

## Hawaii Travel & Tourism Satellite Account: 1997-2006

Pearl Inada Iboashi  
Chief Economist  
State of Hawaii  
October 2007

## Introduction

- Travel & Tourism (T&T) is one of the most important industries in the world
- Numerous countries have estimated the economic impacts of T&T using a variety of definitions and methodologies
- There needs to be a consistent methodology that allows for comparisons with other industries

## What is T&T Satellite Account?

- The TSA is a statistical instrument, a “satellite” revolving around the concepts, definitions and aggregates of the System of National Accounts, that makes it possible to make valid comparisons with other industries, as well as between countries or groups of countries.
- Concept developed by the World Tourism Organization and approved by the United Nations Statistical Commission in 2000.

## History of TSA

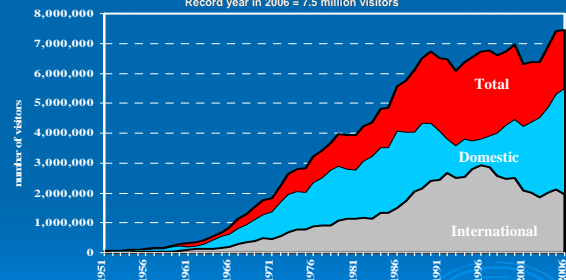
- WTTC – World Travel and Tourism Council (established in 1990), main mission is to quantify the contribution of travel & tourism. Developed most of the TSA standard and methodologies. TSA estimates from 1988. Most Recent is 2007, forecast to 2017.
- WTO – 1999 Nice Conference, 2001 Canada Conference
- United Nations Statistical Commission approved 2000

## History of TSA (Con.)

- USA – Started in 1992, published reports in 1992, 1998-2003, 2002-2005, now quarterly publication by BEA
- Hawaii, WTTC 1996-1999
- DBEDT 2000 – 2005 (Internal only)

### Visitor Arrivals to Hawaii by Air: 1951 to 2006

1960-1990: Fast growth period = 11% per year  
1990-2006 mature market = 0.7% per year  
Record year in 2006 = 7.5 million visitors



Source: Hawaii State Department of Business, Economic Development and Tourism

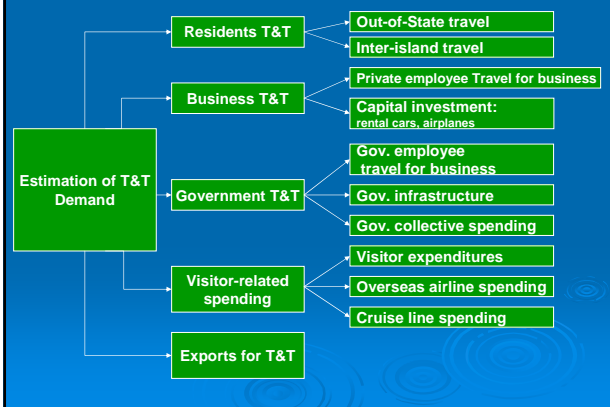
## Major Definitions

- Travel: To go from place to place as a visitor
- Visitor: A visitor is a person who either travels outside of his or her "usual environment" for a period of between one night and less than 1 year. The visitor may travel for personal pleasure or on industry or government business.
- Tourism: the activities of visitors while traveling.
- Tourism is the only industry where the focus is the agent of the demand, rather than the production unit.

## Economic Impact Indicators

- Value added – GDP (GSP)
- Output (sales)
- Employment (jobs)
- Income (earnings)
- Tax revenues

## Procedures of Satellite Account



## Major Data Requirements of a TTSA

- Total Spending on T&T by Industrial Category
  - Non-resident Visitor Expenditure
  - Total Resident Spending
  - Total Government and Business Expenditure
- Exports of T&T by Category
- Input-Output Model
- GDP, Earnings, Jobs, and Taxes by Industrial Category

## Measuring Tourism Demand: Hawaii's Methodology

- Calculate Number of Visitors to State
  - # of Passengers on Airlines or Cruise ships less residents (through surveys) equals visitors
- Calculate Spending by Visitors per day and per trip
  - Departure surveys at airports and on cruise ships for expenditure by category and length of stay
- Calculate Overseas Airline and Cruise line spending
  - Estimated by 50% of airfare, survey of cruise lines

## Calculating Resident Spending on T&T: Hawaii's Methodology

- Out of state: Inflight survey to get total number of residents travel and length of stay, and per day spending
- In State: Departure survey at all airports

