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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.

Sources for data on this subject include the *U.S. 1997 Economic Census*, the *U.S. Annual Survey of Manufactures*, publications of the Hawaii State Department of Agriculture and the Hawaii State Department of Taxation, and the *Hawaiian Sugar Manual* of the former Hawaiian Sugar Planters' Association, now the Hawaii Agriculture Research Center. *Historical Statistics of Hawaii*, Section 16, contains the figures for earlier years. Statistics for the nation as a whole appear in Section 21 of the *Statistical Abstract of the United States: 2004-2005*.

**Table 22.01-- STATISTICAL SUMMARY OF MANUFACTURES
(NAICS 31- 33): 1997 TO 2003**

[Industry groups with 950 employees or more. No data for 2002. Statistics based on the North American Industry Classification System (NAICS) which replaced the Standard Industrial Classification (SIC) system used in earlier Economic Censuses]

Subject	1997	1998	1999	2000	2001	2003
All employees						
Number (1,000) 1/	15.1	15.4	15.2	14.6	14.4	13.6
Payroll (million dollars)	404.6	395.5	409.4	428.0	447.4	434.4
Production workers						
Number (1,000) 1/	9.9	10.4	10.0	9.6	9.1	9.0
Hours (millions)	18.3	19.2	18.0	18.0	16.7	17.6
Wages (million dollars)	231.3	228.0	217.2	232.0	224.7	269.1
Value added by manufacture (million dollars)	1,261.3	1,141.2	1,236.1	1,357.2	907.3	1,224.5
Cost of materials 2/ (million dollars)	1,939.9	1,669.0	1,810.6	2,444.1	2,268.6	2,641.9
Value of shipments 2/ (million dollars)	3,189.9	2,833.4	3,024.5	3,732.3	3,196.4	3,879.7
Total capital expenditures (million dollars)	100.7	94.1	89.9	105.4	157.2	91.3

1/ Figures represent average number of production workers for the payroll period that includes the 12th of March, May, August, and November, plus other employees for the payroll period that includes the 12th of March.

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

Source: U.S. Census Bureau, *Annual Survey of Manufactures, Geographic Area Statistics, 2000*, M00(AS)-3 (March 2002), table 2; *2001*, M01(AS)-3 (January 2003), table 2; *2003*, M03(AS)-3 (May 2005), table 2 <<http://www.census.gov/mcd/asm-as3.html>> accessed June 8, 2005.

Table 22.02-- DETAILED MANUFACTURING STATISTICS: 1997

[NAICS Industries 31-33]

Item	Value
Companies 1/	895
All establishments	921
Establishments with 1 to 19 employees	762
Establishments with 20 to 99 employees	130
Establishments with 100 employees or more	29
All employees	15,109
Total compensation (\$1,000) 2/	503,407
Annual payroll (\$1,000)	405,045
Total fringe benefits (\$1,000)	98,362
Production workers, average for year	9,899
Production workers on March 12	9,835
Production workers on May 12	9,768
Production workers on August 12	10,194
Production workers on November 12	9,799
Production-worker hours (1,000)	18,362
Production-worker wages (\$1,000)	231,595
Total cost of materials	1,941,147
Cost of materials, parts, containers, etc., consumed (\$1,000)	1,673,002
Cost of resales (\$1,000)	152,624
Cost of fuels (\$1,000)	51,118
Cost of purchased electricity (\$1,000)	23,281
Cost of contract work (\$1,000)	41,122
Quantity of electricity purchased for heat and power (1,000 kWh)	245,275
Quantity of electricity generated less sold for heat and power (1,000 kWh)	(D)
Total value of shipments (\$1,000)	3,192,532
Value of resales (\$1,000)	181,478
Value added (\$1,000)	1,262,448
Total inventories, beginning of year (\$1,000)	336,547
Finished goods inventories, beginning of year (\$1,000)	175,028
Work-in-process inventories, beginning of year (\$1,000)	46,214
Materials and supplies inventories, beginning of year (\$1,000)	115,305

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Table 22.02-- DETAILED MANUFACTURING STATISTICS: 1997 -- Con.

[NAICS Industries 31-33]

Item	Value
Total inventories, end of year	351,344
Finished goods inventories, end of year (\$1,000)	188,052
Work-in-process inventories, end of year (\$1,000)	47,984
Materials and supplies inventories, end of year (\$1,000)	115,308
Gross book value of total assets at beginning of year (\$1,000)	1,221,564
Total capital expenditures (new and used) (\$1,000)	100,707
Capital expenditures for buildings and other structures (new and used) (\$1,000)	38,742
Capital expenditures for machinery and equipment (new and used) (\$1,000)	61,965
Total retirements (\$1,000) 2/	24,447
Gross book value of total assets at end of year (\$1,000)	1,297,824
Total depreciation during year (\$1,000) /2	68,301
Total rental payments (\$1,000) /2	38,447
Buildings and other structures rental payments (\$1,000) /2	23,072
Machinery and equipment rental payments (\$1,000) /2	15,375

D Withheld to avoid disclosing data for individual companies.

