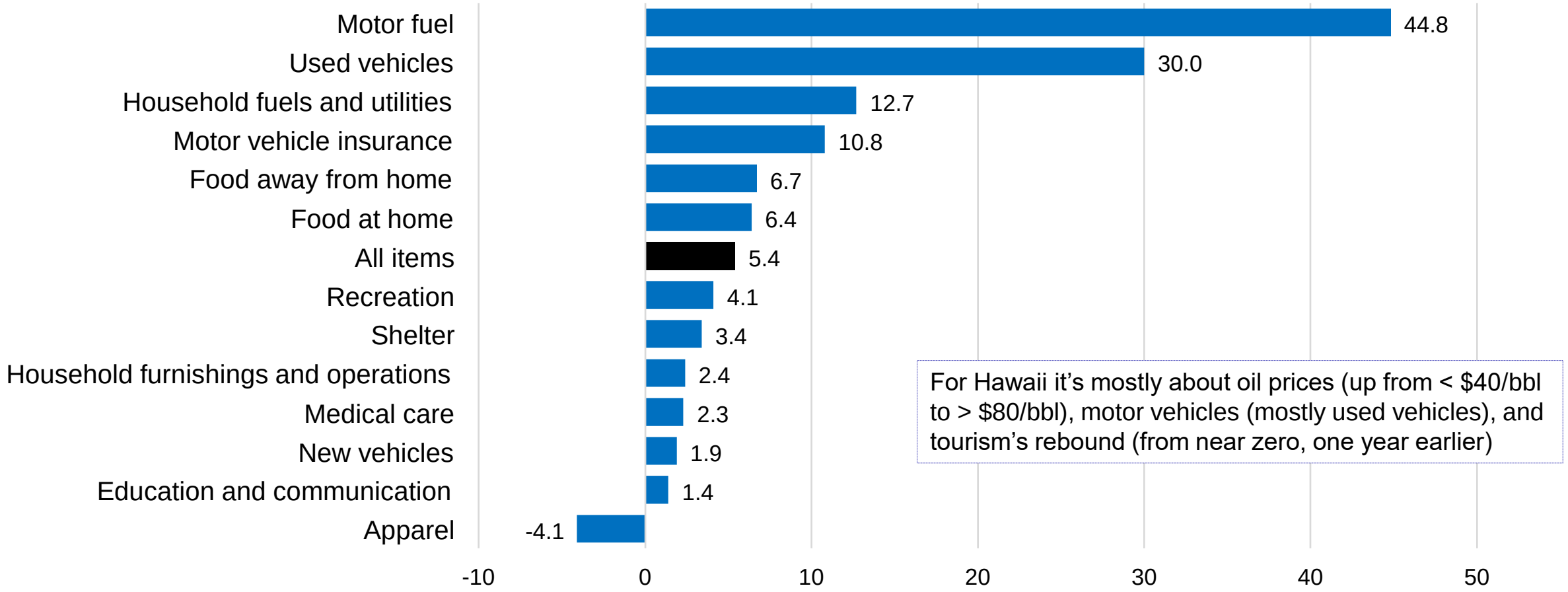
Source: Chicago Mercantile Exchange, Random Length Lumber Futures, via Yahoo Finance (https://finance.yahoo.com/quote/LBS%3DF/history?p=LBS%3DF), weekly closing prices through January 10, 2022, .S. Bureau of Labor Statistics, Producer Price Index by Commodity: Lumber and Wood Products: Lumber [WPS081], monthly data through December 2021 from FRB of St. Louis (https://fred.stlouisfed.org/series/WPS081).

End-2021 U.S. Producer Price Index for Construction Materials well above historical inflation rate of 2.4 percent (outside 99% conf. interval)



Sources: U.S. Bureau of Labor Statistics, Producer Price Index by Commodity: Special Indexes: Construction Materials [WPUSI012011], retrieved from FRED, Federal Reserve Bank of St. Louis; (https://fred.stlouisfed.org/series/WPUSI012011)

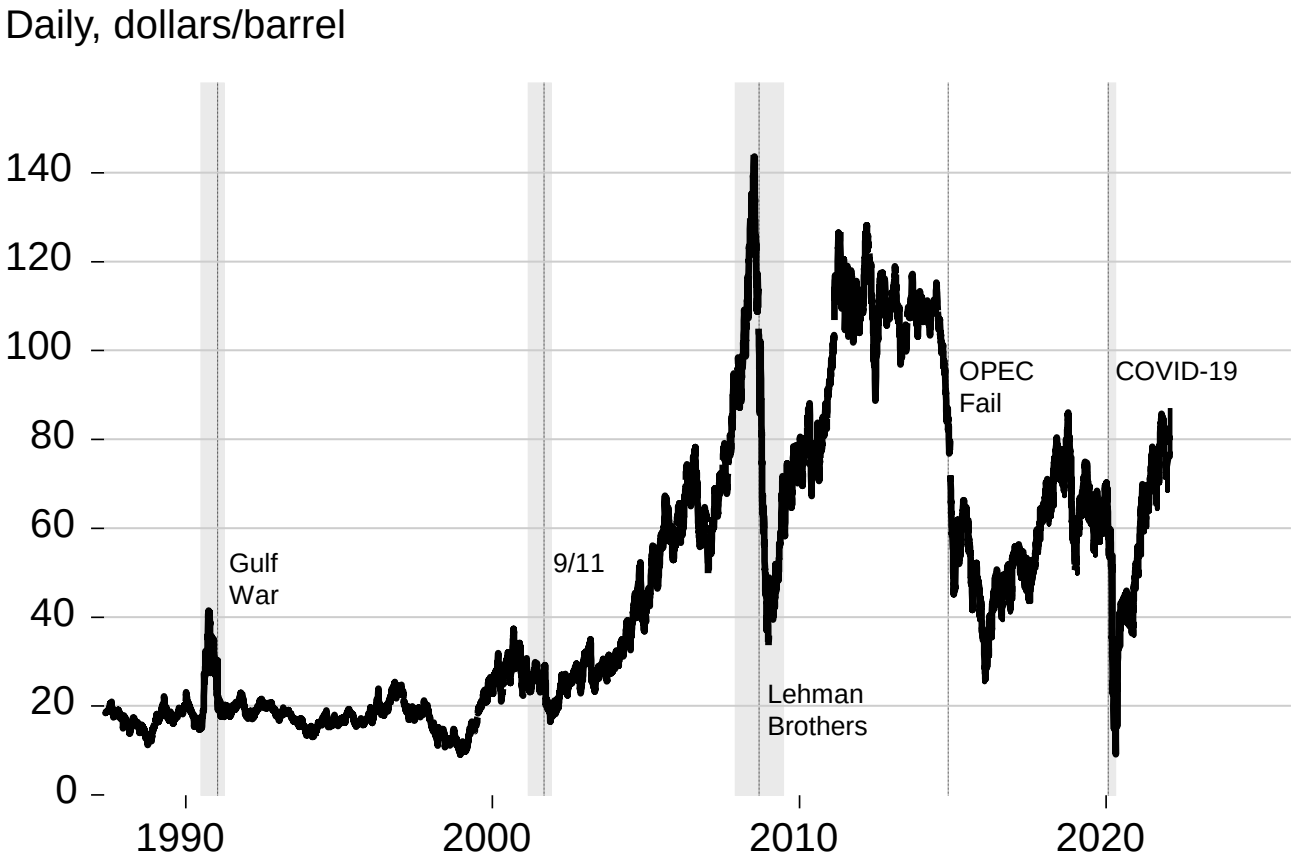
Component rates of Urban Hawaii inflation to November 2021 say as much about how things were one year earlier as they do recently



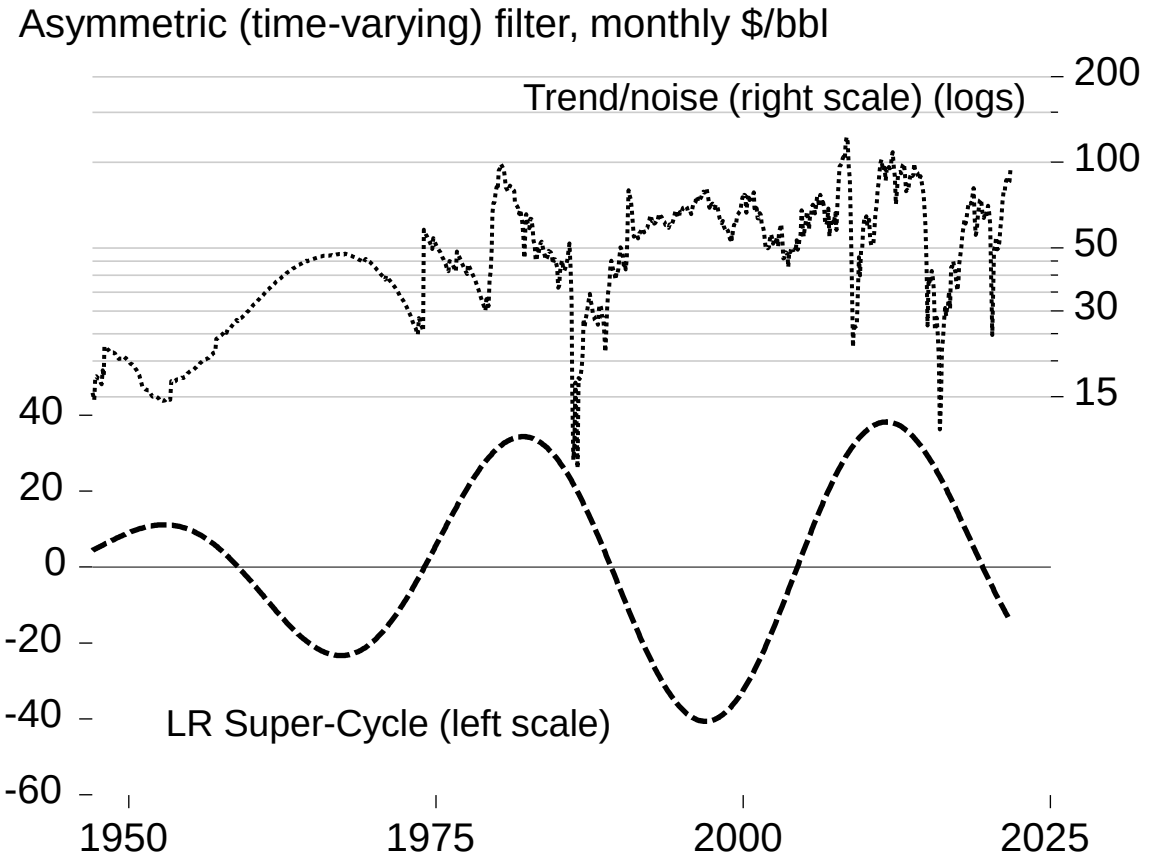
For Hawaii it's mostly about oil prices (up from < $40/bbl to > $80/bbl), motor vehicles (mostly used vehicles), and tourism's rebound (from near zero, one year earlier)

Source: U.S. Bureau of Labor Statistics (https://www.bls.gov/cpi/data.htm); this reaggregation omits certain items including "Alcoholic beverages," and "Medical care" (not continuously available), and "Public transportation."

Those who forget the past are condemned to retweet it: losing it over oil prices? Remember three years ago, or maybe the last 75 years



Brent crude oil prices (current dollars)
May 2, 1987 – January 18, 2022

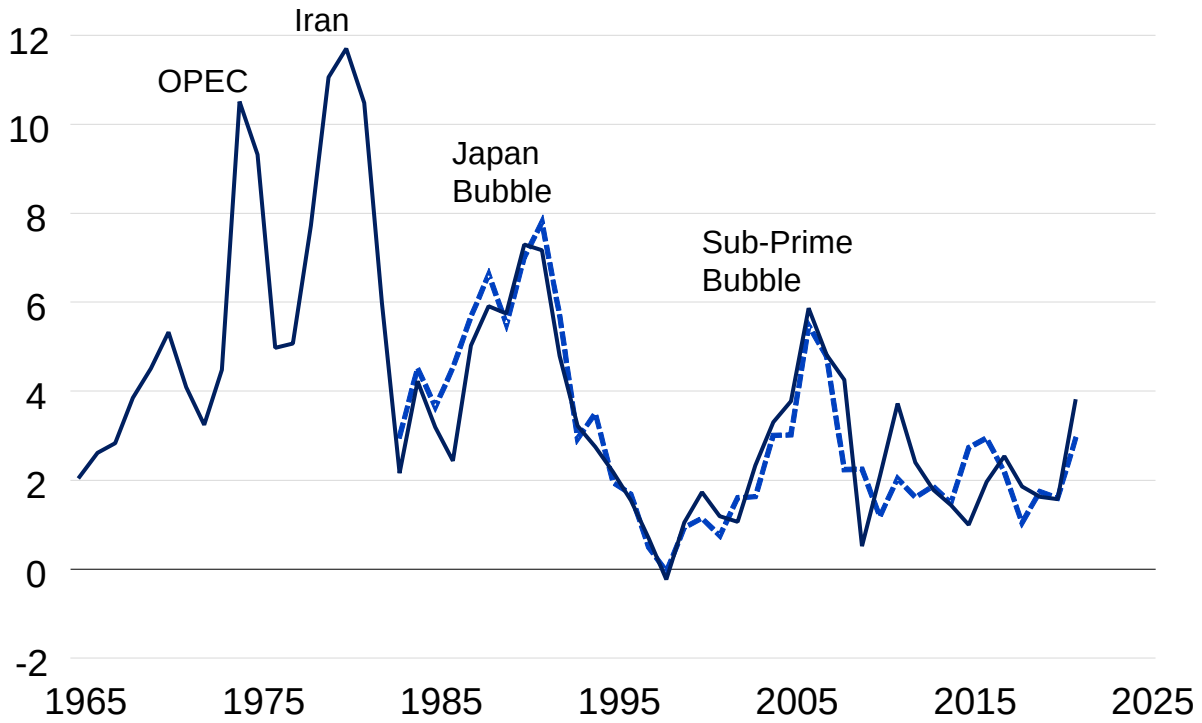


Constant (2021)-dollar monthly long-run crude oil price cyclical and noncyclical decomposition

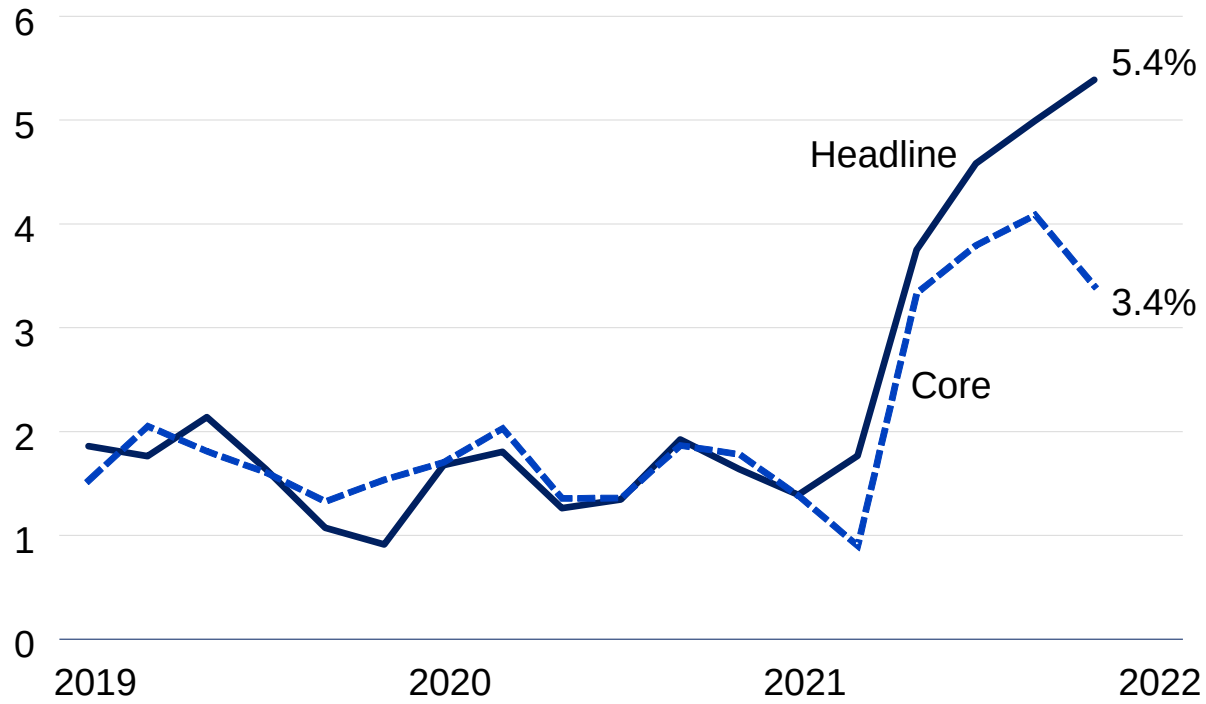
Sources: U.S. Energy Information Administration, Crude Oil Prices: Brent (https://fred.stlouisfed.org/series/MCOILBRENTEU, https://fred.stlouisfed.org/series/DCOILBRENTEU), U.S. Bureau of Labor Statistics, Consumer Price Index for All Urban Consumers: All Items (https://fred.stlouisfed.org/series/CPIAUCSL); deflation, Christiano-Fitzgerald asymmetric band-pass filter decomposition at [240, 500] months by TZE.

