



Assessing aspects of Hawaii's economy in 2011 for the 2012 outlook

presented to an Informational Briefing
of the Senate Committee on Ways and Means
and the House Committee on Finance
Hawaii State Legislature

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TZ Economics
January 9, 2012



Overview

- Colleagues from DBEDT and UHERO will present numerical economic forecasts
- Also available: November 2011 estimates from HPU Professor Leroy Laney
- This presentation: three observations about 2011 framing the 2012 outlook
 1. Noise obscures the signal
 2. Double-dip is for dorks
 3. Are our economic forecasts too high or too low?

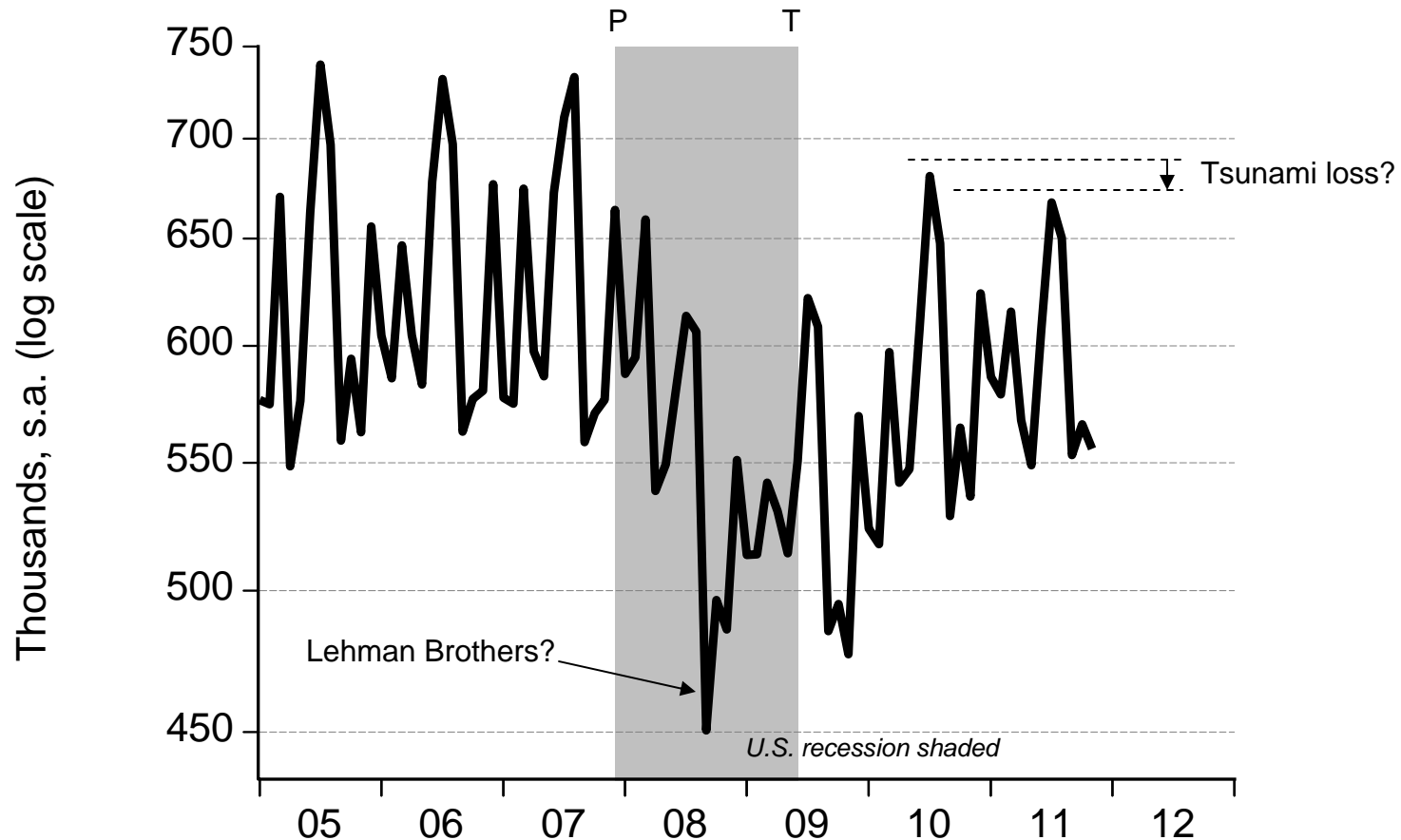
See: UHERO's November state forecast at <http://uhero.hawaii.edu/products/view/312>, DBEDT's November 2011 quarterly forecast update at http://hawaii.gov/dbedt/info/economic/data_reports/qser, and Dr. Laney's economic forecasts, with additional commentary from UH Shidler College Professor Jack Snyderhoud, at https://www.fhb.com/pdf/FHB_OahuEconForecast2011.pdf.



Noise obscures the signal: a tourism example

- A tourism year 2011 punctuated by 3 shocks:
 1. *North African political upheaval* raised global petroleum prices and aviation fuel costs—*reducing* the supply of travel (higher cost), decreasing the number of scheduled seats (also appearing as higher air fares)
 2. *Northeast Japan earthquake and tsunami* temporarily depressed Japanese travel demand over a period of about 6 months (most sharply at first, gradually recovering) [partial offset: yen appreciation]
 3. Prospective *Hawaii APEC meetings* raised uncertainty about positive (more diplomats) vs. negative (fewer weddings) impacts of a meeting scheduled for “11-11-11”
- As all three shocks came and went, underlying economic recovery and its manifestation in visitor arrivals shined through (for December 2011, passenger arrivals up 4.5%; estimated 3.5% arrivals growth in the September-December trimester)
- Is tourism on the 3-4% growth trend implied by recent data, or on the 2-3% forecast path?
- Much media/press release noise about “record” nominal tourism receipts obscures the reality of low real tourism receipts, after inflation adjustment, on par with the late-1980s

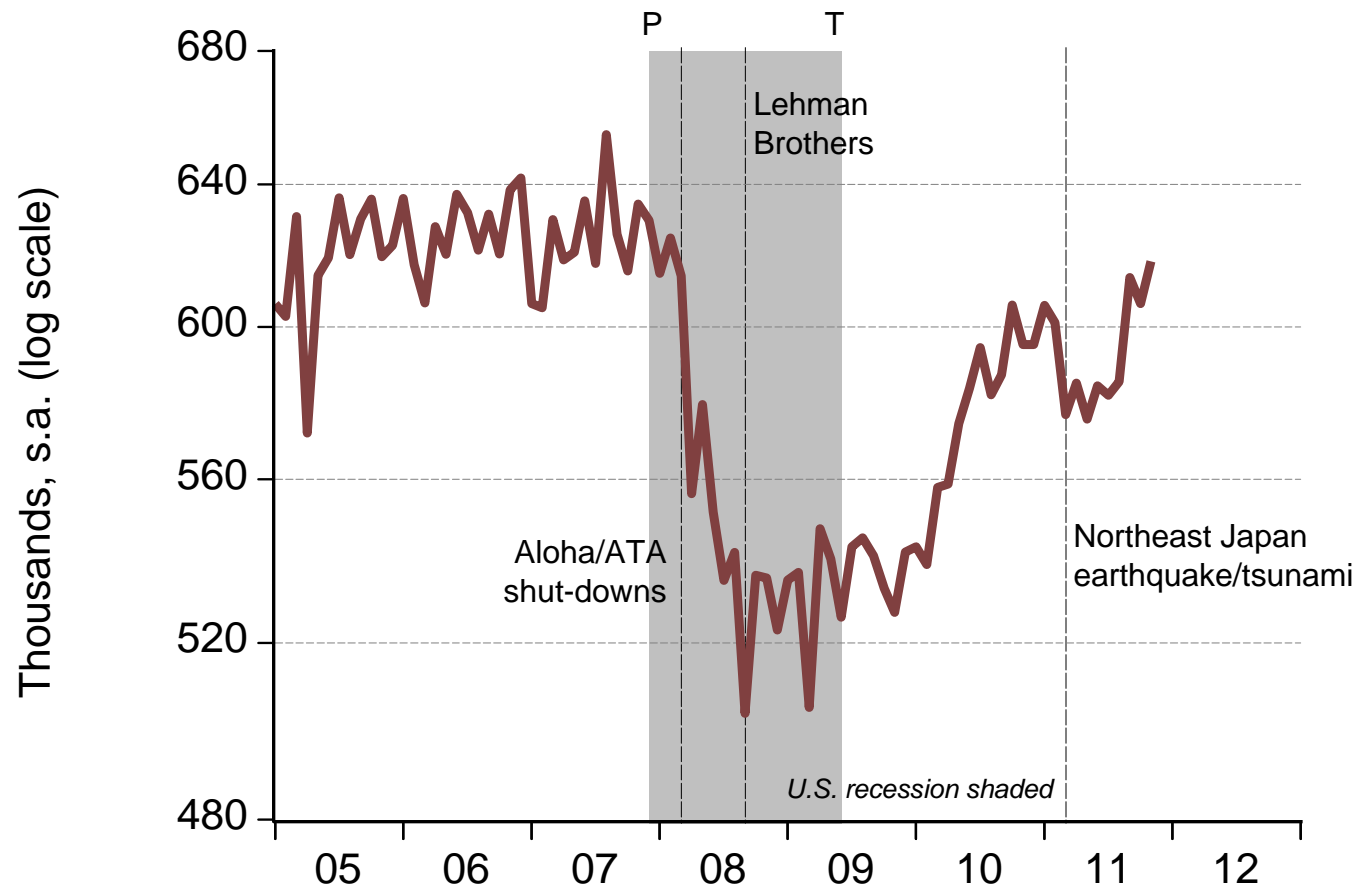
First of all, this is how visitor arrivals are reported, full of seasonal “noise” obscuring the “signal”



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Source: Monthly data through November 2011 from Hawaii Tourism Authority, Hawaii DBEDT, including revisions; seasonal adjustment using Census X-12 ARIMA filter by TZE

Hawaii visitor arrivals, seasonally-adjusted, through November 2011—“revealing” the shocks