1/ For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

2/ These items are collected in the ASM (Annual Survey of Manufacturers) and estimated for the remaining establishments.

Source: U.S. Census Bureau, *1997 Economic Census, Manufacturing, Geographic Area Series, Hawaii*, EC97M31A-HI (May 2000), table 5.

**Table 22.03-- STATISTICAL SUMMARY OF MANUFACTURING, BY COUNTIES:
1997**

[NAICS 31-33]

Subject	State total	City and County of Honolulu	Hawaii County	Kauai County 1/	Maui County
All establishments 2/ (number)	921	685	106	30	100
With 20 employees or more	159	133	13	4	9
All employees:					
Number	15,109	11,161	1,588	441	1,919
Payroll (\$1,000)	405,045	300,856	37,458	15,429	51,302
Production workers:					
Number	9,899	7,034	1,076	280	1,509
Hours (1,000)	18,362	13,018	1,954	560	2,830
Wages (\$1,000)	231,595	164,815	21,133	9,351	36,296
Value added by manufacture (\$1,000)	1,262,448	1,042,807	81,221	15,077	123,343
Cost of materials 3/ (\$1,000)	1,941,147	1,659,321	113,642	32,795	135,389
Value of shipments 3/ (\$1,000)	3,192,532	2,692,239	192,461	48,224	259,608
Total capital expenditures (\$1,000)	100,707	77,715	14,236	4,736	4,020

1/ Kauai data calculated as residual by DBEDT.

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

3/ 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. Census Bureau, *1997 Economic Census, Manufacturing, Geographic Area Series, Hawaii*, EC97M31A-HI (May 2000), tables 1 and 3.

Table 22.04-- MANUFACTURING, BY SELECTED INDUSTRY GROUPS: 1997

[NAICS Industries 31 - 33]

Subject	Total	Food mfg (NAICS 311)	Apparel mfg (NAICS 315)	Printing & rel sup (NAICS 323)	Cement & con. prod mfg (NAICS 3273)	Transp. Equip. mfg (NAICS 336)	Furniture & rel. prod. mfg (NAICS 337)	Miscell. mfg (NAICS 339)
All establishments								
Number	921	244	93	123	33	24	47	146
With 20 employees or more	159	55	21	19	10	6	5	13
All employees								
Number	15,109	6,118	1,555	1,736	613	400	372	1,372
Payroll (\$1,000)	405,045	153,304	28,924	42,452	26,662	13,418	10,339	31,297
Production workers:								
Number	9,899	4,132	1,221	1,072	437	328	286	767
Hours (1,000)	18,362	7,497	2,250	2,010	901	585	554	1,305
Wages (\$1,000)	231,595	90,110	17,243	27,109	18,238	10,306	6,931	15,528
Value added by manufacture (\$1,000)	1,262,448	402,859	70,638	80,317	60,573	26,088	23,608	71,149
Cost of materials (\$1,000)	1,941,147	475,773	62,975	59,396	69,264	21,138	18,302	36,239
Value of shipments (\$1,000)	3,192,532	878,143	133,900	140,213	129,904	47,327	40,407	106,043
Total capital expenditures (\$1,000)	100,707	32,687	1,833	9,658	3,528	816	(D)	2,670

D Withheld to avoid disclosing data for individual companies.

Source: U.S. Census Bureau, 1997 *Economic Census, Manufacturing, Geographic Area Series, Hawaii*,

EC97M31A-HI (May 2000), table 1.

Table 22.05-- PRIVATE INDUSTRY MANUFACTURING EMPLOYMENT AND WAGES, ANNUAL AVERAGES, SELECTED NAICS CODES: 2003

[Workers covered by the unemployment compensation program]

NAICS code 1/	Manufacturing	No. of establishments	All employees	Total wages (\$1,000)	Average annual pay per employee
	Total	1,127	14,937	469,637	31,441
311	Food	317	6,286	158,206	25,168
3113	Sugar & confectionery product	26	832	25,781	31,005
3114	Fruit & vegetable preserving & specialty	26	814	23,053	28,314
3115	Dairy product	14	404	15,936	39,438
3116	Animal slaughtering & processing	25	375	7,734	20,623
3118	Bakeries & tortilla	133	1,962	41,403	21,107
3121	Beverage	25	695	26,798	38,540
314	Textile product mills	31	161	3,582	22,303
315	Apparel	110	1,146	24,179	21,096
3212	Plywood & engineered wood product	5	105	3,537	33,843
3219	Other wood product	27	160	4,150	25,963
3231	Printing & related support activities	150	1,303	40,699	31,229
3241	Petroleum & coal products	7	430	33,170	77,184
325	Chemical	32	353	12,569	35,564
326	Plastics & rubber products	17	223	7,116	31,932
3271	Clay product & refractory	11	30	478	15,925
3272	Glass & glass product	9	37	887	23,986
3273	Cement & concrete product	29	804	42,473	52,860
3279	Other non-metallic mineral products	15	128	4,045	31,665
332	Fabricated metal product	43	463	18,262	39,421
333	Machinery	8	45	1,397	30,882
336	Transportation equipment	26	576	24,396	42,349
337	Furniture & related product	64	580	21,474	37,051
3391	Medical equipment & supplies	47	222	7,195	32,372
3399	Other miscellaneous	123	870	23,519	27,049

1/ North American Industrial Classification System.

