

# Every year a record: fake tourism economics

*slides prepared for the*

**Pacific Asia Travel Association / Travel and Tourism  
Research Association (Hawaii Chapters)**

**2017 Forecast and Economic Outlook Forum  
Ala Moana Hotel**

*by* Paul H. Brewbaker, Ph.D., CBE  
TZ Economics, Kailua, Hawaii  
February 2, 2017

TZ ECONOMICS

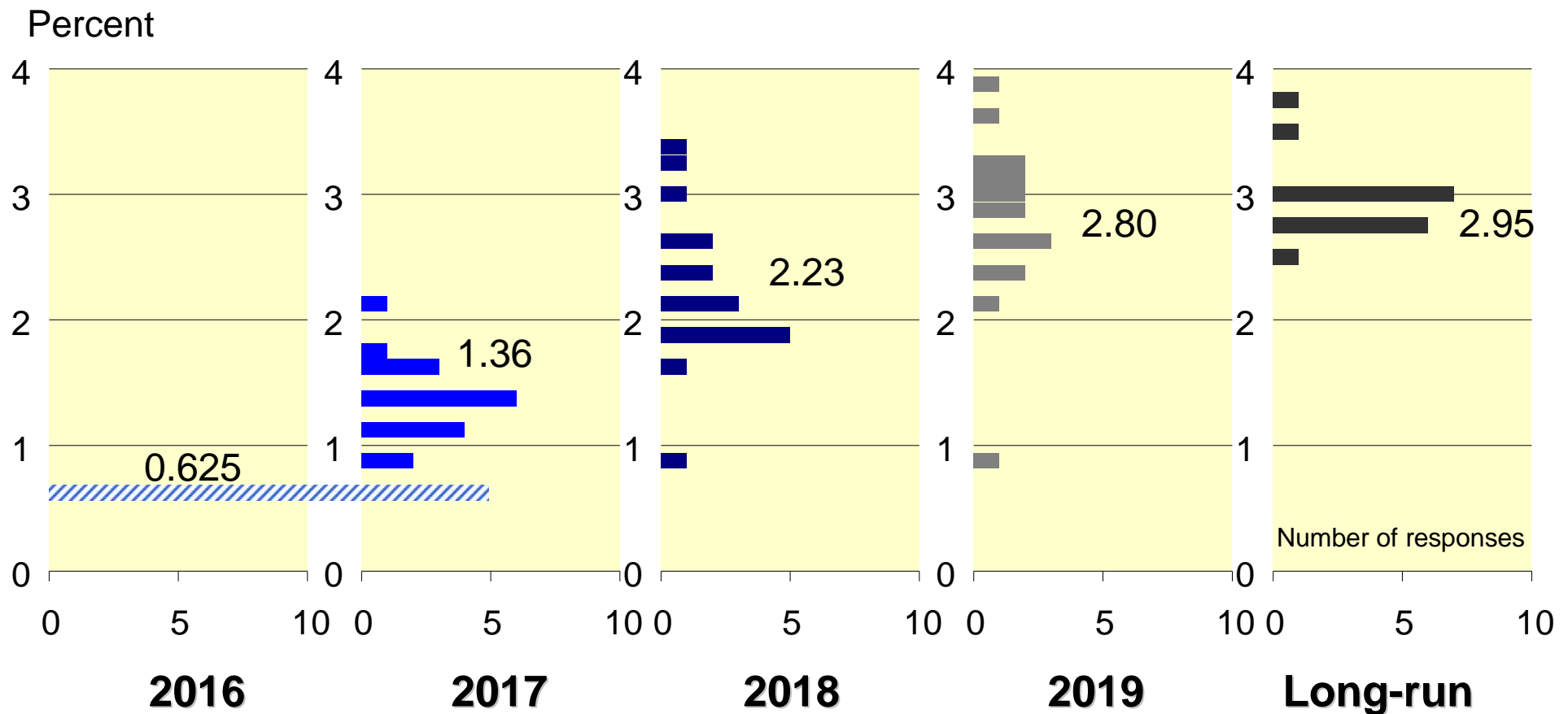
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# Monetary policy divergence: strong dollar

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# Median forecasts for the federal funds rate of Federal Open Market Committee (FOMC) participants, Dec. 2016: quickening

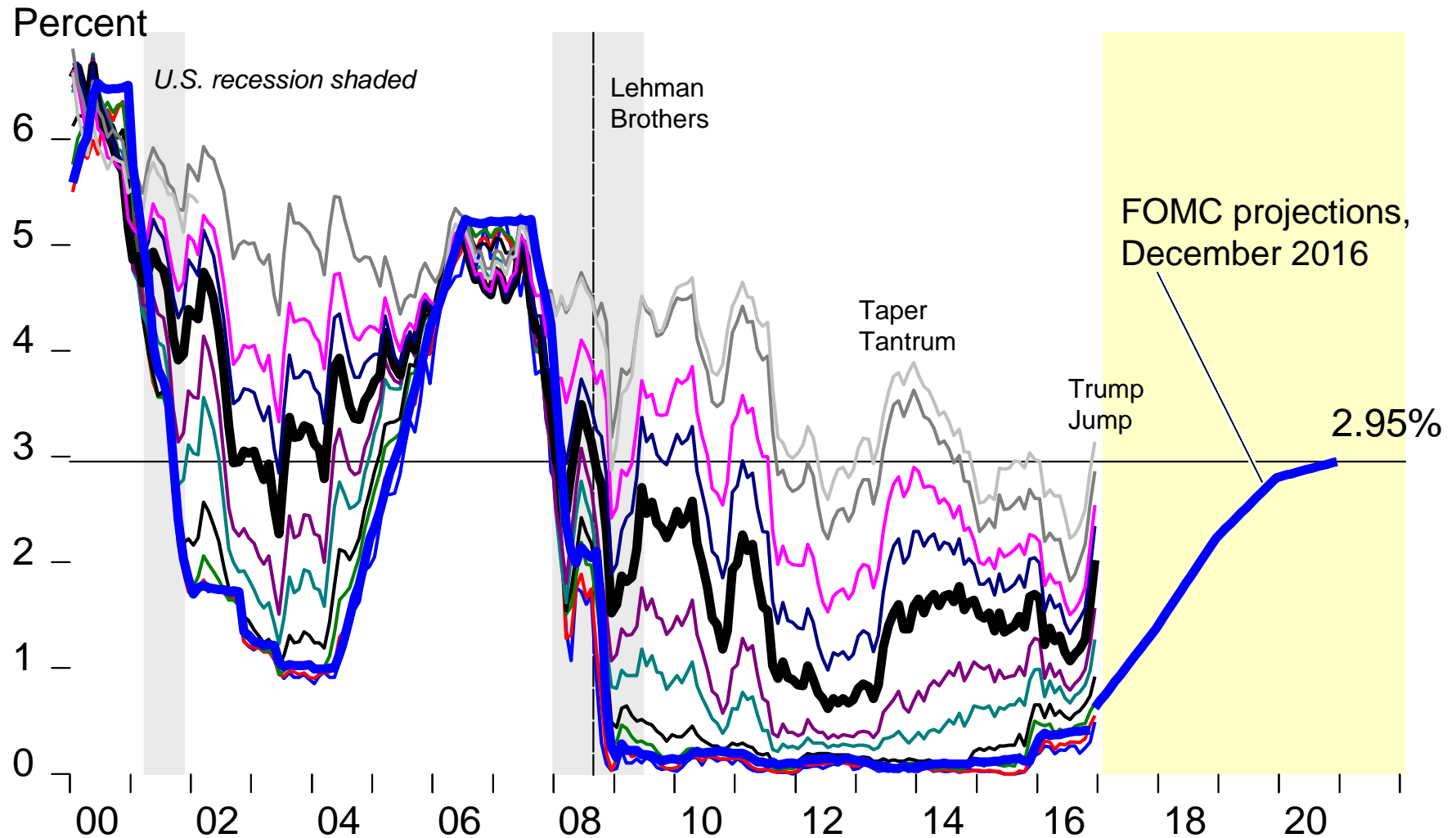


Total number of respondents:  $n = 17$

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Source: Federal Reserve Board (<https://www.federalreserve.gov/monetarypolicy/fomcproptabl20161214.htm>)

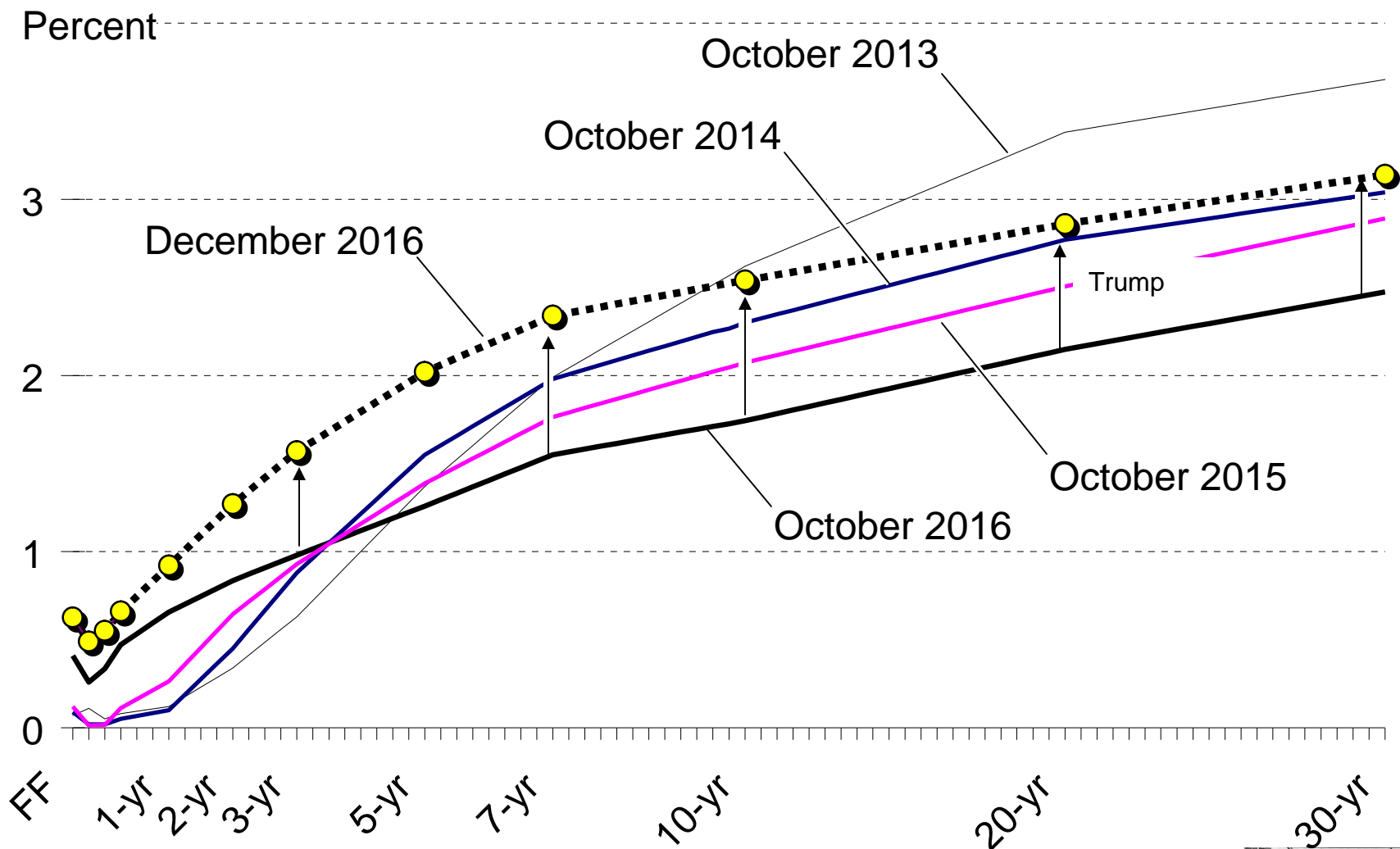
# U.S. Treasury yields and the path of FOMC projections for the fed funds rate target based on December 2016 meeting



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Source: Federal Reserve Board (<https://www.federalreserve.gov/monetarypolicy/fomcproptabl20161214.htm>); Selected Interest Rates H.15 (<http://www.federalreserve.gov/releases/H15/default.htm>)

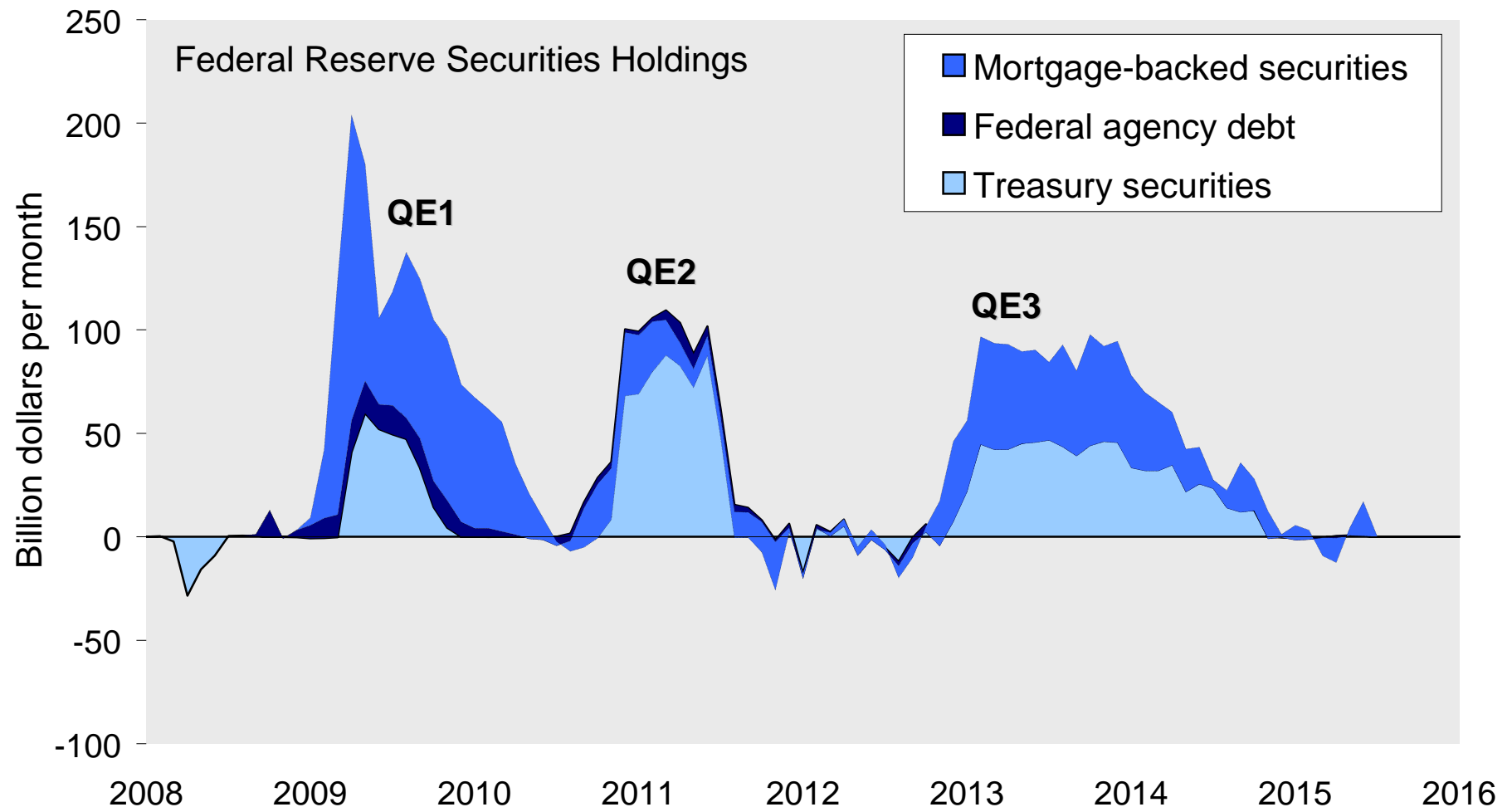
# Term structure of U.S. interest rates reversed in post-election, “Trump Jump,” bond sell-off, widening yield spreads



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Source: Federal Reserve Board (<https://www.federalreserve.gov/releases/h15/>); December 15, 2016 data

# Quantitative Easing pau; FOMC is “maintaining its existing policy of reinvesting principal ...[and] rolling over maturing securities”

