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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. 2012 Economic Census*, the *U.S. Annual Survey of Manufactures*, publications by 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: 2012*.

**Table 22.01-- STATISTICAL SUMMARY OF MANUFACTURES
(NAICS 31-33): 2009 TO 2015**

[In millions of dollars unless otherwise noted. Industry groups with 950 employees or more.
Statistics based on the 2012 North American Industry Classification System (NAICS)]

Subject	2009	2010	2011	2012	2013	2014	2015
All employees							
Number (1,000)	11.6	10.7	10.7	11.4	10.9	1/ 11.5	11.4
Payroll	445.9	429.6	431.0	465.0	471.4	533.8	555.8
Production workers							
Number (1,000)	7.3	6.8	6.7	7.4	6.9	1/ 7.4	7.4
Hours	13.9	13.0	12.9	13.6	13.4	1/ 13.8	14.7
Wages	239.6	238.1	232.3	258.0	268.0	1/ 309.1	334.7
Value added by manufacture	1,688.0	1,391.4	1,456.6	1,101.0	1,138.2	(D)	(D)
Cost of materials 2/	4,239.1	5,044.0	6,353.3	6,740.8	5,282.6	1/ 5,029.0	3,893.0
Value of shipments 2/	5,928.6	6,399.1	7,694.5	(D)	6,435.6	1/ 6,370.4	5,904.2
Total capital expenditures	85.6	75.0	101.3	108.4	103.7	1/ 115.9	116.7

D Withheld to avoid disclosing data for individual companies; data are included in higher level totals.

1/ Revised from previous *Data Book*.

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* (annual)
<<https://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml>> accessed January 27, 2017.

**Table 22.02-- DETAILED MANUFACTURING STATISTICS
(NAICS 31-33): 2007 AND 2012**

[Statistics based on the 2012 North American Industry Classification System (NAICS)]

Item	Year	
	2007	2012
Companies 1/	942	764
All establishments 2/	984	796
0 to 19 employees	813	670
20 to 99 employees	148	104
100 employees or more	23	22
All employees 3/	14,127	11,440
Total compensation (\$1,000)	674,489	602,703
Annual payroll	511,486	465,024
Total fringe benefits	163,003	137,679
Employer cost for health insurance (\$1,000)	51,348	51,919
Production workers, average for year	9,487	7,396
Pay period including March 12	9,671	7,374
Pay period including June 12	9,478	7,355
Pay period including September 12	9,416	7,412
Pay period including December 12	9,383	7,443
Production-worker hours (1,000)	17,480	13,640
Production-worker wages (\$1,000)	294,394	257,974
Total cost of materials (\$1,000)	5,812,515	6,740,826
Materials, parts, containers, packaging, etc., used	5,010,642	5,975,005
Resales	632,000	570,928
Purchased fuels	98,510	121,202
Purchased electricity	32,373	43,758
Contract work	38,990	29,933
Quantity of electricity purchased for heat and power (1,000 kWh)	193,390	129,712
Quantity of electricity generated (1,000 kWh)	454,207	(D)
Quantity of electricity sold or transferred (1,000 kWh)	(D)	(D)
Total value of shipments (\$1,000)	8,799,266	(D)
Value of resales	730,979	645,048
Value added (\$1,000)	3,013,731	1,101,021

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**Table 22.02-- DETAILED MANUFACTURING STATISTICS
(NAICS 31-33): 2007 AND 2012 -- Con.**

