

More of the same for Hawaii tourism 2018?

Slides prepared for the

Pacific Asia Travel Association Travel and Tourism Research Association

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TZ Economics, Kailua, Hawaii

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TZ ECONOMICS

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1. Longer-term trends frame the shorter-term outlook

Principle constraints inhibiting Hawaii's largest export as contributor to economic growth

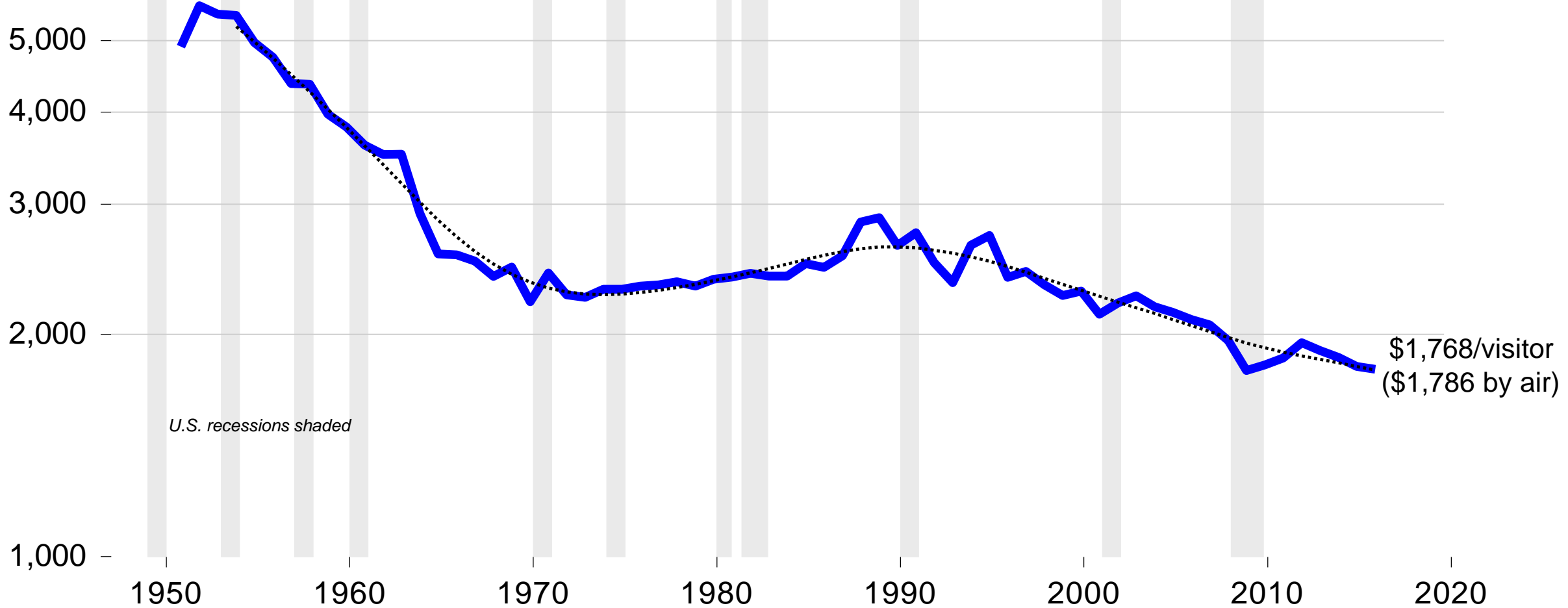
1. Long-term (since 1980s) political predisposition to restrain capacity growth
2. Long-term (since mid-20th century) trend decline in real visitor outlay

- Tourism was dominant engine of economic growth 1950s – 1980s (30 years)
- Tourism has yet to return to its *absolute* economic position of late-1980s (30 years)

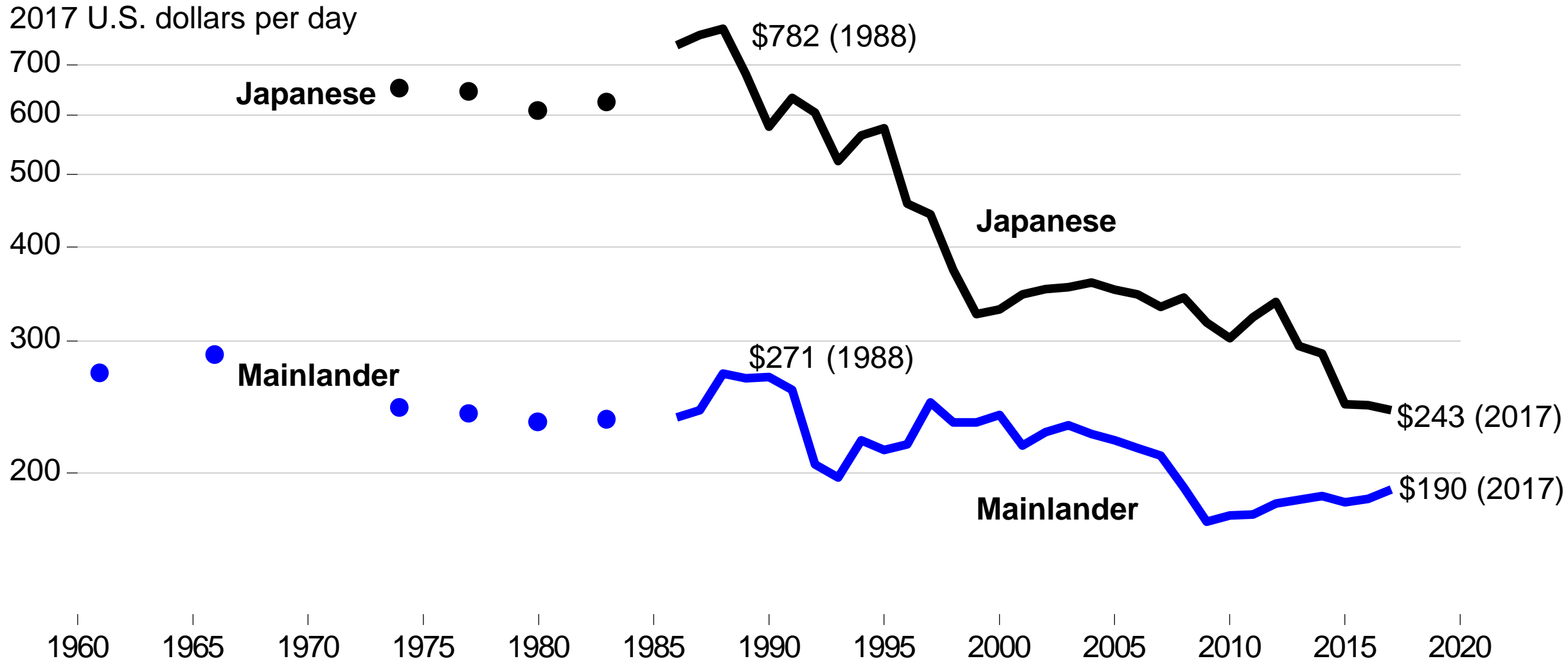
Strategic question for next generation is whether Hawaii's *only* plausibly material export will return as growth engine, 2020-2050, or simply *consume* public resources

Hawaii real tourism receipts per visitor declined on trend (to 2017), last quarter century corresponds with tightening lodging inventory

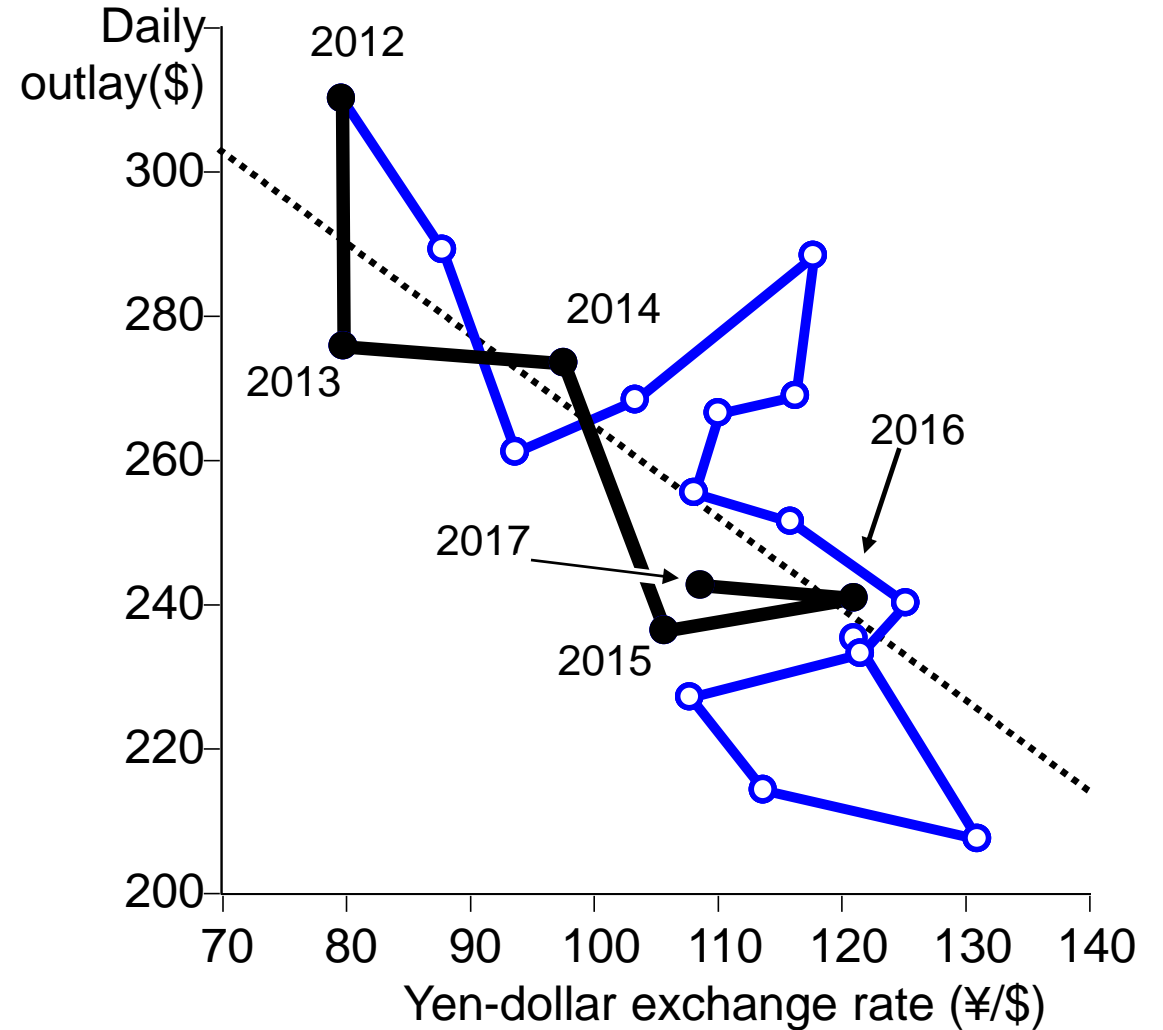
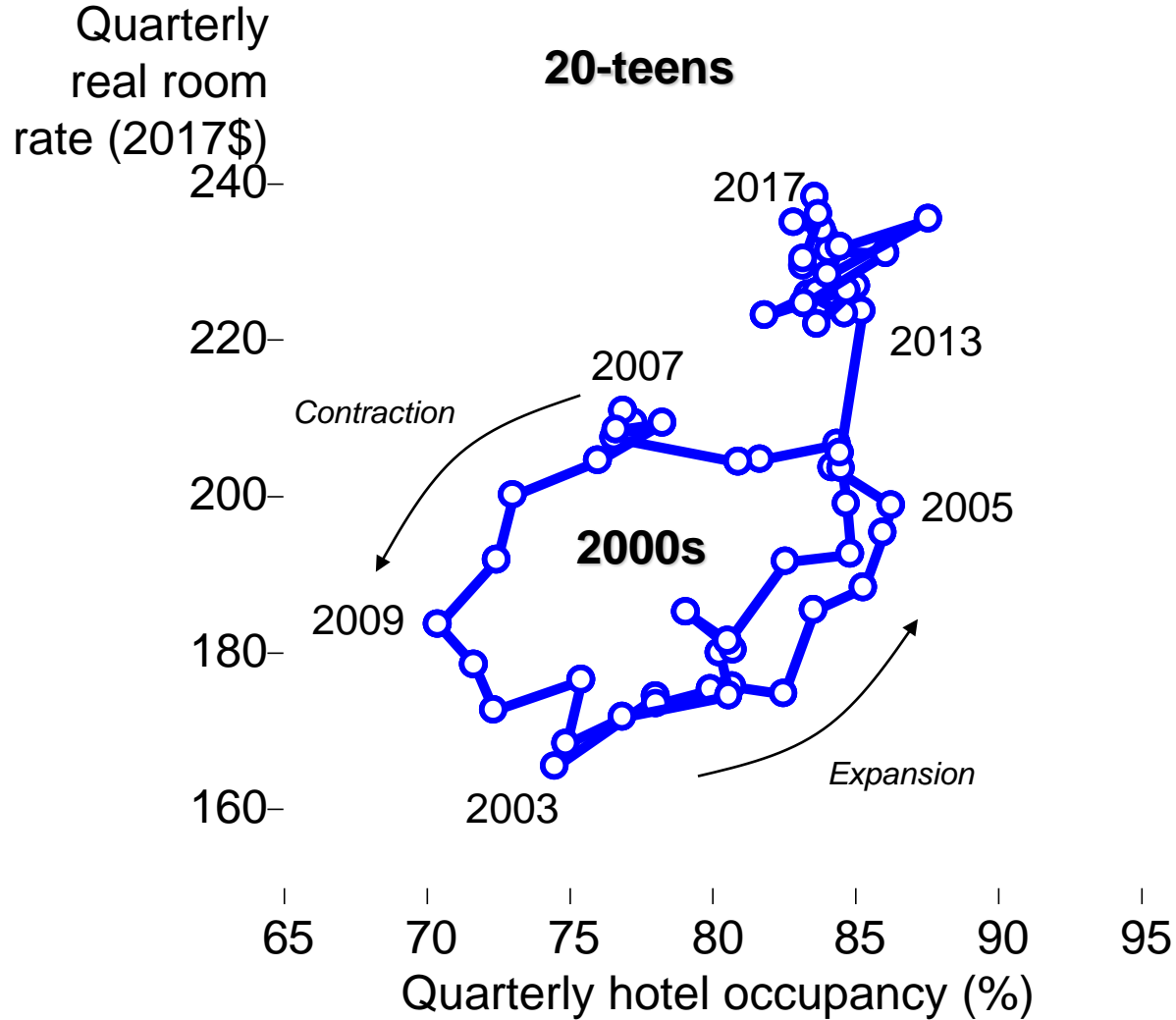
Constant 2017 dollars per visitor, log scale



Canonical example: real Japan visitor daily outlay—after appreciating from 360 ¥/\$ (1973) to 120 ¥/\$ (1988)—eroded (ditto for mainland)