Urban Hawaii core CPI-U inflation measures (less food and energy) illustrate current cap between agg. demand and agg. supply impacts

Annual percent change, year-over-year



Bi-monthly annual percent change, year-over-year



Source: U.S. Bureau of Labor Statistics (https://www.bls.gov/data/#prices)

Monetary policy transition to normalization

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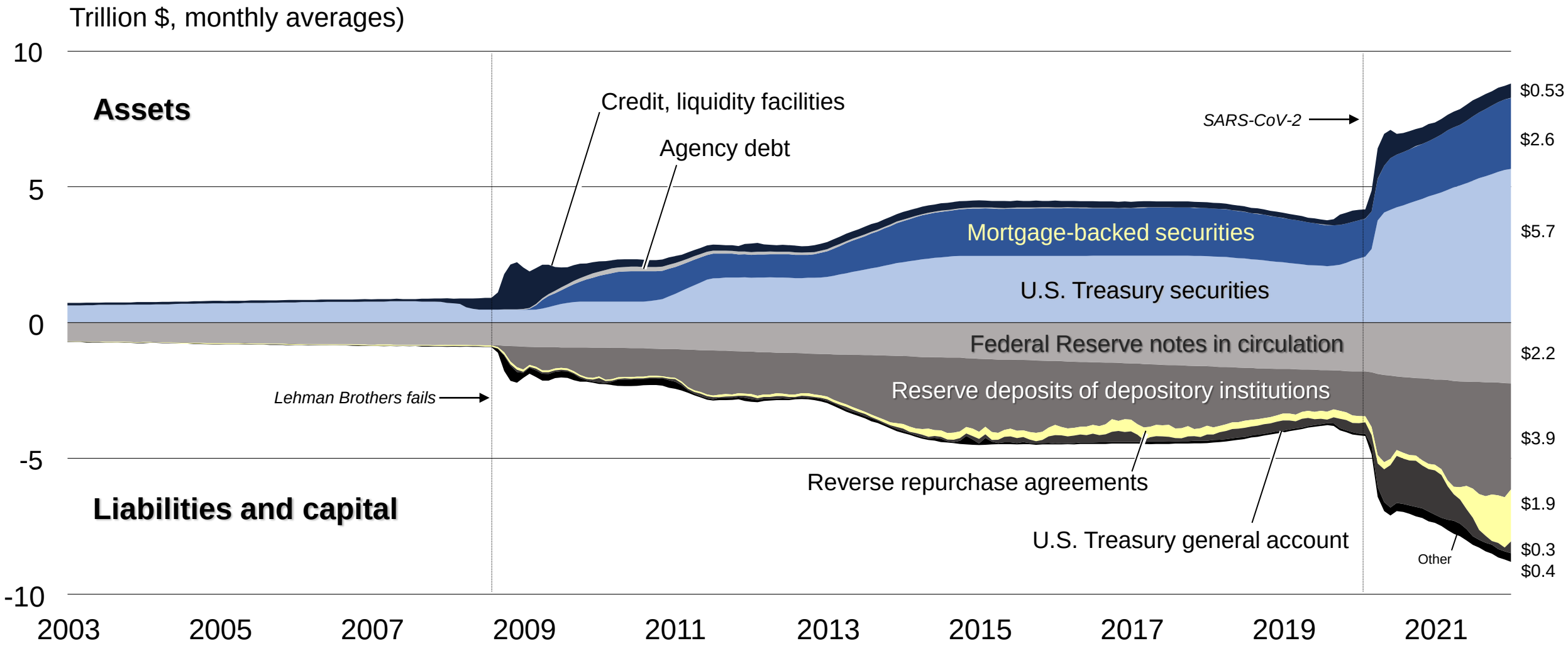
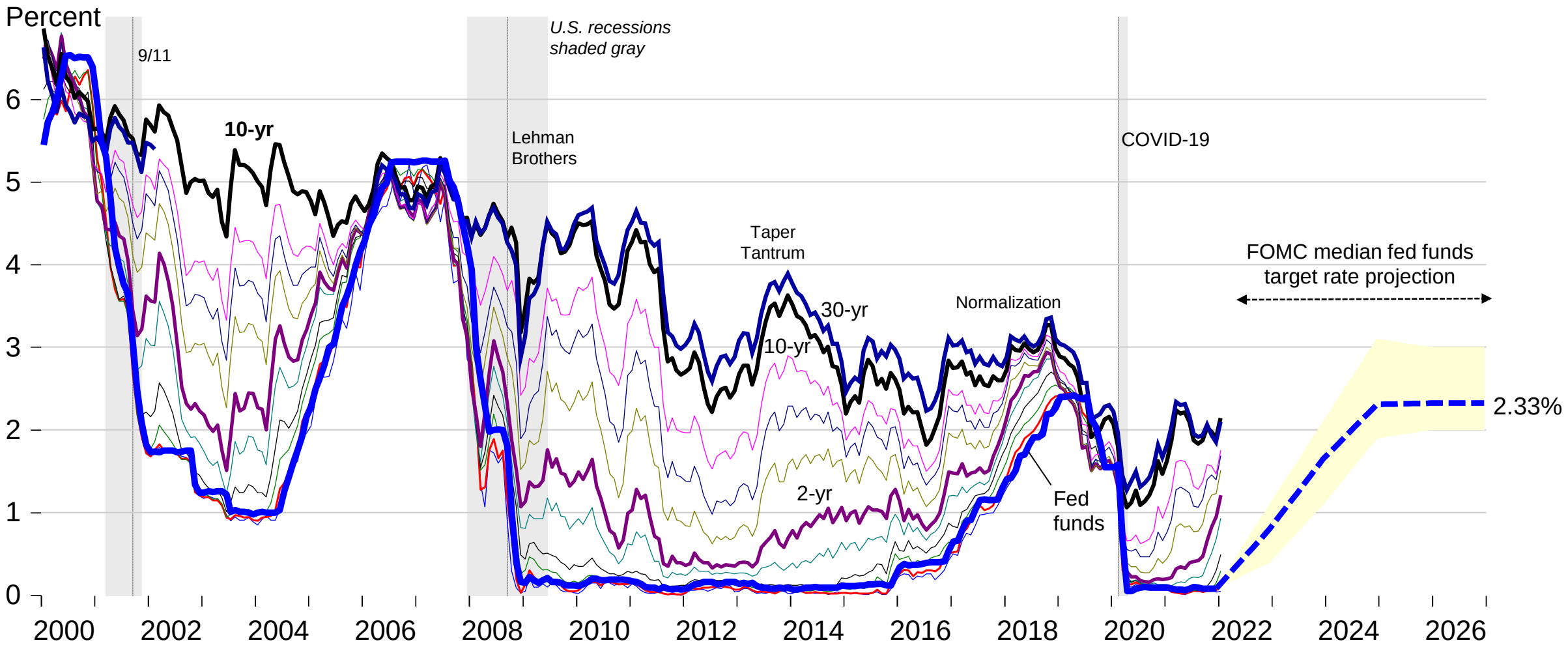
Next steps for monetary policy: tapering asset purchases, tracking supply shocks and inflation, 2022 rate normalization forward guidance



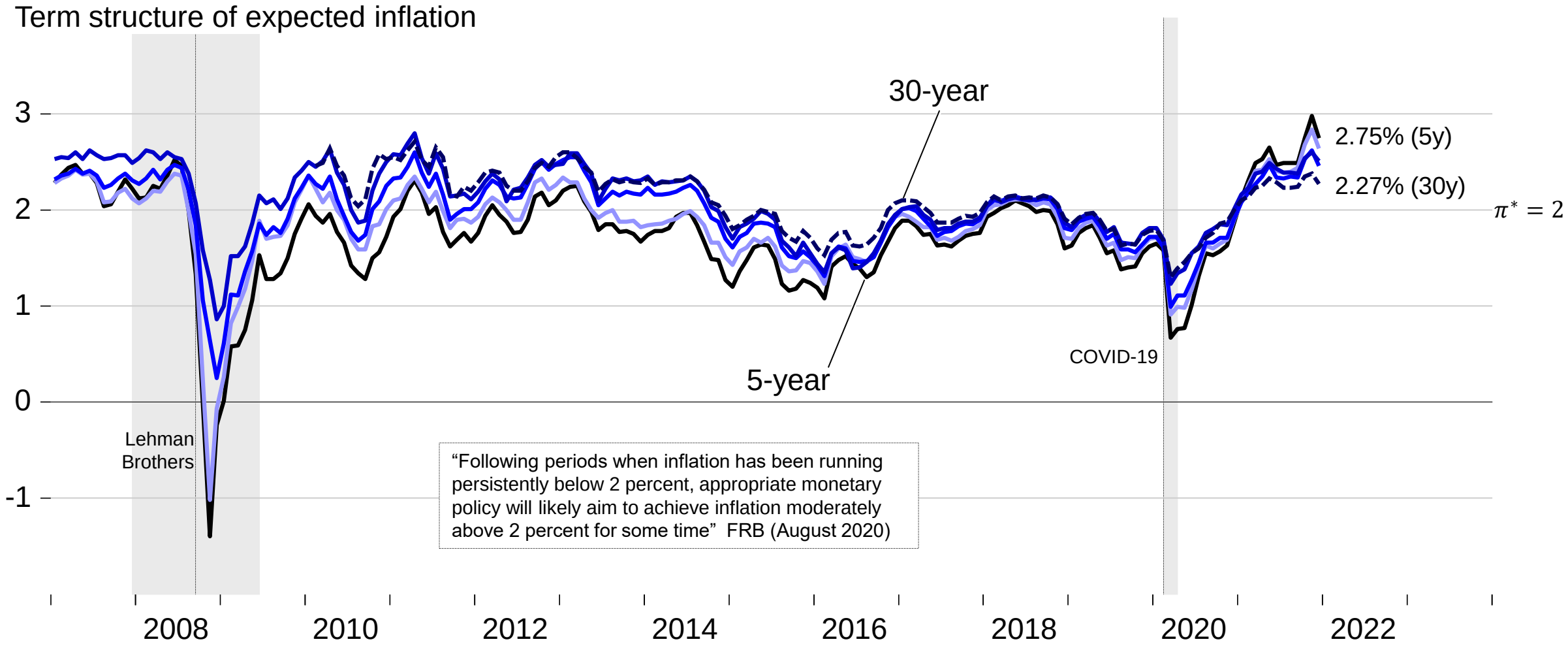
Sources: Monthly averages of weekly averages, Federal Reserve Board (Statistical Release H.4.1), compiled through week of January 19, 2022 (https://www.federalreserve.gov/releases/H41/default.htm)

Nominal U.S. Treasury yields: normalization (2004-06; 2016-18): should unfold as indicated in FOMC forward guidance last fall



Sources: Board of Governors of the Federal Reserve System (https://www.federalreserve.gov/datadownload/), Federal Open Market Committee (FOMC) (December 15, 2021) (https://www.federalreserve.gov/monetarypolicy/fomcprojtabl20211215.htm), National Bureau of Economic Research (https://www.nber.org/research/data/us-business-cycle-expansions-and-contractions).

Implicit inflation expectations: (nominal − real) U.S. Treasury yields: LR inflation expectations $\pi^e \leq 2.75\%$ remain well-anchored or at risk?



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

Source: Board of Governors of the Federal Reserve System (https://www.federalreserve.gov/datadownload/Choose.aspx?rel=H15), monthly implied inflation expectations through August 2021 and *Statement on Longer-Run Goals and Monetary Policy Strategy* (August 2020) https://www.federalreserve.gov/monetarypolicy/review-of-monetary-policy-strategy-tools-and-communications-statement-on-longer-run-goals-monetary-policy-strategy.htm)

Post-pandemic structural change

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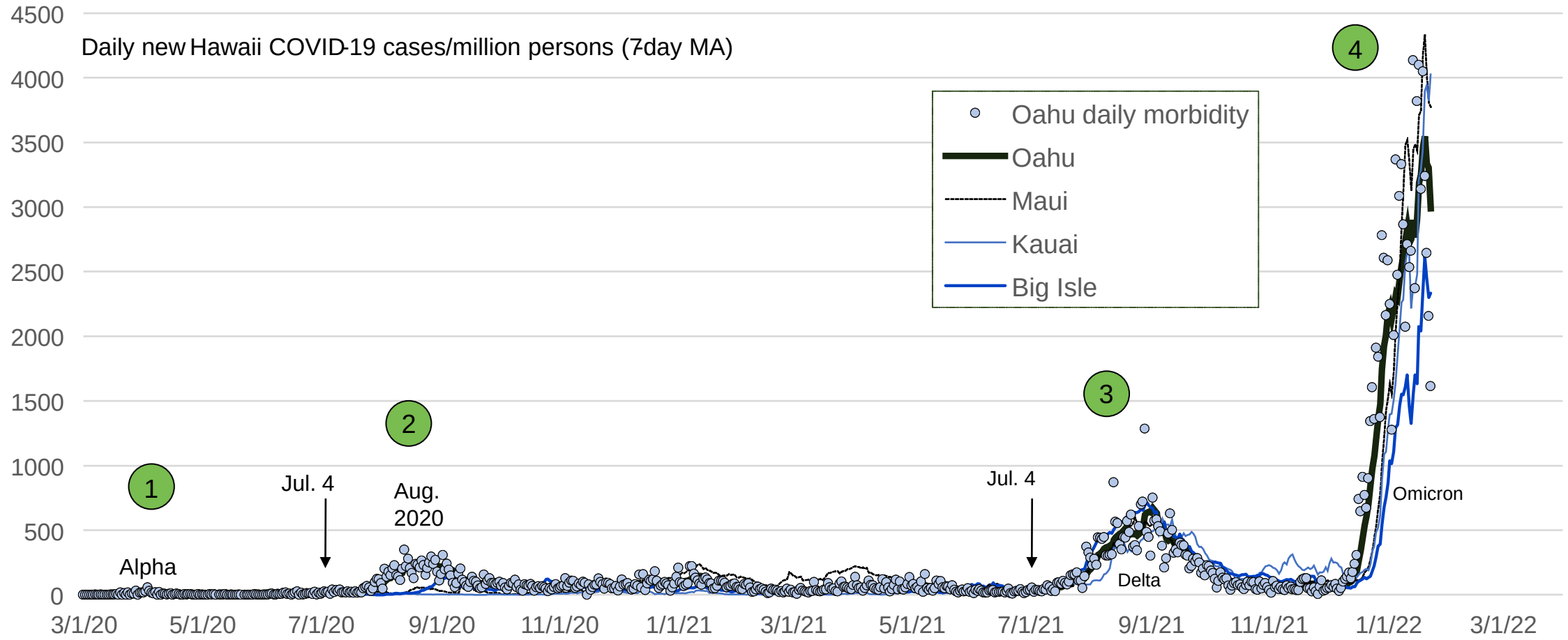
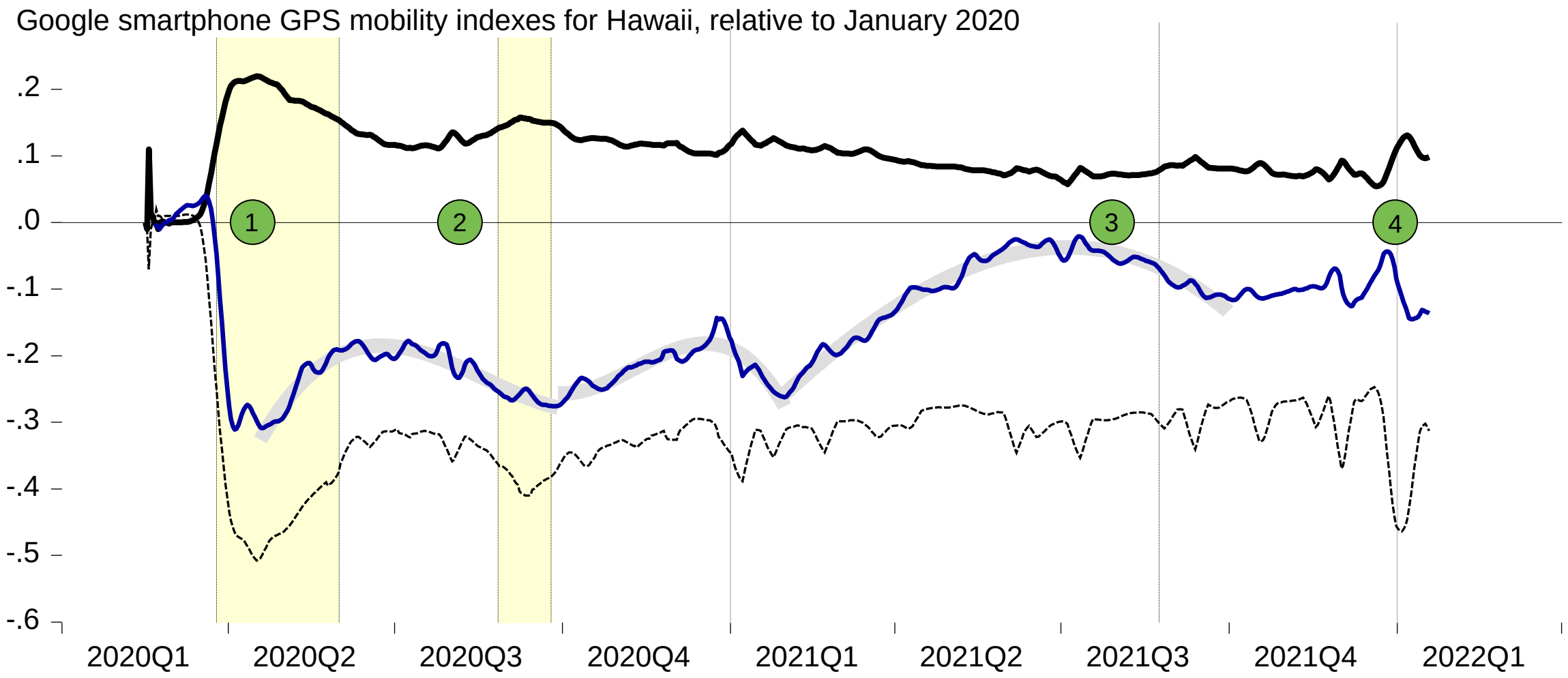
Four COVID-19 waves: (1) Alpha (Spring 2020); (2) Aug. 2020 (Oahu lockdown); (3) Delta; (4) Omicron (peaking mid-Jan.)



Sources: Hawaii Department of Health, Johns Hopkins University (https://raw.githubusercontent.com/CSSEGISandData/COVID-19/master/csse_covid_19_data/csse_covid_19_time_series/time_series_covid19_confirmed_US.csv), Hawaii DBEDT; data through 9:00 HST January 23, 2022 (tests through January 21).

