



---

# HAWAII ECONOMIC TRENDS

---

August 26, 2008

*prepared by*  
Paul H. Brewbaker, Chief Economist  
Bank of Hawaii

<https://www.boh.com/econ/>

Executive Summary  
August 26, 2008

- Hawaii's economy held up through mid-year 2008 but growth slowed. Real income will probably be close to flat for the year, but the risk of a small decline for the year has crept into the forecast. Job growth accelerated slightly in first quarter 2008 before slipping backward in second quarter 2008. Three economic shocks stalled the Hawaii economy in 2008: (1) higher oil prices; (2) falling tourism; (3) falling residential investment. Of the three, oil prices partially unwound towards summer's end. The decrease in domestic tourism arising from a U.S. consumption slowdown was exacerbated by continuing lift reductions following the shutdowns of Aloha Airlines and ATA. The housing downturn continued as well, but a bottom for housing may be forming later this year. Still, risks abound.
- Hawaii's unemployment rate rose to 3.5 percent in June 2008 on a seasonally-adjusted basis, and is expected to continue to drift higher in 2008 and 2009. Job growth slowed to a few tenths of one percent, well below the rate necessary to generate enough labor force absorption to prevent the unemployment rate from rising.
- Honolulu's inflation rate was 4.9 percent in first half 2008, up slightly from the 4.8 percent inflation rate for all of 2007. Though a recent inflation factor, shelter costs, actually began to reduce its contribution to overall price change this year, the energy complex ramped up during second quarter 2008. Household fuels and utilities costs rose 36.4 percent, year-over-year, in the Honolulu CPI-U. The complete energy complex, including transportation fuels, rose 30.8 percent. (The household energy component comprises 3.9 percent of the overall CPI-U; all-in the energy component comprises 6.9 percent of the overall CPI-U.) Food and beverages rose 4.7 percent, year-over-year, in the Honolulu CPI-U during first half 2008.
- Second quarter 2008 transpacific passenger volumes from North America declined 12.5 percent, year-over-year, reflecting the full impact of the shutdowns of Aloha Airlines and ATA. (All statistics here refer to transpacific volumes.) Neighbor island passenger counts declined somewhat more (-14.6 percent) than on Oahu (-11.3 percent). Visitor counts during second quarter 2008 reflected these changes: Oahu visitor counts declined 14.8 percent while neighbor island counts fell by even more. (Because of multiple-island visits, these figures can exceed the statewide domestic visitor count, which dropped 14.2 percent; international visitor arrivals dropped 5.8 percent for the quarter.)
- Previously published scheduled seat estimates predicted a 10.9 percent Oahu decline, and an 11.2 percent decline statewide, for third quarter 2008, slight improvements from the second quarter. More recently published lift estimates for the August-October 2008 period anticipate a 13.4 percent decrease, year-over-year, in domestic scheduled seats to Hawaii across the Pacific. Passenger counts are falling faster than seat counts. July passenger counts declined 15.2 percent overall, with a 17.2 percent decrease in domestic passengers. This suggests that the initial impact of the airline shutdowns was through a *displacement channel*, and that the medium-term impact may be running through a *booking channel*. The reduction in travel supply (lift) is being aggravated by a reduction in travel demand ("movement along the supply curve"). Lower lift and higher air fares, partly from higher fuel costs, combined with other factors dampening travel demand, may make third quarter 2008 travel volumes as soft as during the second quarter.
- Renewed financial market volatility in recent weeks suggests that the workout from the recent financial crisis will be slow and uneven. In each of three cases—conditional volatility of the S&P 500 Index (uncertainty), spreads from 3-month LIBOR to 3-month U.S. Treasury Bill yields (liquidity risk), and the corporate BAA bond yield spread to 10-year U.S. Treasury Notes (credit risk)—risk measures drifted upward from late-May or early June and into July.

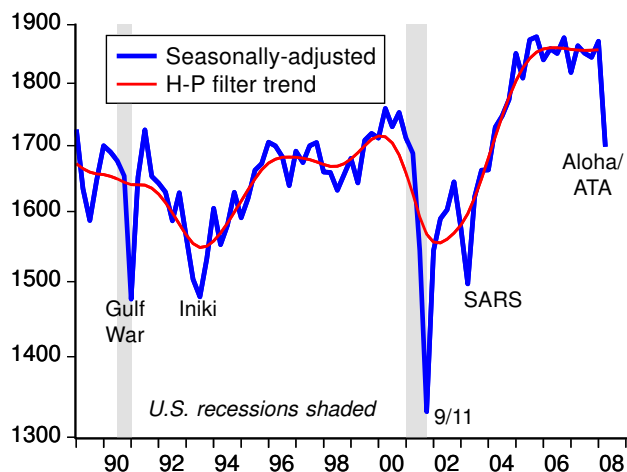
### Hawaii sudden stop follows the U.S. one

A "sudden stop" in U.S. financial markets (the technical term for a precipitous break in orderly functioning) at the end of July 2007 led to a Fed discount rate cut in August 2007 and culminated in even more extraordinary and innovative monetary policy interventions. From 4.8 percent real GDP growth in second and third quarters, 2007, the national economy suddenly stopped, falling to a -0.5 percent annualized rate of real GDP change before reaccelerating to +0.9 percent and +1.9 percent in the first and second quarters of 2008, respectively. U.S. unemployment rose a percentage point as a consequence of the sub-prime financial crisis and the underlying collapse of residential investment. Still, despite oil and commodity shocks and residual uncertainties, the real side of the U.S. economy has inched forward. A weak dollar stimulated U.S. exports, offsetting the drag from declining residential investment. American households, even while retrenching, held up well enough to prevent an outright consumption decline. Meanwhile, with lower-than-national mort-

gage delinquency and default rates, Hawaii's economy mostly dodged the sub-prime mortgage meltdown. Still, Hawaii had *its own* sudden stop in second quarter 2008: a double-digit decrease in travel volumes. As Hawaii's principle source of external receipts, tourism is the islands' largest export, comprising around one-fifth of value-added (gross product). Besides consumers retrenching, Hawaii's tourism destinations have been hurt by the shutdown of two airlines, Aloha and ATA, whose contribution to transpacific scheduled air seats as recently as in first quarter 2008 was 15-20 percent of total lift from North America. Double-digit year-on-year decreases in tourism volume during second quarter 2008 stopped Hawaii's economy dead in its tracks. Hawaii's real growth rate had already slipped to 0-1 percent prior to the airline shutdowns; subsequent lift replacement has only been partial. A protracted tourism contraction, through second *and* third quarters 2008, is expected. Hawaii's high dependence on petroleum adds insult to this macroeconomic injury.

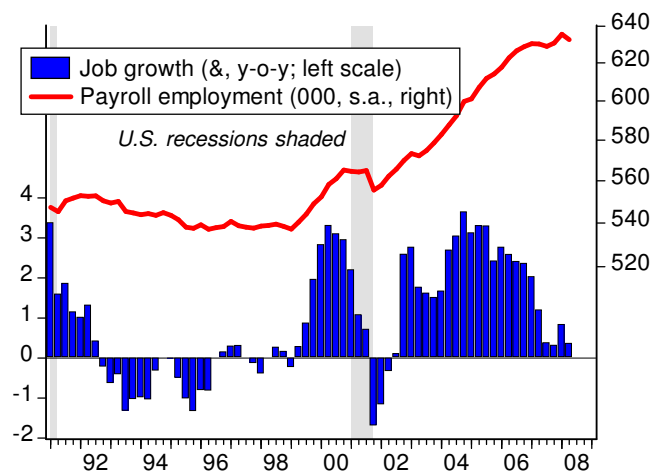
**Hawaii total visitor arrivals through mid-2008**

(quarterly in thousands, s.a., log scale)



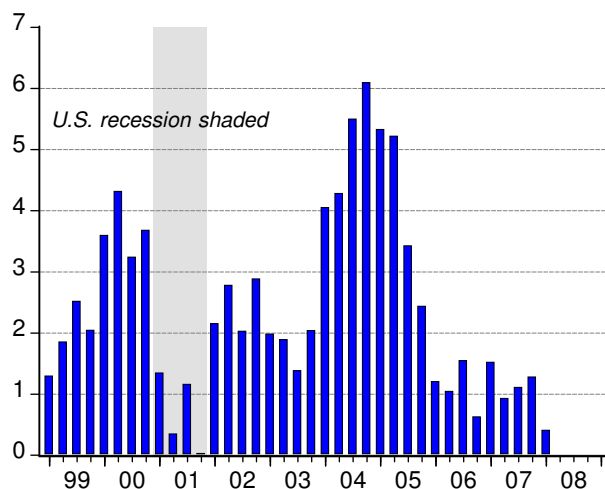
**Hawaii employment through mid-2008**

(quarterly percent changes, y-o-y, and in thousands, s.a.)