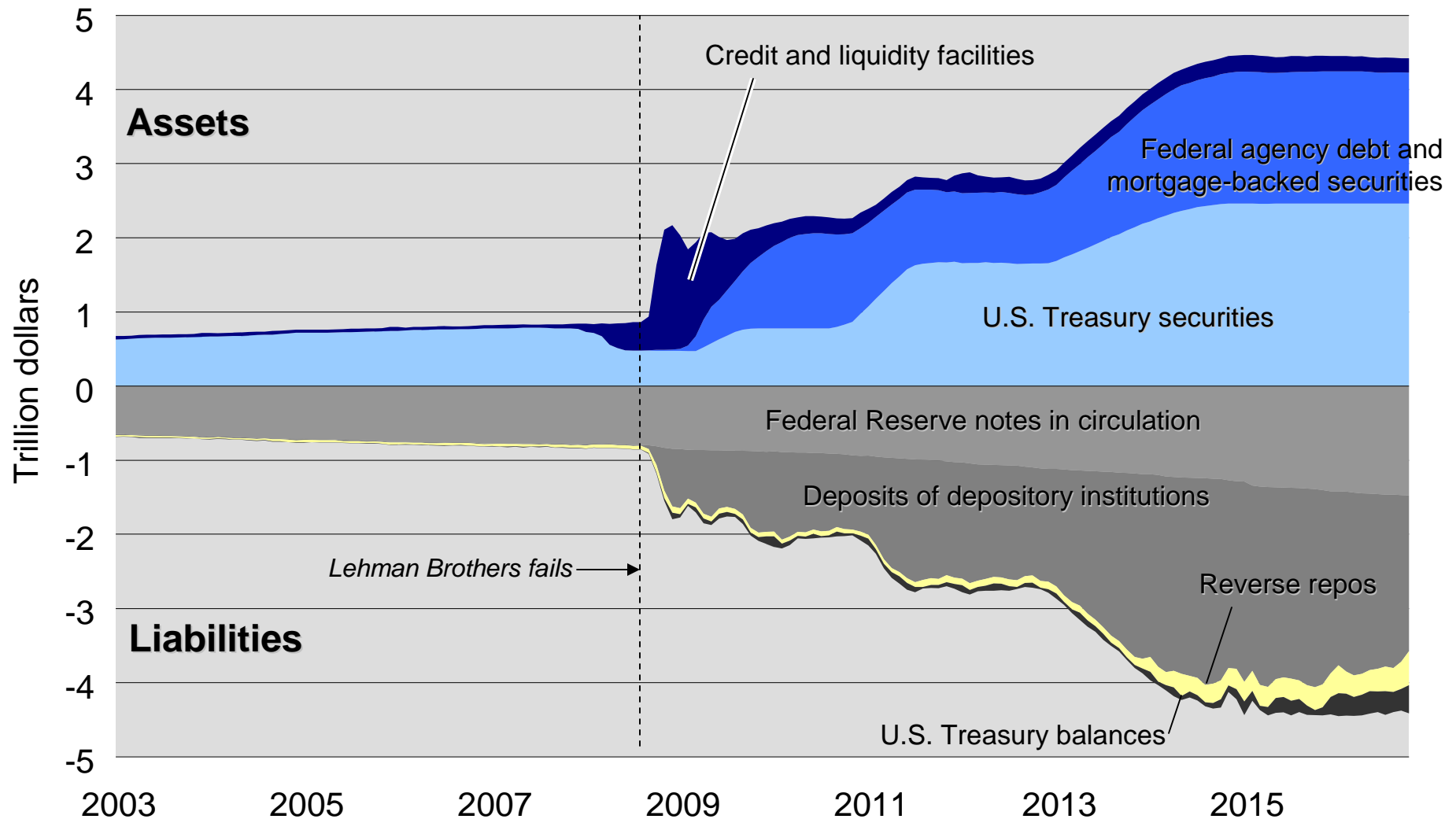


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Source: Federal Reserve Board (H.4.1 Factors Affecting Reserve Balances of Depository Institutions); average monthly changes in U.S. Treasury notes and bonds (including TIPS), federal agency debt securities, and mortgage-backed securities (<http://www.federalreserve.gov/releases/h41/>) through mid-2015 only; FOMC Statement February 1, 2017



# Federal Reserve assets, liabilities: rising fed funds target, balance sheet steady “until normalization...is well under way.”



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Sources: Monthly data for last Wednesday of month from Federal Reserve Board (various, including Statistical Release H.4.1); compiled through October 27, 2016; FOMC Statement February 1, 2017


# Federal Open Market Committee December 2016 annual projections through 2019, long-run

<i>percent</i>	2013	2014	2015	2016	2017	2018	2019	Longer run
<b>Real U.S. GDP growth rate</b>	2.7	2.5	1.9	1.9	2.1	2.0	1.9	1.8
<b>U.S. unemployment rate</b>	7.0	5.7	5.0	4.7	4.5	4.5	4.5	4.8
<b>PCE deflator inflation rate</b>	1.2	1.2	0.4	1.3	1.9	2.0	2.0	2.0
<b>Fed funds rate</b>	1.2	1.2	0.4	0.6	1.4	2.1	2.9	3.0

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Source: Federal Reserve Board (December 14, 2016) (<https://www.federalreserve.gov/monetarypolicy/fomcprojtabl20161214.htm>)





# Why has the long-run neutral interest rate declined from 4 percent to 3 percent?

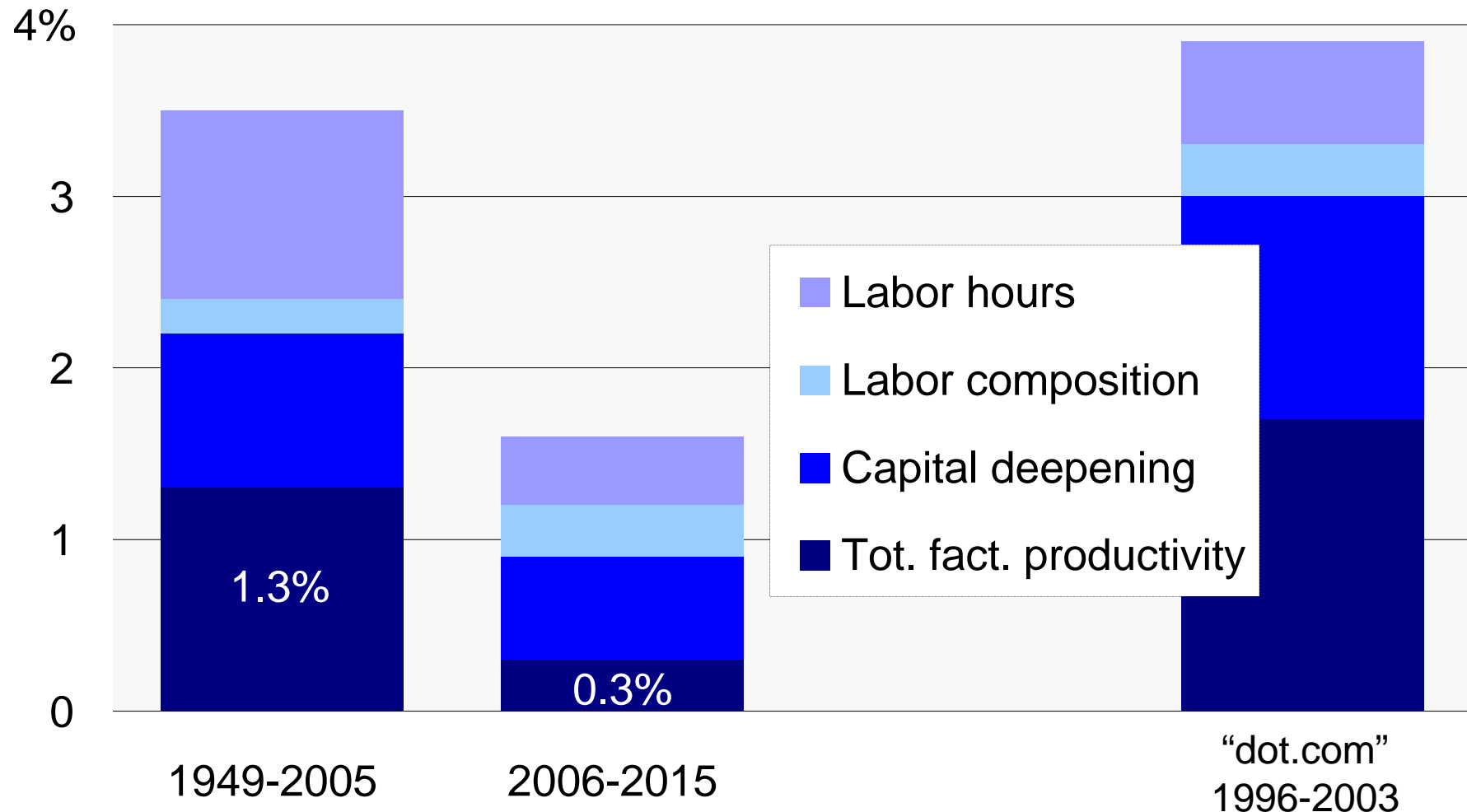
## Declining productivity growth rates

### Growth of output, hours, and productivity in the private business sector

<i>Annualized percent change</i>	1949-2005	2006-2015	1996-2003
<b>Output</b>	<b>3.6</b>	<b>1.6</b>	<b>3.9</b>
<b>Labor input (hours)</b>	<b>1.1</b>	<b>0.4</b>	<b>0.6</b>
<b>Productivity, comprising:</b>	<b>2.5</b>	<b>1.2</b>	<b>3.3</b>
Labor composition	0.2	0.3	0.3
Capital deepening	0.9	0.6	1.3
<b>Total factor productivity</b>	<b>1.3</b>	<b>0.3</b>	<b>1.7</b>

Data from Table 2, Stanley Fischer (August 21, 2016), "Remarks on the U.S. Economy," at the Aspen Institute, Aspen, Colorado (<http://www.federalreserve.gov/newsevents/speech/fischer20160821a.htm>). Data from Bureau of Labor Statistics and John Fernald (2012) "A Quarterly, Utilization-Adjusted Series on Total Factor Productivity," *Working Paper Series 2012-19* (San Francisco: Federal Reserve Bank of San Francisco, revised April 2014) ([www.frbsf.org/economic-research/files/wp12-19bk.pdf](http://www.frbsf.org/economic-research/files/wp12-19bk.pdf))

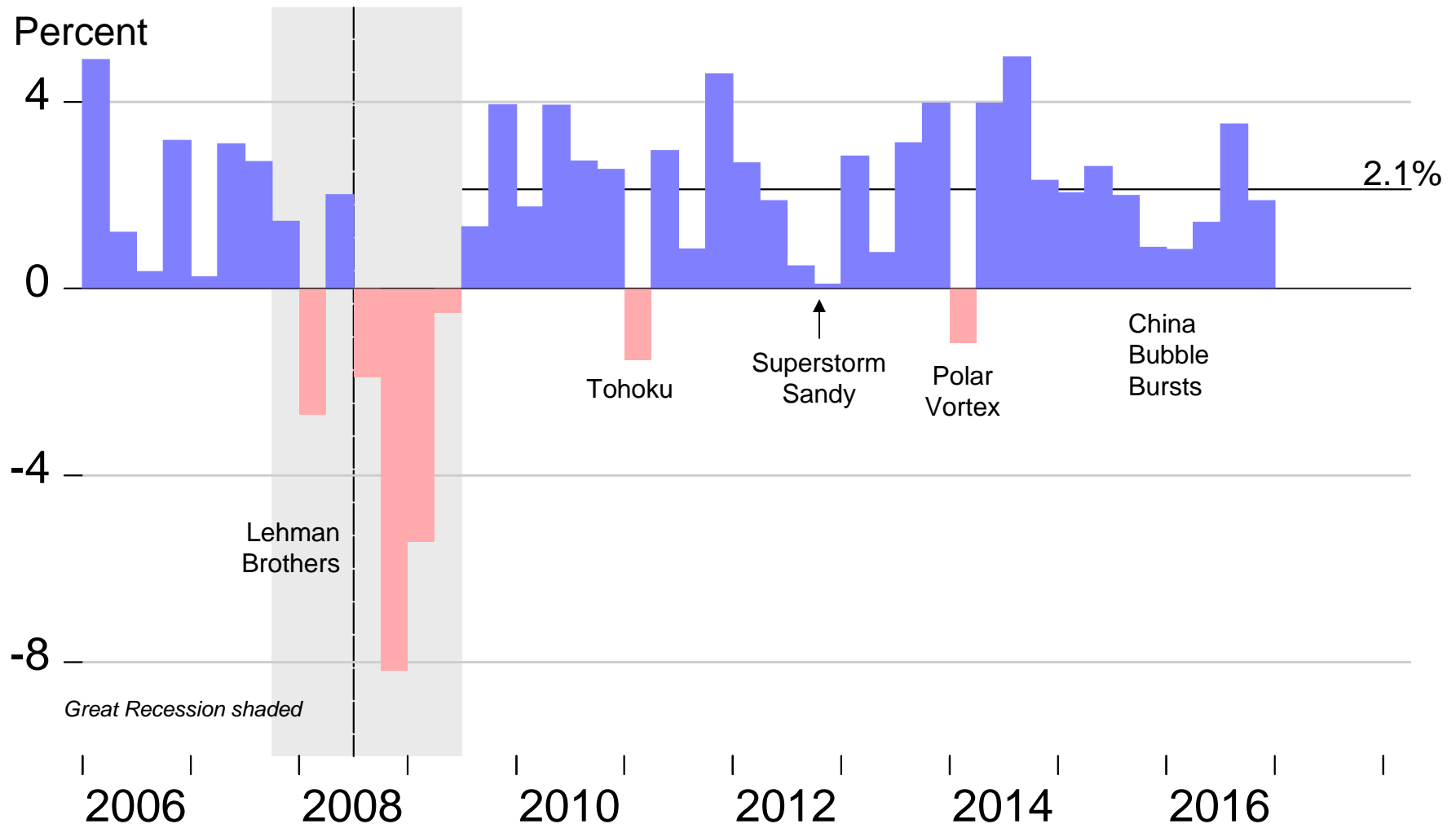
# Contributions to average annualized U.S. real GDP growth, through and after 2005, along with 1996-2003 “dot.com” bubble



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Source: Table 2 from Stanley Fischer (August 21, 2016), “Remarks on the U.S. Economy,” at the Aspen Institute, Aspen, Colorado (<http://www.federalreserve.gov/newsevents/speech/fischer20160821a.htm>)

# Fourth quarter 2017 U.S. real GDP growth of 1.9 percent, consumption-led, extends 7.5 year expansion at 2.1 percent annualized rate

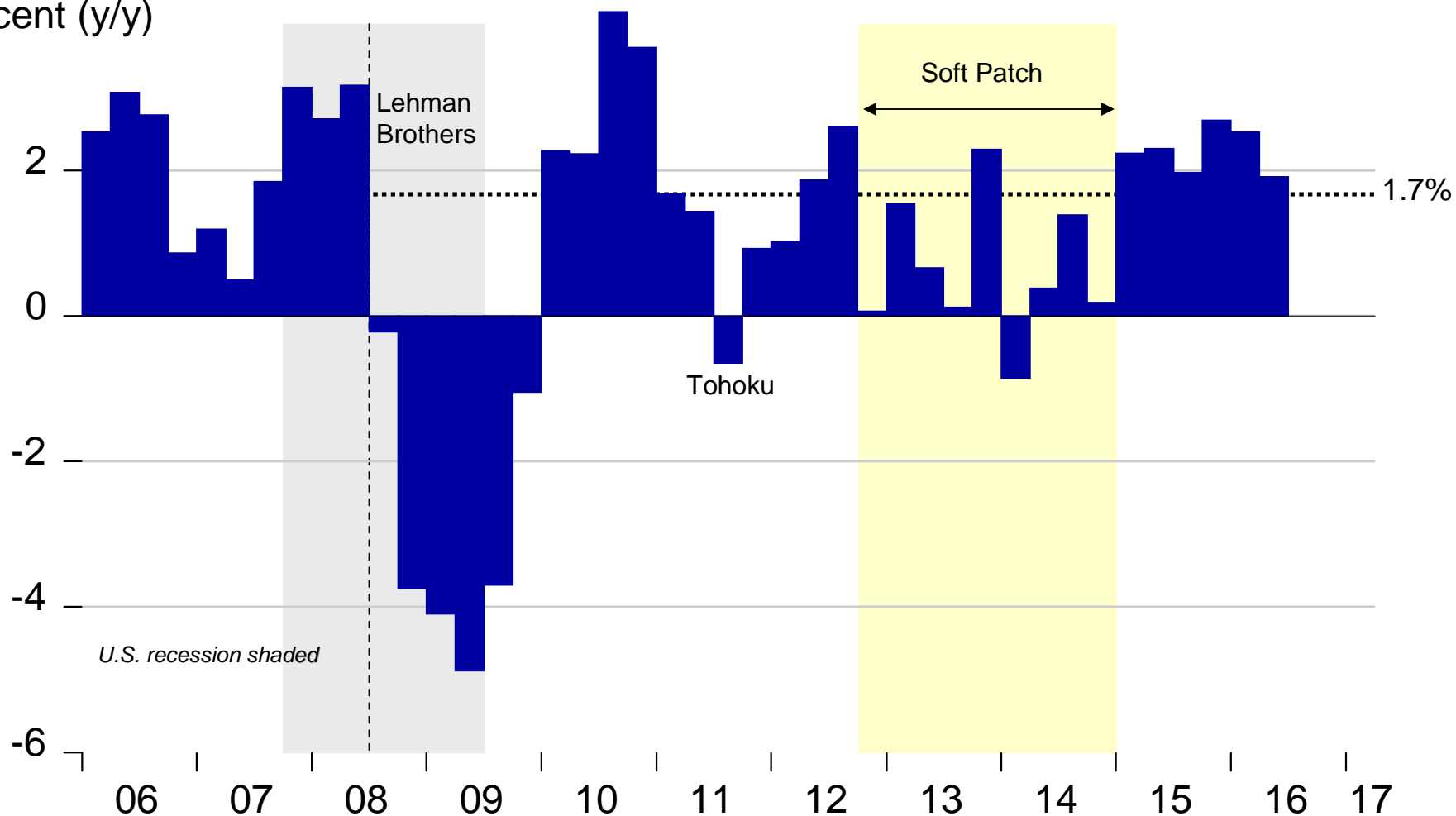


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Source: U.S. Bureau of Economic Analysis (<http://bea.gov/national/xls/gdplev.xls>), data release January 27, 2016