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Source: Monthly data through November 2011 from Hawaii Tourism Authority, Hawaii DBEDT; seasonal adjustment using Census X-12 ARIMA filter by TZE

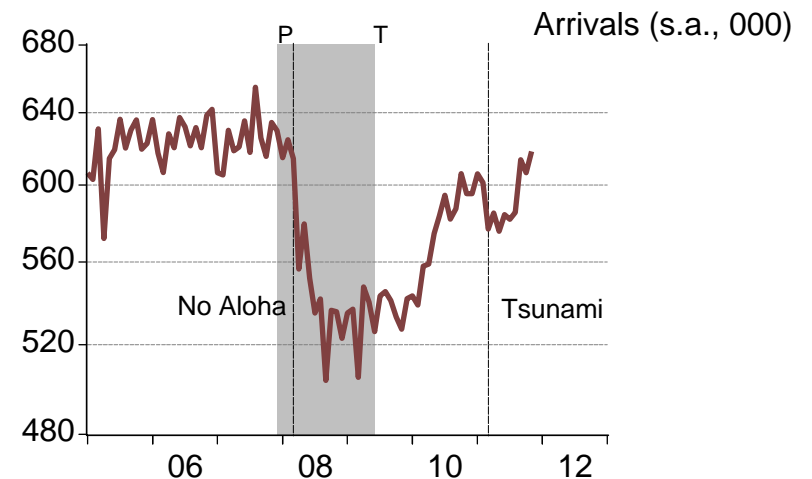
Visitor arrivals growth rates

(percent changes, y-o-y)	2011	2012
Forecasts:		
DBEDT	2.5	3.4
UHERO	2.1	2.7
Laney	3.2	2.6
Implied actual*		
Sep-Dec	3.3	
November visitors	3.6	
December passengers	4.5	
2011 total	2.3	
"No tsunami" addendum:		
Counterfactual trend [†]	3.9	

*including December *passenger* arrivals growth as visitor arrivals growth proxy

[†] Calculated from fall 2010 to fall 2011 ignoring the Japan seismic event

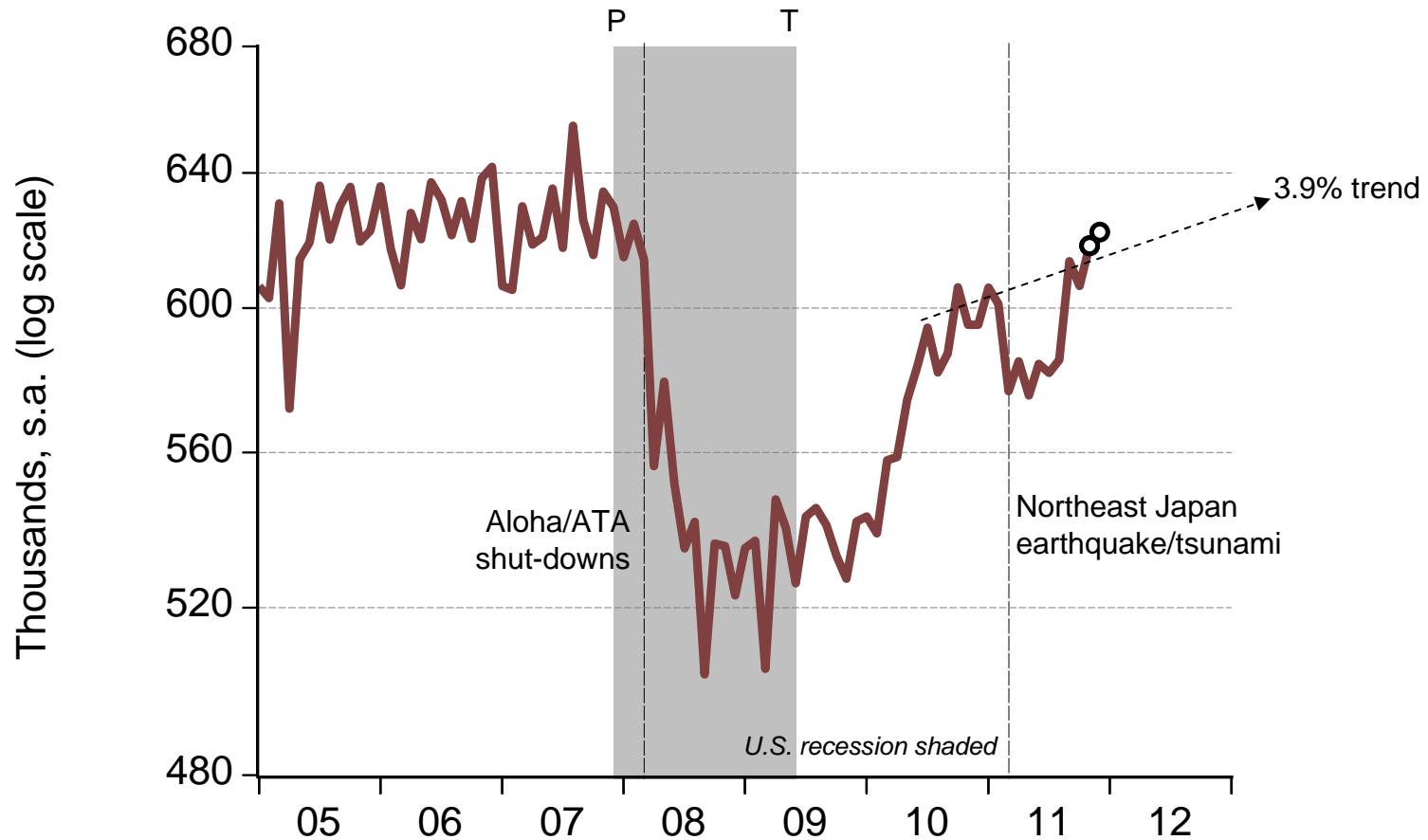
In retrospect—using December passenger counts to “guess” 2011 arrivals—one could say that 2011 would have been a better year *but for* the shocks [oil (–), tsunami (–), APEC (±)]. Arrivals growth was certainly stronger *after* their impacts “burned out,” even if the overall performance *includes* the shocks.



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Source: Monthly data through November 2011 from Hawaii Tourism Authority, Hawaii DBEDT; seasonal adjustment using Census X-12 ARIMA filter and other calculations by TZE; forecasts as referenced in slide 1

Hawaii visitor arrivals, s.a., along counterfactual “no shock” trend: record arrivals by end 2012?

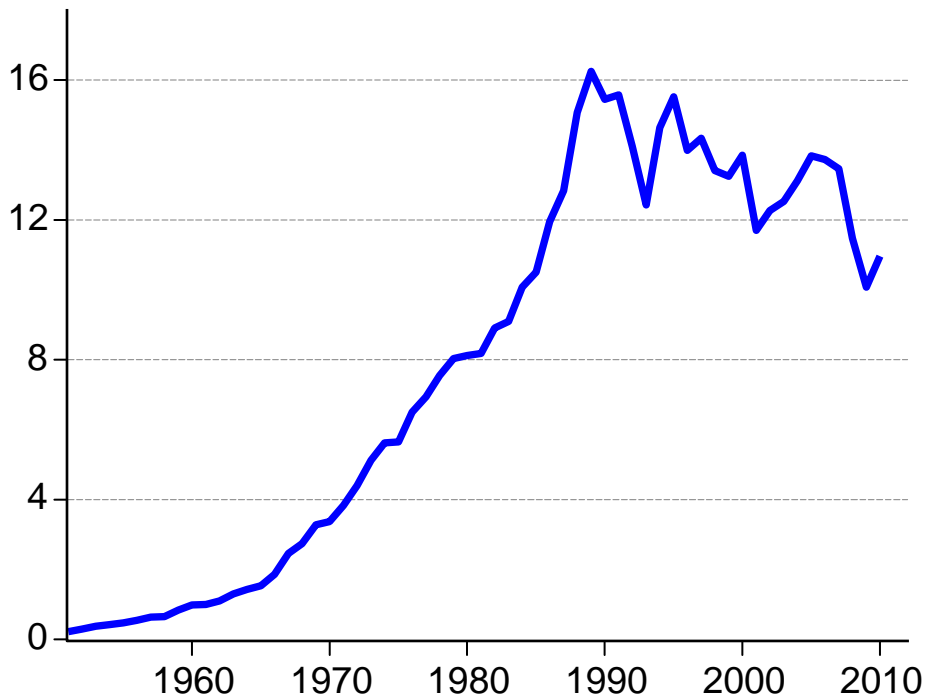


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Source: Monthly data through November 2011 from Hawaii Tourism Authority, Hawaii DBEDT including revisions; seasonal adjustment using Census X-12 ARIMA filter by TZE, December 2011 estimate (last dot) based on passengers

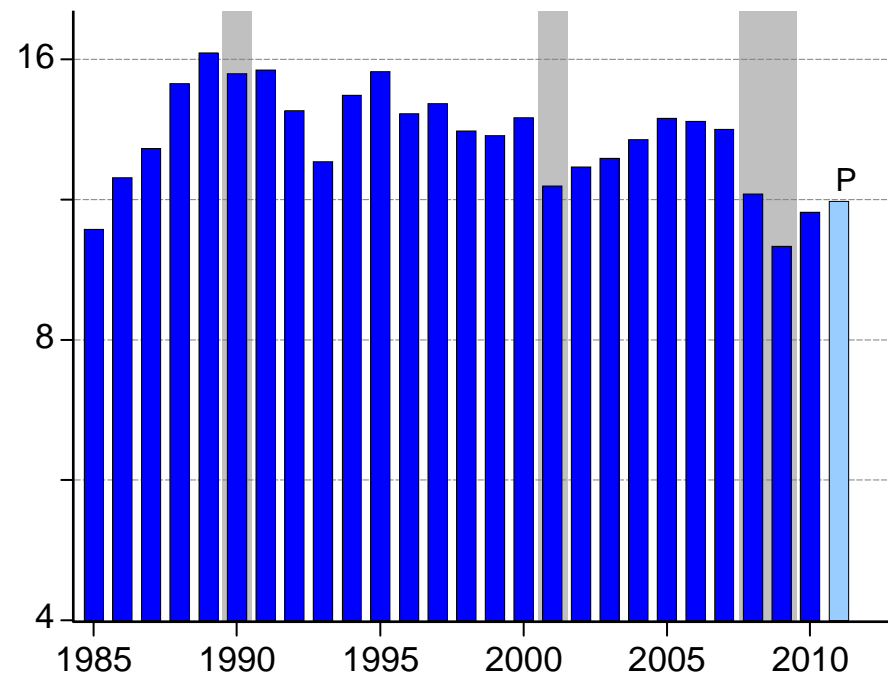
Tourism receipts after inflation haven't risen (on trend) since 1980s—failed “more dollars” strategy