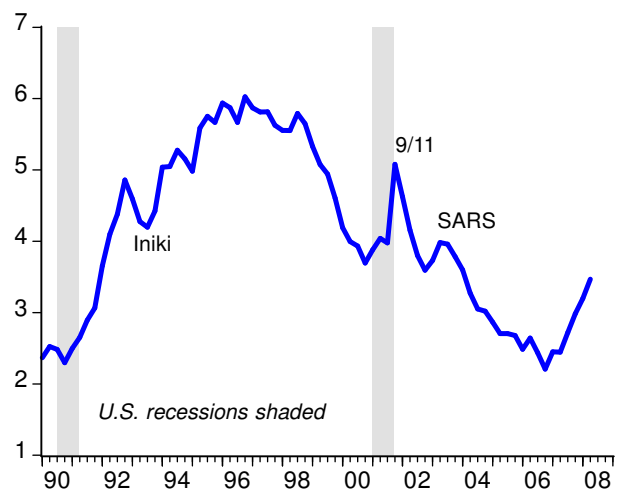
**Hawaii real personal income growth**

(quarterly in percent, y-o-y, through 2008Q1)



**Hawaii statewide unemployment rate**

(monthly in percent, seasonally-adjusted)



## Visitor and Passenger Arrivals and Scheduled Domestic Seats through July 2008

<i>y-o-y percent changes</i>	Actual and pre-AQ/ATA estimates					Projections from OAG reports*			
	08Q1	08Q2*	April	May	June	May-Jul	Jun-Aug	Jul-Sep	Aug-Oct
<b>Domestic scheduled seats</b>									
Oahu	2.7	1.01	-10.6	-13.0	-11.8	-12.1	-12.0	-10.9	-13.4
Hawaii	6.4	16.51	-21.7	-15.6	-3.4	-6.3	-2.0	-3.3	-15.6
Maui	6.0	8.64	-25.5	-20.8	-18.6	-21.2	-17.2	-19.0	-24.3
Kauai	28.2	46.11	1.7	14.3	24.0	21.2	27.5	27.0	22.8
Statewide	5.0	6.13	-14.9	-14.3	-11.7	-12.9	-11.3	-11.2	-15.0

<i>y-o-y percent changes</i>	08Q1	08Q2	April	May	June
<b>Domestic visitors by island</b>					
Oahu	1.6	-14.8	-9.4	-9.3	-17.5
Hawaii	-4.3	-25.7	-24.6	-20.8	-28.1
Maui	-7.5	-18.8	-14.2	-12.3	-22.1
Molokai	3.2	-21.0	-9.4	-9.2	-33.5
Lanai	1.8	-17.8	-19.5	-2.4	-21.6
Kauai	-4.2	-21.5	-19.1	-17.9	-22.7
Statewide domestic	3.5	-14.2	-10.3	-9.3	-16.3
<b>Other visitor arrivals</b>					
International	0.7	-5.8	1.9	3.2	-4.0
Statewide total	2.7	-12.2	-7.6	-6.4	-13.6

	08Q2	08Q3	08Q4	09Q1	09Q2	09Q3	09Q4
<b>Domestic visitor arrivals forecast (May 8, 2008)</b>	-9.7	-6.2	-4.3	-5.3	6.1	4.6	1.5

<i>y-o-y percent changes</i>	08Q1	08Q2	April	May	June	July
<b>Domestic passengers</b>						
Oahu	-2.4	-11.3	-9.1	-10.2	-14.2	-16.2
Neighbor islands	4.2	-14.6	-15.1	-12.7	-15.8	-18.7
Hawaii	0.0	-17.6	-19.3	-15.4	-17.9	-21.1
Maui	0.7	-20.2	-18.8	-18.1	-23.1	-25.9
Kauai	29.1	17.2	9.3	19.1	21.9	17.4
<b>International passengers</b>						
from Japan	-4.5	-8.3	-13.4	-0.4	-10.7	-7.4
other foreign	6.0	8.7	-3.8	17.9	12.6	19.6
<b>Total passengers</b>	0.9	-11.0	-11.3	-8.3	-13.2	-15.2

Sources: Hawaii DBEDT; italicized figures are forecasts as noted; note that Canadian passengers are not, but Canadian visitors are, enumerated; 2008Q2 et. seq. passenger arrivals forecasts are author's 5/8/08 version; blank cells are not available

Passenger counts: [http://hawaii.gov/dbedt/info/economic/data\\_reports/special/daily-pax-update.xls](http://hawaii.gov/dbedt/info/economic/data_reports/special/daily-pax-update.xls)

Visitor counts: <http://hawaii.gov/dbedt/info/visitor-stats/tourism/>

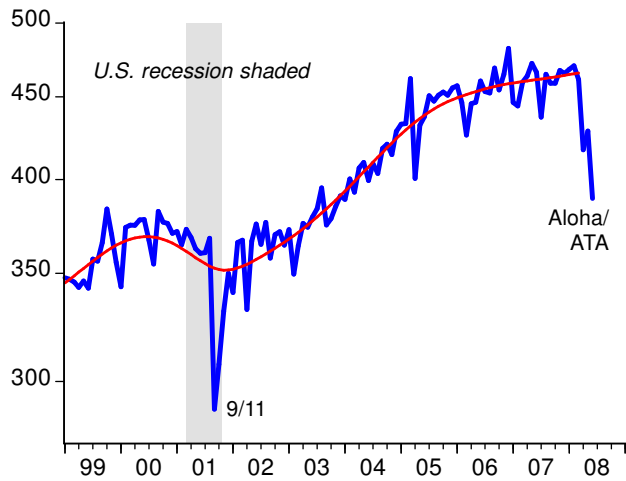
Lift estimates: <http://hawaii.gov/dbedt/info/visitor-stats/air-seats/>

\* 2008Q2 lift estimates were compiled by DBEDT before the Aloha/ATA shutdown.

Note: visitors comprise 86-88 percent of passengers (elsewhere, visitors are defined as "tourists")

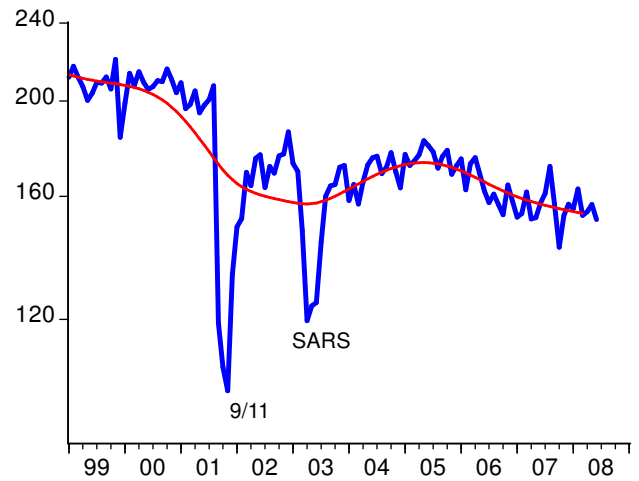
**Hawaii statewide domestic visitor arrivals through June 2008**

(thousands, seasonally-adjusted, log scale)