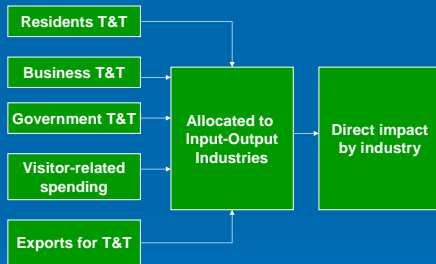
## Calculating Business Spending on T&T: Hawaii's Methodology

- Private employees traveling for business purposes (interindustry purchase)
  - Based on inflight survey and national data on business travel.
  - Other spending based on national data on business travel.

## Calculating Government on T&T: based on government financial reports

- Government employees traveling for government business
  - Out of State
  - In State
- Other spending based on government financial reports

## Procedures of Satellite Account (cont.)

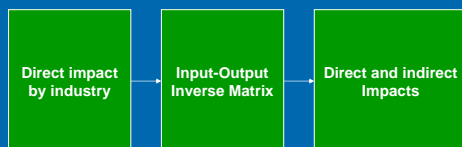


## Hawaii TSA Tables

Table 1. Total Tourism Demand: 2002-2006 (\$millions)

	2002	2003	2004	2005	2006
<b>Total T&amp;T demand</b>	14,625.2	15,225.7	16,412.9	17,628.1	18,575.2
Resident households	1,751.2	1,869.6	2,013.9	2,156.2	2,288.7
Out-of-state travel	1,440.6	1,555.9	1,697.0	1,836.2	1,946.4
Inter-island travel	310.6	313.7	316.8	320.0	342.3
Business	867.3	876.9	928.0	997.1	1,055.7
Business travel	431.8	459.9	501.8	544.1	590.0
Capital investment	435.5	417.0	426.3	453.0	475.7
Government	902.7	950.8	1,002.2	1,056.3	1,112.1
Travel for gov. business	28.5	30.4	33.2	36.0	37.8
Infrastructure investment	251.8	266.9	282.9	299.9	317.8
Collective spending	622.4	653.5	686.2	720.5	756.5
Out-of-state visitors	11,045.5	11,468.3	12,406.8	13,554.6	14,053.0
Visitor spending	9,608.9	10,054.5	10,861.8	11,904.0	12,381.0
Overseas airline spending	1,340.0	1,313.4	1,405.4	1,519.7	1,543.7
Cruise/line spending	95.6	100.3	139.6	130.9	129.2
Exports for T&T	58.6	60.2	62.0	63.9	65.8

## Procedures of Satellite Account (cont.)



## Procedures of Satellite Account

Step 4. Derive T&T Direct & Indirect Impact on Output

$$Y_{T\&T} = D_{T\&T} \times (I-A)^{-1}$$

where

$Y_{T\&T}$  = Direct and indirect output impact of T&T

$D_{T\&T}$  = total demand of T&T

$(I-A)^{-1}$  = I-O multiplier matrix

### Procedures of Satellite Account

Step 5. Derive the ratio between T&T output and total output in the economy

$$R_{T\&T} = Y_{T\&T} \times Y_{Econ}$$

where

$R_{T\&T}$  = T&T output ratio

$Y_{T\&T}$  = T&T output

$Y_{Econ}$  = Total output in the economy

### Procedures of Satellite Account

Step 6. Derive the T&T GSP, employment, earnings, and tax impact

- $GSP_{T\&T} = GSP_{Econ} \times R_{T\&T}$
- $Jobs_{T\&T} = Jobs_{Econ} \times R_{T\&T}$
- $Earnings_{T\&T} = Earnings_{Econ} \times R_{T\&T}$
- $Tax_{T\&T} = Tax_{Econ} \times R_{T\&T}$

Where

T&T = Travel and Tourism

ECON = Total for the economy

### Hawaii TSA Tables (cont.)

Table 2. Tourism Output (Hawaii Production) by Sector (in \$mil.)