Item	Value	
	2007	2012
Total inventories, beginning of year (\$1,000)	761,942	781,501
Finished goods	485,768	(D)
Work-in-process	(D)	(D)
Materials and supplies	(D)	188,586
Total inventories, end of year (\$1,000)	776,859	1,025,186
Finished goods	542,393	390,834
Work-in-process	69,898	403,979
Materials and supplies	164,568	230,373
Gross value of depreciable assets (acquisition costs) at beginning of year (\$1,000)	1,788,164	2,698,293
Total capital expenditures (new and used)	86,735	108,404
Buildings and other structures	15,982	12,834
Machinery and equipment	70,753	95,570
Automobiles, trucks, etc., for highway use	6,713	5,922
Computers and peripheral data processing equipment	8,606	5,513
All other expenditures for machinery and equipment	55,434	84,135
Total retirements	88,206	26,143
Gross value of depreciable assets at end of year (\$1,000)	1,786,693	2,780,554
Depreciation charges during year (\$1,000)	83,345	160,578
Total rental payments (\$1,000)	49,759	60,822
Buildings and other structures	31,654	47,139
Machinery and equipment	18,105	13,683

D Withheld to avoid disclosing data for individual companies; data are included in higher level totals.

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, June, September, and December plus other employees for payroll period that includes the 12th of March.

Source: 2007 Economic Census: EC0731A2, "Manufacturing, Geographic Area Series, Detailed Statistics for the State: 2007" (April 2010) <http://www.census.gov/econ/census07/www/get_data.html>

accessed June 9, 2010; 2012 Economic Census: EC1231A2, "Manufacturing, Geographic Area Series, Detailed Statistics for the State: 2012" (June 2015) <http://factfinder.census.gov/bkmk/table/1.0/en/ECN/2012_US/31A2/0400000US15/naics~31-33> accessed July 1, 2015; and calculations by the Hawaii State Department of Business, Economic Development & Tourism.

**Table 22.03-- STATISTICAL SUMMARY OF MANUFACTURING
(NAICS 31-33), BY COUNTY: 2012**

[For the State, industries with 100 employees or more; for the counties, industries with 500 employees or more. Statistics based on the 2012 North American Industry Classification System (NAICS)]

Subject	State total	City and County of Honolulu	Hawaii	Maui	Kauai
All establishments 1/ With 20 employees or more	796 126	544 106	112 13	99 7	41 -
All employees					
Number	11,440	9,076	1,182	997	185
Payroll (\$1,000)	465,024	370,762	46,354	41,107	6,801
Production workers					
Number	7,396	5,836	823	623	114
Hours (1,000)	13,640	10,715	1,463	1,261	201
Wages (\$1,000)	257,974	201,848	26,236	25,641	4,249
Value added by manufacture (\$1,000)	1,101,021	761,410	145,838	172,964	20,809
Cost of materials 2/ (\$1,000)	6,740,826	6,486,422	133,398	104,138	16,868
Value of shipments 2/ (\$1,000)	(D)	(D)	283,326	(D)	(D)
Total capital expenditures (\$1,000)	108,404	84,849	10,304	12,318	933

D Withheld to avoid disclosing data for individual companies; data are included in higher level totals.

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. Census Bureau, 2012 Economic Census: EC1231A1, "Manufacturing, Geographic Area Series, Industry Statistics for the States, Metropolitan and Micropolitan Statistical Areas, Counties, and Places: 2012" (June 2015) <http://factfinder.census.gov/bkmk/table/1.0/en/ECN/2012_US/31A1/0400000US15|0400000US15.05000/naics~31-33> accessed July 6, 2015.

**Table 22.04-- MANUFACTURING, BY SELECTED INDUSTRY GROUP
(NAICS 31-33): 2015**

[Industry groups with 950 employees or more. Statistics based on the 2012 North American Industry Classification System (NAICS)]

Subject	Total	Food NAICS 311	Food, bakeries & tortilla NAICS 3118	Printing & related support NAICS 323	Printing & related support NAICS 3231	Non- metallic mineral NAICS 327
All employees						
Number	11,382	4,888	2,110	639	639	899
Payroll (\$1,000)	555,756	190,591	74,410	28,934	28,934	59,380
Production workers						
Number	7,446	3,150	1,378	404	404	699
Hours (1,000)	14,695	5,806	2,201	866	866	1,693
Wages (\$1,000)	334,698	104,051	43,395	16,125	16,125	43,506
Total cost of materials (\$1,000) 1/	3,893,007	667,009	137,355	(D)	(D)	(D)
Total value of shipments (\$1,000) 1/	5,904,166	1,394,648	433,336	138,768	138,768	319,997
Value added (\$1,000)	(D)	727,282	301,923	(D)	(D)	194,003
Capital expenditures	116,653	35,105	10,777	(D)	(D)	10,429

D Withheld to avoid disclosing data for individual companies; data are included in higher level totals.