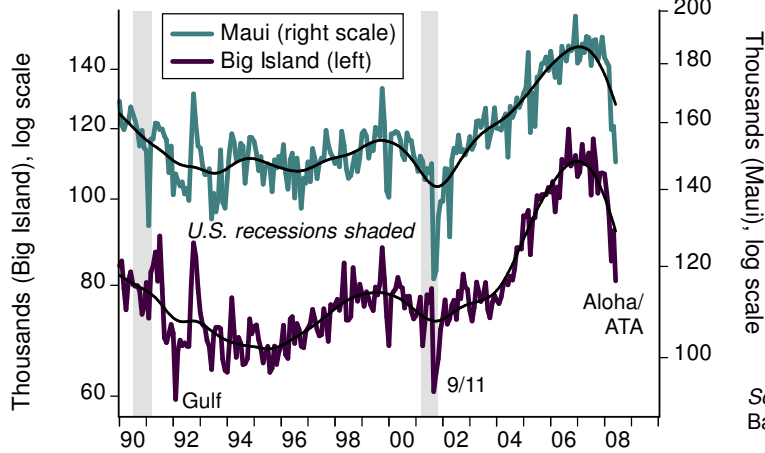
**Hawaii statewide international visitor arrivals through June 2008**

(thousands, seasonally-adjusted, log scale)



**Maui and Big Island domestic visitor arrivals through June 2008**

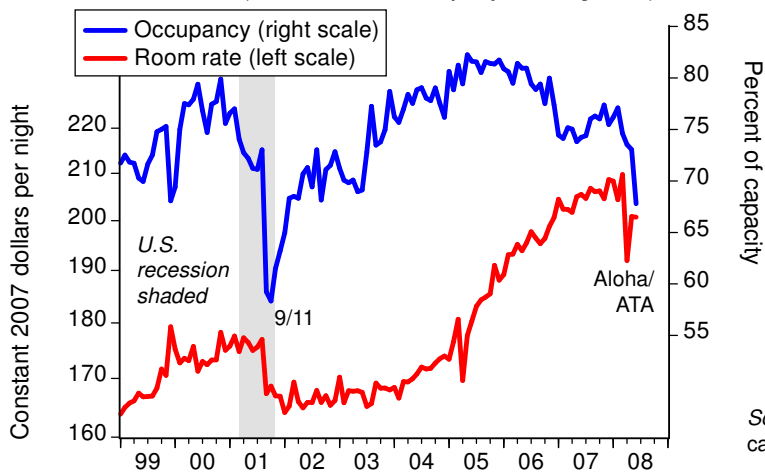
(thousands, seasonally-adjusted, log scale)



Source: Hawaii DBEDT calculations by Bank of Hawaii

**Hawaii statewide hotel performance indicators through June 2008**

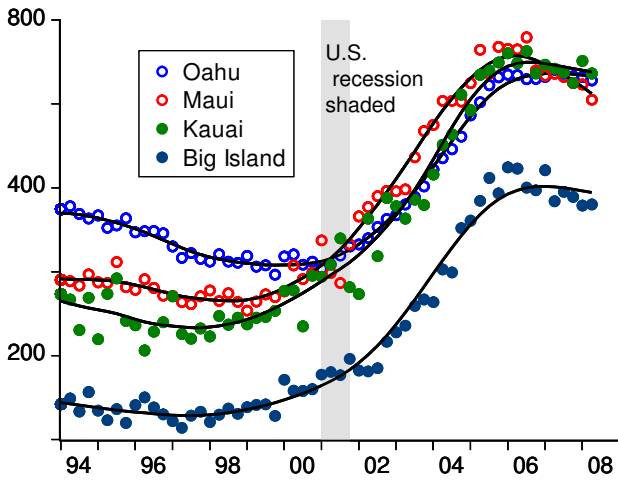
(thousands, seasonally-adjusted, log scale)



Source: Hospitality Advisors LLC, calculations by Bank of Hawaii

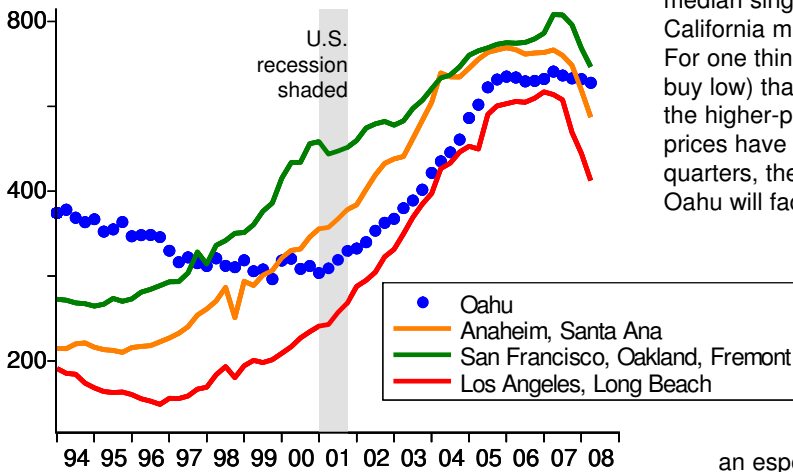
**Hawaii single-family existing home sales prices through second quarter 2008**

(thousand dollars, seasonally adjusted, log scale)



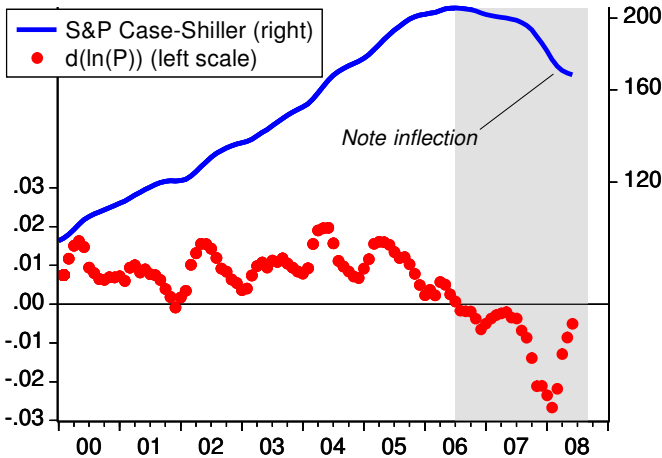
**Oahu and California metro single-family existing home sales prices through second quarter 2008**

(thousand dollars, seasonally adjusted, log scale)



**S&P Case-Shiller 20 U.S. metro area "same home" price indexes through June 2008**

(right scale: January 2000 = 100)



**Housing correction ending?**

Home prices on Oahu have been comparatively resilient. Unlike Hawaii's Neighbor Islands, which experienced more active mainland investor participation, particularly in resort areas among second-home buyers, Oahu neither experienced the buying velocity nor new home buildout seen elsewhere across the state in the recent housing upswing. (Neighbor island economies comprise less than one-third of the state total, while neighbor island homebuilding in the last decade comprised *two-thirds* of the state's new home total.) Markets on the mainland that are now exposed to the greatest shares of sub-prime and Alt-A mortgage lending delinquency-related problems tended to be those that ended up with the largest housing gluts by 2005 or 2006. Currently, California, Nevada, Arizona, Florida and the "Auto Patch" (Michigan and Ohio) are experiencing the worst delinquency and foreclosure problems, a pattern in which production trends and non-prime mortgage lending appears to have generated the greatest "toxicity." For example, in round numbers, sub-prime and Alt-A mortgage loans represent around 80 per 1,000 homes in California, but only around 40 per 1,000 homes in Hawaii, where the mortgage delinquency rates in *all* loan categories are not only lower than average but are among *the lowest* delinquency rates in the country. Still, the sharp push-down in median single-family home prices in the most "bubblicious" California markets does raise risks for Hawaii valuations. For one thing, capital flows set up an "arbitrage" (sell high, buy low) that tends to drag lower-priced markets towards the higher-priced alternatives, historically. Since California prices have moved down so sharply in the last three or four quarters, there is a risk that even a resilient market like Oahu will face the downdraft in second half 2008. There is

some room for optimism, however: the sharp correction in many mainland home prices measures may reflect an "overshooting" phenomenon often seen in asset price adjustments, where prices have to fall "too low" to reward risk-averse investors with a higher expected future return to compensate them for