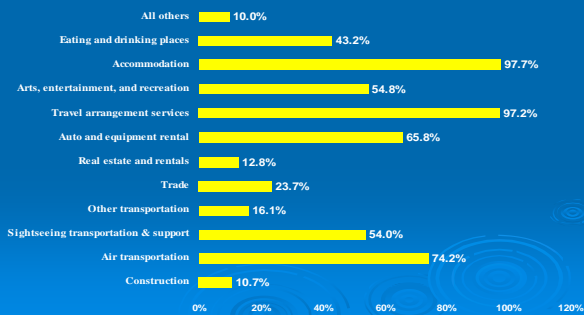
Industry	2002	2003	2004	2005	2006
Total	11,844	12,136	13,097	14,241	14,816
Construction	320	337	354	373	393
Air transportation	1,886	1,973	2,133	2,320	2,421
Scenic transp. & support service	251	262	283	309	321
Other transportation	238	247	267	290	302
Trade	1,413	1,214	1,441	1,733	1,800
Real estate	971	607	760	997	889
Auto equip. rental and leasing	524	547	592	645	672
Travel arran. and reser. Services	413	479	504	570	615
Art and entertainment	369	384	415	453	471
Accommodations	3,726	4,551	4,584	4,643	4,963
Food services and drinking places	1,115	1,161	1,255	1,369	1,423
All others	417	375	508	539	547

### Tourism Component by Sector

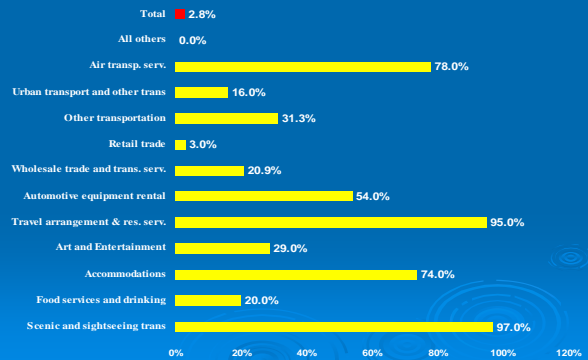
Table 3. Tourism Component by Industry (% of output used by T&T)

Industry	2002	2003	2004	2005	2006
Construction	12.0	12.0	11.7	10.8	10.7
Air transportation	82.1	75.6	72.5	72.0	74.2
Sightseeing transportation & support	58.9	59.3	57.9	53.2	54.0
Other transportation	27.8	25.7	22.2	18.5	16.1
Trade	24.2	20.5	22.0	24.1	23.7
Real estate and rentals	16.4	12.2	12.7	14.2	12.8
Auto and equipment rental	65.0	61.8	67.0	69.1	65.8
Travel arrangement services	98.9	97.9	97.5	96.5	97.2
Arts, entertainment, and recreation	51.4	52.9	53.2	54.6	54.8
Accommodation	96.6	94.4	96.2	97.0	97.7
Eating and drinking places	45.3	43.4	43.1	44.0	43.2
All others	9.5	9.7	9.9	10.1	10.0

### Hawaii Tourism Component by Sector, 2006



### US Tourism Component by Sector, 2004



### Hawaii TSA Tables (cont.)

Table 4A. Hawaii Travel & Tourism Account: 2002 - 2006

	Output (\$mil.)	GSP (\$mil.)	Jobs	Earnings (\$mil.)	State Taxes (\$mil.)
2002	16,227.5	9,471.6	173,488	5,005.5	976.4
2003	17,194.0	9,482.7	170,540	6,131.9	1,062.1
2004	18,548.0	10,557.7	178,324	6,708.8	1,131.4
2005	20,175.9	11,546.1	187,411	7,194.5	1,221.9
2006	21,101.1	12,005.9	189,608	7,827.9	1,190.9

### Hawaii TSA Tables (cont.)

Table 4B. Total Hawaii Economy: 2002 - 2006

	Output (\$mil.)	GSP (\$mil.)	Jobs	Earnings (\$mil.)	State Taxes (\$mil.)
2002	70,618.0	43,807.0	773,751	23,791.8	3,579.0
2003	76,509.4	46,441.0	786,727	30,403.8	4,141.0
2004	82,989.2	50,781.0	809,303	32,976.2	4,324.0
2005	89,099.6	54,773.0	835,360	35,326.2	4,543.3
2006	94,835.0	58,307.0	855,409	37,496.5	4,434.4

### Hawaii TSA Tables (cont.)

Table 4C. Hawaii T&T as % of State Total: 2002 - 2006

	Output	GSP	Jobs	Earnings	State Taxes
2002	23.0	21.6	22.4	21.0	27.3
2003	22.5	20.4	21.7	20.2	25.6
2004	22.3	20.8	22.0	20.3	26.2
2005	22.6	21.1	22.4	20.4	26.9
2006	22.3	20.6	22.2	20.9	26.9