# Hawaii statewide real GDP growth (percent; through 2016Q2) at 1.7% had fallen short of U.S. 2.1% in current expansion

Percent (y/y)

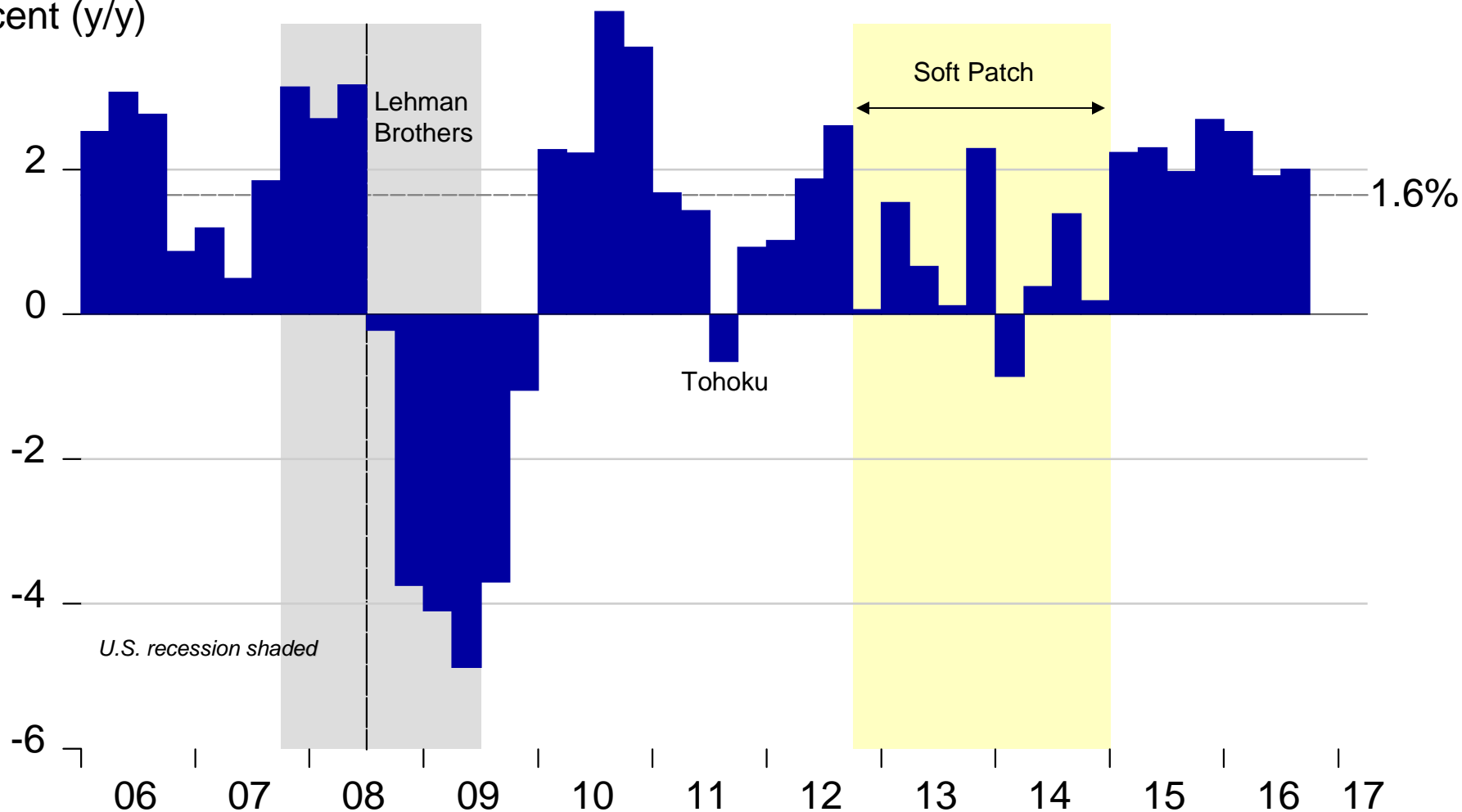


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Source: U.S. Bureau of Economic Analysis (<http://bea.gov/regional/index.htm>); data through mid-2016

## Hawaii statewide real GDP growth (percent; through 2016Q3) at 1.6% has fallen short of U.S. 2.1% in current expansion

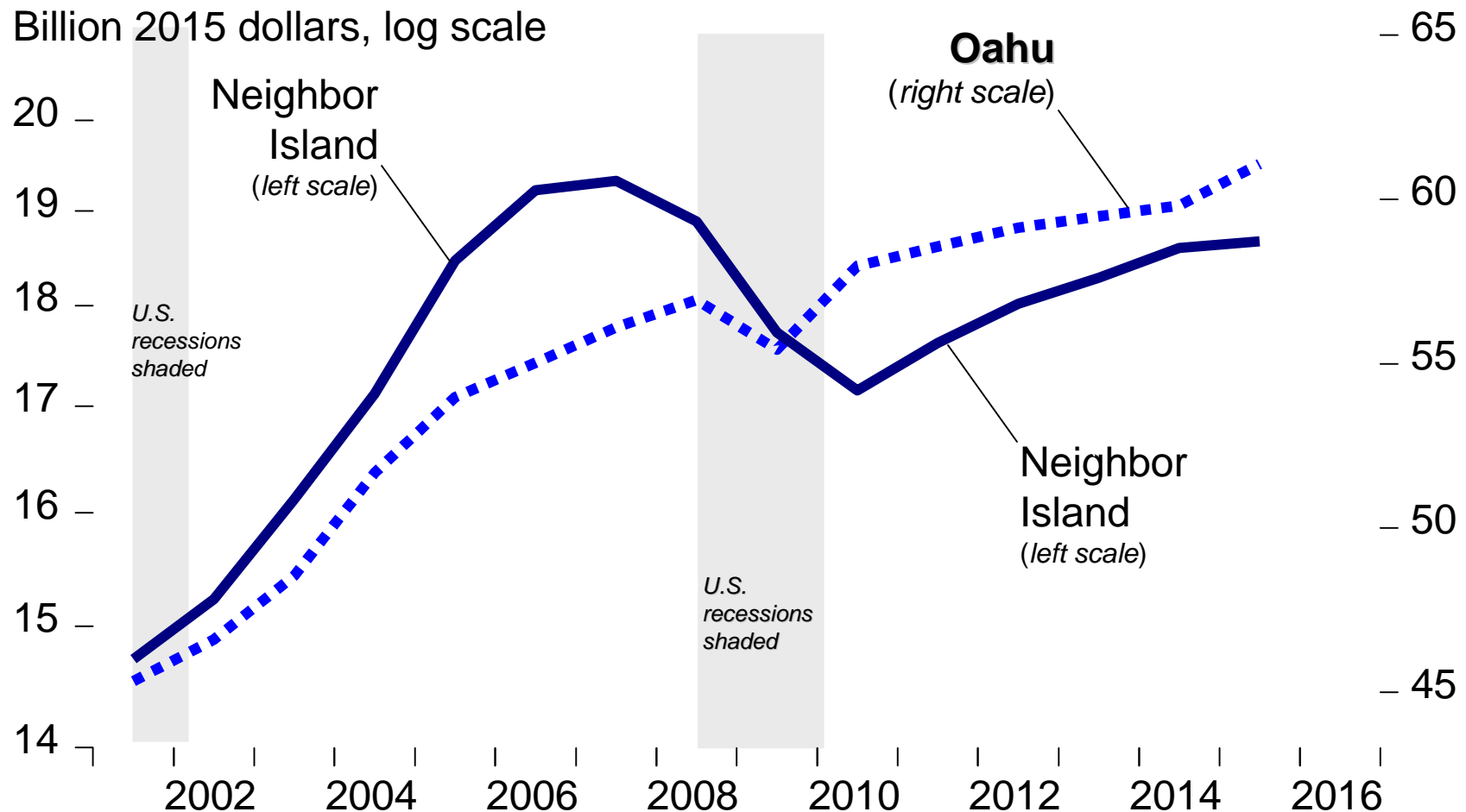
Percent (y/y)



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Source: U.S. Bureau of Economic Analysis (<http://bea.gov/regional/index.htm>); data through third quarter 2016

# Real GDP, Oahu vs. N. Islands: contrast current business cycle with bubblicious predecessor (data rebased to 2015 dollars)



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Source: Bureau of Economic Analysis (<http://bea.gov/regional/index.htm>); rebased to chained 2015 dollars.





# Tourism's challenge to ongoing expansion

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HONOLULU

SUNDAY 1/15/17  
The Pulse of Paradise

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STARADVERTISER.COM >> \$2.25 Oahu, \$3.25 neighbor islands

>> Mostly sunny. High 82, low 67 >> A17



2017 LEGISLATIVE SESSION

## THE ELEPHANT IN THE ROOM

*Money woes continue to dog state lawmakers despite a record surplus and booming economy*

By Kevin Dayton  
kdayton@staradvertiser.com

**T**here will be hand-wringing over lagging tax collections, and anxiety surrounding the discovery last week of an extra \$3.7 billion shortfall in the public workers' pension fund.

There will be political pressure for public employee raises, and urgent requests from city officials asking that the excise tax surcharge be extended to keep the money spigot open for the budget-busting Honolulu rail project.

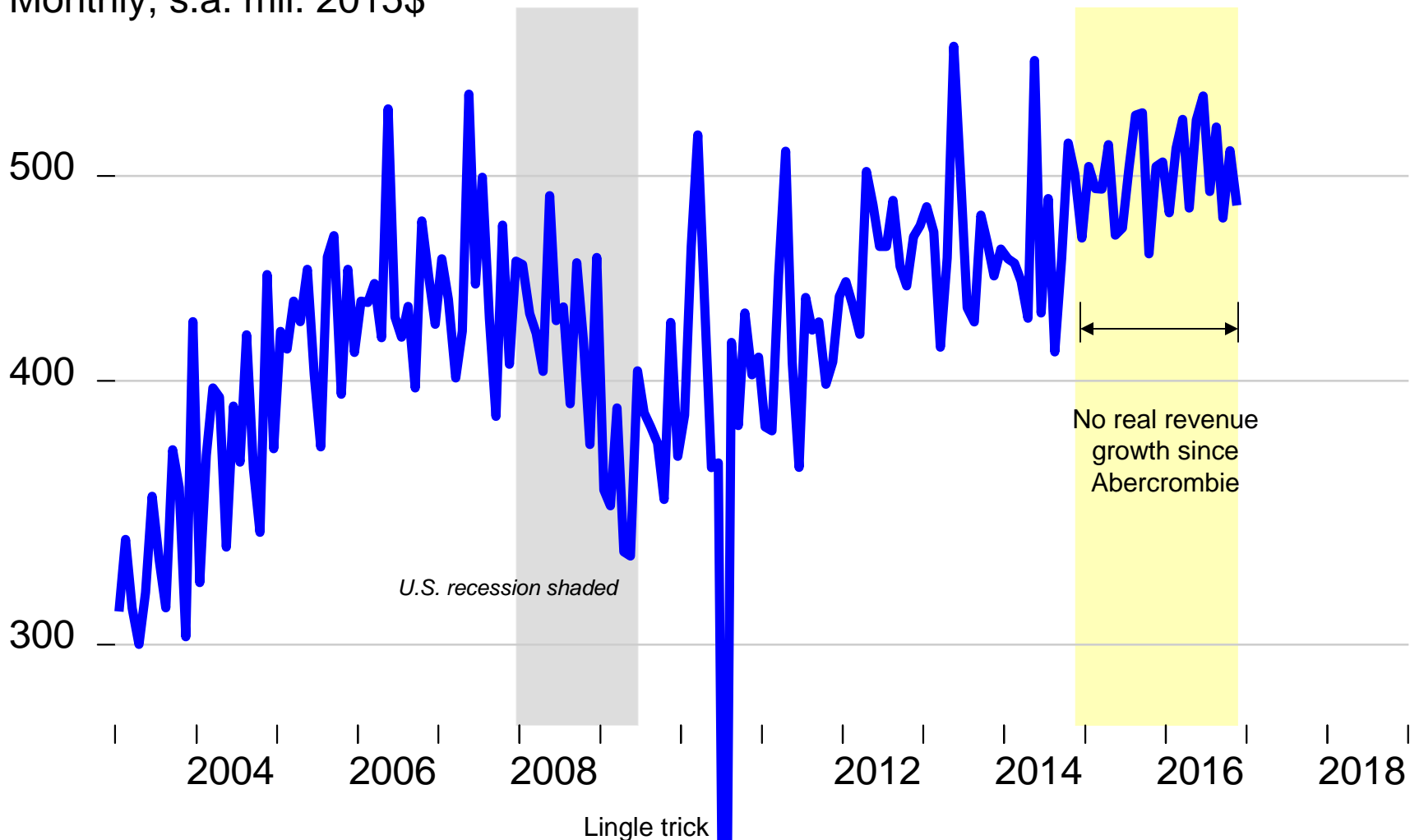
Economically speaking, these are the best of times in Hawaii, but you won't know that by watching the scramble for money shaping up at the Legislature this year.