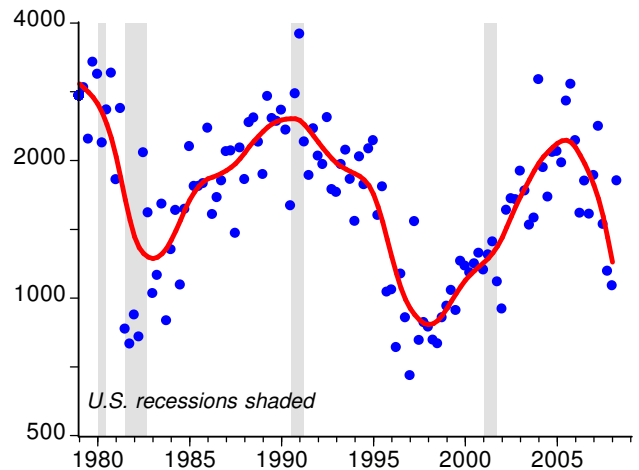
an especially risky asset-pricing environment, such as the one that U.S. housing and financial markets--including volatile commodities and currencies--have experienced. An inkling of housing stabilization may be starting to appear in a oft-cited measure of home values, the S&P Case-Shiller home price index. Built up from public record data in a way that compares same homes with their own, earlier-recorded values, the Case-Shiller index includes not just sales transaction but homes whose values are registered in a mortgage origination, including sub-prime and Alt-A mortgages. In recent months the Case-Shiller index has been decreasing *at a decreasing rate*, a pattern which could lead to a stabilization of this home valuation measure during second half 2008. "Over-shot" California home prices might even "bounce," though it is unlikely that they will rebound sharply, as investors swarm into the most depressed markets. Suggestive evidence now comes from second quarter 2008, when only two states had higher existing home sales than one year earlier: California and Arizona.

**Housing correction still being balanced**

Despite a precipitous decline in unit volumes of new homes authorized for construction statewide (to the right), the constant-dollar volume of *nonresidential* construction has remained resilient. Though some compression in nonresidential construction commitments is expected as fall-out from the subprime credit crunch, overall construction activity in Hawaii may continue to hover at cyclically high levels before declining modestly in coming years. (A complete construction forecast update is forthcoming: Google "UHERO.") Construction rose at more modest rates on increase during the upswing beginning in the late-1990s, compared to the prior cycle, and has proven more sustainable. Still, the housing contraction will be a drag, though on Oahu much or most of that drag so far has been offset by military housing privatization-related homebuilding. Neighbor Island markets do not have the offset of military-related residential construction.

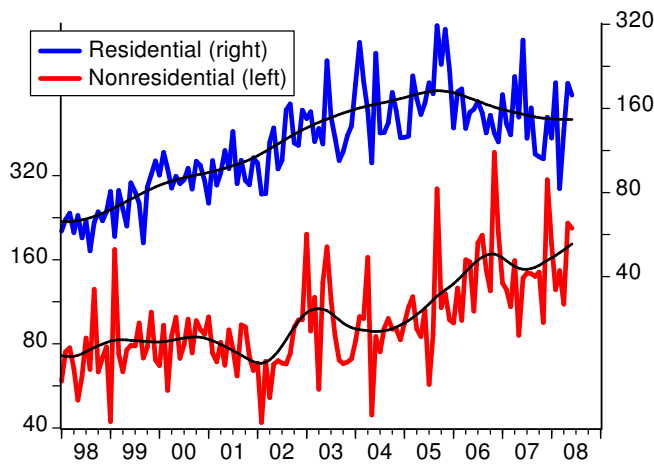
**New housing units authorized by building permit in Hawaii's four counties (<5 stories)**

(quarterly, units, s.a., log scale)



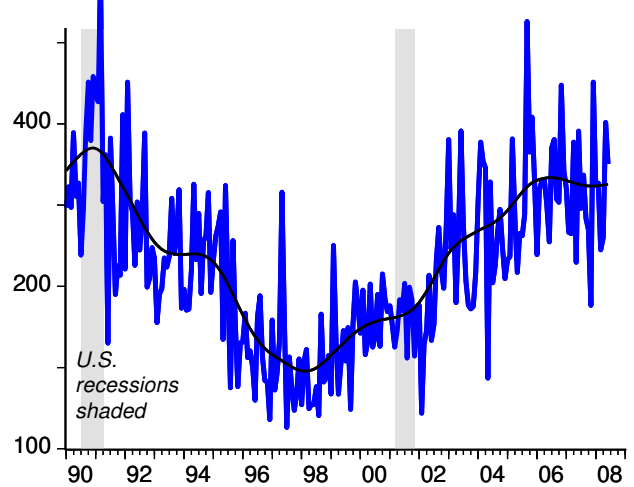
**Hawaii real residential and nonresidential building permits, through mid-2008**

(quarterly, in million 2007\$, log scales)



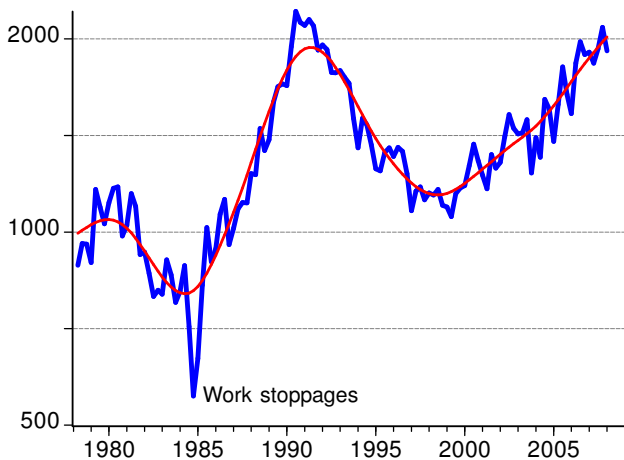
**Hawaii total private building permits, adjusted for construction cost inflation, through mid-2008**

(quarterly, in million 2007\$, log scale)



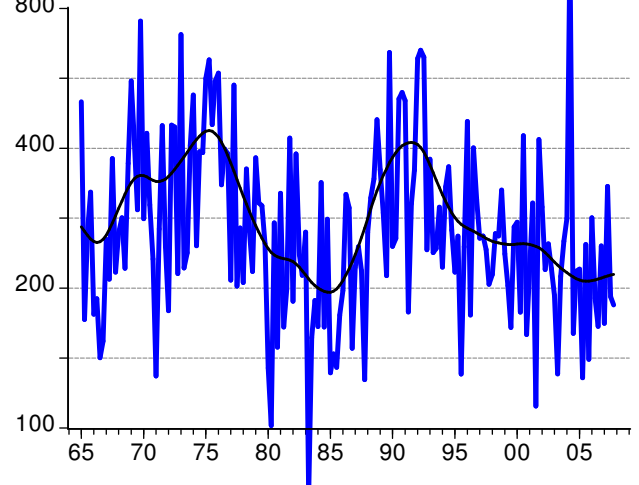
**Hawaii total contracting receipts, adjusted for construction cost inflation, through mid-2008**

(quarterly, in million 2007\$, log scale)



**Hawaii total real county, state and federal government contracts, through mid-2008**

(quarterly, in million 2007\$, log scale)



**Hawaii inflation: higher but falling?**

Moving from an above-national average regional economy to sub-par, Hawaii should be experience a steeper *decline* in consumer price inflation than across the country, measured by the Honolulu CPI-U (consumer price index for all urban consumers). However, the global energy inflation spiked by a commodity bubble affecting petroleum prices in first half 2008 had a disproportionately inflationary effect on Hawaii. Unlike other parts of the country, which rely on coal, hydropower, and even nuclear power for a significant part of electricity generation, Hawaii is much more dependent on imported petroleum. Indeed, Hawaii is one of the few places in the country (and perhaps the only state) that is predominantly dependent on fuel oil derived from petroleum as its primary electricity generation source. Geography prevents Hawaii residents from driving as

