

4h Bank of Hawaii



**Aspects of Hawaii's economic
and tax revenue forecasts**

*Prepared for a presentation to the
Hawaii Senate Committee on Ways and Means
and the
Hawaii House of Representatives Committee on Finance*

January 13, 2009

*by Paul H. Brewbaker, Ph.D.
Chair, Hawaii Council on Revenues
Senior Vice President and Chief Economist, Bank of Hawaii*

Preliminaries

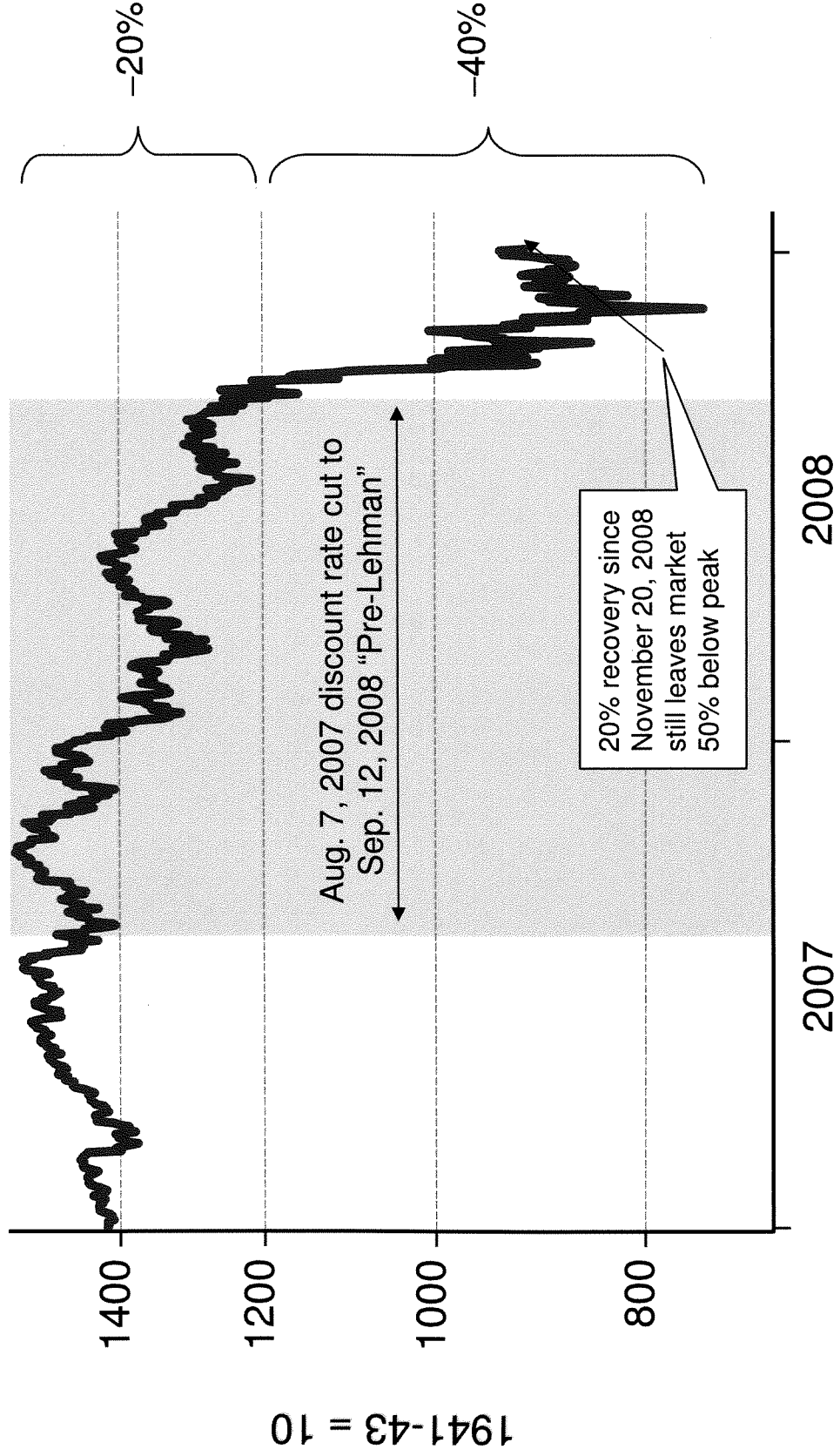
The views expressed by the author of this report are not intended to reflect the views of Bank of Hawaii Corporation or its subsidiaries, and should not be construed as investment advice.

Financial crisis Intensification

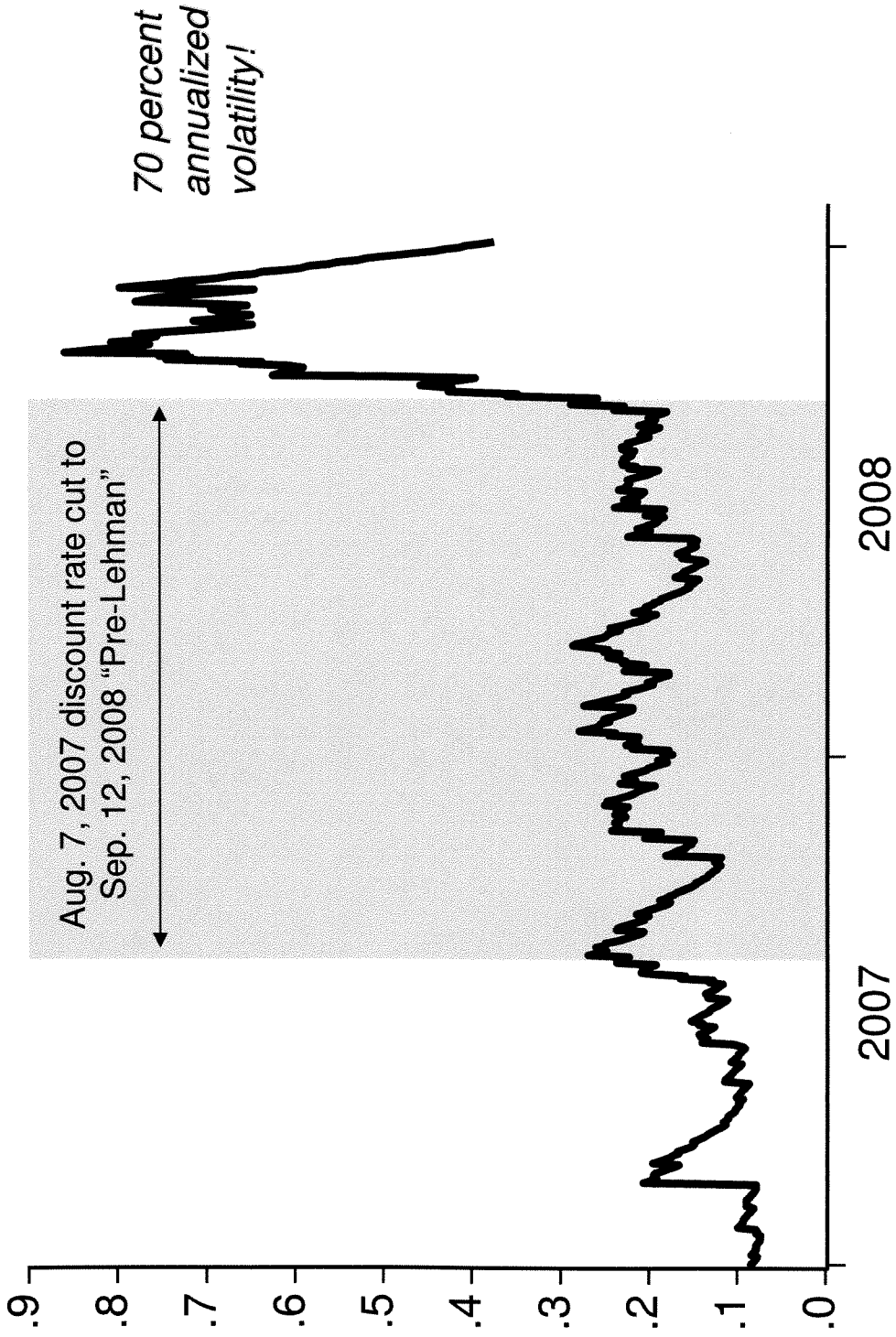
- S&P500: -20%, Oct 2007 to Sep 2008 “Bear Market”
- S&P500: -40%, mid-Sep (“Pre-Lehman”) to Thanksgiving
- Huge jump in uncertainty \Rightarrow volatility, “deep discount”
- Flight to quality: from risky asset classes to liquid assets
- Jump in liquidity risk premium
- “Increased liquidity preference” induces Federal Reserve response to avoid 1930s monetary contraction
- Treasury “switches” TARP to Capital Purchase Plan

Liquidity = confidence (Kevin Warsh)

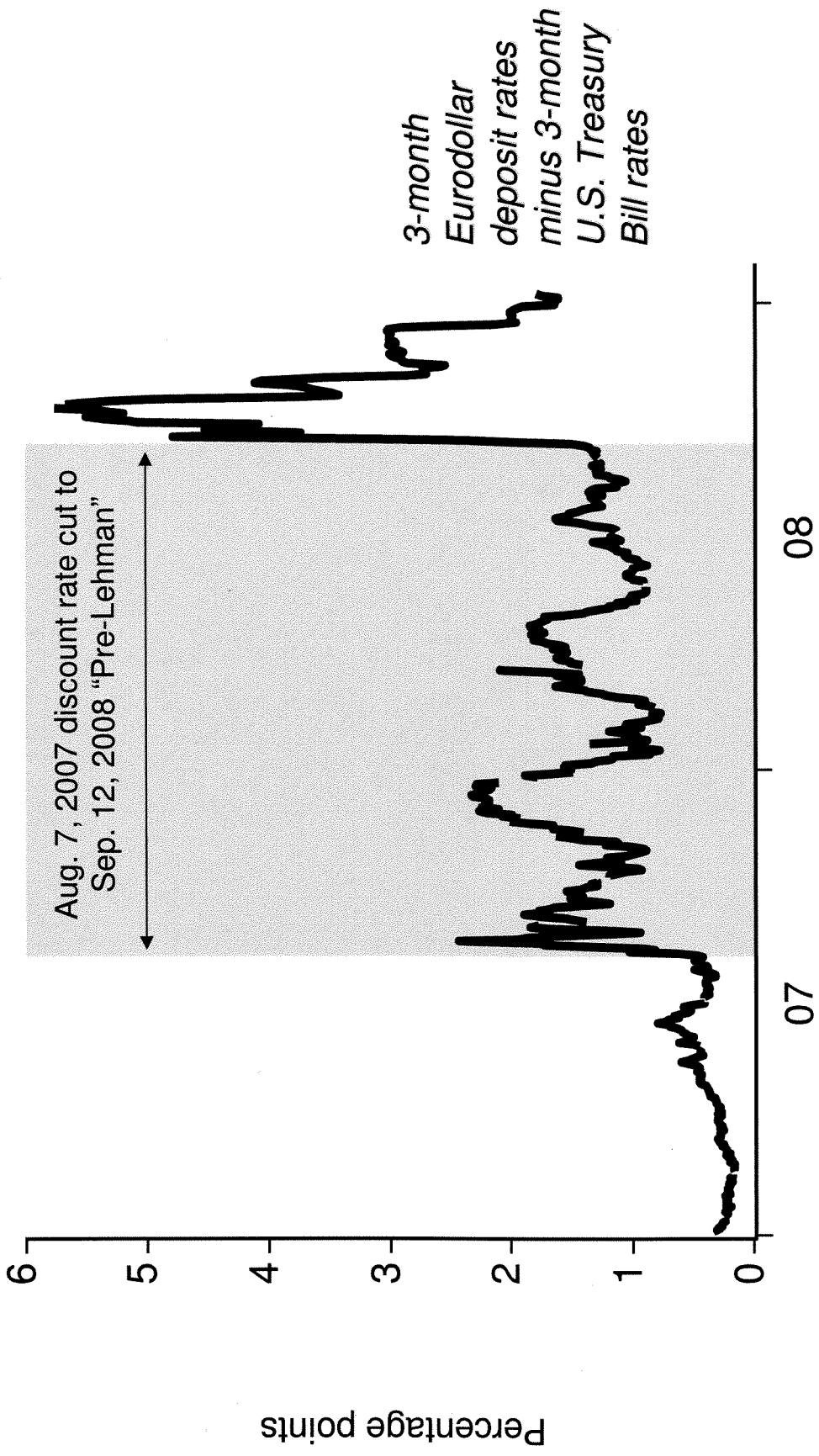
S&P 500 daily values through January 7, 2009



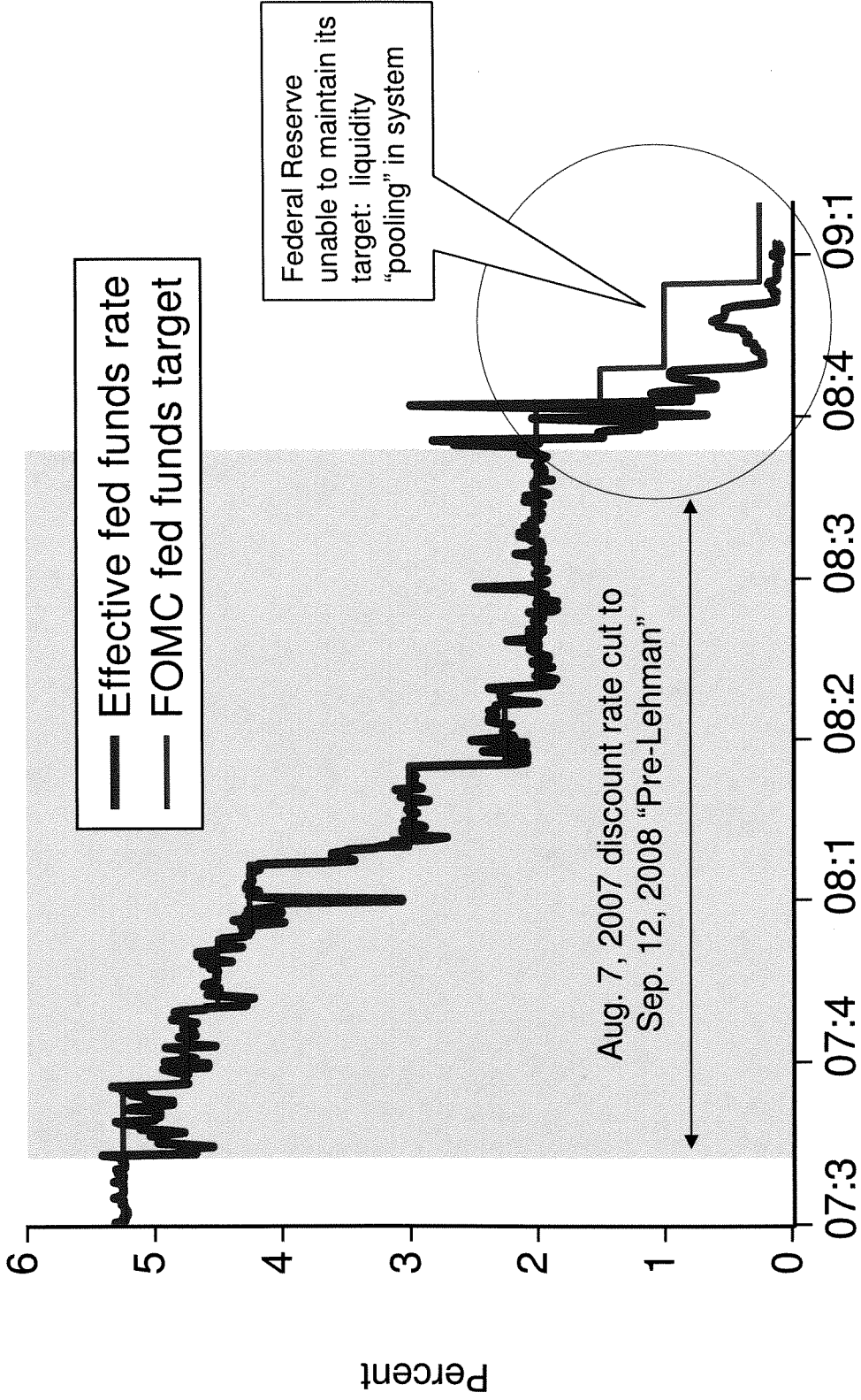
Conditional annualized daily volatility of the S&P500



Liquidity risk premium through January 8, 2008



Fed funds rate and target through January 8, 2008



Sharp downward shift in economy in FY 2009

- U.S. real GDP

<i>annualized growth</i>	<i>%</i>
Second half 2007	2.26
First half 2008	1.84
Third quarter 2008	-0.51