Annual tourism receipts
in billion 2010 dollars



1951-2010

Annual tourism receipts
in billion 2010 dollars (log scale)



1985-2011(P)

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Source: Hawaii Tourism Authority, Hawaii DBEDT, BLS, U.S. Department of Labor; deflation using Honolulu CPI-U by TZE; 2011 projection from geometric unweighted averages of published forecast inflation and arrivals growth rates

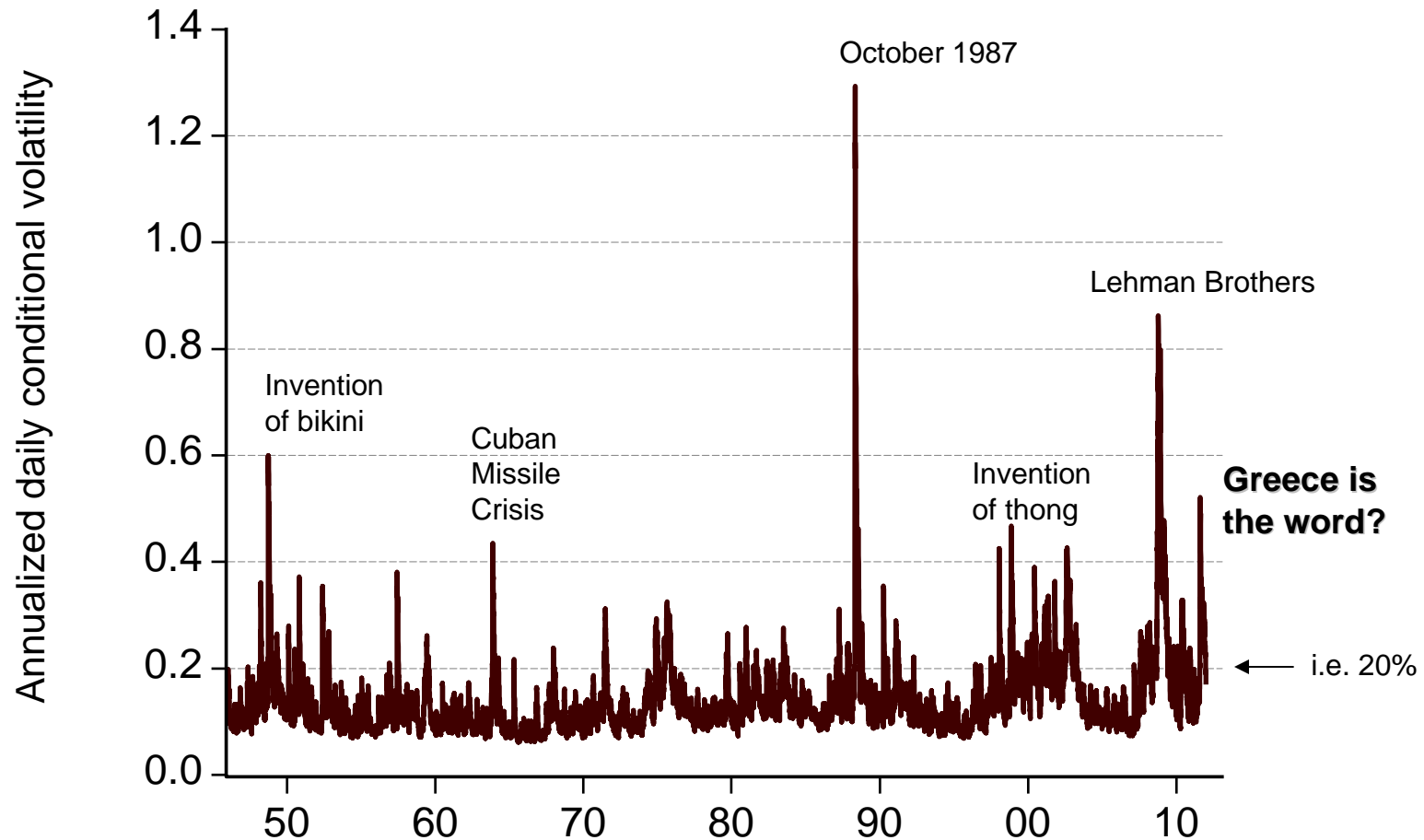


Double Dip this

- Fear Factor in 2010: *double-dip recession*
- Fear Factor in 2011: *double-dip in home prices*
- The moral of these stories: *tune in tomorrow*—they *mean* to scare the crap out of you
- The reality: uneven recovery *has* proceeded even where housing prices came under additional downward pressure
- Additional reality: Honolulu is *not* one of those markets; $\frac{3}{4}$ of Hawaii's statewide economy is an island of economic resilience and growth in a sea of comparatively poor recent economic performance

Don't confuse Oahu for the Neighbor Islands, or Hawaii for the mainland

S&P 500 conditional volatility is in top five since WWII



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Sources: Standard & Poor's, Federal Reserve Bank of St. Louis; standard deviations of the daily log change of the S&P 500 in a threshold autoregressive conditional heteroskedasticity model by TZE through Jan. 5, 2012

Spring (May) 2011: double-dip headlines keep double-dip recession fears alive

Forbes

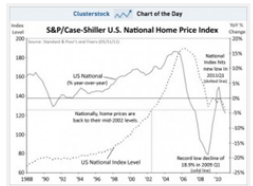
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Double Dip in Housing; Could Double Dip Recession Be Next?



You know that \$400,000 house you want to buy; offer them \$350,000. If they don't take it now, they will soon enough.

This chart from Business Insider shows what the Standard & Poor's Case-Shiller Index looks like on a graph chart: bad. National home prices are back to their 2002 levels, according to the index data released May 31.

As of March 2011, US home prices fell 4.2% in the first quarter after falling 3.6% in the fourth quarter in 2010. Home prices are down 5.1% from the first quarter last year, according to the [S&P/Case-Shiller report](#).

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HOME NEWS MARKETS EARNINGS INVESTING VIDEO CNBC TV

'Double-Dip' in Housing Prices Even Worse Than Expected

Published: Tuesday, 31 May 2011 | 9:05 AM ET

By: Reuters

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U.S. single-family home prices dropped in March, dipping below their 2009 low, as the housing market remained bogged down by inventory and weak demand, a closely watched survey said Tuesday.

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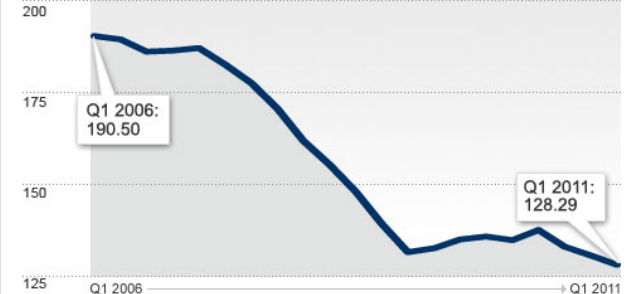
UNLIMITED RENTAL COVERAGE
OUR AUTO INSURANCE HELPS PROTECT YOUR WALLET, CAR, AND PEACE OF MIND.

Home prices: 'Double-dip' confirmed

CNNMoney
570 comments

By Les Christie May 31, 2011: 10:43 AM ET

HOME PRICES HIT POST-BUST LOW



Recommend | 2,926 people recommend this.

NEW YORK (CNNMoney) -- Home prices hit another new low in the first

abc NEWS / Money

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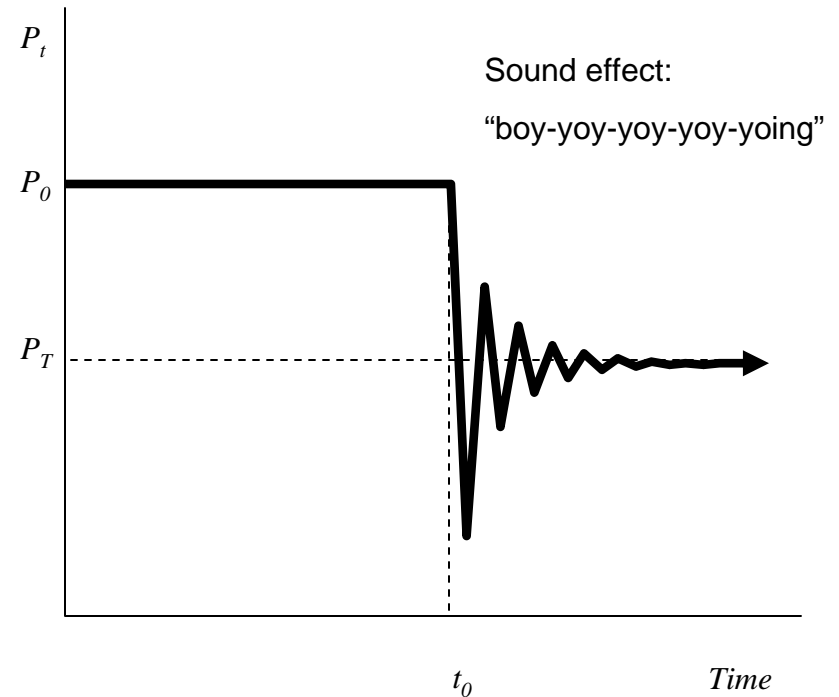
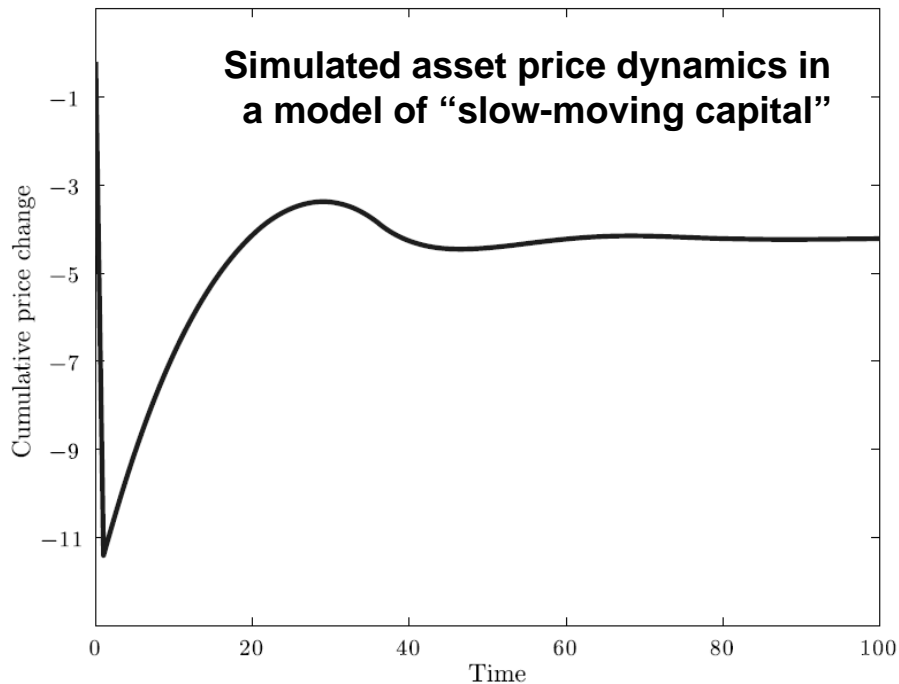
HOME > MONEY