Tourism arrivals, visitor spending and tax collections are all at record levels. The state closed the books last year on a budget surplus of more than \$1 billion — the largest in state history — and finances looked so good in September that national rating agencies gave Hawaii its best com-



# Hawaii constant-dollar general fund revenue has been unchanged since the start of the Ige Administration: it's the tax base

Monthly, s.a. mil. 2015\$



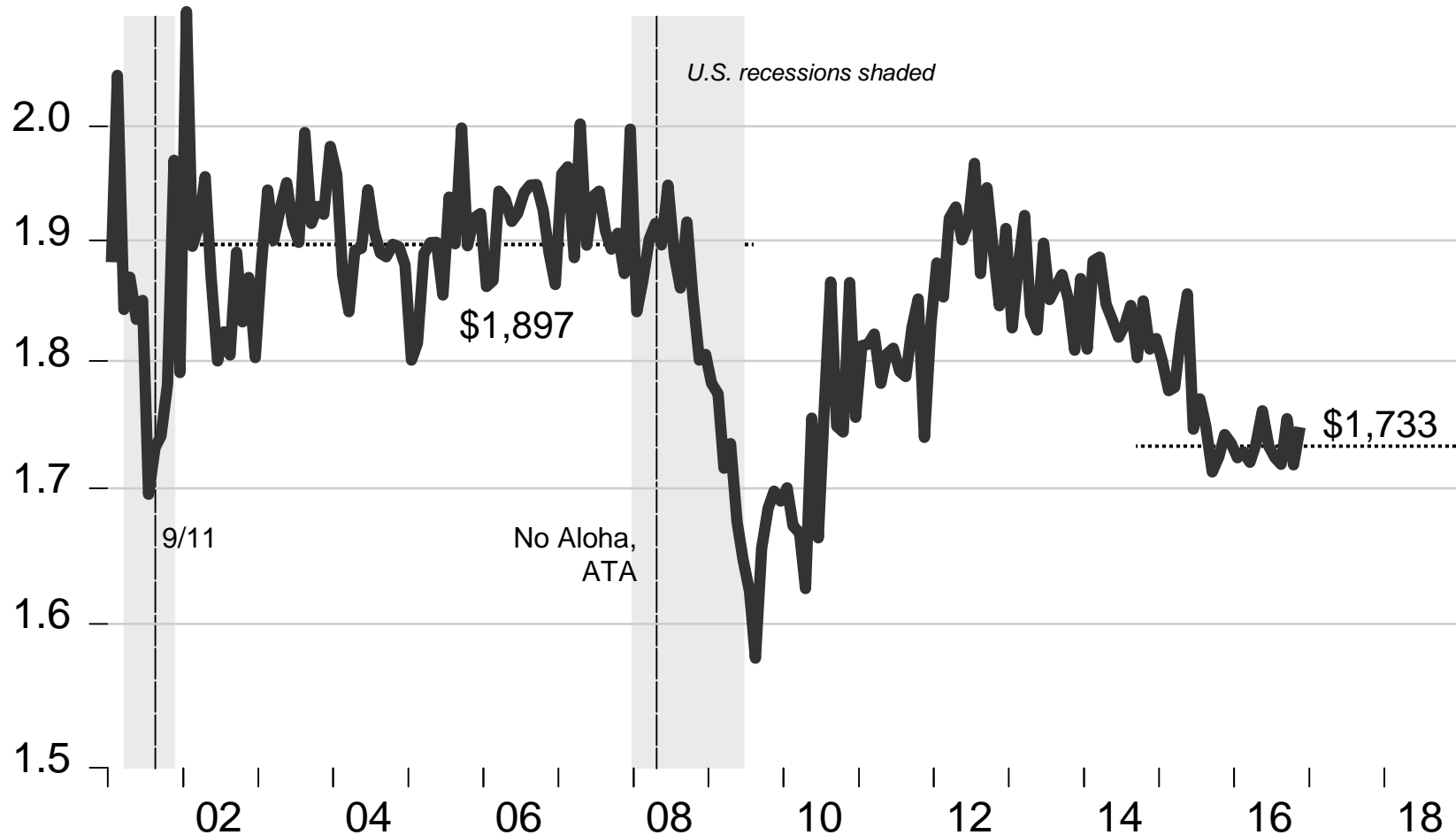
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Sources: "General fund revenue" published monthly by Hawaii DoTAX, Hawaii DBEDT, CPI from Bureau of Labor Statistics; seasonal adjustment, deflation using core U.S. CPI-U by TZ Economics (excludes the impact of more volatile food and energy sources of consumer price inflation)



# Real expenditure per visitor (s.a.) in thousand constant 2015\$ recovered by 2012 but has been eroding since early that year

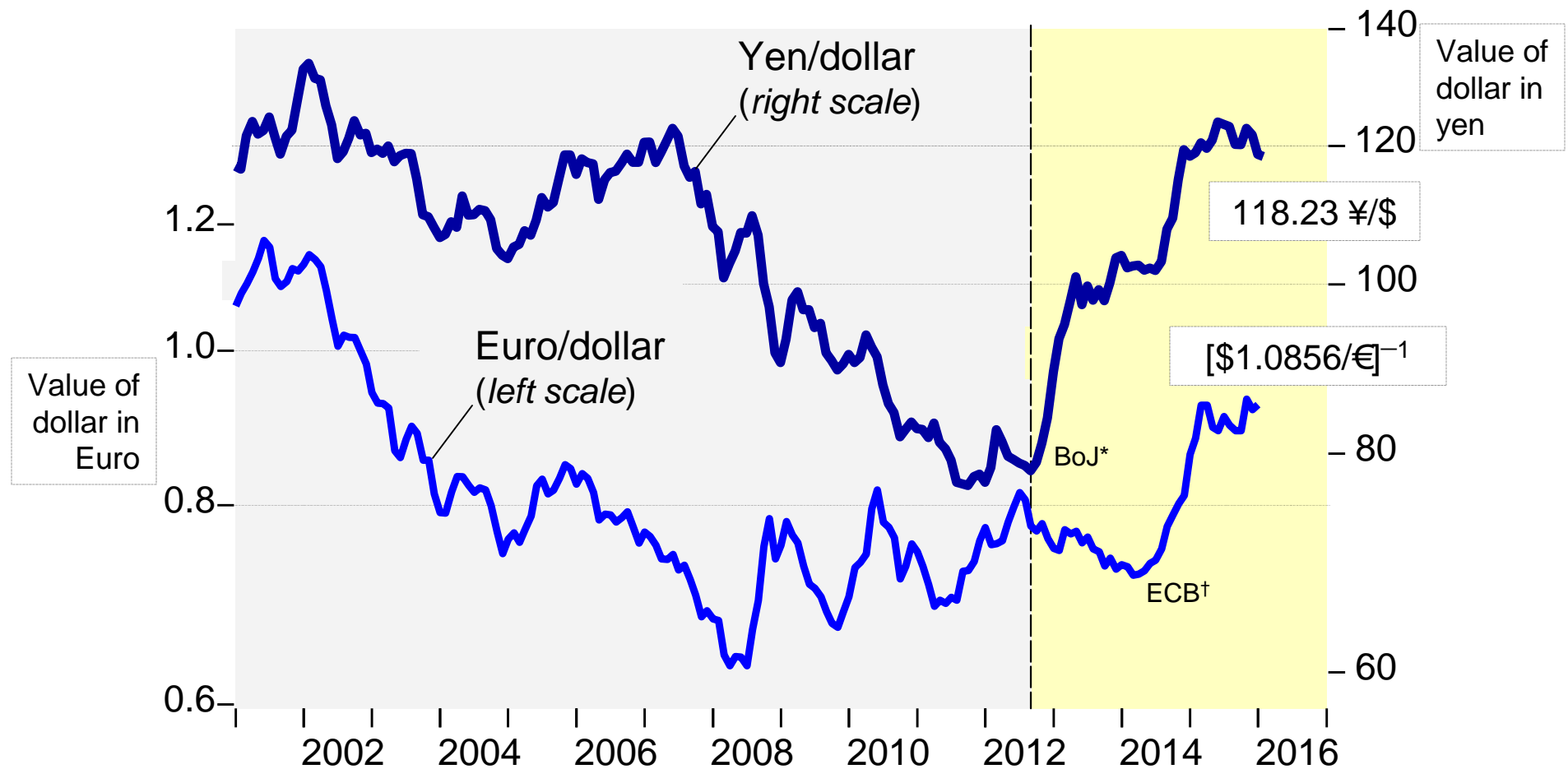
Monthly, thousand constant (2015) dollars, s.a



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Sources: Hawaii Tourism Authority, Hawaii DBEDT, Bureau of Labor Statistics; seasonal adjustment, deflation using core U.S. CPI-U by TZ Economics (excludes the impact of more volatile food and energy sources of consumer price inflation) through November 2016

# Diverging: quantitative easing (QE) depreciated Japanese yen and Euro while the Fed moved towards monetary policy normalization



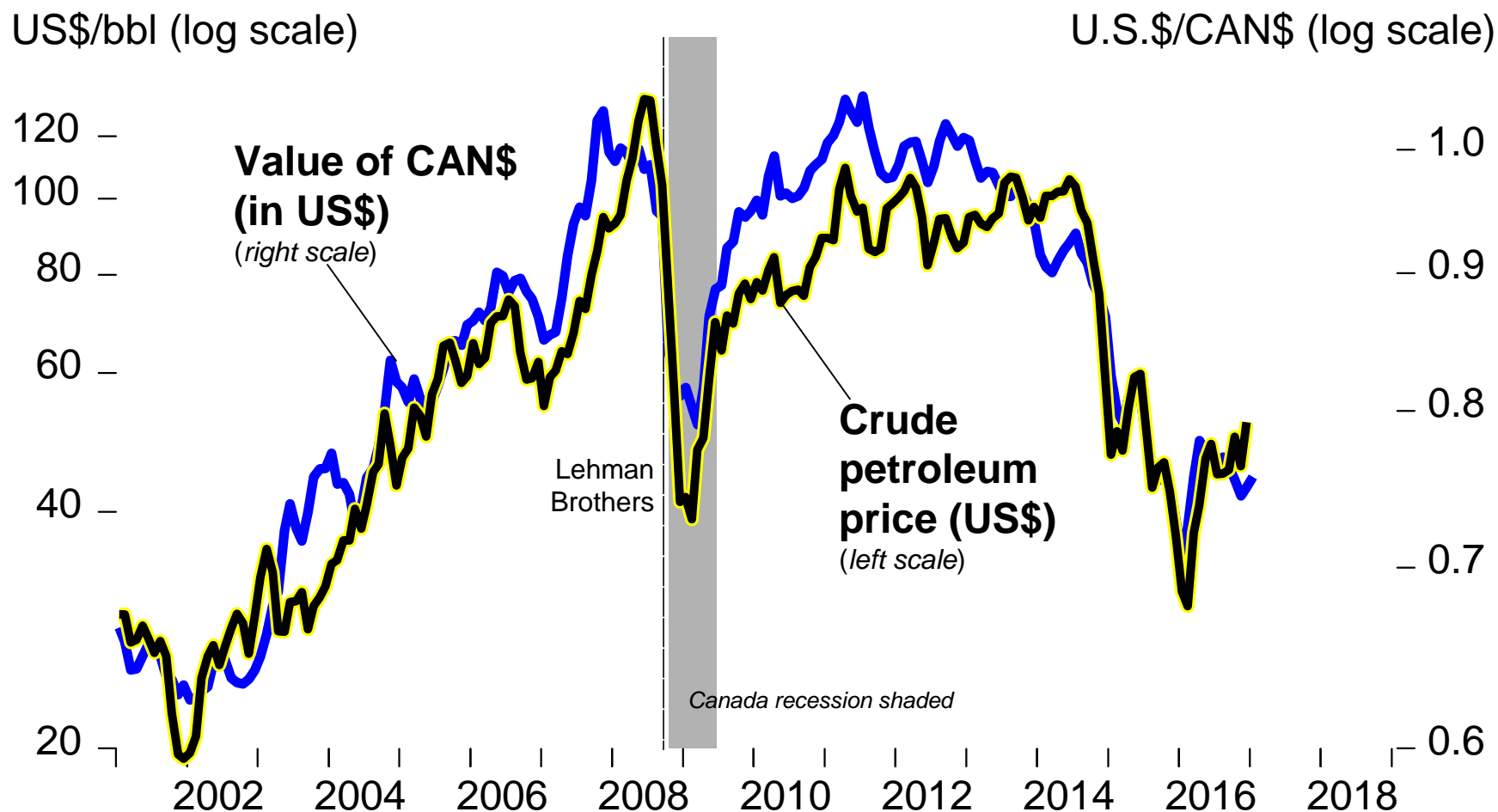
\* Prime Minister Abe re-elected December 16, 2012, initiates "Abenomics," endorsing Quantitative Easing.

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

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Source: Federal Reserve Bank of St. Louis; data through January 13, 2016 (prior monthly averages) (<http://research.stlouisfed.org/fred2/series/EXUSEU> and <http://research.stlouisfed.org/fred2/series/EXJPUS>); exchange rates noted are U.S. market close

# Falling global oil prices: windfall for consumers, tough on producers (Canada, Dakotas) as well as on substitutes—sugar, maize (ethanol)

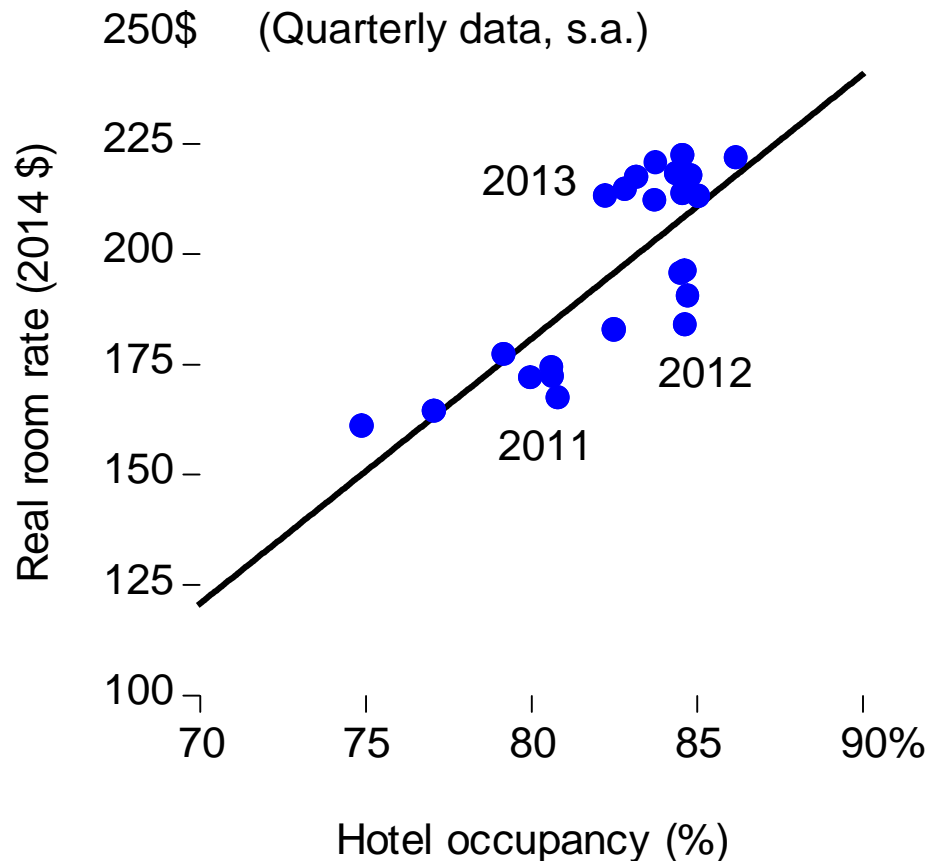


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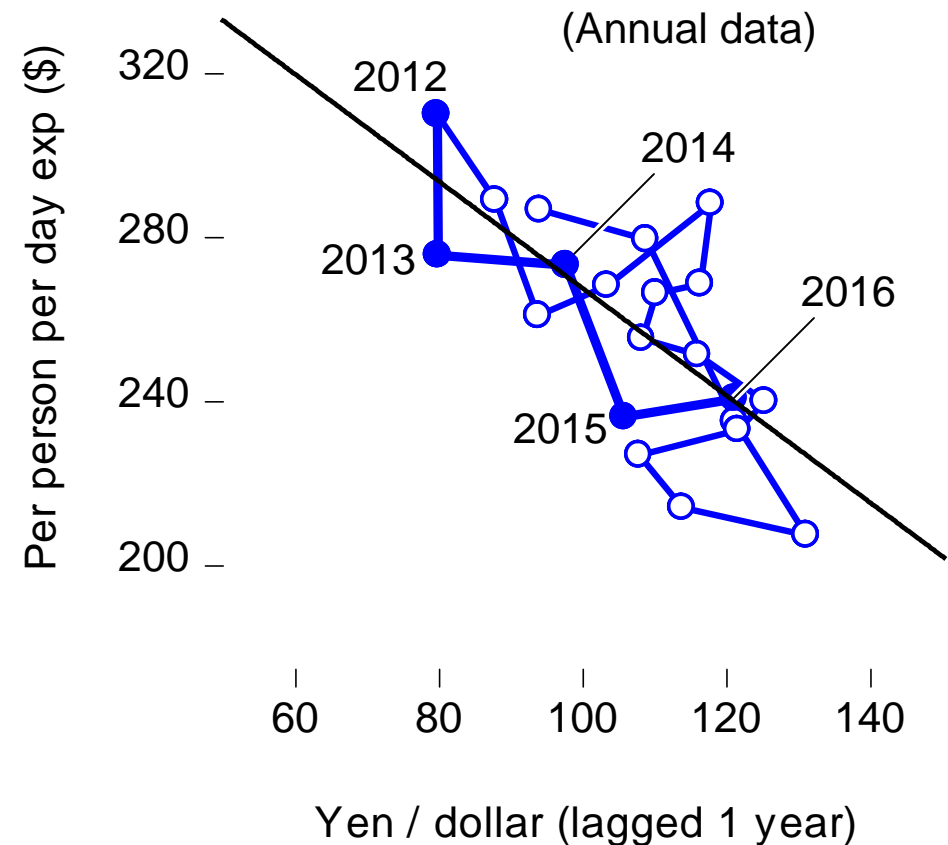
Source: CD Howe Institute ([https://www.cdhowe.org/pdf/Commentary\\_366.pdf](https://www.cdhowe.org/pdf/Commentary_366.pdf)), Federal Reserve Bank of St. Louis; data through December 2016 (monthly averages) (<http://research.stlouisfed.org/fred2/series/EXCAUS> and <http://research.stlouisfed.org/fred2/series/MCOILWTICO/>)



# Relationships: real room rates rose fast with utilization (2010-2015); nominal Japanese outlays fell with yen's value (1996-2016)



