

Section 22

MANUFACTURES

This section presents statistics on the manufacturing segment of the economy, including sugar processing and pineapple canning.

The number of manufacturing establishments in Hawaii increased from 618 in 1958 to 697 in 1967 and 773 in 1972. The value added by manufacture rose from \$165 million in 1958 to \$326 million in 1967, \$410 million in 1972, and \$700 million in 1976. About 72 percent of all manufacturing activity in the State was on Oahu in 1976. Food processing — mostly sugar and pineapple — accounted for more than half of the value added by manufacture in that year. Between 1966 and 1976, the general excise and use tax base increased 54 percent for sugar processing, dropped 10 percent for pineapple canning, and rose 101 percent for all other manufacturing. There were three pineapple canneries and 16 sugar mills in Hawaii in mid-1977. The production of canned pineapple fruit and juices in 1976-1977 dropped to 19 million actual cases, well below the levels of earlier years, but fresh pineapple sales rose sharply. Sugar production in 1977 amounted to 1.03 million short tons, about the same level as in other recent years. The value of production (including raw sugar and commercial molasses) was \$227 million, well below the record set in 1974 but still the fourth best year in Island history.

Sources for data on this subject include the United States Census of Manufactures, most recently published for 1972, the Annual Survey of Manufactures, and publications of the Hawaii State Department of Agriculture and Department of Taxation, Hawaiian Sugar Planters' Association, and Pineapple Growers Association of Hawaii. Statistics for the nation as a whole appear in Section 29 of the *Statistical Abstract of the United States: 1977*.

Table 378.—MANUFACTURING: 1966 TO 1976

Year	All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of industry shipments (million dollars)	Capital expenditures, new (million dollars)
	Number	Payroll (million dollars)	Number	Man-hours (millions)	Wages (million dollars)				
1966	24,800	123.8	18,700	34.3	78.2	310.8	371.5	680.9	24.1
1967	25,400	139.6	19,000	35.9	86.9	326.2	399.6	723.4	26.0
1968	23,200	134.0	17,400	32.2	83.3	353.9	381.9	737.1	15.6
1969	23,900	145.3	17,900	33.2	90.8	351.0	408.3	758.1	19.8
1970	24,800	168.7	18,100	35.3	102.8	408.6	451.1	856.9	40.5
1971	24,400	176.6	17,500	34.3	105.7	435.0	465.9	899.9	28.0
1972	24,800	191.1	17,700	33.1	113.7	410.0	548.3	955.6	46.7
1973	24,300	195.5	17,500	31.9	117.9	496.1	592.9	1,086.4	36.6
1974	22,500	210.4	15,800	28.8	116.6	913.8	952.9	1,848.2	50.2
1975	23,700	236.7	16,900	30.6	133.0	685.4	1,116.2	1,800.3	51.5
1976	24,200	266.4	17,100	30.8	153.9	700.3	1,156.8	1,854.8	55.6

Source: U.S. Bureau of the Census, *Annual Survey of Manufactures, 1976*, M76(AS)-6, p. 213.

Table 379.—MANUFACTURING, BY GEOGRAPHIC AREA: 1972

Standard metropolitan statistical area, county, and city	Establishments		All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Capital expenditures, new (million dollars)
	Total (number)	With 20 employees or more (number)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)				
Hawaii, total	773	238	25.0	191.7	17.7	33.1	113.8	410.3	548.5	956.1	47.2
STANDARD METROPOLITAN STATISTICAL AREA											
Honolulu	612	193	19.6	148.9	13.9	25.4	85.9	321.2	412.4	731.8	33.1
COUNTIES											
Hawaii	85	24	2.5	20.4	1.7	3.4	12.8	49.8	51.9	101.4	10.7
Honolulu	612	193	19.6	148.9	13.9	25.4	85.9	321.2	412.4	731.8	33.1
Kauai	28	8	.8	5.8	.6	1.1	4.0	13.0	28.9	42.0	1.4
Maui	48	13	2.1	16.5	1.6	3.3	11.0	26.3	55.3	80.9	2.1
CITIES WITH 450 OR MORE EMPLOYEES											
Ewa Beach and Barbers Point	8	6	.5	5.4	.4	.7	3.8	15.9	30.8	46.4	11.9
Hilo	57	11	.9	6.9	.6	1.1	3.9	14.1	9.1	23.0	.6
Honolulu	534	169	17.1	126.6	12.2	22.3	72.6	261.1	282.5	542.5	16.8
Kahului	5	3	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
Waipahu	11	4	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)