Resident behavior changes in anonymized Hawaii mobility data: some permanent, less time in workplaces, retail; people act *before* leaders,



*Mahealani Richardson (July 9, 2021) "Ige wants to keep the mask mandate. Green says it's time to drop it," *Hawaii News Now* (https://www.hawaiinewsnow.com/2021/07/10/state-leaders-debate-over-lifting-indoor-mask-mandate/)

Sources: Opportunity Insights Economic Tracker (https://tracktherecovery.org/) 7-day moving averages of daily GPS mobility data through January 18, 2022, indexed to Jan 3-Feb 6, 2020 from Google COVID-19 Community Mobility Reports (https://raw.githubusercontent.com/OpportunityInsights/EconomicTracker/main/data/Google%20Mobility%20-%20State%20-%20Daily.csv), nonlinear regressions by TZE

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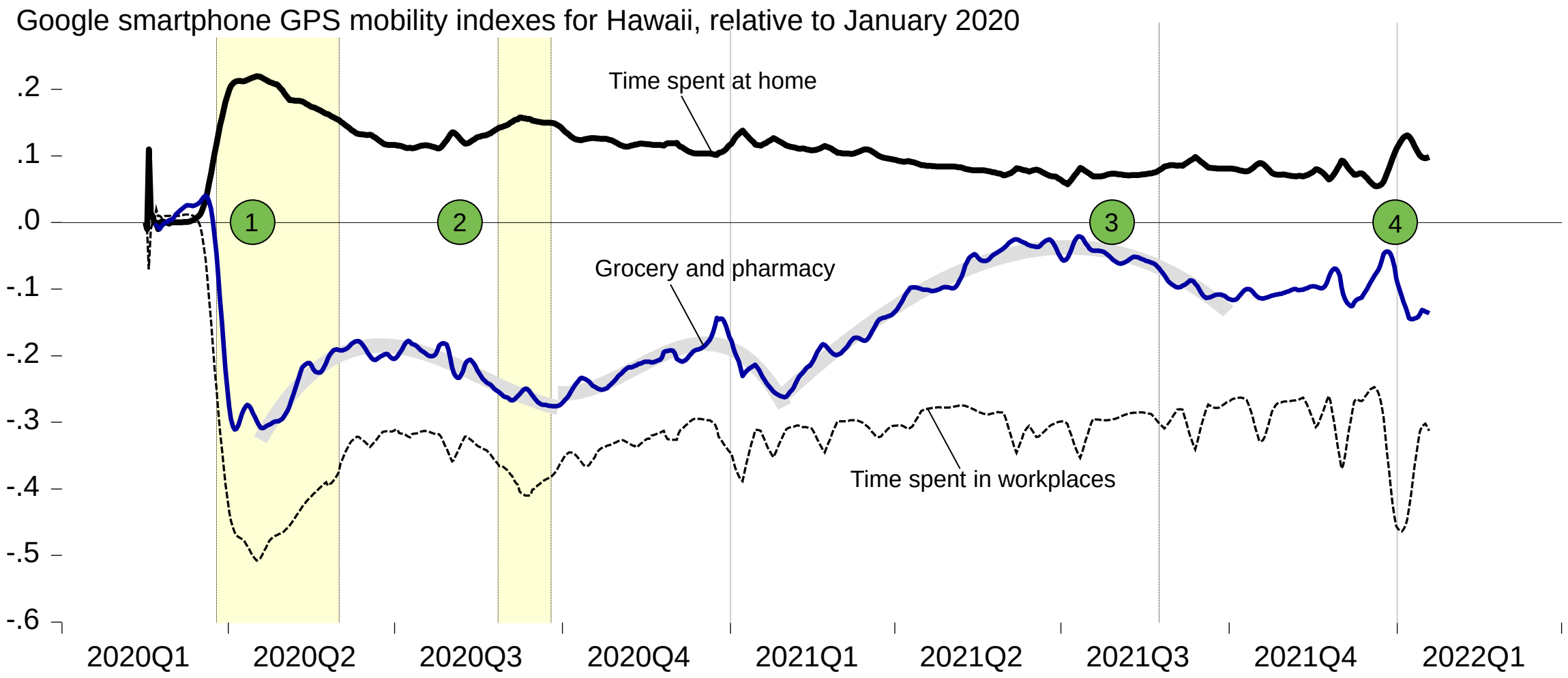

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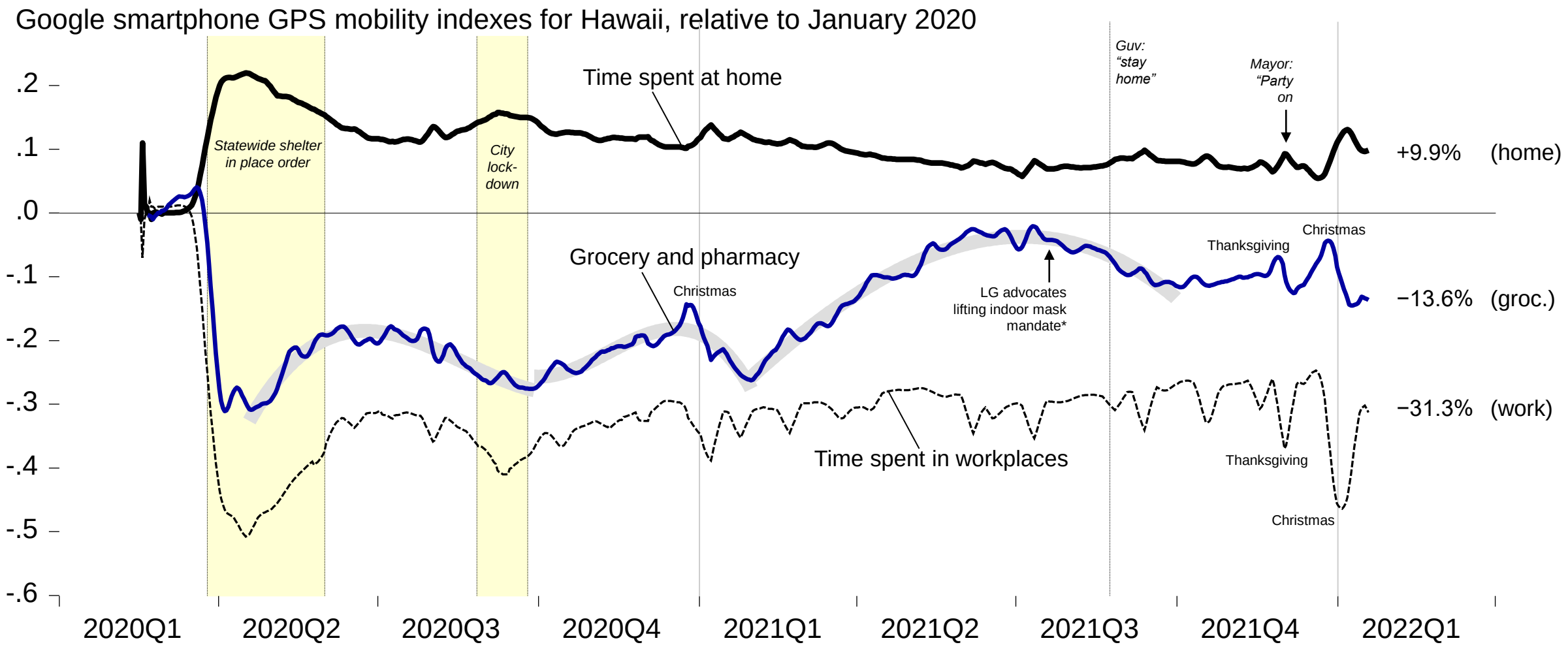

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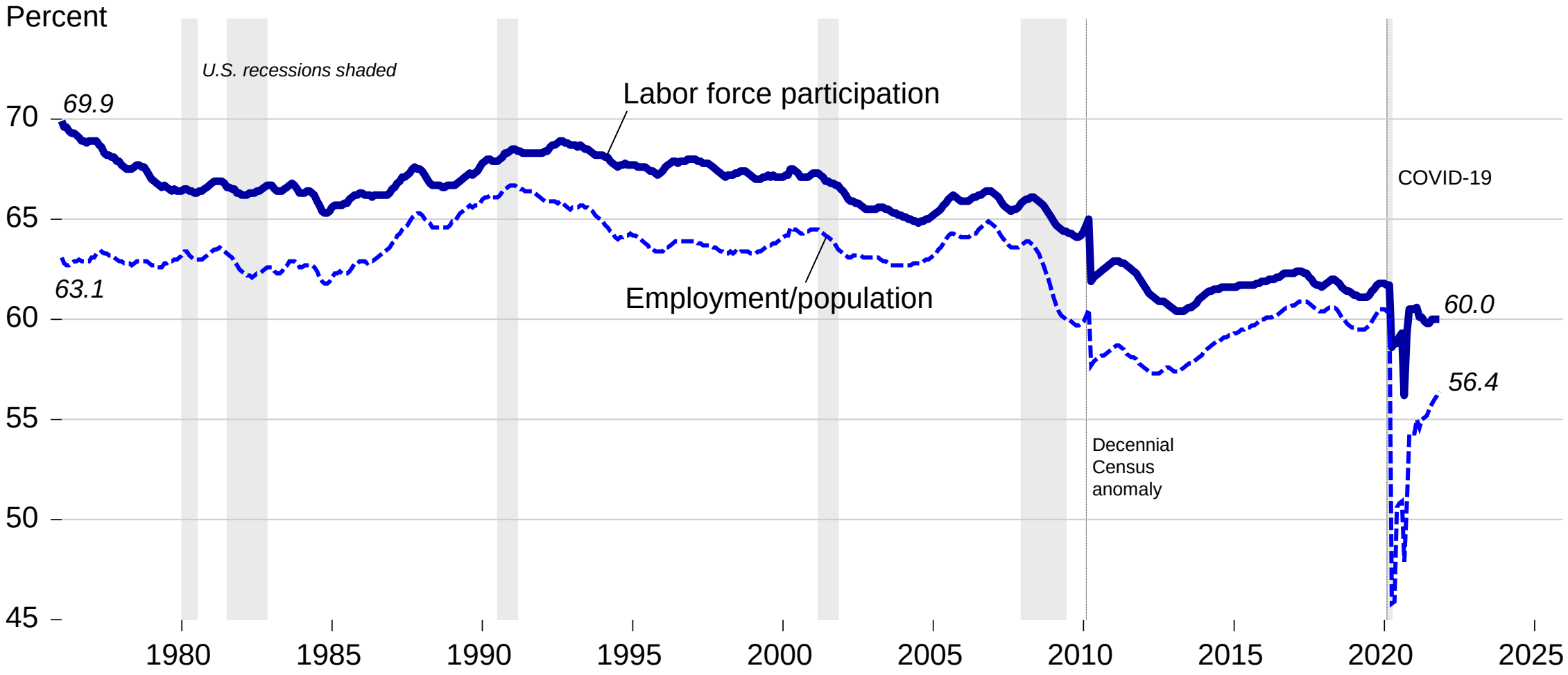
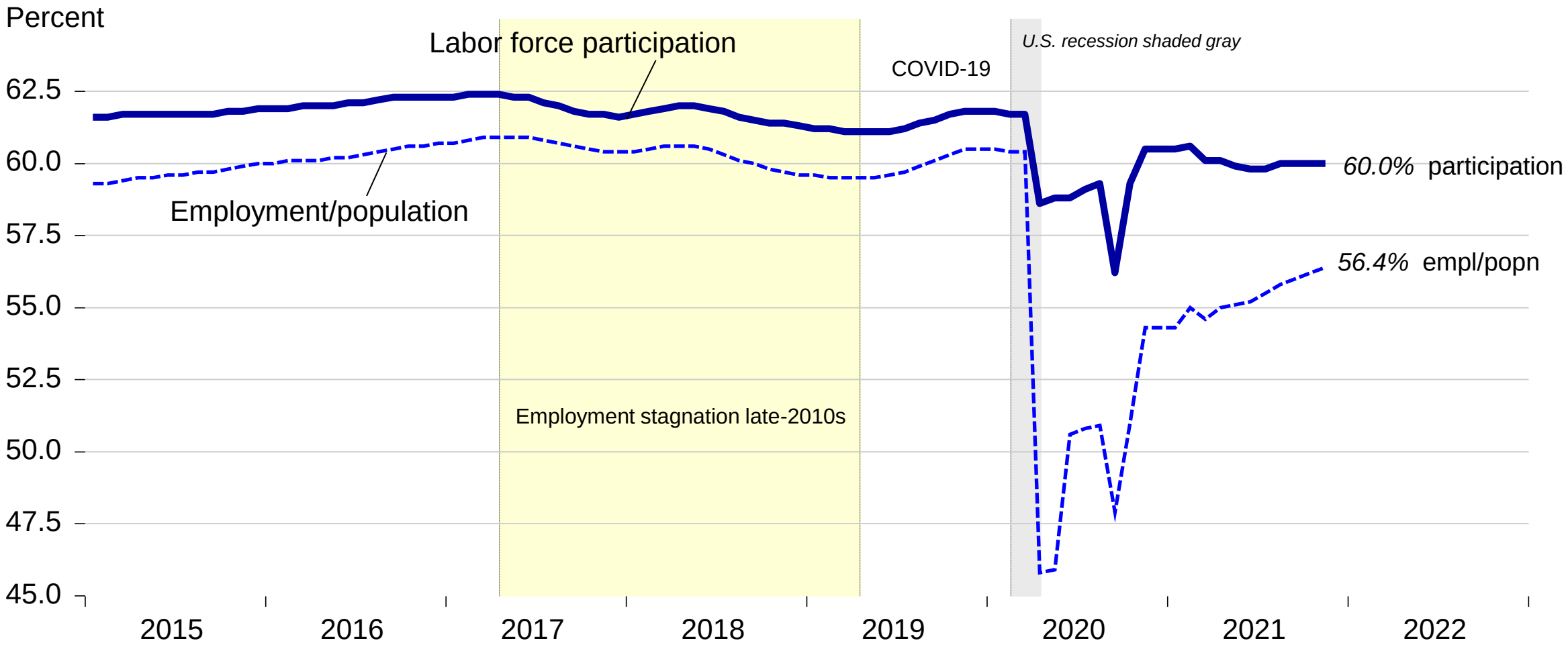
Sources: Opportunity Insights Economic Tracker (https://tracktherecovery.org/) 7-day moving averages of daily GPS mobility data through January 18, 2022, indexed to Jan 3-Feb 6, 2020 from Google COVID-19 Community Mobility Reports (https://raw.githubusercontent.com/OpportunityInsights/EconomicTracker/main/data/Google%20Mobility%20-%20State%20-%20Daily.csv), nonlinear regressions by TZE

Post-Covid Hawaii labor force participation rates, employment rates now below pre-Covid levels, partly from aging, ratcheted downward



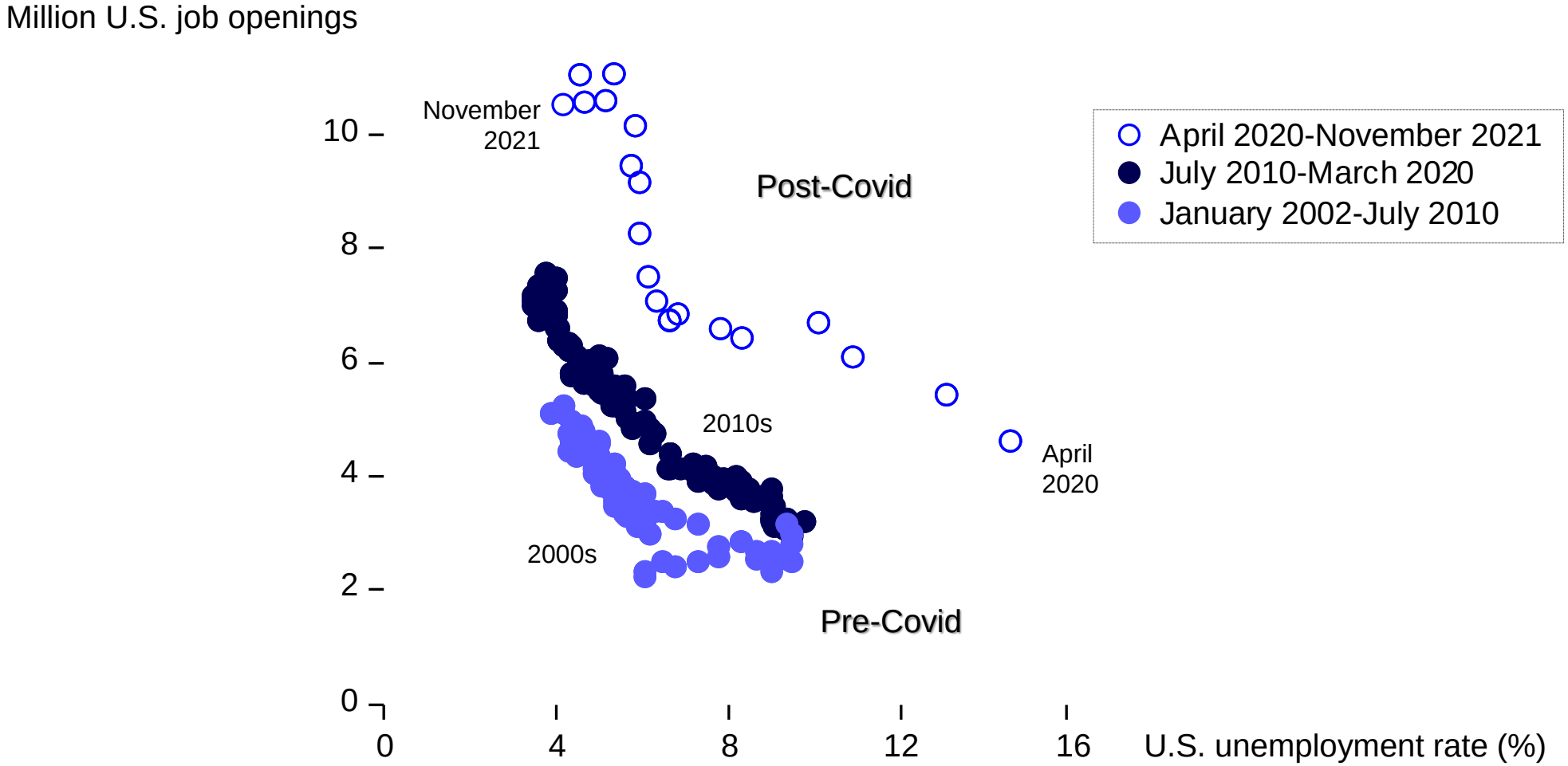
Source: Hawaii DLIR (https://files.hawaii.gov/dbedt/economic/data_reports/DLIR/LFR_LAUS_LF.xls), seasonal adjusted through November 2021(*p*)

Post-Covid Hawaii participation rates, employment rates, stepped down from pre-Covid benchmarks, diminished by similar factors



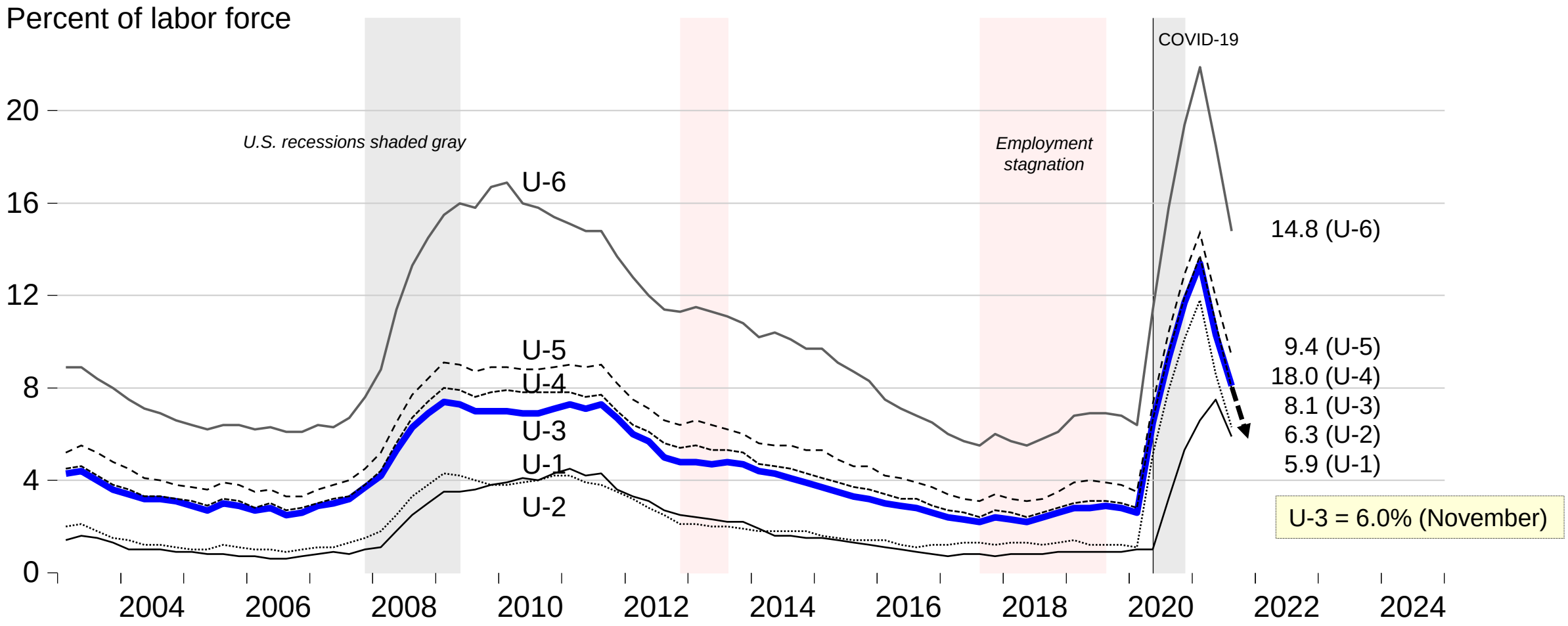
Source: Hawaii DLIR (https://files.hawaii.gov/dbedt/economic/data_reports/DLIR/LFR_LAUS_SADJ.xls), seasonally adjusted through November 2021(*p*).

