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# HAWAII ECONOMIC TRENDS

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January 31, 2006

*prepared by*

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Bank of Hawaii

Economic information is available electronically at  
<http://www.boh.com/econ/>

Executive Summary  
January 31, 2006

- Top seven reasons to be happy about Hawaii's economy in 2005:
  1. Hawaii construction was way stronger than forecast: closer to 15-20 percent growth vs. forecasts of 13.8 percent (October 2004), 11.0 percent (April 2005), and 12.2 percent (October 2005).
  2. Hawaii tourism numbers were slightly higher than forecast ( $\geq 7.4$  million versus 7.3 million arrivals forecast by BOH, 7.2-7.4 million by the consensus).
  3. Higher energy costs were mostly absorbed; refiners appear to have profited from Hawaii's unique, regulatory wholesale gasoline price cap, introduced the week of Hurricane Katrina (by accident).
  4. Honolulu inflation started 2005 a full percentage point lower than previously forecast for the full year (3 percent, versus 4 percent, respectively); globalization is still exerting disinflation force.
  5. Hawaii job growth in 2005 remained closer to 2.8 percent than the 1.8 percent forecast
  6. Only one-third of the State's windfall revenue increase was attributable to an increase in delinquent collections, only one-third to unusual legislation, and one-third to the strong economy.
  7. Residential real estate projections were pretty much correct (read: no bubble).
- The economic outcome for Hawaii in year 2006 will once again be dominated by the path of housing. The risk for housing in 2006 is that the surprises might be negative rather than positive. A decline in home sales transactions volumes, an inventory buildup causing longer selling times, and a narrowing of the list-to-sales price premia, all point to slower growth of valuations during 2006. For affordability, this time it's *all* about prices, *not* interest rates. The affordability crisis will generate political turbulence, but household balance sheets are expected to remain intact as another year of appreciation—perhaps 10 percent—in median home prices continues. Signs in the tea leaves: values will flatten after that.
- California markets show signs of home resale values stabilizing at or under \$700,000 just like on Kauai and Maui. Continued work in our research program on home price dynamics suggests lags of 2 to 4 quarters linking Hawaii to California, but lags may be longer. The 1990s experience of price reversals, because of military downsizing, may be misleading: price stability is the most likely outcome.
- Tourism's record in 2005 masked surprises as well as continuing trends. It was all domestic. It overwhelmed higher than expected energy costs, a stronger than expected dollar, and benefited from stronger than expected US and Japan economies. It experienced mysterious volatility in seasonally-adjusted arrivals volumes that complicate the forecast. Underlying macroeconomic fundamentals in the US and Japan support a prognosis for continued good tourism growth during the next few years.
- Interest rates along the US Treasury yield curve moved into a mild "U"-shaped configuration. We interpret this configuration as a reflection of the market's continuing concern about prospects for a slowdown. In contrast, we think the Fed's vigilance will contain inflation and, for the fourth year in a row keep US real GDP growth closer to 4 percent than 2 percent, ultimately steepening—slightly—the term structure of interest rates, but only by about 25 basis points, following the FOMC move of the Fed Funds target to 4.50 percent at the end of January 2006.

## Comparative Hawaii economy 2005-2007 forecasts

January 31, 2006

Annual percent changes <sup>0</sup>	Jobs						Personal Income (real)						CPI Honolulu					
	2002	2003	2004	2005	2006	2007	2002	2003	2004	2005	2006	2007	2002	2003	2004	2005	2006	2007
<b>BOH<sup>1</sup></b>	-0.4	2.3	2.4	2.1	1.6		2.6	3.5	2.3	3.5	2.6		1.2	1.8	3.8	3.5	3.6	
<b>UHERO<sup>2,6</sup></b>	-0.7	2.3	2.2	2.7	1.8		2.4	3.4	2.5	3.6	2.7		1.6	1.7	3.5	3.7	3.9	
<b>Laney<sup>3</sup></b>	-1.0	2.5	2.0	2.7	2.0		2.5	3.5	2.8	3.6	3.1		1.1	1.8	3.4	3.5	4.0	
<b>DBEDT<sup>4</sup></b>	-0.5	2.2	2.2	2.7	1.5		2.5	3.5	2.5	3.5	2.8		1.2	1.8	3.2	3.4	3.3	
<b>COR<sup>5</sup></b>										4.6	2.5					3.6	3.3	
<b>Actual (p)</b>	0.3	1.9	2.5	2.8			2.8	1.8	3.4 <sup>7</sup>				1.1	2.3	3.3			

Annual percent changes <sup>0</sup>	Total Visitor Arrivals						Domestic (UHERO: US) Arrivals						International (UHERO: Japan) Arrivals					
	2002	2003	2004	2005	2006	2007	2002	2003	2004	2005	2006	2007	2002	2003	2004	2005	2006	2007
<b>BOH<sup>1</sup></b>	-0.1	1.3	8.0	7.4	4.6	3.9	3.0	4.5	6.1	8.1	4.0	3.2	-5.9	-6.3	12.7	5.7	2.2	3.0
<b>UHERO<sup>2</sup></b>	1.2	-0.3	7.9	6.7	2.4		3.5	3.9	7.8	6.9	2.5		-4.4	-13.5	12.9	3.4	2.7	
<b>Laney<sup>3</sup></b>	3.0	0.2	7.0	6.2	3.0													
<b>DBEDT<sup>4</sup></b>	1.8	-0.6	7.6	6.5	2.9													
<b>COR<sup>5</sup></b>				3.8	2.1													
<b>Actual (p)</b>	1.6	-0.8	8.3	6.8			2.8	3.2	7.6	7.4			1.0	-9.0	9.8	5.2		

Annual percent changes <sup>0</sup>	Total Visitor Expenditures						Construction <sup>6</sup> (UHERO ; see footnote)											
	2002	2003	2004	2005	2006	2007	2002	2003	2004	2005	2006	2007						
<b>BOH<sup>1</sup></b>																		
<b>UHERO<sup>2</sup></b>							13.5	6.3	6.2	12.2	5.0	1.8						
<b>Laney<sup>3</sup></b>																		
<b>DBEDT<sup>4</sup></b>				6.9	5.8													
<b>COR<sup>5</sup></b>				7.0	5.4					5.5	3.5							
<b>Actual (p)</b>	8.7	4.7	5.0				16.5	3.1	12.1									

**Notes:**

<sup>0</sup> 2002-2005 "forecasts" are taken from last published forecasts prior to end of each year

<sup>1</sup> Paul Brewbaker, Chief Economist, Bank of Hawaii (September 16, 2005) [www.boh.com/econ/reports/econ0510.pdf](http://www.boh.com/econ/reports/econ0510.pdf) (published October 19, 2005) and January 23, 2006 tourism modeling update (unpublished)

<sup>2</sup> "UHERO Quarterly Forecast Update: Surging Economy Generates Impressive Income Growth," (November 22, 2005) by Carl Bonham and Byron Gangnes, University of Hawaii Economic Research Organization; [http://uhero.isdi-hi.com/05Q4\\_hioutlook.html](http://uhero.isdi-hi.com/05Q4_hioutlook.html)

<sup>3</sup> Professor Leroy Laney, Hawaii Pacific University, as reported from FHB press release (November 14, 2005) [www.fhb.com/hm\\_news111405.htm](http://www.fhb.com/hm_news111405.htm)