- U.S. personal consumption

<i>annualized growth</i>	<i>%</i>
Second half 2007	1.48
First half 2008	1.04
Third quarter 2008	-3.81

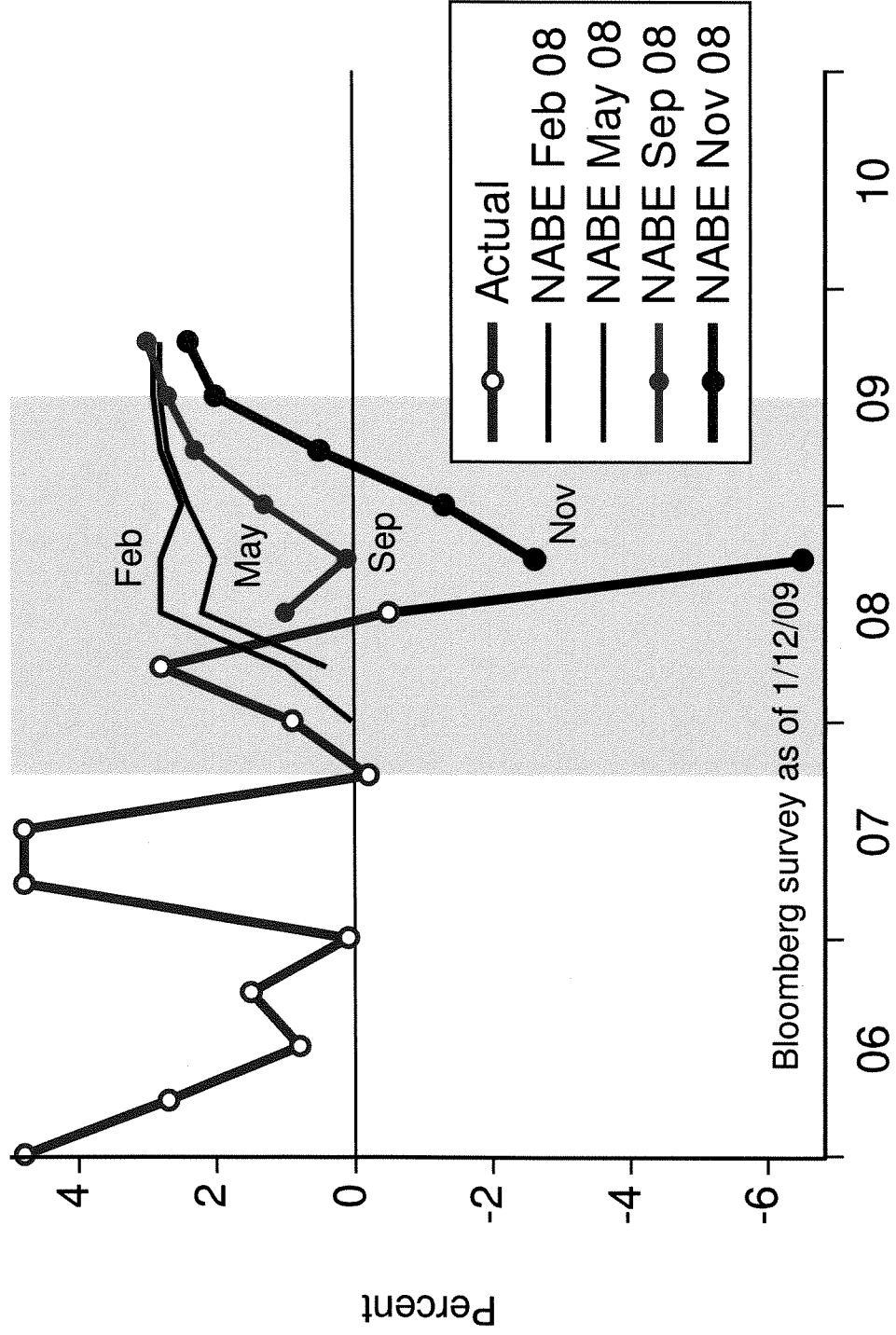
- Intensification of financial crisis “Post-Lehman” (mid-September 2008)

US real GDP growth: downward forecast revisions

	07.3	07.4	08.1	08.2	08.3	08.4	09.1	09.2	09.3	09.4
<i>percent*</i>										
NABE	Feb 08	0.0	1.0	2.8	2.8	2.8	2.5	2.8	2.9	2.9
	May 08		0.4	2.2	2.0	2.0	2.4	2.7	2.8	2.8
	Oct 08			1.0	0.1	0.1	1.3	2.3	2.7	3.0
	Nov 08				-2.6	-2.6	-1.3	0.5	2.0	2.4
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
	Nov 08					-0.1	-1.5	-1.2	-0.4	0.9
Actual	Oct 08	4.8	-0.2	0.9	2.8	-6.5	Bloomberg survey as of 1/12			

*Quarterly percent changes at annual rates

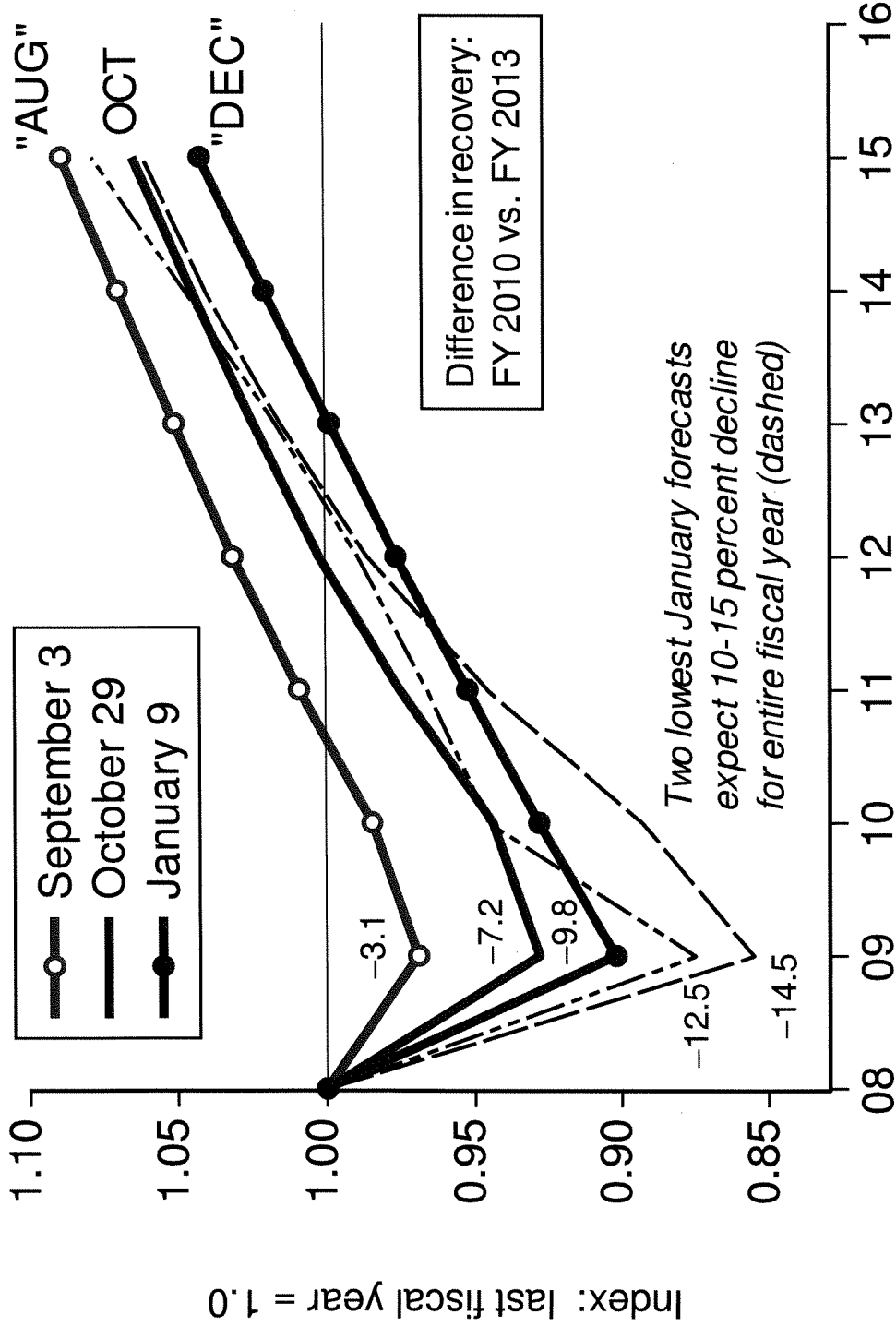
Quarterly US real GDP growth actual and forecast



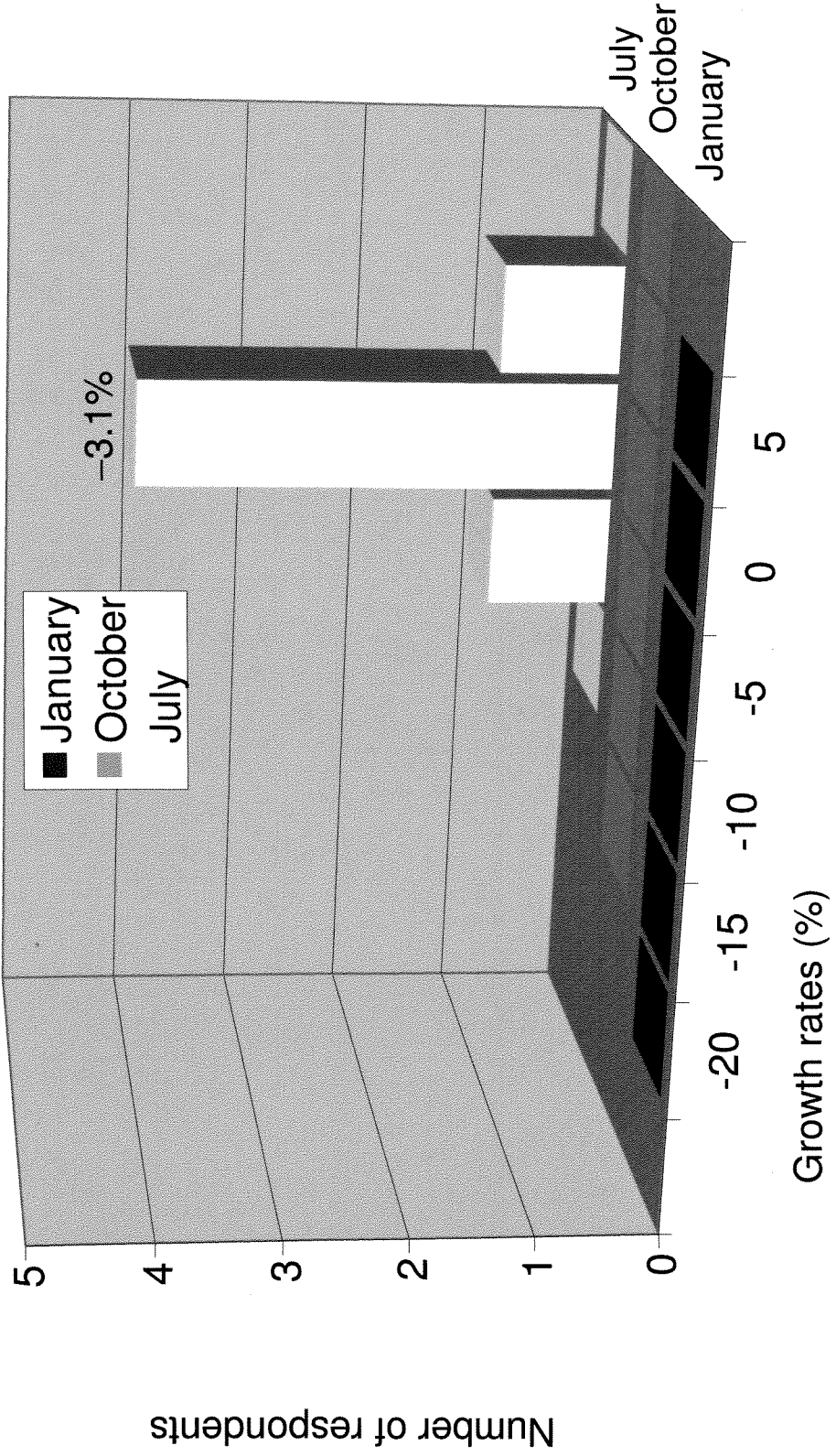
Sharp downward shift in tourism in FY 2009

- First quarter of calendar 2008: no worse than 2007
- Second quarter (post-Aloha/ATA): forecasts “too low!”
- Third quarter 2008 = first quarter FY 2009: oops
- COR “mean” tourism forecast: chasing reality ever since
- COR forecasts Jul/Sep/Oct 2008; January 2009
 - *July: fairly close views around “normal” central tendency*
 - *October: greater dispersion among members’ forecasts*
 - *January: “tighter” consensus, but negative skew*

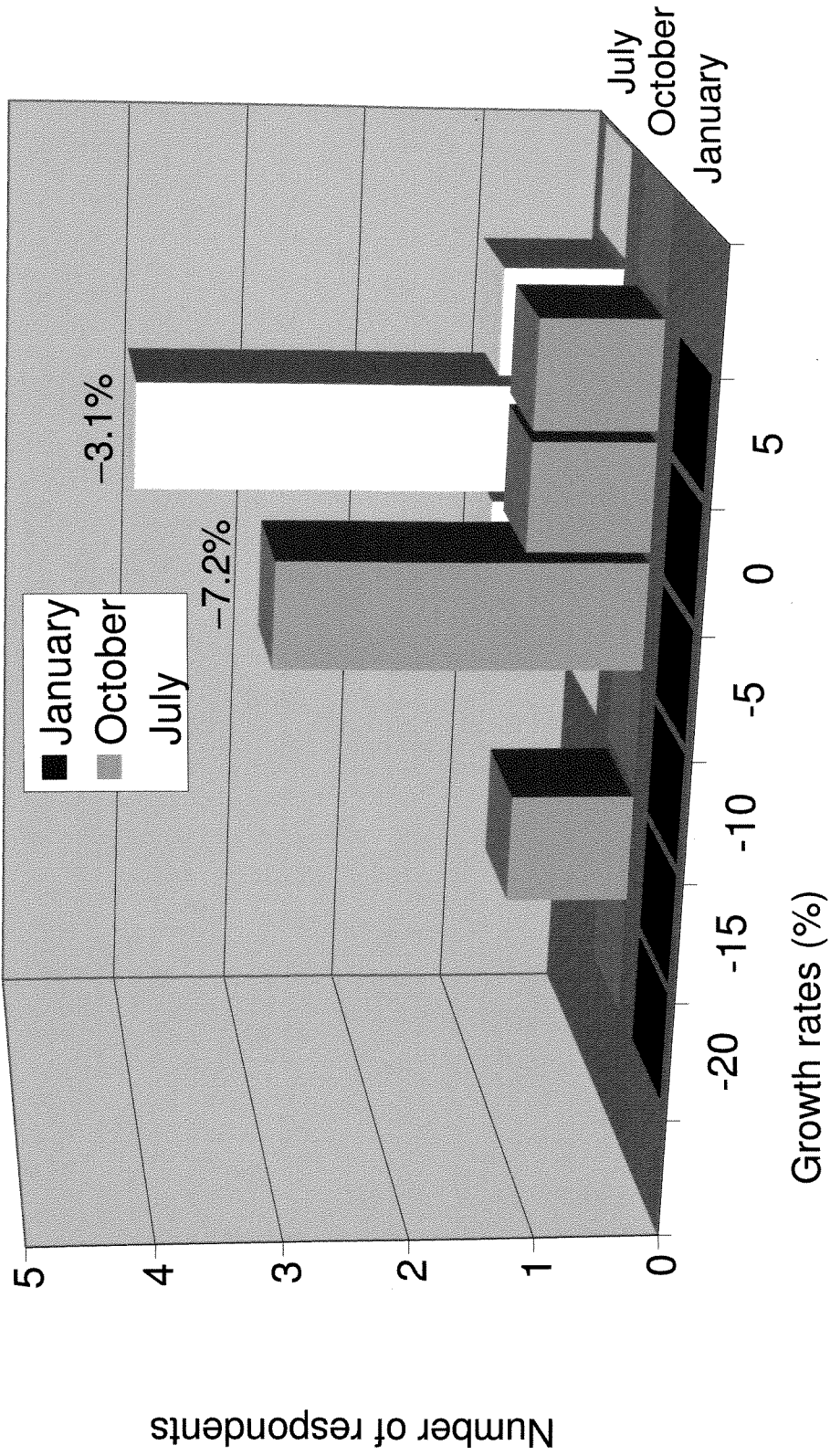
COR tourism (growth) forecasts since June 2008