U.S. Beveridge Curve: higher unemployment ↔ fewer jobs open; post-pandemic ⇒ even *more* openings for given unemployment



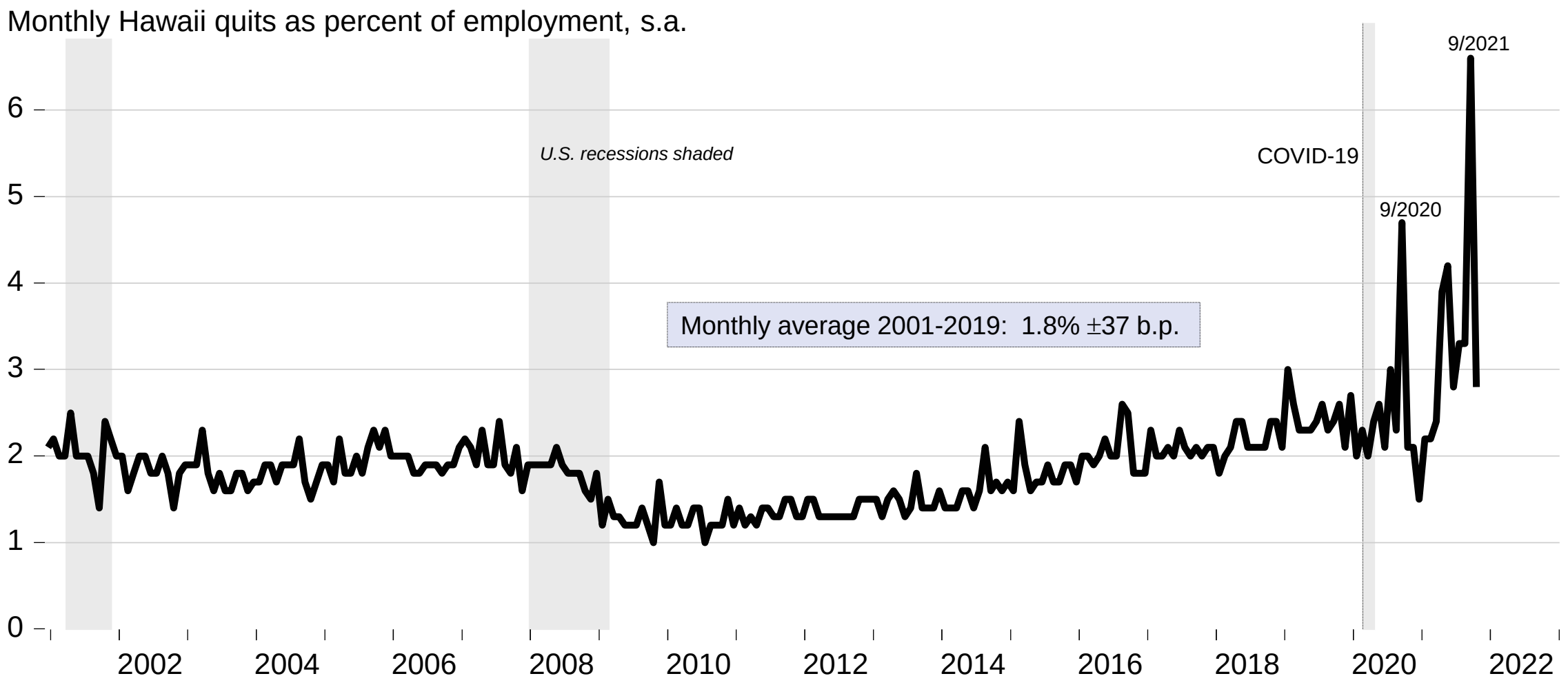
Sources: U.S. Bureau of Labor Statistics, Job Openings: Total Nonfarm [JTSJOL], Unemployment Rate [UNRATE], retrieved from FRED, Federal Reserve Bank of St. Louis; (https://fred.stlouisfed.org/series/JTSJOL, https://fred.stlouisfed.org/series/UNRATE)

Alternative measures of Hawaii labor underutilization, 4-quarter trailing through 2021Q3; U-*i*, *i* < 3, *i* > 3 are uninformative about business cycle



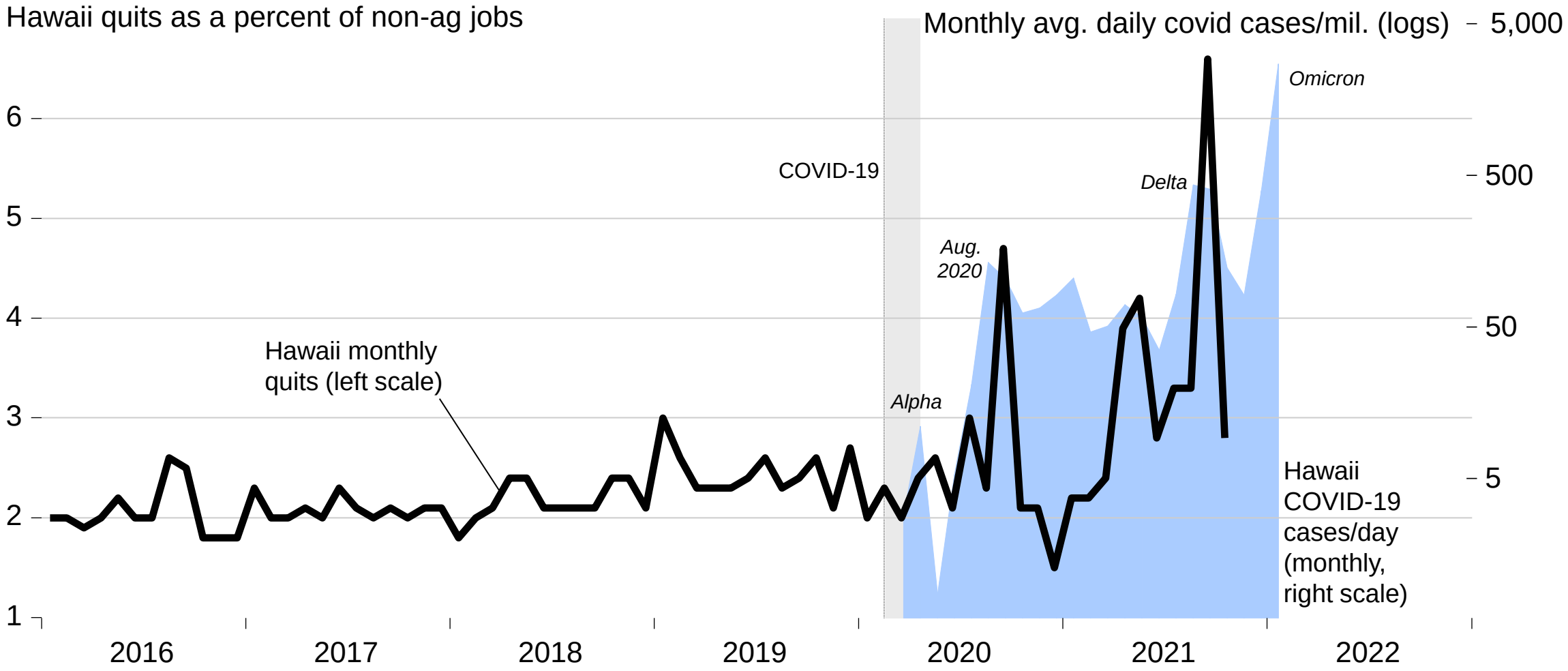
Source: U.S. Bureau of Labor Statistics (monthly) *Alternative Measures of Labor Underutilization for States* (https://www.bls.gov/lau/stalt.htm and https://www.bls.gov/lau/stalt-archived.htm).

Hawaii's Great Resignation—voluntarily separations excl. retirements, transfers to other locations—following summer COVID-19 waves



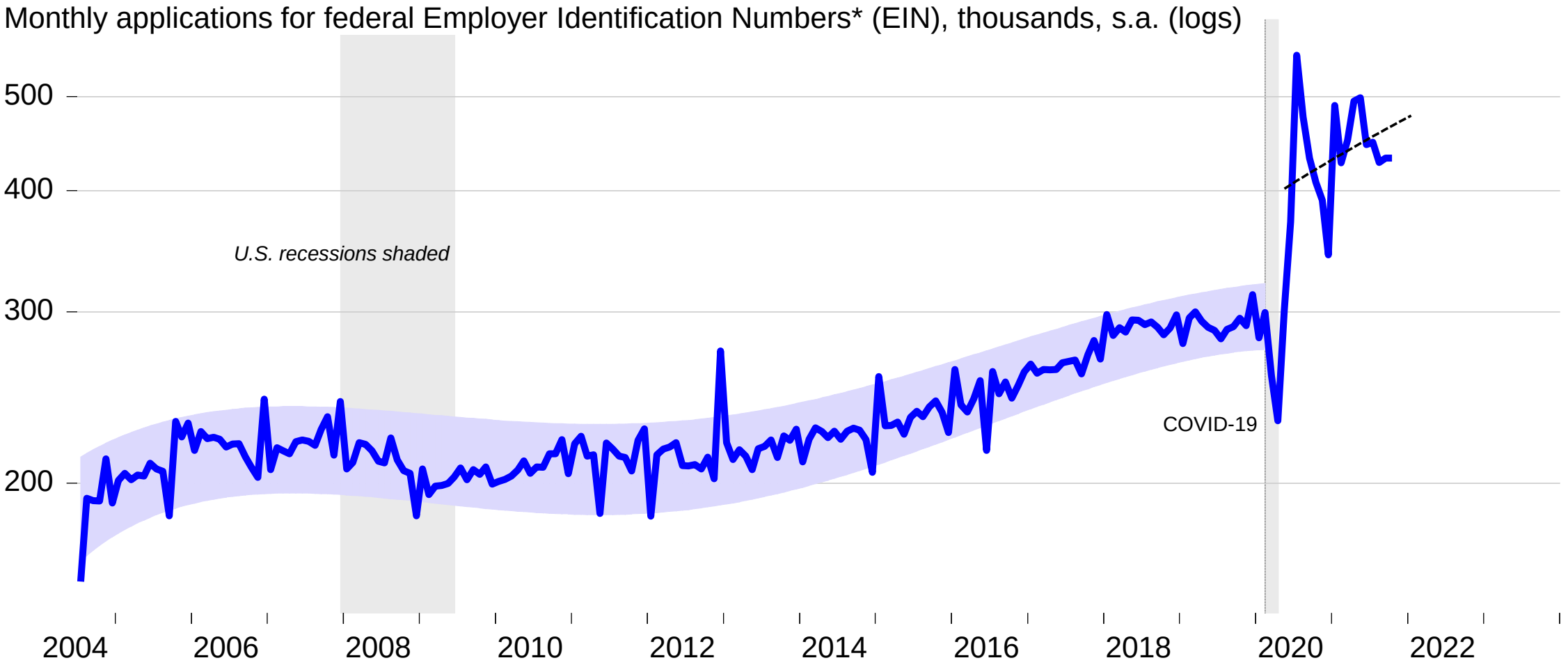
Source: Bureau of Labor Statistics JOLTS (https://www.bls.gov/news.release/jltst.t04.htm, https://www.bls.gov/data/)

Hawaii quits not just at historic highs, they followed each covid wave (data not in yet for Omicron); outlier: Spring 2021 upsurge in quits



Source: Bureau of Labor Statistics JOLTS (https://www.bls.gov/news.release/jltst.t04.htm, https://www.bls.gov/data/)

What do people do after they quit? Census Bureau national business formation statistics suggest some are starting up new enterprises



*Applications for an EIN, except for 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)

Sources: U.S. Census Bureau, Business Applications for All NAICS in the U.S., retrieved from FRED, Federal Reserve Bank of St. Louis (https://fred.stlouisfed.org/series/BABATOTALSAUS); data through October 2021

“Stop enhanced unemployment insurance and people will return to work”

–Every Chamber of Commerce in Murica

“Almost all of the decline in the [labor force] participation rate since the onset of the pandemic is due to changes in job-loss and job-finding rates and thus accounted for by the participation cycle. This is not only true in the aggregate, but also for all of the groups we consider [*i.e.* by sex, age, education, race and ethnicity]. … We show that these similarities in the source of the participation declines across groups is indicative of a broader pattern: The very uneven effect of COVID-19 on different groups in 2020 largely has subsided in 2021.”

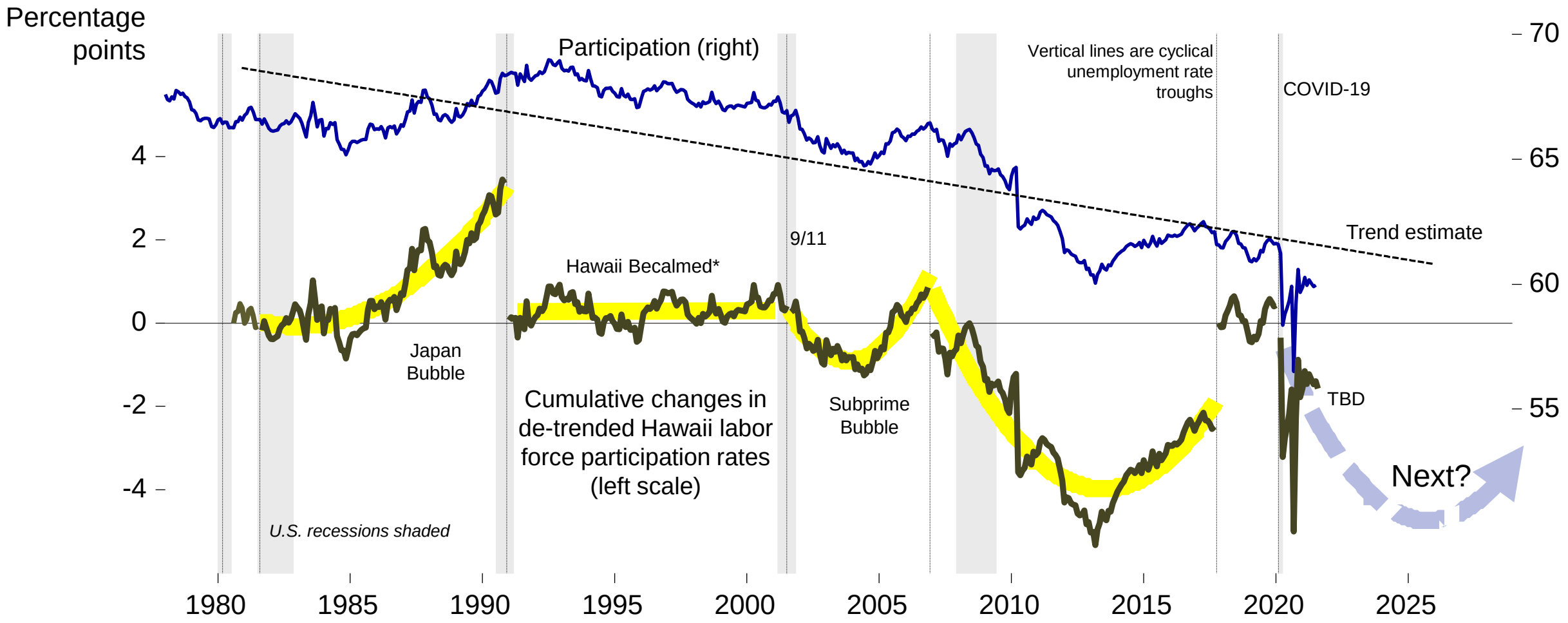
“A longer-run historical comparison … reveals that both the unemployment rate and participation cycle in June 2021 are comparable with those in the early fall of 2014. Using the labor market expansion after 2014 as a baseline, we show that the participation cycle is likely to lag the recovery in the unemployment rate in coming years, just like it did in previous recoveries.”

–Hobijn and Şahin (September 2021) “Maximum Employment and the Participation Cycle”

Note: “The measurement of the participation cycle does not require an estimate of the trend participation rate” (Hobijn and Şahin (2021)) so the illustration in the next slide is for heuristic purposes, only

Source: Bart Hobijn, Arizona State University and FRB San Francisco, and Ayşegül Şahin,University of Texas at Austin and NBER (September 4, 2021) “Maximum Employment and the Participation Cycle,” working paper prepared for the 2021 Jackson Hole Economic Policy Symposium (https://www.kansascityfed.org/documents/8361/JH2021HobijnSahinKCFedVersion.pdf).