<sup>4</sup> Hawaii DBEDT quarterly forecast (November 14, 2005, updated November 16, 2005); <http://www3.hawaii.gov/dbedt/index.cfm?contentID=1779&siteid=1>, Hawaii Department of Business, Economic Development and Tourism

<sup>5</sup> Hawaii Council on Revenues State fiscal year forecasts, this forecast shifted forward so that "2005" represents the fiscal year from July 2005 to June 2006, or fiscal year 2006; (September 2, 2005) (members include: Paul Brewbaker, Jack Suyderhoud, Carl Bonham, Vito Galati, Pearl Imada Iboshi, Mike Hirai, Eric Yeaman)

<sup>6</sup> "UHERO Construction Forecast: Tremendous Strength as Cycle Peak Approaches," (October 3, 2005) by Carl Bonham, Byron Gangnes (UHERO) and Paul Brewbaker (BOH); [http://uhero.isdi-hi.com/05Q3\\_conoutlook.html](http://uhero.isdi-hi.com/05Q3_conoutlook.html); (detailed UHERO construction forecast for 2005-2008 is by subscription only)

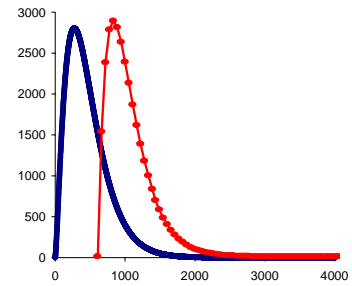
<sup>7</sup> Preliminary first quarter 2005 estimates were released June 22, 2005; see [www.bea.doc.gov/bea/regional/spi/](http://www.bea.doc.gov/bea/regional/spi/); this calculation used the Honolulu Consumer Price Index for All Urban Consumers as the deflator, see <http://data.bls.gov/cgi-bin/surveymost?r9>

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

### Housing starts to feel affordability heat

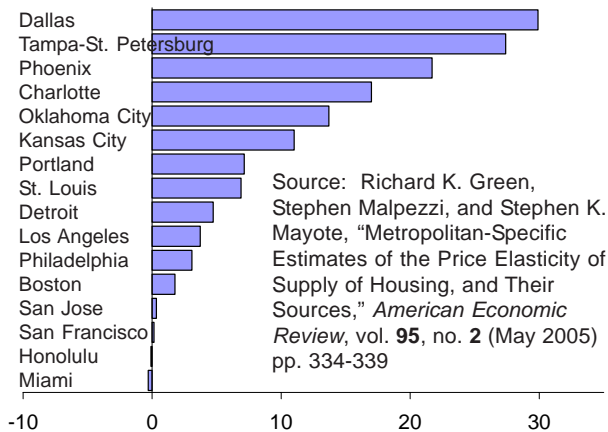
The political fallout is growing from recent rapid home price increases. Public policy and geography restrict Hawaii homebuilding, leading to low price elasticities of housing supply. Housing demand rises faster than new housing inventory can be supplied, so prices appreciate rapidly. "Average" prices are measures of central tendency like the median, but the underlying distributions of home prices and incomes are skewed to the right. In supply-constrained markets an increase in housing demand shifts the home price distribution to the right faster than income distribution (as illustrated for Maui to the right.) A mismatch between average incomes and home prices follows, along with the outcry over property taxes and affordability.

**Representative gamma distributions parameterized to Maui single-family home sales price data**  
(arbitrary scales, one suppressed for comparison)



### Housing supply elasticities

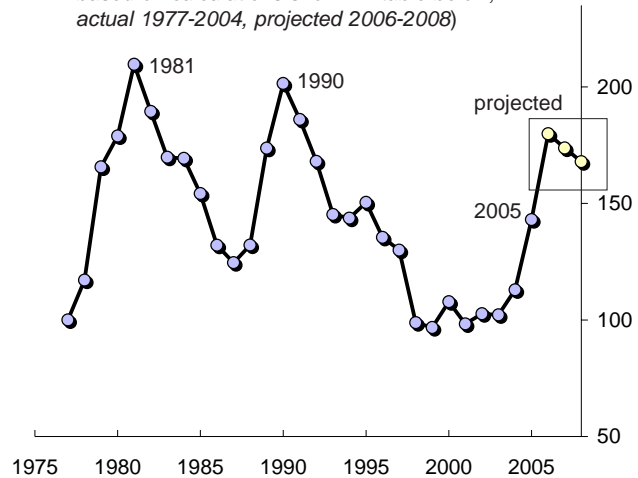
(Proportionate responses of homebuilding to proportionate increases in home prices for selected US metropolitan areas)



Source: Richard K. Green, Stephen Malpezzi, and Stephen K. Mayote, "Metropolitan-Specific Estimates of the Price Elasticity of Supply of Housing, and Their Sources," *American Economic Review*, vol. 95, no. 2 (May 2005) pp. 334-339

### Index of Oahu housing affordability

(1977 = 100; higher index connotes less affordability, based on calculations shown in table below; actual 1977-2004, projected 2006-2008)



### Some unpleasant Oahu housing affordability arithmetic

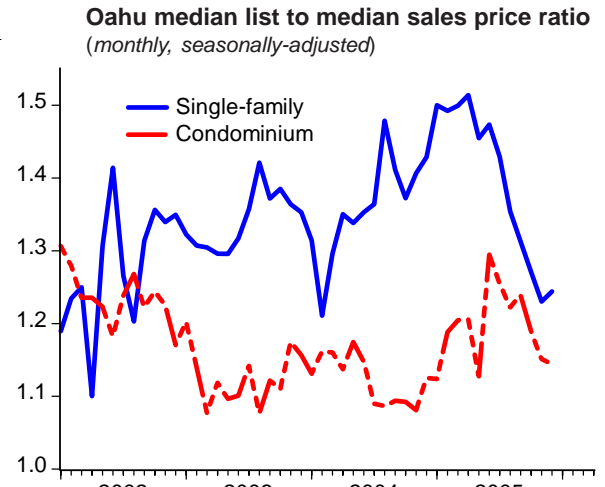
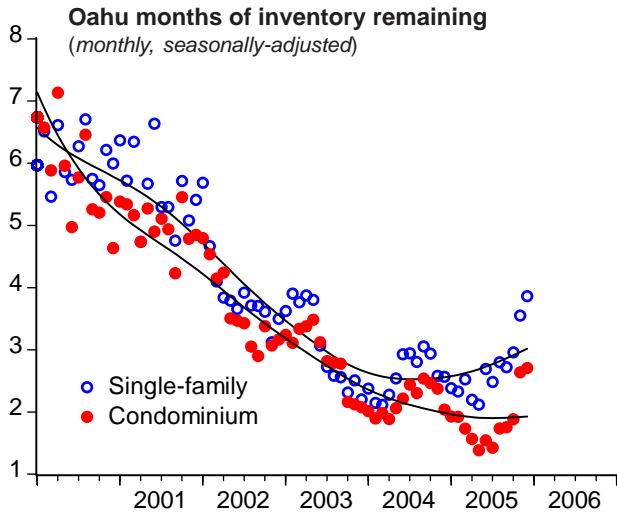
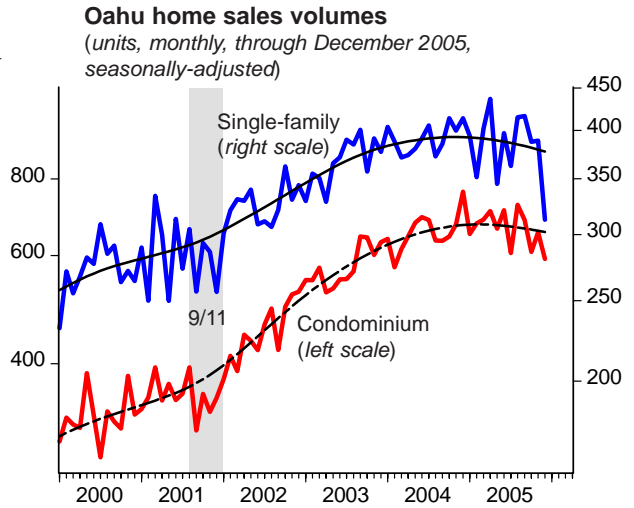
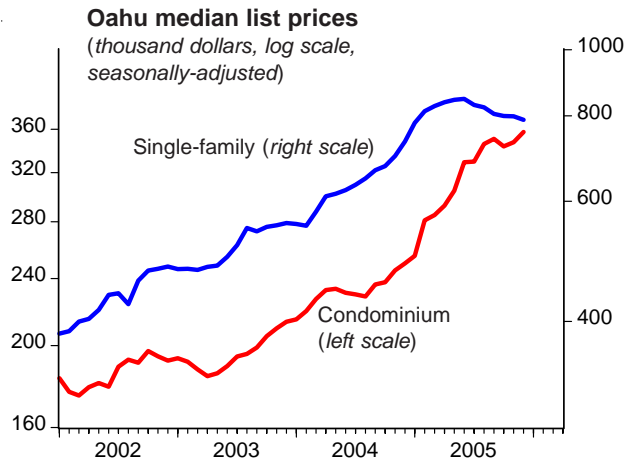
Housing affordability index of monthly home mortgage payment divided by median four-person family income (HUD guidelines) through 2005, based on median single-family home prices (index of payment to income ratio with base period 1977 = 100)