20-teens double whammy: Oahu real hotel room rates accelerated at 85% occupancy; Japanese daily outlay moved inversely with yen

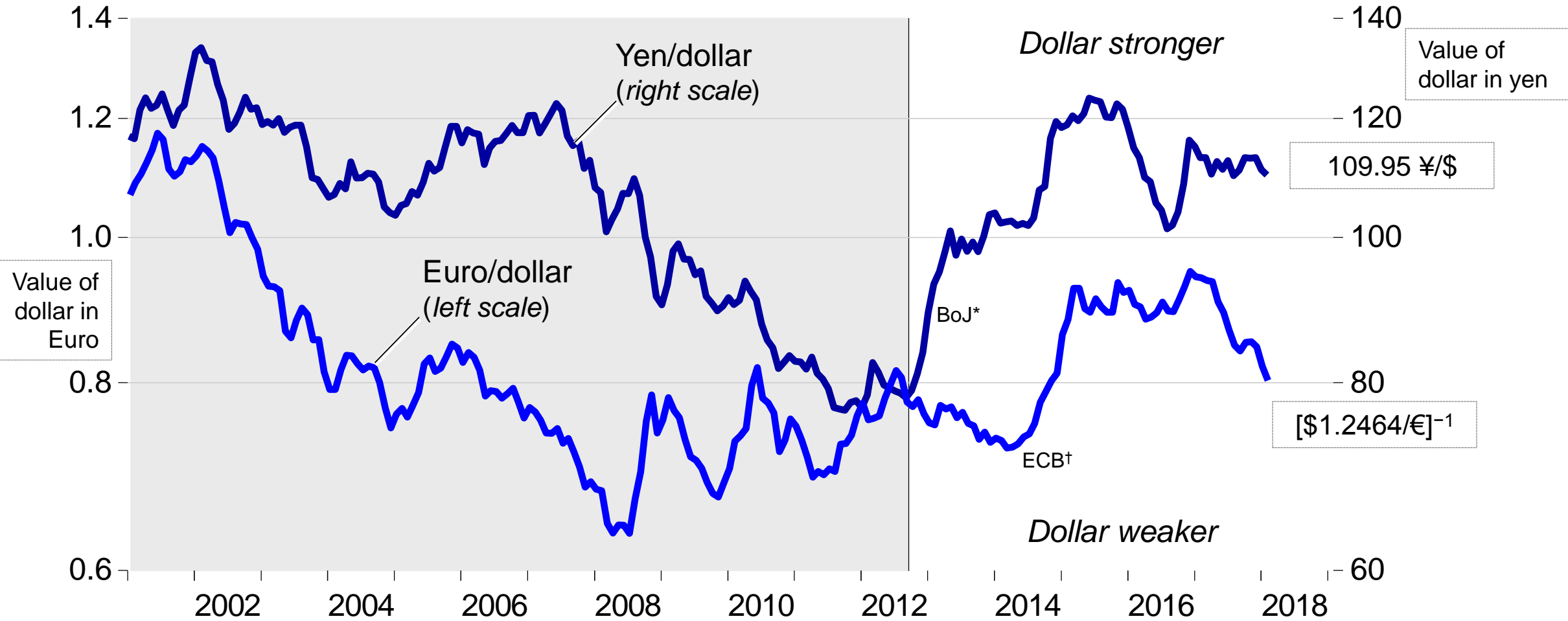




Why U.S. dollar a relatively strong currency since early-20teens?

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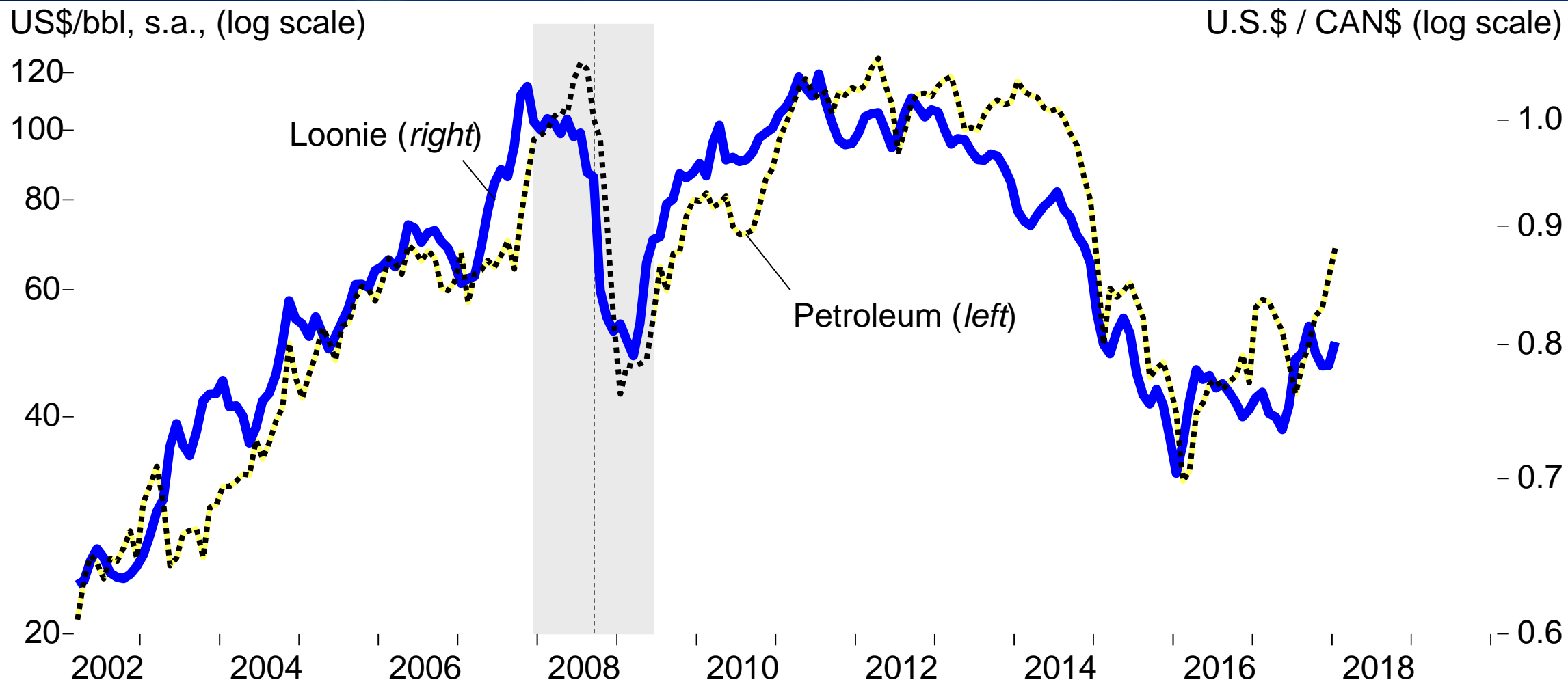
Diverging monetary policy: Japanese and European monetary policy still behind U.S. monetary policy normalization—they'll catch up



* Prime Minister Abe re-elected December 16, 2012, initiates “Abenomics,” endorsing Quantitative Easing.

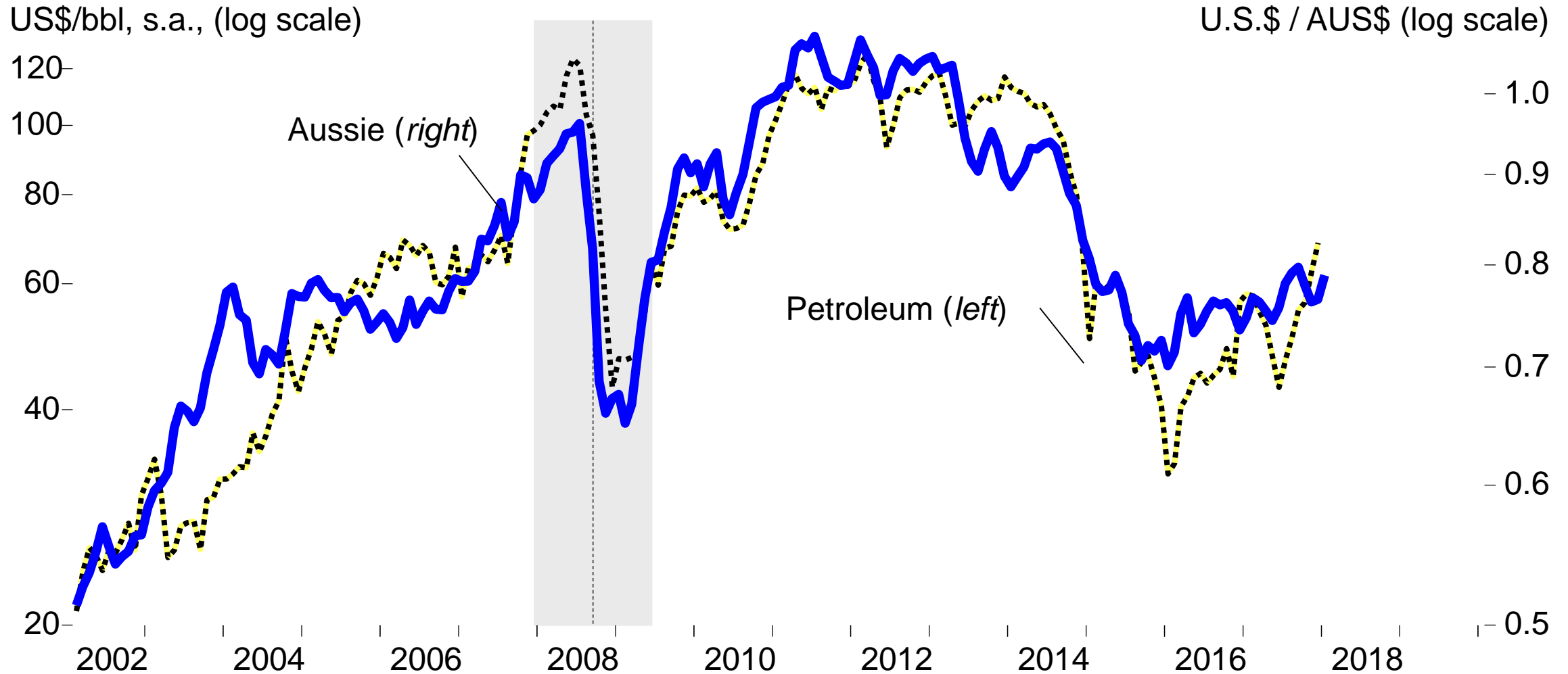
† QE widely anticipated in financial markets; announced by ECB President Draghi January 22, 2015.

Another currency that matters for Hawaii tourism: Canadian dollars; the price of a barrel of oil IS the value of the Loonie

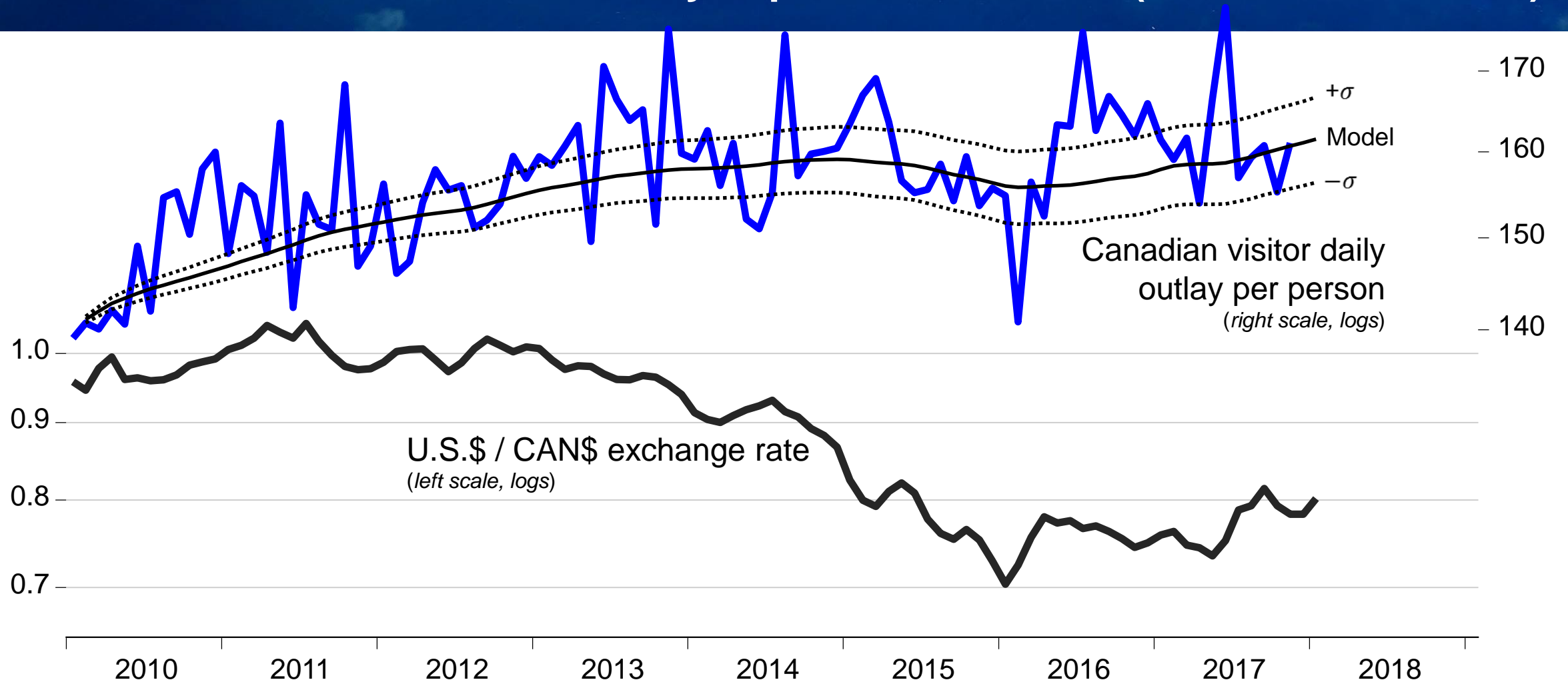


Sources: Federal Reserve Bank of St. Louis (<https://fred.stlouisfed.org/series/EXCAUS> and <https://fred.stlouisfed.org/series/MCOILBRENTU>); seasonal adjustment by TZE


Another currency that matters for Hawaii tourism: Australian dollars; are you getting the picture yet? Currencies as minerals, oil prices



As value of Canadian dollar declined with oil prices, *growth rate* of Canadian visitor daily expenditure slowed (and level stumbled)



Sources: HTA, Hawaii DBEDT, Federal Reserve Bank of St. Louis (<https://fred.stlouisfed.org/series/EXCAUS>); seasonal adjustment and regression model of change in natural log of the monthly Hodrick-Prescott filter trend component of daily Canadian visitor outlay on contemporaneous and lagged (12 months) values of the Canadian dollar / U.S. dollar exchange rate by TZE

