

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 697 in 1967 to 1,020 in 1987. The value added by manufacture rose from \$326 million in 1967 to \$786 million in 1977, \$1.41 billion in 1987, and \$1.56 billion in 1990. More than three-fourths of all manufacturing activity in the State in 1987 was on Oahu. Food processing--mostly sugar and pineapple--accounted for 36 percent of the value added by manufacture in 1990. In 1992, the general excise and use tax base for diversified manufacturing (that is, manufacturing exclusive of sugar processing, pineapple canning, and petroleum refining) was \$714 million. There were two pineapple canneries and 12 sugar mills in Hawaii in 1992. Canned and fresh pineapple sales in 1991 totaled \$225 million. Sugar production in 1991 amounted to 724,000 short tons, the lowest total in 45 years. The value of sugar production (including commercial molasses) in 1991 was \$271 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 1987, 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 27 of the Statistical Abstract of the United States: 1992.

Table 643.-- STATISTICAL SUMMARY OF MANUFACTURES: 1963 TO 1990

Subject	1963	1967	1972	1977	1982
All establishments: <u>1/</u>					
Total	672	697	773	949	966
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	360.3
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 manu- facture <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

Continued on next page.

Table 643.-- STATISTICAL SUMMARY OF MANUFACTURES: 1963 TO 1990--Con.

Subject	1986	1987	1988	1989	1990
All establishments: <u>1/</u>					
Total	(NA)	1,022	(NA)	(NA)	(NA)
With 20 employees or more	(NA)	225	(NA)	(NA)	(NA)
All employees:					
Number (1,000)	23.1	22.2	21.7	20.5	20.7
Payroll (million dollars)	424.0	440.2	452.4	432.6	476.7
Production workers:					
Number (1,000)	15.7	15.2	14.3	13.0	13.2
Hours (millions)	29.0	28.8	27.4	25.2	26.1
Wages (million dollars) .	239.3	254.2	255.0	244.2	263.1
Value added by manufac- ture <u>2/</u> (million dollars)	1,173.9	1,405.3	1,376.8	1,609.8	1,557.5
Cost of materials <u>3/</u> (million dollars)	1,898.9	2,048.8	1,980.1	2,220.7	2,680.5
Value of shipments <u>3/</u> (million dollars)	3,086.4	3,447.9	3,337.3	3,813.4	4,202.9
New capital expenditures (million dollars)	47.3	102.0	76.1	98.4	126.9

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.

Source: U.S. Bureau of the Census, 1982 Census of Manufactures, Geographic Area Series, Hawaii, MC82-A-12 (April 1985), table 2a; 1986 Annual Survey of Manufactures, Geographic Area Statistics, M86(AS)-3 (July 1988), table 1; 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 Manufacturers, Geographic Area Statistics, M90 (AS)-3 (April 1992), table 1.

Table 644.-- STATISTICAL SUMMARY OF MANUFACTURES, BY COUNTIES: 1987

Subject	State total	City and County of Honolulu	Hawaii County	Kauai County	Maui County
All establishments <u>1/</u> (number) ...	1,022	800	100	34	88
With 20 employees or more	225	182	21	6	16
All employees:					
Number (1,000)	22.2	16.5	2.2	0.7	2.8
Payroll (million dollars)	440.2	330.7	40.7	13.8	54.9
Production workers:					
Number (1,000)	15.2	10.9	1.6	0.5	2.2
Hours (millions)	28.8	19.9	3.2	1.1	4.6
Wages (million dollars)	254.2	178.2	27.5	9.5	39.0
Value added by manufacture (million dollars)	1,405.3	1,077.1	117.4	51.8	159.0
Cost of materials <u>2/</u> (million dollars)	2,048.8	1,716.6	129.6	47.7	154.9
Value of shipments <u>2/</u> (million dollars)	3,447.9	2,783.8	250.5	99.5	314.2
New capital expenditures (million dollars)	102.0	66.1	11.6	5.9	18.5

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, 1987 Census of Manufactures, Geographic Area Series, Hawaii, MC87-A-12 (October 1990), table 4.