Home Prices Double Dip to Levels Before Housing Bubble Burst

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Sources: web sites as illustrated

“Slow-moving’ capital” one version of “overshooting” models of asset price dynamics



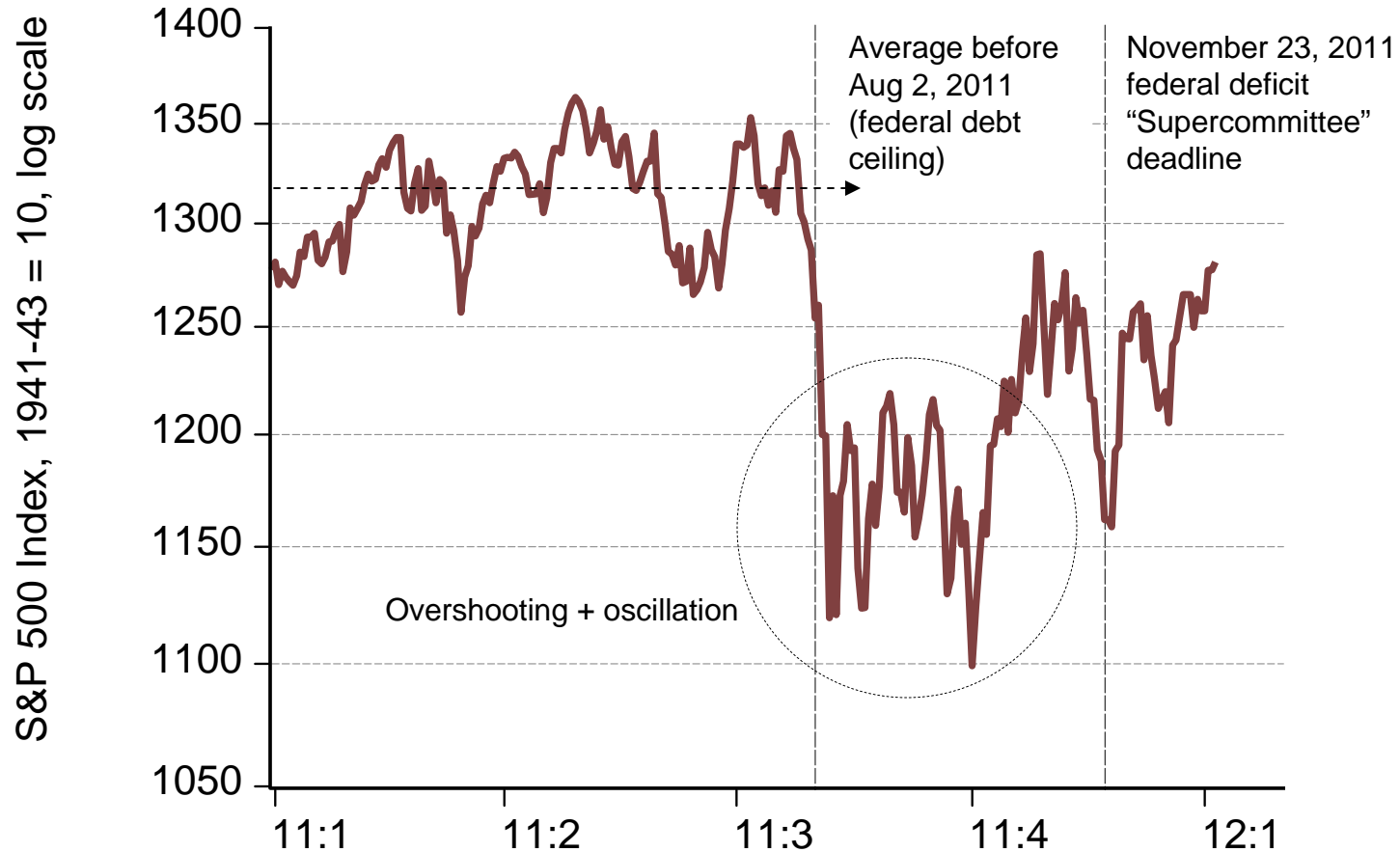
“The key implication is that supply or demand shocks must be absorbed on short notice by a limited set of investors. The risk aversion or limited capital of the currently available investors, including intermediaries, leads them to require a price concession in order to absorb the supply or demand shock. They plan to ‘lay off’ the associated risk over time as other investors become available. As a result, the initial price impact is followed by a price reversal that may occur over an extended period of time.”

Simulated asset price dynamics in a logistic growth model

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Sources: Darrell Duffie, “Asset Price Dynamics with Slow-Moving Capital” *Journal of Finance* vol. 65 no. 4 (August 2010) pp 1239-1267 (<http://www.darrellduffie.com/uploads/pubs/DuffieAFAPresidentialAddress2010.pdf>); TZ Economics calculations

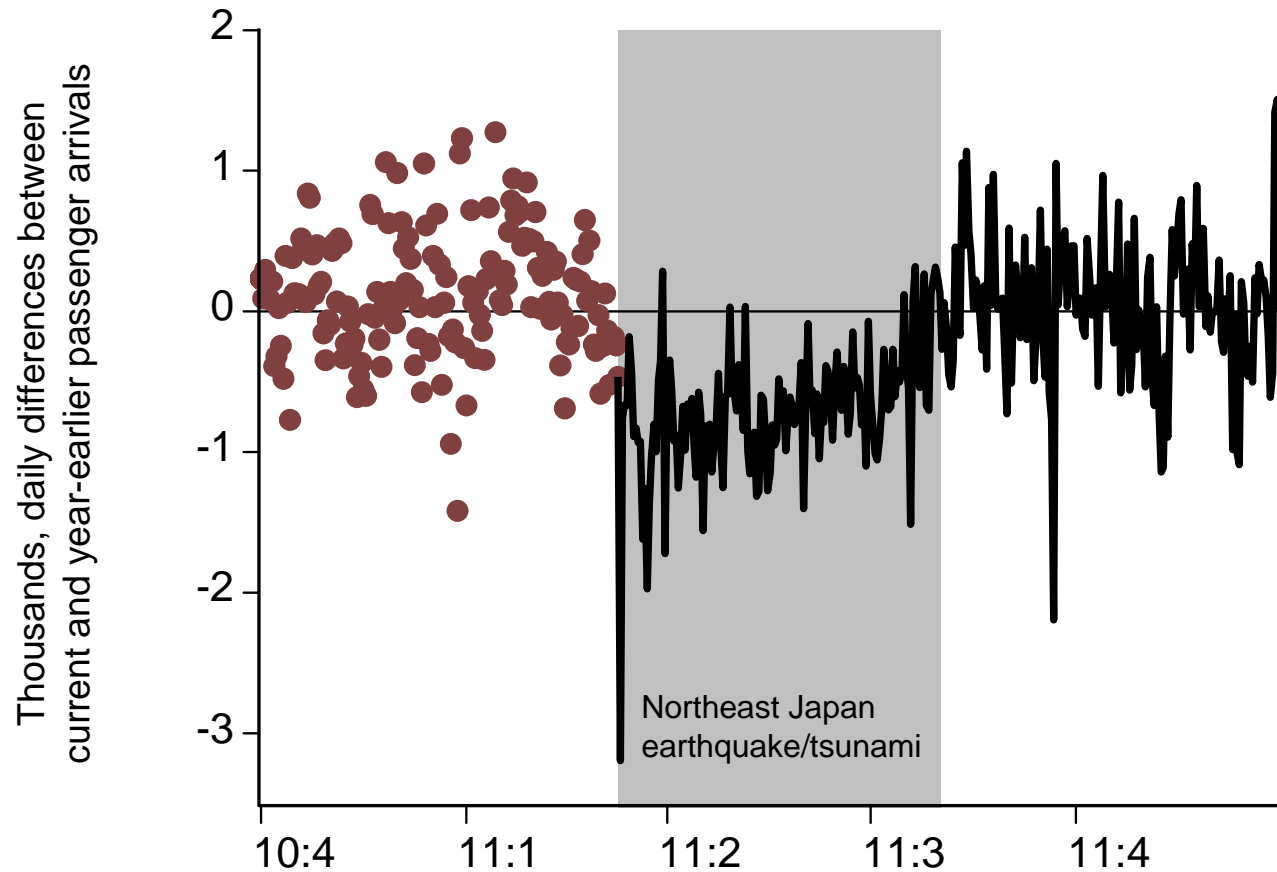
S&P 500 Index daily closing values: markets concerned about U.S. Congressional fiscal policy-making FAILs