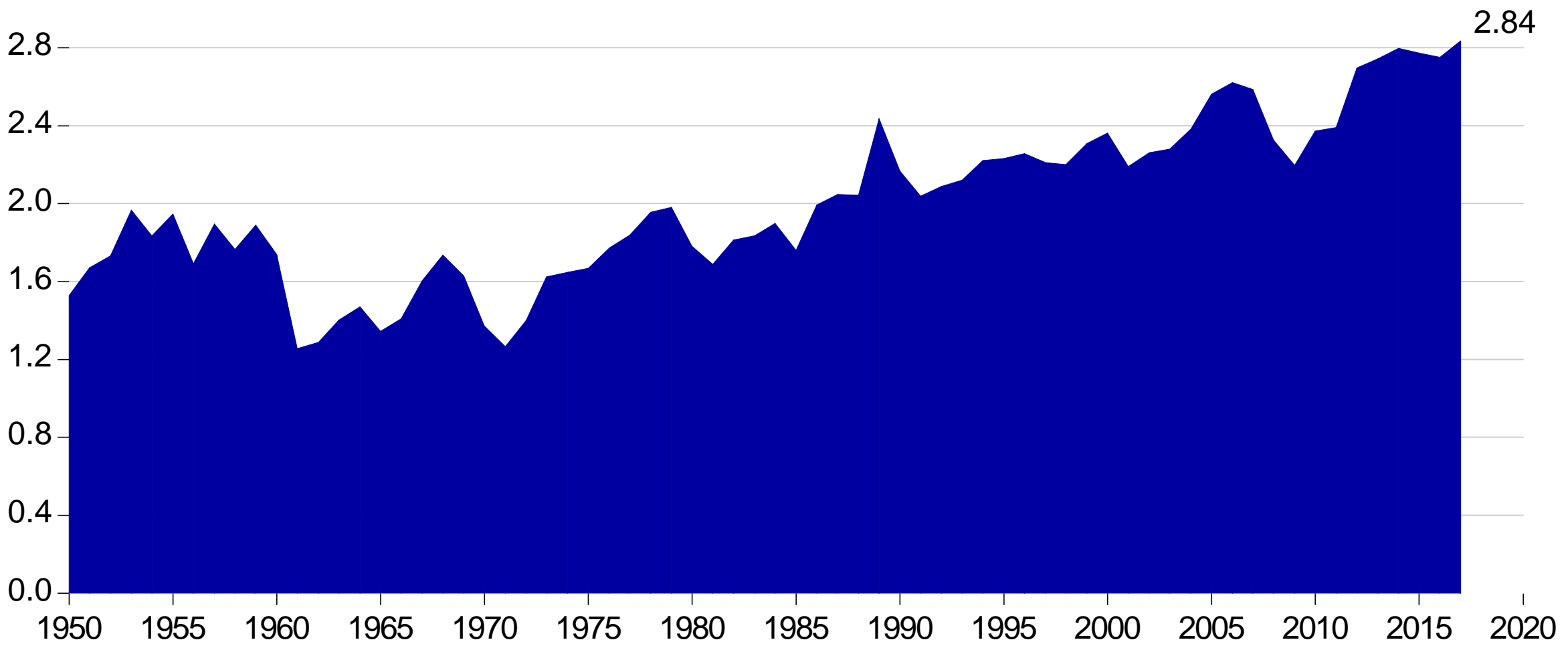


2. What's all this Brew-haha about not enough rooms?

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Think of lodging capacity constraints as a housing problem: as Hawaii pushes to 3 visitors per unit per day, crowding raises “housing” costs

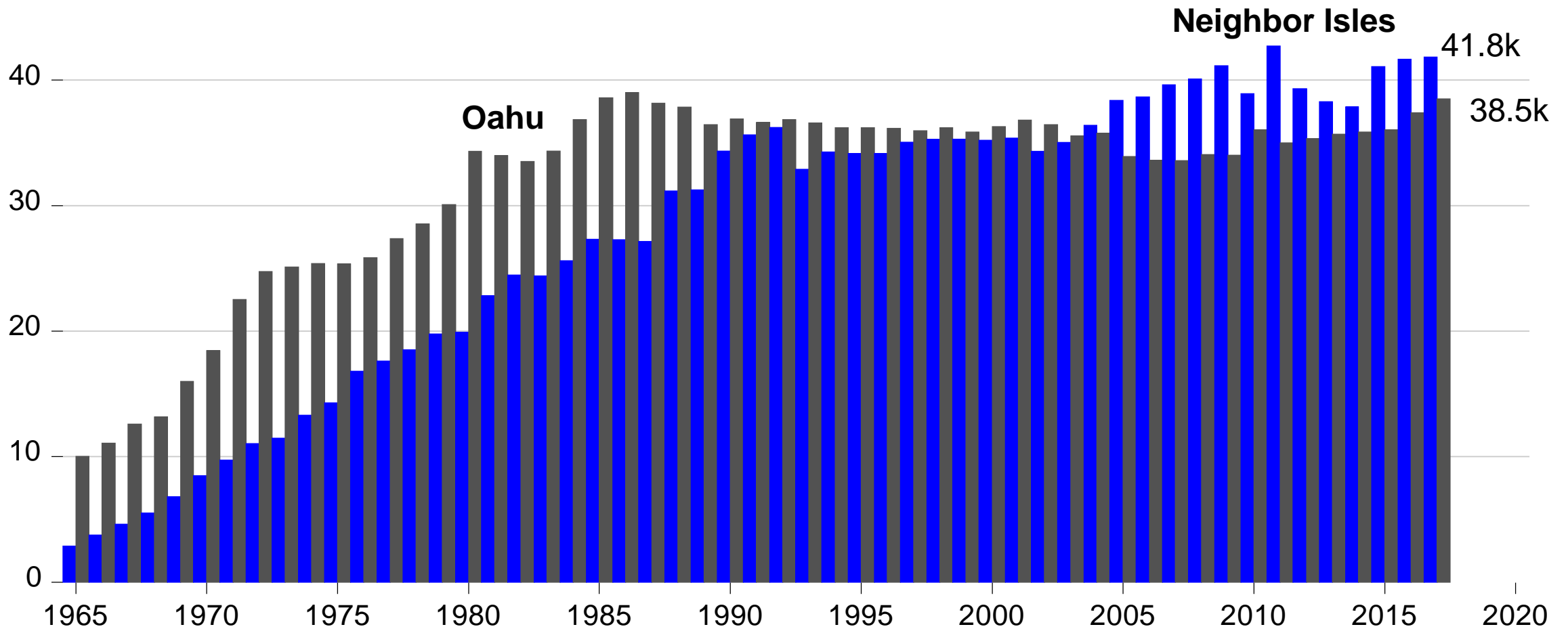
Hawaii visitors per available lodging unit per day



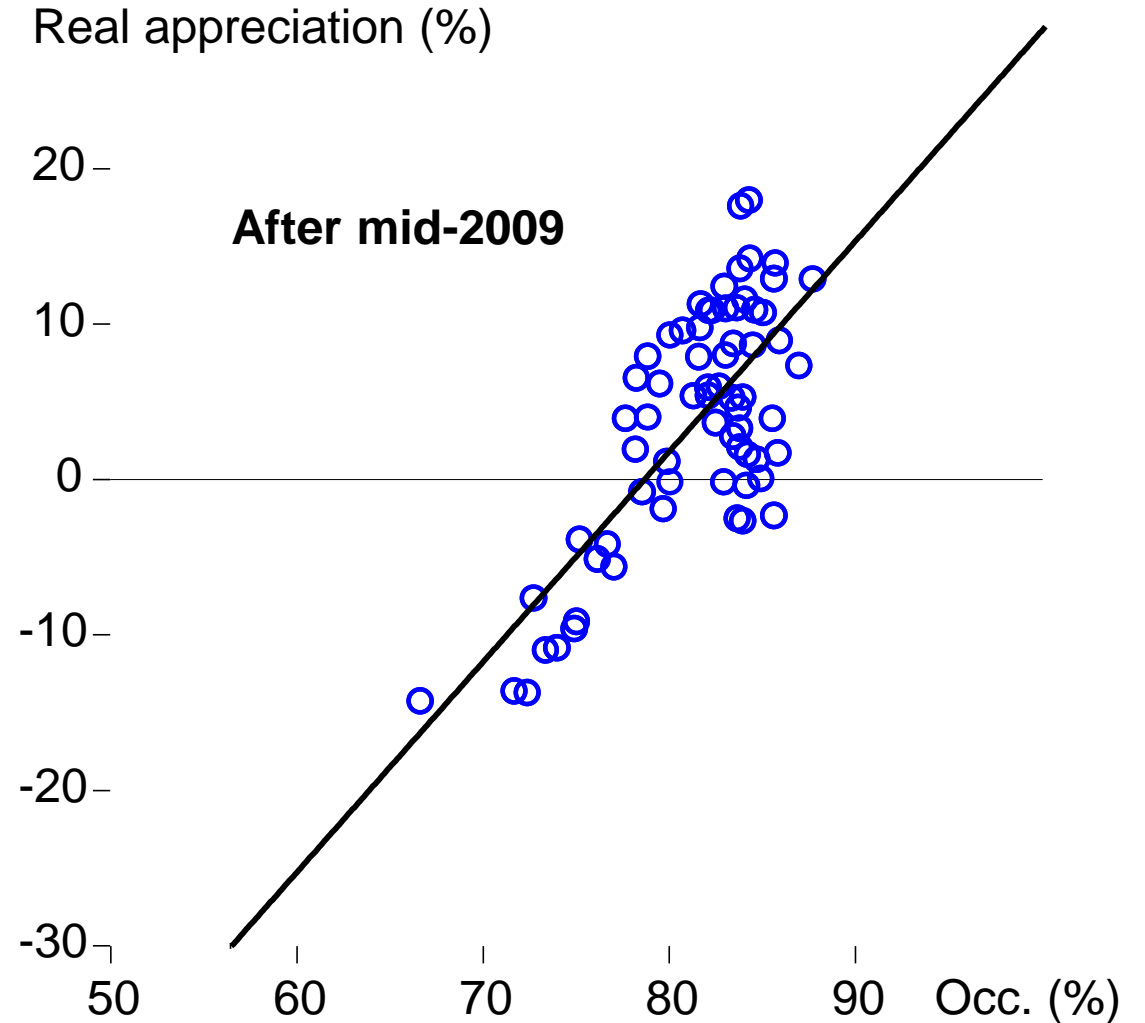
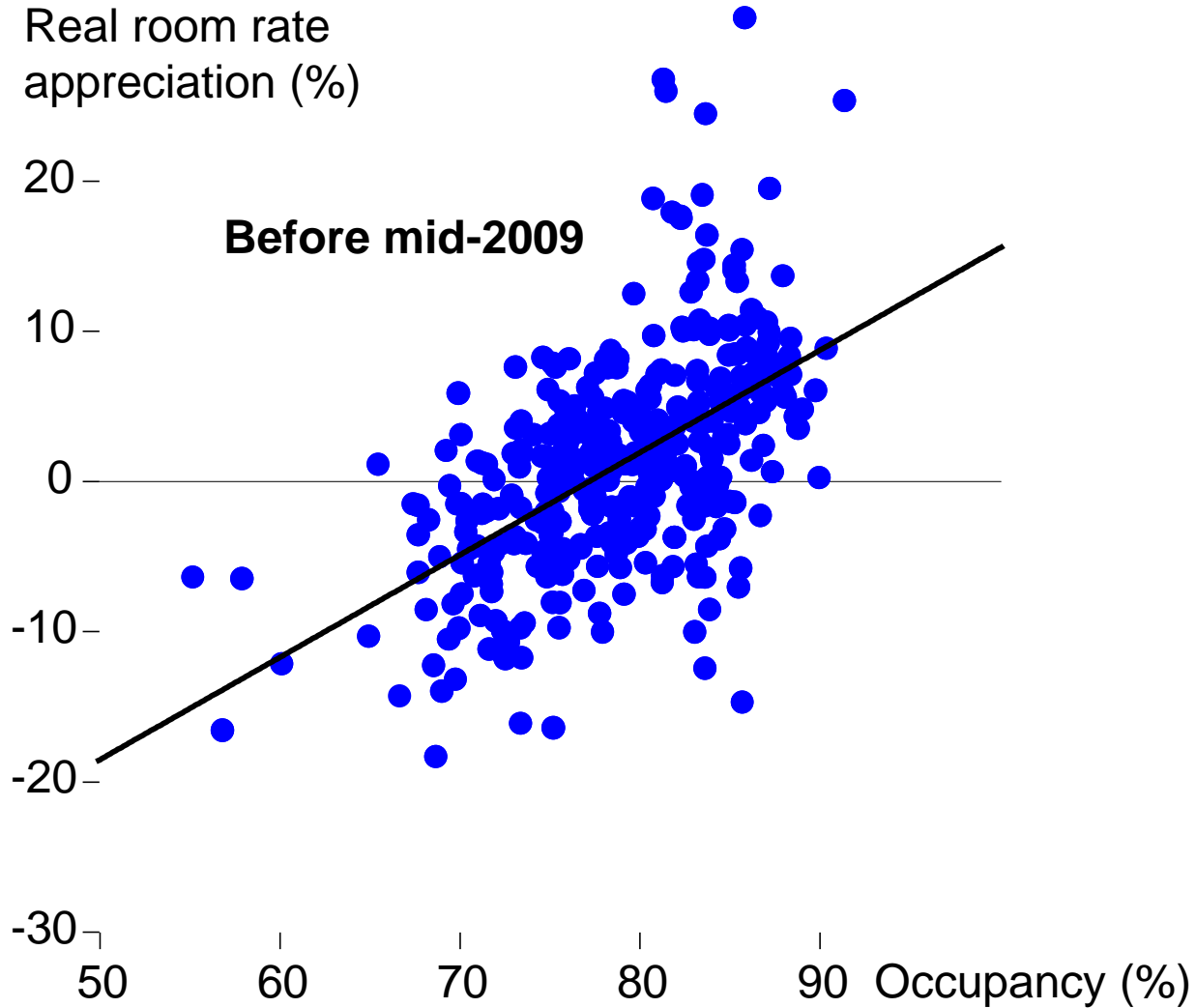
Sources: Hawaii Visitors Bureau, Hawaii DBEDT, Hawaii Tourism Authority; calculated by TZE as total visitor days divided by contemporaneous visitor plant inventory total, divided by 365.25

Lodging inventory, up 11 percent over the last quarter century—all Neighbor Islands—not enough to prevent Oahu from tightening up