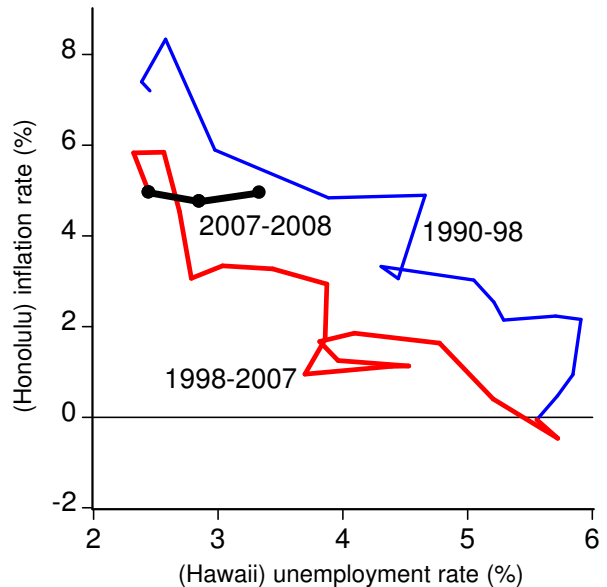
much as mainland residents, and home heating generally is not an issue, but the impact of rising oil prices does not have quite as significant an impact via transportation fuels as it does versus household electricity consumption. Thus, the spike in oil prices in second quarter 2008 had an especially harsh inflation consequence through household fuels and utilities in Honolulu during first half 2008. Hawaii's stagnating economy, meanwhile, should be bringing inflation down faster than on the mainland, a process which should reassert itself later in 2008 and for the next several years. A boost in unemployment from this year's tourism contraction, and a "sticky" inflation rate in first half 2008, will give way to a 1990s-style trajectory of falling inflation and rising unemployment in Hawaii.

**HNL CPI-U inflation**

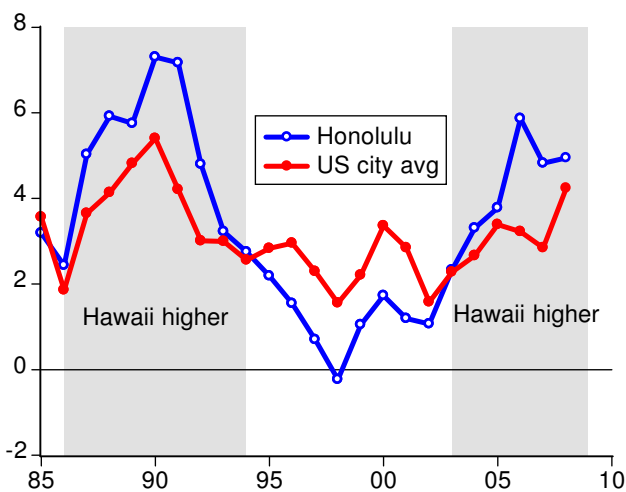
Weight	Component	2007	2008H1
100.0	All items	4.8	4.9
15.5	Food, beverages	5.5	4.7
38.6	Shelter	7.6	3.5
3.9	Household fuels, utilities	5.3	36.4
4.3	Furnishings, operations	1.7	-0.3
3.5	Apparel	-0.2	3.2
15.7	Transportation (incl. fuels)	1.4	5.4
5.0	Medical	n.a.	n.a.
5.4	Recreation	1.5	3.5
5.3	Educ / Comm	0.0	2.0
2.8	Other	4.6	5.1
<i>Special indexes:</i>			
6.9	Energy (included elsewhere)	3.6	30.8
78.6	Core (less food, energy)	4.8	3.1

Source: Bureau of Labor Statistics

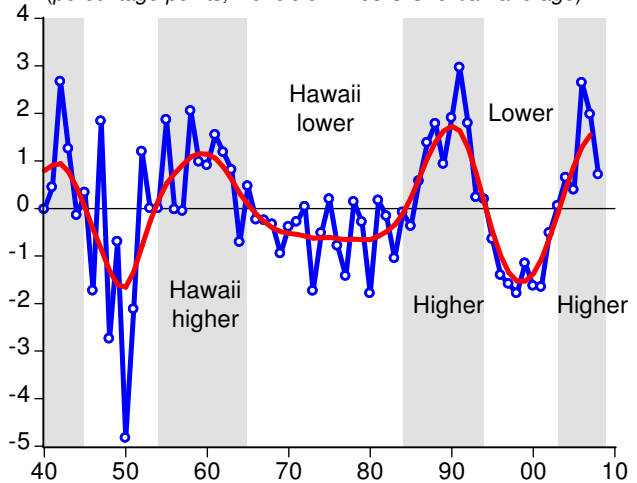
**Hawaii's "Phillips Curve:" short-run trade-offs between inflation and unemployment**



**Semiannual Honolulu, U.S. CPI-U inflation rates**  
(percent change, year-over-year)



**Semiannual differences between Honolulu and U.S. CPI-U inflation rates**  
(percentage points, Honolulu minus U.S. urban average)



## Comparative Hawaii economy 2008-2009 forecasts

August 15, 2008

Annual percent changes <sup>1</sup>	Jobs					Personal Income (real)					CPI Honolulu				
	2005	2006	2007	2008	2009	2005	2006	2007	2008	2009	2005	2006	2007	2008	2009
BOH <sup>2</sup>	3.1	2.5	1.9	-0.3	0.6	2.9	0.9	1.8	-0.2	0.9	4.0	4.6	4.6	4.7	2.5
UHERO <sup>3</sup>	2.7	2.6	2.1	-0.2	-0.2	4.6	1.1	1.6	-0.1	0.4	3.7	5.1	5.0	5.0	2.2
DBEDT <sup>4</sup>			1.9	0.2	0.5			1.8	0.4	0.8			4.5	4.5	3.5
Laney <sup>6</sup>			2.0	1.0				1.0	1.5				5.0	4.0	
Actual(p)	3.1	2.6	1.0			2.9	0.2	1.3			3.8	5.9	4.8		

Annual percent changes <sup>1</sup>	Total Visitor Arrivals by air					Domestic (UHERO: US) Arrivals by air					International (UHERO: Japan) Arrivals by air				
	2005	2006	2007	2008	2009	2005	2006	2007	2008	2009	2005	2006	2007	2008	2009
BOH <sup>2</sup>	4.2	-0.5	-1.6	-6.0	3.8	2.9	1.7	-0.1	-7.6	4.7	7.2	-5.9	-5.3	-1.5	1.2
UHERO <sup>3</sup>	6.7	0.4	-1.1	-4.6	1.3	6.9	2.4	-0.8	-7.1	0.7	3.4	-8.6	-3.4	-8.0	0.2
DBEDT <sup>4</sup>			-0.8	-6.7	-0.8										
Laney <sup>6</sup>			-0.5	1.5				1.8	1.9	1.9			4.5	3.8	3.4
Actual(p)	7.3	0.6	-1.2			8.5	3.3	0.0			5.0	-4.8	-4.7		

Annual percent changes <sup>1</sup>	Total Visitor Expenditures					Construction <sup>5</sup> (UHERO ; see footnote)				
	2005	2006	2007	2008	2009	2005	2006	2007	2008	2009
UHERO (08Q1) <sup>5</sup>								2.2	-1.8	-4.1
UHERO (07Q3)								5.3	-0.7	
UHERO (07Q1)						13.5	8.4	4.4	-3.5	
UHERO (06Q3)						6.3	10.0	-1.9		
BOH (Jun 06) <sup>2</sup>						9.6	8.9	-1.2	-6.0	-3.2
DBEDT <sup>4</sup>			2.0	-6.4	2.9					
Actual(p)	9.6	4.0	0.9			10.75	9.2			

**Notes:**

<sup>1</sup> 2005-2007 "forecasts" are taken from last published forecasts prior to end of each year

<sup>2</sup> Paul Brewbaker, Chief Economist, Bank of Hawaii, "Hawaii Economic Trends" (August 18, 2008) <https://www.boh.com/econ/reports/econ081808.pdf>; June 2006 construction forecast is unpublished

<sup>3</sup> Professors Carl Bonham and Byron Gangnes (University of Hawaii Economic Research Organization) June 13, 2008; "UHERO Hawaii Quarterly Forecast Update: Oil Surge Fuels Inflation, Threatens Deeper Downturn" <http://www.uhero.hawaii.edu/>

<sup>4</sup> "Outlook for the Economy: 3rd Quarter 2008," (August 14, 2008) (includes cruise ships) [http://hawaii.gov/dbedt/info/economic/data\\_reports/qser/outlook-economy](http://hawaii.gov/dbedt/info/economic/data_reports/qser/outlook-economy)

<sup>5</sup> "UHERO Hawaii Construction Forecast: Slow Decline But No Contracting Crunch" (March 7, 2008) by Carl Bonham (UHERO) and Paul Brewbaker (BOH) ([http://www.uhero.hawaii.edu/eis/eis\\_forecastarchive.html](http://www.uhero.hawaii.edu/eis/eis_forecastarchive.html))

<sup>6</sup> "Hawaii Economic Forecast For 2008" (November 7, 2007) Professor Leroy Laney, Hawaii Pacific University ([http://fthb.com/hm\\_news110707.htm](http://fthb.com/hm_news110707.htm))

Note: data were compiled by Bank of Hawaii but users are encouraged to refer to original sources.