**Oahu real room rates rose with occupancy**

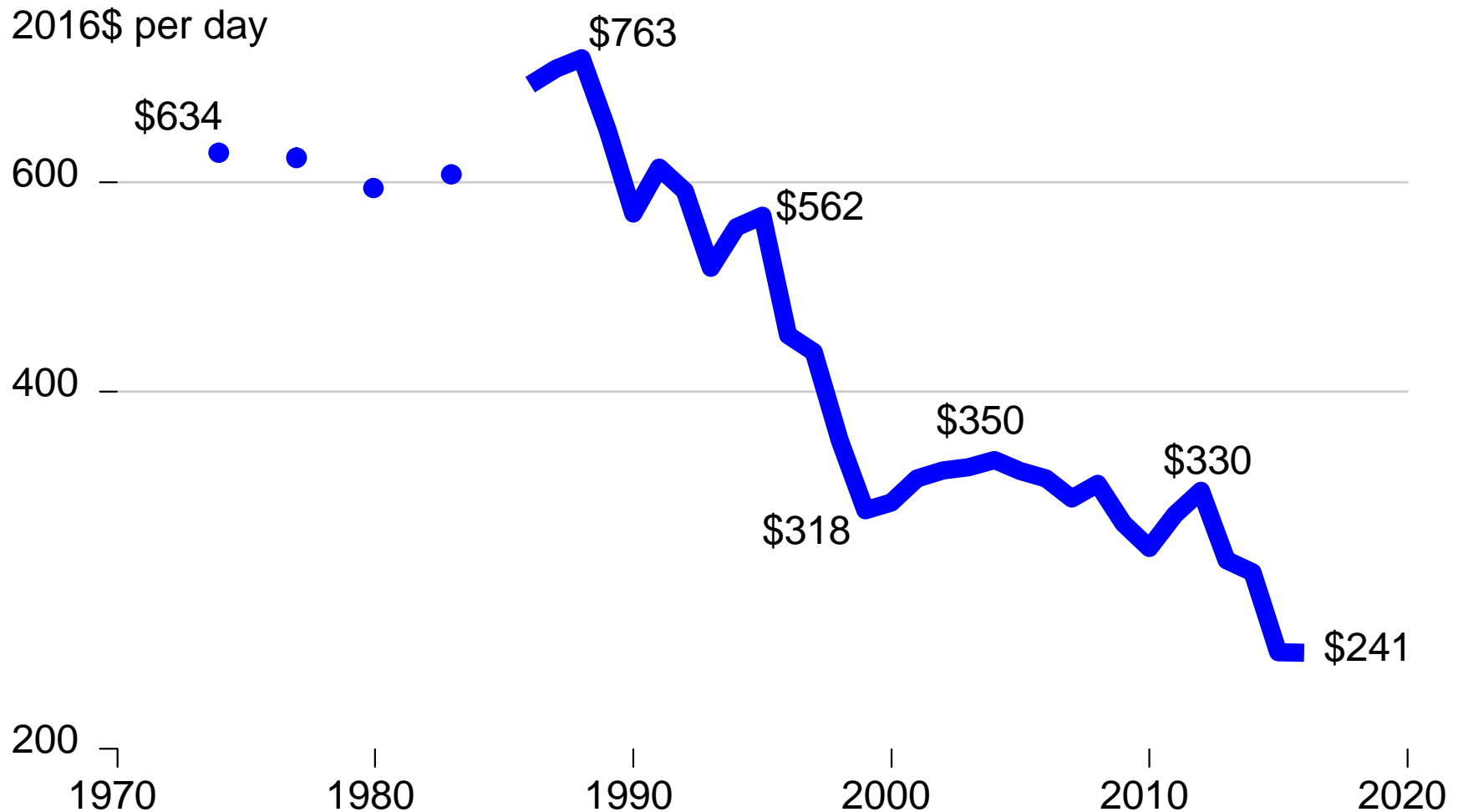


**Japanese daily visitor outlay fell with the yen's value**

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Sources: Hawaii Tourism Authority, Hawaii DBEDT, Bureau of Labor Statistics; seasonal adjustment, deflation using Honolulu CPI-U (quarterly interpolation from semiannual data and annual averages, as appropriate) by TZE

## Extending a long trend towards lower real (constant-dollar) daily expenditure by Japanese tourists (same U.S., CAN)



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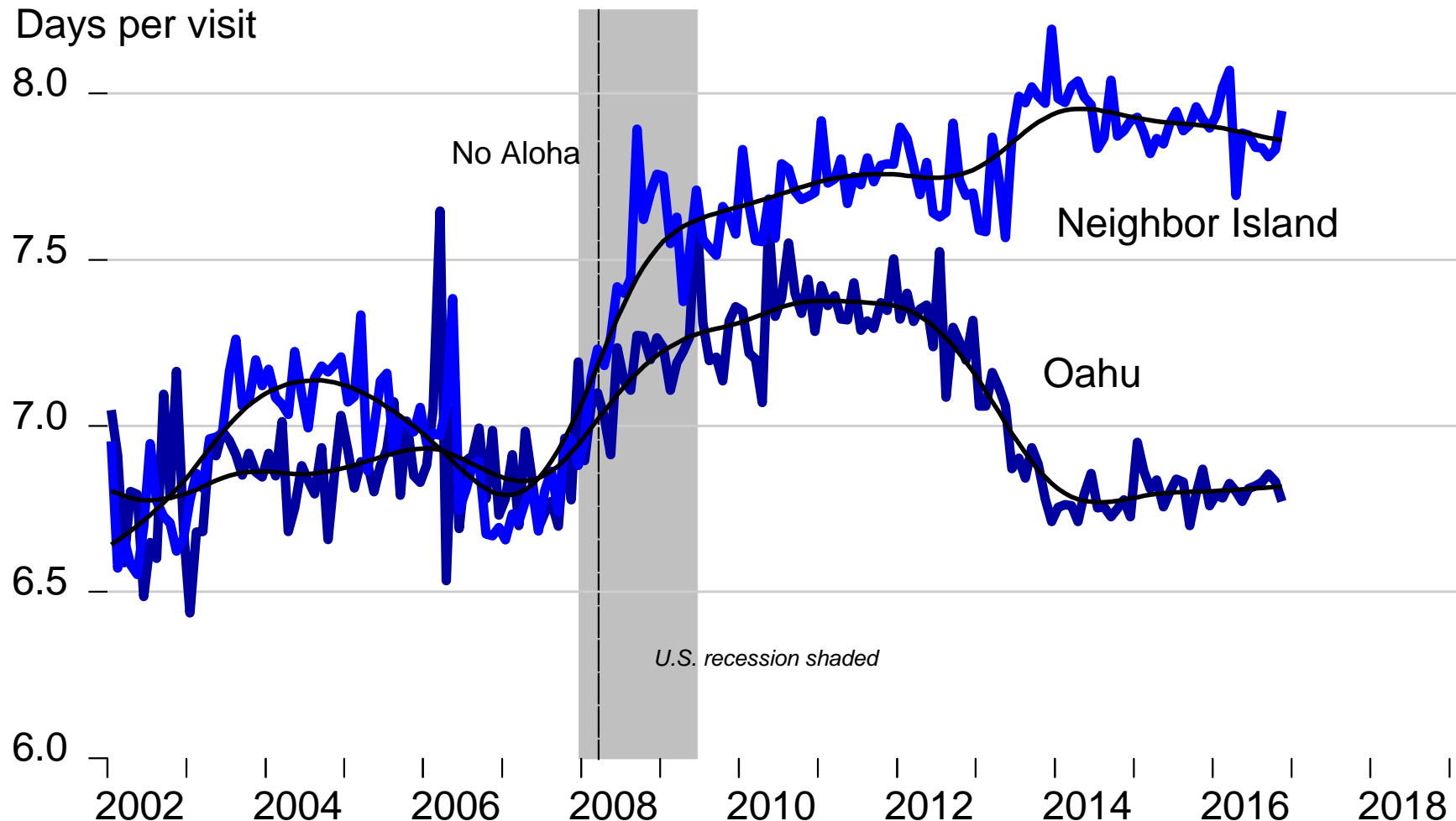
Sources: Hawaii Tourism Authority, Hawaii DBEDT, Bureau of Labor Statistics; deflation using Honolulu CPI-U) by TZE



# Stay lengths, airlines, and tight inventory

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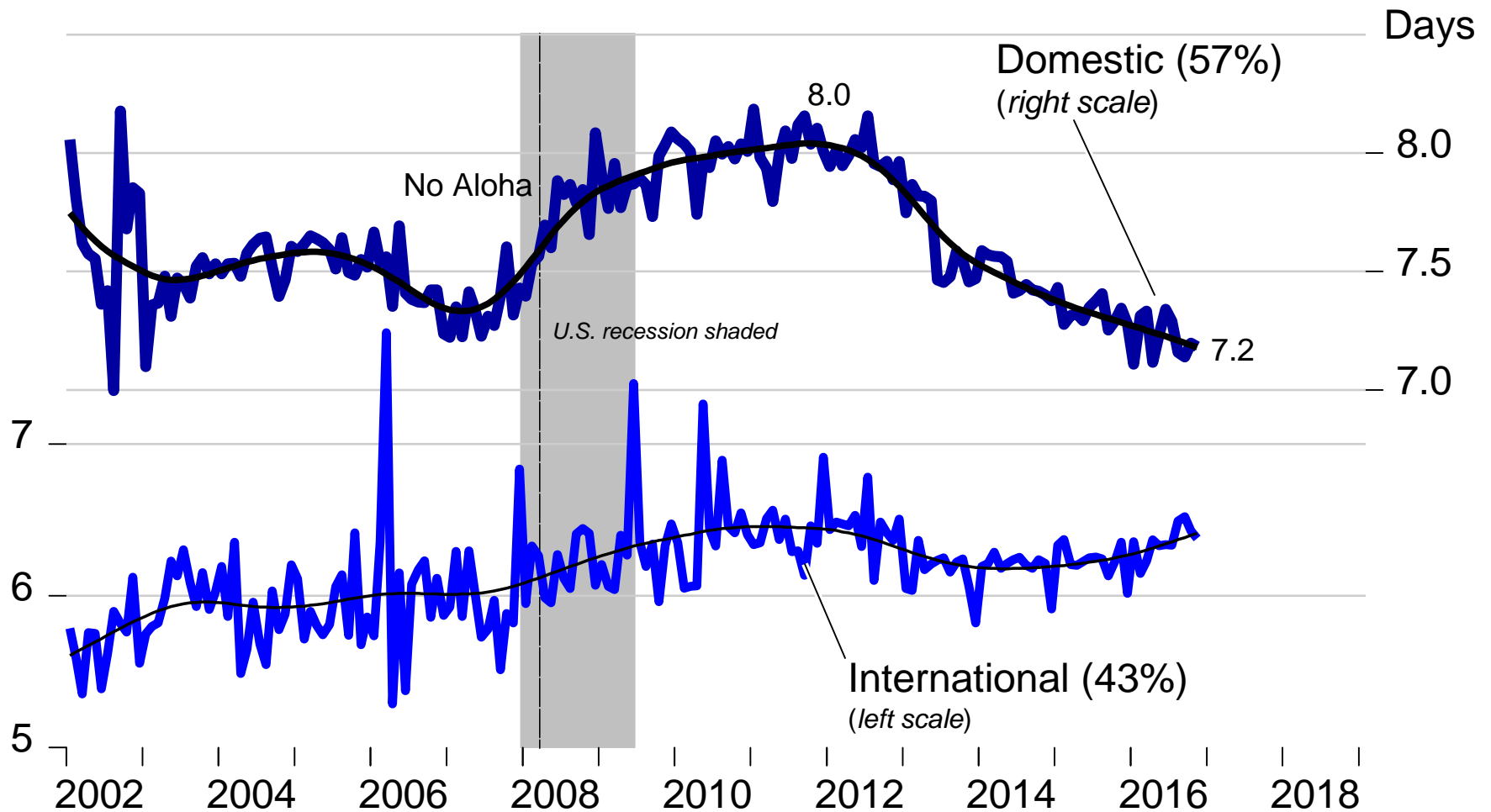
## Evolving stay lengths: sharp rise after cruise ship and Aloha Airlines withdrawal, sharp decline as Oahu real room rate jumped



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Sources: Hawaii Tourism Authority, Hawaii DBEDT, days implied by ratio of visitor days to visitor arrivals, seasonal adjustment, by TZ Economics; shares are percent of total Oahu visitor days

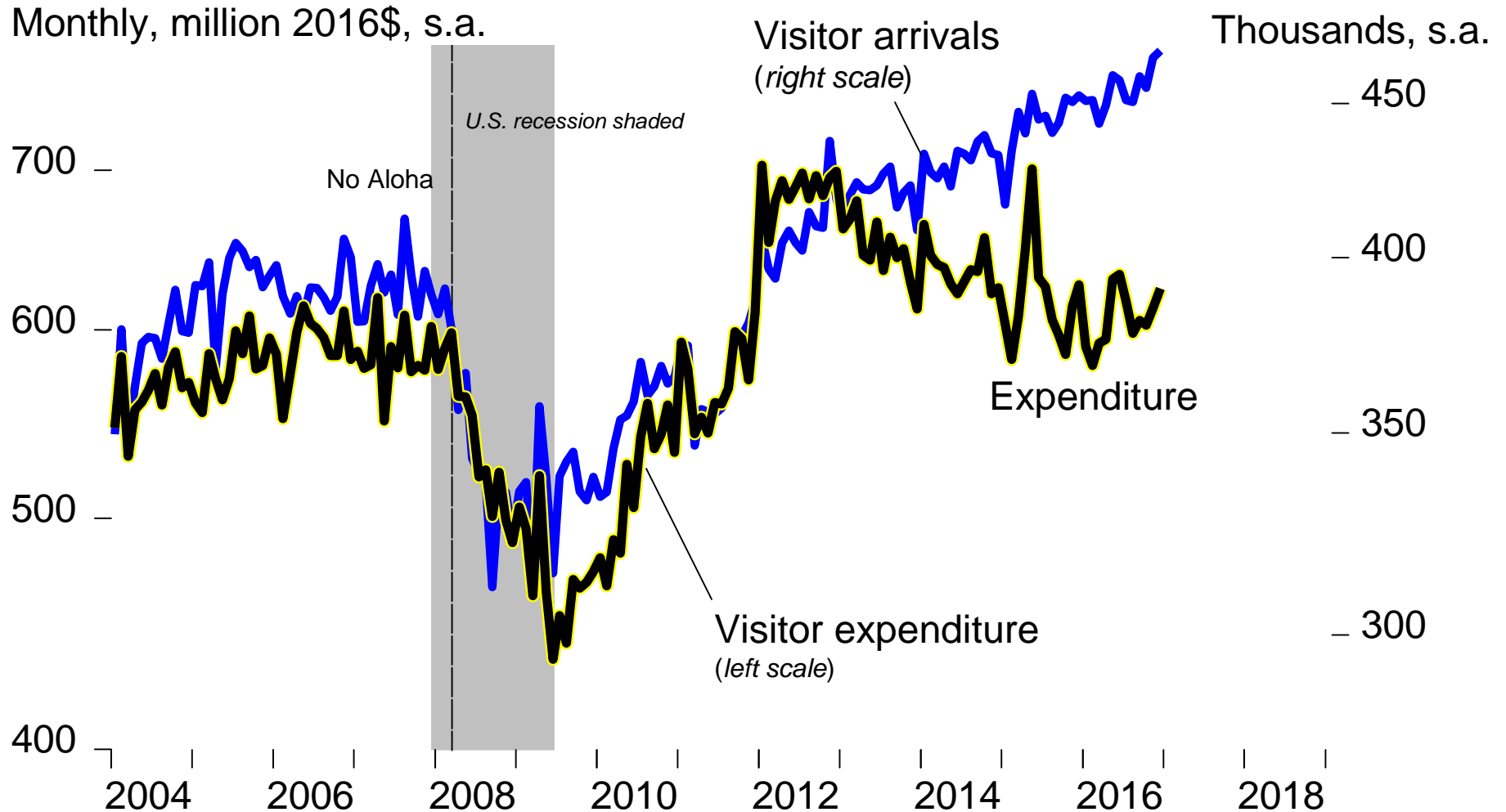
# Average length of stay of Oahu domestic visitors has fallen almost one full day since real room rates ramped up



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Sources: Hawaii Tourism Authority, Hawaii DBEDT, days implied by ratio of visitor days to visitor arrivals, seasonal adjustment, by TZ Economics; shares are percent of total Oahu visitor days

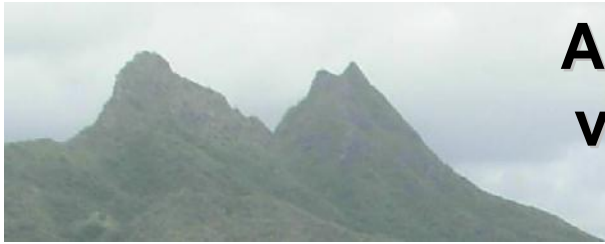
# Visitor arrivals on Oahu keep rising, but not rooms: shorter stay length, drop in values of yen, Euro, CAN\$ mean lower receipts