Thousand units

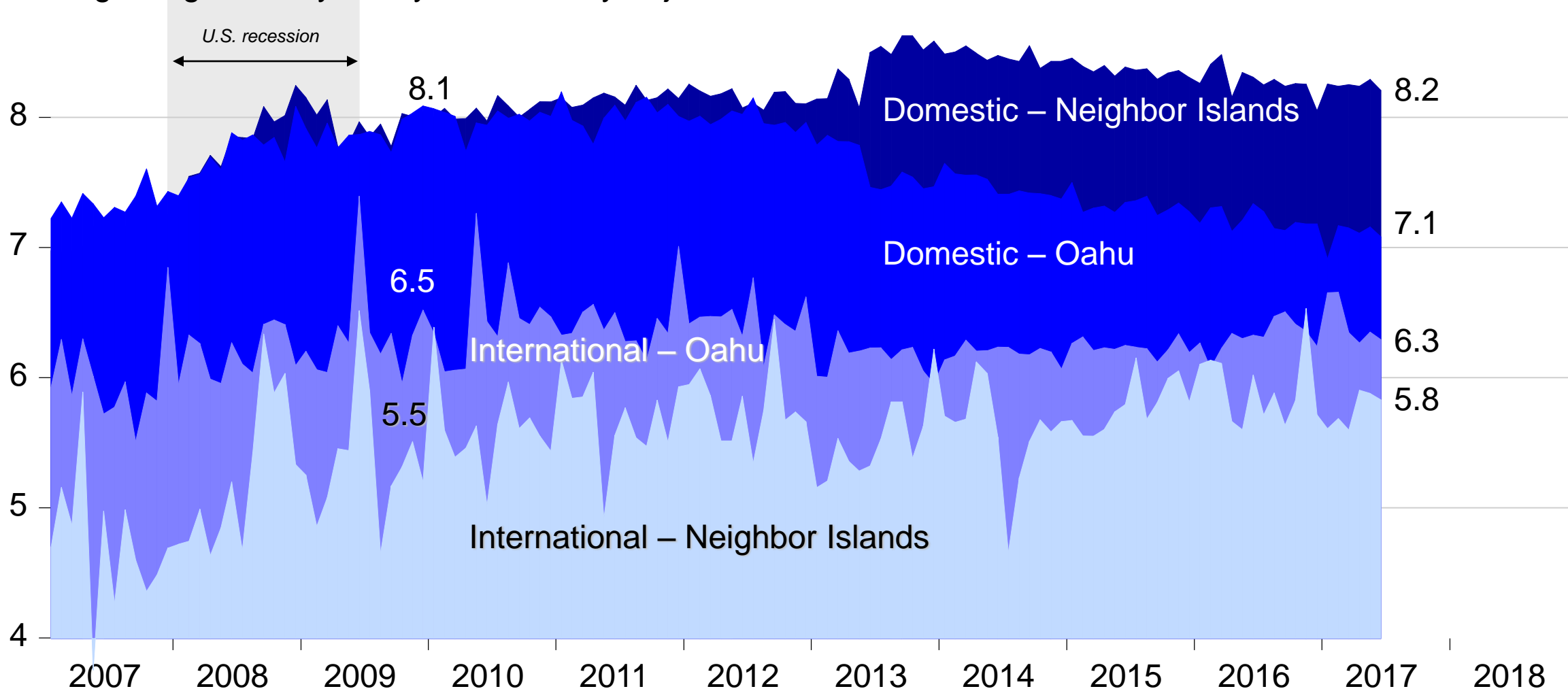


Oahu real hotel room rates in 20-teens experienced much sharper (faster) appreciation with higher hotel occupancy than before



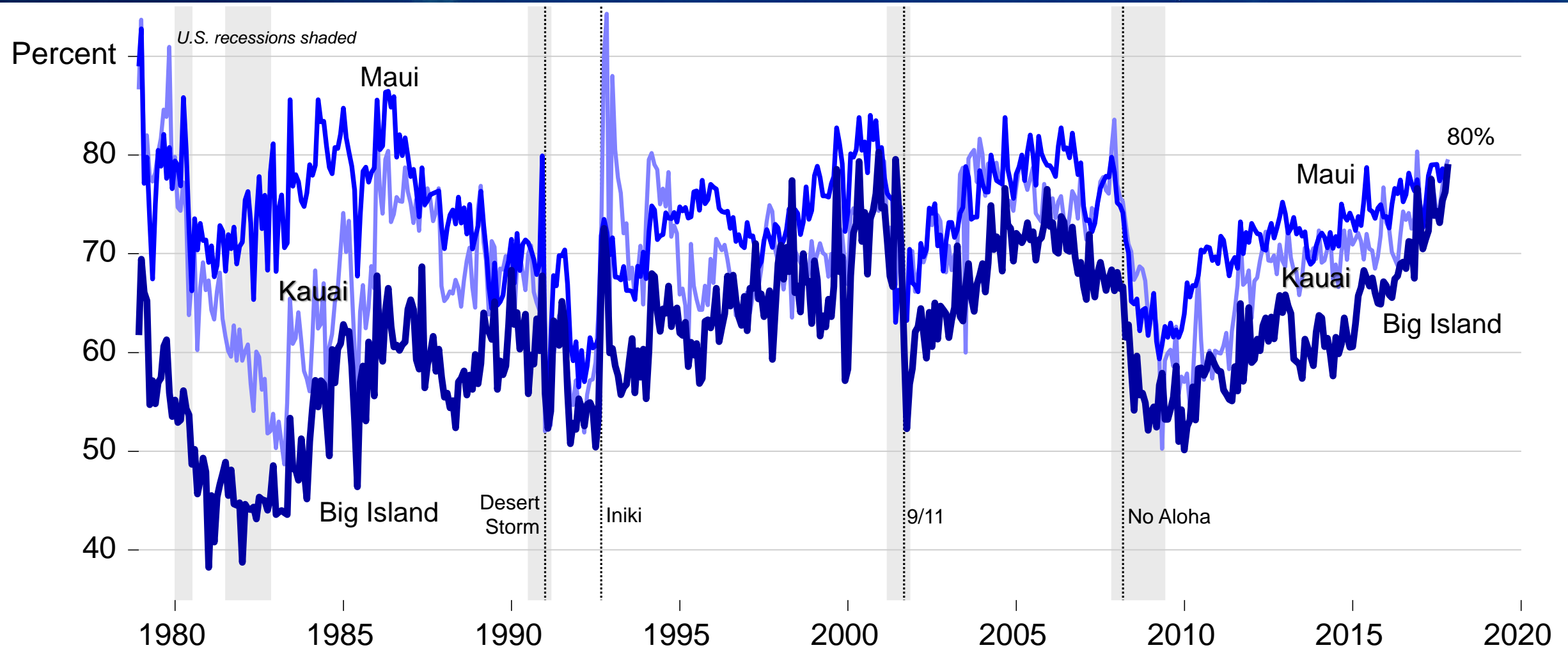
Oahu *domestic* visitor average stay length declined 1 day 2012-2017, other lengths largely unchanged: *somebody* had to give up a day

Average length of stay in days, seasonally-adjusted

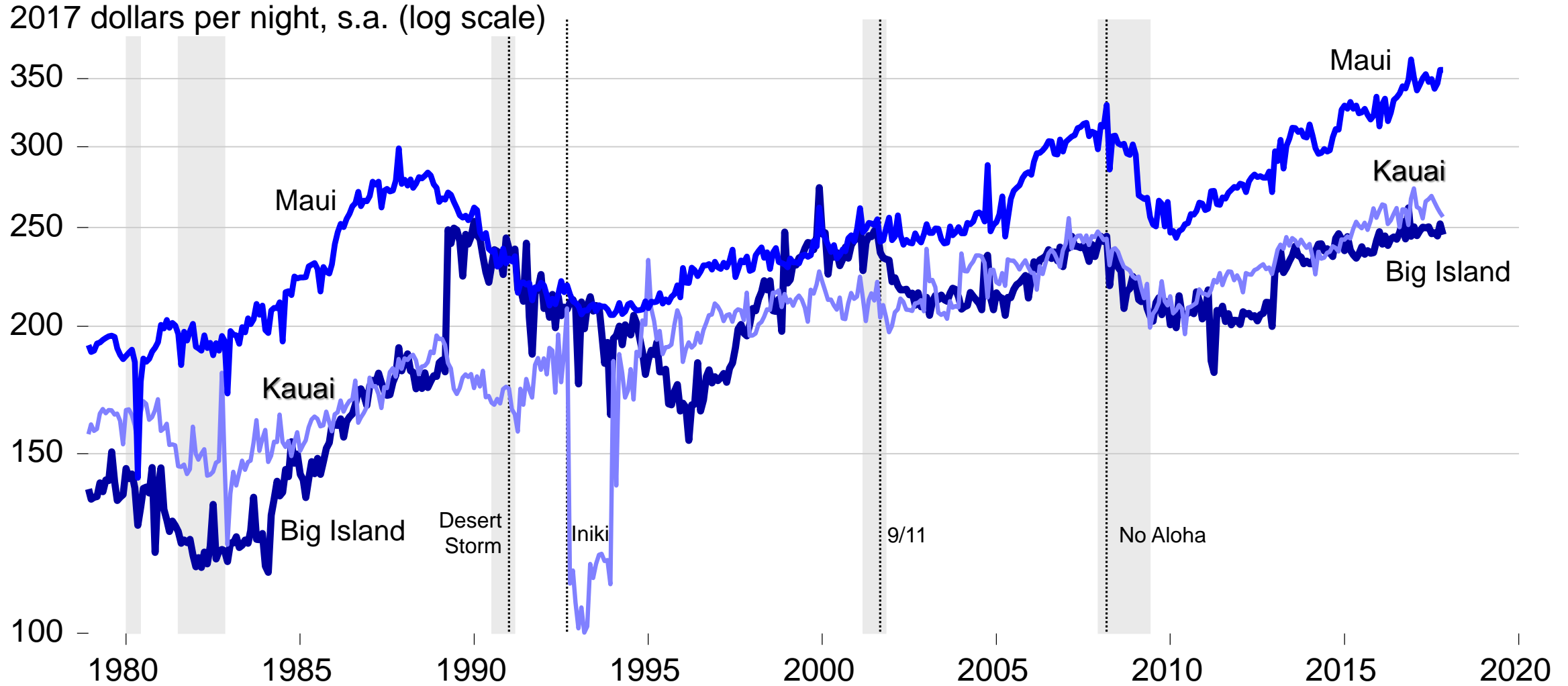


Sources: Hawaii Tourism Authority, Hawaii DBEDT; calculated by TZE through mid-2017

Next test: Neighbor Island lodging utilization rates converged on 80 percent (s.a.) at end-2017; will stay length compress > 80%?



Real average daily room rates at \$450 on Maui, \$250 Big Island and Kauai: yields are attractive (multiply by 0.8), can more be built?