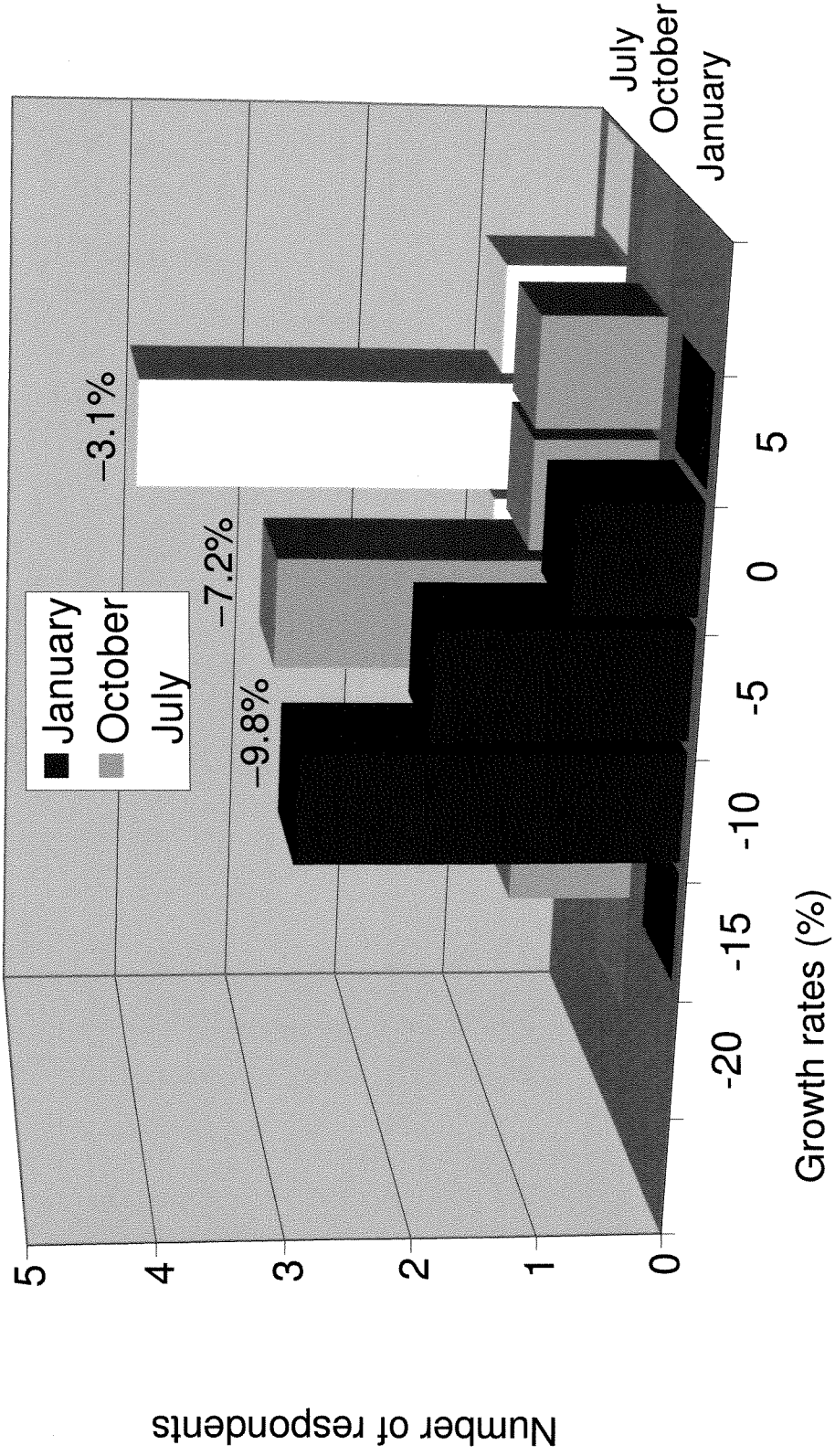
COR members' visitor arrivals growth forecasts (%)



COR members' visitor arrivals growth forecasts (%)



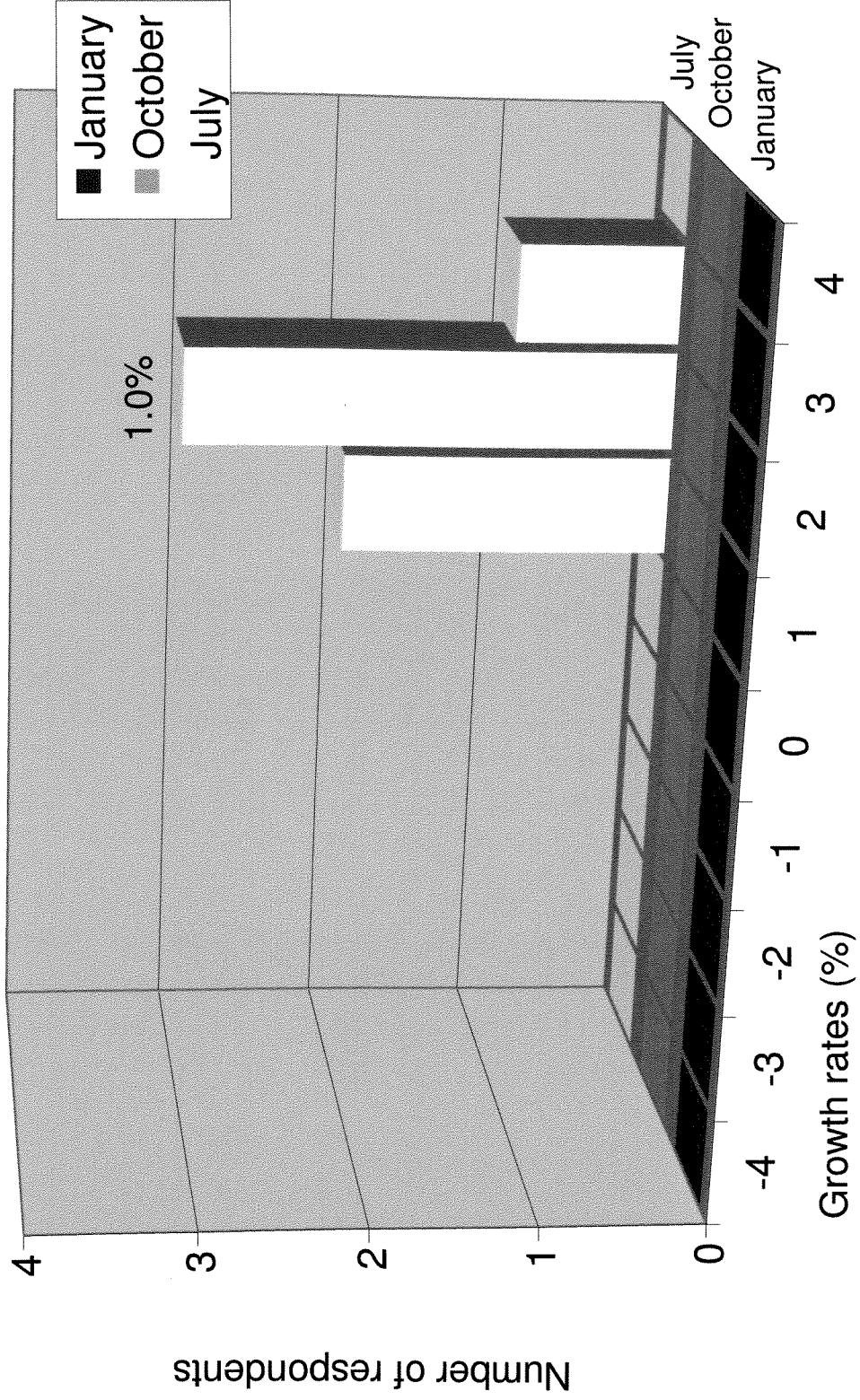
COR members' visitor arrivals growth forecasts (%)



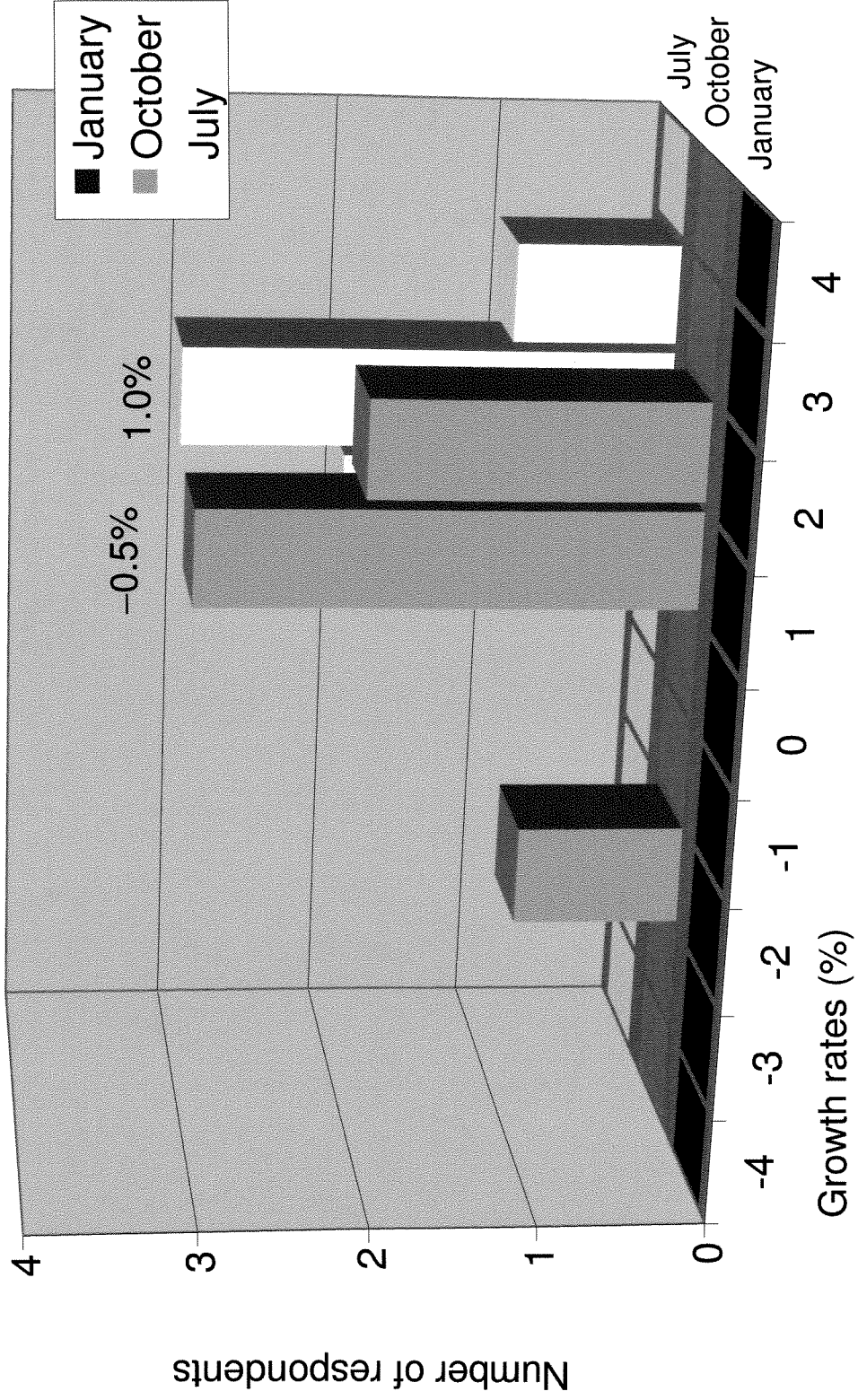
Same downshift in General Fund forecast in FY 2009

- COR forecasts Jul/Sep/Oct 2008; January 2009
 - *July: fairly close views around central tendency*
 - *October: wider dispersion among members' forecasts*
 - *January: "tighter" consensus around more negative view*

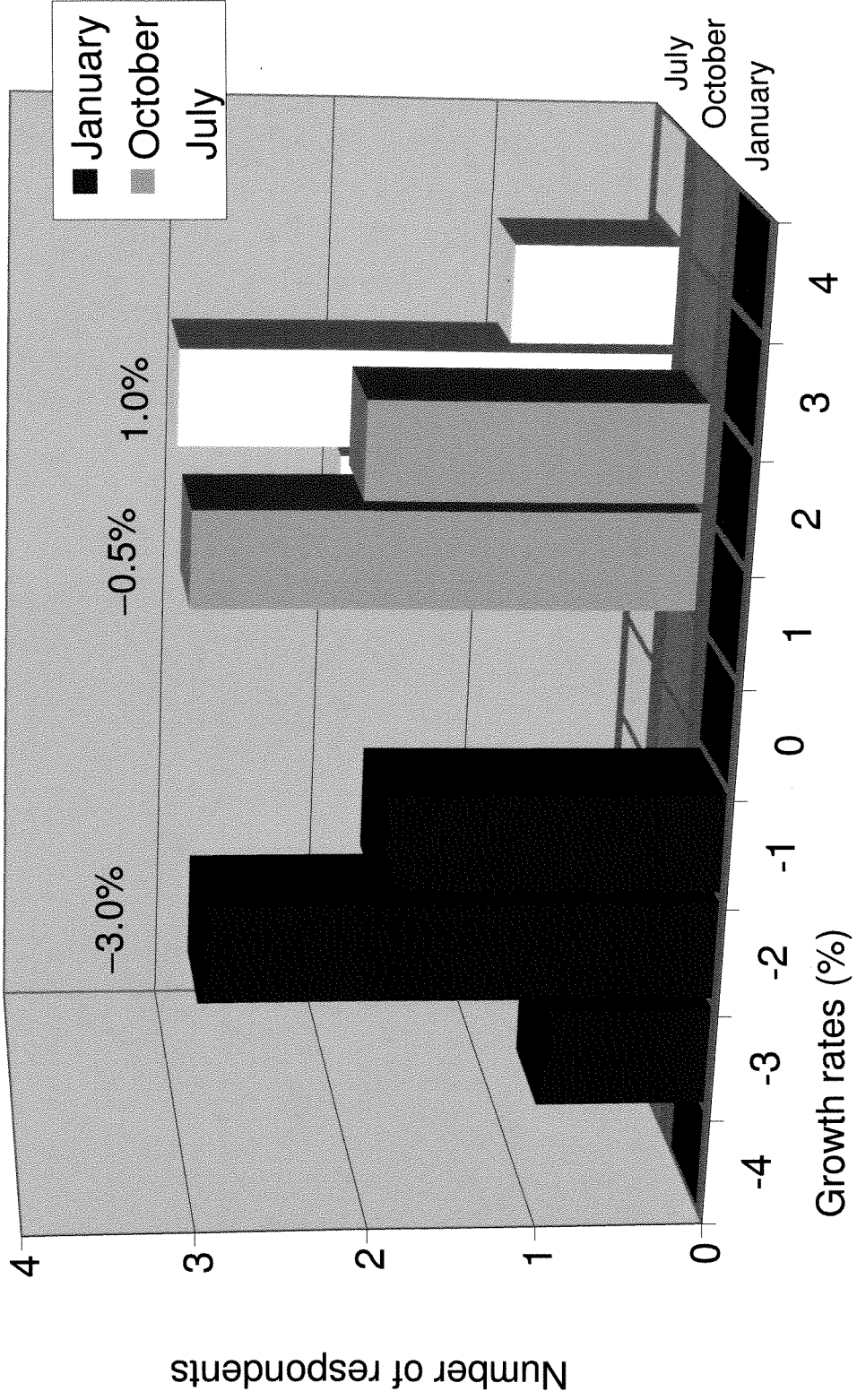
COR members' implied General Fund revenue growth forecasts (%)