Source follows table 380.

Table 380.—MANUFACTURING, BY INDUSTRY GROUP AND INDUSTRY: 1972

Ind. code	Industry group and industry	Establishments		All employees		Production workers		Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)
		Total	With 20 employees or more	Number (1,000)	Payroll (million dollars)	Number	Man-hours (millions)			
	All manufacturing	773	238	25.0	191.7	17.7	33.1	410.3	548.5	956.1
20	Food and kindred products	209	70	11.9	87.8	8.8	17.0	215.4	308.3	513.0
201	Meat products	18	8	0.4	2.7	0.3	0.5	5.9	24.0	30.0
202	Dairy products	11	5	(D)	(D)	(D)	(D)	(D)	(D)	(D)
203	Preserved fruits, vegetables ..	38	5	4.9	28.2	4.4	8.0	70.5	71.3	141.8
2033	Canned fruits, vegetables...	15	5	4.8	27.4	4.3	7.8	69.0	69.4	138.4
204	Grain mill products	8	6	0.2	1.7	0.1	0.2	5.6	20.9	26.5
205	Bakery products	18	8	0.7	6.3	0.4	0.8	11.4	7.8	19.3
206	Sugar, confectionery products	37	24	3.8	32.8	2.6	5.4	76.7	136.5	202.7
2061	Raw cane sugar	18	18	3.4	29.5	2.3	4.8	67.1	110.4	177.5
208	Beverages	21	8	(D)	(D)	(D)	(D)	(D)	(D)	(D)
209	Misc. foods, kindred products.	56	6	0.7	4.5	0.5	1.1	9.4	13.3	22.7
23	Apparel, other textile products ..	120	55	3.3	15.4	2.9	5.2	29.6	17.4	46.4
24	Lumber and wood products	38	12	0.9	7.4	0.7	1.3	13.1	12.4	25.3
25	Furniture and fixtures	26	11	0.7	5.1	0.4	0.7	7.9	11.1	18.4
26	Paper and allied products	11	4	(D)	(D)	(D)	(D)	(D)	(D)	(D)
27	Printing and publishing	117	21	2.5	22.8	1.3	2.2	46.2	17.3	63.6
28	Chemicals and allied products ..	21	5	(D)	(D)	(D)	(D)	(D)	(D)	(D)
29	Petroleum and coal products	5	4	(D)	(D)	(D)	(D)	(D)	(D)	(D)
30	Rubber, misc. plastics products .	11	5	(D)	(D)	(D)	(D)	(D)	(D)	(D)
32	Stone, clay, glass products	42	13	1.1	12.3	0.8	1.6	31.8	24.7	56.5
33	Primary metal industries	3	1	(D)	(D)	(D)	(D)	(D)	(D)	(D)
34	Fabricated metal products	33	10	(D)	(D)	(D)	(D)	(D)	(D)	(D)
35	Machinery, except electrical	28	3	0.4	3.4	0.3	0.5	4.8	3.6	7.7
37	Transportation equipment	6	2	0.2	2.1	0.2	0.3	2.7	2.5	5.2
39	Misc. manufacturing industries .	55	9	0.8	4.0	0.7	1.2	6.9	4.8	11.9
—	Administrative and auxiliary	22	14	0.9	11.9	—	—	—	—	—

(D) Withheld to avoid disclosing figures for individual companies.

