

Section 22

MANUFACTURES

This section presents statistics on the manufacturing segment of the economy, including sugar processing and pineapple canning. Additional information on manufacturing workers appears in Sections 12 and 15.

The number of manufacturing establishments in Hawaii increased from 773 in 1972 to 1,020 in 1992. The value added by manufacture rose from \$410 million in 1972 to \$1.12 billion in 1982, \$1.41 billion in 1987, and \$1.56 billion in 1992. More than three-fourths of all manufacturing activity in the State in 1992 was on Oahu. Food processing--mostly sugar and pineapple--accounted for 39 percent of the value added by manufacture in 1992. In 1994, the general excise and use tax base for diversified manufacturing (that is, manufacturing exclusive of sugar processing, pineapple canning, and petroleum refining) was \$628 million. There were 10 sugar mills and one pineapple cannery in Hawaii in 1994. Canned and fresh pineapple sales in 1994 totaled \$134 million. Sugar production in 1994 amounted to 659,000 short tons, well below the totals for a decade or so earlier. The value of sugar production (including commercial molasses) in 1994 was \$248 million, compared with the record of \$677 million set in 1974. Important manufactures other than food processing include apparel, printing and publishing, and stone, clay, and glass products. Industrial and technology parks and areas in 1990 numbered 40, with 7,591 acres.

Sources for data on this subject include the quinquennial United States Census of Manufactures, most recently published for 1992, the Annual Survey of Manufactures, publications of the Hawaii State Department of Agriculture and Department of Taxation, and the Hawaiian Sugar Planters' Association's annual report, *HSPA Sugar Manual*. *Historical Statistics of Hawaii*, Section 16, contains the figures for earlier years. Statistics for the nation as a whole appear in Section 26 of the *Statistical Abstract of the United States: 1995*.

**Table 22.01-- STATISTICAL SUMMARY OF MANUFACTURES:
1963 TO 1992**

Subject	1963	1967	1972	1977	1982
All establishments: <u>1/</u>					
Total.....	672	697	773	949	967
With 20 employees or more	203	215	238	231	237
All employees:					
Number (1,000)	25.1	25.4	24.8	25.0	23.6
Payroll (million dollars).....	109.0	139.6	191.1	276.8	360.4
Production workers:					
Number (1,000)	18.7	19.0	17.7	17.4	16.0
Hours (millions)	33.2	35.9	33.1	31.3	29.9
Wages (million dollars).....	67.5	86.9	113.7	160.5	217.5
Value added by manufacture <u>2/</u>					
(million dollars).....	261.1	326.2	410.0	785.5	1,119.6
Cost of materials <u>3/</u>					
(million dollars).....	(NA)	399.6	548.3	1,176.1	2,357.5
Value of shipments <u>3/</u>					
(million dollars).....	(NA)	723.4	955.6	1,974.0	3,443.0
New capital expenditures					
(million dollars).....	15.4	26.0	46.7	44.4	89.4

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**Table 22.01-- STATISTICAL SUMMARY OF MANUFACTURES:
1963 TO 1992 -- Con.**

Subject	1987	1989	1990	1991	1992
All establishments: <u>1/</u>					
Total.....	1,022	(NA)	(NA)	(NA)	<u>4/</u> 1,020
With 20 employees or more	225	(NA)	(NA)	(NA)	225
All employees:					
Number (1,000)	22.2	20.5	20.7	19.3	20.6
Payroll (million dollars)	440.2	432.6	476.7	466.1	547.4
Production workers:					
Number (1,000)	15.2	13.0	13.2	11.5	12.9
Hours (millions)	28.8	25.2	26.1	22.9	26.0
Wages (million dollars).....	254.2	244.2	263.1	248.6	290.1
Value added by manufacture <u>2/</u> (million dollars).....	1,405.3	1,609.8	1,557.5	1,383.3	1,556.4
Cost of materials <u>3/</u> (million dollars).....	2,048.8	2,220.7	2,680.5	2,368.8	2,228.3
Value of shipments <u>3/</u> (million dollars).....	3,447.9	3,813.4	4,202.9	3,805.3	3,791.7
New capital expenditures (million dollars).....	102.0	98.4	126.9	64.1	107.1

NA Not available.

1/ Establishments with payroll at any time during year.

2/ Data for 1982 and later years not directly comparable to data for earlier years; see source for discussion.

3/ Aggregate of cost of materials and value of shipments includes extensive duplication since products of some industries are used as materials by others.

4/ Companies numbered 963.