Year	1999	2000	2001	2002	2003	2004	2005	2006f	2007f
Mortgage Interest Rate (%)	7.20	8.06	6.97	6.54	5.82	5.50	5.50	6.25	6.25
Compound annual return 1980-? (%)	2.6	2.5	2.8	3.3	3.8	4.8	6.1	6.9	6.6
Annual appreciation rate (%)	-1.7	1.7	1.7	11.7	13.4	18.4	31.1	20.0	0.0
Median Oahu SF Home Price (\$)	290,000	295,000	299,900	335,000	380,000	450,000	590,000	708,000	708,000
Down Payment (20% of Price)	58,000	59,000	59,980	67,000	76,000	90,000	118,000	141,600	141,600
Loan Amount (80% of Price)	232,000	236,000	239,920	268,000	304,000	360,000	472,000	566,400	566,400
Monthly Principal and Interest (\$)	1,575	1,742	1,591	1,701	1,788	2,044	2,680	3,487	3,487
Annual Median Family Income (\$)	66,402	65,872	66,014	67,564	71,320	73,816	76,400	79,074	81,841
Monthly Median Income (\$)	5,534	5,489	5,501	5,630	5,943	6,151	6,367	6,589	6,820
Monthly Income Required (\$)	5,512	6,095	5,570	5,953	6,257	7,154	9,380	12,206	12,206
Monthly Income Gap (\$)	(22)	606	69	323	313	1,003	3,013	5,616	5,386
House Payment/Median Income (%)	28.5	31.7	28.9	30.2	30.1	33.2	42.1	52.9	51.1
Inaffordability index (higher is worse; 1977 = 100)	96.7	107.8	98.3	102.7	102.2	112.9	143.1	179.9	173.8

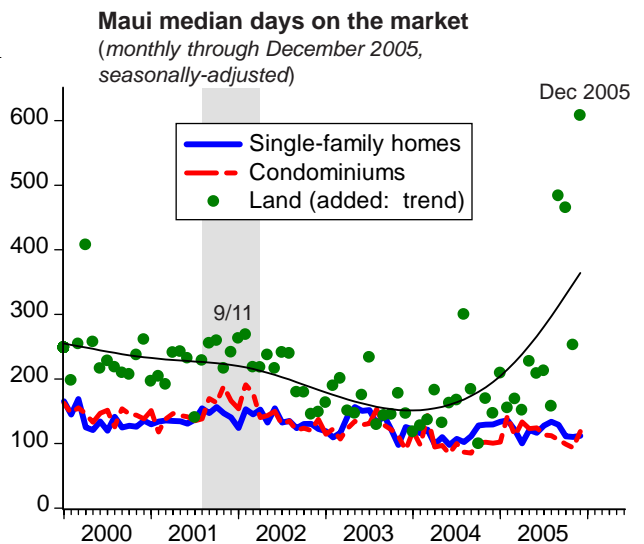
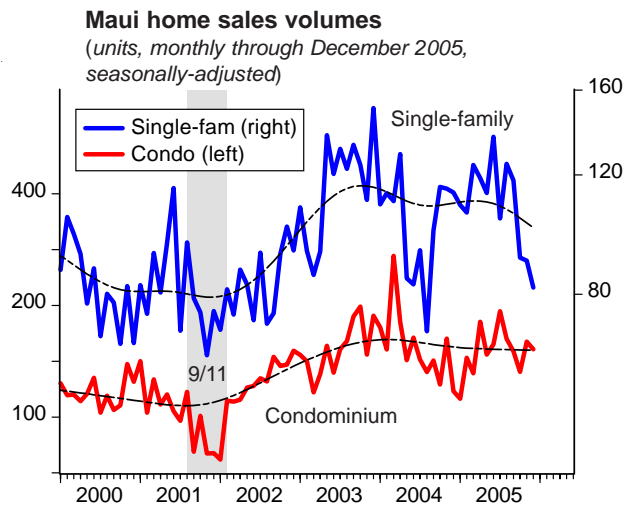
**Volumes slow as prices reach for peak**

Virtually all volume-oriented measures of residential real estate investment activity have slowed in the last six months to one year, making it more likely that prices will reach the end of their rapid recent appreciation. As the

next pages illustrate, this seems likely to be a multi-year development, with only modest risk of a late-1990s-style generalized price decline.



Sources: Harvey Shapiro / Honolulu Board of Realtors, Bank of Hawaii



Sources: Realtors Association of Maui, Bank of Hawaii

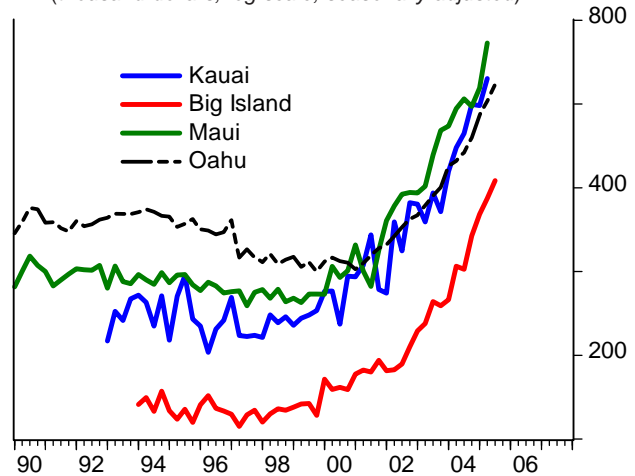
## High prices bite into sales, but prices keep rising

The slowing pattern showing up in Oahu sales transactions volumes, in inventories and in listing premia as depicted in the previous page, is expected to exert a drag on the upward momentum in prices over time. The turn in 2005 in these mostly volume-oriented measures should be reflected in flattening prices later in 2006 or in 2007. For the moment the lift in prices on Oahu continues, and is coming from strong demand in the Central and West Oahu. Upward movement in sales prices also continues on the neighbor islands along the Hilo Coast and elsewhere in East Hawaii Island. A pattern of continued rise in sales prices in the lower half of the home price distribution on Maui and Kauai keeps pushing those islands' median prices upward, but at significantly slower rates than in recent quarters.