Source: U.S. Department of Labor, Bureau of Labor Statistics, *Employment and Wages, Annual Averages 2003*, Manufacturing, table 10 <<http://www.bls.gov/cew/cewbultn03.htm>> accessed June 10, 2005.

**Table 22.06-- GENERAL EXCISE TAX BASE FOR MANUFACTURING:
1987 TO 2004**

[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 1/	Tax base	Year 1/	Tax base	Year 1/	Tax base
1987	595,140	1993	717,423	1999	585,305
1988	629,303	1994	618,238	2000	586,039
1989	630,997	1995	614,771	2001	611,292
1990	728,387	1996	622,889	2002	612,658
1991	714,407	1997	581,259	2003	638,863
1992	714,470	1998	535,371	2004	642,245

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 Collections" (annual), beginning with 1997, data are available on website
<http://www.state.hi.us/tax/a5_3txcolrptarchive.htm> accessed June 1, 2005.

**Table 22.07-- INDUSTRIAL AND HIGH-TECHNOLOGY PARKS,
BY ISLAND: 2005**

Subject	State	Hawaii	Maui	Oahu	Kauai
Number of parks	22	5	5	12	-
Acres					
Total	4,755	1,651	700	2,404	-
Developed	1/ 2,855	1/ 600	138	1/ 2,118	-

1/ Excluding Kona Industrial Park on Hawaii (total of 77 acres) and Foreign Trade Zone No. 9 on Oahu (total of 2 acres).

Source: Pacific Business News, April 1, 2005, p. 34.

**Table 22.08-- PINEAPPLE COMPANIES AND CANNERIES, AND
SUGAR COMPANIES AND MILLS, 1950 TO 2004,
AND BY ISLANDS, 2003 AND 2004**

Year	Pineapple (end of canning season)		Sugar (December 31)	
	Companies	Canneries	Companies 1/	Mills
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
1994	3	1	9	10
1995	3	1	8	10
1996	3	1	4	6
1997	3	1	4	6
1998	3	1	4	6
1999	3	1	4	6
2000	3	1	3	4
2001	3	1	2	2
2002	3	1	2	2
2003	3	1	2	2
2004	3	1	2	2
ISLANDS: 2003				
Hawaii	-	-	-	-
Maui	1	1	1	1
Oahu	2	-	-	-
Kauai	-	-	1	1
ISLANDS: 2004				
Hawaii	-	-	-	-
Maui	1	1	1	1
Oahu	2	-	-	-
Kauai	-	-	1	1

1/ In operation; excludes cooperatives.

Source: Pineapple Growers Association of Hawaii, records; *Hawaiian Sugar Manual (annual)*; Dole Food Company, records; Hawaii Agriculture Research Center, records.

Table 22.09-- SUGAR AND MOLASSES PRODUCTION: 1991 TO 2004

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	
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	5,506,072	677,405	633,103	211,658
1994	98,413	64,951	5,268,859	658,538	615,470	200,835
1995	81,957	48,507	3,952,347	492,346	460,147	163,305
1996	68,816	36,769	3,542,460	437,262	408,665	145,369
1997	67,820	32,033	2,923,594	356,917	333,575	131,173
1998	67,585	30,347	2,725,744	353,893	330,748	125,909
1999	60,758	35,329	2,891,499	367,532	343,495	141,481
2000	43,821	30,194	2,364,357	301,165	281,469	101,329
2001	50,410	19,293	1,876,613	246,203	230,101	85,894
2002	47,476	21,311	2,108,810	270,084	252,421	89,885
2003	47,733	19,851	2,029,761	261,009	243,939	89,631
2004	43,465	21,790	1,978,821	257,866	241,002	80,466

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* (annual), and records; Hawaii Agriculture Research Center, records.

**Table 22.10-- VALUE OF SALES FOR PINEAPPLE AND SUGAR PRODUCTION:
1980 TO 2003**

[In millions of dollars]

Year	Pineapple		Sugar	
	Canned fruit and juices 1/	Fresh market sales 2/	Raw sugar 96°	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
1995	72.5	62.5	190.5	9.7
1996	78.2	68.8	160.8	8.0
1997	73.0	63.7	127.5	5.0
1998	81.3	63.8	130.3	2.8
1999	72.3	72.5	129.5	1.8
2000	60.8	71.4	93.1	2.8
2001	67.7	68.9	86.4	4.2
2002	71.0	73.0	95.9	4.4
2003	72.4	78.1	95.9	3.1

1/ Value of canned fruit and juices and by-product 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 Hawaii Agriculture* (annual)

<<http://www.nass.usda.gov/hi/stats/stat-pgs.htm>> accessed April 25, 2005; records.