Table 645.-- MANUFACTURES, BY SELECTED INDUSTRY GROUP: 1990
 [Includes operating manufacturing establishments and auxiliaries]

Subject	All manu- factures	Food and kindred products (SIC 20)		Apparel and other textile products (SIC 23)	Commercial printing (SIC 275)	Stone, clay, and glass products (SIC 32)
		Total	Sugar and confect. prod. (SIC 206)			
All employees:						
Number (1,000)	20.7	8.4	3.2	3.0	1.3	1.1
Payroll (mil. dol.)	476.7	185.1	69.1	34.0	31.9	40.9
564 Production workers:						
Number (1,000)	13.2	5.7	2.4	2.2	0.8	0.9
Hours (millions) ...	26.1	11.5	4.9	3.9	1.9	1.9
Wages (mil. dol.) ..	263.1	108.8	46.4	18.1	20.0	29.9
Value added by manu- facture (mil. dol.)	1,557.5	559.8	249.1	19.6	49.9	87.1
Cost of materials (mil. dol.)	2,680.5	802.9	264.8	38.5	38.1	129.8
Value of shipments (mil. dol.)	4,202.9	1,356.7	507.2	63.1	90.2	221.6
New capital expend- itures (mil. dol.)	126.9	52.7	24.8	1.8	1.2	15.1
End-of-year inven- tories (mil. dol.)	431.0	186.9	86.8	9.9	5.5	24.9

Source: U.S. Bureau of the Census, 1990 Annual Survey of Manufactures, Geographic Area Statistics, M90(AS)-3 (April 1992), table 2.

Table 646.-- MANUFACTURES, BY SELECTED INDUSTRY GROUP: 1989

SIC code	Industry	Number of establishments		Number of employees for week including March 12	Annual payroll (\$1,000)
		Total	With 20 employees or more		
	Manufacturing	971	231	22,886	492,781
20	Food and kindred products	212	76	10,130	202,148
2061	Raw cane sugar	11	11	3,266	61,610
22	Textile mill products	8	1	87	1,720
23	Apparel and other textile products	158	39	2,954	36,395
24	Lumber and wood products	44	6	418	9,344
25	Furniture and fixtures	29	7	376	7,253
26	Paper and allied products	8	4	218	5,926
27	Printing and publishing	187	37	3,508	89,940
28	Chemicals and allied products ..	24	6	489	12,644
29	Petroleum and coal products	4	2	407	17,277
30	Rubber and miscellaneous plastics products	20	3	207	2,979
31	Leather and leather products ...	6	1	(B)	(D)
32	Stone, clay, and glass products	52	13	953	31,927
33	Primary metal industries	4	1	(C)	(D)
34	Fabricated metal products	29	8	418	10,648
35	Industrial machinery and equipment	34	4	272	7,232
36	Electronic and other electronic equipment	16	2	196	4,201
37	Transportation equipment	14	6	510	17,314
38	Instruments and related products	15	-	72	1,302
39	Miscellaneous manufacturing industries	88	8	888	13,588
--	Administrative and auxiliary ...	19	7	571	16,649

B 20 to 99.

C 100 to 249.

D Withheld to avoid disclosing data for individual companies.

Source: U.S. Bureau of the Census, County Business Patterns 1989, Hawaii, CBP-89-13 (October 1991), table 1B.

Table 647.-- PLANT CAPACITY UTILIZATION RATES:
FOURTH QUARTER ESTIMATES, 1989 AND 1990

[The sample of manufacturing plants located in Hawaii was not selected specifically to represent the state but is a by-product of the national survey. Consequently, the state data are subject to high sampling variability that may disguise real movement in the series. No survey was conducted in 1991]

Type of rate	1989	1990
Utilization of full production capacity (percent)	86	73
Utilization of national emergency production capacity (percent)	80	69

Source: U.S. Bureau of the Census, Industry Division, records.

Table 648.-- MANUFACTURING SALES RECEIPTS: 1988 TO 1991

[Millions of dollars]

Category	1988	1989	1990	1991
Total manufacturing ...	2,051.2	2,259.0	2,615.1	2,402.6
Sugar processing	337.5	342.1	353.3	302.0
Pineapple canning	191.7	182.7	161.6	172.7
Petroleum	915.3	1,076.4	1,345.9	1,214.8
Diversified manufacturing ..	606.7	657.9	754.4	713.2

Source: Bank of Hawaii, Hawaii 1992, Annual Economic Report, p. 35.

Table 649.-- GENERAL EXCISE TAX BASE FOR MANUFACTURING:
1982 TO 1992

[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 re- ported <u>1/</u>	Tax base	Year re- ported <u>1/</u>	Tax base	Year re- ported <u>1/</u>	Tax base
1982	530,598	1986	568,532	1990	728,387
1983	511,823	1987	595,140	1991	714,407
1984	519,601	1988	629,303	1992	714,470
1985	527,673	1989	630,997		

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).

