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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. 2002 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: 2009*.

**Table 22.01-- STATISTICAL SUMMARY OF MANUFACTURES  
(NAICS 31- 33): 2001 TO 2006**

[In millions of dollars unless otherwise noted. Industry groups with 950 employees or more; for 2002 data, with 100 employees or more. Statistics based on the North American Industry Classification System (NAICS)]

Subject	2001	2002	2003	2004	2005	2006
All employees						
Number (1,000)	14.4	13.2	13.6	14.0	14.0	14.0
Payroll	447.4	421.3	434.4	518.5	481.0	503.8
Production workers						
Number (1,000) 1/	9.1	8.9	9.0	8.8	9.0	9.0
Hours (millions)	16.7	16.8	17.6	18.6	18.7	18.1
Wages	224.7	254.7	269.1	319.2	282.5	299.5
Value added by manufacture	907.3	1,217.7	1,224.5	1,477.8	1,847.6	2,049.1
Cost of materials 2/	2,268.6	2,246.5	2,641.9	3,092.7	4,716.2	5,301.5
Value of shipments 2/	3,196.4	3,460.2	3,879.7	4,519.0	6,442.6	7,301.0
Total capital expenditures	157.2	83.0	91.3	98.3	146.4	173.5

1/ For years 2001 to 2004, average number of production workers for the payroll periods that include the 12th of March, May, August, and November, plus other employees for the payroll period that includes the 12th of March. For years 2005 and 2006, average number of production workers for the payroll periods that include the 12th of March, June, September, and December, 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, 2001*, M01(AS)-3 (January 2003), table 2; *2003*, M03(AS)-3 (May 2005), table 2; *2004*, M04(AS)-3 (January 2006), table 2; *2005*, M05 (AS)-3 (November 2006), table 2; *2006* (December 2006) <<http://www.census.gov/mcd/asm-as3.html>> accessed March 5, 2008; U.S. Census Bureau, *2002 Economic Census, Manufacturing, Geographic Area Series, Hawaii*, EC02-31A-HI (RV) (September 2005), table 1 <<http://www.census.gov/prod/ec02/ec0231ahi.pdf>> accessed October 6, 2005.

**Table 22.02-- DETAILED MANUFACTURING STATISTICS  
(NAICS 31 - 33): 1997 AND 2002**

[Statistics based on the North American Industry Classification System (NAICS) which replaced the Standard Industrial Classification (SIC) system used in Economic Censuses prior to the 1997 Economic Census]

Item	Value	
	1997	2002
Companies 1/	895	(NA)
All establishments 2/	921	929
1 to 19 employees	762	772
20 to 99 employees	130	135
100 employees or more	29	22
All employees 3/	15,109	13,200
Total compensation (\$1,000)	503,407	512,860
Annual payroll	405,045	421,269
Total fringe benefits	98,362	91,591
Production workers, average for year	9,899	8,865
On March 12	9,835	8,858
On May 12	9,768	8,830
On August 12	10,194	8,880
On November 12	9,799	8,859
Production-worker hours (1,000)	18,362	16,837
Production-worker wages (\$1,000)	231,595	254,713
Total cost of materials (\$1,000)	1,941,147	2,246,539
Materials, parts, containers, packaging, etc., used	1,673,002	1,904,259
Resales	152,624	246,016
Purchased fuels	51,118	41,001
Purchased electricity	23,281	21,969
Contract work	41,122	33,294
Quantity of electricity purchased for heat and power (1,000 kWh)	245,275	204,563
Quantity of electricity generated less sold for heat and power (1,000 kWh)	(4/)	356,114
Total value of shipments (\$1,000)	3,192,532	3,460,199
Value of resales	181,478	280,656
Value added (\$1,000)	1,262,448	1,217,728
Total inventories, beginning of year (\$1,000)	336,547	366,172
Finished goods	175,028	195,042
Work-in-process	46,214	74,346
Materials and supplies	115,305	96,784

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**Table 22.02-- DETAILED MANUFACTURING STATISTICS  
(NAICS 31 - 33): 1997 and 2002 -- Con.**