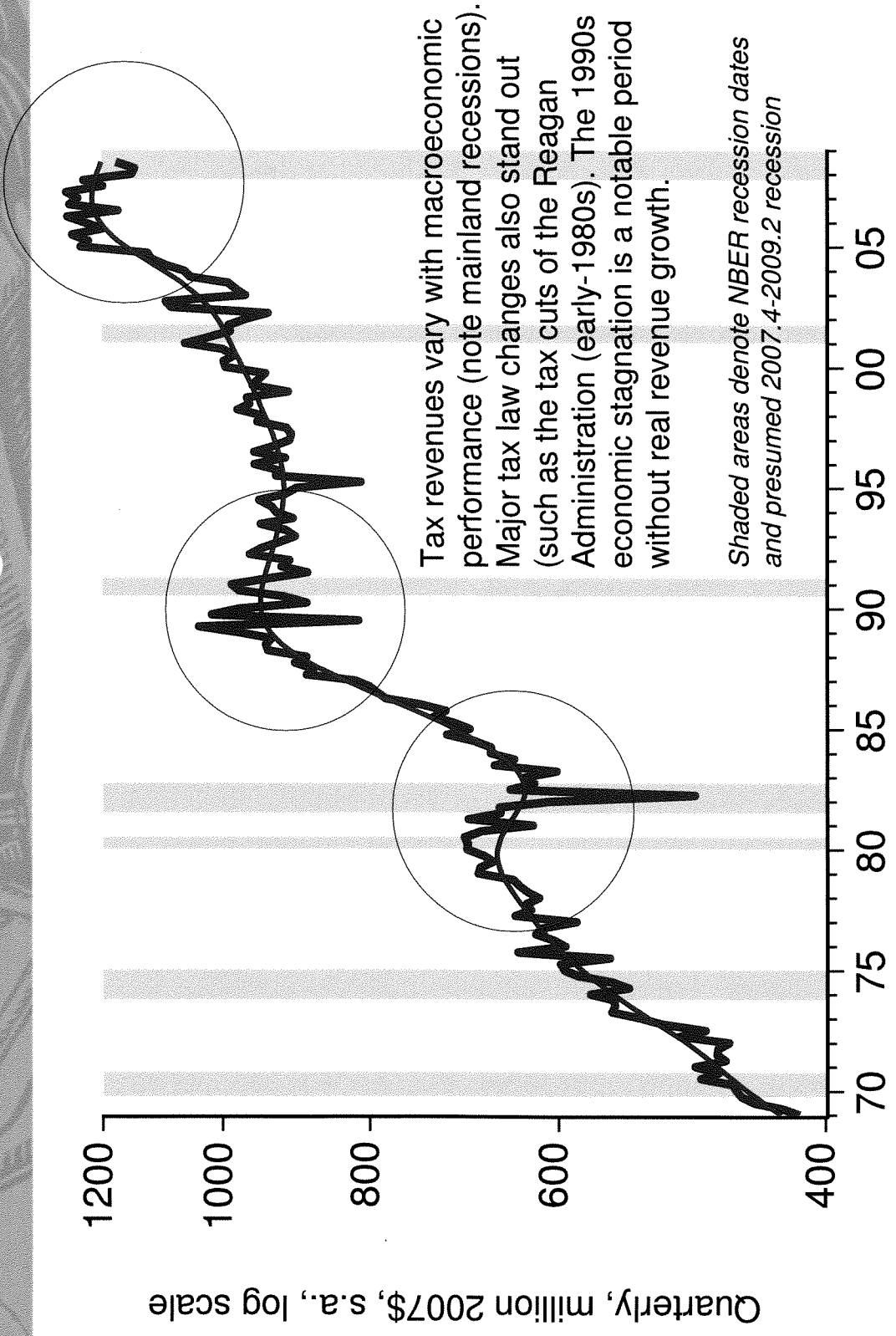
COR members' implied General Fund revenue growth forecasts (%)



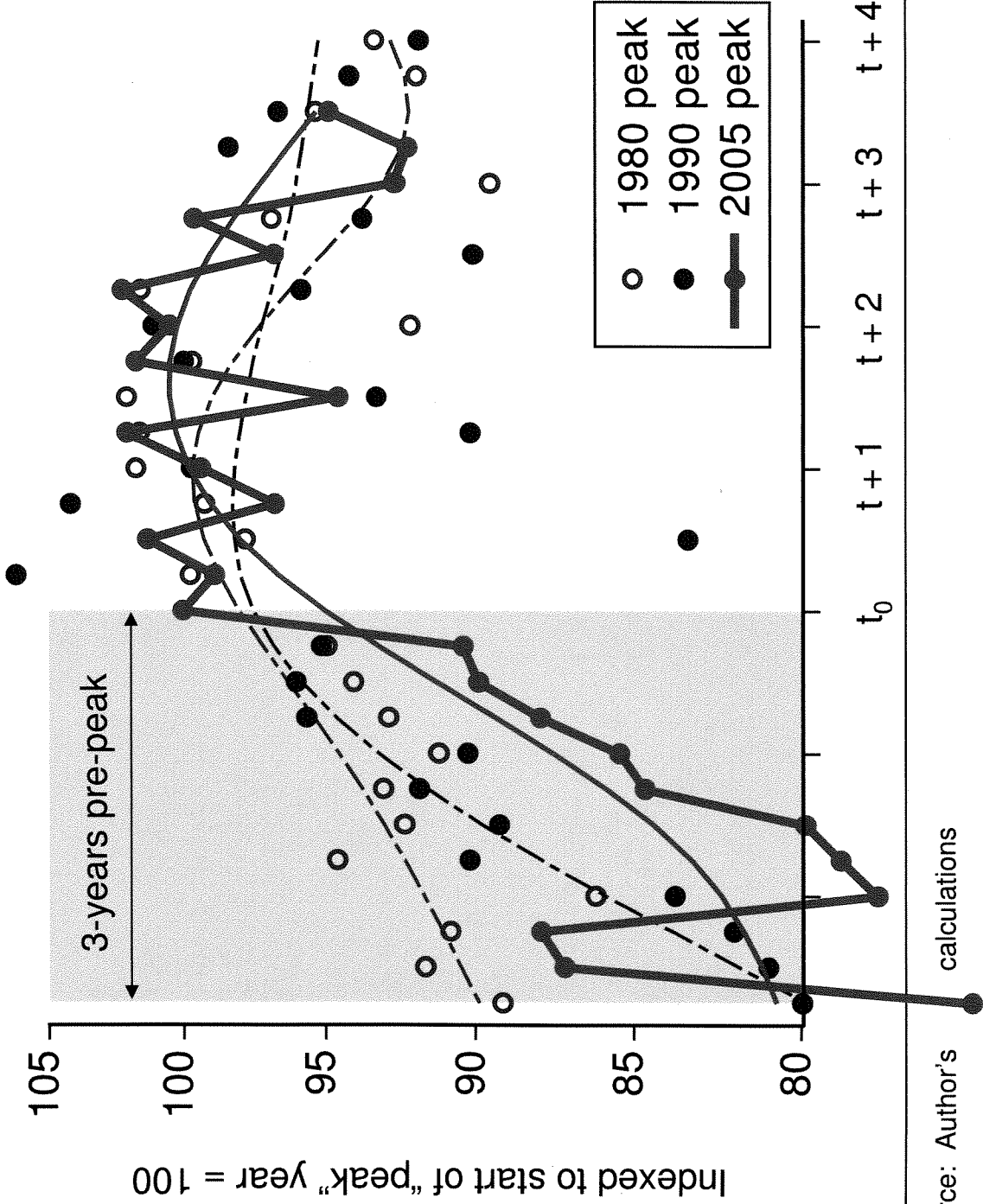
COR members' implied General Fund revenue growth forecasts (%)



Hawaii real general fund tax revenues



Real general fund tax revenue "peaks," aligned



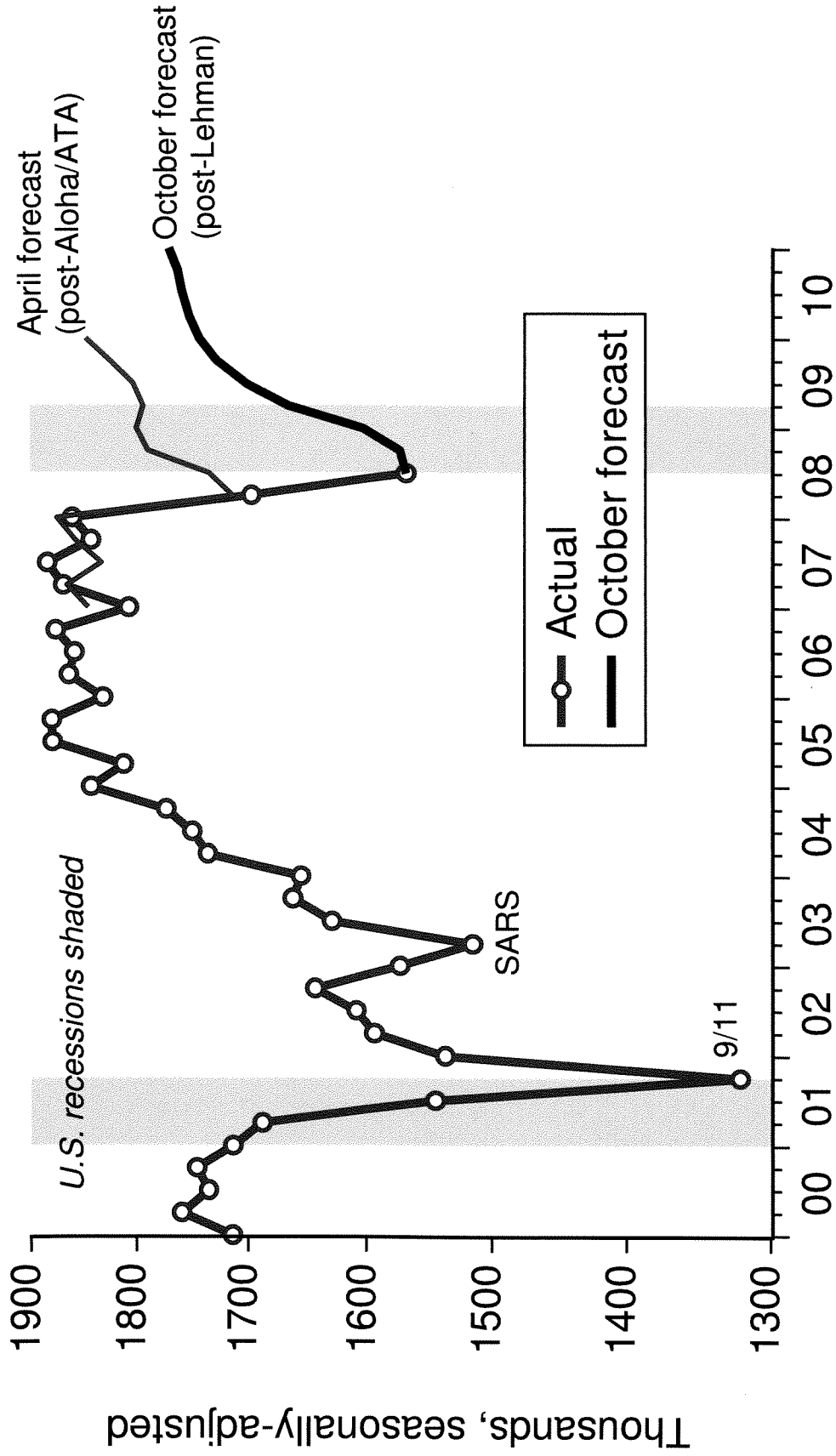
Source: Author's calculations

Notes on the Hawaii tourism forecast

- Adverse wealth effects, income effects on demand side
- Lift reductions, cruise ship withdrawals reduce supply
- More recent petroleum price declines reverse earlier adverse effects of rising travel cost
- My forecast now reflects some positive “substitution” responses to travel and destination costs decrease

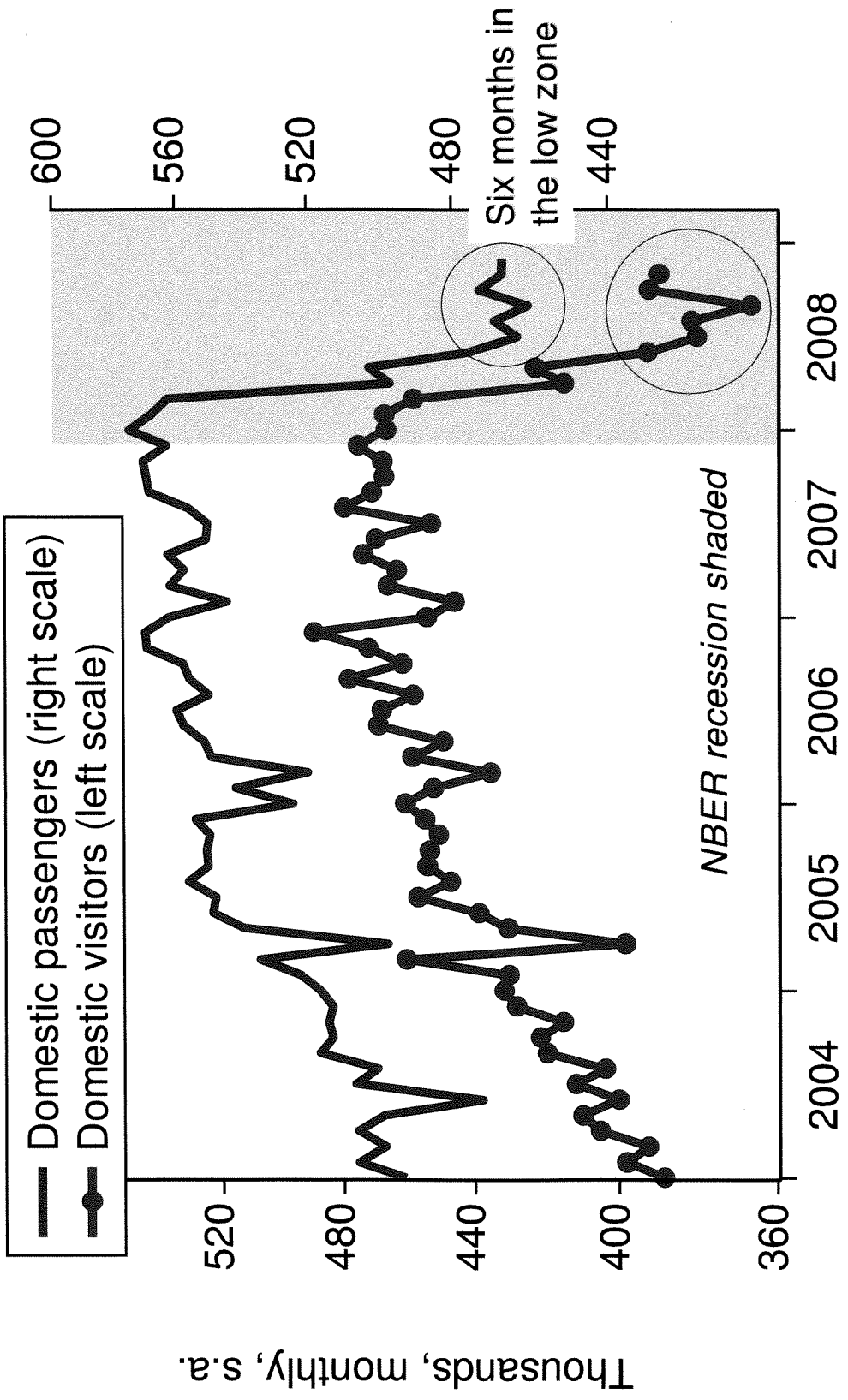
- My view of tourism outlook:
 - *Prices matter, material to recovery (personal view)*
 - *This time, deeper for longer (shared by Council members)*