Source of tables 379 and 380: U.S. Bureau of the Census, *Census of Manufactures, 1970, Hawaii*, MC72(3)-12.

Table 381.—MANUFACTURING, BY INDUSTRY GROUP AND ISLAND: 1974
[Revised]

Island and industry group	All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of industry shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)
	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)					
State total	22.5	210.4	15.8	28.8	116.6	913.8	952.9	1,848.2	50.2	167.2
Island:										
Oahu	16.5	156.0	11.4	20.9	83.6	420.6	763.3	1,160.9	30.7	140.1
Other islands	6.0	54.4	4.4	7.9	33.0	493.2	189.6	687.3	19.5	27.1
Industry group: ¹										
Food and kindred products	10.1	89.5	7.2	13.5	55.3	711.6	390.0	1,095.3	26.4	60.0
Canned fruits and vegetables .	3.0	194	2.7	4.6	15.1	87.2	50.9	138.1	(D)	27.6
Raw cane sugar	3.0	31.3	2.1	4.5	21.3	509.2	123.3	631.9	17.8	9.6
Apparel, other textile products .	3.0	17.3	2.8	4.9	11.2	23.8	21.5	44.7	1.1	7.9
Lumber and wood products	0.7	5.2	0.5	1.0	3.4	10.1	6.7	16.8	0.8	1.7
Furniture and fixtures	0.8	6.1	0.5	0.8	2.9	10.6	8.7	18.7	0.1	4.5
Printing and publishing	2.7	26.9	1.4	2.4	12.8	62.1	26.9	88.6	2.7	8.9
Stone, clay, glass products	1.5	22.4	1.2	2.7	15.2	49.9	54.7	103.5	3.0	14.4
Machinery, exc. electric	0.6	5.6	0.5	0.1	0.6	6.8	5.4	17.9	0.6	0.2
Miscellaneous mfg.	0.7	4.8	0.4	0.6	2.1	2.6	7.9	12.5	0.2	3.5

¹ Reported separately only for major groups, and hence does not add to indicated total or subtotal.

Source: U.S. Bureau of the Census, *Annual Survey of Manufactures, 1975*, M75(AS)-6, pp. 225 and 236.

Table 382.—MANUFACTURING, BY INDUSTRY GROUP AND ISLAND: 1975

Island and industry group	All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of industry shipments (million dollars)	Capital expenditures, new (million dollars)	End-of-year inventories (million dollars)
	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)					
State total	23.7	236.7	16.9	30.6	133.0	685.4	1,116.2	1,800.3	51.5	176.2
Island:										
Oahu	16.9	174.0	11.7	20.4	89.8	401.6	915.5	1,317.0	25.3	144.4
Other islands	6.8	62.7	5.2	10.2	43.2	283.8	200.7	483.3	26.2	31.8
Industry group: ¹										
Food and kindred products ²	11.6	104.3	8.7	15.3	66.4	442.3	399.3	843.3	31.8	66.1
Canned fruits, vegetables ³	3.5	20.3	3.1	4.8	16.1	89.4	62.4	151.8	(D)	31.1
Raw cane sugar	3.4	42.4	2.5	5.5	29.6	252.3	125.2	377.5	24.7	12.2
Apparel, other textile products ..	3.1	18.4	2.8	5.3	11.7	25.5	24.6	50.8	0.4	7.6
Lumber and wood products	0.7	5.5	0.5	0.9	3.9	10.8	7.4	18.6	2.2	1.6
Furniture and fixtures	0.7	6.2	0.5	0.7	2.8	16.5	5.3	21.2	0.1	4.8
Printing and publishing	2.7	31.0	1.3	2.3	14.1	79.6	35.9	115.5	2.1	5.4
Leather, leather products	0.1	0.4	0.1	0.1	0.3	0.7	0.6	1.3	—	0.2
Stone, clay, glass products	1.6	24.5	1.1	2.3	14.5	49.7	76.9	127.7	2.7	12.4
Miscellaneous mfg.	0.7	5.4	0.4	0.7	2.6	7.3	8.8	16.7	0.2	3.3

(D) Withheld to avoid disclosing data for individual companies.