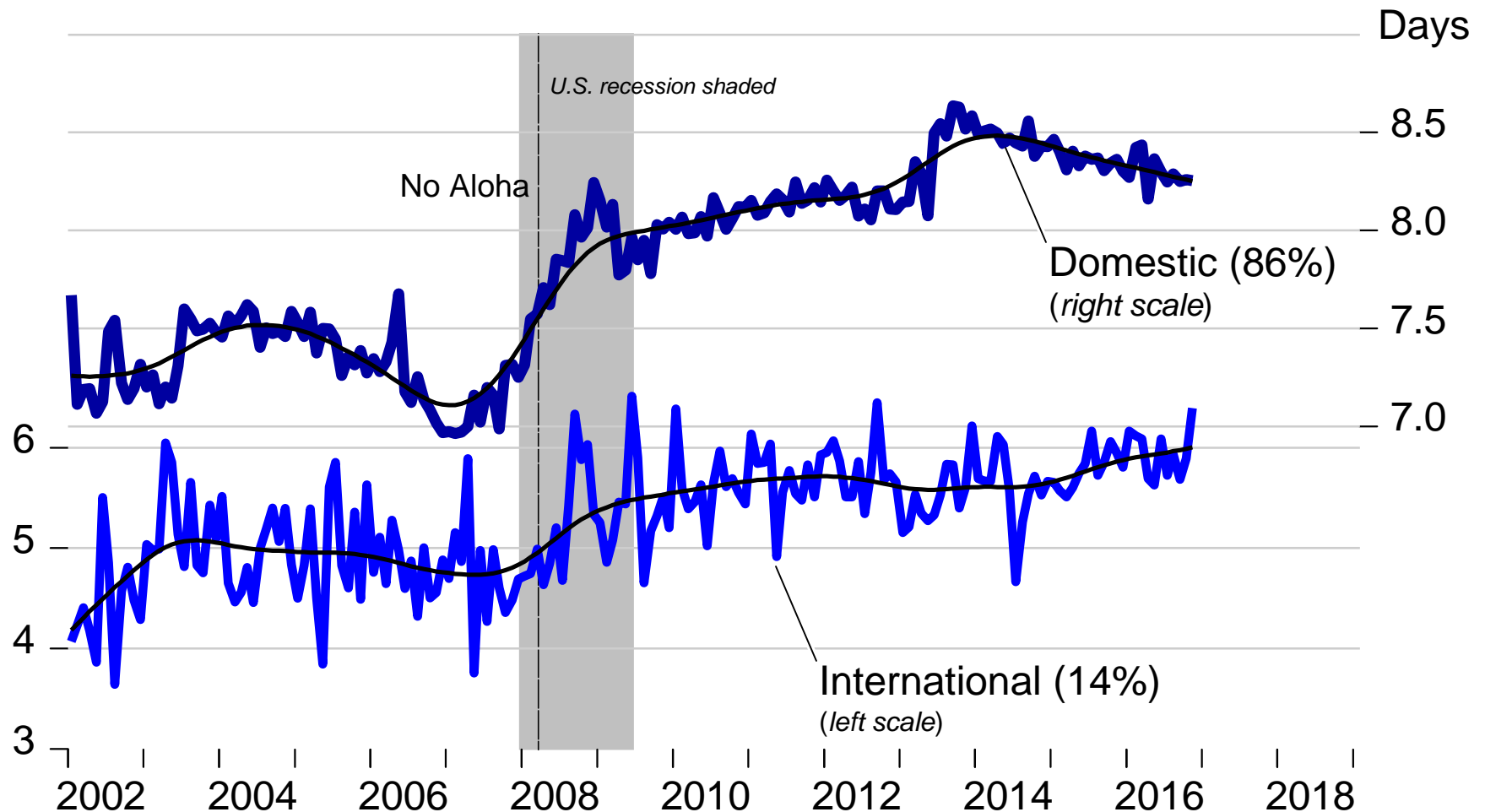
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Sources: Hawaii Tourism Authority, Hawaii DBEDT, Bureau of Labor Statistics; monthly data, seasonal adjustment, deflation using core U.S. CPI-U by TZ Economics (excludes the impact of more volatile food and energy sources of consumer price inflation), data through December 2016.





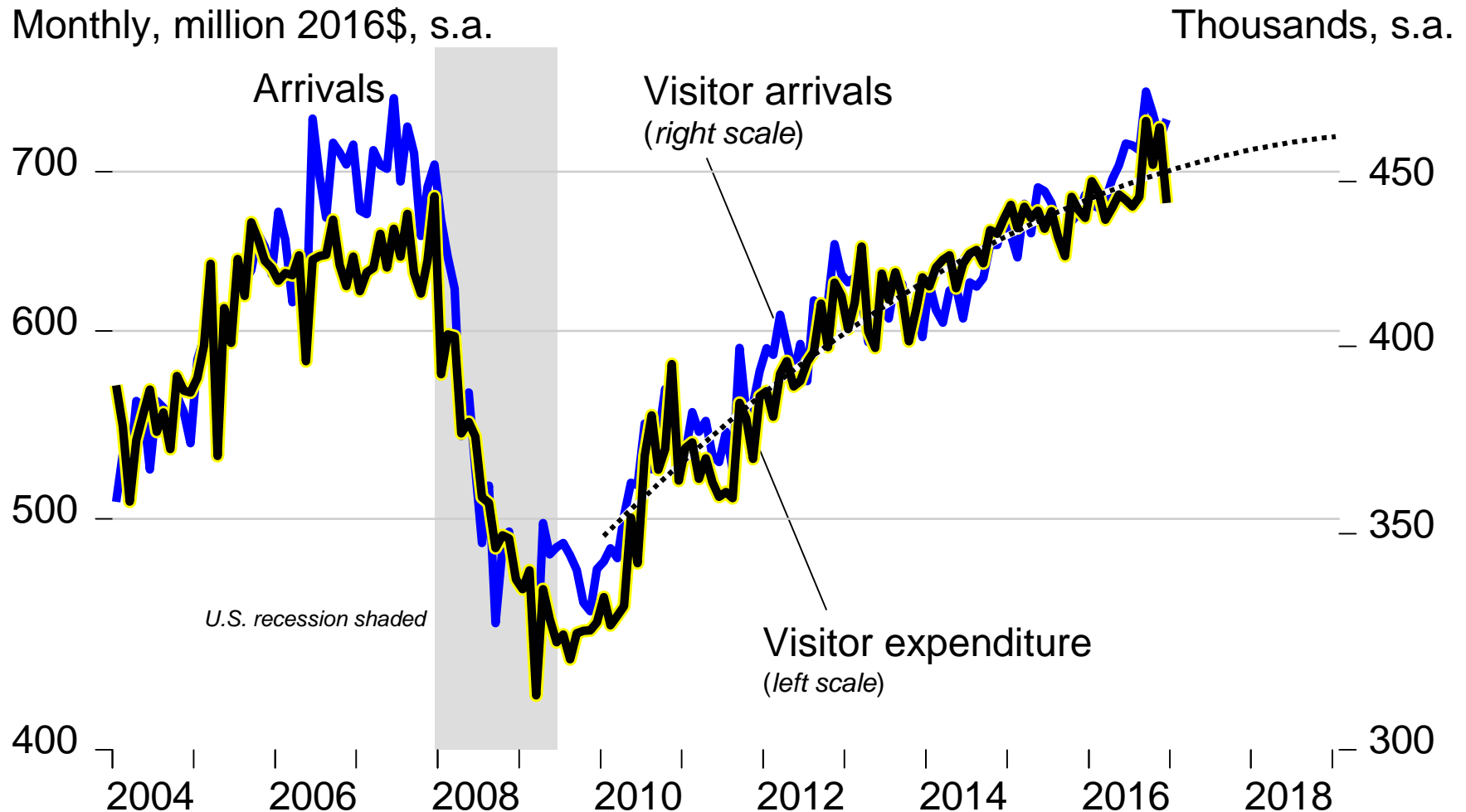
## Average length of stay of Neighbor Island visitors has risen by about one day since the shutdown of Aloha Airlines



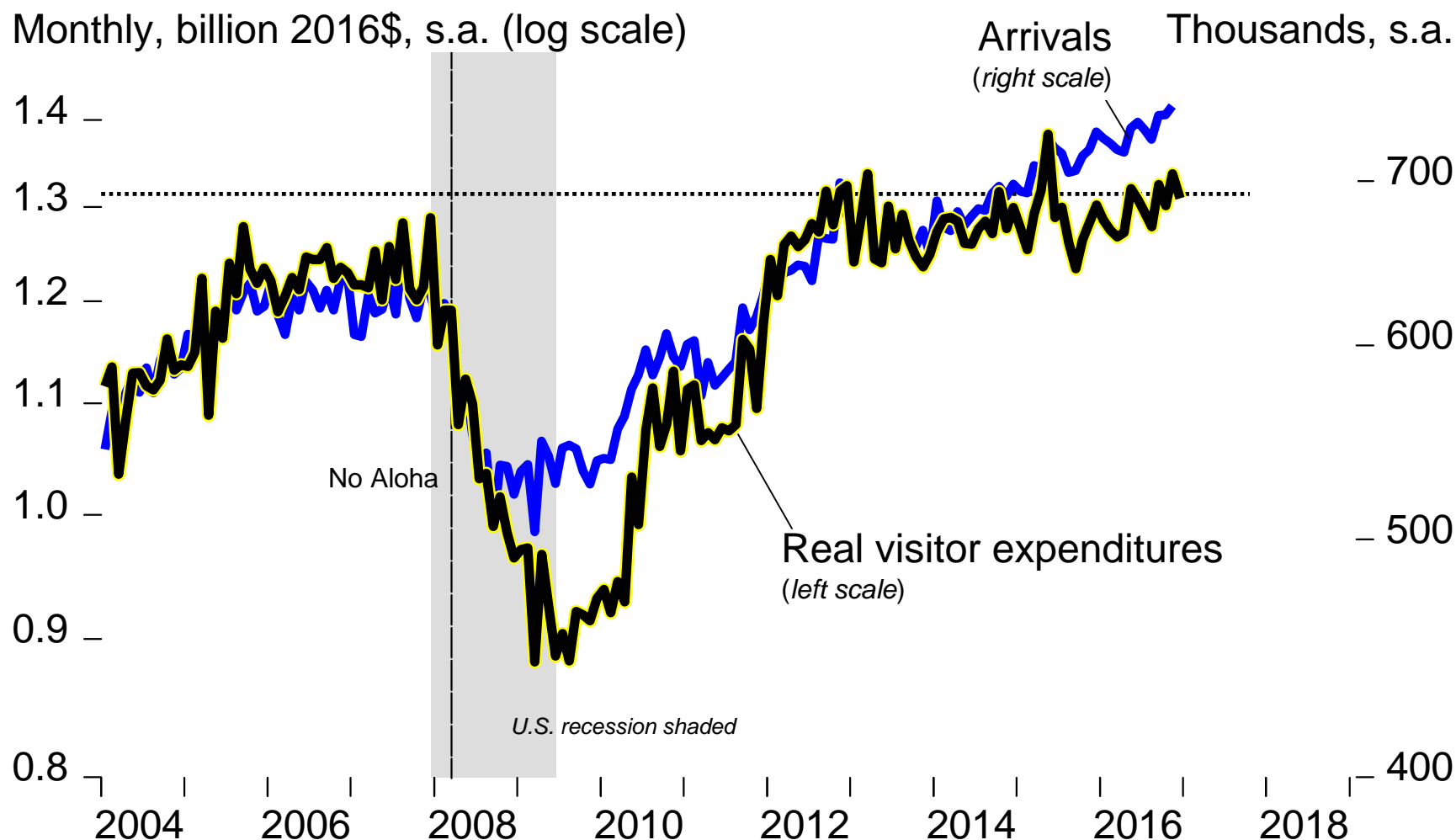
Slide copyright 2017 TZ Economics

Sources: Hawaii Tourism Authority, Hawaii DBEDT, days implied by ratio of visitor days to visitor arrivals, seasonal adjustment, by TZ Economics; shares are percent of total Neighbor Island visitor days

# On the Neighbor Islands room rates are higher but utilization remains 70-80%—room to grow—and arrivals and receipts are in lockstep



# Real Hawaii tourism receipts flat for some time constrained by lodging capacity, eroded by stronger dollar, reviving a bit in 2016



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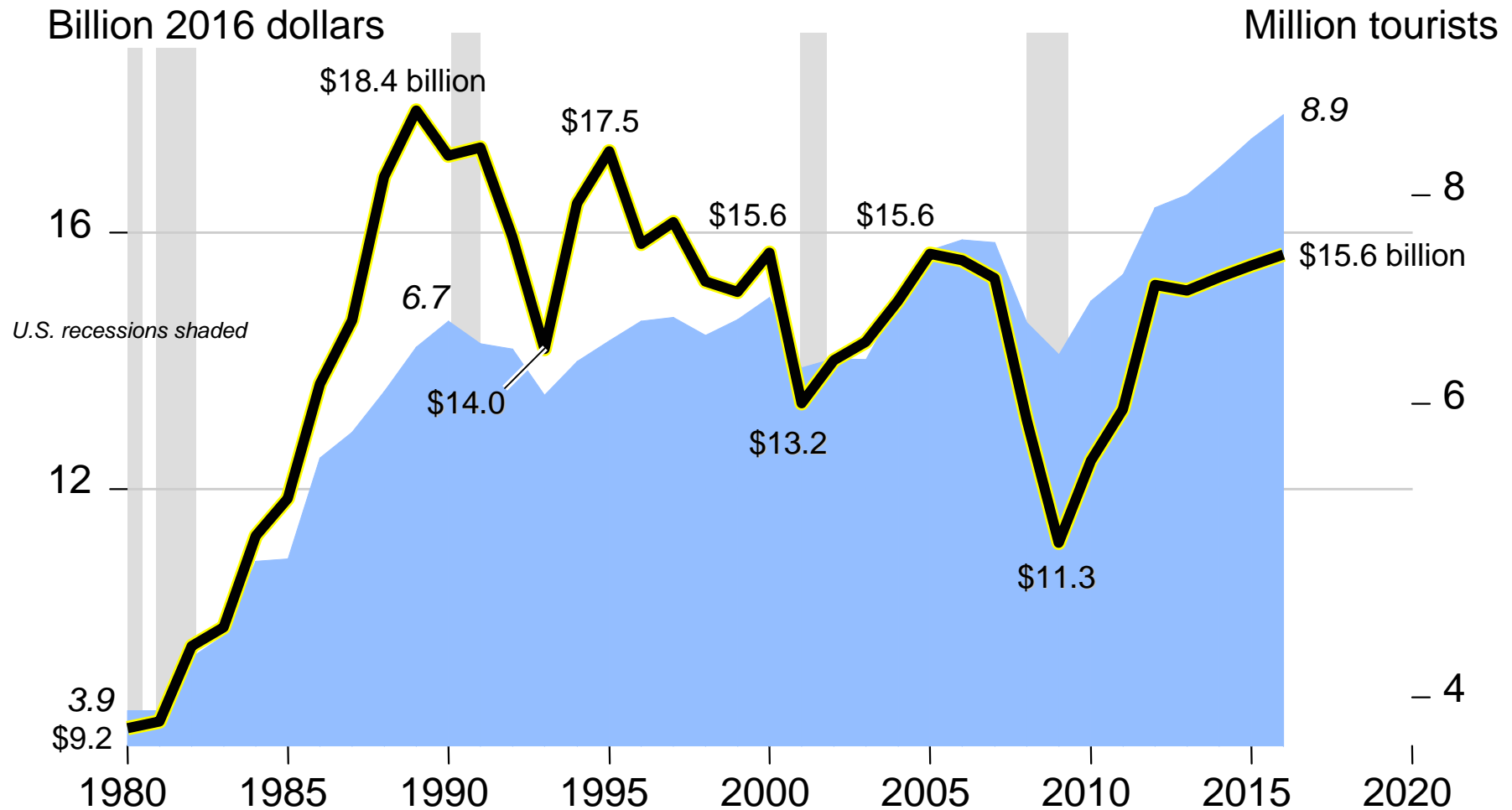
Sources: "Total visitor expenditure" published by HTA, Hawaii DBEDT, Bureau of Labor Statistics; seasonal adjustment, deflation using core U.S. CPI-U by TZ Economics (excludes the impact of more volatile food and energy sources of consumer price inflation)



## **Yin, yang—stay length, spending reductions; Neighbor Island gain neutralized by Oahu**

- Oahu more internationally-oriented (43 percent): 25 percent drop in average daily Japanese expenditure weighs heavily
- Oahu still majority mainland (57 percent): lodging, higher room rates binding constraint on average stay-length, reducing receipts
- Neighbor islands more mainland-oriented (86 percent): room to grow; some erosion in stay length may come from higher rates
- Small international exposure on Neighbor Islands (14 percent): subdues impact of dollar appreciation—except for the Loonie
- Blended total: Oahu's loss of tourism export receipts offsetting Neighbor Islands' gains, in real terms, for the last four years