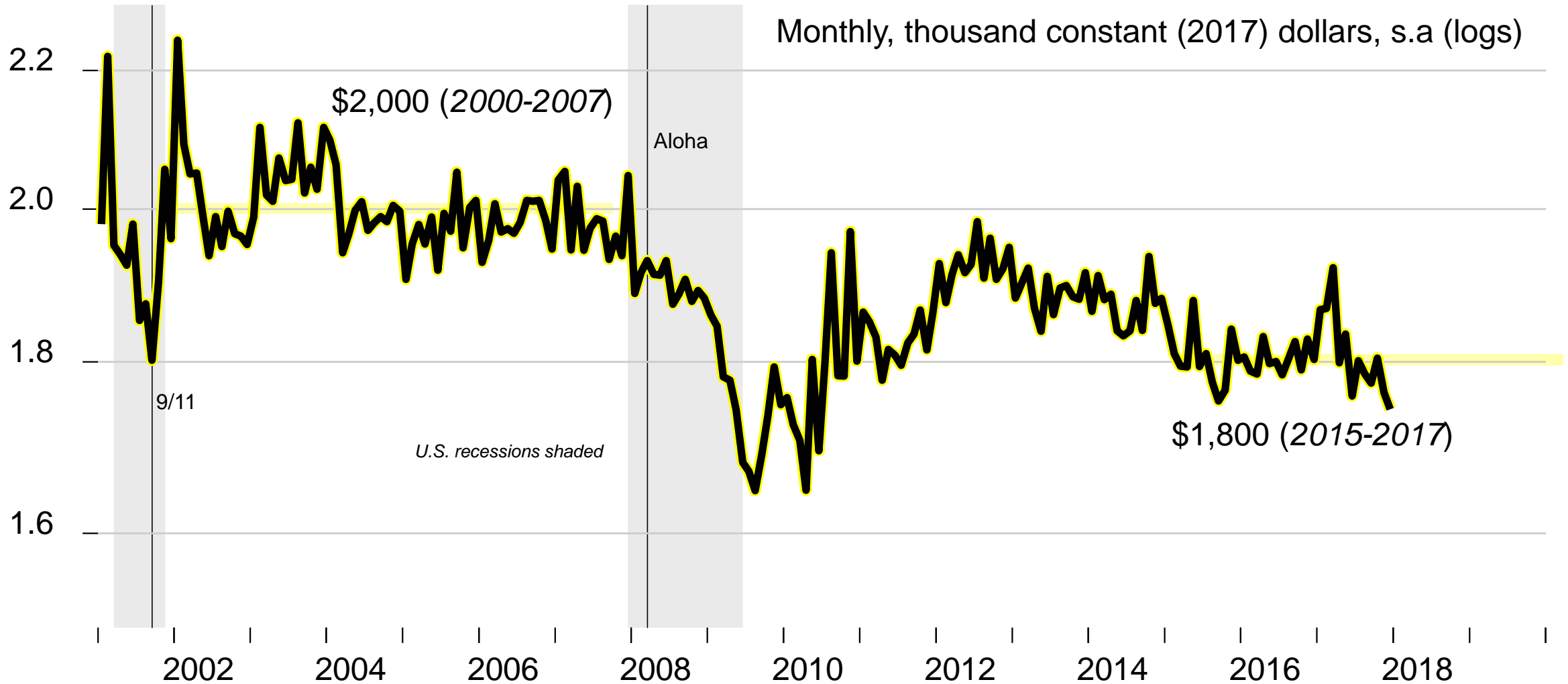


Musical rooms on Oahu + foreign currency depreciation

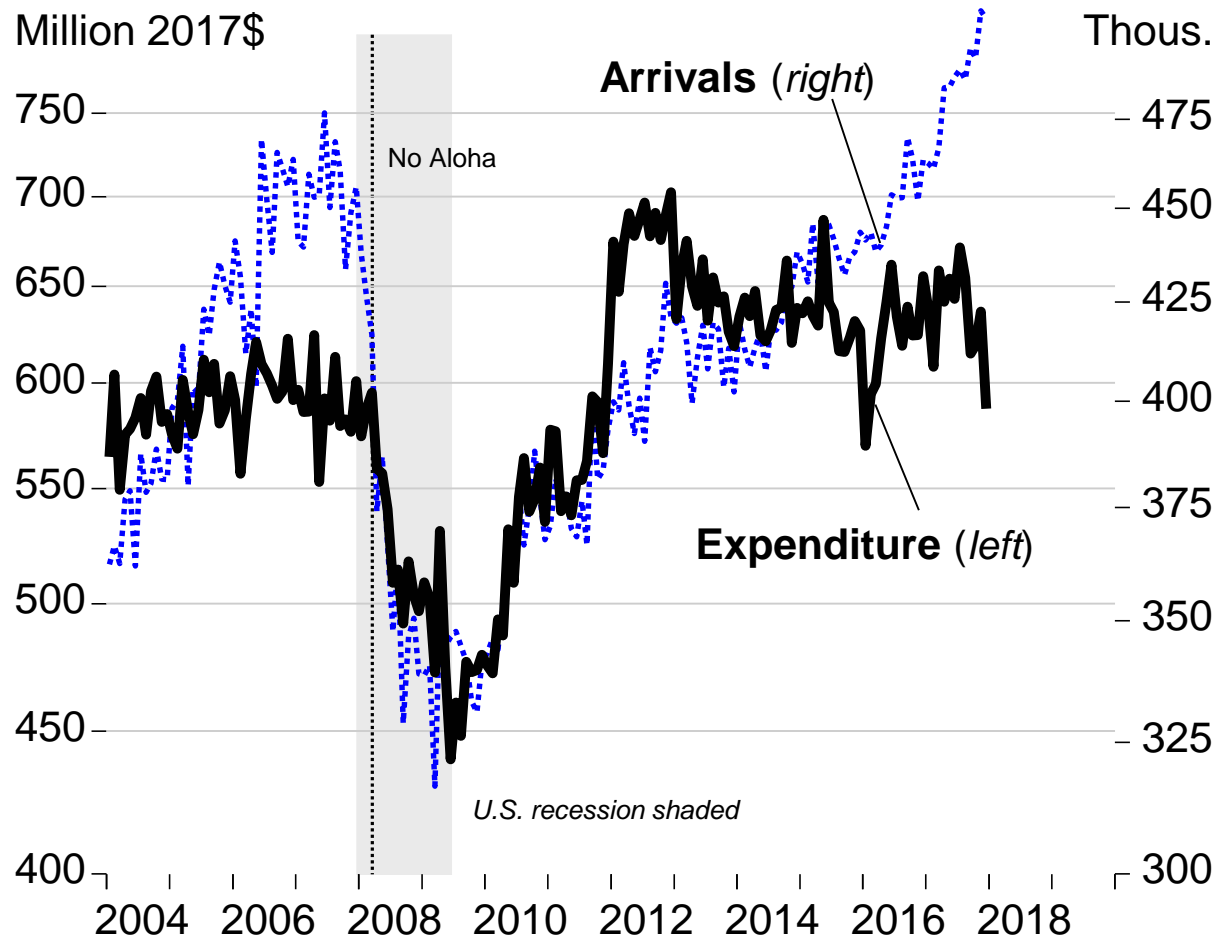
- At effective full utilization (85 percent), Oahu room rates jumped, mainland visitors reduced stay length by 1 day: more seats, more visitors, but not any more dollars
- Foreign currency depreciation reduced international visitor outlays—they came to Hawaii with ability to pay in *their* currency, but prices are denominated in ours
- Tourism strategy: “drive visitors to the Neighbor Islands” (*fly* them)—works fine until *they* start running out of room, and is that at 85 percent occupancy? 80 percent?

Wait a few years and find out?

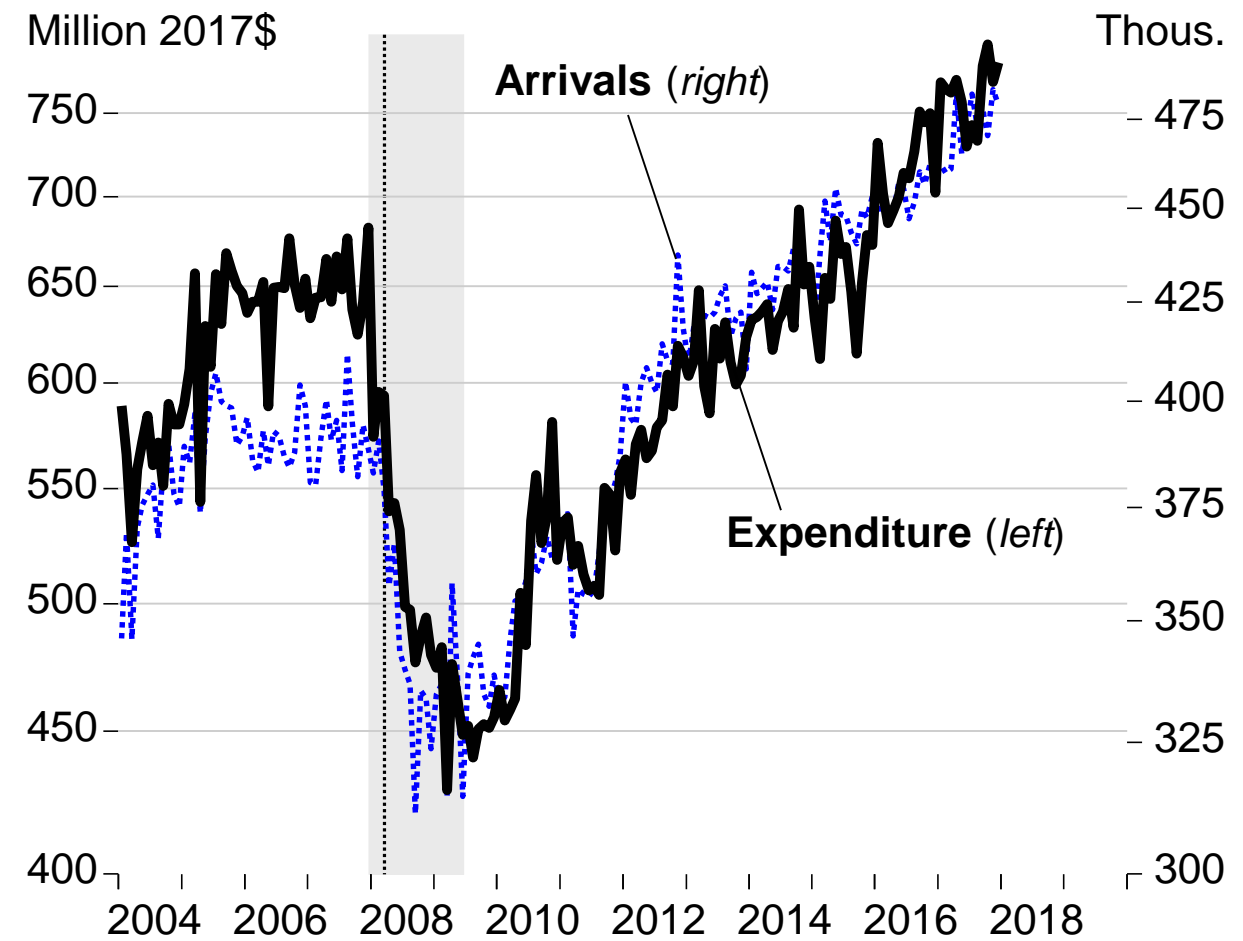
Real expenditure per visitor (s.a.) down from 2.0 to 1.8 thousand constant 2017\$, recovering through 2012 but erosion renewed



Capacity-constrained Oahu got higher room rates, shorter stays, strong dollar; Neighbor Isles got more rooms, mainland tourists

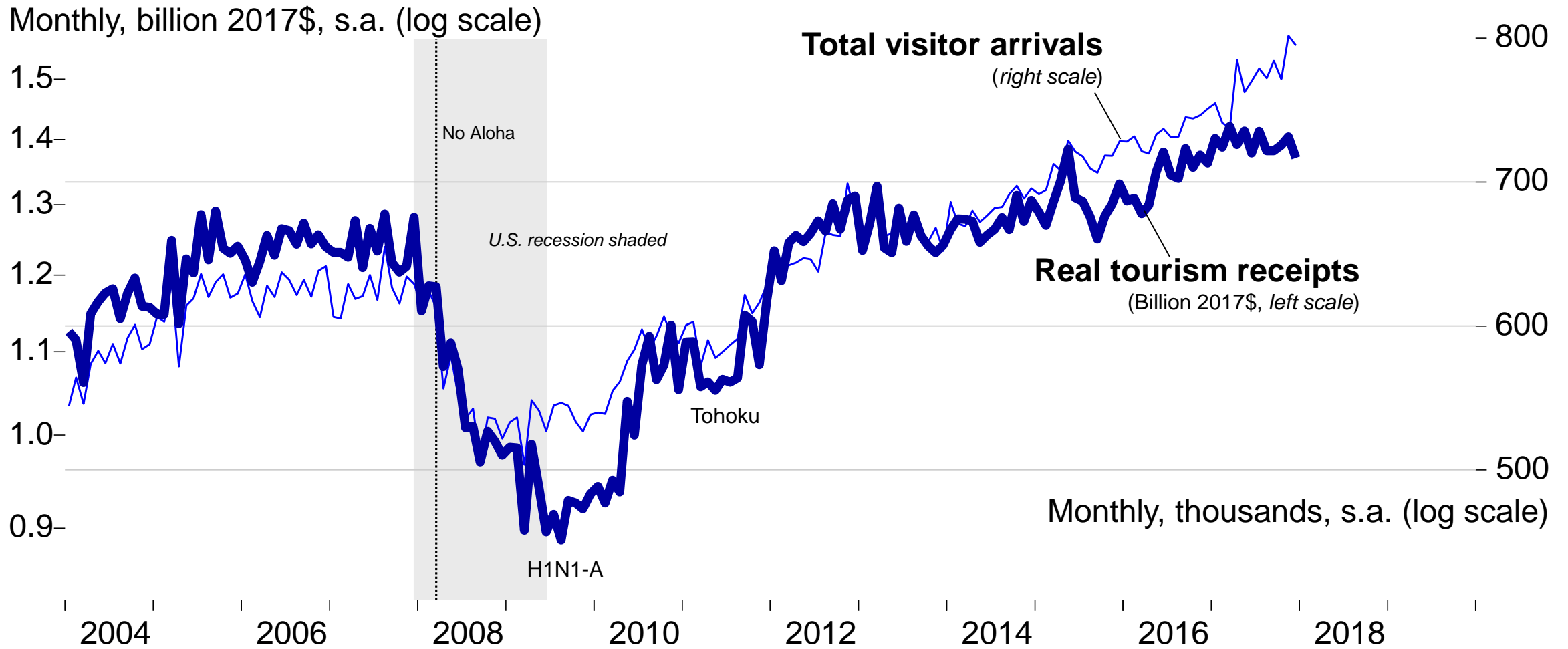


Oahu



Neighbor Islands

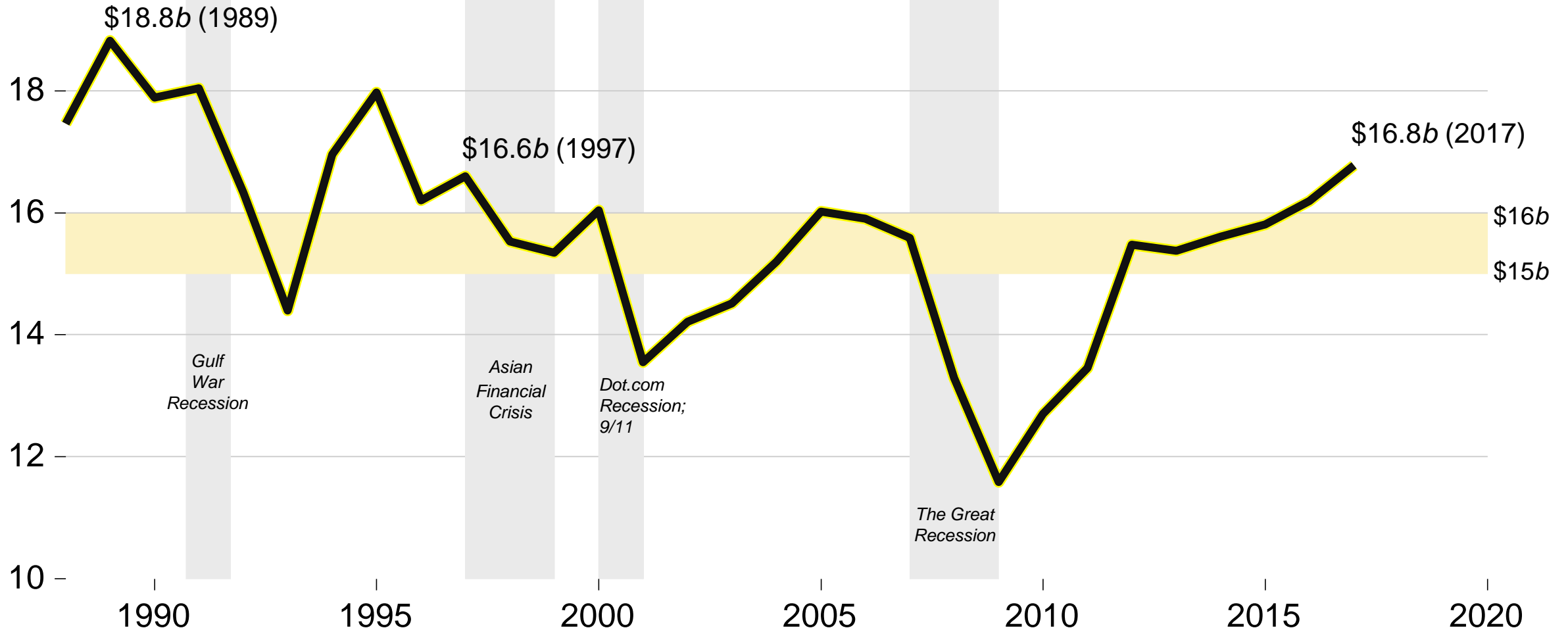
Real visitor expenditure, aligned to visitor arrivals in early-20-teens, felt drag of strong dollar, crowding on Oahu as expansion progressed



Sources: monthly data from Hawaii Tourism Authority, Hawaii DBEDT (<http://dbedt.hawaii.gov/economic/mei/>), Federal Reserve Bank of St. Louis (<https://fred.stlouisfed.org/series/CPILFESL>); seasonal adjustment and deflation by TZE

After several years of inhibition (currencies; crowding), 2 decades below \leq \$16.0 billion, Hawaii real tourism receipts 2017 > 1997