## Hawaii Economic Indicators

Seasonally-adjusted, real data  
(home prices nominal)

		2005:2	2005:3	2005:4	2006:1	2006:2	2006:3	2006:4	2007:1	2007:2	2007:3	2007:4	2008:1	2008:2
1	Real personal income	<i>billion 2007\$</i>	49.483	49.140	49.617	49.627	50.001	49.899	49.930	50.382	50.466	50.453	50.569	50.589
2	Growth rate	<i>% y-o-y</i>	5.2	3.4	2.4	1.2	1.0	1.5	0.6	1.5	0.9	1.1	1.3	0.4
3	Honolulu CPI inflation*	<i>% y-o-y</i>	3.07	4.05	4.53	5.42	5.85	5.84	5.83	5.24	4.95	4.82	4.75	4.9
4	Civilian labor force	<i>thousands</i>	633.38	638.93	640.90	642.72	645.88	649.16	652.60	652.36	649.23	646.56	648.21	653.85
5	Civilians employed	<i>thousands</i>	616.44	621.73	623.77	626.15	628.95	633.30	638.03	636.14	633.58	628.85	629.06	632.86
6	Civilian unemployment rate	<i>percent</i>	2.7	2.7	2.7	2.5	2.6	2.4	2.2	2.5	2.4	2.7	3.0	3.2
7	Total wage and salary jJobs	<i>thousands</i>	607.14	611.83	614.18	617.74	622.78	626.56	628.70	630.30	630.32	628.96	630.70	635.61
	<i>pre-benchmarked jobs</i>	<i>thousands</i>	606.99	611.81	614.24	617.96	621.85	624.69	629.34	632.18	634.31	636.15	638.11	
7b	Nonagricultural jobs	<i>thousands</i>	600.31	605.01	607.37	610.81	615.82	619.59	621.82	623.54	623.66	622.61	624.37	626.33
8	Private building permits	<i>million 2007\$</i>	785.9	1080.6	1047.0	822.5	908.9	1008.2	991.7	807.9	1064.2	843.3	821.1	903.0
9	Residential	<i>million 2007\$</i>	500.0	704.5	746.0	495.8	463.0	461.5	395.5	432.0	661.5	403.0	352.1	401.3
10	Commercial and industrial	<i>million 2007\$</i>	106.6	200.8	59.1	97.1	151.4	173.3	262.7	112.3	204.0	117.3	236.2	201.2
11	Additions and alterations	<i>million 2007\$</i>	179.2	175.3	241.8	229.6	294.5	373.4	333.5	263.6	198.7	323.0	232.7	300.5
12	Government contracts	<i>million 2007\$</i>	131.7	240.1	145.1	285.4	195.2	160.2	254.7	168.7	339.6	185.4	191.2	186.7
13	Oahu home sales	<i>units</i>	3,150	3,293	3,040	2,959	2,695	2,429	2,381	2,496	2,452	2,152	2,041	1,909
14	Single family: Honolulu	<i>units</i>	1,158	1,189	1,131	1,088	1,016	981	969	996	981	877	781	772
15	Condominium: Honolulu	<i>units</i>	1,993	2,104	1,909	1,871	1,678	1,448	1,412	1,500	1,471	1,275	1,260	1,137
16	SF median price: Honolulu	<i>thousand \$</i>	570.2	607.1	628.0	633.6	631.0	627.3	628.8	628.1	655.1	642.2	634.3	628.2
17	Condo median price: HNL	<i>thousand \$</i>	255.8	277.8	301.2	311.4	304.3	311.7	316.7	322.1	327.7	326.4	321.9	331.9
18	Visitor arrivals	<i>thousand</i>	1,804.5	1,876.3	1,874.1	1,843.6	1,853.4	1,852.2	1,872.0	1,825.8	1,850.1	1,853.2	1,836.7	1,877.0
19	Domestic arrivals	<i>thousand</i>	1,269.8	1,352.6	1,353.5	1,332.5	1,350.1	1,378.2	1,393.5	1,358.4	1,388.6	1,365.2	1,380.5	1,407.3
20	International arrivals	<i>thousand</i>	534.7	523.8	520.6	511.1	503.3	474.0	478.6	467.4	461.5	488.0	456.2	469.7
21	Hotel occupancy	<i>percent</i>	81.1	81.2	81.5	80.3	81.1	79.2	78.3	74.6	74.4	75.6	76.3	76.0
22	Average daily room rate	<i>2007\$</i>	175.87	184.08	188.17	191.83	194.83	196.47	198.60	203.04	204.05	205.81	206.46	207.46

\*interpolation; italicized based on two months

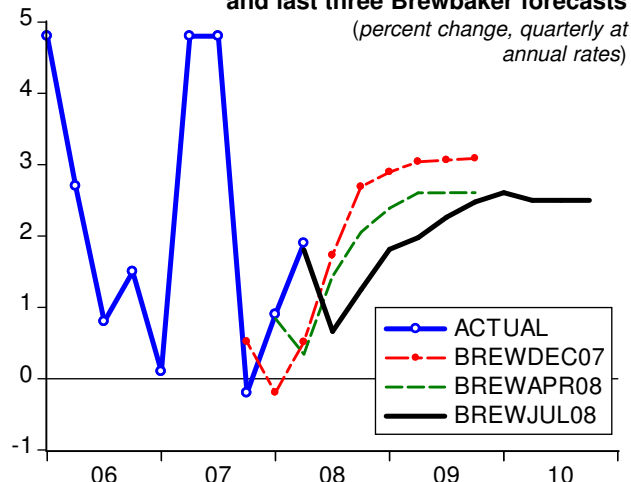
Sources: Bureau of Economic Analysis, US Department of Commerce;  
Bureau of Labor Statistics, US Department of Labor;  
Hawaii Department of Labor and Industrial Relations;  
Hawaii Department of Business and Economic Development;  
Honolulu Board of Realtors;  
Hospitality Advisors, LLC;

Note: Personal income, inflation and employment data are seasonally-adjusted by source, all others by Bank of Hawaii.

### Macroeconomic forecasts

Notwithstanding financial market volatility and the reversal of market gains from March-May during June-July, economic forecasts have remained fairly stable. Federal Reserve (FRB) forecasts for this year improved somewhat in June; slightly older NABE and ABA/EAC forecasts weakened further in their most recent forecast rounds. Revisions to U.S. real GDP growth put growth higher at mid-2007 and lower in fourth quarter 2007 than previously published, i.e. an economic sudden stop to accompany the financial sudden stop. Real economic reacceleration implicit in the table below (along with inflation forecasts) form the forecast basis for a Fed tightening to commence at the end of 2008 or early in 2009, in anticipation of which interest rates across the yield curve will rise gradually during second half of this year.