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Sources: Standard & Poor's, Federal Reserve Bank of St. Louis; daily data through Thursday, January 5, 2012

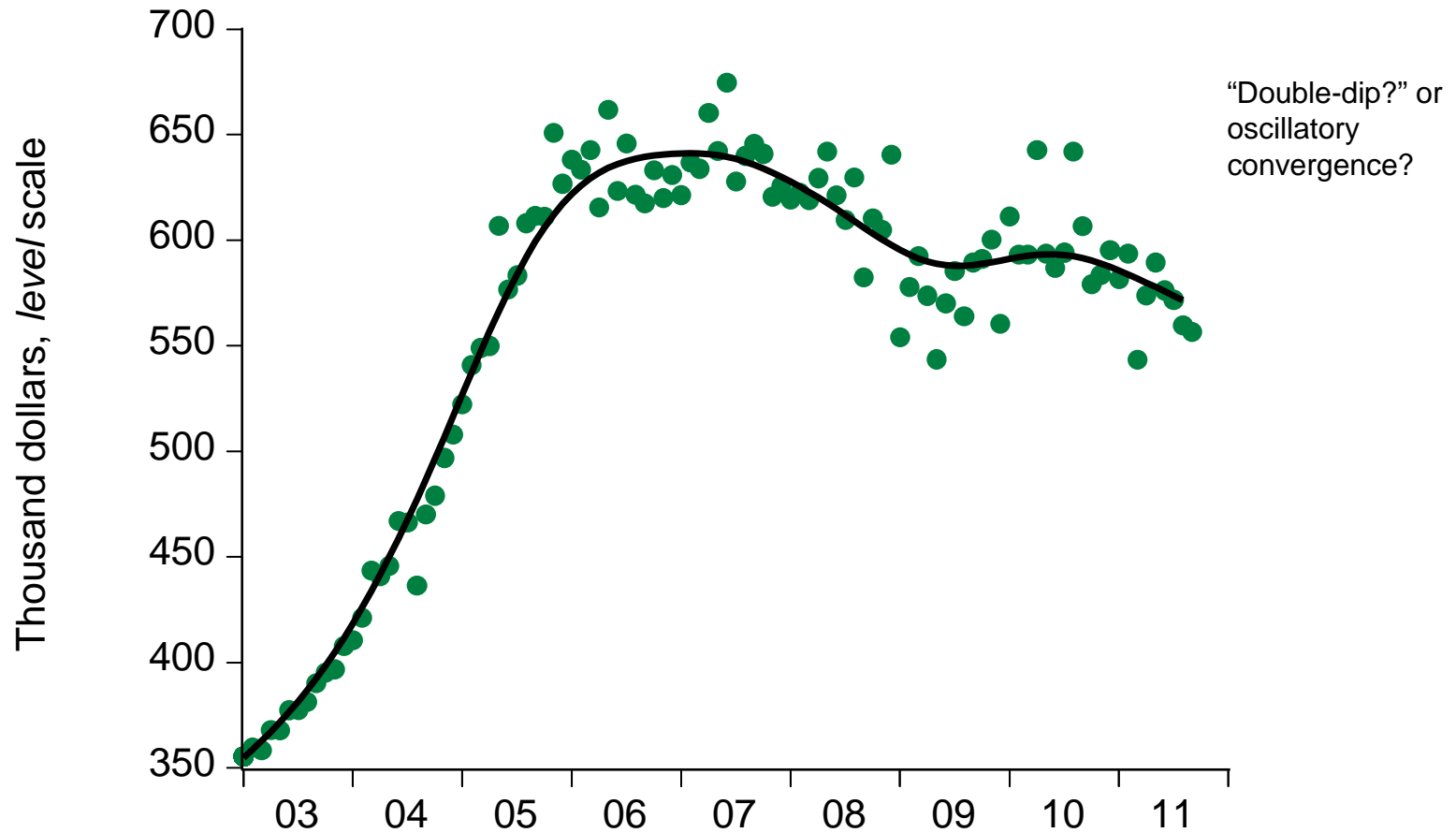
Real overshooting : Japanese passenger arrivals growth and the Great Tohoku seismic event



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Source: Daily data through January 6, 2012 from Hawaii Tourism Authority, Hawaii DBEDT; calculations by TZE

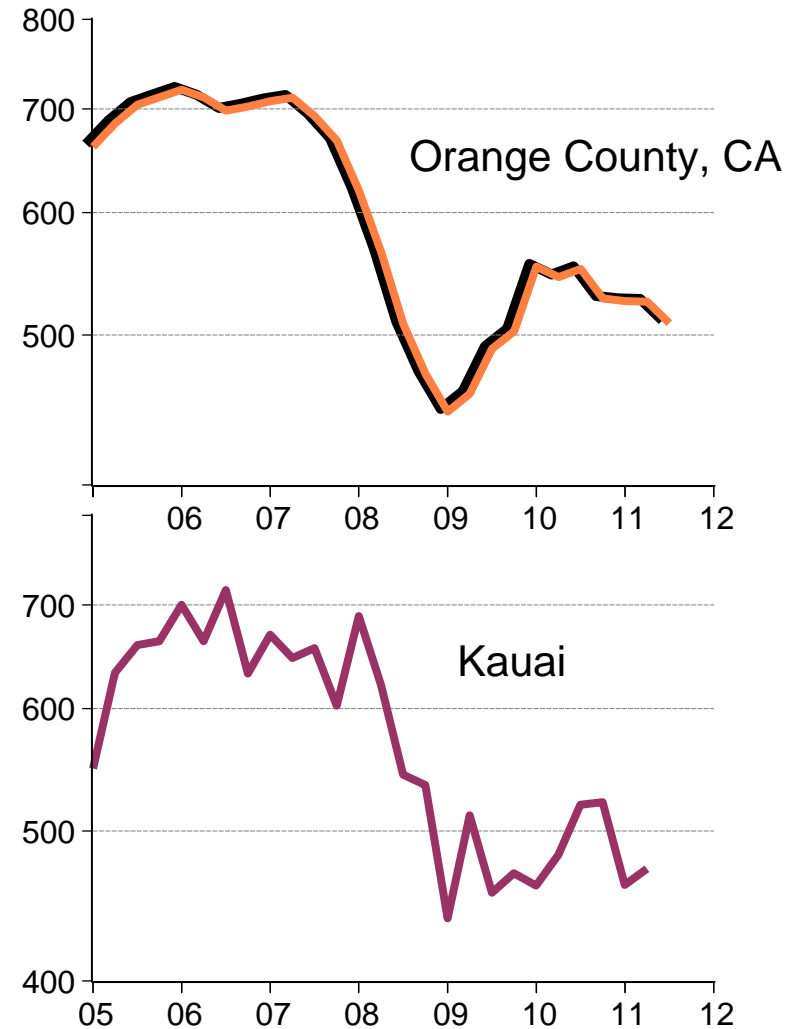
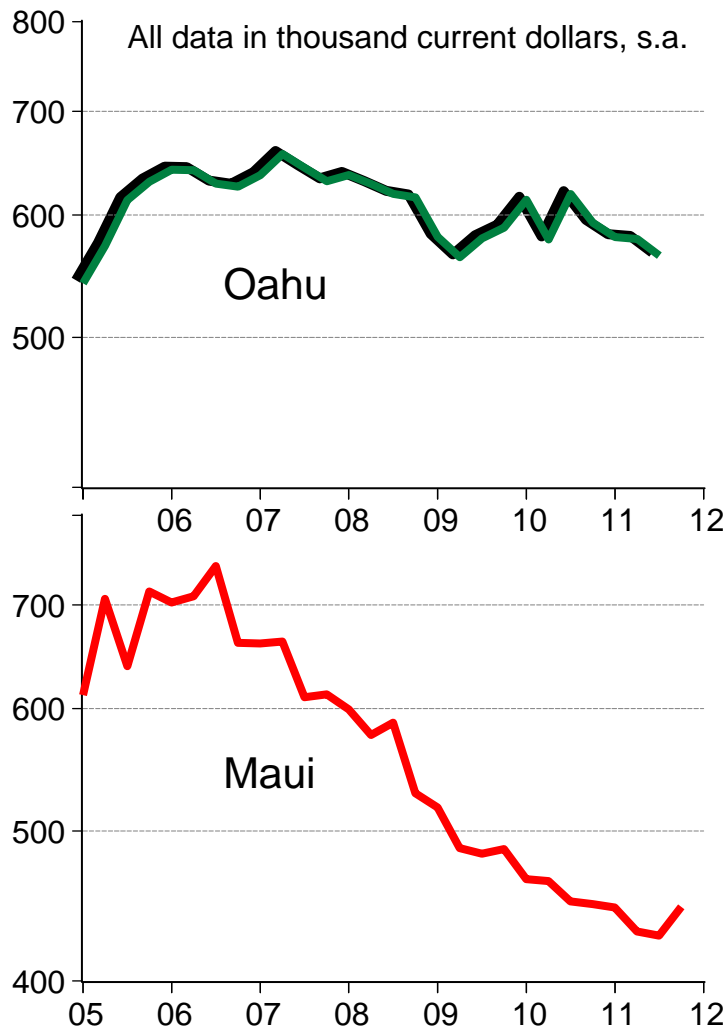
Oahu single-family median existing home sales prices from 2003 through 2011:



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Sources: Honolulu Board of Realtors; seasonal adjustment using Census X-12 filter, Hodrick-Prescott filter trend extraction by TZ Economics