Billion 2017\$, log scale





Two million more visitors, same real tourism exports as 20 years ago

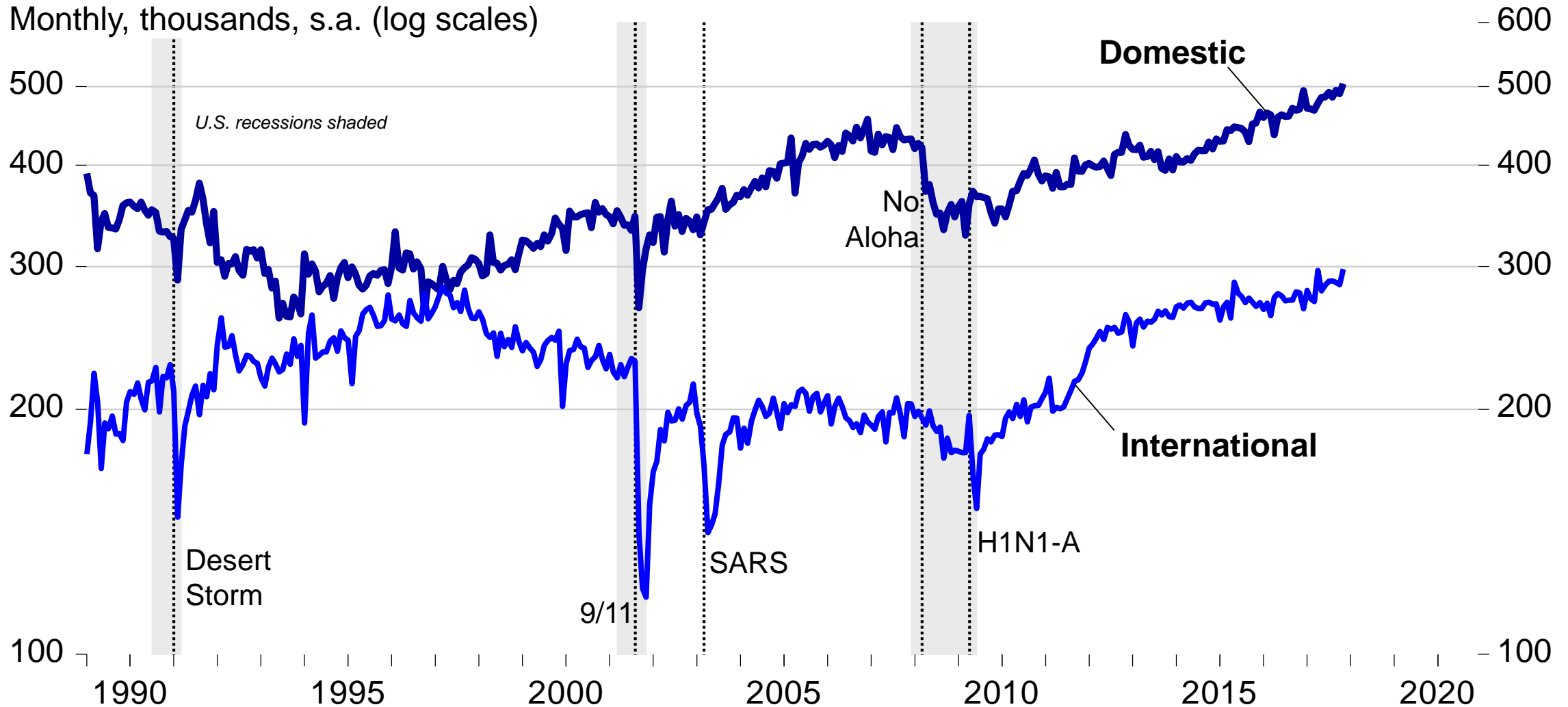
- In persons:
 - Total visitor arrivals in 2017: 9.4 million
 - Total visitor arrivals in 1997: 6.8 million
- In 2017 dollars:
 - Total visitor expenditure in 2017: \$16.8 billion
 - Total visitor expenditure in 1997: \$16.6 billion
- No meaningful tourism export growth for 20+ years
- In a couple *more* years, tourism exports will be as good as 30 years ago! *Awesome!*



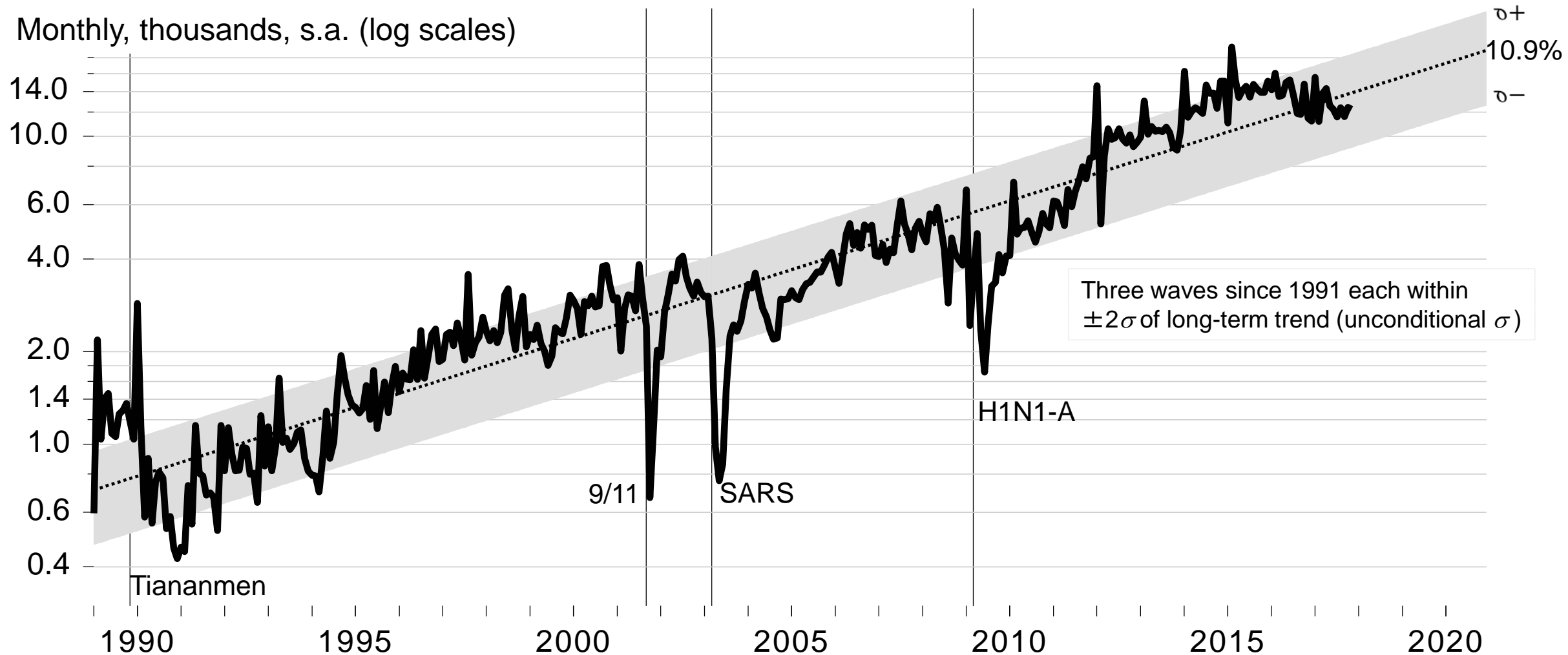
3. Some reminders about volatility and preparedness

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Two key aspects of 20-teens Hawaii tourism (arrivals) expansion: (1) *both* segments participated; (2) comparatively low volatility

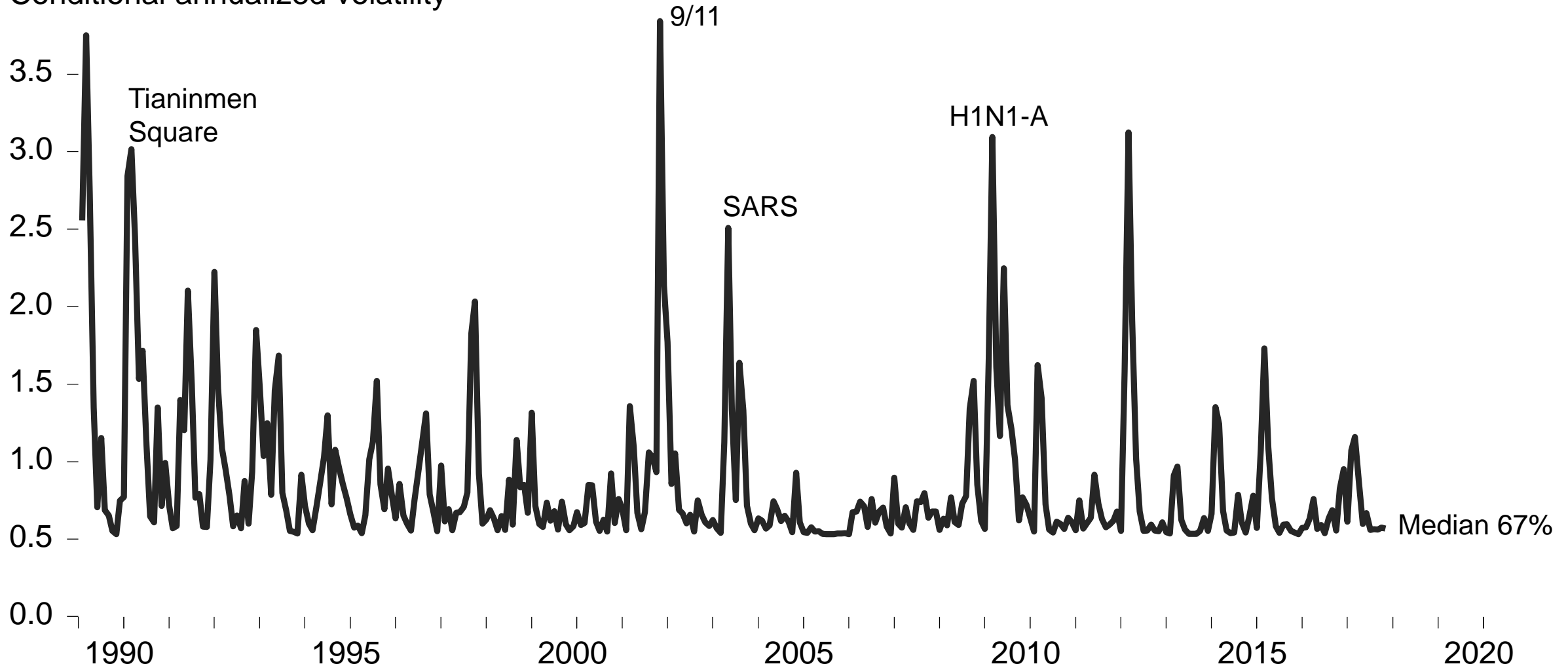


Volatility is time-varying, unpredictable jumps (timing, magnitude); example: China monthly arrivals—small segment, growing, resilient



China monthly visitor arrivals volatility is massive (at annualized rate) *punctuated* by Black Swan jumps, many unidentifiable (to me)

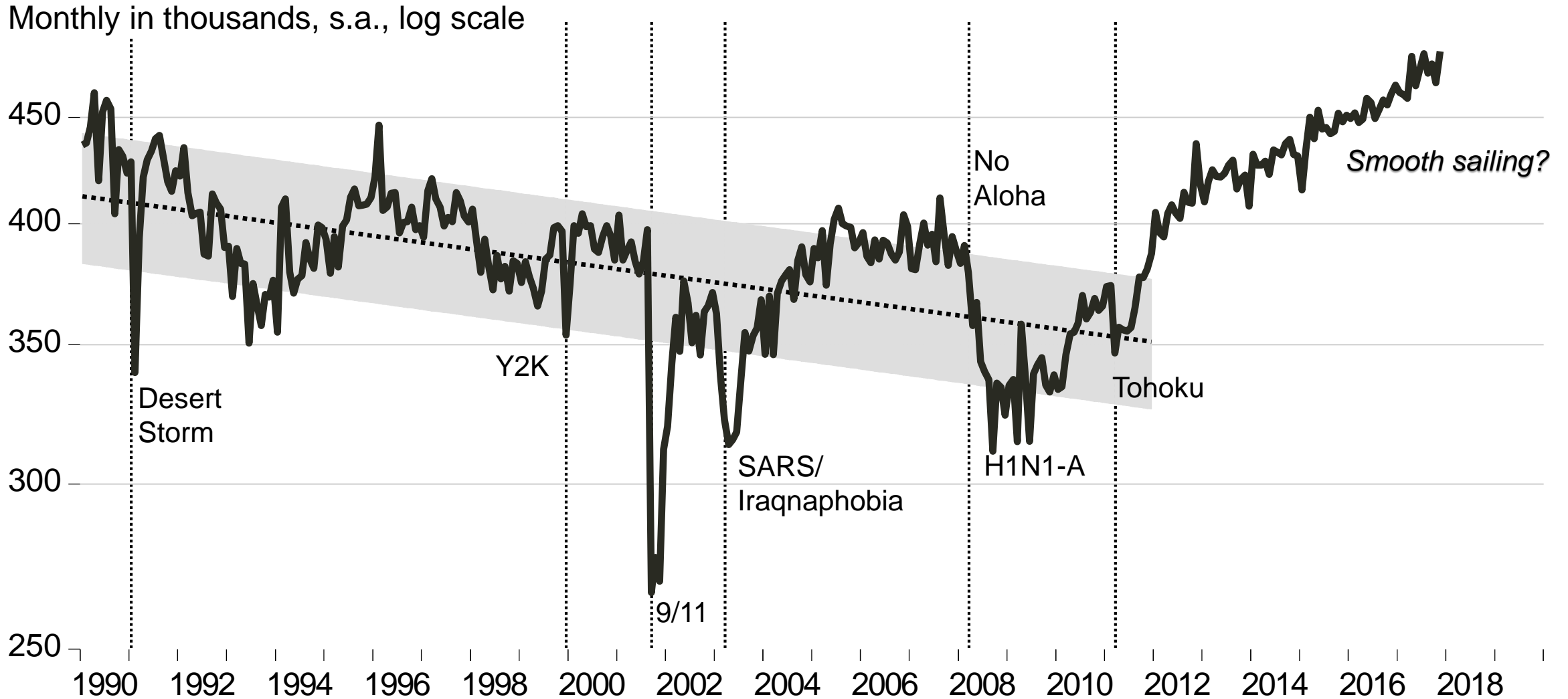
Conditional annualized volatility



Sources: Monthly data from Hawaii Tourism Authority, Hawaii DBEDT (<http://dbedt.hawaii.gov/economic/datawarehouse/>); seasonal adjustment and calculation of annualized Threshold Autoregressive Conditional Heteroskedasticity (TARCH) monthly standard deviations by TZE