Hawaii quarterly total visitor arrivals

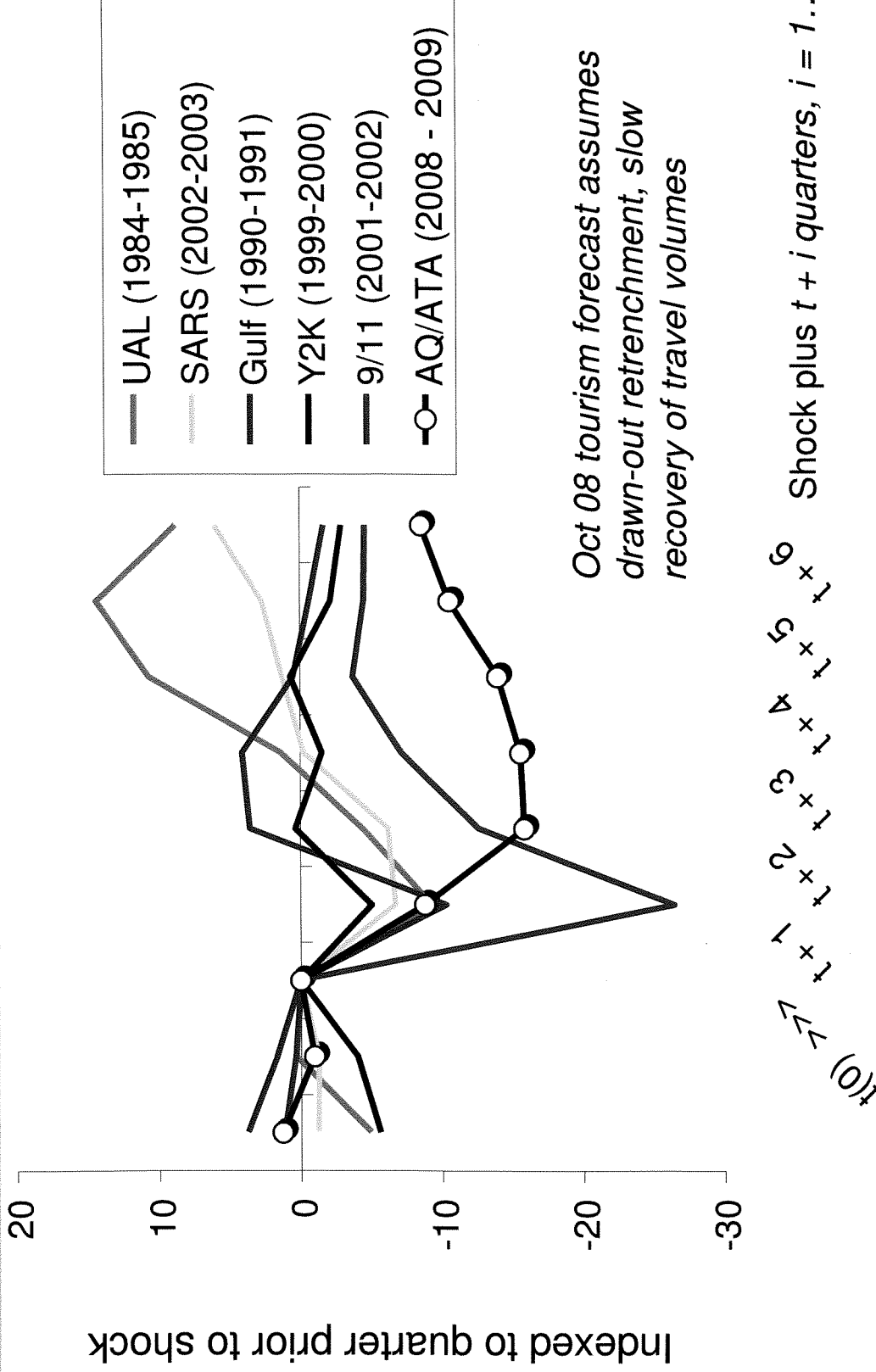


Source: Hawaii DBEDT; author's calculations (e.g. seasonal-adjustment) and author's forecasts

Domestic passenger (Dec) and visitor (Nov) arrivals



Comparative responses to tourism shocks

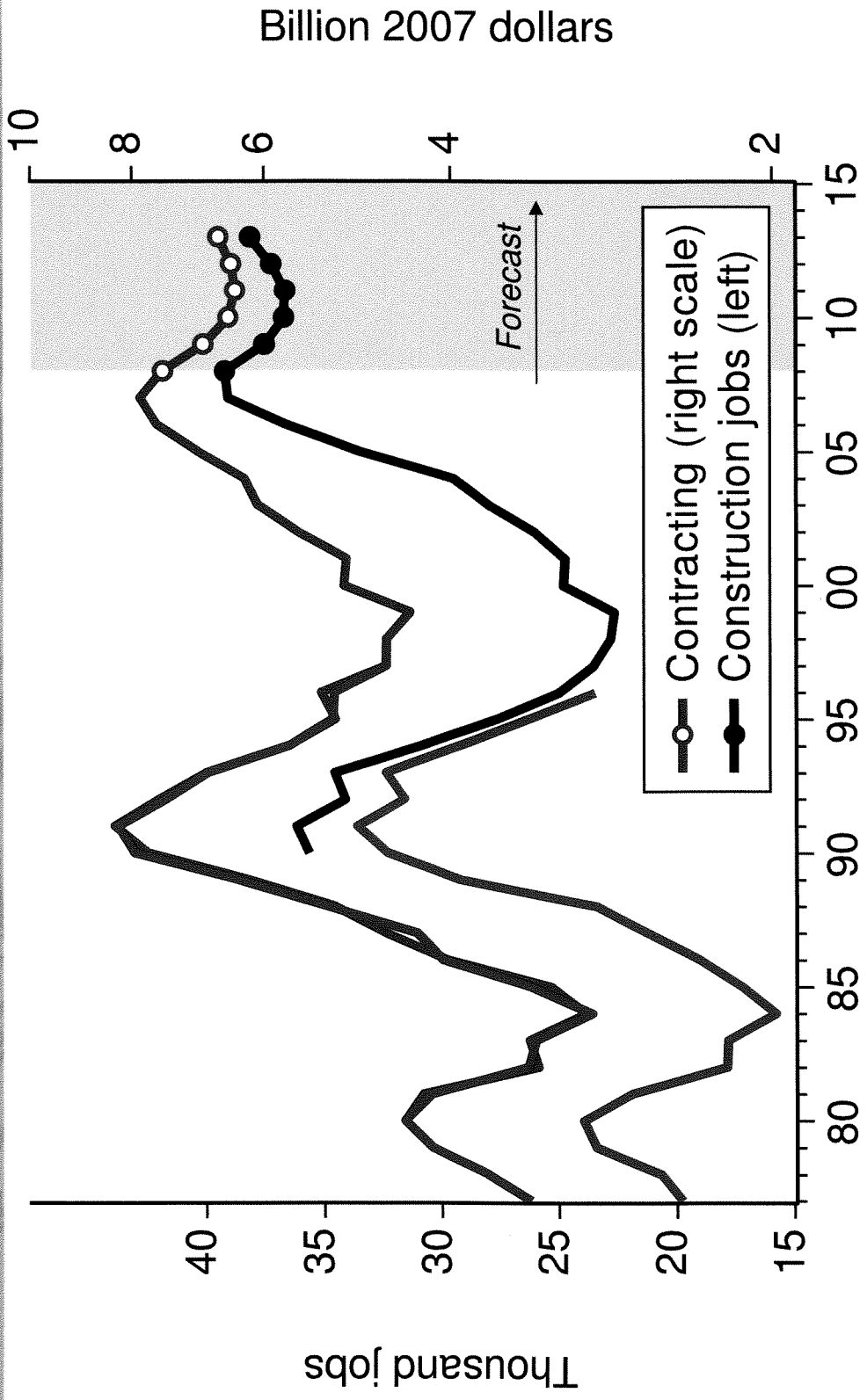


Add construction to the overall Hawaii forecast

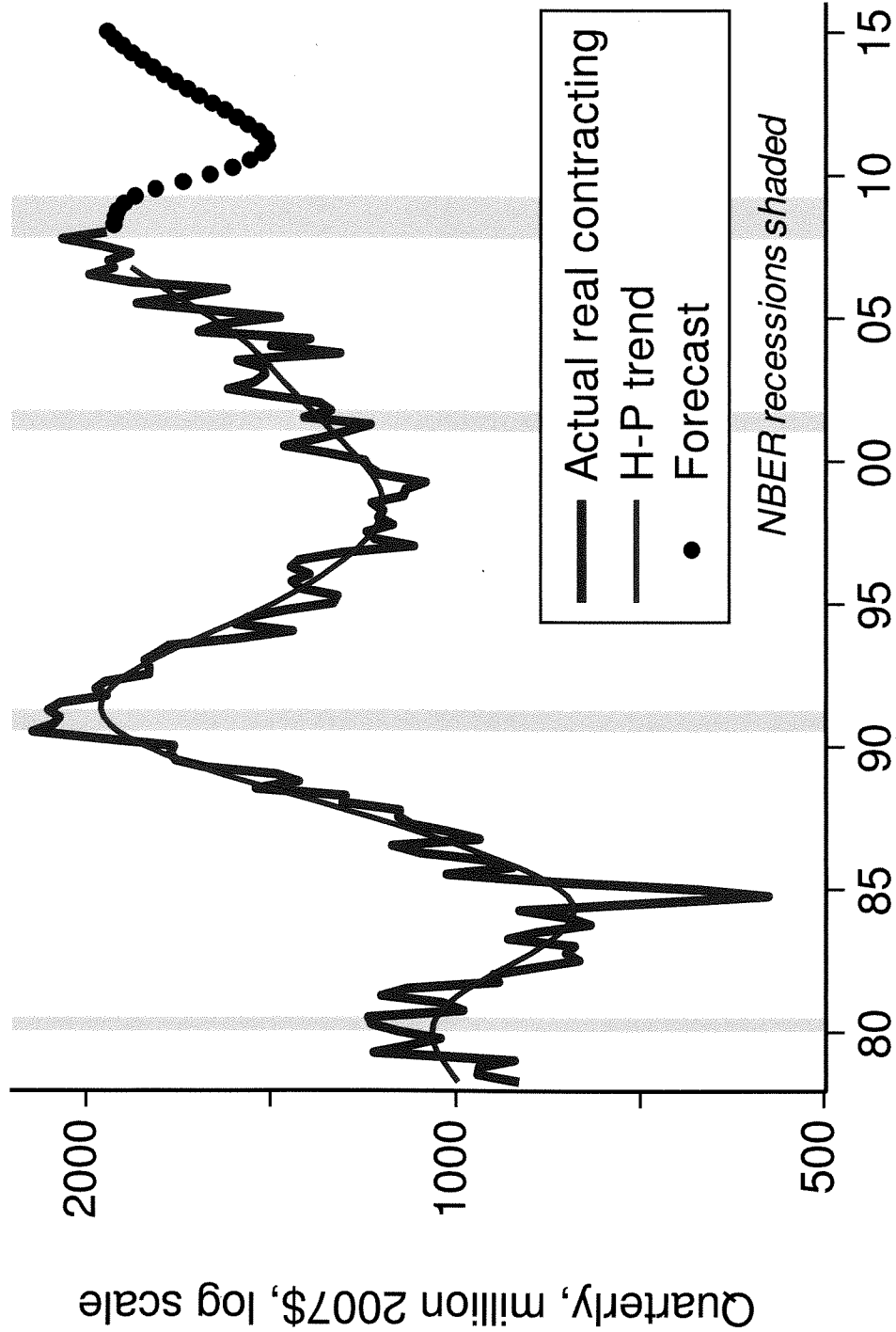
- UHERO (September): *half* the 1990s cyclical decline
- *Even less job loss*, because of military housing privatization
- Now: credit crunch now constrains project finance
- Public investment impaired by municipal bond markets
- Obamanomics probably requires *matching* funds (uh-oh)
- Brewbonski construction forecast for January 2009 COR meeting assumed deeper trough than in September, but more The Train than in September:

More “V” than “U”

Real construction September 2008 UHERO forecasts



My construction forecast January 2009 COR meeting



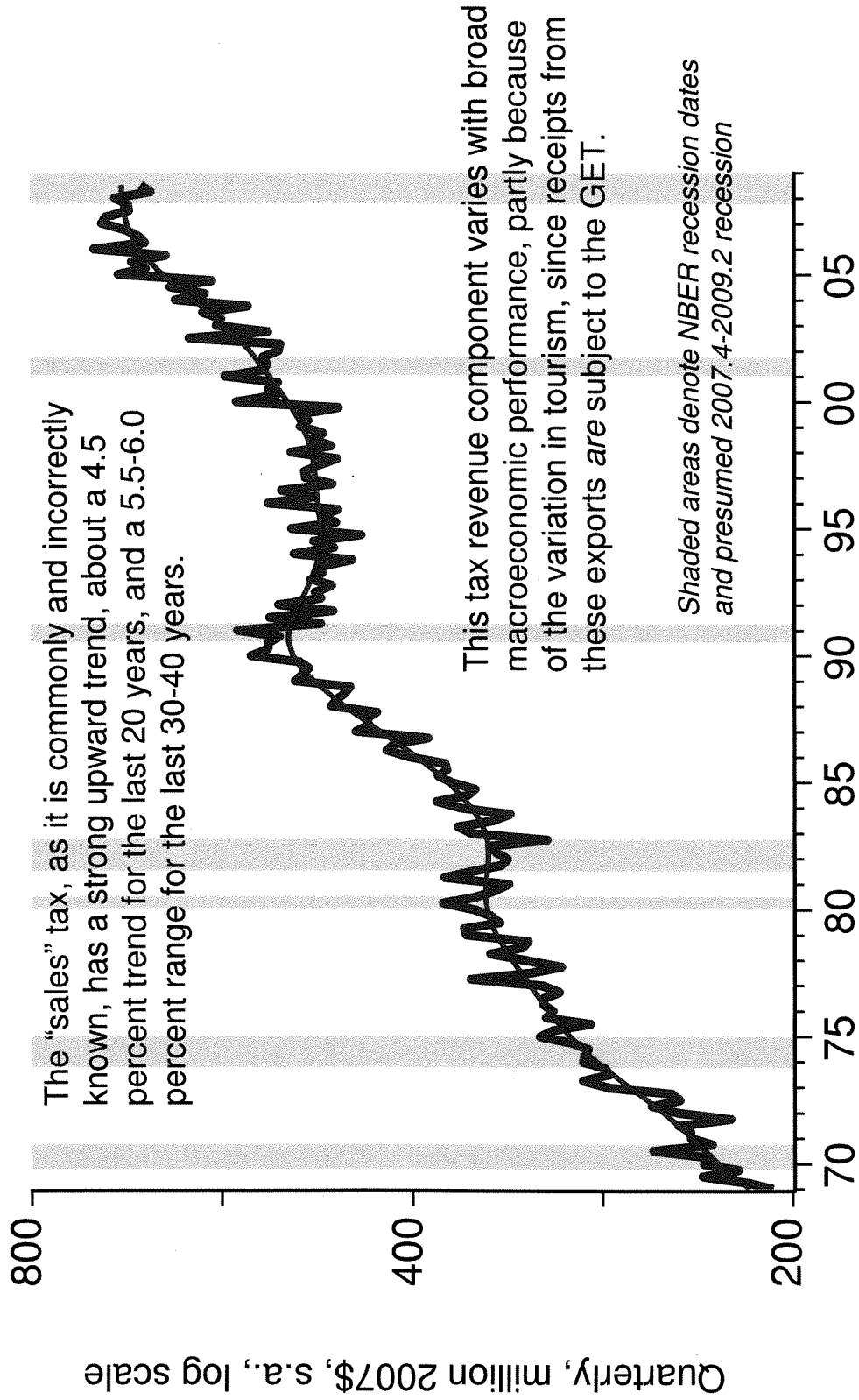
h Bank of Hawaii

Puu

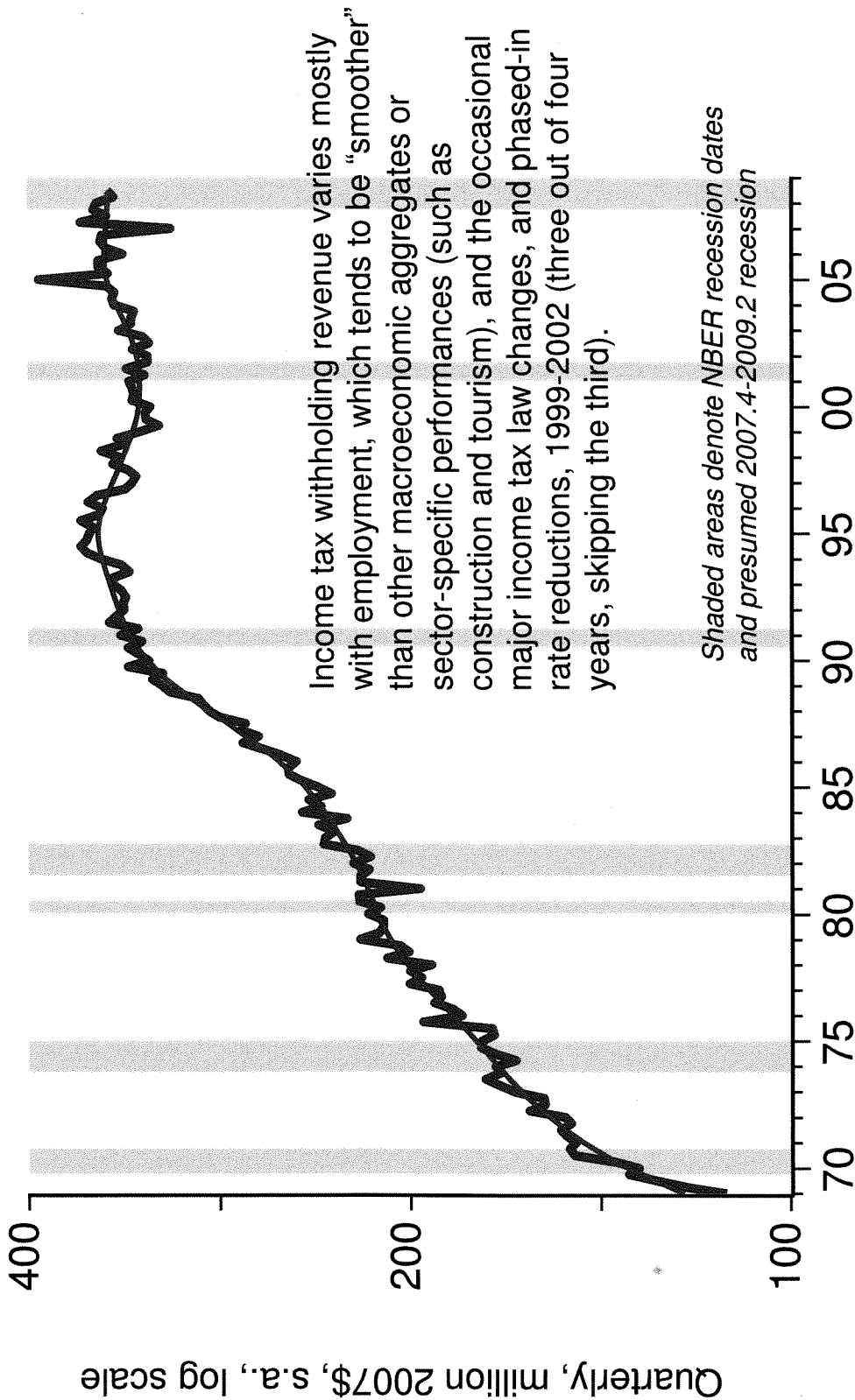
Appendix 1: General Fund tax revenue components