Procyclical movement in de-trended *Hawaii* labor force participation rates (%), zeroed at each unemployment rate trough (vertical lines)



*Christopher Grandy (2002), *Hawaii Becalmed: Economic Lessons of the 1990s,* University of Hawaii Press

Source: Hawaii DLIR (https://files.hawaii.gov/dbedt/economic/data_reports/DLIR/LFR_LAUS_LF.xls), seasonal adjusted using X-13 ARIMA filter, de-trended from January 1976 – June 2017 and projected through 2026, with interval nonlinear regressions from trough-to-trough unemployment rates 1981M08-1990M12, 2006M12-2006M12, and 2007M01- 2017M10 by TZE.

Remote work is here to stay

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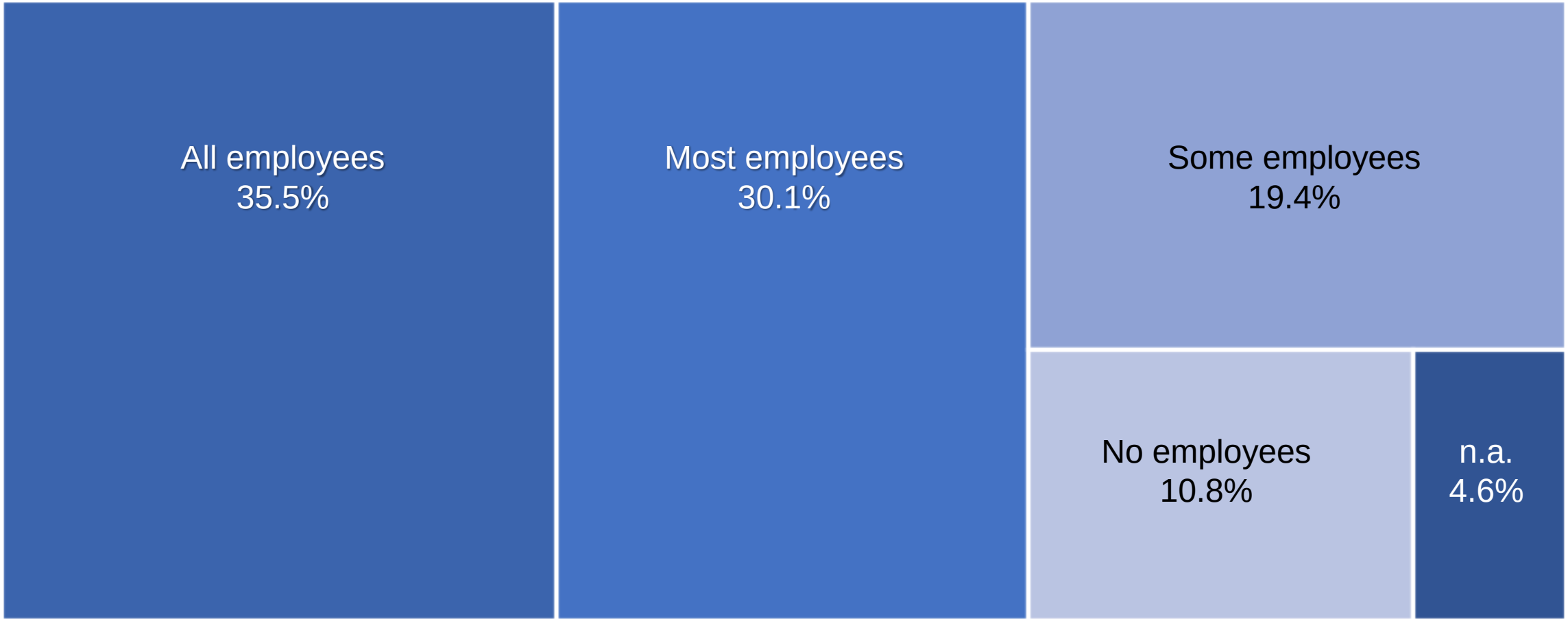
BLS averages for 2017-2018 from American Time Use Survey: small pre-Covid workforce proportions worked from home: days/week

Source: U.S. Bureau of Labor Statistics, *American Time Use Survey* (https://www.bls.gov/news/release/flex2.t03.htm).

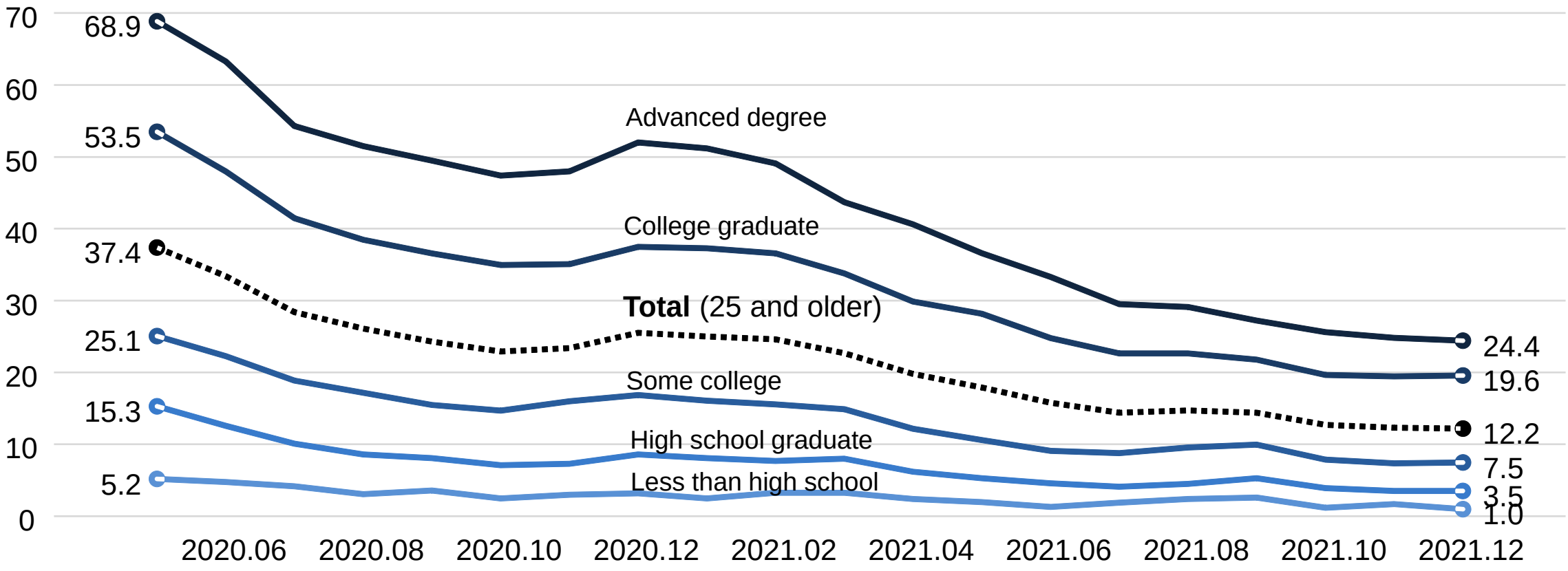
January 2021 NABE member survey of firms: widespread adoption; "Did your company implement new work from home policies?"



Source: National Association for Business Economics (https://nabe.com/NABE/Surveys/Business_Conditions_Surveys/January_2021_Business_Conditions_Survey_Summary.aspx); survey question asked of respondents January 4-12, 2021 was, "Did your company implement new work from home policies due to the health crisis?"

U.S. workers who teleworked or worked at home for pay specifically because of COVID-19, excluding those who did pre-pandemic* (BLS)

Percent of U.S. workers who teleworked because of COVID-19

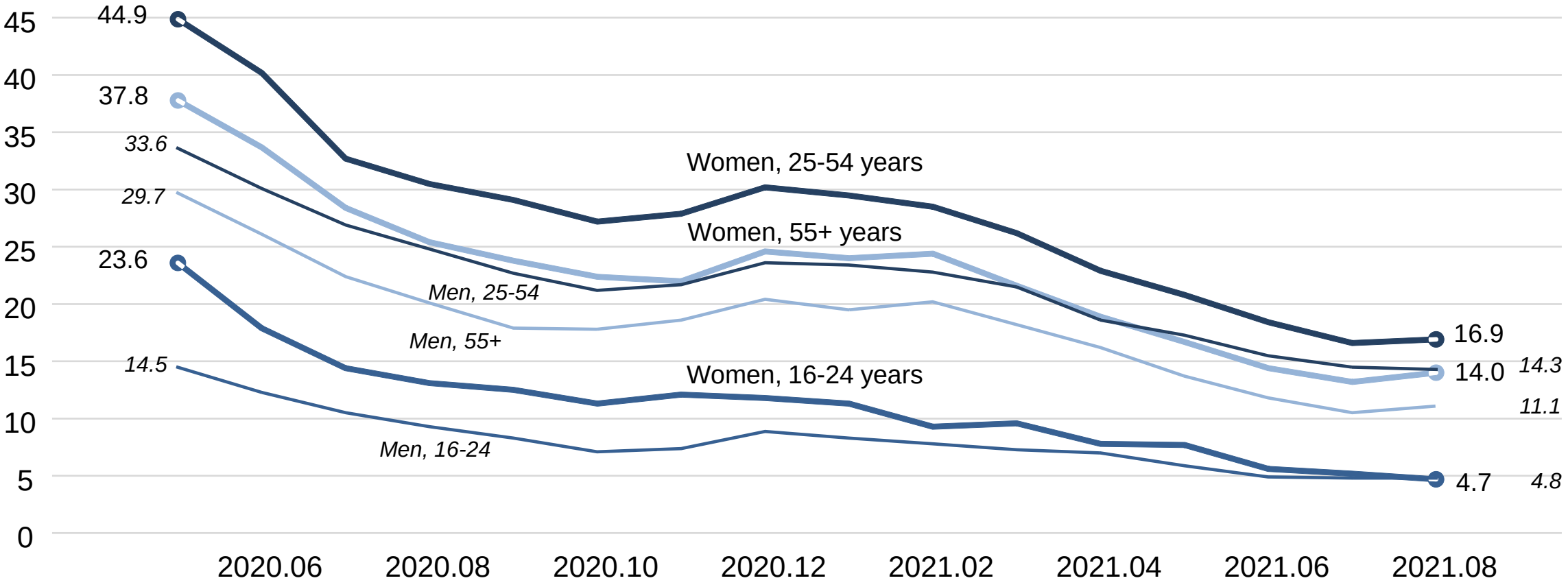


*Or those whose telework was unrelated to the pandemic.

Source: U.S. Bureau of Labor Statistics (monthly) through December 2021; supplemental data measuring the effects of the coronavirus (COVID-19) pandemic on the labor market (https://www.bls.gov/cps/effects-of-the-coronavirus-covid-19-pandemic.htm and https://www.bls.gov/web/empsit/covid19-table1.xlsx).

U.S. workers who teleworked or worked at home for pay specifically because of COVID-19, excluding those who did pre-pandemic* (BLS)

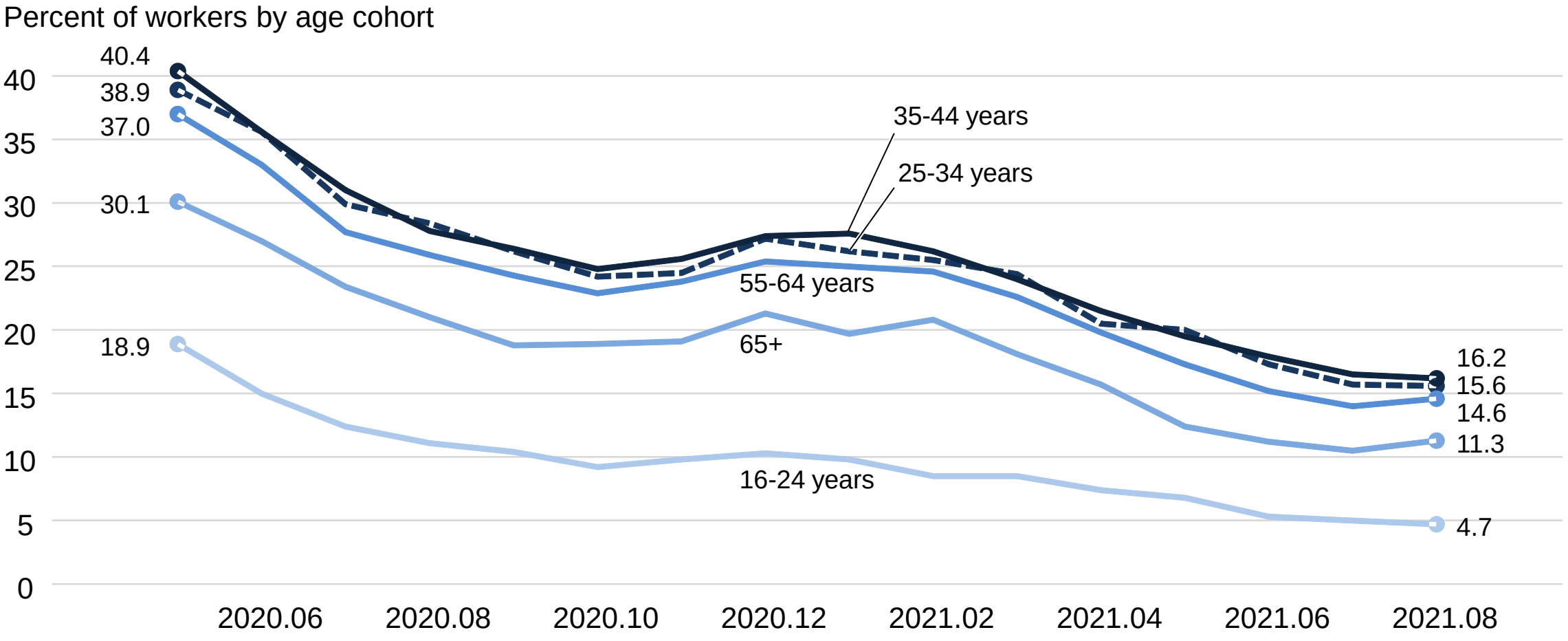
Percent of U.S. workers who teleworked because of COVID-19 by gender



*Or those whose telework was unrelated to the pandemic.

Source: U.S. Bureau of Labor Statistics (monthly) through August 2021; supplemental data measuring the effects of the coronavirus (COVID-19) pandemic on the labor market (https://www.bls.gov/cps/effects-of-the-coronavirus-covid-19-pandemic.htm and https://www.bls.gov/web/empsit/covid19-table1.xlsx).

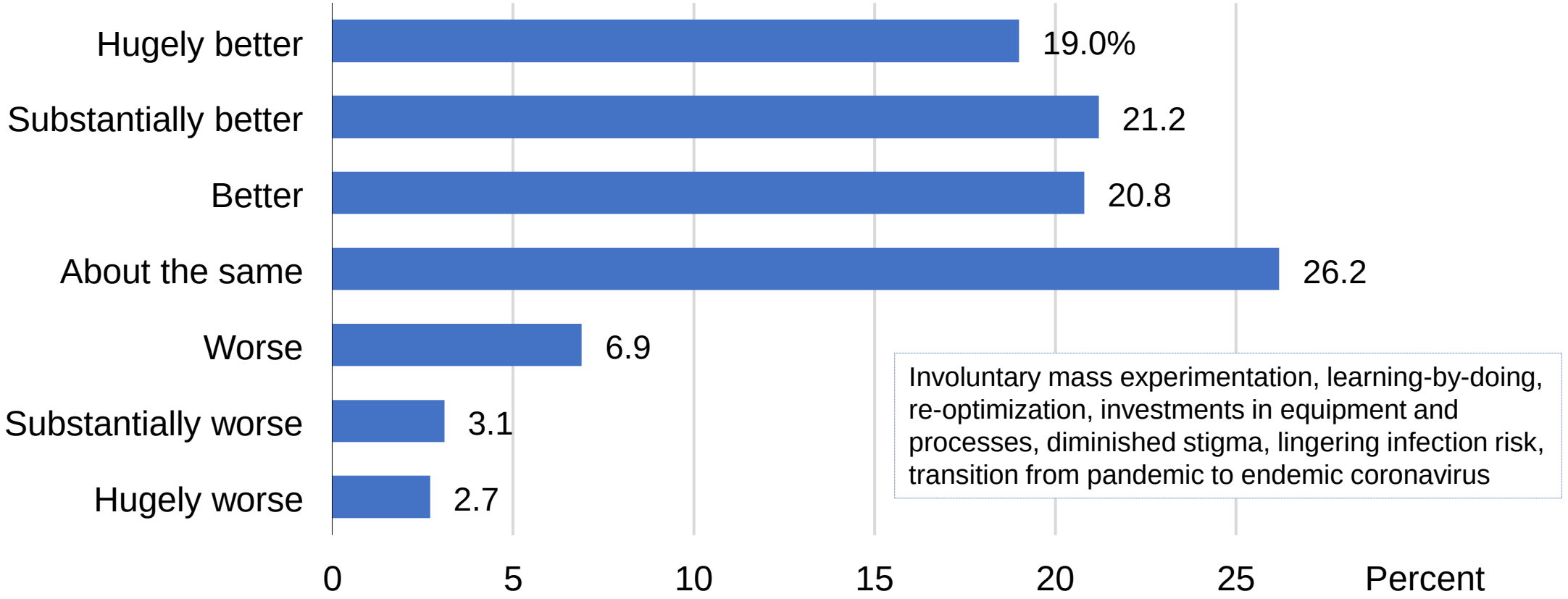
U.S. workers who teleworked or worked at home for pay specifically because of COVID-19, excluding those who did pre-pandemic* (BLS)



*Or those whose telework was unrelated to the pandemic.

Source: U.S. Bureau of Labor Statistics (monthly) through August 2021; supplemental data measuring the effects of the coronavirus (COVID-19) pandemic on the labor market (https://www.bls.gov/cps/effects-of-the-coronavirus-covid-19-pandemic.htm and https://www.bls.gov/web/empsit/covid19-table1.xlsx).