# Conclusion: real Hawaii tourism receipts in 2016 same as in 2005 and in 2000—export gains eroded by negative externalities (volume)



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Sources: Hawaii Tourism Authority, Hawaii DBEDT, deflation of total annual Hawaii visitor expenditure using Honolulu Consumer Price Index for All Urban Consumers (CPI-U), rebasing to 2016, to express export revenue in terms of purchasing power of Honolulu residents over time by TZ Economics





# *Mahalo!*

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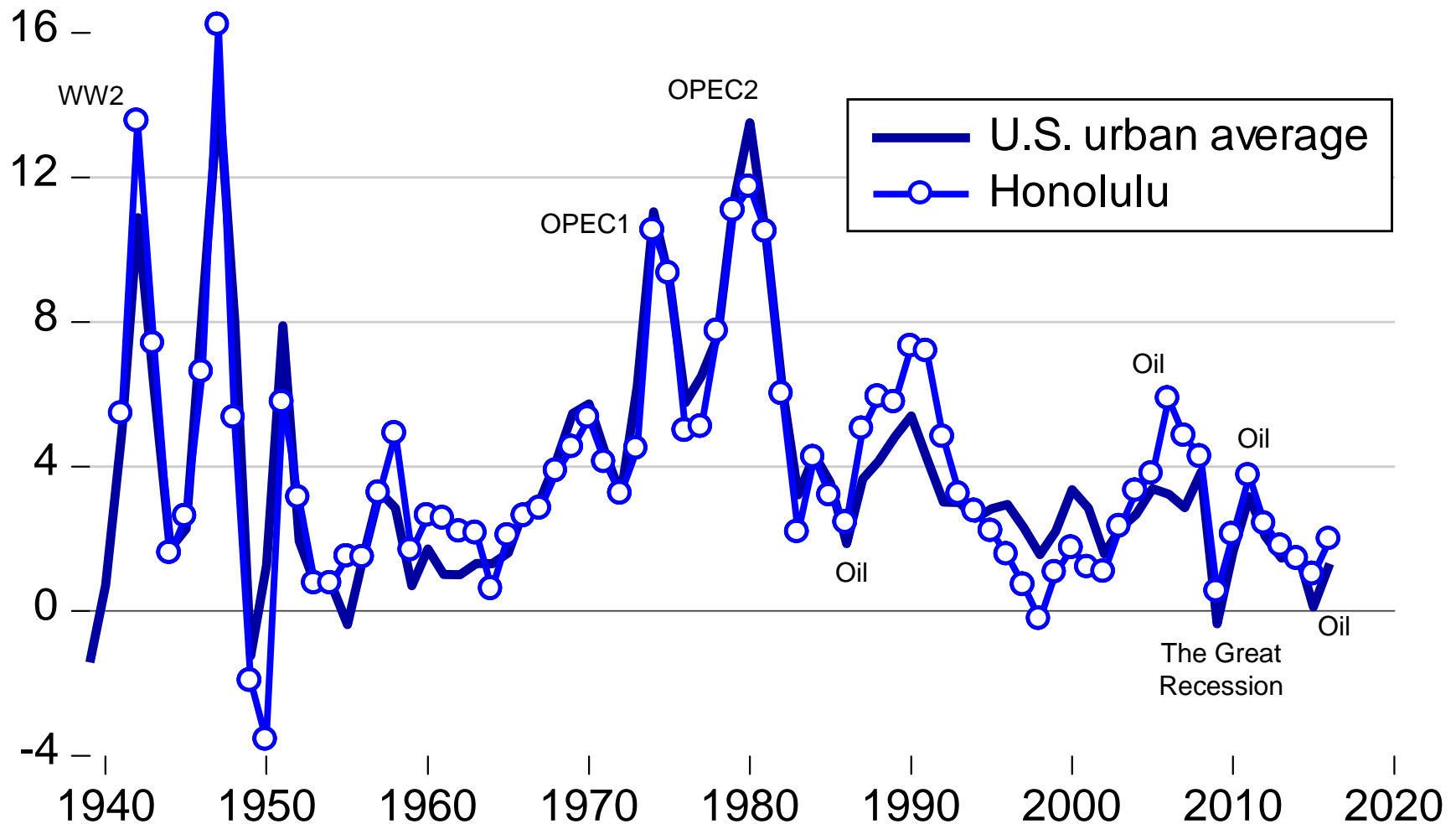




## **Appendix 1: long-run inflation differentials are nil—use any deflator, results nearly same**

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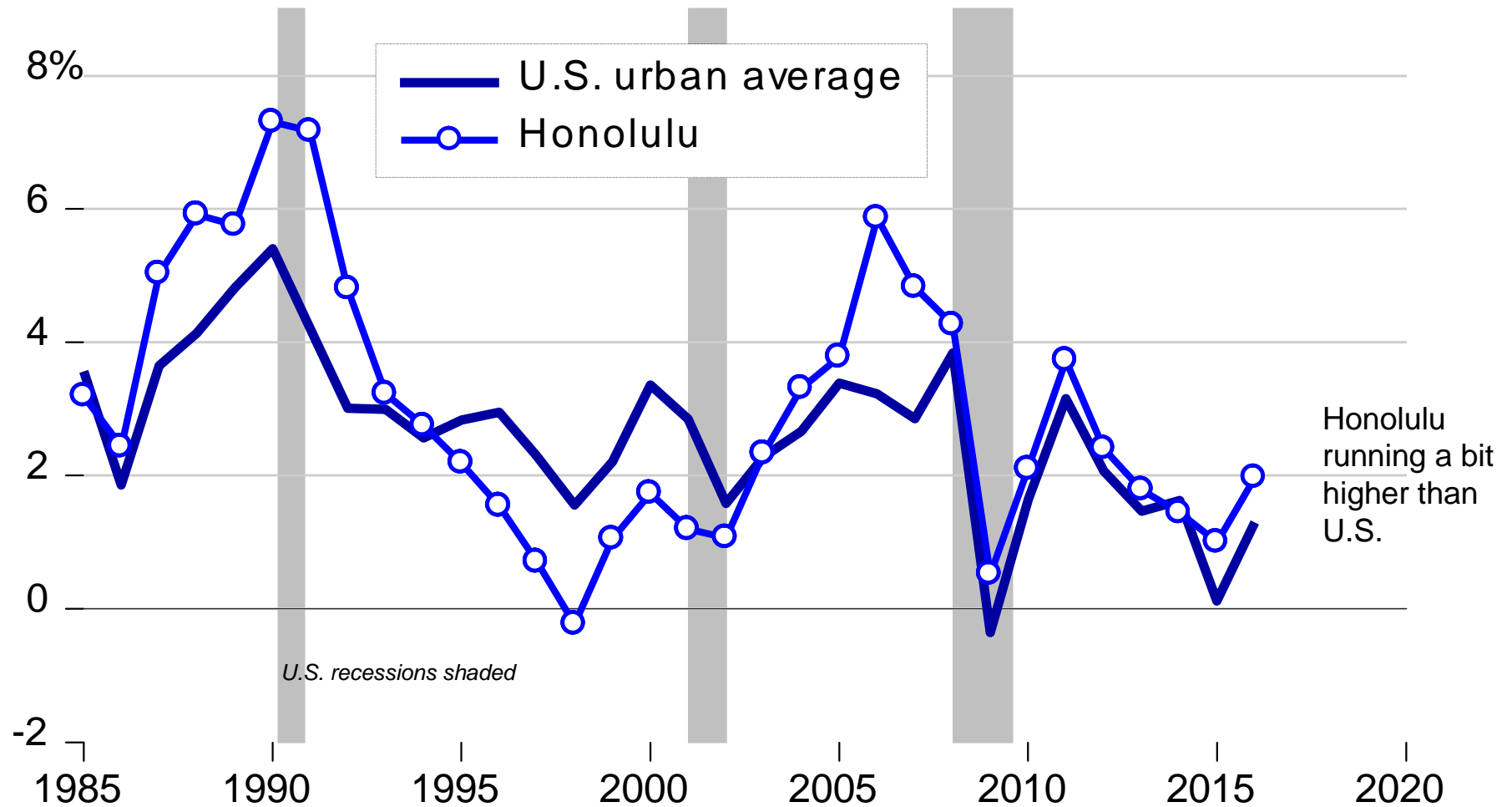
# Annual consumer price inflation rates (year-over-year percent changes)



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Source: Bureau of Labor Statistics, U.S. Department of Labor

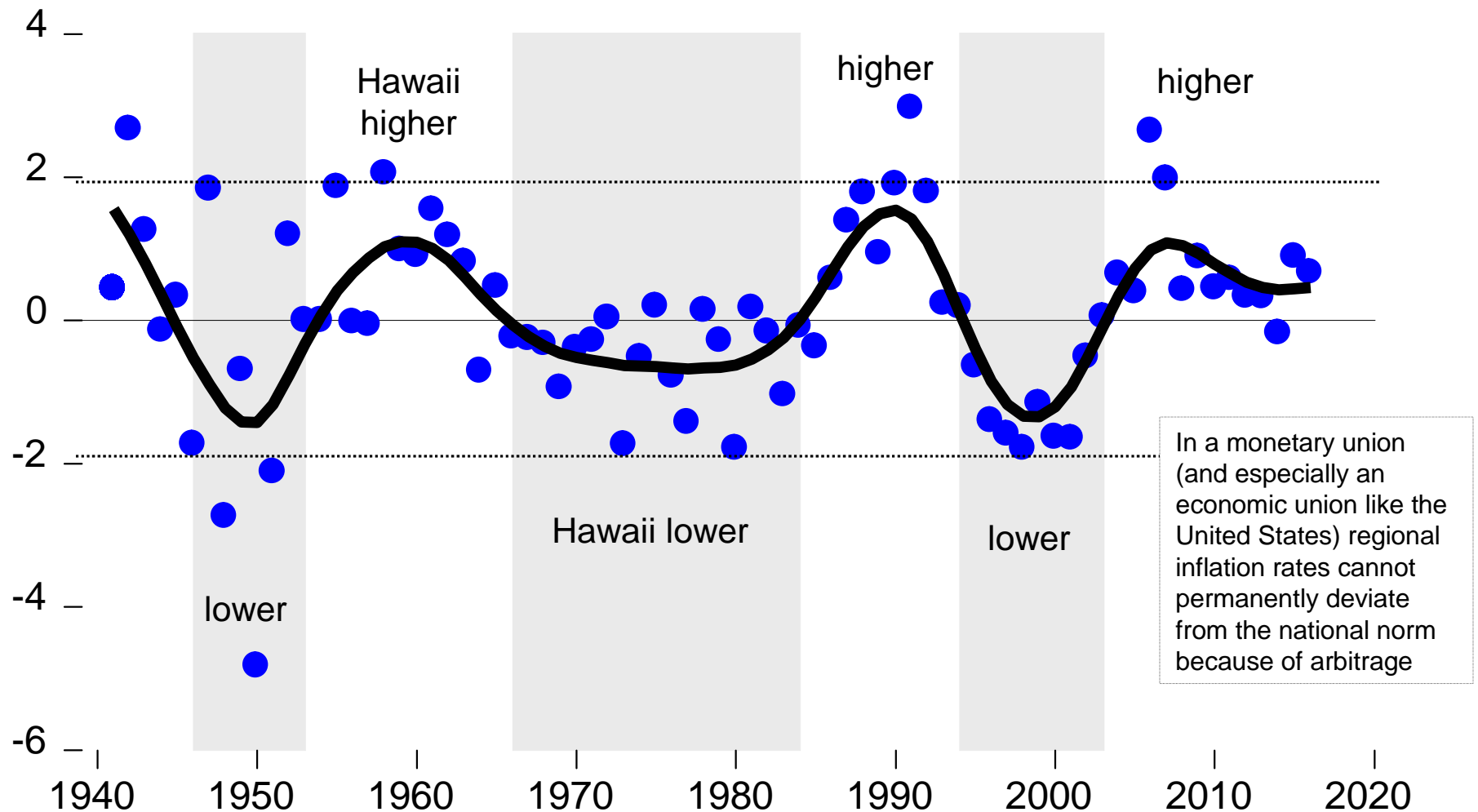
# Honolulu inflation varies around the U.S. urban average over the business cycle (booms and busts)



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Source: BLS, U.S. Department of Labor

# Differential between Hawaii and U.S. inflation (annual 1941-2016, in percentage points); mean 0.074262, s.d. 1.317487\*

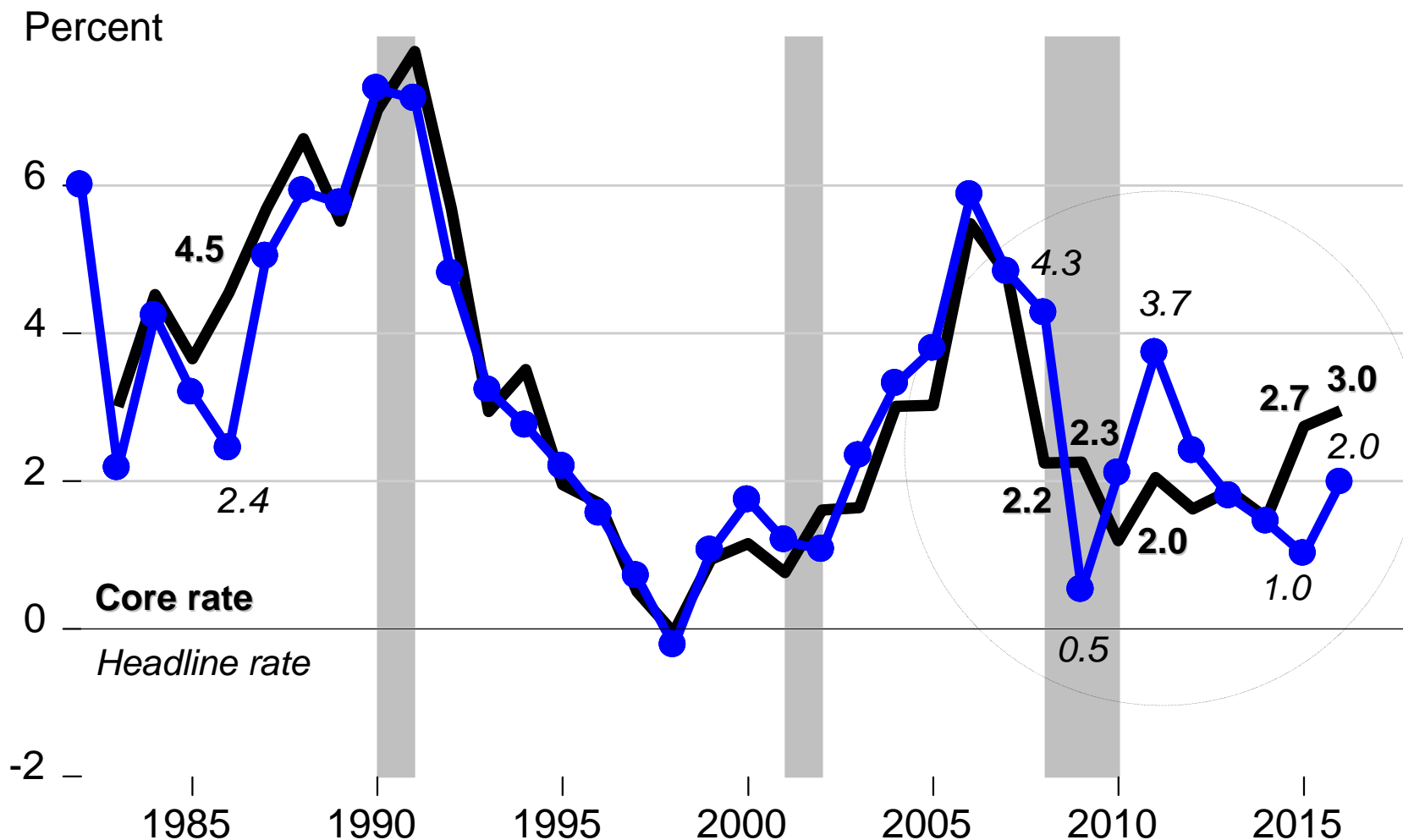


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Source: Bureau of Labor Statistics, US Department of Labor; H-P filter calculations by author

\*Skewness -0.530681, Kurtosis 4.496638

At annual frequencies, the differential between headline and core Honolulu inflation rates (excluding food, energy) more volatile