- General Excise (0.55): pressure—tourists *and* residents
- Payroll withholding (0.29): nothing but downside
- Everything else (0.16): business cycle roller-coaster

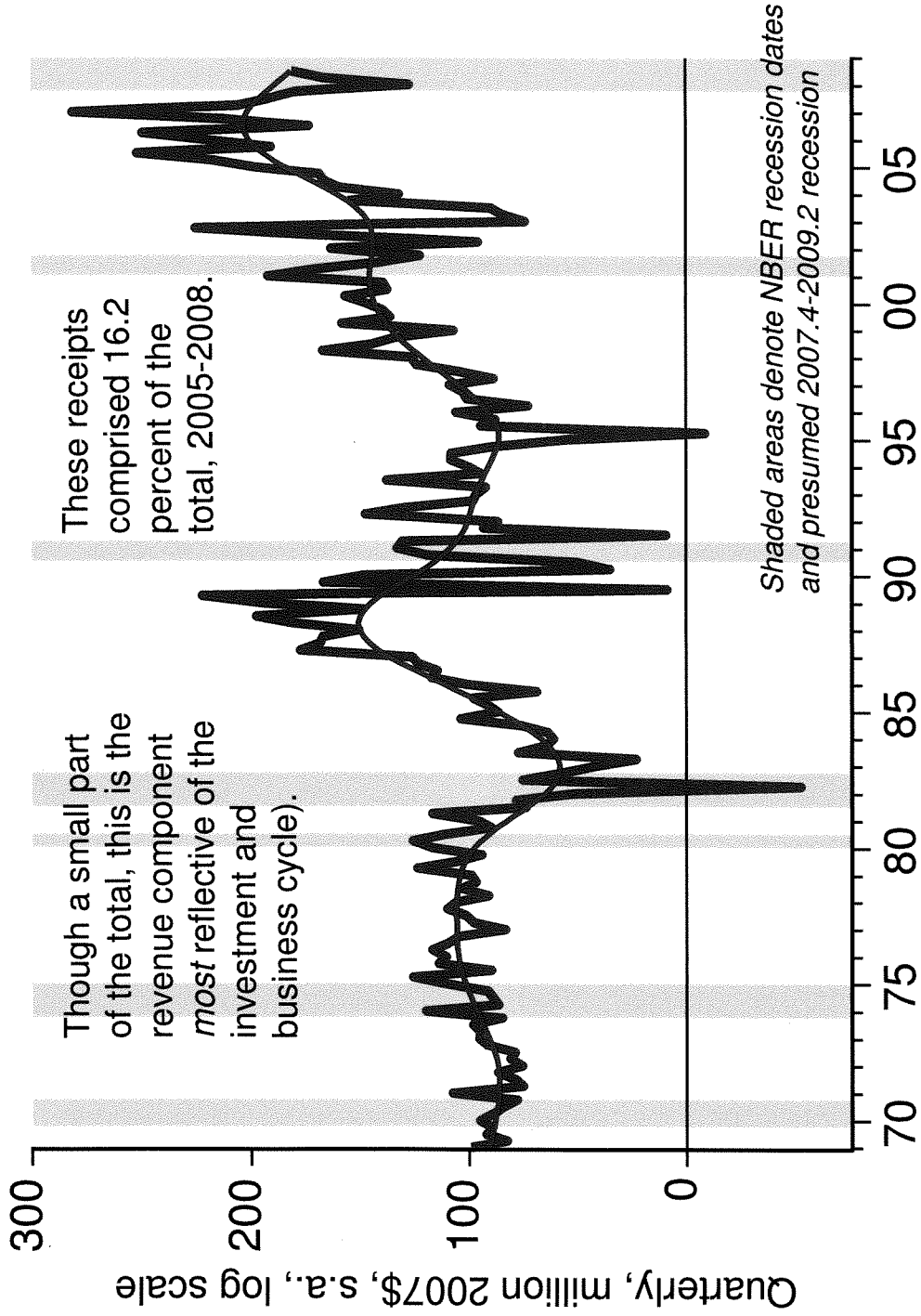
General excise tax revenues (55% of total)



State income tax withholding (29% of the total)



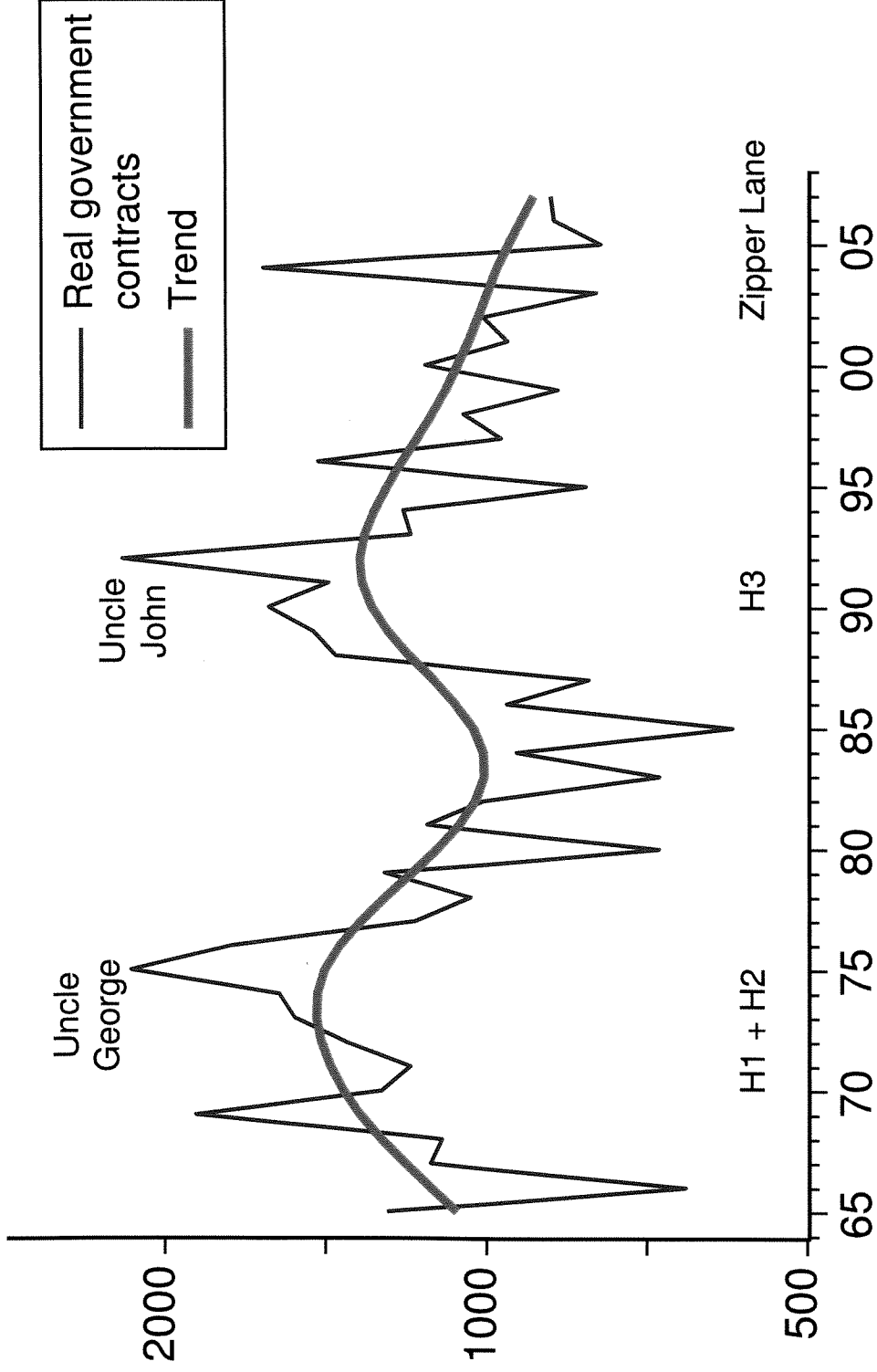
Other (mostly corporate, quarterly individuals' filings)



Appendix 2: more public capital spending

Got? Need more? No duh, what was your first clue.

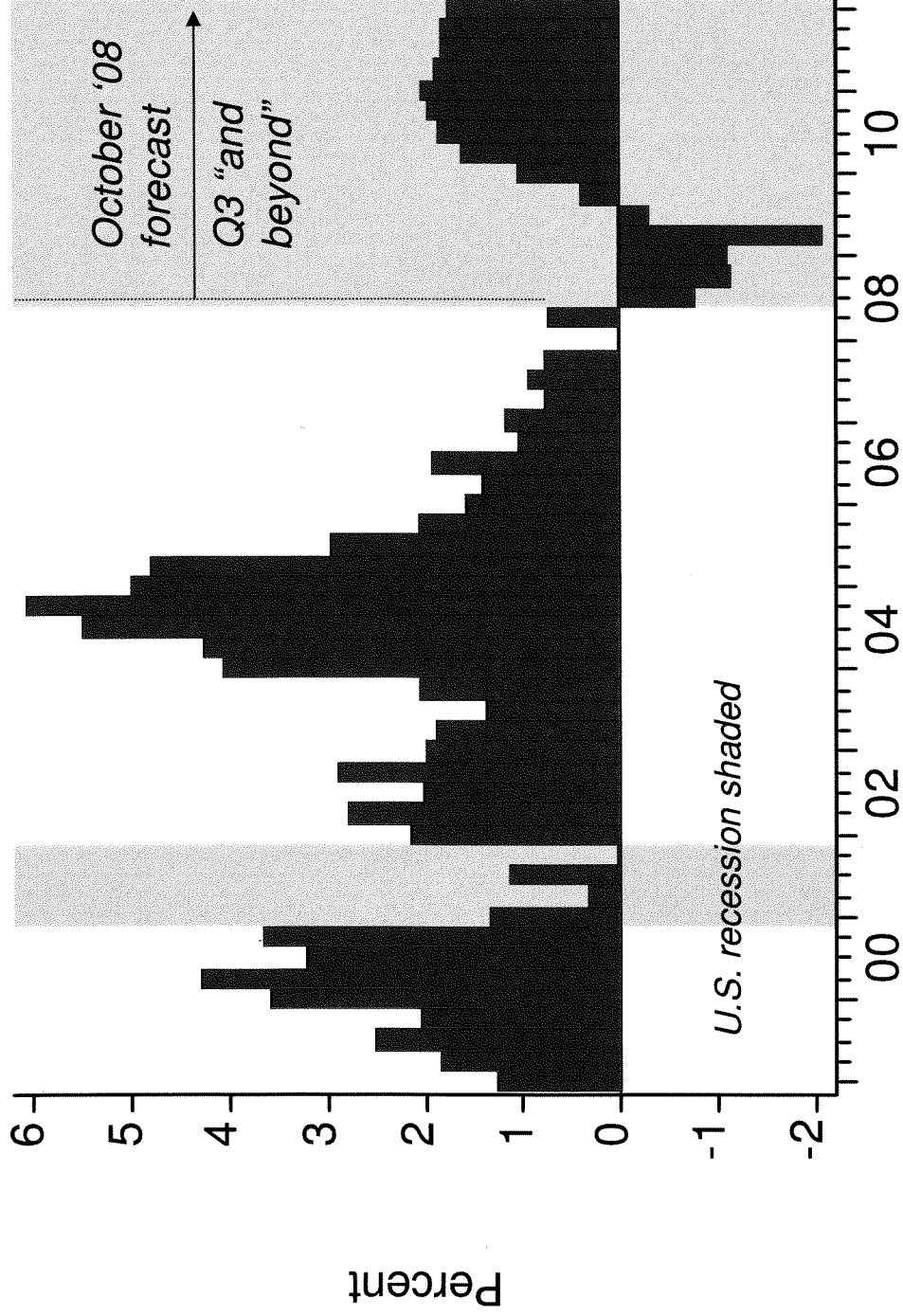
Constant-dollar total government construction contracts in Hawaii (federal, state, county)



Appendix 3: the rest of Hawaii's macroeconomic picture

Sharper deterioration beginning in 2008Q3.