¹ Reported separately only for major groups, and hence does not add to indicated totals.

² Total value of shipments includes extensive duplication arising from shipments between establishments in the same industry classification.

³ Establishments in this industry reported value of production instead of value of shipments. Consequently, the formula for computing value added by manufacture was modified to exclude any change in finished products inventories between the beginning and end of the year.

Source: U.S. Bureau of the Census, *Annual Survey of Manufactures, 1976*, M76(AS)-6, pp. 217 and 227.

Table 383.—MANUFACTURING, BY INDUSTRY GROUP AND ISLAND: 1976

Island and industry group	All employees		Production workers			Value added by manufac- ture (million dollars)	Cost of materials (million dollars)	Value of industry ship- ments (million dollars)	Capital expendi- tures, new (million dollars)	End-of- year inven- tories (million dollars)
	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man- hours (mil- lions)	Wages (million dollars)					
State total	24.2	266.4	17.1	30.8	153.9	700.3	1,156.8	1,854.8	55.6	193.7
Island:										
Oahu	17.5	195.4	12.1	20.6	107.0	503.2	962.7	1,465.0	29.5	162.1
Other islands	6.7	71.0	5.0	10.2	46.9	197.1	194.1	389.8	26.1	31.6
Industry group: ¹										
Food and kindred products ²	11.4	114.5	8.4	14.9	72.6	357.9	403.7	761.3	31.7	65.3
Canned fruits, vegetables ³	3.3	22.4	2.9	4.4	17.8	96.3	63.9	160.2	(D)	30.1
Raw cane sugar	3.5	45.3	2.6	5.6	31.9	135.0	124.5	259.7	23.2	10.1
Apparel, other textile products ..	3.1	19.7	2.7	5.0	10.9	24.5	25.7	52.2	1.1	4.4
Lumber and wood products	0.8	6.6	0.7	1.0	5.2	12.7	8.5	20.3	0.6	2.5
Furniture and fixtures	0.7	5.6	0.4	0.7	2.5	14.3	5.9	19.6	0.0	4.8
Printing and publishing	2.8	35.5	1.4	2.5	16.8	92.9	41.8	133.6	2.4	7.7
Leather, leather products	0.1	0.4	0.1	0.1	0.3	0.7	0.6	1.3	—	0.2
Stone, clay, glass products	1.3	19.2	0.8	1.7	11.5	39.5	48.8	89.9	4.3	12.4
Miscellaneous mfg.	0.6	5.2	0.4	0.7	2.4	6.6	7.9	15.1	1.2	2.5

(D) Withheld to avoid disclosing figures for individual companies.

¹ Reported separately only for major groups, and hence detail does not add to indicated totals.

² The total value of shipments and cost of materials include extensive duplication arising from shipments between establishments in the same industry classification.

³ Establishments in this category reported value of production instead of value of shipments.

Source: U.S. Bureau of the Census, *Annual Survey of Manufactures, 1976*, M76(AS)-6, pp. 216 and 226.

**Table 384.—MANUFACTURING LABOR COSTS, CAPITAL EXPENDITURES,
ASSETS, AND RENTAL PAYMENTS: 1975 AND 1976**

[In millions of dollars.]