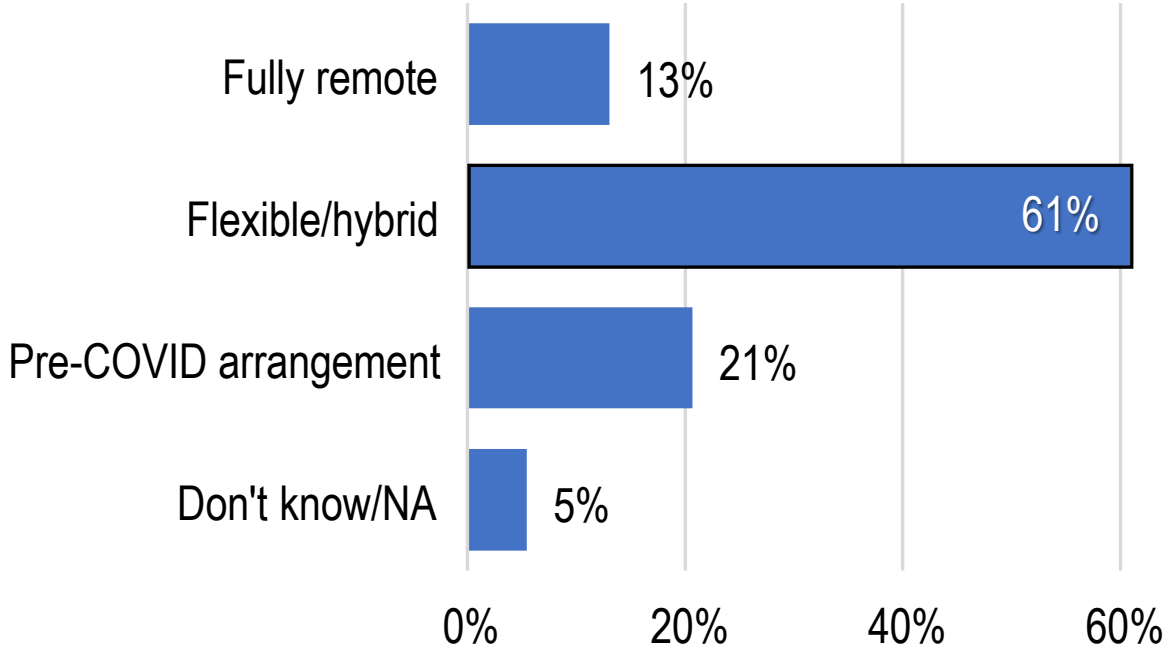
Survey of firms: "Compared to expectations before Covid (in 2019) how has working from home turned out?" (4 survey waves, 2020)



n = 2,500 (May, July, September/October 2020), 5,000 (August)

Source: Nicholas Bloom on working from home: will it persist? (https://www.youtube.com/watch?v=N8_rvy-hqUs), Princeton Bendheim Center for Finance, working paper by Jose Maria Barrero, Nicholas Bloom, and Stephen J. Davis (January 2021), "Why Working From Home Will Stick," https://nbloom.people.stanford.edu/sites/g/files/sbiybj4746/f/wfh_will_stick_v5.pdf.

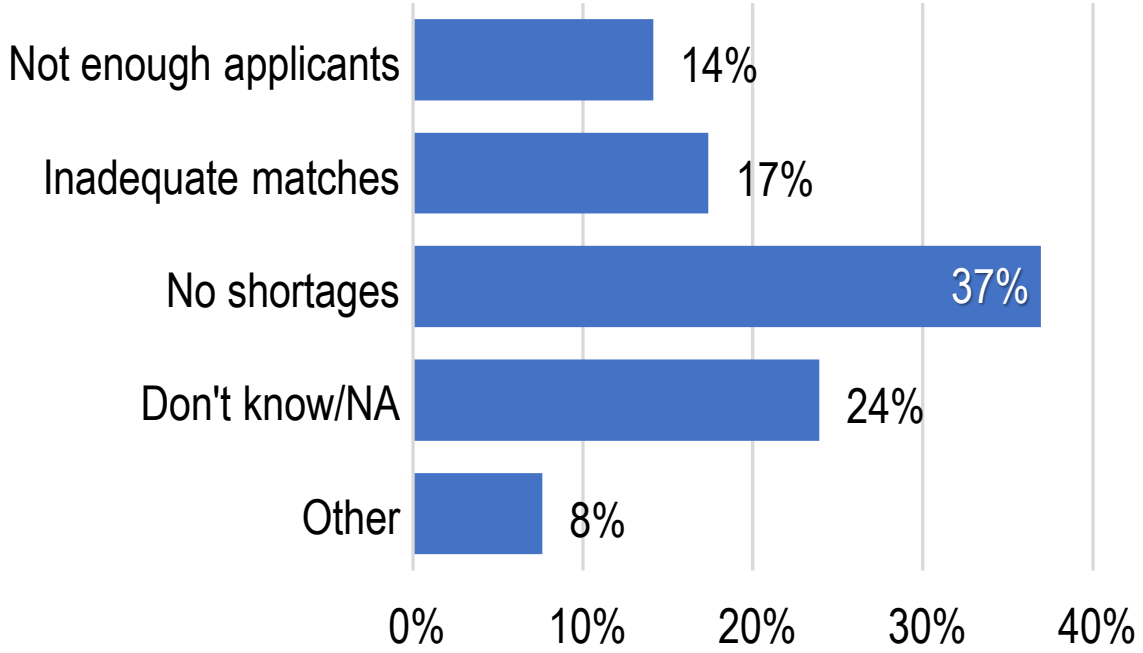
July 2021 NABE Business Conditions survey (of firms): 66% higher sales, 3% lower sales; 53% < 100 employees, 35% > 1,000 employees



Post-Covid Work From Home?

Q. Are work-from-home policies in your company going to remain in place after COVID? If so to what degree?

n = 92



Worker shortages?

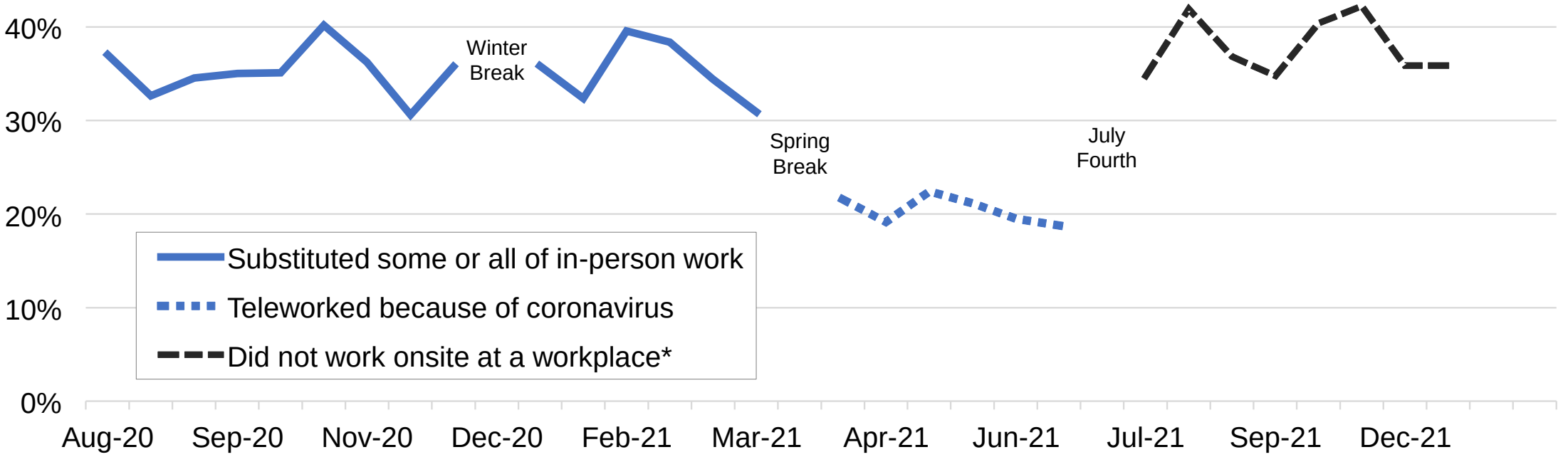
Q. Is your company experiencing shortages of workers? If so, what are the reasons?

n = 92

Source: National Association for Business Economics (NABE®) member survey (July 2021) (https://nabe.com/NABE/Surveys/Business_Conditions_Surveys/July-2021-Business-Conditions-Survey-Summary.aspx).

Household pulse data* *for Hawaii* show that ≥ 1/5 of respondents live households in which at least one adult teleworked because of Covid

Hawaii "household pulse" (Census survey) data: percentages of households



* Surveys before April 2021 define "Percentage of adults living in households where at least one adult has substituted some or all of their typical in-person work for telework because of the coronavirus pandemic," from April-June 2021 "Percentage of adults living in households where at least one adult has teleworked because of the coronavirus pandemic in the last 7 days," and beginning in July 2021, "Percentage of adults in households where someone worked onsite at a workplace in the last 7 days (*i.e.* 64.1% between December 1-13, 2021)."

Source: U.S. Bureau of the Census, Household Pulse Survey (https://www.census.gov/programs-surveys/household-pulse-survey.html)

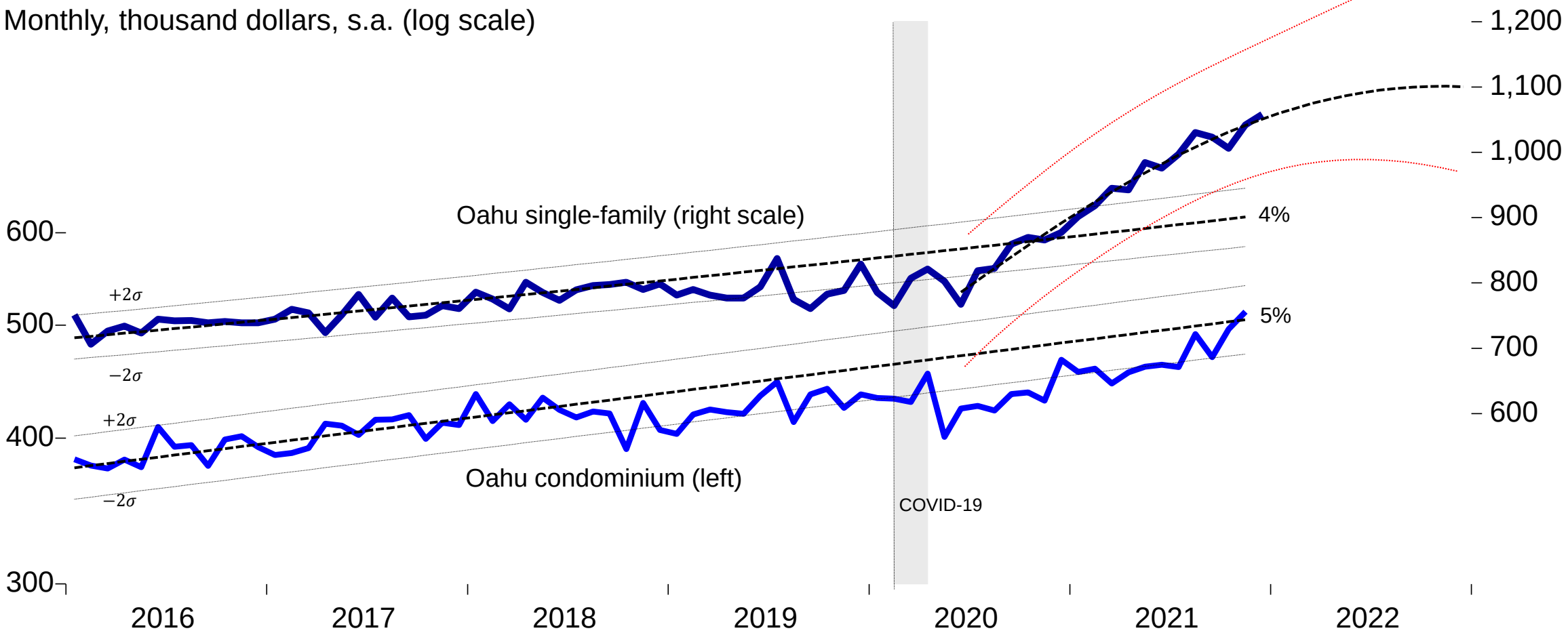
Comments of BLS Commissioner William Beach on which new data "drove a lot of interest and traffic; what really seemed to take off?"

- "I'm beginning to think that this pandemic…has accelerated structural change in the economy. …You can sense it in the distributed platform as a way of working—telework. Automation, global value chains had already…wreaked havoc with the workplace but I think the workplace is changing faster today than at any time since the industrial revolution.
- The questions we put out had two sides to them. One side measure the pandemic. …The other side of that was to take a look at the way that the workplace itself was restructuring. So, we've gone from 36 percent at telework in the payroll employment to about 14 percent and it's leveling off. Well, if it stays at 14 percent that's a very serious, high percentage.
- We did surveys on workplace safety, on sick leave, all of that's changing too as the workplace changes. So, I think the research question coming out of this at least for the Labor Department will be to say:
  - How has the structure of the workplace changed?
  - How has the structure of labor relations changed?

  because of the pandemic.
- 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. And on this point 86 percent now of payroll employment is in the services-providing sector…and that really accelerated in the last five years. So, that's another indication that we've got some permanent changes going on."

Source: 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), transcribed by TZ Economics.

Bubblicious Oahu single-family home prices after COVID-19, not so much condos (yet), suggesting source: demand-side *preference* shift



Sources: Honolulu Board of Realtors, Hawaii DBEDT (http://dbedt.hawaii.gov/economic/mei/), monthly data through December 2021, seasonal adjustment using Census X-13 filter, log-linear trend regressions mid-2012 through mid-2018 depicted with two standard-error bandwidths, nonlinear single-family home price regression, June 2020 through December 2021 and projection through December 2022

What do valuation dynamics tell us about pre-/post-Covid markets?

- Common characteristics of asset pricing bubbles: (*a*) detachment from economic fundamentals; (*b*) information asymmetry; (*c*) herding; (*d*) expectations of *others*' expectations
- Currently, Hawaii housing is not experiencing a meme bubble (GME, AMC, cryptocurrencies)
  1. Fundamentals consistent: low interest rates, economic recovery, strong balance sheets
  2. Transitory biological event; investors looking to longer-lived assets as safe havens
  3. Covid "Donut Effect": 2020 housing demand moving to suburbs, exurbs, Zoomtowns
  4. Backwash "Triumph of the City": 2021 *relative* prices in urban core now attractive
  5. Inelastic supply / regulatory barriers: fewer for sale listings, building (verb) constrained
- Novel coronavirus SARS-Cov-2 $\Rightarrow$ novel factor in housing, commercial RE, labor markets
  1. Tourists absent for 6-12 months—zero vacation rental cash flow (drop in condo demand)
  2. Remote work / work-from-home (WFH) new source of SF demand—vagabond workers
  3. Exacerbating demographic change and net out-migration: medium- to longer-term factors

See: Nicholas Bloom (Stanford): https://bcf.princeton.edu/events/nick-bloom-working-from-home-will-it-persist/; Edward Glaeser (Harvard): https://bcf.princeton.edu/events/edward-glaeser-on-triumph-of-the-city-the-future-of-urban-life-and-work/

Appendix: what we build and don't build now

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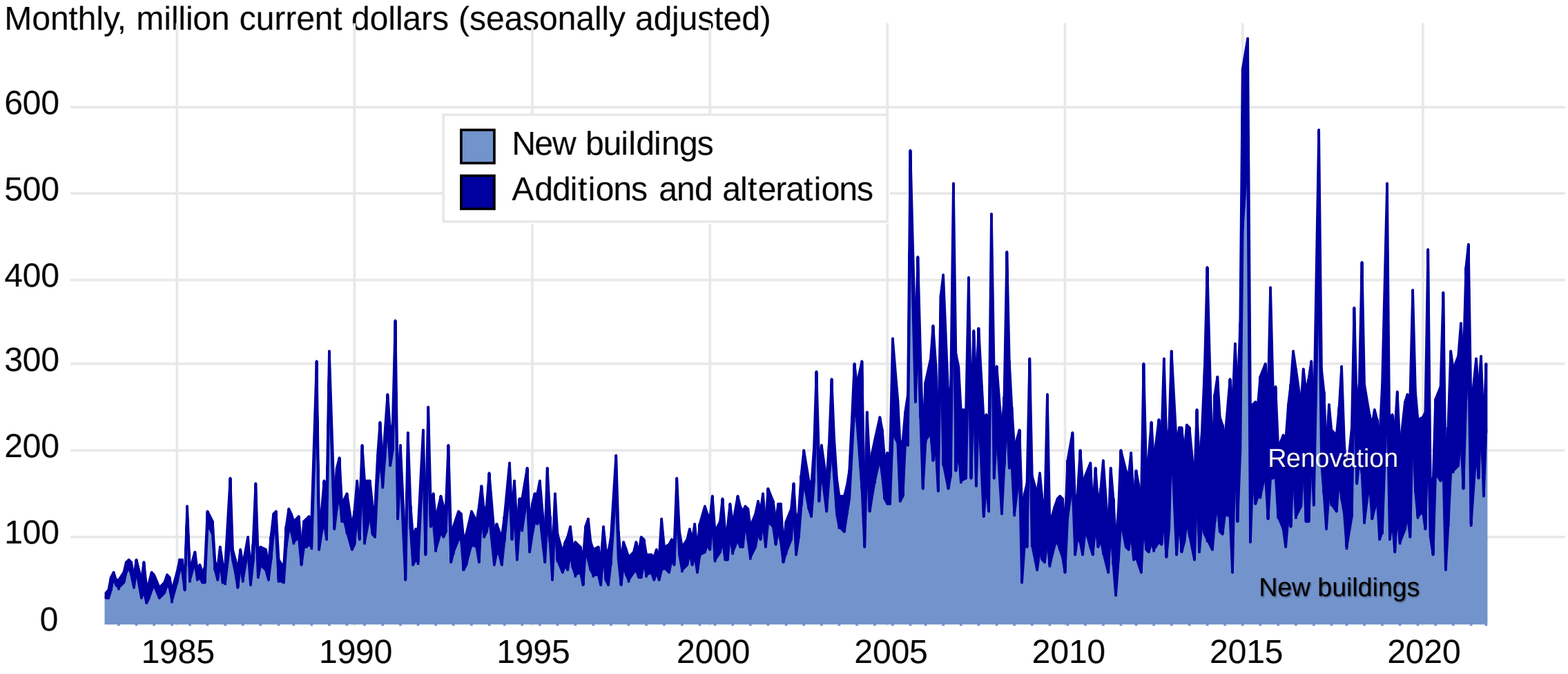
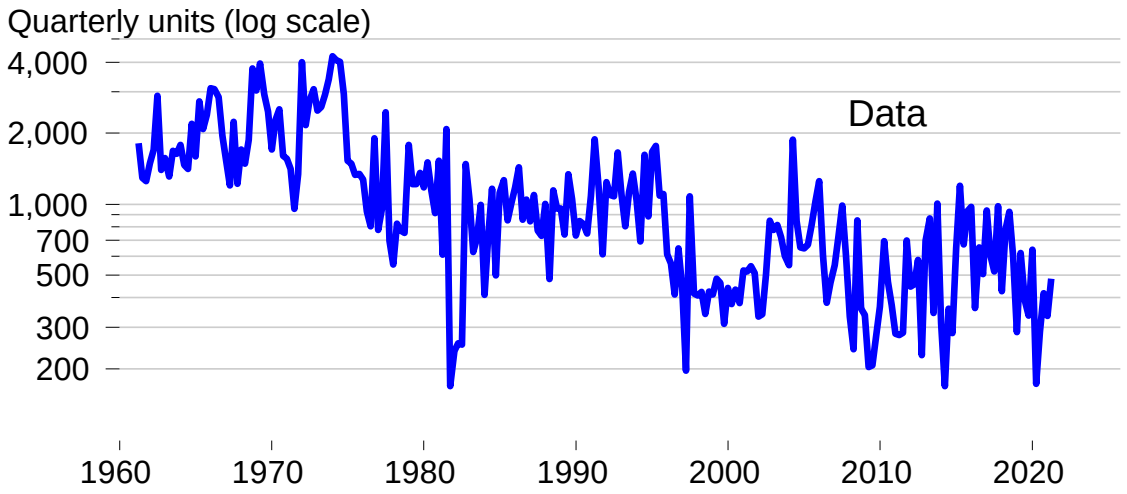
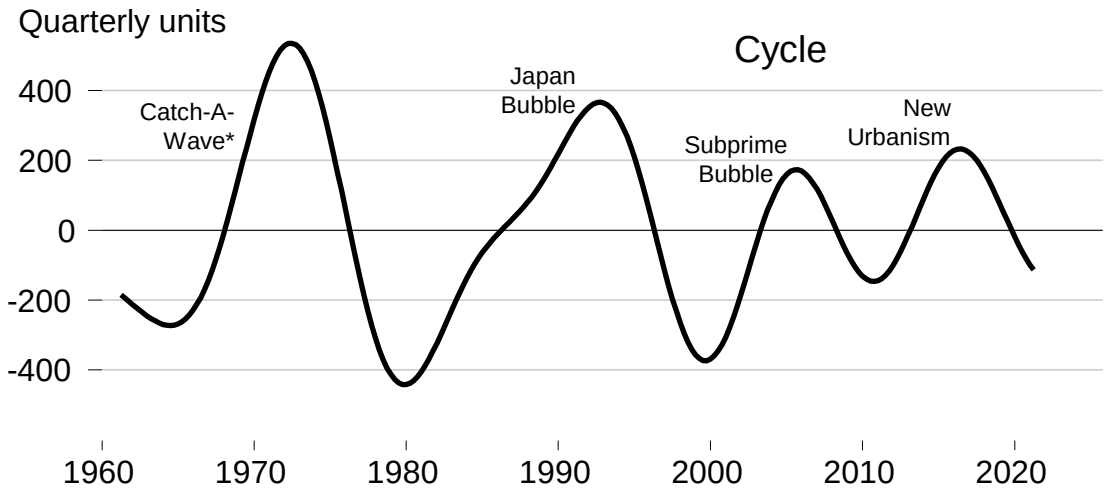
As economic growth, and growth of private capital formation, levelled off, the private construction *mix* shifted towards renovation



