Outlook for the Hawai'i Economy

April 24, 1997

Carl Bonham and Byron Gangnes
Department of Economics
University of Hawai'i at Manoa

Forecast Summary

We predict a continuation of the modest recovery that began in 1994. While visitor arrivals will rebound somewhat from the very weak performance of the second half of 1996, we expect overall arrivals to fall short of the 1996 total. Broader measures of economic health will firm slightly. We predict greater than 1% increase in real personal income in both 1997 and 1998. 1996 should also be the last year of overall job losses, with small net additions of jobs beginning. Construction however will continue to be a moderate drag on the economy. Inflation is expected to remain very low by Hawai'i standards.

Hawai'i Economic Indicators (Annual Growth Rates)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Real Personal Income</td>
<td>0.1*</td>
<td>1.4</td>
<td>1.3</td>
</tr>
<tr>
<td>Visitor Arrivals</td>
<td>2.8</td>
<td>-1.0</td>
<td>4.8</td>
</tr>
<tr>
<td>Nonagricultural Jobs</td>
<td>-0.3</td>
<td>0.4</td>
<td>0.5</td>
</tr>
<tr>
<td>Construction Put in Place</td>
<td>0.0</td>
<td>-3.4</td>
<td>-3.5</td>
</tr>
<tr>
<td>Real Gross State Product</td>
<td>0.9*</td>
<td>0.9</td>
<td>1.0</td>
</tr>
<tr>
<td>Consumer Price Inflation</td>
<td>1.7</td>
<td>0.8</td>
<td>1.6</td>
</tr>
</tbody>
</table>

* Estimate
April 1997 Empirical Model Overview

We use statistical methods to predict developments in key Hawai'i economic indicators based on their own past behavior and paths of several external indicators. Our primary model focuses on important high-frequency indicators, including Hawai'i real personal income, visitor arrivals, nonagricultural jobs, and real construction put in place. As external "driving" variables, we use U.S. real personal income, Japanese real disposable personal income, California nonagricultural employment, the real yen/dollar exchange rate and, to capture Japanese wealth effects, a real Japanese stock price index. Annual changes in Gross State Product (GSP) are projected based on their historical relationship with Hawaii income and jobs. A separate model of inflation predicts local price movements based on developments in U.S. inflation and local unemployment.

The primary Bayesian Vector Autoregression model treats the set of four local variables and five external drivers as an interdependent system of economic relationships, where each data series may in principle by affected by its own history and the behavior of the other series. Some structure is imposed on the estimation process to reflect prior beliefs about economic relationships and to limit implausible influences of Hawai'i variables on the U.S. and Japanese economies. The model captures both long-run relationships and patterns of dynamic adjustment. The model is estimated with quarterly data ending in 1996:3 (in some cases 1997:1), and a forecast is generated several years out. For purposes of forecasting, external driving variables are taken as given, and likely paths are assumed for them. The forecasts presented are pure model forecasts, with no subjective adjustments.

Forecast Assumptions

Our forecast rests partly on assumptions about economic developments in the U.S. and Japanese economies. Following roughly the consensus view, we assume that U.S. real personal income will expand through 1997 and 1998 at a 2.4% average rate.

The California economy, which expanded briskly last year, is likely continue at a rate better than the nation as a whole. We project 1.5% growth in jobs over each of the next two years.
Like most observers, we expect fiscal tightening in Japan to limit expansion this year, with moderately higher growth resuming in 1998. Japanese real income is expected to grow by 1.4% in 1996, strengthening to 2.4% the following year. We assume no retreat of the dollar from its current high value against the yen. Japanese stock prices are held constant over the forecast horizon.

Results

Last year saw the visitor industry get off to a quick start, with arrivals for the first half of the year 12% higher than in 1995. But arrivals faltered in the 1996 second half, so that for the year arrivals were less than 3% above 1995 levels. This weakness has persisted into the first two months of 1997. While we expect a resumption of 3-5% quarter-on-quarter growth rates later in the year, annual arrivals will likely fall short of 1996. We project nearly 5% arrivals growth the following year.

Growth Rate Forecast

The contraction in jobs that has plagued the Hawai'i economy in the 1990s is expected to end this year, with nonagricultural jobs growing by almost one-half of one percent in 1997 and 1998.

Growth Rate Forecast

The slow down in Hawaii job losses is aided by a slowdown (but not an end) to the construction slump. Real construction put in place is projected to decline at a 3-4% annual rate during 1997 and 1998.

Growth Rate Forecast

The slight growth in jobs and slowing decline in construction activity will help personal income strengthen from the dismal performance of 1996 to rise nearly 1.5% in both 1997 and 1998.
Gross State Product, the broadest measure of Hawai‘i economic activity, will manage about 1% annual growth over the forecast period, on par with 1996.

The rate of consumer price inflation is projected to fall below the 1% level in 1997 before rebounding to 1.6% in 1998. Such low rates of inflation can be explained by asset price deflation as well as the restructuring of Hawaii retail. If we assume only moderate bias in the Honolulu Consumer Price Index, then inflation in Honolulu is very close to zero and may even be negative in 1997.

**Risks**

Forecasting Hawai‘i’s economy has been an unrewarding enterprise in the 1990s. Models based on expert opinion and empirical evidence have fared equally poorly, consistently overestimating the strength of an impending recovery that recedes further and further into the future. The model-based forecast above is for only very modest strengthening of the economy, suggesting that the model, at least, may finally be catching on. Is there reason to believe that we are now in a position to put more stock in the economy’s future? Perhaps. The California and Japanese economies, whose weakness hampered Hawai‘i recovery in past years, appear on a much firmer footing today. External risks still exist though, including the weak yen and the advanced age of the US economic expansion. The most encouraging signs may be local: indications that construction cycle is approaching its nadir and that labor market adjustments may be nearly complete.