Item	Value	
	1997	2002
Total inventories, end of year (\$1,000)	351,344	370,990
Finished goods	188,052	237,652
Work-in-process	47,984	31,358
Materials and supplies	115,308	101,980
Gross value of depreciable assets (acquisition costs) at beginning of year (\$1,000)	1,221,564	1,386,417
Total capital expenditures (new and used)	100,707	82,960
Buildings and other structures	38,742	13,569
Machinery and equipment	61,965	69,391
Automobiles, trucks, etc., for highway use	(NA)	5,399
Computers and peripheral data processing equipment	(NA)	4,080
All other expenditures for machinery and equipment	(NA)	59,912
Total retirements	24,447	33,527
Gross value of depreciable assets at end of year (\$1,000)	1,297,824	1,435,850
Depreciation charges during year (\$1,000)	68,301	76,908
Total rental payments (\$1,000)	38,447	51,216
Buildings and other structures	23,072	36,161
Machinery and equipment	15,375	15,055

NA Not available.

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

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

3/ Average number of production workers for pay period that includes the 12th of March, May,

4/ Withheld to avoid disclosing data for individual companies; data are included in higher level totals. August, and November plus other employees for payroll period that includes the 12th of March.

Source: U.S. Census Bureau, *1997 Economic Census, Manufacturing, Geographic Area Series, Hawaii*, EC97M31A-HI (May 2000), table 5; U.S. Census Bureau, *2002 Economic Census, Manufacturing, Geographic Area Series, Hawaii*, EC02-31A-HI (RV) (September 2005), table 5  
<<http://www.census.gov/prod/ec02/ec0231ahi.pdf>> accessed October 6, 2005.

**Table 22.03-- STATISTICAL SUMMARY OF MANUFACTURING  
(NAICS 31 - 33), BY COUNTY: 2002**

[For the State, industries with 100 employees or more; for the counties, industries with 500 employees or more. Statistics based on the North American Industry Classification System (NAICS) which replaced the Standard Industrial Classification (SIC) system used in Economic Censuses prior to the 1997 Economic Census]

<b>Subject</b>	<b>State total</b>	<b>City and County of Honolulu</b>	<b>Hawaii County</b>	<b>Kauai County 1/</b>	<b>Maui County</b>
All establishments 2/	929	683	114	39	93
With 20 employees or more	157	132	14	3	8
All employees					
Number	13,200	10,253	1,246	210	1,491
Payroll (\$1,000)	421,269	326,845	38,289	5,903	50,232
Production workers					
Number 3/	8,865	6,855	740	129	1,141
Hours (1,000)	16,837	12,920	1,466	247	2,204
Wages (\$1,000)	254,713	195,266	20,463	3,344	35,640
Value added by manufacture (\$1,000)	1,217,728	948,546	97,719	14,403	157,060
Cost of materials 4/ (\$1,000)	2,246,539	2,017,417	102,186	13,047	113,889
Value of shipments 4/ (\$1,000)	3,460,199	2,959,134	204,377	26,132	270,556
Total capital expenditures (\$1,000)	82,960	59,572	6,371	443	16,574

1/ Kauai data calculated as residual by the Hawaii State Department of Business, Economic Development & Tourism.

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

3/ Average number of production workers for pay period that includes the 12th of March, May, August, and November plus other employees for payroll period that includes the 12th of March.

4/ 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, 2002 *Economic Census, Manufacturing, Geographic Area Series, Hawaii*, EC02-31A-HI (RV) (September 2005), tables 1 and 3 <<http://www.census.gov/prod/ec02/ec0231ahi.pdf>> accessed October 6, 2005. Calculations by the Hawaii State Department of Business, Economic Development & Tourism.

**Table 22.04-- MANUFACTURING, BY SELECTED INDUSTRY GROUP  
(NAICS 31 - 33): 2006**

[Industry groups with 950 employees or more. Statistics based on the North American Industry Classification System (NAICS)]