We have documented in earlier reports the fact that, looking at the distribution of home sales prices, the low end catches up to the high end in later phases of the real estate investment cycle as part of the normal dynamic of rising average prices. High-end homes experience appreciation earlier than low-end homes. At the moment transactions volume at the high end has not dried up enough for the heavier weighting of sales volumes at the low end to pull downward on average prices. However, a precursor transition in skewness and kurtosis back to "tranquil" configurations of the home price distribution had already begun on Maui and Kauai in 2004, continued during early portions of 2005, and would be completed in 2006 as the low end completes its return, in relative valuation terms, to its customary "tranquil" alignment. In this phase, associated with the absence of home price

## Oahu and neighbor island single-family median home prices through third quarter 2005

(thousand dollars, log scale, seasonally-adjusted)



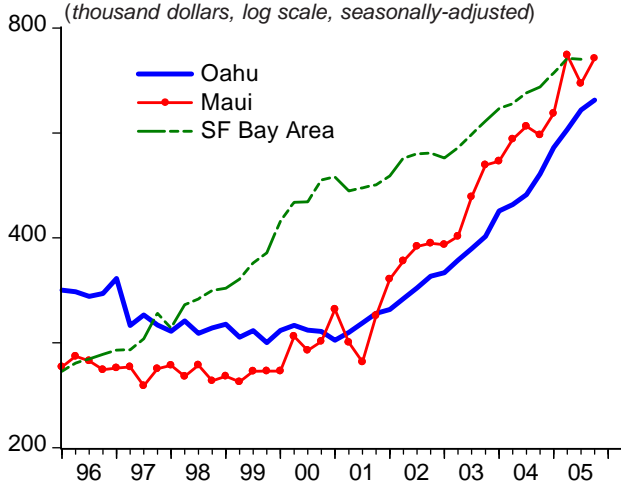
appreciation (and, assuming rational expectations, expected appreciation), all the moments of the home price distribution stabilize.

As depicted in the image above and to the right, the shift from "tranquil" to "appreciating" home prices began on the neighbor islands in 1998 or 1999, and then washed back to Honolulu in 2001, following several years of substantial reductions in the military force presence stationed on Oahu.

## San Francisco Bay Area, Oahu and Maui median single-family home prices through fourth quarter 2005 (SFO third quarter)

The Bay Area's technology-led regional growth was reflected early in real estate valuations. Within several years arbitrage combined with local economic recovery to pull Hawaii values upward.

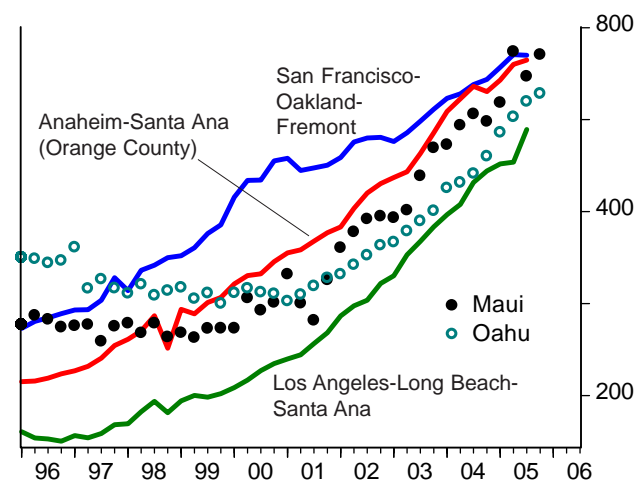
(thousand dollars, log scale, seasonally-adjusted)



## California, Oahu and Maui home prices

Single-family home prices through Southern California as well as Hawaii, both of which were set back by military downsizing (Oahu more than Maui), were eventually pulled upward by the technology boom in the Northland.

(thousand dollars, log scale, seasonally-adjusted)



**Leads and lags:**

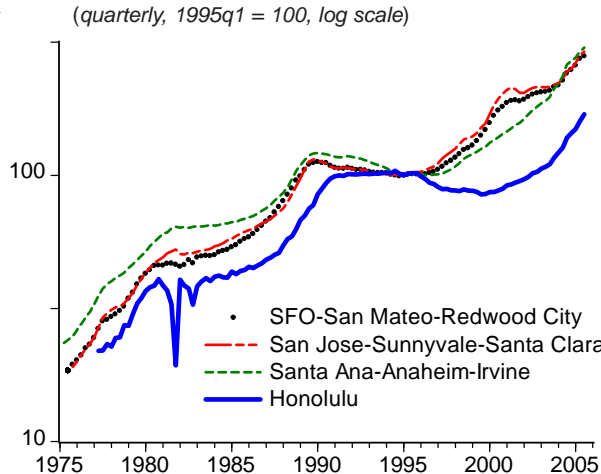
**California will exert a drag on Hawaii eventually**

Double-digit home price appreciation has persisted through third or fourth quarter 2005 in some Hawaii markets, but at slowing rates. On Maui and Kauai, where residential valuations have been leading the state, single-digits are starting to reappear. Just as the rising tide of California valuations spilled over to the Hawaiian Islands beginning in the late 1990s, driven by capital flows into Hawaii from the West Coast. On Oahu the rate of appreciation slipped to 22.5 percent at 2005 year-end, from 35.4 percent in first half of the year (based on annualized rates of semiannual increase in seasonally-adjusted median single-family home prices, through fourth quarter 2005). The comparable deceleration on Maui was to 8.4 percent from 37.1 percent. In contrast, a "flattening" in California is underway, with appreciation rates of -5.4 percent and 0.2 percent in the San Francisco Bay Area, and -2.8 and 0.2 percent around San Diego, respectively (annualized six-month rates of change in seasonally-adjusted single-family

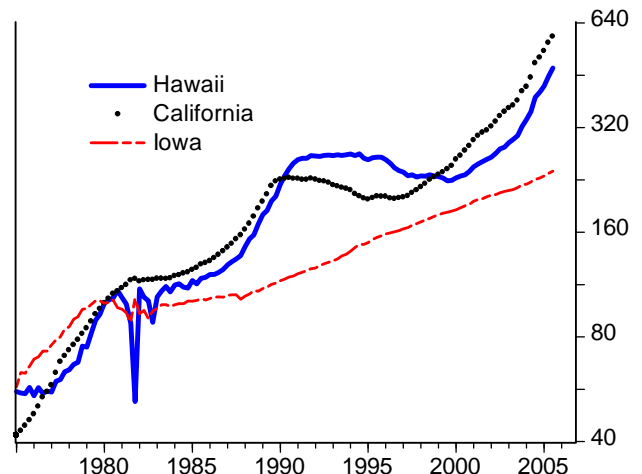
home prices are available only through third quarter 2005.) In Orange County valuations had actually reaccelerated to 19.5 percent annualized appreciation in mid-2005, from 5.2 percent annualized appreciation a half-year earlier, but even that resurgence was well below the 35.9 percent annualized appreciation in the comparable prior period. In relatively affordable LA, the catch-up to these other California markets was depicted in 18.0 percent annualized appreciation, down from 21.6 percent one semiannual period earlier, and 22.9 percent in the period before that.