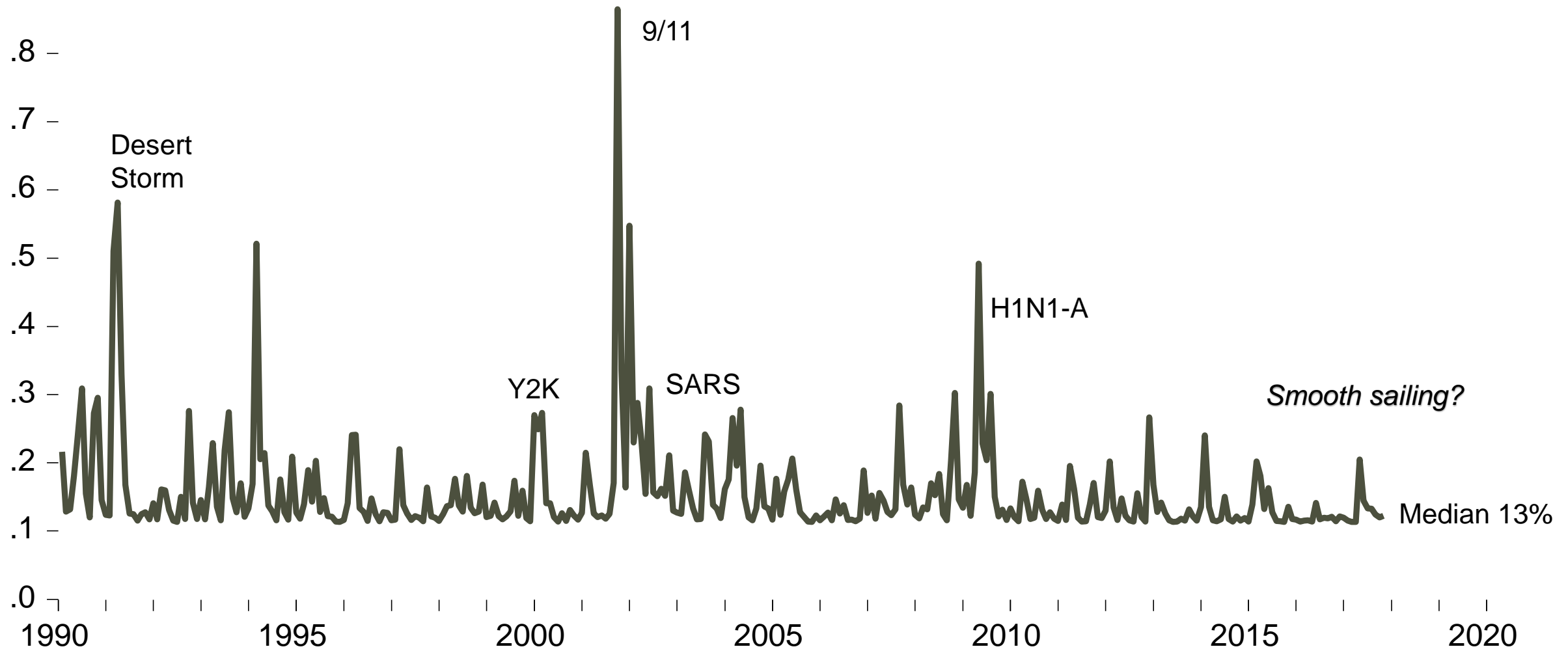
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Remember: until five years ago Oahu arrivals declined for 20 years; helps explain why recent growth shocked room rates (note: *tranquil*)



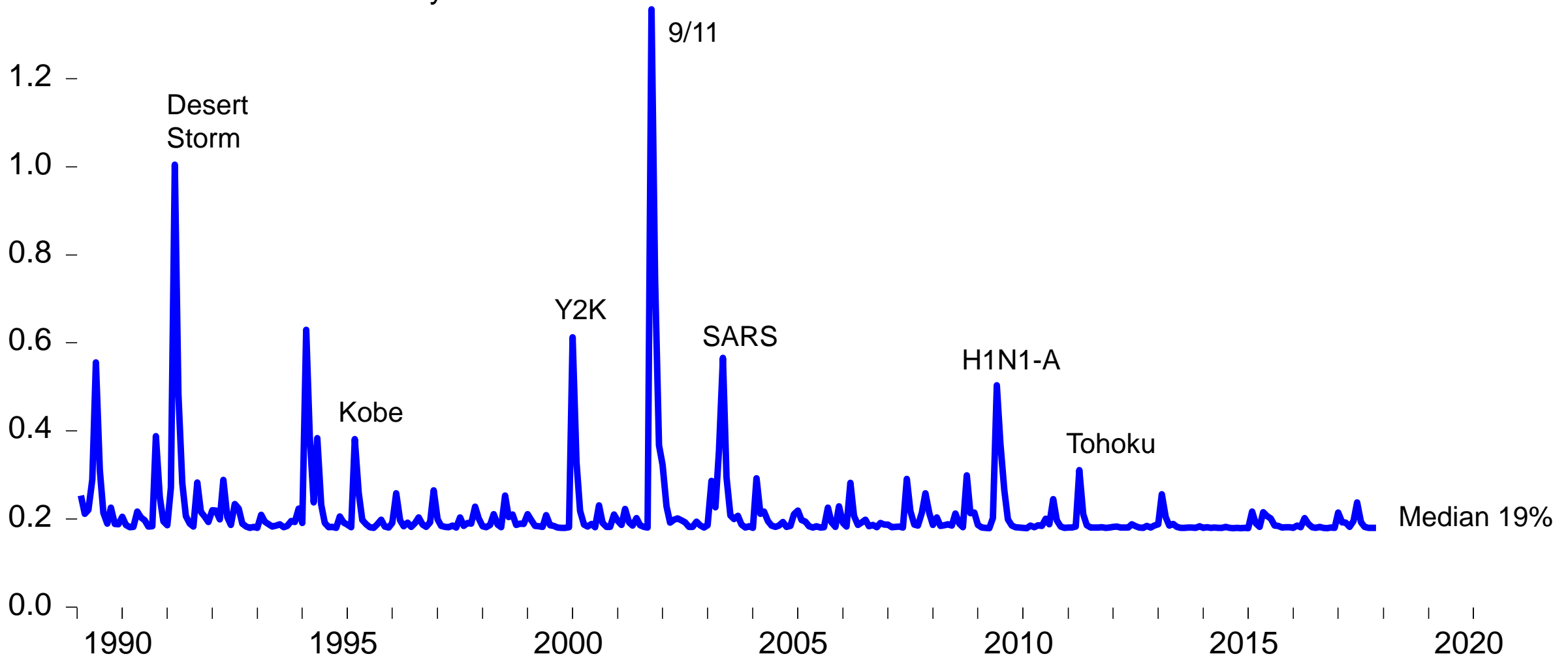
Scale of Oahu total arrivals volatility *one-fifth* that of China arrivals (“diversification”); has lull in jumps 2012-2017 made us complacent?

Conditional annualized volatility



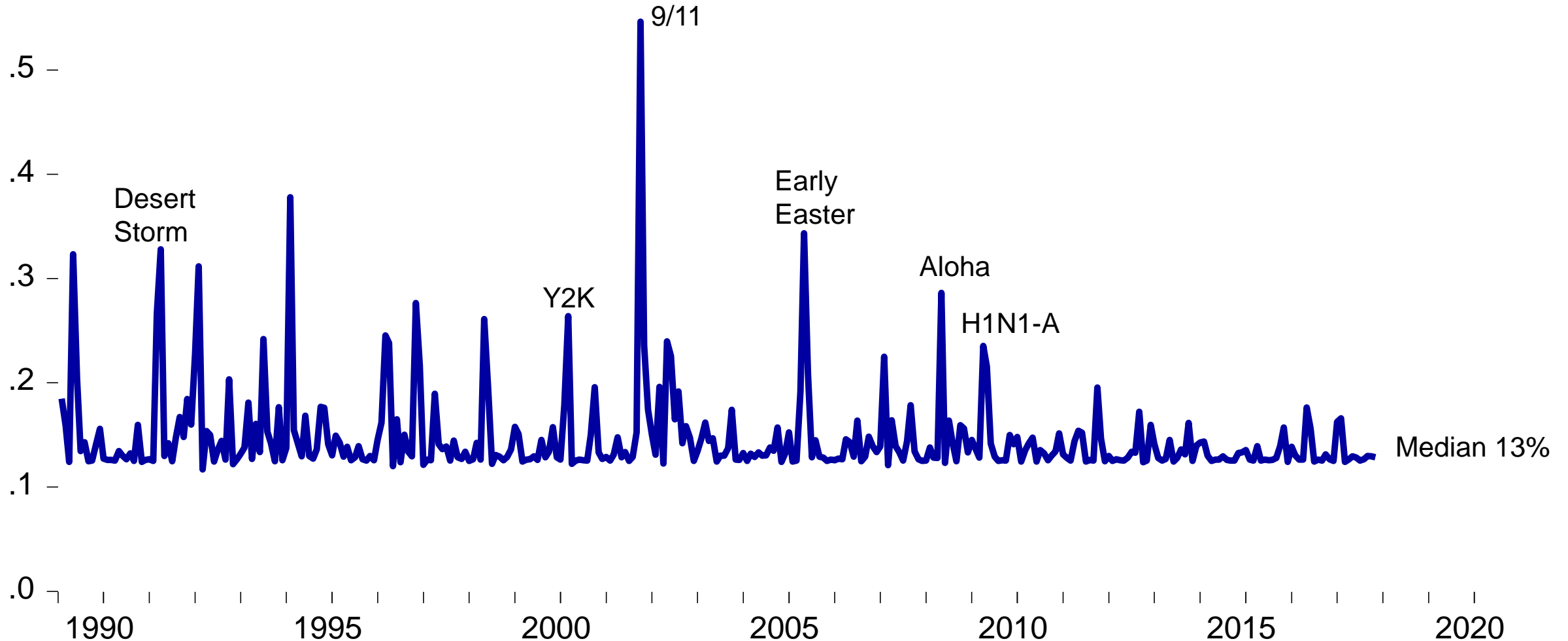
Monthly conditional annualized volatility of international visitor arrivals by air: higher “on average,” sharply punctuated by events

Conditional annualized volatility



Monthly conditional annualized volatility of domestic visitor arrivals by air: about equal to S&P 500 Index, some notable event risks

Conditional annualized volatility

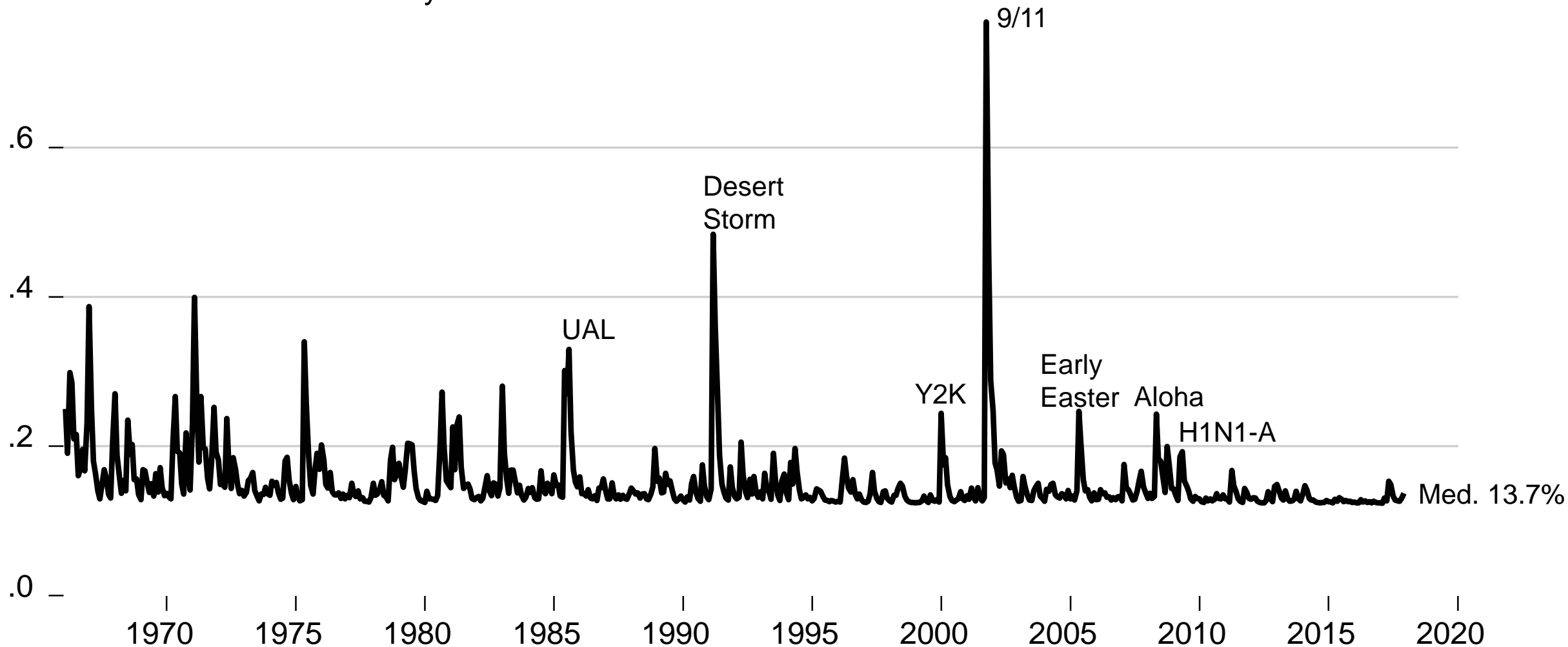


Sources: Monthly data from Hawaii Tourism Authority, Hawaii DBEDT (<http://dbedt.hawaii.gov/economic/mei/>, <http://dbedt.hawaii.gov/economic/datawarehouse/>); seasonal adjustment and calculation of annualized Generalized Autoregressive Conditional Heteroskedasticity (GARCH) monthly standard deviations by TZE

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Monthly conditional annualized volatility of total visitor arrivals by air: transition from volatility clusters to volatility jumps to tranquility?