Table 650.-- MANUFACTURING CLIMATE: 1989

Factor	States ranked	Hawaii rank
Overall rank (among low manufacturing intensity States only)	21	19
State and local government fiscal policies	50	21
State regulated employment costs	50	14
Labor costs	50	48
Productivity of resources	50	45

Source: 11th Annual Grant Thornton Manufacturing Climates Study (August 1990), pp. 13 and 55.

Table 651.-- PINEAPPLE COMPANIES AND CANNERIES AND
SUGAR COMPANIES AND MILLS: 1940 TO 1992

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
1992	3	2	12	12
ISLANDS: 1992				
Hawaii	-	-	3	3
Maui	1	1	2	3
Oahu	2	1	2	2
Kauai	-	-	5	4

1/ 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 652.-- SUGAR AND MOLASSES PRODUCTION: 1971 TO 1991

Year	Cane land (acres)		Cane used for sugar (short tons)	Sugar produced (short tons)		Molasses produced (short tons)
	Total area	Harvested area ^{1/}		96° raw value	Equivalent refined	
1971 ...	232,278	115,810	10,685,019	1,229,976	1,149,510	330,227
1972 ...	229,611	108,456	9,929,068	1,118,883	1,045,708	307,543
1973 ...	226,580	108,189	9,645,452	1,128,529	1,054,723	301,500
1974 ...	224,227	95,826	9,082,684	1,040,742	972,677	293,380
1975 ...	221,426	105,125	9,485,299	1,107,199	1,034,788	301,335
1976 ...	221,551	99,926	9,172,649	1,050,457	981,757	275,352
1977 ...	220,729	96,770	8,994,388	1,033,739	966,132	284,349
1978 ...	220,697	99,355	9,263,190	1,028,933	961,641	310,238
1979 ...	218,773	100,610	9,632,135	1,059,737	990,430	325,843
1980 ...	217,718	97,358	9,214,136	1,023,232	956,313	315,088
1981 ...	216,099	97,573	8,831,477	1,047,541	979,032	311,719
1982 ...	204,749	89,261	8,807,998	982,913	918,630	287,190
1983 ...	194,258	92,808	8,926,358	1,044,204	975,913	303,254
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	78,715	7,602,414	928,195	867,491	274,375
1989 ...	170,813	74,660	7,078,479	863,614	817,752	229,377
1990 ...	161,991	71,999	6,540,925	819,631	776,027	220,859
1991 ...	155,609	67,716	5,852,668	724,100	684,619	202,214

^{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, HSPA Sugar Manual (annual), and records.

Table 653.-- AVERAGE RAW SUGAR PRICE AND SUGAR INDUSTRY EMPLOYMENT
AND EARNINGS: 1971 TO 1991

Year	Average raw sugar price ^{1/} (cents per lb.)	Hourly-rated employees		Industry-wide strikes (weeks)	Average daily earnings ^{2/} (dollars)	
		Average number ^{3/}	Total man-days		Cash wages	Employee benefits
1971 ...	8.52	8,610	2,077,011	-	26.08	10.27
1972 ...	9.10	8,127	1,934,563	-	29.09	11.23
1973 ...	10.30	7,900	1,897,369	-	30.86	12.48
1974 ...	29.43	7,700	1,744,346	6	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	3	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

^{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.

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

Table 654.-- VALUE OF SALES AND GOVERNMENT PAYMENTS FOR PINEAPPLE
AND SUGAR PRODUCTION: 1970 TO 1991

[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>	Value of production		Government sugar support payments
			Raw sugar 96 ^o	Commercial molasses	
1970 ..	135.0	3.6	180.7	7.1	10.3
1971 ..	137.7	3.7	196.3	6.7	10.7
1972 ..	140.5	4.9	176.6	8.1	9.7
1973 ..	135.0	7.4	203.8	18.4	9.5
1974 ..	118.2	8.9	659.2	17.4	8.6
1975 ..	126.6	10.1	354.6	11.5	-
1976 ..	130.0	14.5	245.5	11.5	-
1977 ..	140.0	21.6	219.1	7.7	48.7
1978 ..	133.4	29.5	269.5	15.7	8.1
1979 ..	176.3	30.1	322.2	23.5	-
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	-

1/ Processor value of canned fruit and juice production and by-products shipped out-of-State and sold within State. Prior to 1979, data are for pack years beginning June 1.

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

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

Table 655.-- 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).