Leader-follower distinctions are evidenced in comparisons between states and between individual metropolitan areas. The graphs below depict impulse responses drawn from OFHEO data in single-family "same home" median price data through third quarter 2005. Lags between California and Hawaii price movements are around 2 to 3 quarters, with somewhat tighter relationships seemingly "broken" during the 1990s military downsizing. The OFHEO "same home" price indexes are constructed from Fannie Mae and Freddie Mac home mortgages.

**OFHEO metropolitan area single-family home price indexes**  
(quarterly, 1995q1 = 100, log scale)

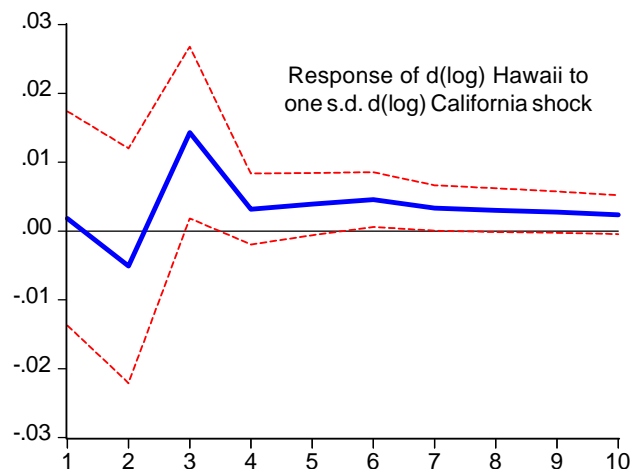
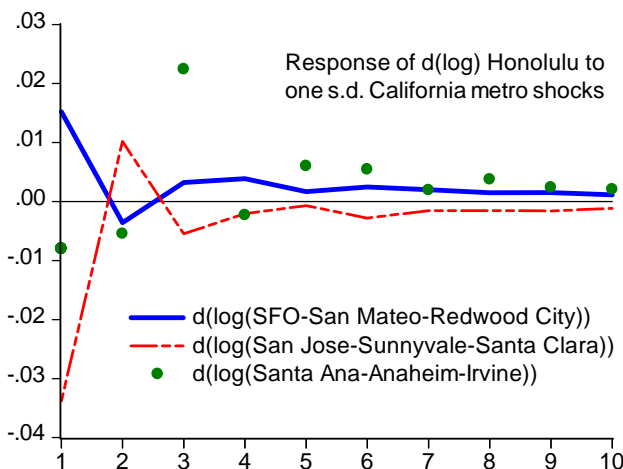


**OFHEO state single-family home price indexes**  
(quarterly, 1980q1 = 100, log scale)



**Impulse responses in vector-autoregressive home price models**

Responses, over quarters, of the change in the natural logarithm of Honolulu (Hawaii) single-family OFHEO "same home" price indexes to a one standard deviation shock to the change in the natural logarithm of selected California metro area (state) single-family home prices



Responses in quarters following the initial shock

## Tourism record year 2005

As has been widely publicized--without the customary greeting of the millionth incremental visitor--Hawaii's total visitor count exceeded 7 million during 2005.\* Including visitors aboard cruise ships, the total was nearly 7.5 million, with visitors by air comprising just under 7.4 million for the year. One year ago, in early-January 2005, a compilation of forecasts at that time was considerably less enthusiastic. Some of those forecasts are highlighted below:

### Forecast Hawaii 2005 total visitor counts

(in millions)	Fall 2004	Fall 2005
BOH	7.356	7.391
UHERO	7.244	7.460
Laney (HPU/FHB)	7.202	7.426
DBEDT	7.202	7.446
Actual 2005 visitors by air		7.380
Total including shipboard		7.457

Customarily, analysts forecast visitors "by air"

Sources: corresponding web sites

BOH: December 23, 2004; September 16, 2005  
 UHERO: November 22, 2004; November 22, 2005  
 Laney: October 13, 2004; November 14, 2005  
 DBEDT: November 10, 2004; November 14, 2005

Tabulation of comparisons does *not* use the "Historical Visitor Data" tables on DBEDT's web site but rather their 2004 total visitor count benchmark published in their November 14, 2005 quarterly economic forecast.

Remarkably, air travel cost remained in check amidst an increasingly rivalrous commercial aviation industry, despite rising energy prices and several reorganizations. Underlying macroeconomic performance in the US and Japan significantly exceeded consensus forecasts one year ago, partly as a result of greater than expected resilience to rising petroleum and natural gas prices. The result was stronger travel demand than predicted for the year. A stronger than expected US dollar generated additional headwinds for foreign travelers, but did not seem to siphon abroad significant numbers of prospective domestic travelers.

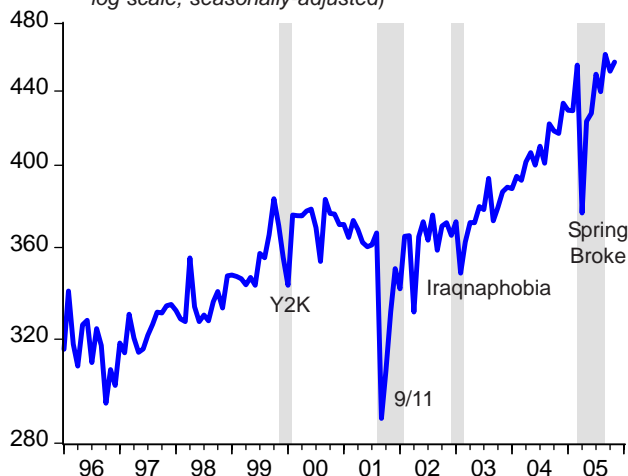
Still, all Hawaii's tourism strength is in the domestic visitor segment, which boosts utilization of the visitor plant and shifts revenue gains away from retailers and towards properties, restaurants and activities providers. Slightly lower daily spending means that, proportionately, total spending grew less in inflation-adjusted terms than volume growth. Capacity constraints in during seasonal peaks, especially high utilization months for the visitor plant in the winter and mid-summer months, typically mask even stronger--but rationed--travel demand. One piece of evidence for this in 2005 was the anomalous drop in second quarter domestic travel: adverse effects of the Banda Aceh, Indonesia, seismic event may only became evident after the winter months' strong demand abated.

International travel remained stable through 2005, except for a brief seismic diversion of Southeast Asian-bound Japanese. The international visitor count for 2005 exceeded 2.1 million again, a foreign travel volume benchmark first experienced in 1989.

\*First millions: 3 (1976), 4 (1982), 5 (1986), 6 (1988), 6.72 (1990), 6.76 (1997), 6.95 (2000) and a return to 6.92 million (2004).