Source: U.S. Bureau of the Census, *1982 Census of Manufactures, Geographic Area Series, Hawaii*, MC82-A-12 (April 1985), table 2a; *1987 Census of Manufactures, Geographic Area Series, Hawaii*, MC87-A-12 (October 1990), table 2a; *1989 Annual Survey of Manufactures, Geographic Area Statistics*, M89 (AS)-3 (September 1991), table 1; *1990 Annual Survey of Manufactures, Geographic Area Statistics*, M90 (AS)-3 (April 1992), table 1; *1991 Annual Survey of Manufactures, Geographic Area Statistics*, M91(AS)-3 (February 1993), table 1; *1992 Census of Manufactures, Geographic Area Series, Hawaii*, MC 92-A-12 (August 1995), tables 2a and 3a.

**Table 22.02-- STATISTICAL SUMMARY OF MANUFACTURES, BY COUNTIES:
1992**

[Includes operating manufacturing establishments and auxiliaries]

Subject	State total	City and County of Honolulu	Hawaii County	Kauai County	Maui County
All establishments <u>1/</u> (number).....	1,020	768	114	40	98
With 20 employees or more.....	225	183	24	7	11
All employees:					
Number (1,000)	20.6	15.0	2.6	0.9	2.2
Payroll (million dollars)	547.4	409.8	54.7	21.0	61.9
Production workers:					
Number (1,000)	12.9	9.2	1.8	0.6	1.3
Hours (millions)	26.0	18.0	3.6	1.3	3.1
Wages (million dollars)	290.1	211.4	36.7	13.0	29.0
Value added by manufacture (million dollars).....	1,556.4	1,228.6	141.4	42.0	144.3
Cost of materials <u>2/</u> (million dollars)	2,228.3	1,911.4	140.6	45.9	130.5
Value of shipments <u>2/</u> (million dollars)	3,791.7	3,150.7	278.4	87.7	275.0
New capital expenditures (million dollars)	107.1	81.8	6.3	7.3	11.6

1/ Includes establishments with payroll at any time during the year.

2/ Aggregate of cost of materials and value of shipments include extensive duplication since products of some industries are used as materials by others.

Source: U.S. Bureau of the Census, *1992 Census of Manufactures, Geographic Area Series, Hawaii*, MC92-A-12 (August 1995), table 4.

Table 22.03-- MANUFACTURES, BY SELECTED INDUSTRY GROUPS: 1992

[Includes operating manufacturing establishments and auxiliaries]

Subject	Food and kindred products (SIC 20)			Apparel, other textile products (SIC 23)	Printing and publishing (SIC 27)	Stone, clay, and glass products (SIC 32)
	Total	Canned fruits and vegeta- bles (SIC 2033)	Sugar, confec- tionery products (SIC 206)			
All establishments:						
Total.....	233	10	29	145	199	51
With 20 employees or more	83	4	21	29	37	16
All employees:						
Number (1,000)	9.0	1.3	3.4	2.1	3.6	1.1
Payroll (million dollars)	217.9	37.8	78.2	31.1	108.2	45.2
Production workers:						
Number (1,000)	5.8	0.9	2.5	1.8	1.9	0.8
Hours (million)	11.9	1.9	5.3	3.2	3.6	1.8
Wages (million dollars)	119.6	17.4	53.7	22.8	50.2	32.4
Value added by manufacture (million dollars)	611.5	98.8	224.3	84.4	362.6	85.0
Cost of materials (million dollars)	717.0	95.8	212.0	62.3	95.2	138.6
Value of shipments (million dollars)	1,325.5	194.6	433.9	147.0	458.1	223.6
New capital expenditures (million dollars)	41.5	2.1	18.8	1.9	12.5	(D)

D Withheld to avoid disclosing data for individual companies.

Source: U.S. Bureau of the Census, *1992 Census of Manufactures, Geographic Area Series, Hawaii, MC 92-A-12* (August 1995), table 5.

**Table 22.04-- OPERATING MANUFACTURING ESTABLISHMENTS AND
AUXILIARIES: 1977 TO 1992**

[Auxiliaries are establishments whose employees are primarily engaged in performing supporting services for other establishments of the same company, rather than for the general public or for other business firms]

Subject	1977	1982	1987	1992 ^{1/}
Employees (1,000)	25.0	23.6	22.2	20.6
Operating manufacturing establishments	23.6	22.9	21.7	20.0
Auxiliaries.....	1.4	0.7	0.5	0.6
Payroll (million dollars).....	276.8	360.4	440.2	547.4
Operating manufacturing establishments	254.1	341.7	421.8	523.4
Auxiliaries.....	22.9	18.7	18.3	24.0

^{1/} In 1992, 21 of the 1,020 manufacturing establishments were auxiliaries.