Item	1975	1976
Labor costs, total	272.1	308.0
Payroll	236.7	266.4
Social security and other required payments	16.8	20.1
Employer payments for other programs	18.5	21.5
Expenditures for new plant and equipment, total	51.5	55.6
New structures and additions to plant	12.8	15.0
New machinery and equipment	38.7	40.6
Gross book value of depreciable assets, end of year, total	673.7	709.0
Structures and building	227.4	243.6
Machinery and equipment	446.2	465.3
Rental payments, total	15.3	17.5
Structures and building	9.0	11.0
Machinery and equipment	6.3	6.5

Source: U.S. Bureau of the Census, *Annual Survey of Manufactures, 1976*, M76(AS)-6, p. 228.

**Table 385.—PINEAPPLE CANNERIES AND SUGAR MILLS:
1967 TO 1977**

Year	Pineapple canneries ¹	Sugar ²	
		Companies	Mills
1967.....	6	25	26
1968.....	6	25	26
1969.....	6	24	26
1970.....	4	23	26
1971.....	4	23	26
1972.....	4	21	23
1973.....	4	19	21
1974.....	3	17	20
1975.....	3	16	17
1976.....	3	15	17
1977.....	3	15	16
ISLANDS: 1977			
Hawaii.....	—	5	6
Maui.....	1	3	4
Oahu.....	2	2	2
Kauai.....	—	5	4

¹Variable dates, usually after the end of the canning season.

²As of December 31.

Source: The Pineapple Growers Association of Hawaii, records; Hawaiian Sugar Planters' Association, records.

**Table 386.—GENERAL EXCISE TAX BASE FOR SUGAR PROCESSING, PINEAPPLE CANNING,
AND MANUFACTURING: 1966 TO 1976**

[In thousands of dollars. Series discontinued in January 1977 and resumed early in 1978.]

Year reported ¹	Total	Sugar processing	Pineapple canning	Manu- facturing ²
1966.....	490,119	178,909	105,747	205,463
1967.....	521,122	171,155	131,695	218,272
1968.....	533,288	184,663	114,554	234,071
1969.....	592,692	196,744	116,466	279,482
1970.....	575,222	175,337	114,634	285,251
1971.....	599,686	190,209	124,548	284,929
1972.....	638,059	205,962	124,265	307,833
1973.....	692,715	213,095	123,597	356,023
1974.....	934,613	454,660	103,686	376,268
1975.....	1,166,923	605,521	131,655	429,748
1976.....	783,751	275,078	95,488	413,186

NA Not available.

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

² Excludes sugar processing and pineapple canning.

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

Table 387.—HAWAIIAN PINEAPPLE PRODUCTION: 1967 TO 1977
 [Hawaiian pack only; excludes overseas production by Hawaiian companies.]

Pack year ended May 31	Canned fruit		Canned juice		Frozen concentrate	
	1,000 actual cases	1,000 standard cases ¹	1,000 actual cases	1,000 standard cases ²	1,000 equivalent 6/10 cases	1,000 standard cases ²
1966-1967	19,005	13,168	11,323	8,800	1,062	972
1967-1968	17,002	11,994	10,794	8,400	643	588
1968-1969	17,728	12,116	10,930	8,600	692	633
1969-1970	16,971	11,596	11,814	9,000	731	669
1970-1971	17,718	12,028	10,590	8,100	1,016	929
1971-1972	17,961	12,537	11,004	8,400	789	722
1972-1973	15,891	11,108	9,282	7,400	633	580
1973-1974	14,042	9,550	8,470	6,600	886	810
1974-1975	11,584	8,110	5,643	4,400	438	400
1975-1976	12,142	8,200	6,173	4,800	471	520
1976-1977	12,160	8,270	7,295	5,600	346	320

¹24 #2½ can, 45-lb. cases.

²24 #2½ can, 42½-lb. cases.

Source: The Pineapple Growers Association of Hawaii, *Pineapple Fact Book/Hawaii 1973* (January 1973), p. 18, and records; Hawaii Agricultural Reporting Service, *Statistics of Hawaiian Agriculture* (annual), and records.

**Table 388.—EMPLOYMENT AND EARNINGS IN THE PINEAPPLE INDUSTRY:
 1970 TO 1976**

[Includes field and cannery employment and earnings.]