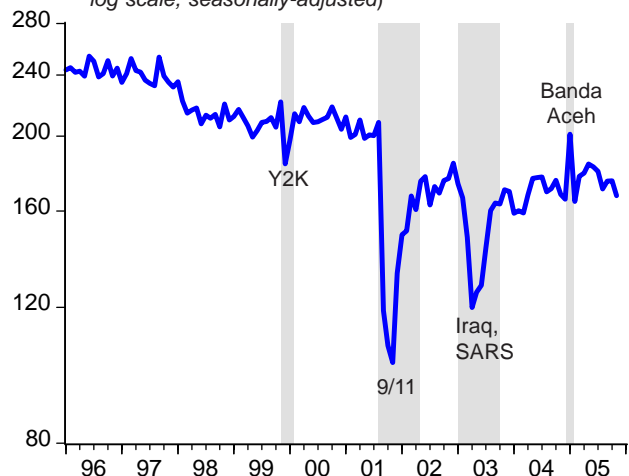
### Domestic visitor arrivals

(monthly in thousands through 2005, log scale, seasonally-adjusted)

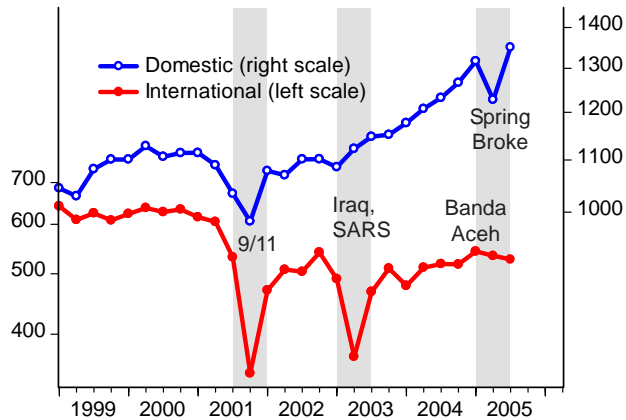


### International visitor arrivals

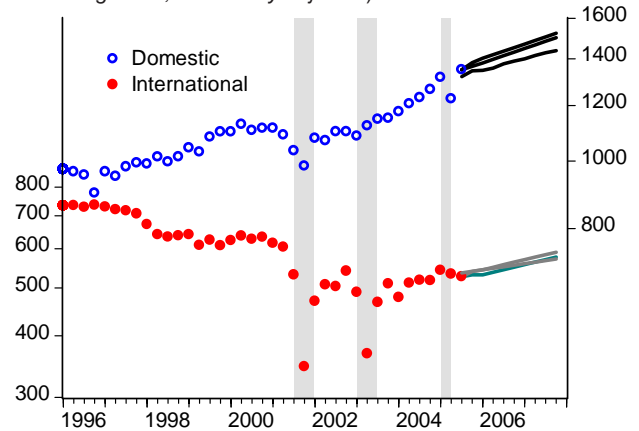
(monthly in thousands through 2005, log scale, seasonally-adjusted)



**Recent quarterly Hawaii visitor arrivals**  
(monthly in thousands through 2005, log scale, seasonally-adjusted)



**Selected Hawaii visitor arrivals forecasts**  
(monthly in thousands through 2005, log scale, seasonally-adjusted)



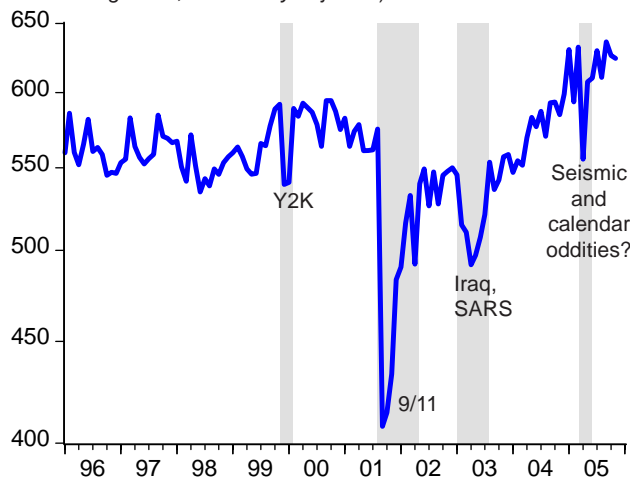
**Tourism forecasting in a volatile environment**

Recent years' Hawaii tourism performances, including the record-setting overall performance in 2005, are complicated by the high frequency of large changes in periodic visitor arrivals as a result of a variety of global shocks. These global shocks range from the geopolitical to those of biological and meteorological, and even seismic, origin. Globalization of information flows seems to have made travel decisions more sensitive to these events. In approaching the tourism forecast for the next several years, both the possibility of future shocks as well as underlying macroeconomic and travel industry fundamentals must be kept in mind. An upper and lower bound forecast range is illustrated in the tables and graphs to the right. With the assumption of strong GDP growth in the US and Japan, combined with a strengthening yen against the US dollar and stable energy costs, tourism's growth should continue at a healthy pace. Weaker economic performance or a stronger US dollar would yield less robust performance. An additional downward adjustment for unlikely but potentially costly global shocks is prudent.

**Tourism forecast examples**

percent change	2005	2006	2007
<b>Optimistic assumptions</b>			
AR(1)	8.1	8.2	4.8
d(log)	7.8	6.9	4.9
VAR	7.3	4.4	3.8
<b>Average</b>	<b>7.7</b>	<b>6.5</b>	<b>4.5</b>
<b>Conservative assumptions</b>			
VAR2	0.3	3.4	3.9
<b>Domestic average</b>	<b>4.0</b>	<b>5.0</b>	<b>4.2</b>
<b>Optimistic assumptions</b>			
AR(1)	5.4	1.4	4.9
d(log)	5.8	3.4	4.8
VAR	5.8	2.6	2.9
<b>Average</b>	<b>5.7</b>	<b>2.5</b>	<b>4.2</b>
<b>Conservative assumptions</b>			
VAR2	1.1	2.9	2.9
<b>International average</b>	<b>3.4</b>	<b>2.7</b>	<b>3.5</b>