<b>Subject</b>	<b>Total</b>	<b>Food NAICS 311</b>	<b>Food, bakeries &amp; tortilla NAICS 3118</b>	<b>Other food NAICS 3119</b>	<b>Printing &amp; related support NAICS 323</b>	<b>Non- metallic mineral NAICS 327</b>	<b>Miscel- laneous NAICS 339</b>	<b>Other miscel- laneous NAICS 3399</b>
All employees								
Number 1/	13,933	4,947	1,590	1,486	1,538	1,077	1,309	1,061
Payroll (\$1,000)	503,761	158,474	39,938	41,861	54,875	54,586	37,989	28,646
Production workers								
Number 1/	8,966	3,096	1,152	1,025	899	738	652	482
Hours (1,000)	18,148	6,500	1,860	1,994	1,732	1,654	1,238	890
Wages (\$1,000)	299,466	94,006	25,320	24,601	31,183	37,541	16,496	10,151
Value added (\$1,000)	2,049,067	544,935	105,648	164,666	121,418	190,714	60,483	45,337
Total cost of materials (\$1,000) 2/	5,301,463	444,485	59,998	141,602	61,645	130,820	66,475	60,715
Total value of shipments (\$1,000) 2/	7,300,965	986,050	164,288	301,316	181,624	322,444	121,757	100,946
Total capital expenditures (\$1,000)	173,501	45,698	5,163	3,757	5,125	14,644	4,099	3,962

1/ Average number of production workers for the March 12, June 12, September 12, and December 12 pay periods, 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, 2006 Geographic Area Statistics, "2006 Annual Survey of Manufactures"  
<<http://www.census.gov/mcd/asm-as3.html>> accessed June 16, 2008.

**Table 22.05-- MANUFACTURING, EMPLOYMENT AND WAGES  
(NAICS 31-33), BY SELECTED NAICS CODE: 2007**

[Includes only establishments with payroll. Statistics based on the North American Industry Classification System (NAICS) which replaced the Standard Industrial Classification (SIC) system used in Economic Censuses prior to 1997]

NAICS code	Kind of business	Average establishments	Annual average employment	Total annual wages (\$1,000)	Annual wages per employee
	Total	1,093	15,270	575,633	37,698
311	Food	324	6,264	176,026	28,099
3113	Sugar & confectionery product	23	853	29,812	34,946
3114	Fruit & vegetable preserving & specialty	25	540	19,530	36,189
3115	Dairy product	15	376	16,856	44,800
3116	Animal slaughtering & processing	21	532	14,724	27,655
3118	Bakeries & tortilla	146	2,146	48,730	22,706
312	Beverage and tobacco product	37	888	38,900	43,806
3121	Beverage	37	888	38,900	43,806
314	Textile product mills	31	262	7,126	27,182
315	Apparel	66	682	14,204	20,837
321	Wood product	34	(1/)	(1/)	(1/)
3212	Plywood & engineered wood product	9	231	8,701	37,749
3219	Other wood product	18	123	4,031	32,814
322	Paper	9	200	9,004	44,982
323	Printing & related support activities	125	1,159	39,954	34,466
325	Chemical	33	364	18,019	49,527
326	Plastics & rubber products	18	270	11,206	41,567
327	Nonmetallic mineral product	74	1,159	67,027	57,819
3272	Glass & glass product	12	49	1,590	32,668
3273	Cement & concrete product	35	879	56,541	64,336
3279	Other nonmetallic mineral products	20	201	8,213	40,927
332	Fabricated metal product	47	480	22,316	46,483
3323	Architectural & structural metals	30	277	11,851	42,834
334	Computer & electronic product	13	55	3,489	63,436
336	Transportation equipment	29	692	37,948	54,858
3366	Ship & boat building	19	647	36,063	55,710
337	Furniture & related product	72	582	24,119	41,423
339	Miscellaneous	160	1,152	37,696	32,711
3391	Medical equipment & supplies	44	291	11,316	38,943
3399	Other miscellaneous	117	862	26,380	30,609

1/ Data do not meet Bureau of Labor Statistics or State agency disclosure standards.

Source: U.S. Department of Labor, Bureau of Labor Statistics, *Employment and Wages, Annual Averages 2007*, table 10 <<http://www.bls.gov/cew/cewbultn07.htm>> accessed May 28, 2009.



**Table 22.06-- GENERAL EXCISE TAX BASE FOR MANUFACTURING:  
1987 TO 2008**

[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. 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 income received in the 12-month period ending November 30]

Year	Tax base	Year	Tax base	Year	Tax base
1987	595,140	1995	614,771	2003	638,863
1988	629,303	1996	622,889	2004	642,245
1989	630,997	1997	581,259	2005 1/	738,573
1990	728,387	1998	535,371	2006	781,626
1991	714,407	1999	585,305	2007	766,208
1992	714,470	2000	586,039	2008	795,352
1993	717,423	2001	611,292		
1994	618,238	2002	612,658		

1/ Revised from previous *Data Book*.