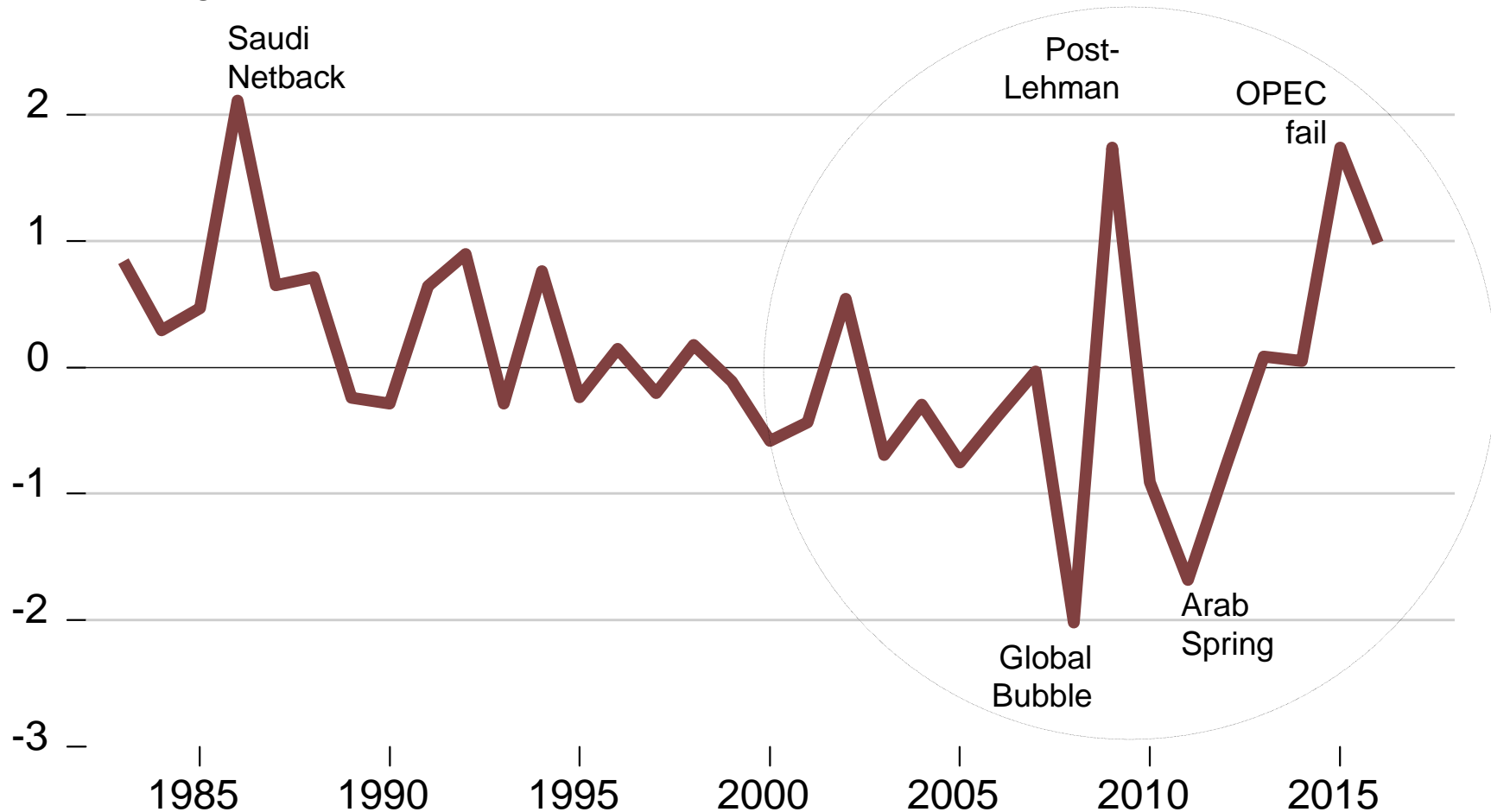


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Source: Bureau of Labor Statistics (<http://data.bls.gov/cgi-bin/surveymost?r9>), core and headline rates calculated by TZE


# Annual differentials between Honolulu core inflation (excluding food and energy) and headline inflation rates, 1982-2016

Percentage points



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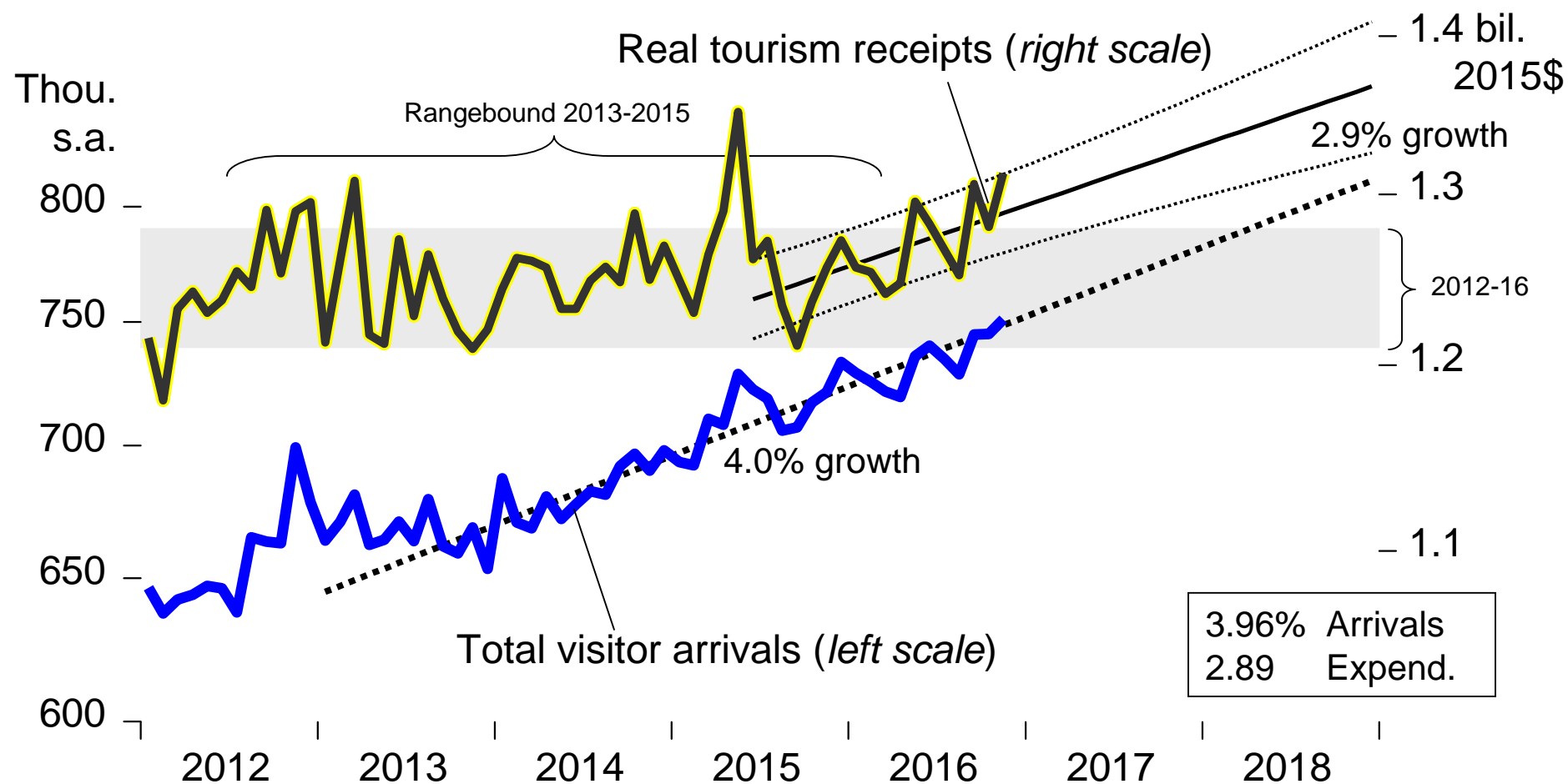




## Appendix 2: reacceleration last year

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# Growth in monthly real tourism receipts revived in 2016, but choice of deflator may be disproportionately important

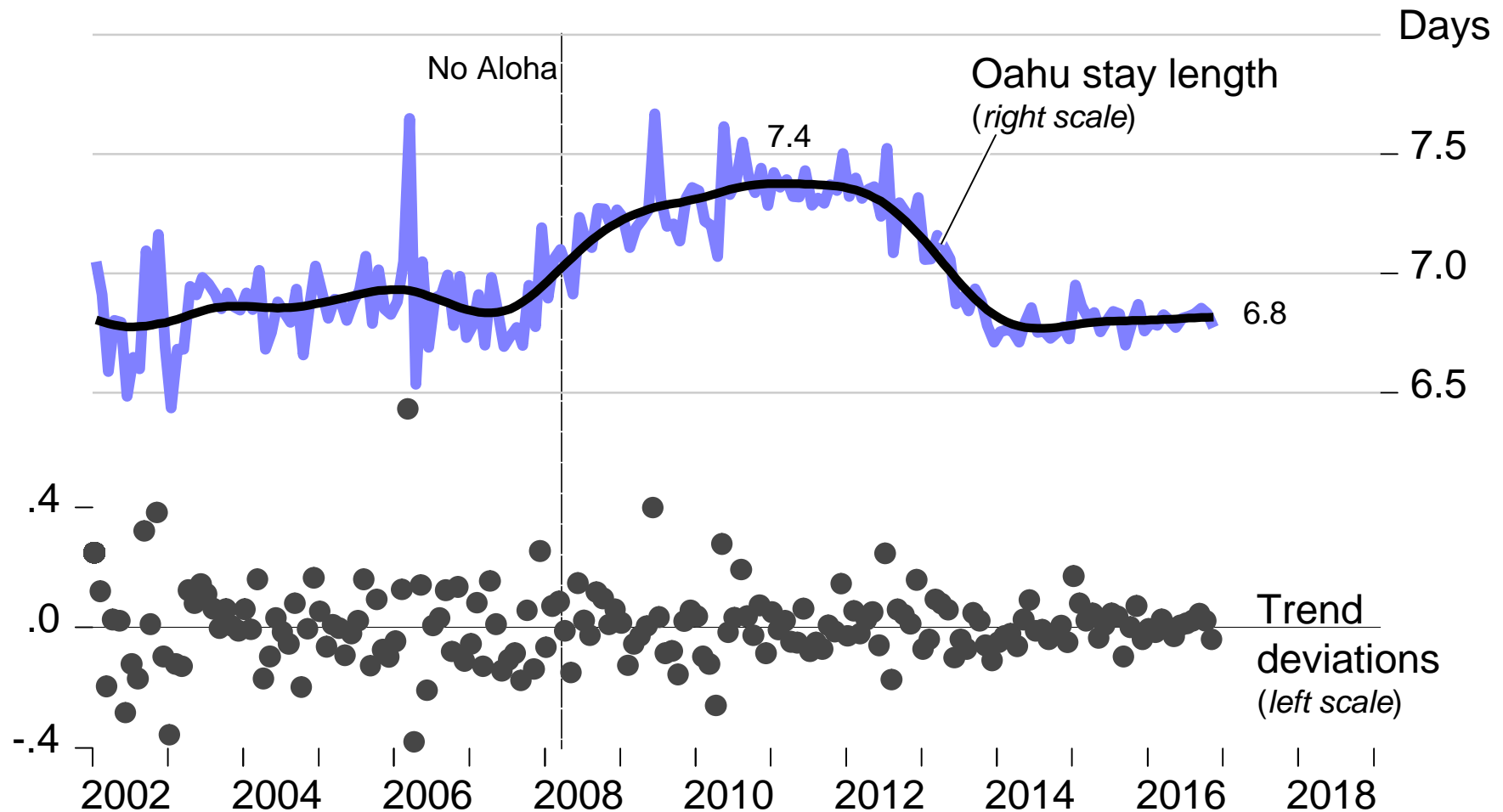


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Sources: Hawaii Tourism Authority, Hawaii DBEDT, Bureau of Labor Statistics; monthly data, seasonal adjustment, deflation using core U.S. CPI-U by TZ Economics (excludes the impact of more volatile food and energy sources of consumer price inflation), data through November 2016.

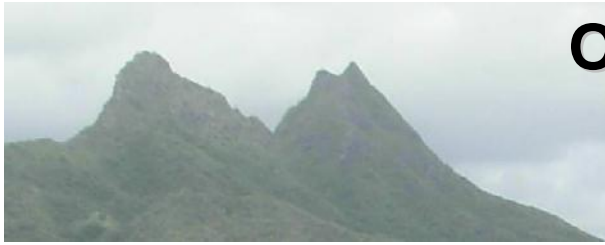


## Fairly tight association on Oahu of longer stay length with drop in interisland lift, shorter lengths as lodging costs rose

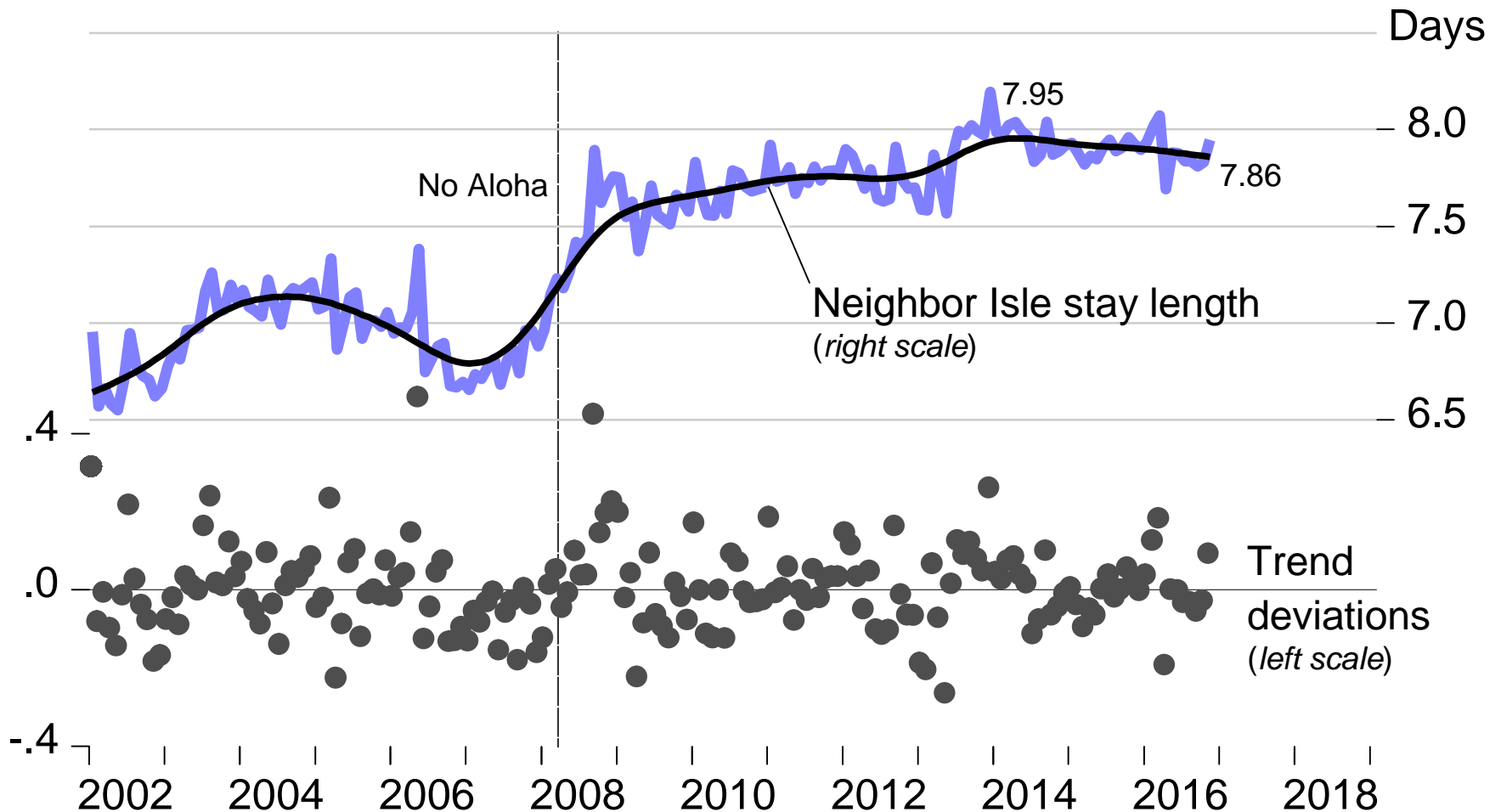


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Sources: Hawaii Tourism Authority, Hawaii DBEDT, days implied by ratio of visitor days to visitor arrivals, seasonal adjustment, Hodrick-Prescott filter (1997) trend extraction by TZ Economics



## One thing to look for: as Neighbor Island real room rates push upward, stay length may begin eroding faster



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Sources: Hawaii Tourism Authority, Hawaii DBEDT, days implied by ratio of visitor days to visitor arrivals, seasonal adjustment, Hodrick-Prescott filter (1997) trend extraction by TZ Economics



# *Mahalo!*

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