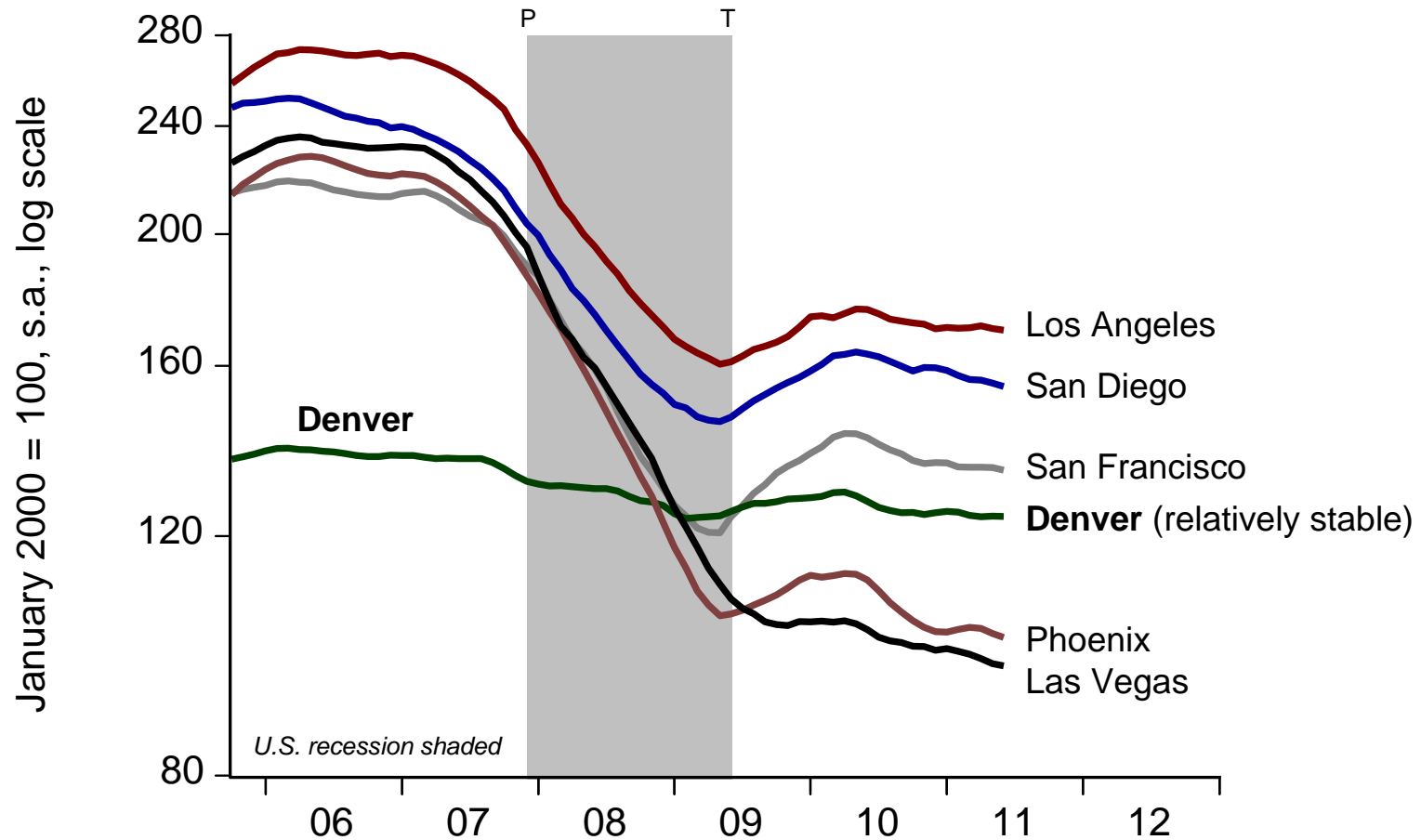
Oahu housing market most stable—relatively—of Hawaii Islands and many mainland urban markets



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Sources: Honolulu Board of Realtors, Realtors Association of Maui, National Association of Realtors, Kauai Board of Realtors / Hawaii Information Service; seasonal adjustment by TZE using Census X-12 ARIMA filter

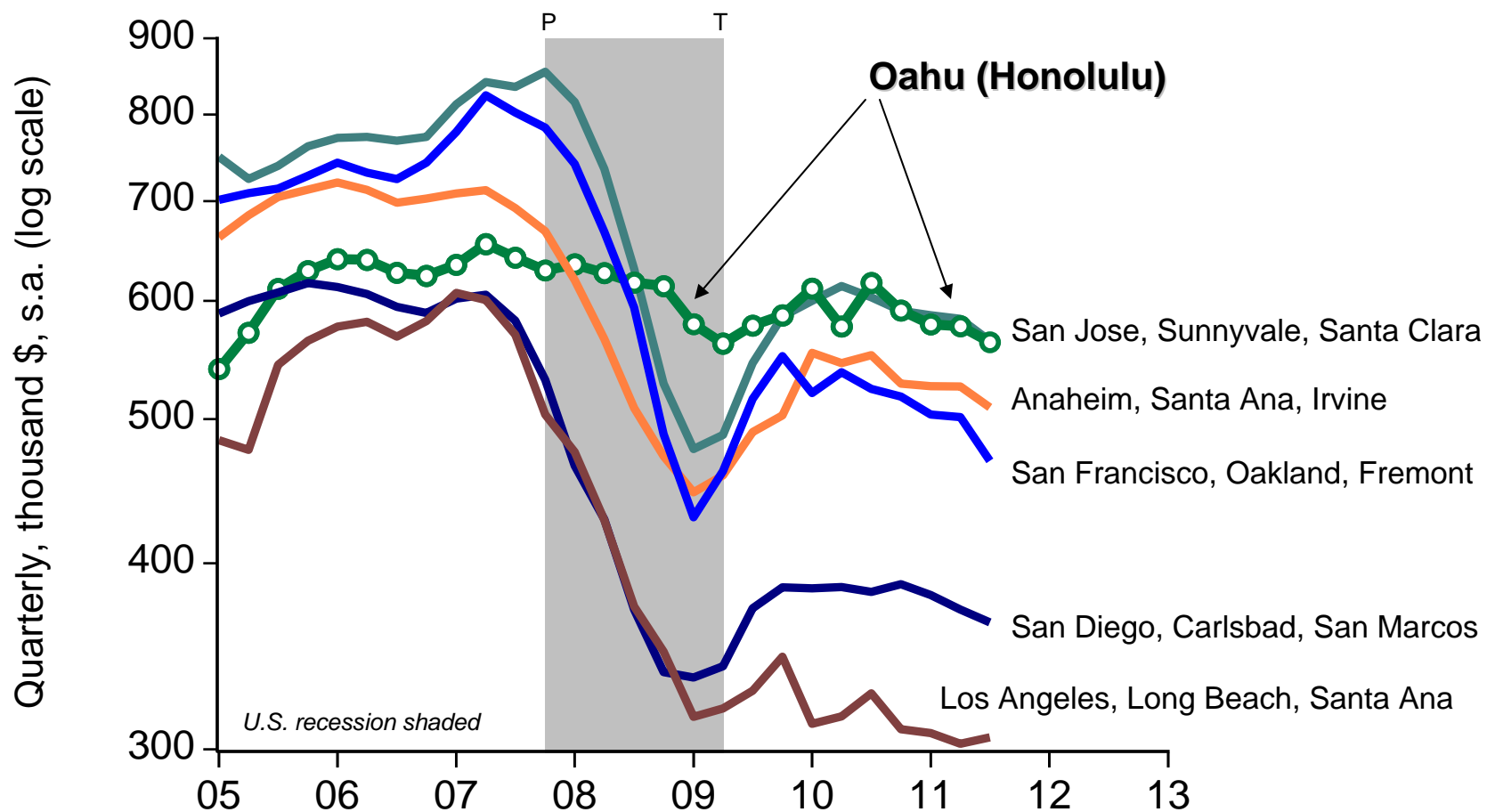
S&P Case-Shiller price indexes (“relative to Jan 2000”): “double-dip” in home prices in many mainland markets



Slide copyright 2011, TZ Economics

Sources: Standard & Poor's; seasonal adjustment using Census X-12 filter by TZ Economics

Median CA existing single-family home prices: “double-dip” or “overshooting + oscillation?”



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Sources: Honolulu Board of Realtors, National Association of Realtors; seasonal adjustment by TZE using Census X-12 ARIMA filter



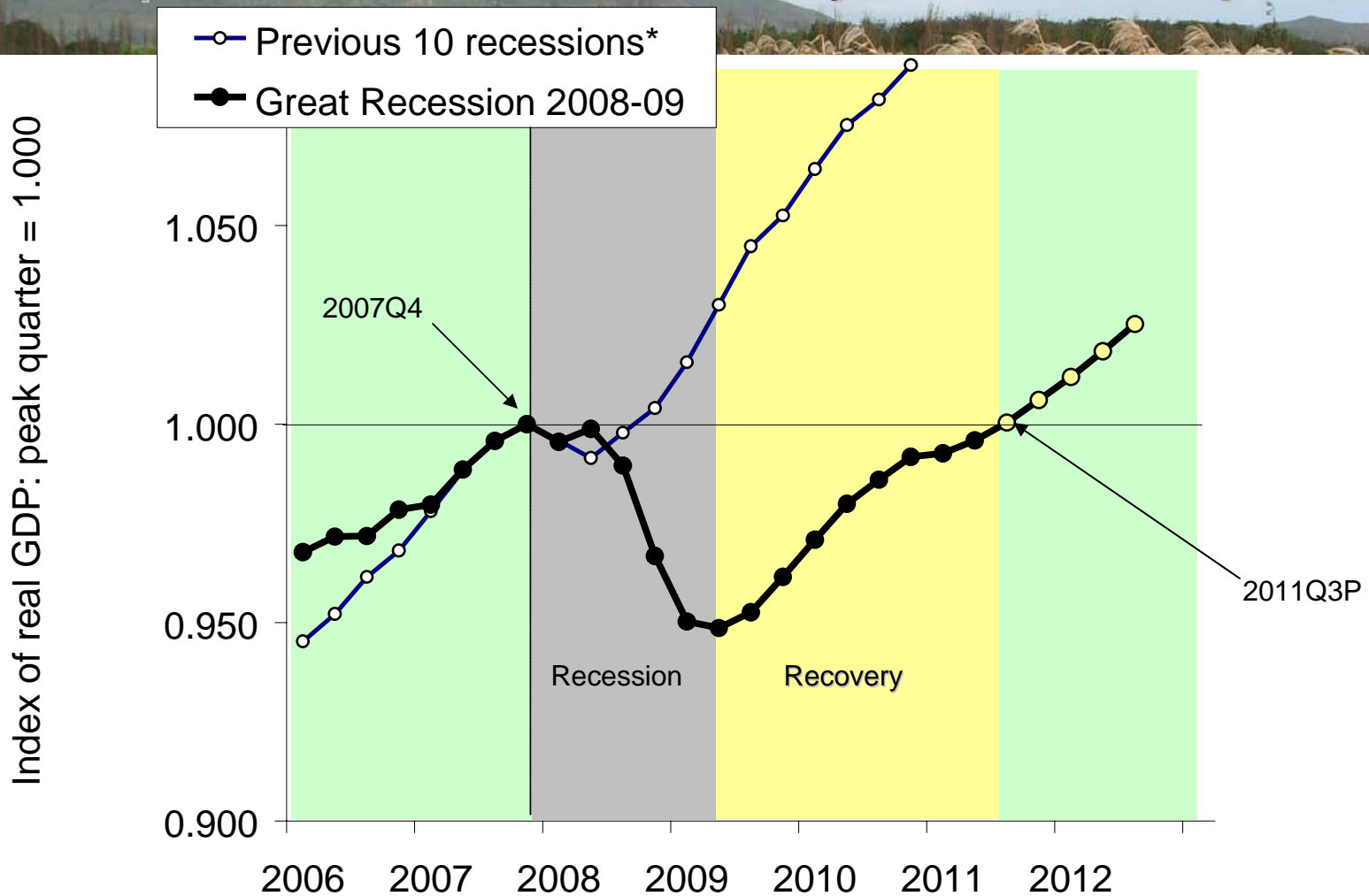
Stabilization in the transition to expansion