Source: Hawaii State Department of Taxation, "General Excise and Use Tax Base" (annual) and as revised. Beginning in 1997, <[http://www.state.hi.us/tax/a5\\_3txcolrptarchive.htm](http://www.state.hi.us/tax/a5_3txcolrptarchive.htm)> accessed June 22, 2009.

**Table 22.07-- INDUSTRIAL AND HIGH-TECHNOLOGY PARKS,  
BY ISLAND: 2007 AND 2008**

<b>Subject</b>	<b>State total</b>	<b>Hawaii</b>	<b>Maui</b>	<b>Molokai</b>	<b>Oahu</b>	<b>Kauai</b>
2007						
Number of parks	25	4	4	1	14	2
Total acres	4,772.20	1,794.00	751.00	16.50	2,141.70	69.00
Developed acres	2,863.50	512.00	208.00	6.70	2,068.30	68.50
Number of tenants 1/	1,692	184	616	1	834	57
Number of owners 2/	418	4	147	9	178	80
2008						
Number of parks	25	4	5	1	13	2
Total acres	4,866.80	1,867.00	776.30	16.50	2,138.00	69.00
Developed acres	3,067.12	717.00	232.30	6.70	2,042.12	69.00
Number of tenants 3/	1,101	184	20	1	836	60
Number of owners 4/	629	86	248	9	193	93

1/ Data on number of tenants not available for 3 parks, 2 on Maui and 1 on Oahu.

2/ Data on number of owners not available for 2 parks, 1 on Maui and 1 on Oahu.

3/ Data on number of tenants not available for 5 parks, 4 on Maui and 1 on Oahu.

4/ Data on number of owners not available for 2 parks on Oahu.

Source: *Pacific Business News*, Vol. 45, No. 46 (January 11, 2008), p. 24; Vol. 46, No. 46 (January 9, 2009), p. 18.

**Table 22.08-- PINEAPPLE COMPANIES AND CANNERIES, AND  
SUGAR COMPANIES AND MILLS, 1955 TO 2007,  
AND BY ISLAND, 2006 AND 2007**

Year	Pineapple (end of canning season)		Sugar (December 31)	
	Companies	Canneries	Companies 1/	Mills
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
2005	3	1	2	2
2006	3	1	2	2
2007	2	-	2	2
ISLAND: 2006				
Hawaii	-	-	-	-
Maui	1	1	1	1
Oahu	2	-	-	-
Kauai	-	-	1	1
ISLAND: 2007				
Hawaii	-	-	-	-
Maui	1	-	1	1
Oahu	1	-	-	-
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 2008**

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
2005	40,145	21,735	1,754,581	252,342	235,839	72,675
2006	42,080	20,413	1,614,691	213,185	199,243	65,505
2007	(NA)	20,385	2/ 1,492,357	206,008	192,535	62,231
2008	(NA)	20,426	1,422,296	185,171	173,061	62,278

NA Not available.

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.

2/ Revised from previous year *Data Book*.

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 2007**

[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	64.4	78.5	95.9	3.1
2004	57.3	65.9	91.7	2.4
2005	49.8	63.6	87.9	4.6
2006	(NA)	3/ 60.5	74.8	4.9
2007	(NA)	(D)	70.9	5.4

NA Not available.

D Data not shown separately to avoid disclosure of individual operations.

1/ Value of canned fruit and juices and by-product shipped out-of-State and sold within State.

2/ Includes "fresh cut". Prior to 2005, value FAS shipping point for outshipments, delivered wholesalers local sales.

3/ Revised from previous *Data Book*.

Source: Hawaii Agricultural Statistics Service, *Statistics of Hawaii Agriculture* (annual)

<[http://www.nass.usda.gov/Statistics\\_by\\_State/Hawaii/Publications/Annual\\_Statistical\\_Bulletin/index.asp](http://www.nass.usda.gov/Statistics_by_State/Hawaii/Publications/Annual_Statistical_Bulletin/index.asp)> accessed July 20, 2009; and records.