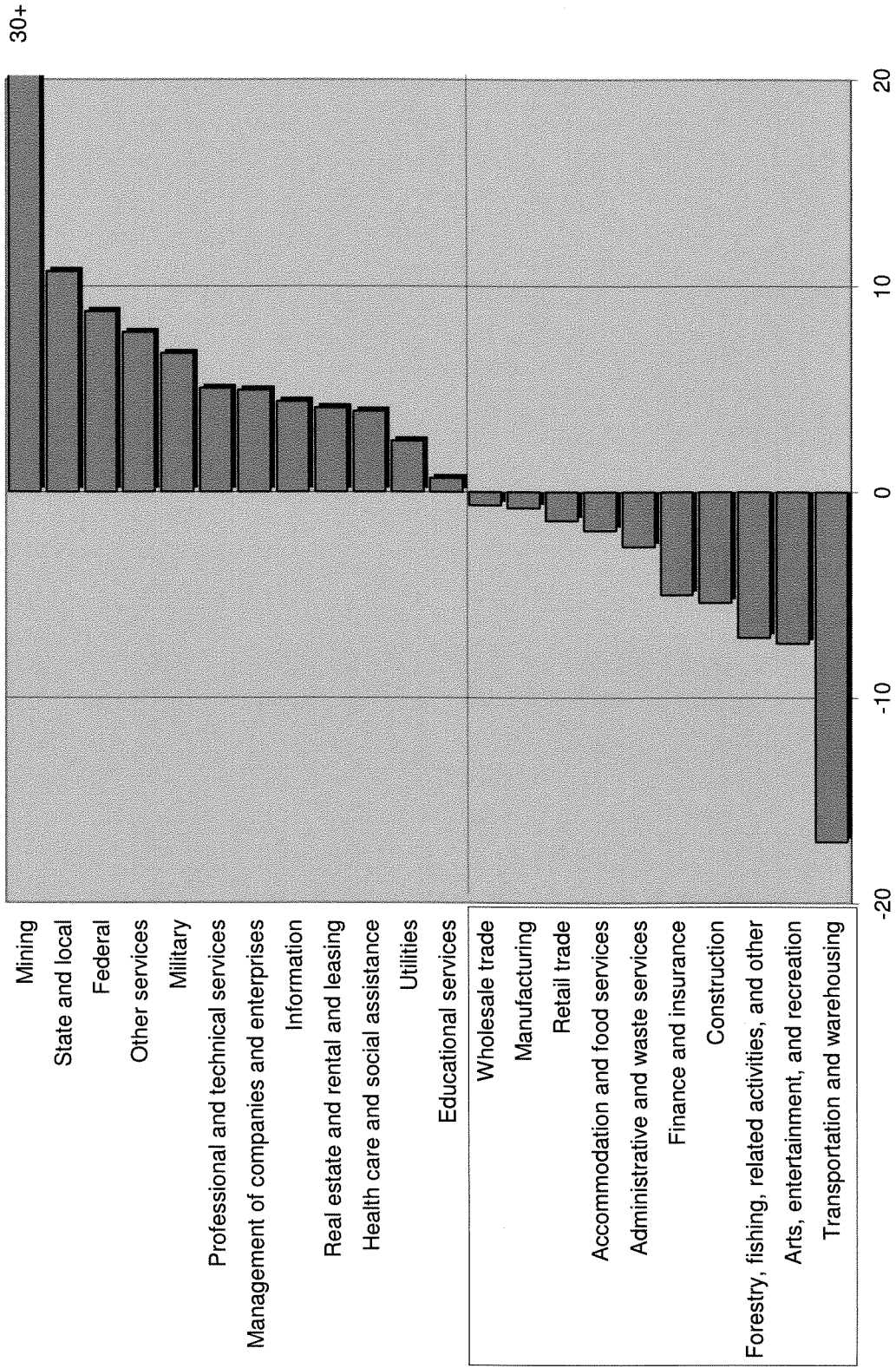
Hawaii real personal income growth



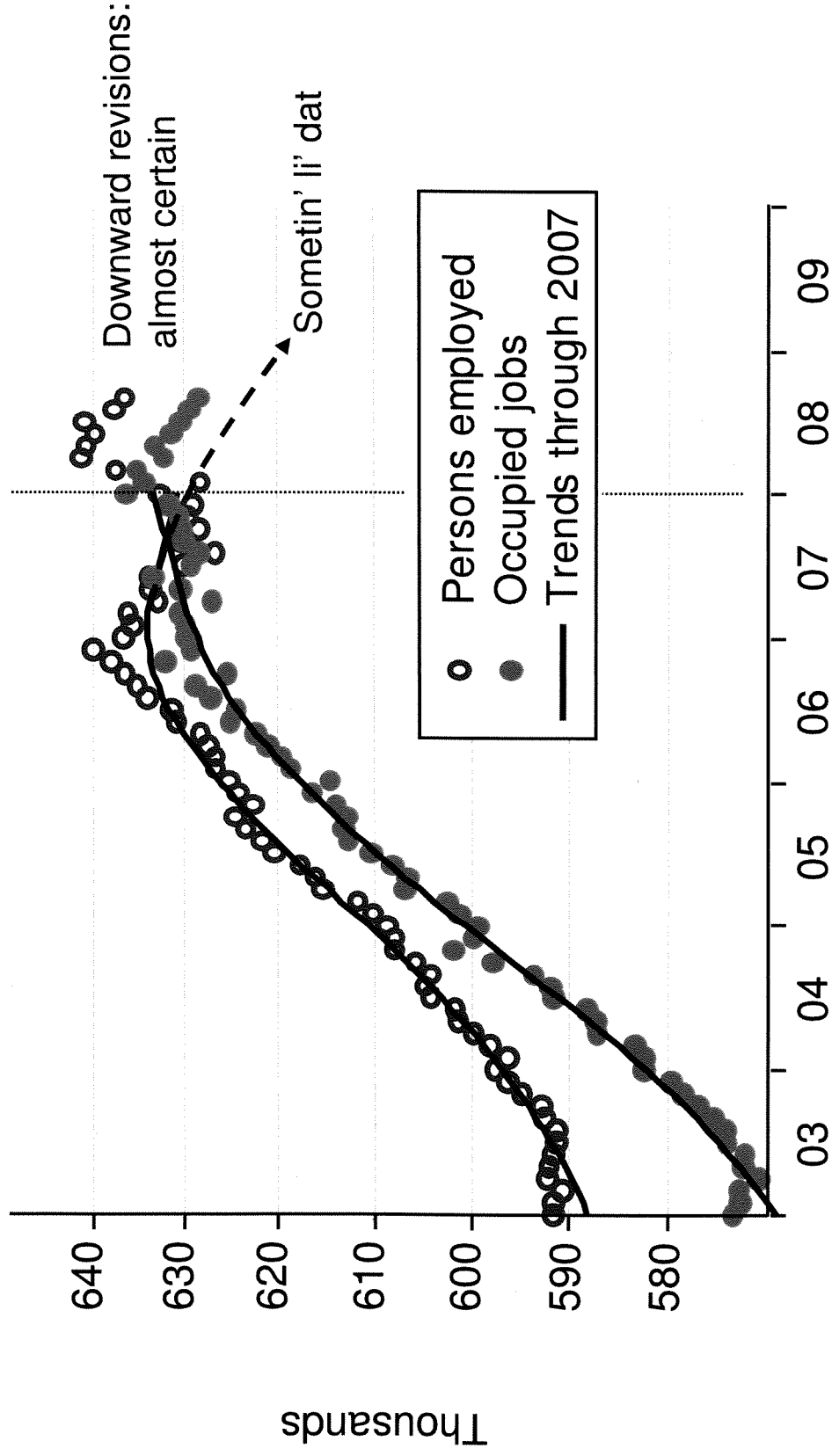
Third quarter 2008 actual Hawaii personal income annualized earnings growth by NAICS industry

Quarterly	2008.3	2007	2008.1	2008.2	2008.3	
	\$mil	y-o-y %	annualized percent changes			
	Share					
	%					
HAWAII PERSONAL INCOME	52,556	100.0	5.9	5.2	6.2	1.0
Dividends, interest, and rent	8,433	16.0	8.7	-0.7	2.5	3.4
Earnings By Place of Work	41,091	78.2	4.5	6.1	1.7	2.3
Less: Contributions for gov't social insurance	4,184	8.0	3.6	11.1	1.3	0.6
Personal current transfer receipts	7,215	13.7	9.7	10.8	37.5	-8.9
(included above: State UI benefits)	272	0.5	17.0	91.3	161.9	347.6
Earnings By Industry	41,091	100.0	4.5	6.1	1.7	2.3
(shares of earnings)						
Farm Earnings	166	0.4	1.4	-74.2	19.5	13.0
Nonfarm Earnings	40,925	99.6	4.5	6.8	1.7	2.3
(shares of nonfarm earnings)						
Government and government enterprises	13,883	33.9	6.4	12.5	6.8	8.7
Private earnings	27,042	66.1	3.6	4.1	-0.8	-0.8

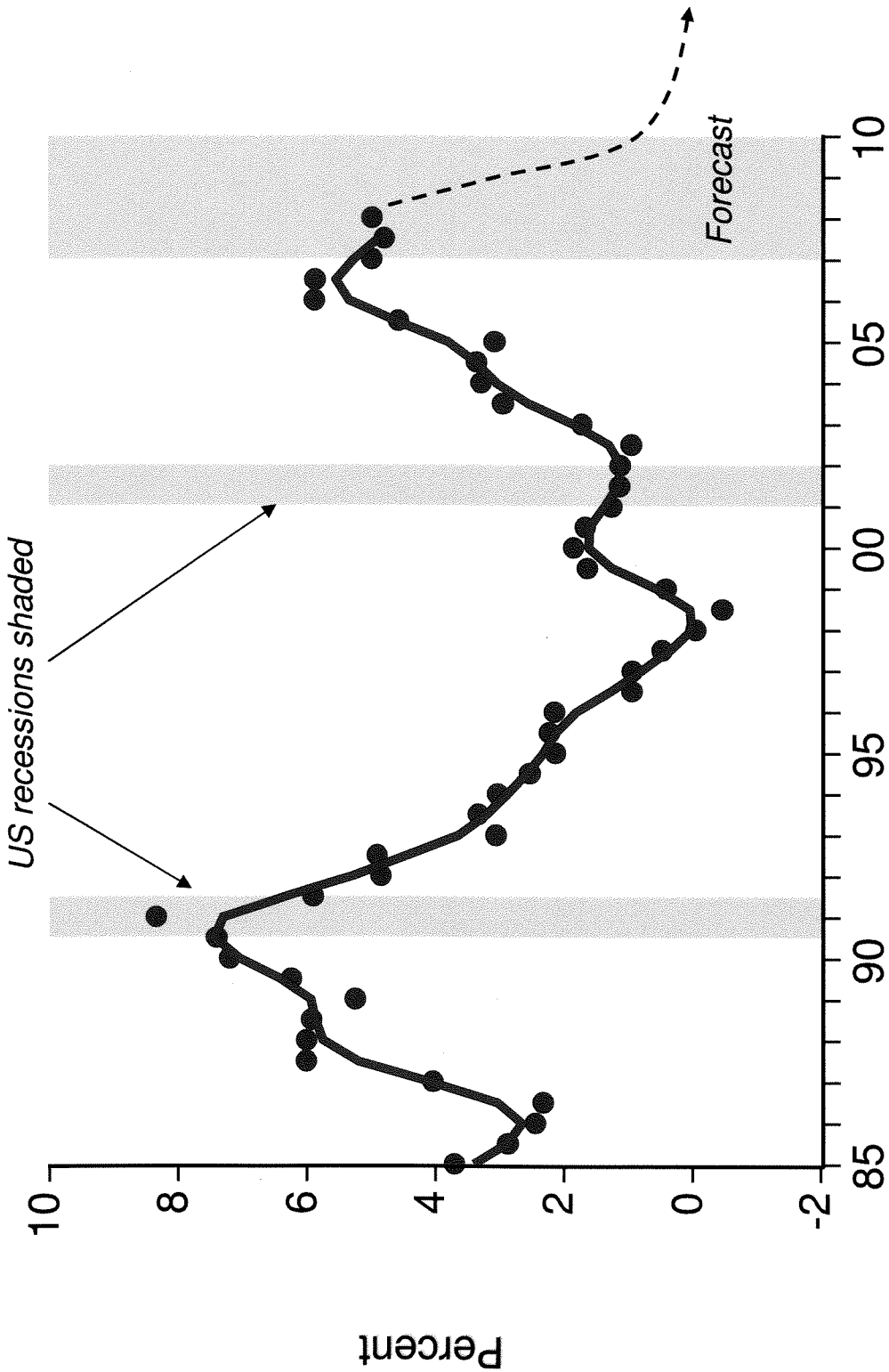
Third quarter 2008 actual Hawaii personal income annualized earnings growth by NAICS industry



Hawaii employment indicators and anticipated February 2009 revisions



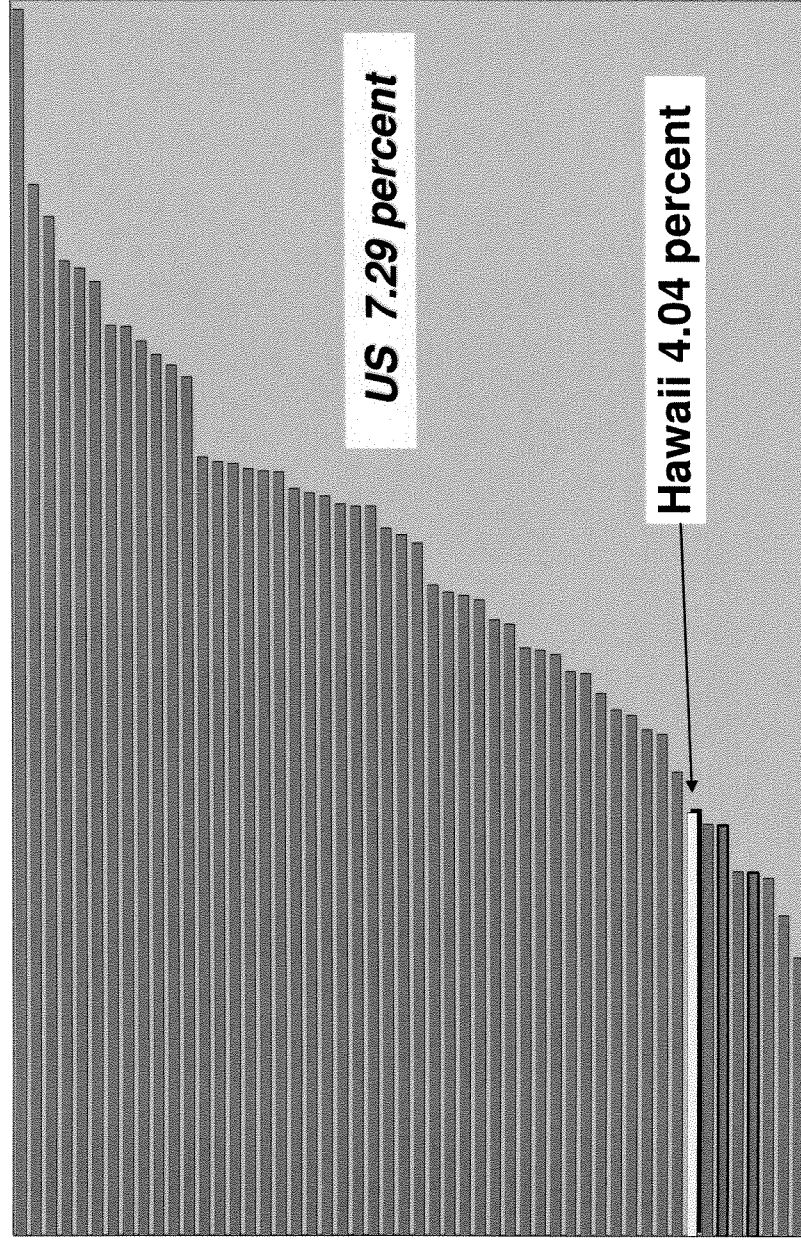
Honolulu semi-annual CPI inflation through mid-2008



Appendix 4: Hawaii housing relatively resilient

- Hawaii: low mortgage delinquency
- Oahu home prices stable: no glut
- Neighbor islands California-like (except Hilo side)
- Most previous recessions *investment-led*
 - 1980(Jan-Jun)/1981(Jul)-1982(Nov) interest rates, housing
 - 1990(Jul)-1991(Mar) housing (S&L), consumption (Gulf War)
 - 2001(Mar-Nov), equipment and software investment (dot.com)
 - 2005-2008 housing recession offset by export growth
- 2008-09 recession aggravated by drop in *consumption*:
 - First half-2008 → 2008Q3: +2% → -3%for Hawaii, that means *tourism*.

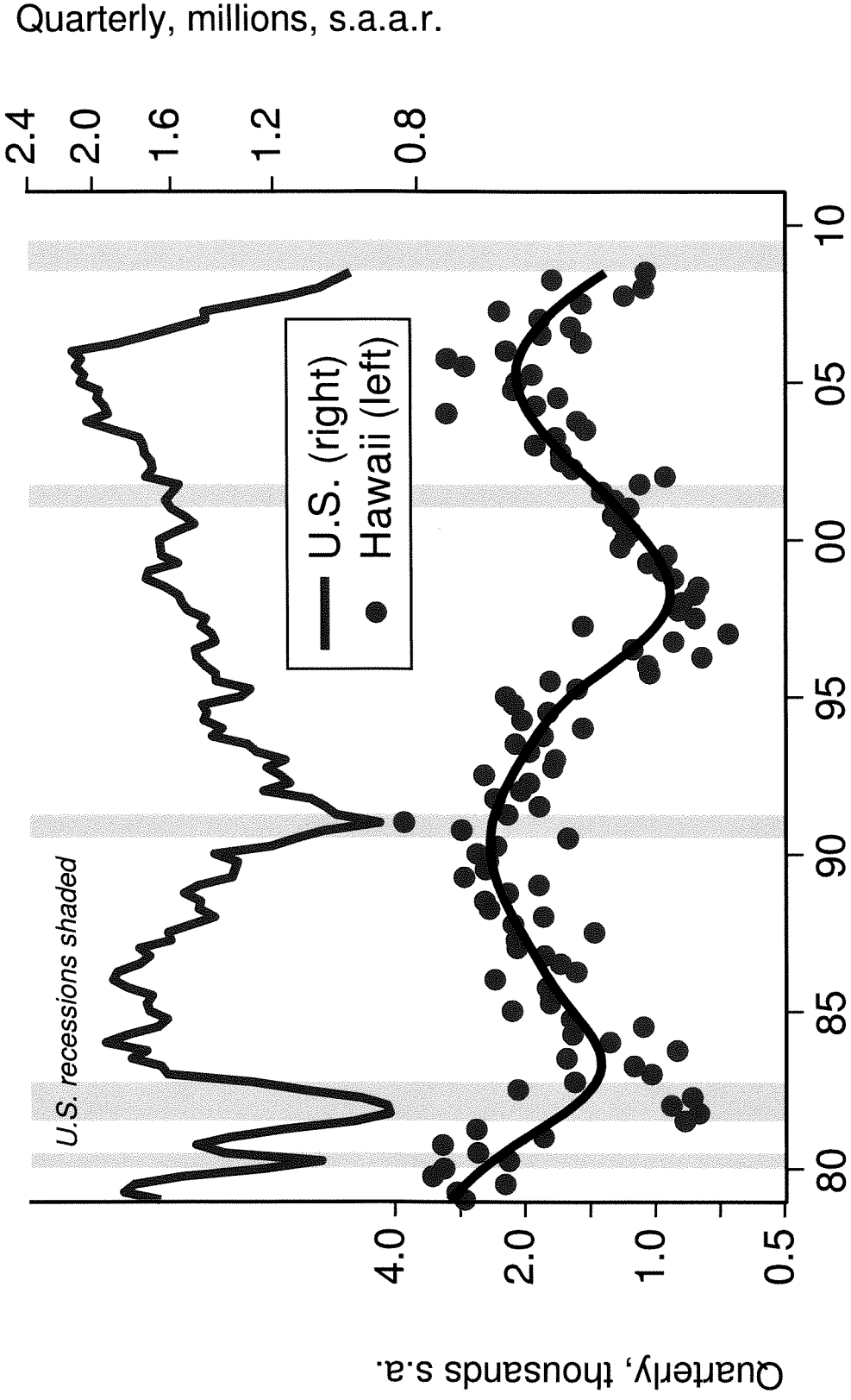
Mortgage delinquency rates ranked by state 2008Q3