- For two years, financial media have been beating the drum of “double-dip” recession risk
- Oscillation is part of asset price equilibration following extreme adjustment, a *normal* part of the process of transition from economic recovery to economic expansion, following severe macroeconomic breaks such as the financial crisis of 2007-08 and recession of 2008-09
- Both systemic risk exposure (including contagion exposure to European sovereign debt risk) and event risk exposure (such as last year’s geopolitical events in North Africa—affecting Hawaii via oil prices—as well as Japan’s seismic event) are *always* present
- I guarantee even more such surprises in 2012, and forever after
- You cannot spend your entire time frozen in fear of the unknown—especially when underlying trends are validating the recovery/expansion forecast



Are our forecasts too optimistic, or too pessimistic?

U.S. real GDP indexed to cyclical peaks: deep recession, slow recovery, definitive expansion

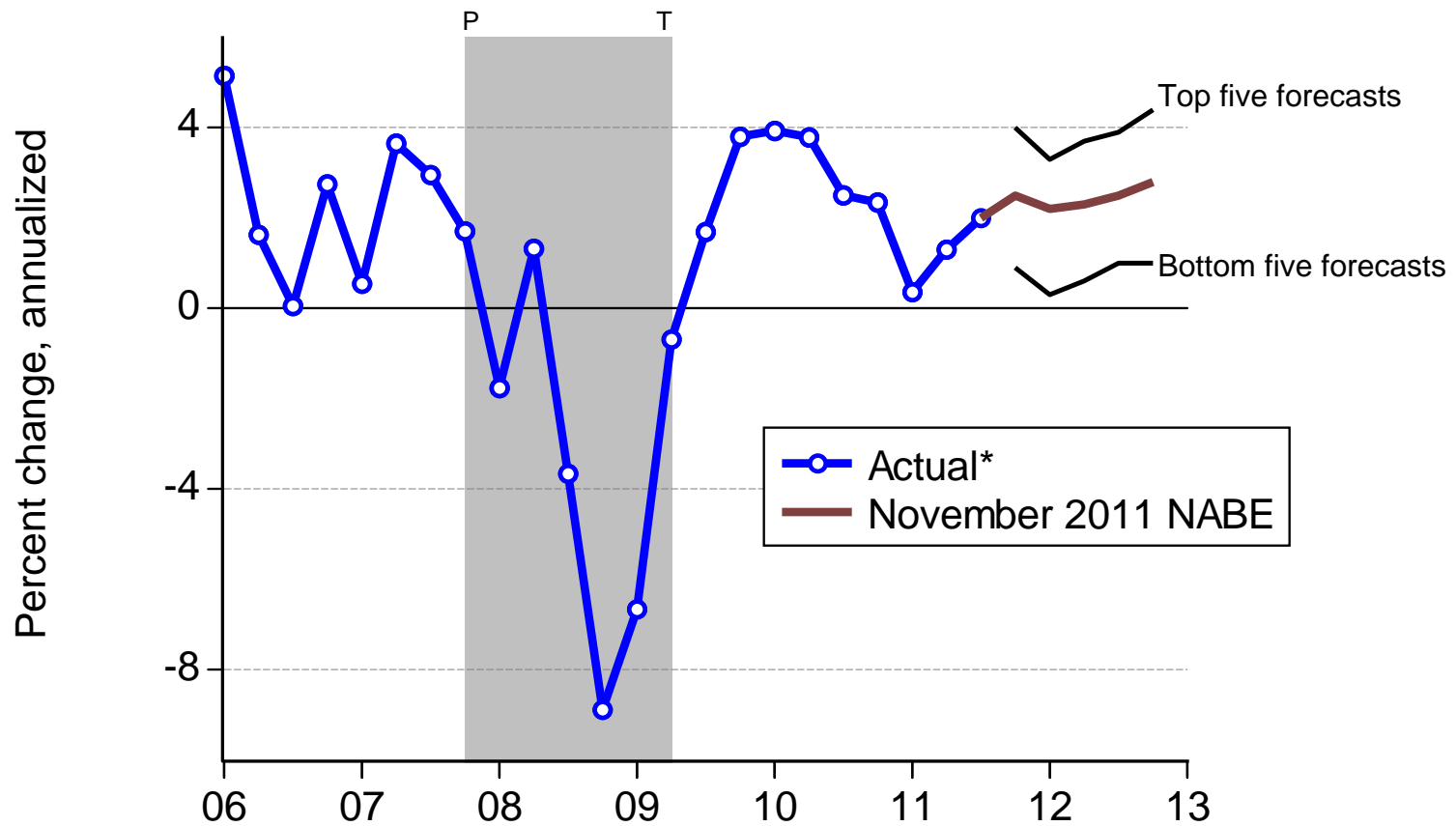


*Recessions since World War II—averages aligned to peak quarter of each business cycle and to 2007Q4

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Source: Professor Robert Hall, Stanford University and Chair, NBER Dating Committee; Bureau of Economic Analysis, U.S. Department of Commerce; includes 2011Q3P data and NABE forecasts though 2012Q4

U.S. real GDP growth NABE forecasts November 2011



*Includes November 22, 2011 release

(<http://www.bea.gov/newsreleases/national/gdp/gdpnewsrelease.htm>)

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Source: BEA (<http://www.bea.gov/national/index.htm#gdp>); NABE Outlook "Below-Trend Recovery Continues, Hindered by Policy Uncertainty," (November 21, 2011) (<http://nabe.com/publib/macsum.html>)

Federal Reserve economic outlook November 2011: real GDP growth 2.5-2.9% forecast for 2012

Percent

Variable	Central tendency ¹					Range ²				
	2011	2012	2013	2014	Longer run	2011	2012	2013	2014	Longer run
Change in real GDP . . .	1.6 to 1.7	2.5 to 2.9	3.0 to 3.5	3.0 to 3.9	2.4 to 2.7	1.6 to 1.8	2.3 to 3.5	2.7 to 4.0	2.7 to 4.5	2.2 to 3.0
June projection. . . .	2.7 to 2.9	3.3 to 3.7	3.5 to 4.2	n.a.	2.5 to 2.8	2.5 to 3.0	2.2 to 4.0	3.0 to 4.5	n.a.	2.4 to 3.0
Unemployment rate. . .	9.0 to 9.1	8.5 to 8.7	7.8 to 8.2	6.8 to 7.7	5.2 to 6.0	8.9 to 9.1	8.1 to 8.9	7.5 to 8.4	6.5 to 8.0	5.0 to 6.0
June projection. . . .	8.6 to 8.9	7.8 to 8.2	7.0 to 7.5	n.a.	5.2 to 5.6	8.4 to 9.1	7.5 to 8.7	6.5 to 8.3	n.a.	5.0 to 6.0
PCE inflation.	2.7 to 2.9	1.4 to 2.0	1.5 to 2.0	1.5 to 2.0	1.7 to 2.0	2.5 to 3.3	1.4 to 2.8	1.4 to 2.5	1.5 to 2.4	1.5 to 2.0
June projection. . . .	2.3 to 2.5	1.5 to 2.0	1.5 to 2.0	n.a.	1.7 to 2.0	2.1 to 3.5	1.2 to 2.8	1.3 to 2.5	n.a.	1.5 to 2.0
Core PCE inflation ³ . .	1.8 to 1.9	1.5 to 2.0	1.4 to 1.9	1.5 to 2.0		1.7 to 2.0	1.3 to 2.1	1.4 to 2.1	1.4 to 2.2	
June projection. . . .	1.5 to 1.8	1.4 to 2.0	1.4 to 2.0	n.a.		1.5 to 2.3	1.2 to 2.5	1.3 to 2.5	n.a.	

NOTE: Projections of change in real gross domestic product (GDP) and projections for both measures of inflation are 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 June projections were made in conjunction with the meeting of the Federal Open Market Committee on June 21-22, 2011.

1. The central tendency excludes the three highest and three lowest projections for each variable in each year.
2. The range for a variable in a given year includes all participants' projections, from lowest to highest, for that variable in that year.
3. Longer-run projections for core PCE inflation are not collected.