**Actual annualized quarterly real GDP growth rates and last three Brewbaker forecasts**



### U.S. real GDP growth forecasts

<i>percent change</i>	2007	2008	2009	2010	$\gamma$
FRB October 2007		1.8 - 2.5	2.3 - 2.7	2.5 - 2.6	
FRB January 2008		1.3 - 2.0	2.1 - 2.7	2.5 - 3.0	
FRB April 2008		0.3 - 1.2	2.0 - 2.8	2.6 - 3.1	
FRB June 2008		1.0 - 1.6	2.0 - 2.8	2.5 - 3.0	
ABA/EAC January 2008	2.9	1.7			2.8
ABA/EAC June 2008	2.6	1.0	2.1		2.7
NABE May 2007		3.1			
NABE September 2007		2.8			
NABE November 2007		2.6			
NABE February 2008		1.8	2.9		
NABE May 2008		1.2	2.7		
BOH December 2007	2.4	2.0			
BOH March 2008		1.5	2.2		
Actual	2.5				

$\gamma$  = potential or "nonaccelerating inflation" real GDP growth rate

### Quarterly U.S. real GDP forecasts and vintages

		2007.3	2007.4	2008.1	2008.2	2008.3	2008.4	2009.1	2009.2	2009.3	2009.4
ABA EAC	Jan 08		1.5	1.0	1.5	2.2	2.3				
	Jun 08				1.0	1.4	1.0	1.6	2.1	2.3	2.5
NABE	Feb 08			0.0	1.0	2.8	2.8	2.5	2.8	2.9	2.9
	May 08				0.4	2.2	2.0	2.4	2.7	2.8	2.8
Brew	Dec 07		0.5	-0.2	0.5	1.7	2.7	2.9	3.0	3.1	3.1
	Apr 08			0.8	0.3	1.4	2.1	2.4	2.6	2.6	2.6
	Jul 08				1.8	0.7	1.2	1.8	2.0	2.3	2.5
Actual		4.8	-0.2	0.9	1.9*						

\* Bloomberg survey forecast was 2.3 percent prior to 7/31/08 release date (as of 7/28/08)

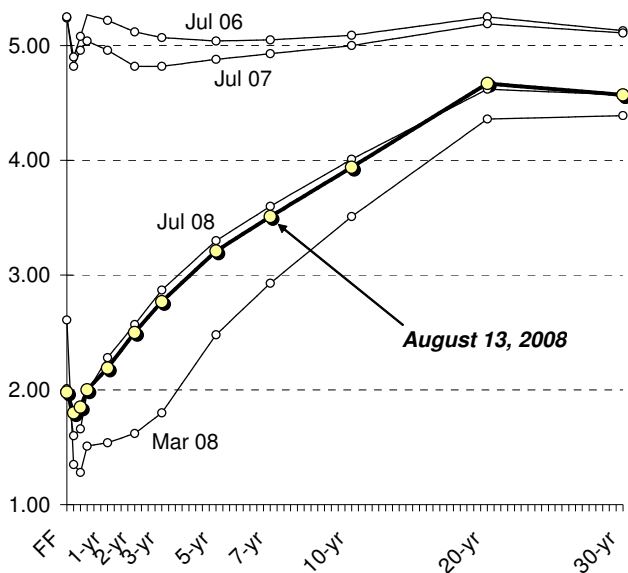
Sources: American Bankers Association Economic Advisory Committee; National Association for Business Economics; Paul Brewbaker, BOH; Bureau of Economic Analysis, U.S. Department of Commerce

**Not a smooth transition**

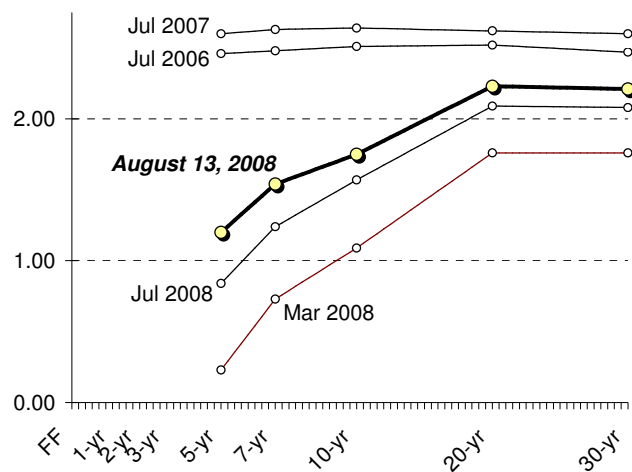
U.S. Treasury yields had moved upward between the FOMC meeting in the middle of March 2008 and the FOMC meeting in June 2008. Attention was shifting towards inflation risks in the spring, exacerbated by commodity inflation and the possibility of contagion to the core inflation rate (excluding food and energy). Rising more than 130 basis points, yields at the 2-year and 3-year maturities were front-running the rest of the curve, as is customary ahead of an incipient economic reacceleration. Long-term yields (20+ years) already pointed to their steady-state values, somewhat below levels in each of the last two summers, when Fed monetary policy was in a modestly firm posture. Progress towards economic recovery would have produced continued yield curve flattening. Such

transitions, however, are rarely smooth: in the weeks since the June 23-24 FOMC meeting increasing risks perceived in Fannie Mae and Freddie Mac portfolios revived recession concerns in the market, partially reversing prior yield movements. U.S. Treasury and Federal Reserve interventions to expand access of the two GSEs ("government sponsored" enterprises) to the Fed's discount window, an expanded Treasury credit line, and the possibility of equity participation by the federal government, combined with oversight and regulatory reforms, should tamp down the renewed risk. Through July and August, however, perceived GSE risks persisted. Yield curve flattening is expected gradually to unfold moving out of 2008 and through 2009. The transition is unlikely to be smooth.

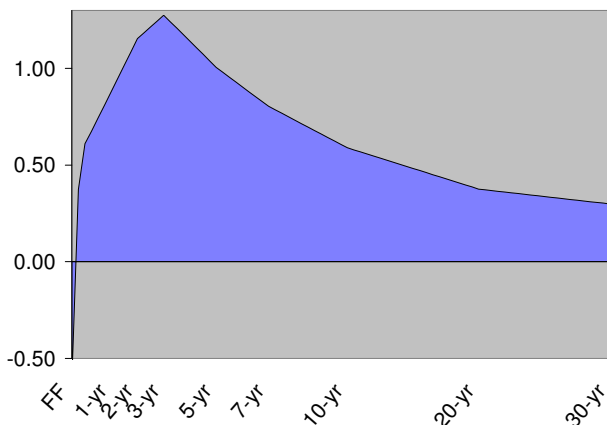
**US Treasury nominal yield curve**  
(percent, adjusted to constant maturities)



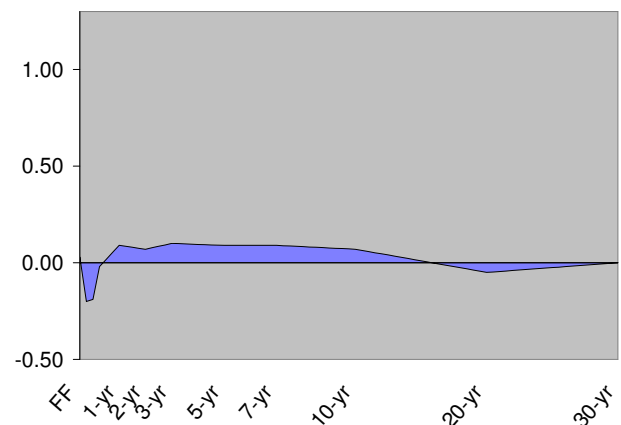
**US Treasury real (TIPS) yield curve**  
(percent, adjusted to constant maturities)



**Term structure changes March through June**  
(percentage points, nominal constant maturity yields)



**Term structure changes June to August 13**  
(percentage points, nominal constant maturity yields)



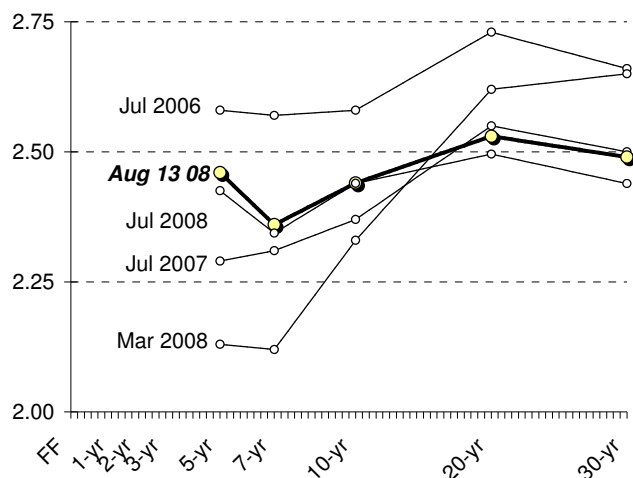
### Core and long-run inflation expectations stable

Despite a partial reversal of the spring 2008 rise in U.S. Treasury yields between June and July, the long-term inflation expectation implied by the difference between nominal and real yields continued to remain tightly contained in the upper half of the range of 2.25-2.50 percent. The difference between nominal and real yields includes an unobservable inflation risk premium (and a

gradually fading TIPS liquidity premium) thought to be around 25 basis points. In June, energy and food inflation pushed the headline CPI-U rate above 5 percent, and the core rate inched up to 2.4 percent. Monetary policy will have to continue to emphasize inflation risk to keep inflation expectations from drifting upward. Core inflation forecasts recently have begun to reflect such risks.