**Hawaii visitor arrivals**  
(monthly in thousands through 2005, log scale, seasonally-adjusted)



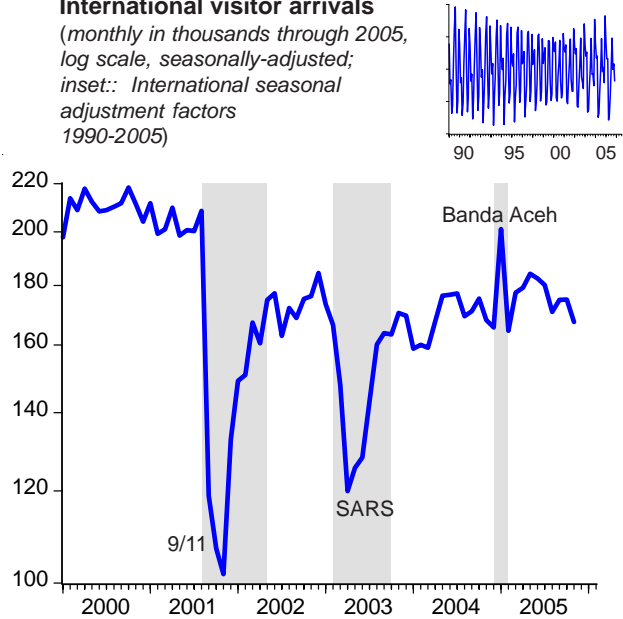
These "upper bound" and "lower bound" Hawaii visitor arrivals growth forecasts from January 2006 are based on quarterly data through 2005Q3. The optimistic forecast assumptions incorporate 3.5 percent US real GDP growth, 2.5 percent Japan real GDP growth, constant petroleum prices at \$65/barrel, quarterly yen appreciation of 5 yen/dollar for two years and the absence of any extraordinary shocks under three modeling specifications. The conservative assumptions incorporate 3.3 percent US real GDP growth, 2.5 percent Japan real GDP growth and constant petroleum prices and exchange rates at \$65/barrel and 115 yen/dollar, respectively, throughout the forecast horizon. Averages are growth rates of average forecast levels. The three models are an auto-regressive specification, and structural regression model in stationary transforms of the underlying variables (i.e. specified in log changes), and a vector-autoregressive specification. Only the latter is illustrated for the conservative case. Actually published forecasts in this report's forecast summary include a judgmental downward adjustment for the presence of volatility jumps. See illustrations of these volatility characteristics on the following pages.

**Siesmic and seasonal surprises: a 2005 mystery**

The seismic event centered around Banda Aceh, Indonesia and the destructive seismic sea wave transmitted across the Indian Ocean, may have diverted a small portion of international winter 2005 travel to Hawaii as a result of the temporary closure of resorts in South Thailand and elsewhere along Southeast Asia's Indian Ocean coastline. Seasonally-adjusting raw tourism data reveals surprising movements of this sort. Abrupt shifts or jumps in economic variables, or corresponding jumps in their associated volatility measures, may be important for forecasting. On the next page, long-term patterns of tourism volatility are shown for the major mainland and foreign arrivals measures. Hawaii visitor arrivals data display "jumpy" volatility often seen in financial data. A forecaster would be well-advised to judgmentally adjust downward a tourism forecast based on a subjective probability assessment of infrequent, high-loss events.

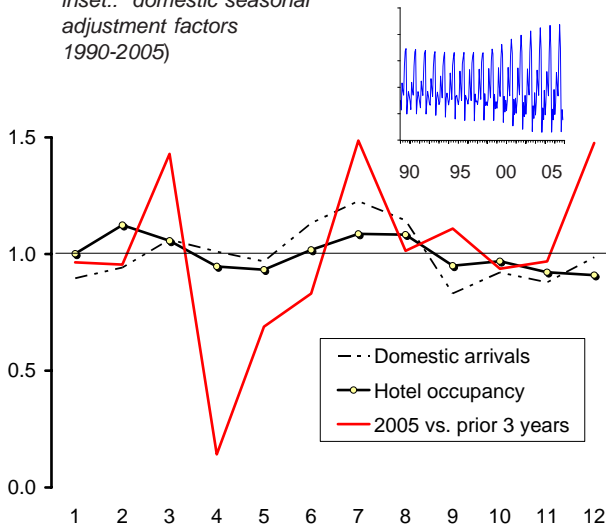
**International visitor arrivals**

(monthly in thousands through 2005, log scale, seasonally-adjusted; inset: International seasonal adjustment factors 1990-2005)



**Seasonal variation 2002-2005 in domestic visitor arrivals, Hawaii hotel occupancy, and the difference between 2005 and prior arrivals**

(seasonal adjustment factors, average = 1.0; inset: domestic seasonal adjustment factors 1990-2005)

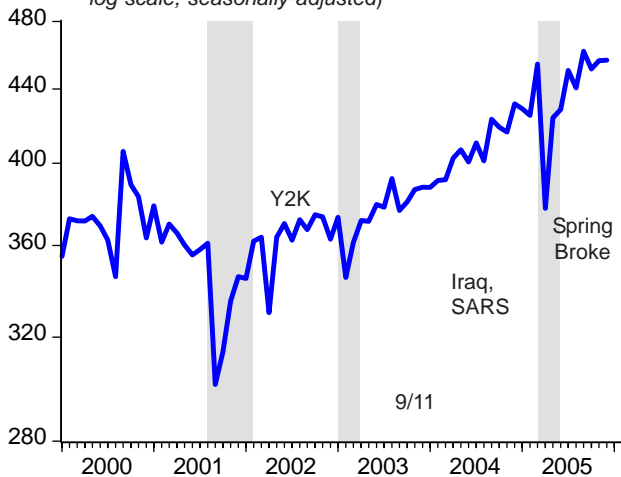


**Capacity constraints interacting with shocks?**

During the spring of 2005, an unusually large decline in domestic travel to Hawaii occurred, and is labeled "Spring Broke" in the graph below and to the left. An unusual clustering of school Spring Break and Easter vacation weeks boosted March arrivals, robbing from April. But the persistent declines throughout second quarter 2005, suggested the possibility of other factors at work. One hypothesis: a decrease in travel demand because of the Indian Ocean seismic event might not have "appeared" until the seasonal dip in arrivals and hotel occupancy during the spring. In the winter months Hawaii may be capacity-constrained, as in midsummer. An alternative hypothesis: withdrawal of hotel rooms for condo conversion on Oahu undermined spring travel. A problem: the neighbor islands experienced the same unusual decline.

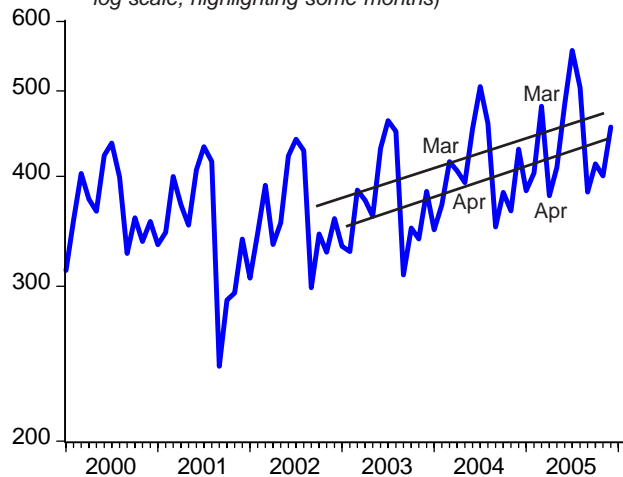
**Domestic visitor arrivals**

(monthly in thousands through 2005, log scale, seasonally-adjusted)



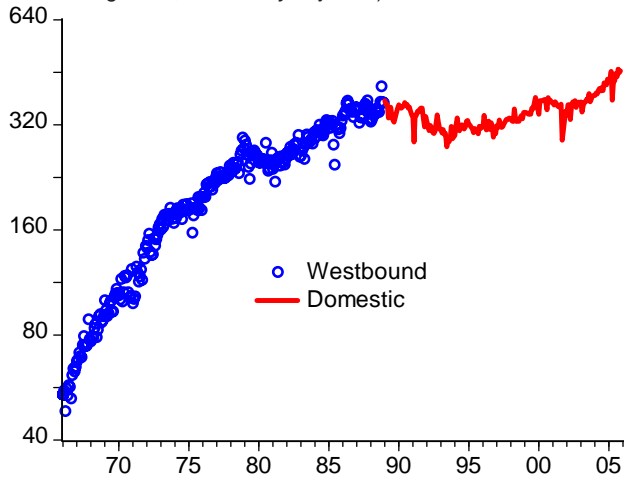
**Domestic arrivals, not seasonally-adjusted**