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Source: Federal Reserve Board Members and Federal Reserve Bank Presidents (advance release with FOMC minutes) (November 2, 2011) (<http://www.federalreserve.gov/monetarypolicy/files/fomcproptabl20111102.pdf>)

Hawaii *national* forecasts are at the low end of the range

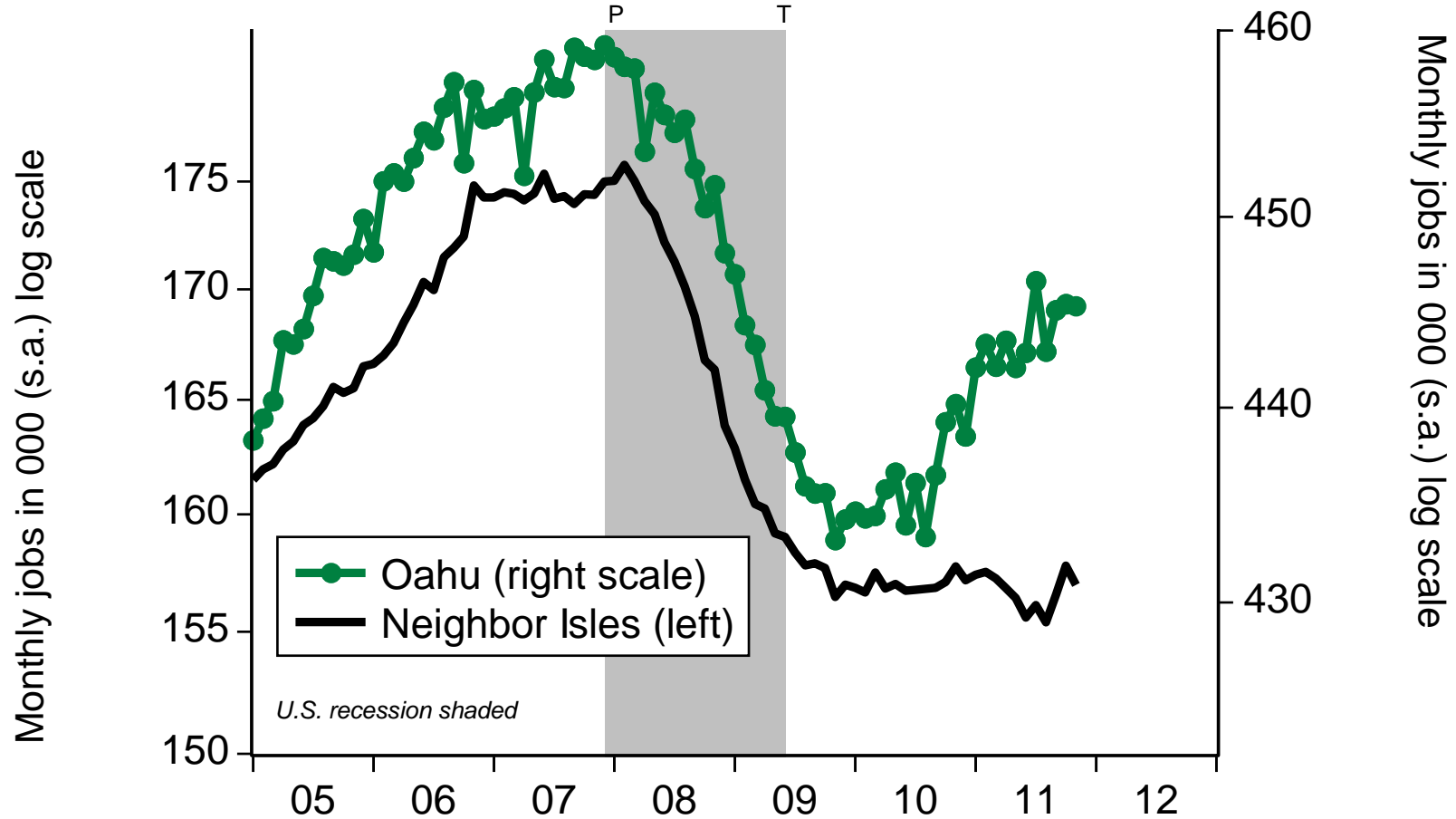
(percent changes as noted)	2011		2012			
	Q3p	Q4	Q1	Q2	Q3	Q4
Real Hawaii personal income growth						
DBEDT	1.3			1.2		
UHERO	1.3			0.9		
Laney	1.0			0.9		
Real U.S. GDP growth						
DBEDT	1.4			1.8		
UHERO	1.7			2.1		
Actual	1.8	n.a.				
NABE		2.5	2.2	2.3	2.5	2.8
Top five	2.0			3.8		
Median	1.7			2.4		
Bottom five	1.2			0.9		
Federal Reserve	1.6-1.7			2.3-3.5		

Sources: as noted elsewhere in this presentation, National Association for Business Economics (NABE) (November 2011) <http://nabe.com/publib/macsum.html> and Bureau of Economic Analysis (BEA) (December 22, 2011), U.S. Department of Commerce <http://www.bea.gov/national/index.htm#gdp>; last four rows are Q4/Q4 growth rates, quarterly growth rates are annualized, other are year-over-year estimates

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Note: as a group the NABE survey implied probability of recession in the near-term is 4.8% ($n = 42$)

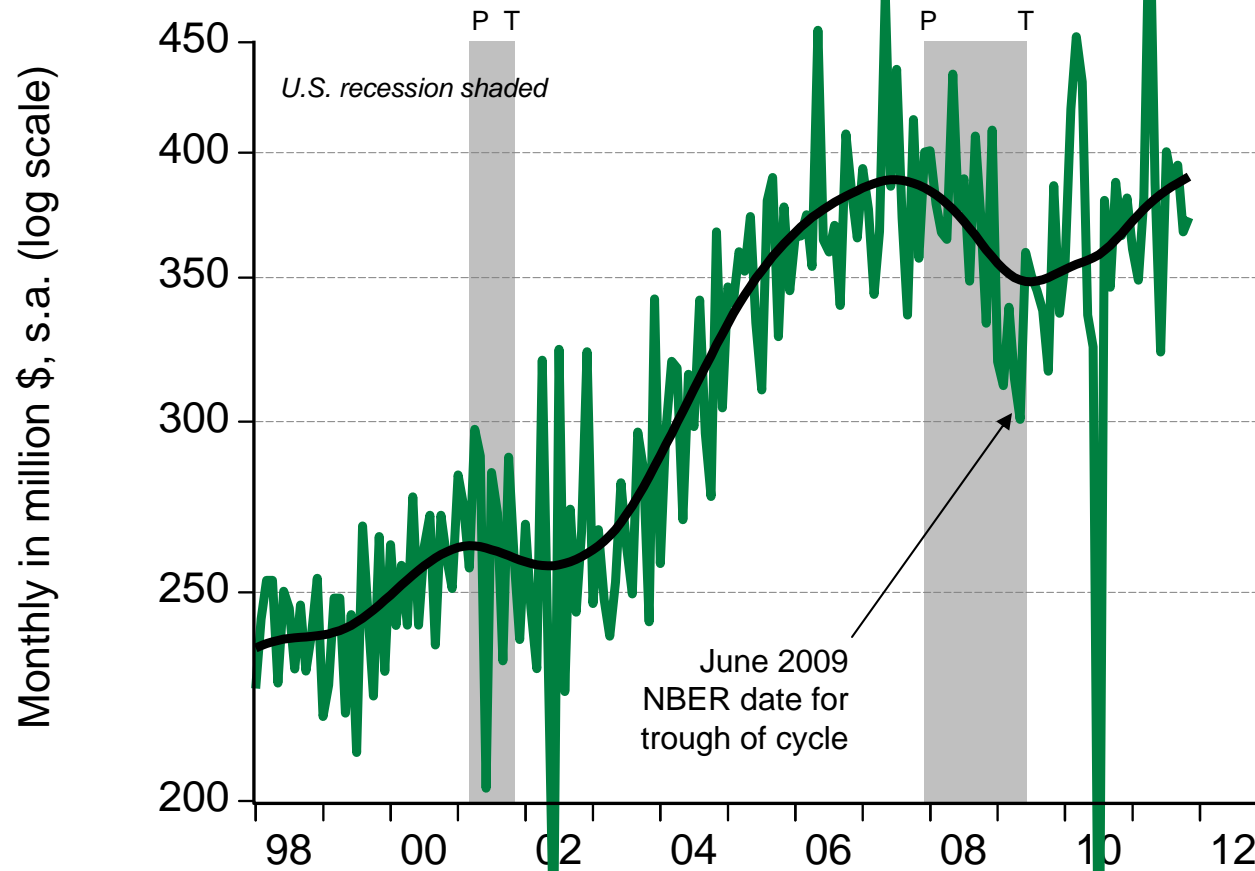
Job growth? Oahu has, Neighbor Islands don't



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Sources: Hawaii DLIR, Hawaii DBEDT; seasonal adjustment by TZ Economics through November 2011

Hawaii general fund tax revenues: signal vs. noise



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Sources: Hawaii DoTax, DBEDT; data through November 2011, seasonal adjustment and trend extraction by TZE



Grains of Hawaiian rock salt

- Published forecasts for U.S. real GDP growth from Hawaii sources (DBEDT, UHERO) are in the lower half of the range of FRB and NABE counterparts
- Notwithstanding forecasters' concerns during second half 2009 and throughout the years 2010 and 2011, the following are true:
 1. Recession ended in mid-2009, as anticipated by at least some analysts
 2. Recovery ended in mid-2011, as anticipated by at least some analysts
 3. Transition to economic expansion (nationwide) came from a deeper trough, took longer and proceeded more slowly than at any time since the Great Depression of the 1930s
 4. U.S. economic expansion, rooted in mid-2009, punched out in mid-2011 and, led by Oahu, a contemporaneous rebound has occurred in Hawaii
- Hawaii has been a better than average state from an economic performance standpoint since the end of the last economic expansion (December 2007), though as a whole the recession-recovery cycle in Hawaii has largely followed the path of the national economy:
 1. The worst performing parts of the state, the Neighbor Islands, collectively comprise approximately $\frac{1}{4}$ of the total and approximately *matched* national economic performance
 2. The remaining $\frac{3}{4}$ of the total comprising Oahu's economy would be among the better performing state economies in the country, currently, without the Neighbor Islands
 3. Recovery patterns are consistent across a variety of Hawaii indicators, including general fund tax revenues (some of which are illustrated in the appendix)



Pan