Year	Full-time equivalent employment	Total wages and salaries (dollars)	Earnings per full-time equiv- alent employee (dollars)
1970	7,779	52,580,858	6,759
1971	7,403	51,194,731	6,915
1972	7,110	48,376,978	6,804
1973	5,759	42,613,741	7,400
1974	4,894	37,764,230	7,716
1975	4,915	42,137,633	8,573
1976	4,657	44,918,405	9,645

Source: Hawaii Employers Council, unpublished estimates.

Table 389.—SUGAR PRODUCTION: 1967 TO 1977

Year	Cane land (acres)		Cane used for sugar (short tons)		Sugar produced (short tons)		Average New York raw sugar price cwt. (dollars)	Average daily earnings of workers (dollars) ¹	Field worker man-hours per ton (raw value)	Molasses production (short tons)
	Total area	Harvested area	Total	Per acre	Converted to 96° raw value	Equivalent refined				
1967.....	239,813	111,837	11,045,949	98.74	1,191,042	1,113,148	7.28	21.35	10.64	359,170
1968.....	242,476	113,525	11,279,920	99.36	1,232,182	1,151,597	7.52	21.62	9.98	368,050
1969.....	242,216	113,232	10,839,272	95.73	1,182,414	1,105,060	7.75	23.26	9.44	340,330
1970.....	238,997	113,816	10,457,377	91.88	1,162,071	1,086,000	8.08	24.24	9.50	322,480
1971.....	232,278	115,810	10,685,019	92.26	1,229,976	1,149,510	8.52	26.08	9.04	330,227
1972.....	229,611	108,456	9,929,068	91.55	1,118,883	1,045,708	9.10	29.09	9.22	307,543
1973.....	226,580	108,189	9,645,452	89.15	1,128,529	1,054,723	10.30	30.86	9.20	301,500
1974.....	224,227	95,826	9,082,684	94.76	1,040,742	972,677	29.43	34.41	9.32	293,380
1975.....	221,426	105,125	9,485,299	90.23	1,107,199	1,034,788	22.49	37.34	(NA)	301,335
1976.....	221,551	99,926	9,172,649	91.79	1,050,457	981,757	13.31	43.12	(NA)	275,352
1977.....	220,729	96,770	8,994,388	92.95	1,033,739	966,132	11.11	43.92	(NA)	284,349

NA Not available.

¹ Cash wage only, excluding the value of employees benefits (\$19.97 per day in 1977).

Source: Hawaii Sugar Planter's Association, *HSPA Sugar Manual 1978*, pp. 8-11.

Table 390.—VALUE OF SALES AND GOVERNMENT PAYMENTS FOR PINEAPPLE AND SUGAR PRODUCTION: 1967 TO 1977

Year	Pineapple (\$1,000,000)		Sugar (\$1,000)		
	Canned fruit and juices ¹	Fresh market sales ²	Value of production ³		Government payments
			Raw sugar 96°	Commercial molasses	
1967.....	130.5	2.8	172,421	7,945	10,570
1968.....	125.0	2.5	182,455	6,621	10,861
1969.....	123.0	2.4	171,498	7,501	10,463
1970.....	135.0	3.6	180,680	7,061	10,261
1971.....	137.7	3.7	196,253	6,669	10,722
1972.....	140.5	4.9	176,550	8,052	9,667
1973.....	135.0	7.4	203,788	18,370	9,510
1974.....	118.2	8.9	659,227	17,390	8,646
1975.....	126.6	10.1	354,600	11,500	—
1976.....	130.0	14.5	245,500	11,500	—
1977.....	140.0	21.6	219,100	7,700	48,700

¹ Value of canned fruit and juices and by products shipped out-of-State and sold within State, as estimated by Bank of Hawaii.

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

³ Beginning with 1972, point of delivery changed from refinery to mill.

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