(monthly in thousands through 2005, log scale, highlighting some months)



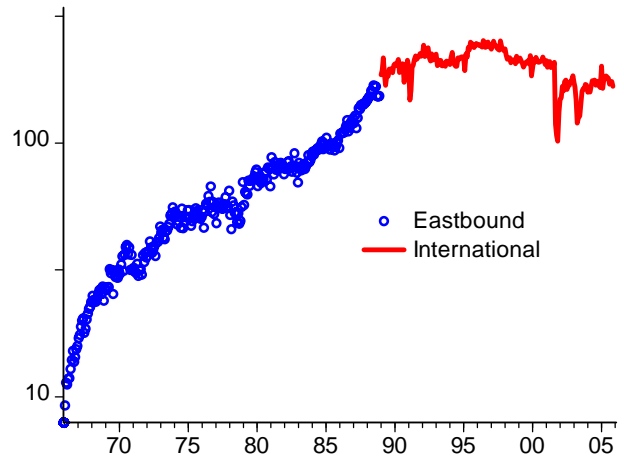
**Westbound and domestic visitor arrivals**

(monthly in thousands through November 2005, log scale, seasonally-adjusted)



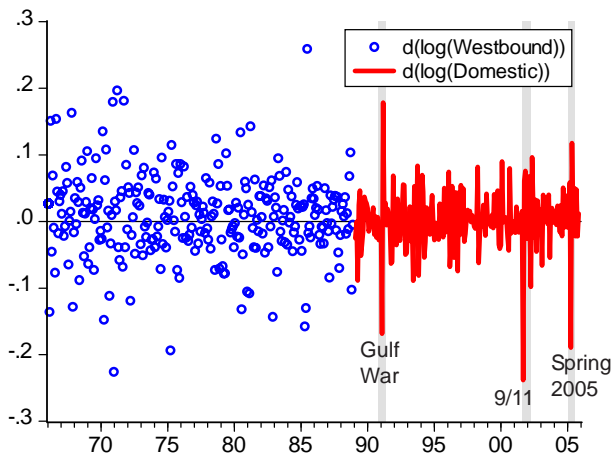
**Eastbound and international visitor arrivals**

(monthly in thousands through November 2005, log scale, seasonally-adjusted)



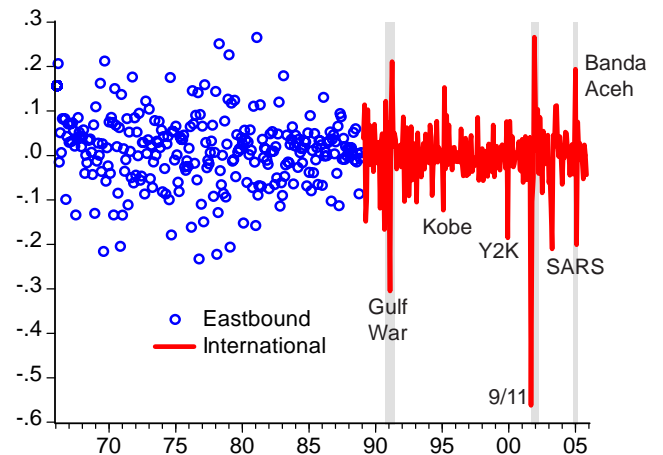
**Monthly log changes of westbound and domestic visitor arrivals**

(monthly through November 2005)



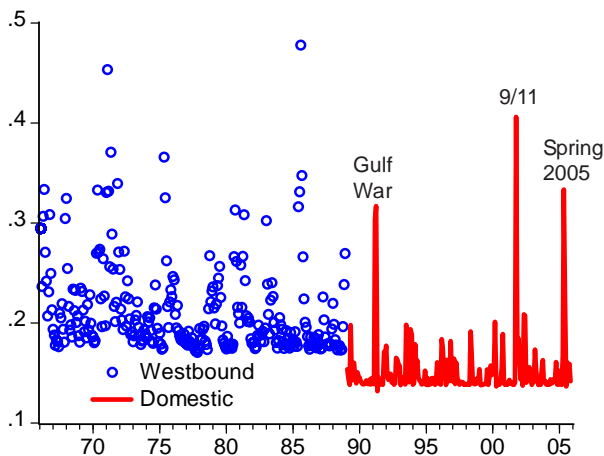
**Monthly log changes of eastbound and international visitor arrivals**

(monthly through November 2005)



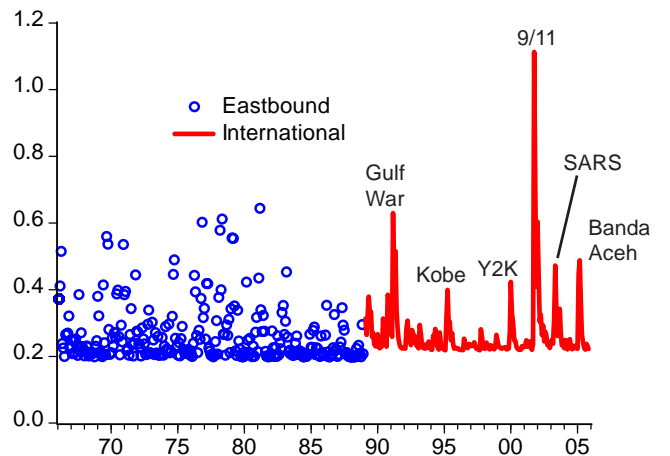
**Conditional volatility of westbound and domestic visitor arrivals**

(generalized conditional heteroskedasticity estimates)



**Conditional volatility of eastbound and international visitor arrivals**

(generalized conditional heteroskedasticity estimates)



**How flat is flat?**

The nominal Treasury yield curve remained “flat,” with a twisted and U-shaped configuration from one to ten years in maturity right through the announcement of a 4.5 percent target for the Federal Funds (interbank overnight) interest rate. Inflation-indexed (TIPS) bond yields were equally flat. The 2.4 percentage points of long-term expected inflation implied by the differential between nominal and real 10-year yields should be matched in the near-term. Continuity in the transition of Fed Chairmanship from Alan Greenspan to Ben Bernanke was echoed in the Federal Open Market Committee’s (FOMC) policy statement. In the December 13, 2005, statement the FOMC “judge[d] that some further measured policy firming is likely to be needed.” Ben Bernanke reassured Congress of his commitment to the dual mandate in his confirmation, responding to questions about inflation targeting, suggesting the necessity of a continued firm posture to keep

inflation expectations “well-anchored.” He was expected to do much the same in his February 2006 Humphrey-Hawkins testimony to Congress. The January 31, 2006 FOMC statement removed the qualifier “measured” in judging that “some further policy firming may be needed to keep the risks to the attainment of both sustainable economic growth and price stability roughly in balance.” Inflation seems contained despite various aggravating influences (housing, energy, commodities). Our expectation is that US GDP growth will persist near its full employment potential around 3.5 percent, and that financial markets will be reassured by unfolding good economic data during 2006. Some modest steepening of the term structure of nominal Treasury bond yields, perhaps +25 basis points of term spread overall, could return with or without further increases in the Fed Funds target, which the FOMC will surely raise if it sees the need.