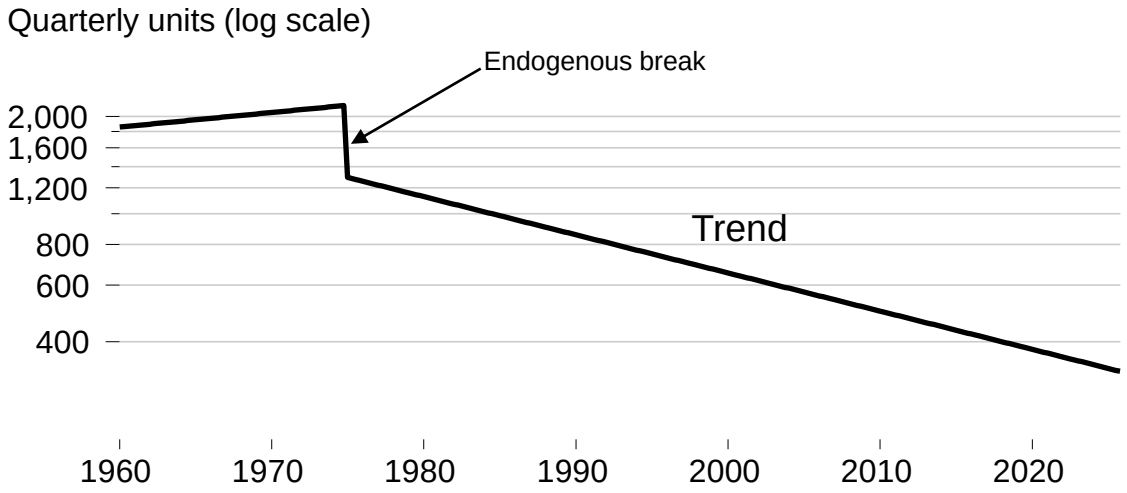
Sources: County building departments, Hawaii DBEDT (http://dbedt.hawaii.gov/economic/mei/); monthly building permit values (stacked) through November 2021

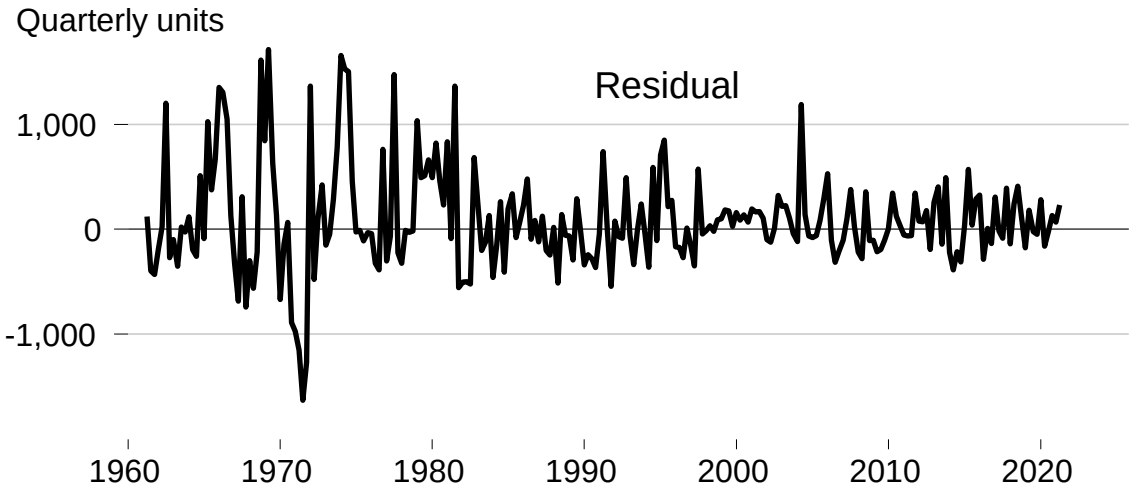
Decomposition of Oahu newly-permitted residential units, 1961-2020





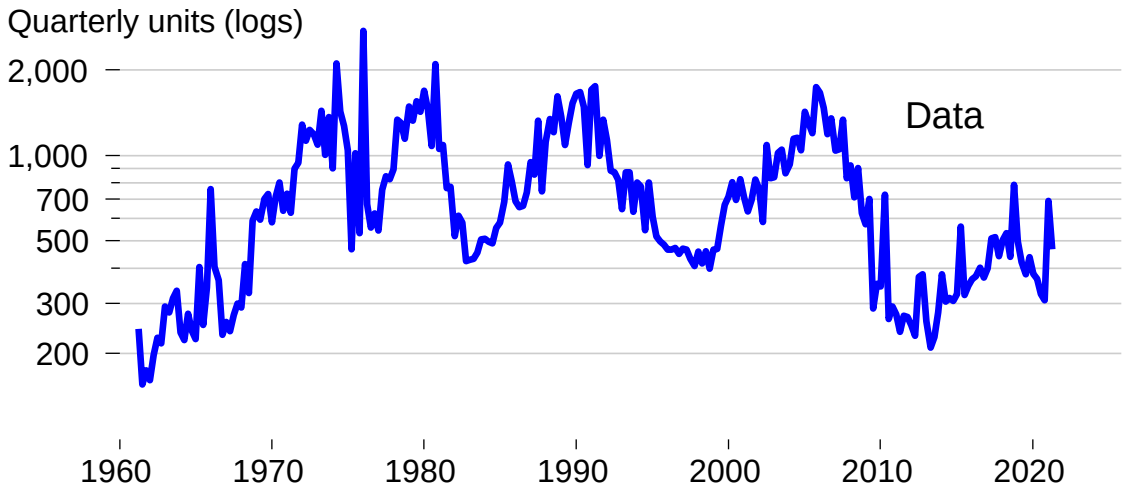
* Tom Coffman (1973), *Catch A Wave: A Case Study of Hawaii's New Politics,* UH Press

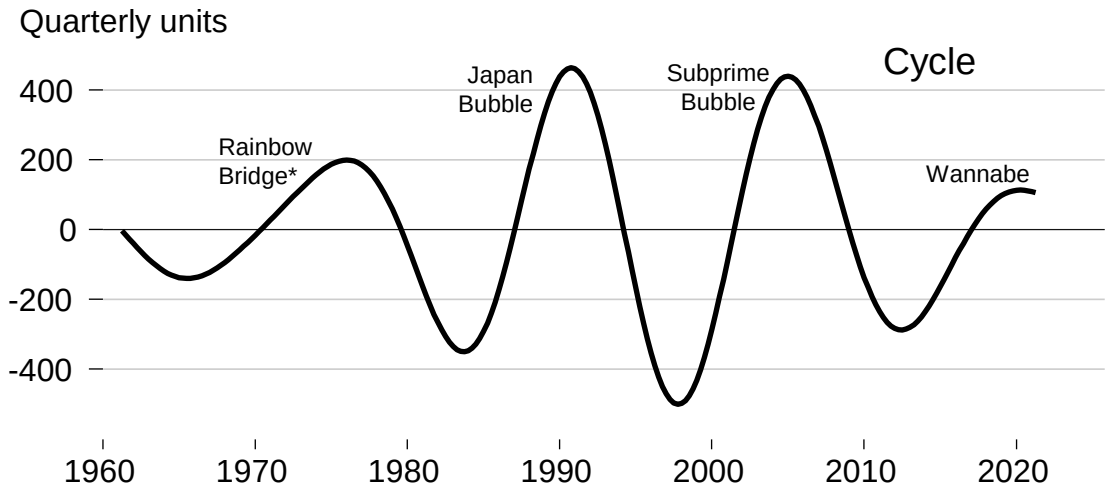




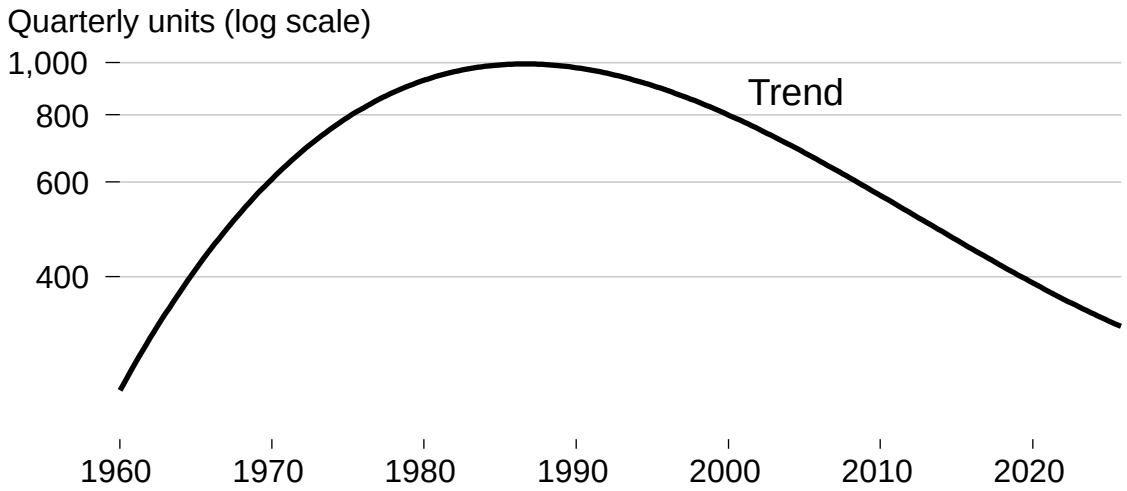
Sources: County building department, Bank of Hawaii, Hawaii DBEDT (http://dbedt.hawaii.gov/economic/qser/selected-county-tables/); seasonal adjustment using Census X-13 ARIMA filter, decomposition using Christiano-Fitzgerald asymmetric band-pass frequency filter assuming first-difference stationarity and short:long cycle periods of 40:120 quarters, and trend extraction with nonlinear regression with endogenous break by TZE.

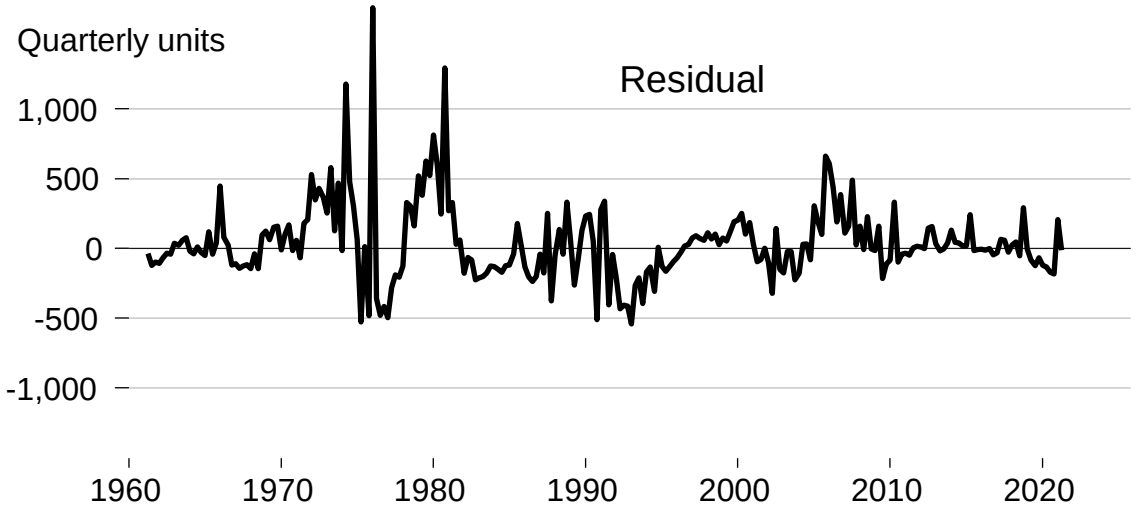
Decomposition of Neighbor Island newly-permitted residential units, 1961-2020





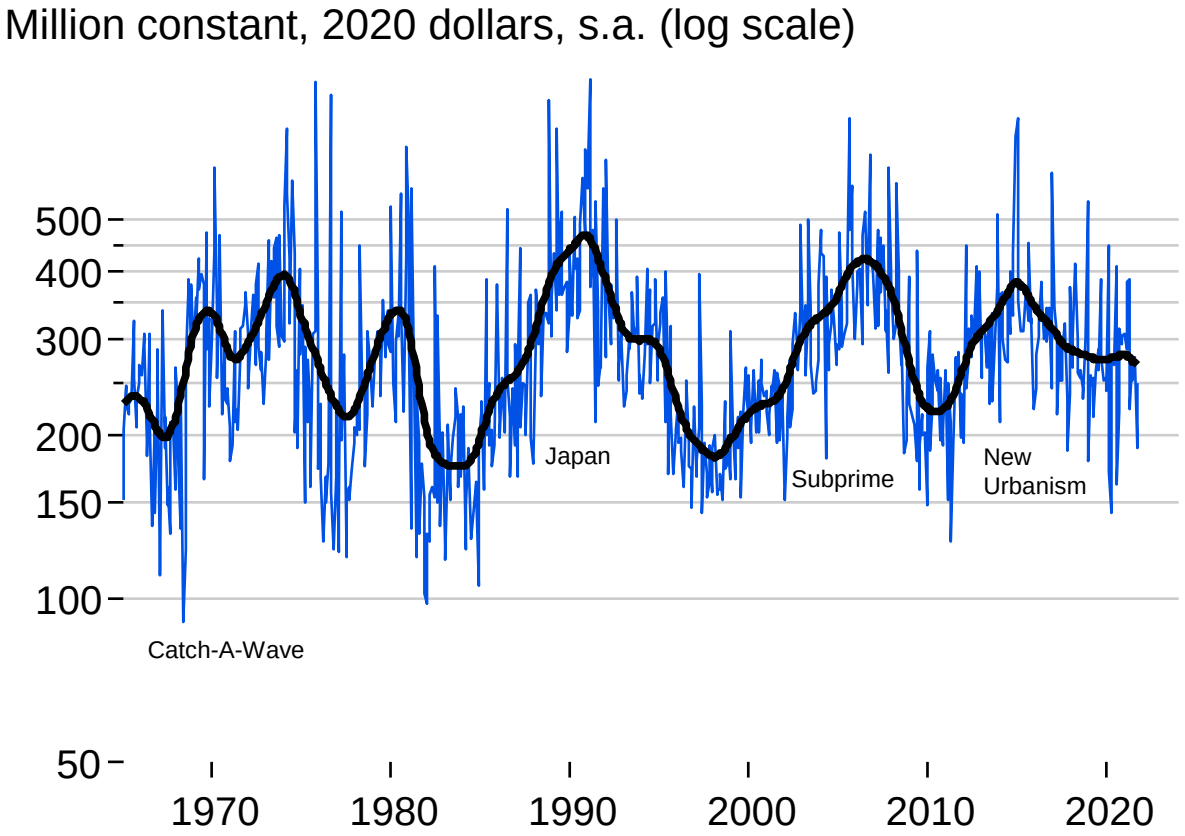
* Jimi Hendrix https://www.youtube.com/watch?v=qFfnlYbFEiE

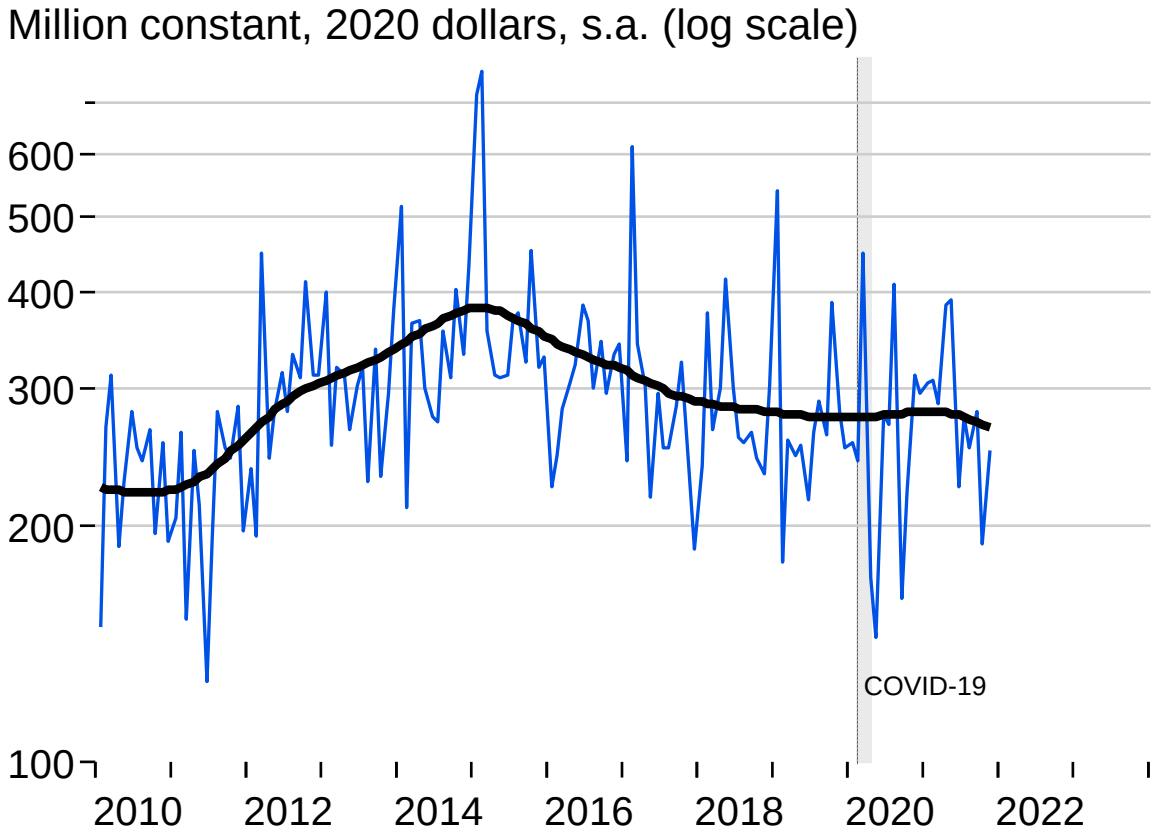




Sources: County building departments, Bank of Hawaii, Hawaii DBEDT (http://dbedt.hawaii.gov/economic/qser/selected-county-tables/); seasonal adjustment using Census X-13 ARIMA filter, decomposition using Christiano-Fitzgerald asymmetric band-pass frequency filter assuming first-difference stationarity and short:long cycle periods of 40:100 quarters, and trend extraction with nonlinear regression by TZ Economics.