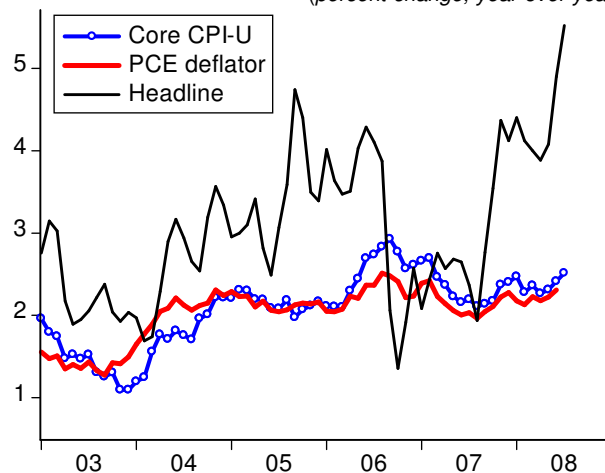
### Implied long-term inflation expectations plus inflation risk premium

(percent, difference between nominal and TIPS yield curves)



### Alternative US inflation measures, "headline" and core (less food and energy) through July 2008

(percent change, year-over-year)



### Recent U.S. core PCE inflation forecasts for 2008-09

<i>in percent; last period y-o-y</i>	Vintage	2008	2009	2010
Federal Open Market Committee	Oct 2007	1.8 - 1.9	1.7 - 1.9	
	Jan 2008	2.0 - 2.2	1.7 - 2.0	1.7 - 1.9
	Apr 2008	2.2 - 2.4	1.9 - 2.1	1.7 - 1.9
	Jun 2008	2.2 - 2.4	2.0 - 2.2	1.8 - 2.0
ABA Economic Advisory Committee	Jan 2008	2.1	2.0	
	Jun 2008	2.4	2.1	
National Association for Business Economics	Feb 2008	2.0	1.9	
	May 2008	2.1	2.0	
Actual 2007 figure: 2.1 percent	Jan 2008			
Latest 2008 figure: 2.4 percent	Jun 2008			

**Renewed volatility widens out risk premiums again**

At about the time crude petroleum prices began to punch through to \$145 per barrel in June 2008, market sentiment shifted from the inflationary consequences of the commodity shock to the recessionary consequences of higher oil prices. What began as concern about financial sector participants like Lehman turned into a virtual run on Fannie Mae and Freddie Mac stocks, and an *actual* run on IndyMac Bank. To date, 7 of 90 banks on the FDIC watch list have failed in 2008, comprising total assets of \$26 billion (about 2.5 Bank of Hawaii's; during the S&L crisis in the 1980s 1,500 banks and savings and loans were on the FDIC watch list, which has an average failure rate of 13 percent). Treasury Paulsen's GSE announcement July 13, and the Fed's expanded discount window access to Fannie and Freddie, stand out like the "Bear Stearns" weekend in March in volatility and risk measures (bottom right). Congress approved a Treasury's request for authority to "de-privatize" an equity portion of Fannie and Freddie, legislation which President Bush signed the same day that the Federal Reserve Board extended various liquidity facilities introduced during the credit crunch.

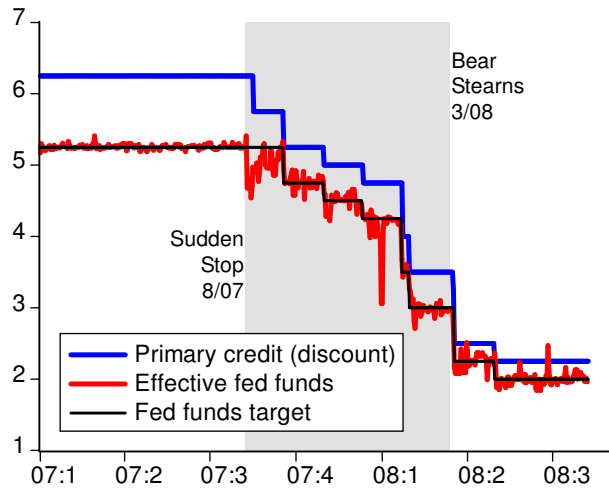
**The Taylor Rule and Fed accommodation**

The Taylor Rule says that the Fed Funds target should deviate from an equilibrium overnight rate (here, 4.50 percent) as equally weighted functions of the difference between: (1) inflation and its policy target (here, 2.0 percent); and (2) the difference between GDP growth and its potential growth rate (here, 2.8 percent). The deviation of the actual target from the Taylor Rule forecast typically is consistent with the bias articulated in FOMC policy statements. For example, in 2003 FOMC concern was tilted towards disinflation risk, specifically, "an unwelcome fall in inflation." More recently, the subprime financial crisis induced to Fed to shift its focus to recession risk, despite inflation concerns. The Taylor rule "forecast" illustrated is calibrated to the April 2008 Brewbaker forecast, and the gap reflects the Fed's recent response to financial crisis.

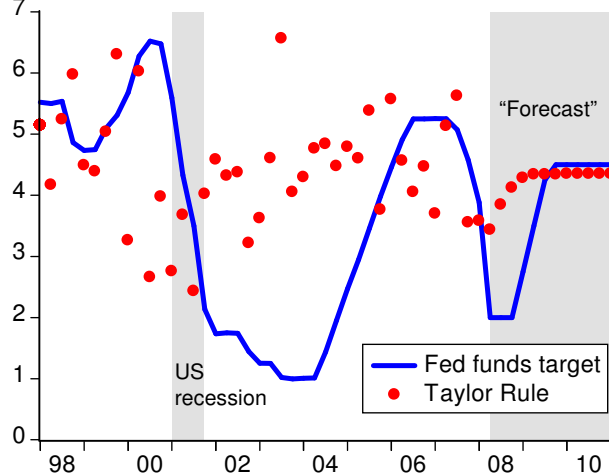
**Volatility: not declining monotonically**

Though measures of risk and uncertainty associated with the sub-prime credit crunch may have peaked in March 2008, recent moves make clear that subsidence will not be smooth and unidirectional. By the end of June 2008 rising oil prices had crushed re nascent inflation concerns and revived recession fears. By July 2008 fears of insolvency at Fannie Mae and Freddie Mac provoked three measures to stabilize GSE risks. First, the Treasury unilaterally increased its credit line with the two GSEs. Second, The Federal Reserve Bank of New York was authorized to grant them discount window access. Third, Congressional authorization was received that enabled the Treasury to acquire an equity stake in the two GSEs. Partly because of associated uncertainties, volatility in equity returns, credit risk premia, and liquidity risk premia have diminished only gradually over time and *not* monotonically (in one direction only), but instead ratcheting sideways and downward, often backtracking.

**Federal Reserve primary credit (discount) rate and federal funds rate through August 7, 2008**  
(percent, daily)



**Federal funds rates and a Taylor Rule "forecast"**  
(percent)



**Conditional volatility of S&P 500 daily returns, spreads from Moody's Baa seasoned corporate bond yields to 10-year U.S. Treasury Note yields, and spreads from 3-month LIBOR rates to T-Bill rates, through 8/11/08**  
(volatility on the right scale, spreads on the left scale)