Conditional annualized volatility



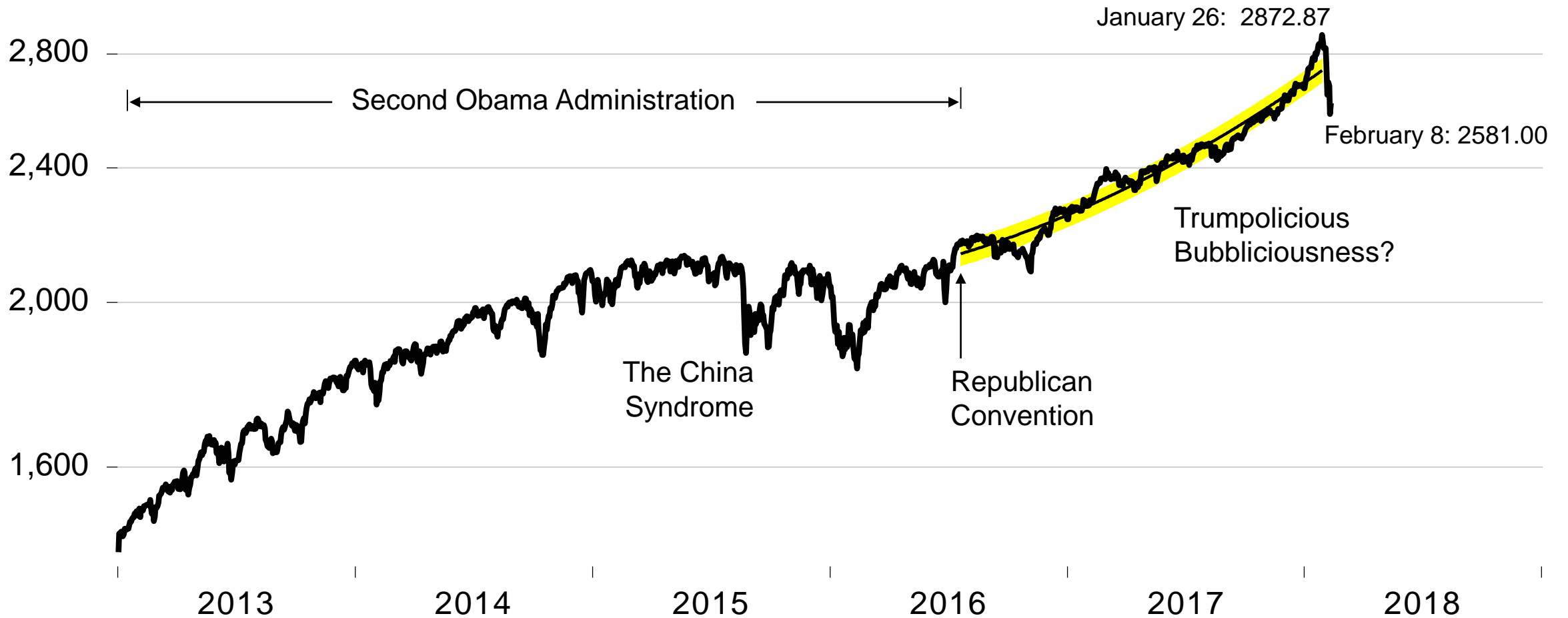
Some conditional annualized volatility comparisons (percent *p.a.*); [Kurtosis measures extent of “fat-tailed”-ness (“Black Swan”-ishness)]

	Oahu	Neighbor Island	Int'l	China	Japan	Domestic	Total
Mean	15.6%	15.1	21.5	86.0	30.6	14.7	15.2
Median (S&P 500 = 13)	12.9	14.4	18.7	67.1	26.1	13.2	13.7
Maximum	86.5	43.4	135.8	384.2	112.8	55.0	76.8
Minimum	11.3	13.1	17.9	53.0	22.7	12.5	12.4
<i>Skewness</i> (Norm = 0)	4.7	6.0	7.0	3.0	3.4	4.3	5.8
<i>Kurtosis</i> (Norm = 3)	33.5	55.6	65.5	13.4	17.2	30.1	57.5
<i>Observations</i>	334	295	346	346	346	346	623

Notable sensitivities: Geopolitical Biological Seismic Geopolitical

This week in U.S. equity markets, a reminder that just when you think volatility has settled down is probably a good time to be wary

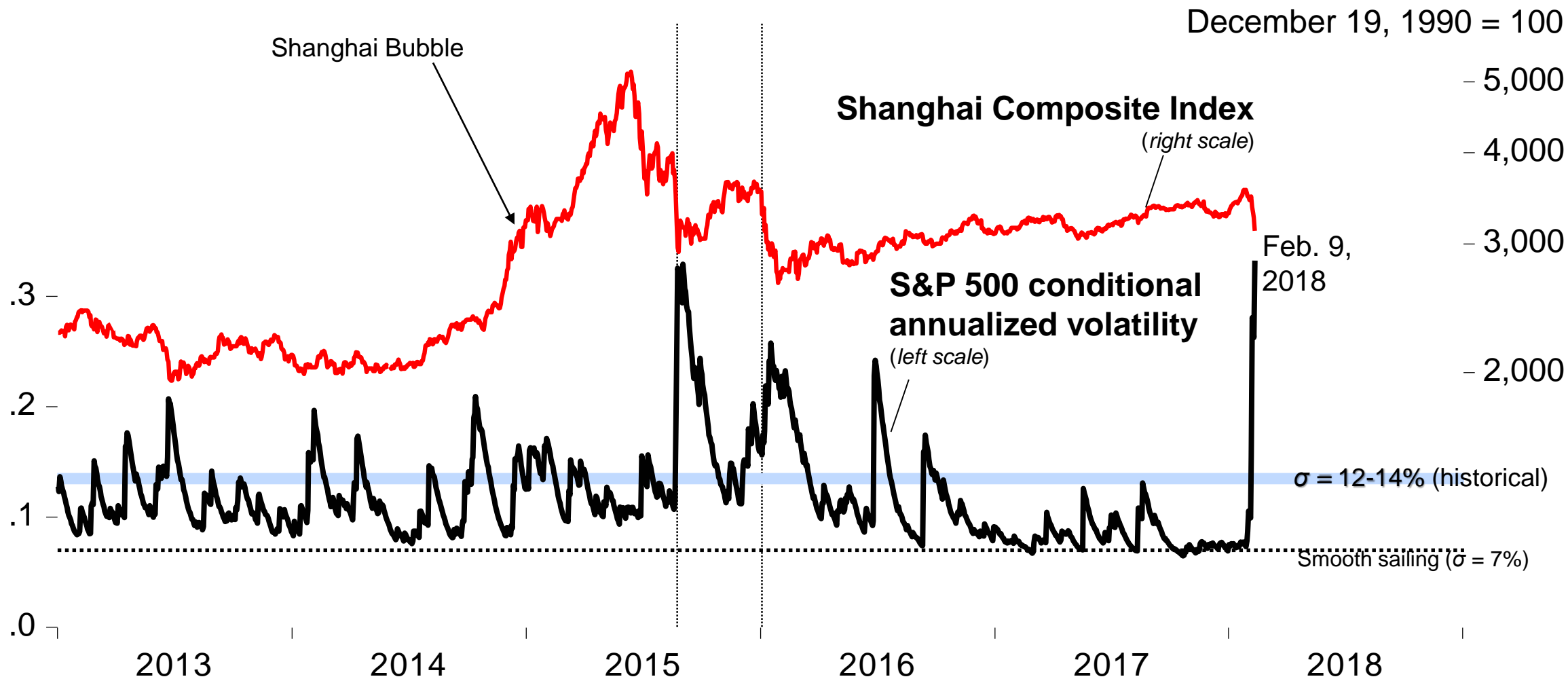
S&P 500 Index (1941-43 = 100)




Sources: Daily data from Standard & Poors, Federal Reserve Bank of St. Louis (<https://fred.stlouisfed.org/series/SP500>); nonlinear trend regression from July 20, 2017 through January 26, 2018 by TZE

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Jump, in S&P 500 Index daily annualized volatility: in 2015-2016 it was channeling the Shanghai Composite Index; now, a U.S. correction



Sources: Daily data from Yahoo Finance (<https://finance.yahoo.com/quote/000001.SS/history?p=000001.SS>), Standard & Poor's, Federal Reserve Bank of St. Louis (<https://fred.stlouisfed.org/series/SP500>); Threshold Autoregressive Conditional Heteroskedasticity annualized standard deviations of daily log changes of the S&P 500 Index calculated by TZE through Friday, February 9, 2018



Part of being prepared: with probability 1 you will get whacked; also, technology has lowered search cost (undocumented vacation rentals)

- Tight lodging inventory on Oahu has been a story about robust yields (REVPAR boost); “collateral damage”: signal to investors to deploy housing capital in vacation rentals—is the next adverse tourism shock coming to a neighborhood like yours?
- Longer-term risks for Oahu:
 1. Growth in new segments (China; East Asia) adding volatility? Vulnerability?
 2. Unusually tranquil revival of Oahu arrivals growth 2012-17 risks complacency
 3. Demand-side focus (arrivals) neglects supply-side risks: sea rise, depreciation
- Cataloging volatility clusters/jumps (generally asymmetric to downside):
 1. Biological events (rapid viral evolution; anti-science denialists won't vaccinate)
 2. Geophysical events (tropical cyclones, seismic sea waves, sea rise, *etc.*)
 3. Geopolitical events (9/11, Desert Storm, Iraqnaphobia; Trump vs. Kim?)



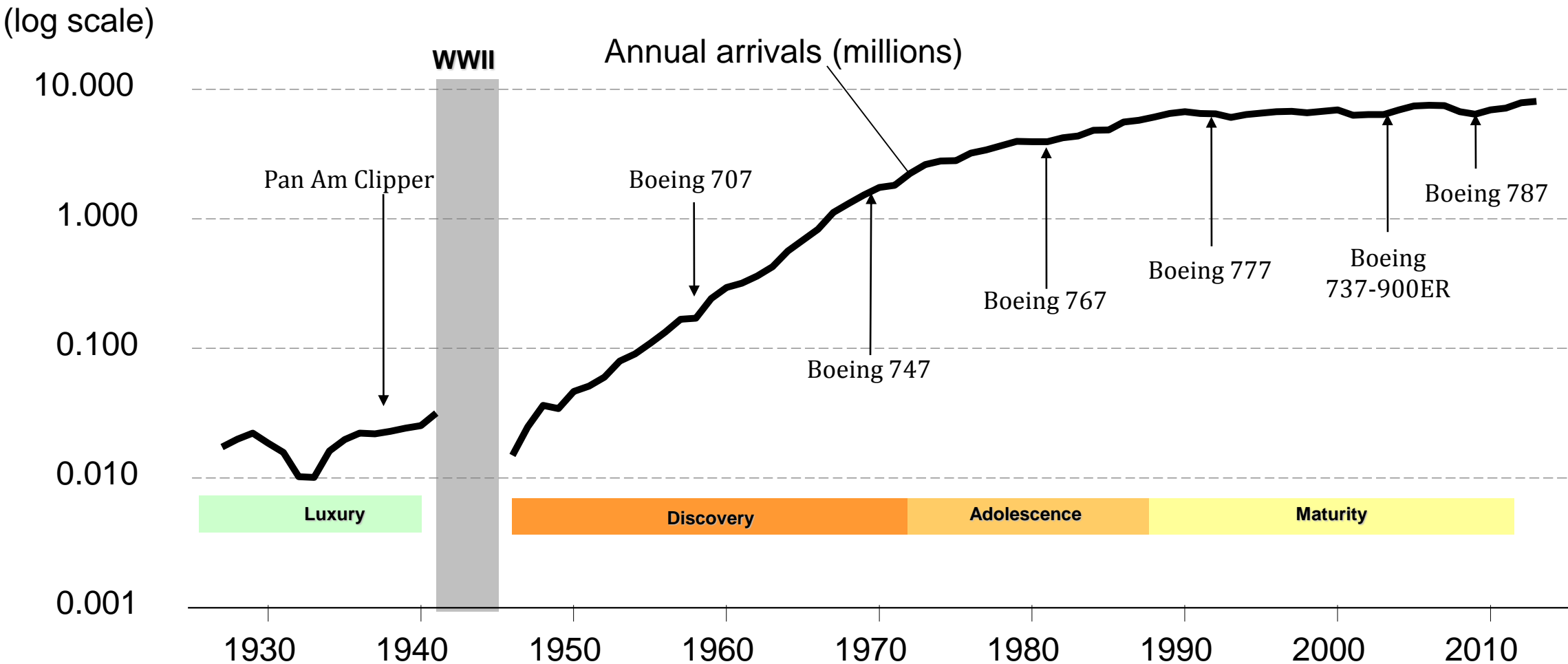
Pau



Appendix: longer-term Hawaii tourist arrival trends

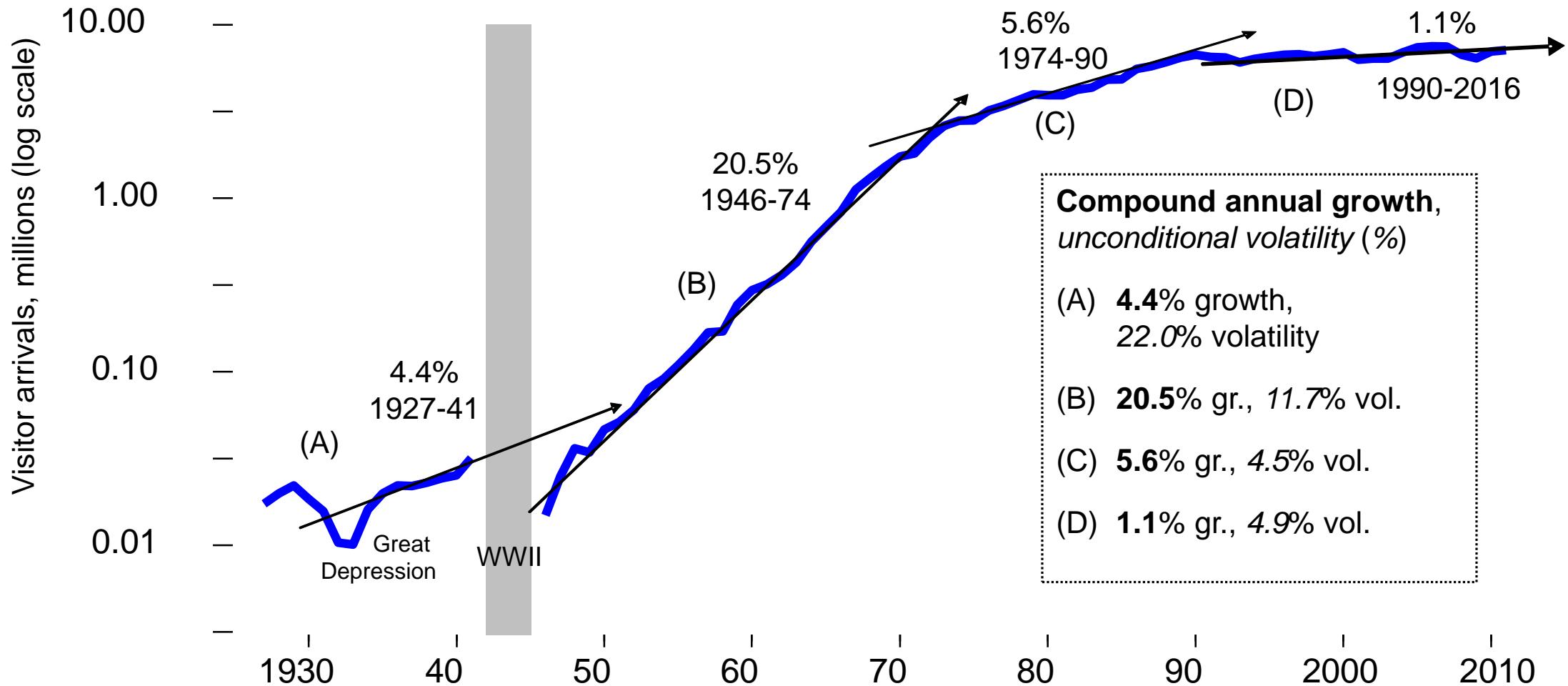
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LR Hawaii tourism volumes grew with aviation technology, statehood



Sources: Annual data through 2016 from Hawaii Visitors Bureau, Hawaii Tourism Authority, Hawaii DBEDT, Robert C. Schmitt, *Historical Statistics of Hawaii* (1976) UH Press

Strategic challenge: a mature tourism destination, Hawaii's primary export sector now is characterized less by growth, more by volatility



Source: Annual data from Hawaii Visitors Bureau, Hawaii DBEDT; calculations by TZ Economics; *annualized growth rate 1990-2007 before the 2008-09 recession was +0.6 percent, unconditional interval volatility was 4.4 percent

Pau!