0 2 4 6 8 10
Percent of all mortgage loans with past due installments

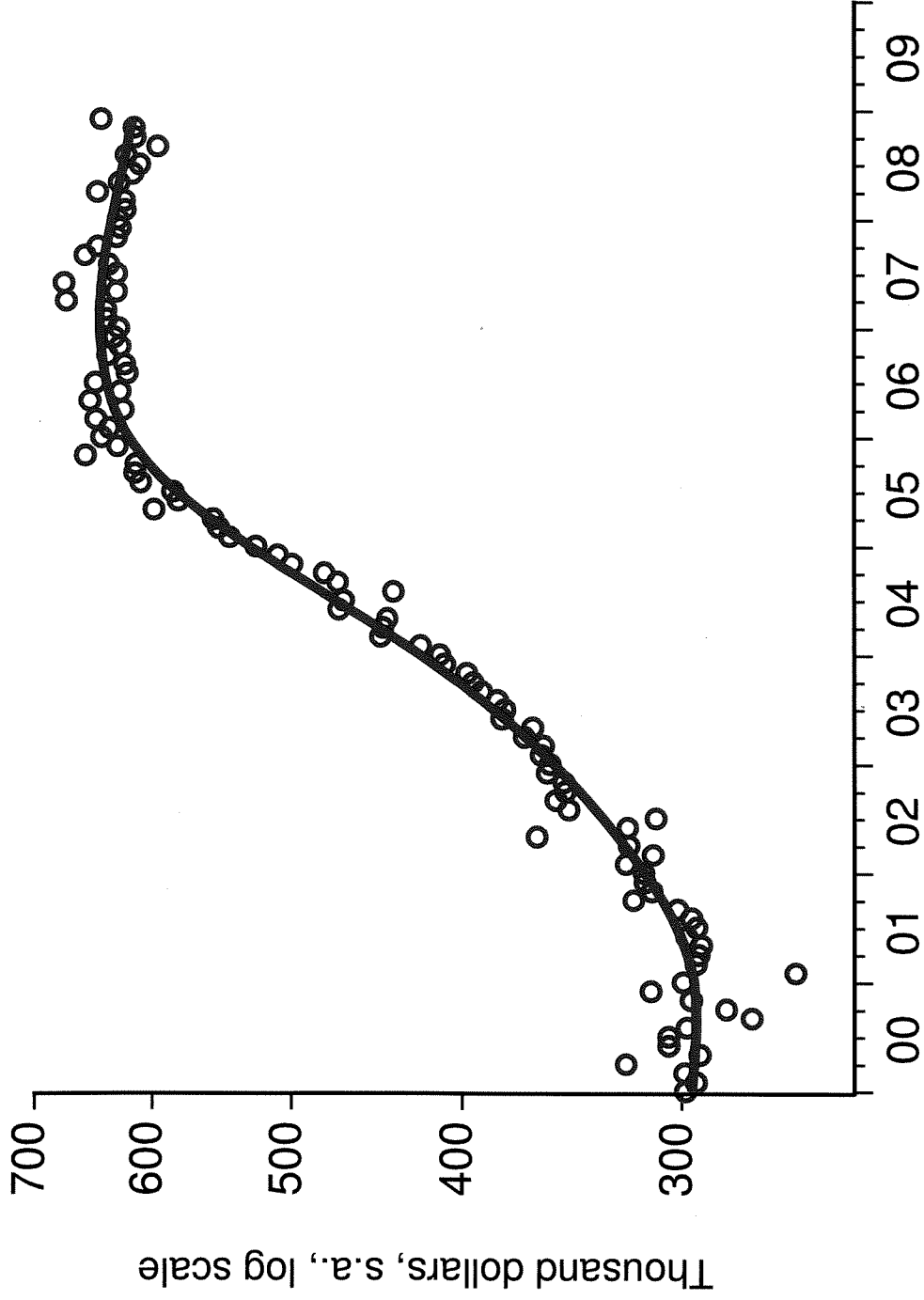
Source: Mortgage Bankers Association, 30 days or more past due; foreclosure inventory is 1.67% of Hawaii loan universe; "historically, about of half of foreclosures starts" result in borrower loss of home (Bernanke, 12-1-08)

New housing units started (US) and authorized (HI)



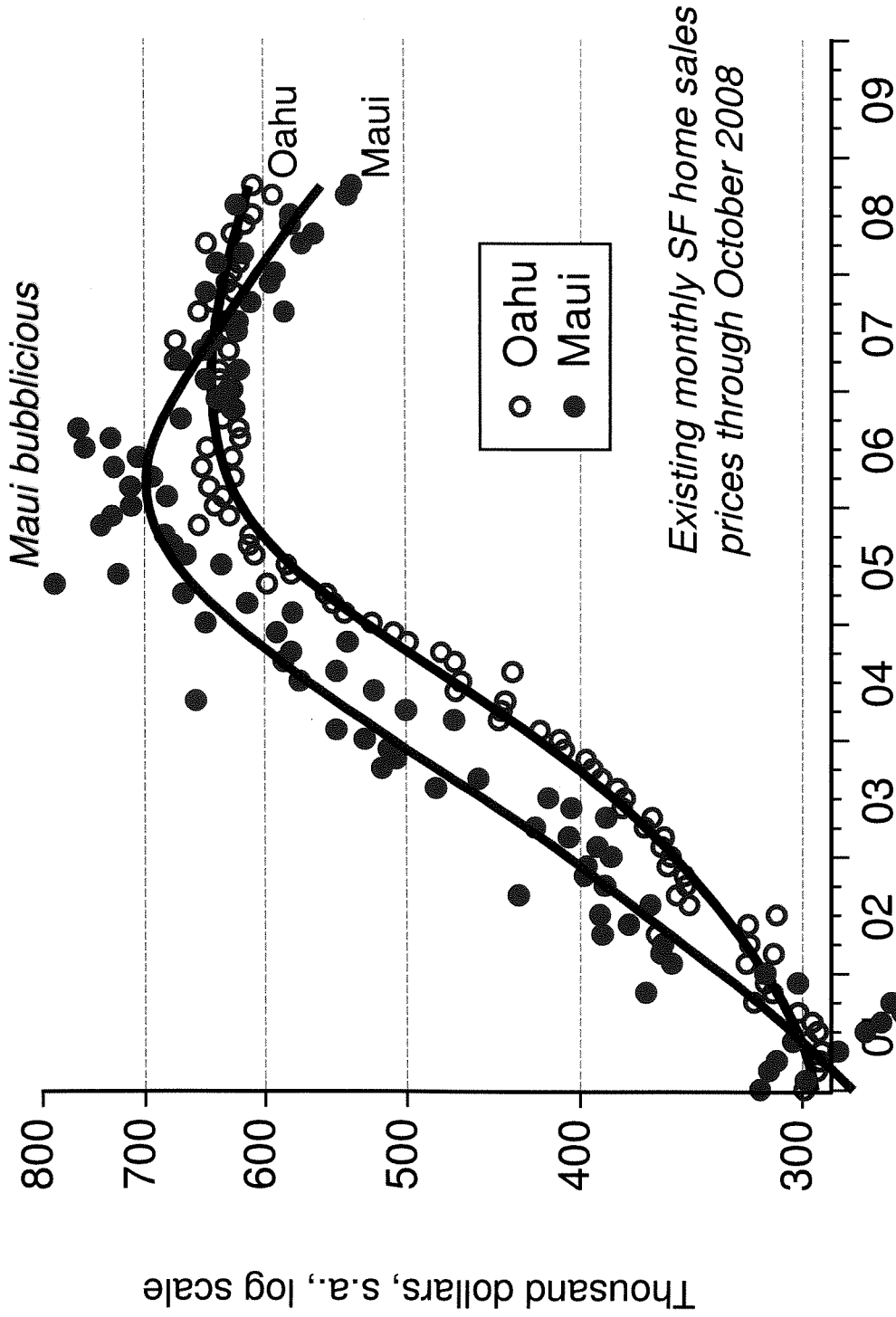
Sources: Federal Reserve Bank of St. Louis, Bank of Hawaii, Hawaii DBEDT; calculations by author

Oahu median single-family home prices, scrubbed



Sources: Honolulu Board of Realtors; seasonal adjustment calculation and application of Hodrick-Prescott filter for trend by author

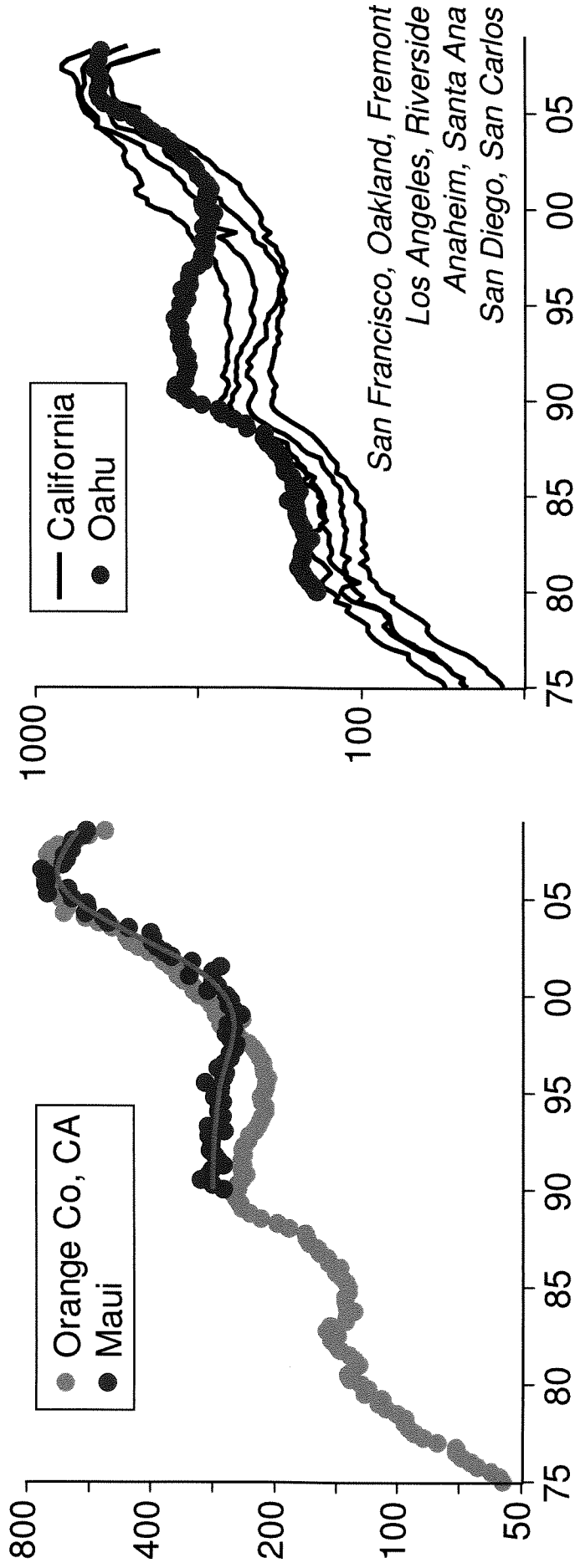
Oahu and Maui median single-family home prices



Sources: Honolulu Board of Realtors, Realtors Association of Maui; seasonal adjustment calculation and application of Hodrick-Prescott filter for trend by author

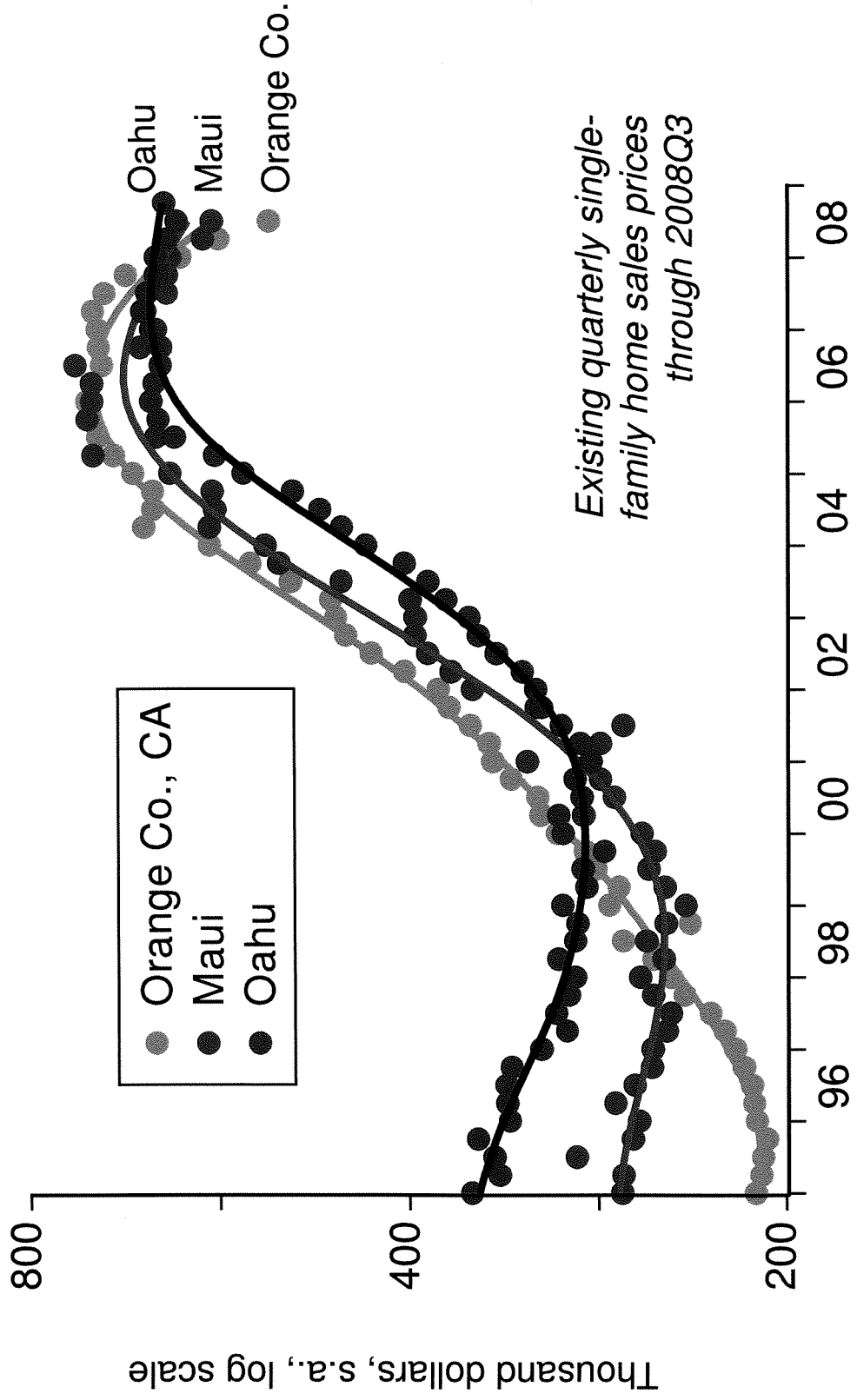
California and Hawaii median SF home sales prices

Thousand dollars, s.a., log scale



Existing quarterly single-family home sales prices through 2008Q3

California and Hawaii median SF home sales prices



h Bank of Hawaii

Pan, seriously