Source: U.S. Bureau of the Census, *1992 Census of Manufactures, Geographic Area Series, Hawaii*, MC92-A-12 (August 1995), tables 1 and 5.

Table 22.05-- MANUFACTURING SALES RECEIPTS: 1990 TO 1993

[Millions of dollars]

Category	1990	1991	1992	1993
Total manufacturing	2,615.1	2,402.6	2,263.0	2,106.6
Sugar processing	353.3	302.0	280.5	292.9
Pineapple canning.....	161.6	172.7	141.8	86.6
Petroleum.....	1,345.9	1,214.8	1,144.4	1,007.3
Diversified manufacturing.....	754.4	713.2	696.4	719.7

Source: Bank of Hawaii, *Hawaii 1994, Annual Economic Report* (1994), p. 39.

**Table 22.06-- GENERAL EXCISE TAX BASE FOR MANUFACTURING:
1985 TO 1995**

[In thousands of dollars. Data exclude sugar processing, pineapple canning, and petroleum refining, and are on a cash basis accounting. Manufactured goods shipped out of State were exempted from the general excise tax by Act 239, SLH 1987, effective January 1, 1988]

Year reported <u>1/</u>	Tax base	Year reported <u>1/</u>	Tax base	Year reported <u>1/</u>	Tax base
1985	527,673	1989	630,997	1993	717,423
1986	568,532	1990	728,387	1994	618,238
1987	595,140	1991	714,407	1995	614,771
1988	629,303	1992	714,470		

1/ Calendar year in which reported, including "prior years" reports. Income received in December is reported the following January and hence these annual totals generally refer to an "income year" ended November 30.

Source: Hawaii State Department of Taxation, "General Excise and Use Tax Base" (annual tabular release, as revised).

**Table 22.07-- INDUSTRIAL AND TECHNOLOGY PARKS AND AREAS, BY
ISLANDS: 1990**

[Includes existing industrial areas, industrial parks and subdivisions, and technology parks and centers]

Subject	State total	Hawaii	Maui	Oahu	Kauai
Number of parks and areas	40	10	5	22	3
Acres	7,591	2,066	626	4,847	52

Source: Hawaii State Department of Business, Economic Development & Tourism, *State of Hawaii Directory of Industrial and Technology Parks 1991* (1990).

Table 22.08-- PINEAPPLE COMPANIES AND CANNERIES AND SUGAR COMPANIES AND MILLS: 1940 TO 1994

Year	Pineapple (end of canning season)		Sugar (December 31)	
	Companies	Canneries	Companies <u>1/</u>	Mills
1940.....	8	8	38	34
1945.....	7	7	36	32
1950.....	9	8	28	26
1955.....	10	8	28	26
1960.....	8	9	27	27
1965.....	6	6	25	27
1970.....	4	4	23	26
1975.....	3	3	16	17
1980.....	3	3	15	14
1985.....	3	2	14	12
1990.....	4	2	12	12
1993.....	3	1	11	12
1994.....	3	1	9	10
ISLANDS: 1994				
Hawaii.....	-	-	1	1
Maui.....	1	1	2	3
Oahu.....	2	-	2	2
Kauai.....	-	-	4	4

1/ In operation; excludes cooperatives.

Source: Pineapple Growers Association of Hawaii, records; Hawaiian Sugar Planters' Association, *Hawaiian Sugar Manual* (annual); Hawaii State Department of Agriculture, records; Dole Food Company, records.

Table 22.09-- SUGAR AND MOLASSES PRODUCTION: 1984 TO 1994

Year	Cane land (acres)		Cane used for sugar (short tons)	Sugar produced (short tons)		Molasses produced (short tons)
	Total area	Harvested area <u>1/</u>		96° raw value	Equivalent refined	
1984.....	188,396	89,541	8,453,721	1,061,814	992,371	314,202
1985.....	187,858	83,029	7,916,459	1,012,249	946,048	271,645
1986.....	184,181	83,583	8,379,463	1,042,452	974,276	290,422
1987.....	180,966	79,498	8,012,899	979,209	915,169	283,250
1988.....	177,693	78,861	7,602,414	928,195	867,491	274,375
1989.....	170,813	74,660	7,078,479	863,614	807,134	229,377
1990.....	161,991	71,998	6,540,925	819,631	766,027	220,859
1991.....	155,609	67,716	5,852,668	724,100	676,744	202,214
1992.....	145,790	62,123	5,432,286	652,304	609,643	203,739
1993.....	121,322	64,705	5,506,702	677,405	623,103	211,658
1994.....	98,413	64,951	5,268,859	658,538	615,470	200,835

1/ The average growth of a crop is 22 to 26 months. Only a portion of the total acreage in cane is harvested each year.