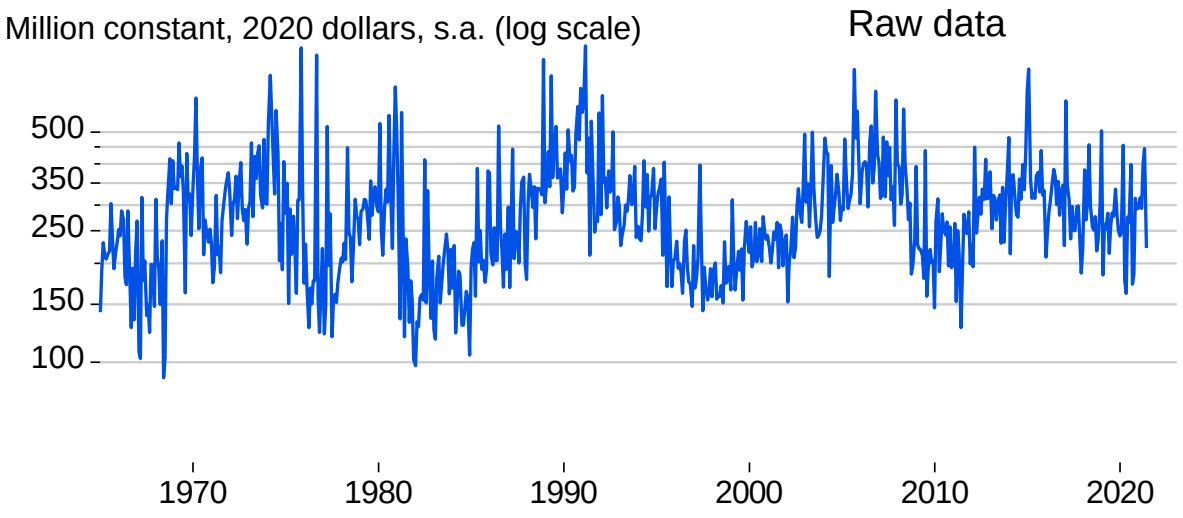
So where's the private construction? Holding its own, but no growth: constant-dollar Hawaii monthly private building permit values, trends

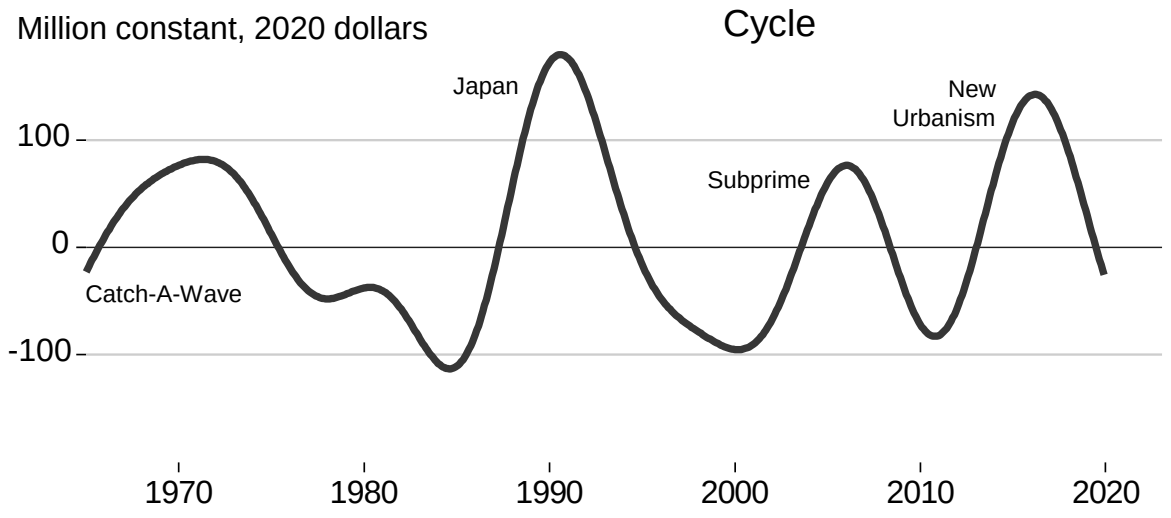


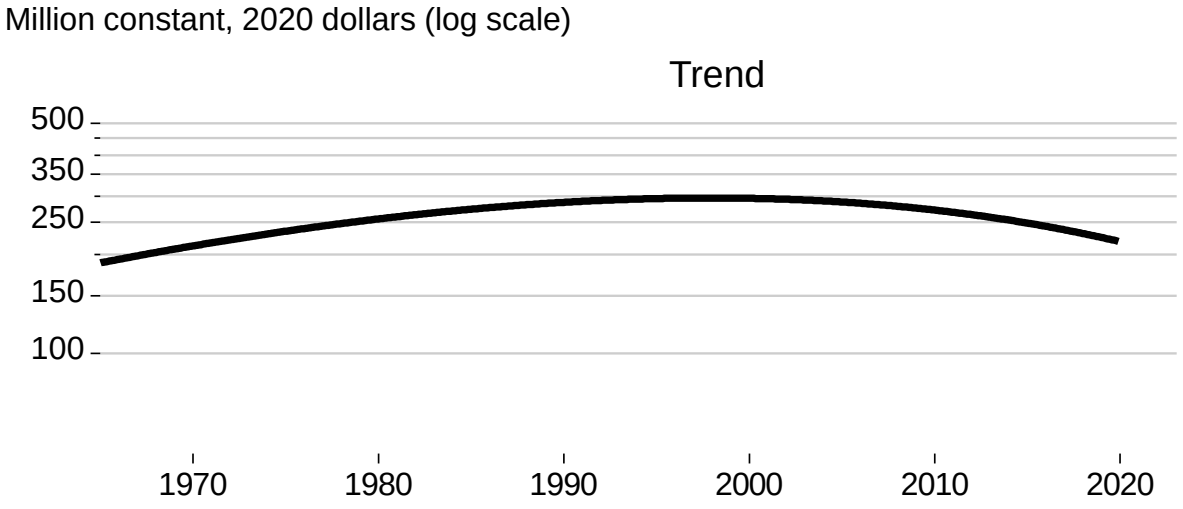


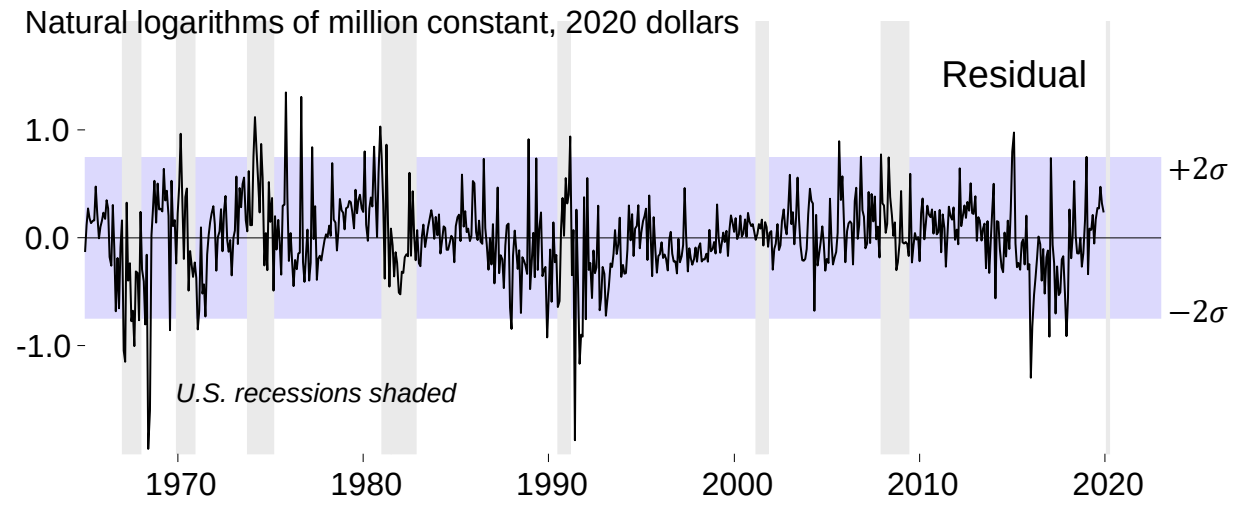
Sources: County building departments, Bank of Hawaii, Hawaii DBEDT (http://dbedt.hawaii.gov/economic/mei/), U.S. Bureau of the Census (https://www.census.gov/construction/cpi/); seasonal adjustment using Census X-13 ARIMA filter, trend extraction using Hodrick-Prescott filter ($\lambda = 2{,}000$).

Decomposition of statewide real building permit values 1965 - June 2021: same old same old



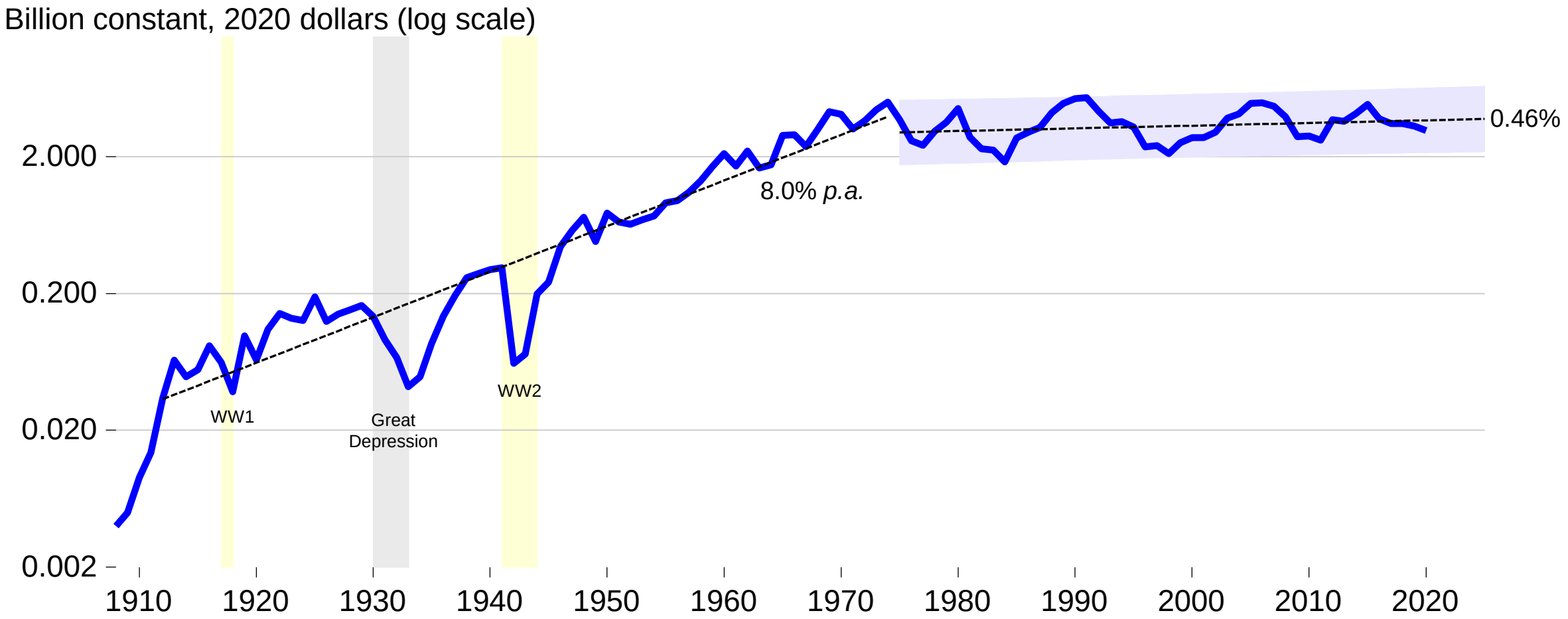






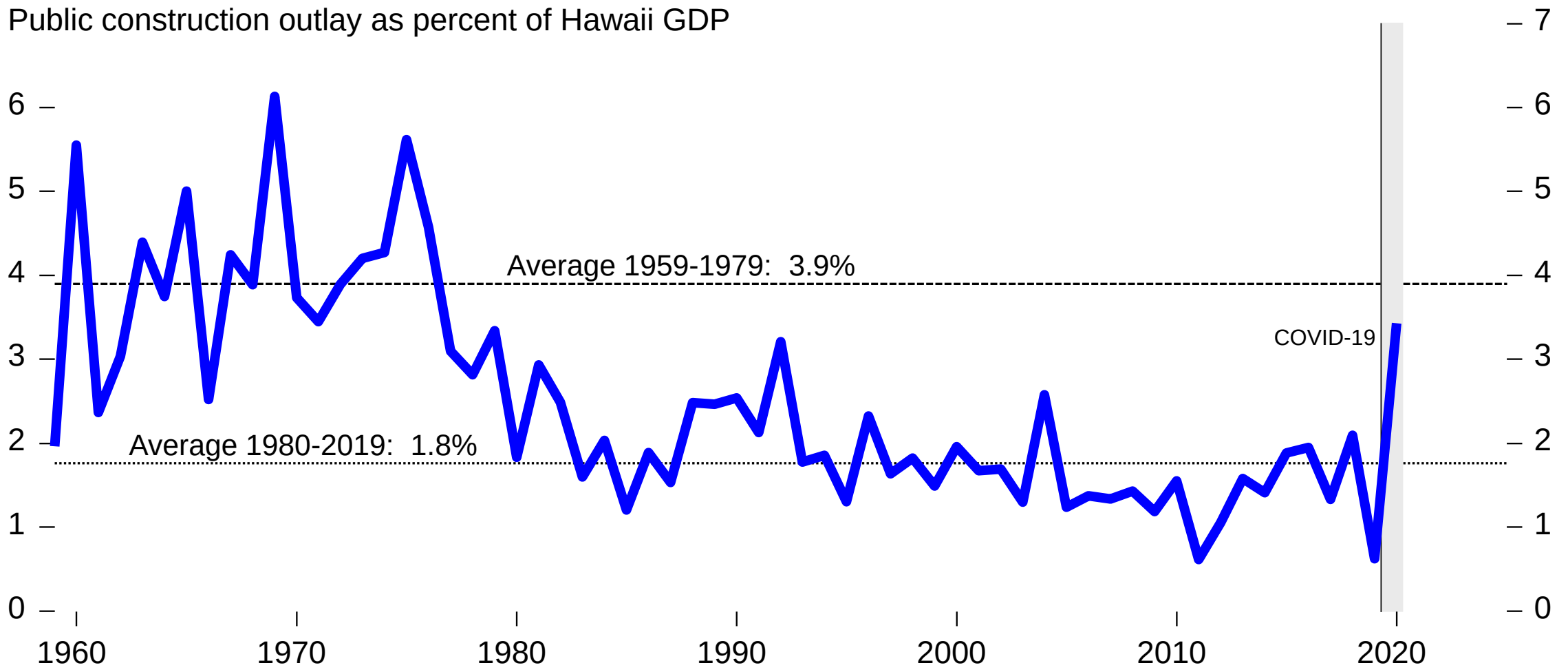
Sources: County building departments, Bank of Hawaii, Hawaii DBEDT (http://dbedt.hawaii.gov/economic/mei/), U.S. Bureau of the Census (https://www.census.gov/construction/cpi/); seasonal adjustment using Census X-13 ARIMA filter, decomposition using Christiano-Fitzgerald asymmetric band-pass frequency filter assuming stationarity and short:long cycle periods of 90:360 months, trend extraction with nonlinear regression on the non-cyclical component, by TZE.

In broad sweep of history, Hawaii private construction authorizations unlikely to vary much around 0.5 percent growth path of last 46 years



Sources: County building departments, Bank of Hawaii, Hawaii DBEDT (http://dbedt.hawaii.gov/economic/mei/), U.S. Bureau of the Census (https://www.census.gov/construction/cpi/); trend extraction with log-linear regression on time by TZE.

Part of the difference between high growth, low growth economy: public capital formation; annual public construction as % of GDP



Pau