Source: Hawaiian Sugar Planters' Association, *Hawaiian Sugar Manual 1993-1994*, pp. 6-7, and records.

**Table 22.10-- AVERAGE RAW SUGAR PRICE AND SUGAR INDUSTRY
EMPLOYMENT AND EARNINGS: 1973 TO 1993**

Year	Average raw sugar price <u>1/</u> (cents per lb.)	Hourly-rated employees		Average daily earnings <u>2/</u> (dollars)	
		Average number <u>3/</u>	Total man-days	Cash wages	Employee benefits
1973.....	10.30	7,900	1,897,369	30.86	12.48
1974.....	29.43	7,700	1,744,346	34.41	15.81
1975.....	22.49	7,800	1,937,973	37.34	15.66
1976.....	13.31	7,500	1,854,272	43.12	17.28
1977.....	11.11	7,200	1,660,298	43.92	19.97
1978.....	13.74	7,200	1,771,530	47.06	21.28
1979.....	15.20	7,065	1,762,838	50.49	22.21
1980.....	30.18	7,076	1,793,237	56.72	24.68
1981.....	19.74	7,282	1,806,020	61.51	27.71
1982.....	19.94	6,816	1,519,732	65.11	30.83
1983.....	22.04	6,543	1,565,928	66.80	32.00
1984.....	21.74	6,319	1,467,127	68.88	34.71
1985.....	20.39	5,751	1,323,525	68.72	35.99
1986.....	20.90	5,413	1,290,067	69.28	34.24
1987.....	21.83	5,222	1,261,209	71.36	41.83
1988.....	22.12	5,110	1,204,708	72.46	34.56
1989.....	22.76	4,721	1,129,526	74.64	41.92
1990.....	23.26	4,453	1,065,794	76.42	43.07
1991.....	21.57	4,263	1,024,534	80.26	44.02
1992.....	21.30	4,101	1,003,876	84.11	46.00
1993 <u>4/</u>	21.62	(NA)	(NA)	(NA)	(NA)

NA Not available.

1/ Average New York raw sugar price computed over all the days of the year (Hawaiian basis). The New York spot price was suspended from November 2, 1977 to August 20, 1979; figures for that period are based on Clearing Association settlement prices. New York spot price "nearby futures" used beginning June 1985.

2/ For non-supervisory employees.

3/ Adults only.

4/ HSPA employee data no longer compiled after 1992.

Source: Hawaiian Sugar Planters' Association, *HSPA Sugar Manual* (annual), as revised and corrected.

**Table 22.11-- VALUE OF SALES FOR PINEAPPLE AND SUGAR
PRODUCTION: 1980 TO 1994**

[In millions of dollars. Calendar year data unless otherwise specified]

Year	Pineapple		Sugar	
	Canned fruit and juices <u>1/</u>	Fresh market sales <u>2/</u>	Raw sugar 96 ⁰	Commercial molasses
1980.....	192.2	34.3	566.4	27.7
1981.....	172.0	45.6	314.2	13.7
1982.....	156.1	49.9	343.9	7.6
1983.....	171.6	47.4	396.5	13.7
1984.....	202.0	47.6	382.9	10.1
1985.....	171.7	50.8	331.9	8.9
1986.....	184.9	53.5	348.4	13.5
1987.....	202.9	48.5	325.0	10.9
1988.....	191.7	55.3	312.9	11.1
1989.....	182.7	59.2	313.6	8.4
1990.....	161.6	54.3	319.0	9.9
1991.....	172.7	51.9	261.0	9.7
1992.....	141.8	55.9	229.2	8.4
1993.....	86.6	54.0	242.9	9.0
1994.....	81.1	53.0	239.2	8.7

1/ Processor value of canned fruit and juice production and by-products shipped out-of-State and sold within State.

2/ Value FAS shipping point for outshipments, delivered wholesalers local sales.

Source: Hawaii Agricultural Statistics Service, *Statistics of Hawaiian Agriculture* (annual) and records.