1/ 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: AM1531AS101: Geographic Area Statistics: Statistics for All Manufacturing by State <<https://factfinder.census.gov>> accessed April 24, 2017.

**Table 22.05-- MANUFACTURING, EMPLOYMENT AND WAGES
(NAICS 31-33), BY SELECTED NAICS CODE: 2015**

[Includes only establishments with payroll. Statistics based on the 2012 North American Industry Classification System (NAICS)]

NAICS code	Kind of business	Average establishments	Annual average employment	Total annual wages (\$1,000)	Annual wages per employee
	Total	930	14,075	602,879	42,934
311	Food	304	6,700	207,695	30,999
3112	Grain and oilseed milling	4	32	855	26,377
3113	Sugar & confectionery product	22	841	31,992	38,021
3114	Fruit & vegetable preserving & specialty	20	366	10,139	27,708
3115	Dairy product	15	409	17,656	43,133
3116	Animal slaughtering & processing	18	429	15,270	35,608
3118	Bakeries & tortilla	136	2,651	71,262	26,880
3119	Other food	86	1,937	59,782	30,857
312	Beverage and tobacco product	30	920	43,820	47,626
3121	Beverage	30	920	43,820	47,626
314	Textile product mills	25	188	6,743	35,899
3141	Textile furnishings mills	6	118	4,641	39,357
3149	Other textile product mills	19	70	2,102	30,067
315	Apparel	57	502	15,460	30,776
3212	Plywood & engineered wood product	5	99	3,818	38,757
322	Paper	4	79	4,293	54,057
3222	Converted paper product	4	79	4,293	54,057
323	Printing & related support activities	98	759	27,767	36,596
3231	Printing & related support activities	98	759	27,767	36,596
324	Petroleum and coal products	8	514	62,847	122,269
325	Chemical	33	295	13,854	47,017
3251	Basic chemical	8	121	7,365	60,910
3254	Pharmaceutical and medicine	3	(D)	(D)	(D)
326	Plastics & rubber products	21	319	14,633	45,919
327	Nonmetallic mineral product	54	939	63,705	67,844
3271	Clay product and refractory	4	29	713	24,300
3272	Glass and glass product	8	36	1,247	34,628
3273	Cement & concrete product	25	760	56,086	73,765
3279	Other nonmetallic mineral products	17	113	5,660	49,942
332	Fabricated metal product	42	318	17,675	55,654
3323	Architectural and structural metals	28	216	12,347	57,116
334	Computer & electronic product	13	192	13,927	72,692

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**Table 22.05-- MANUFACTURING, EMPLOYMENT AND WAGES
(NAICS 31-33), BY SELECTED NAICS CODE: 2015 -- Con.**

NAICS code	Kind of business	Average establishments	Annual average employment	Total annual wages (\$1,000)	Annual wages per employee
336	Transportation equipment	25	809	51,924	64,176
3366	Ship & boat building	20	781	50,302	64,448
337	Furniture & related product	51	354	15,982	45,210
3371	Household and institutional furniture	41	268	11,573	43,237
339	Miscellaneous	135	838	29,168	34,793
3391	Medical equipment & supplies	30	179	6,456	35,983
3399	Other miscellaneous	105	659	22,712	34,469

D Withheld to avoid disclosing data for individual companies; data are included in higher level totals.

Source: U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages, "Private, All Industry Aggregations, Hawaii 2015 Annual Averages, All Establishment Sizes"
<https://data.bls.gov/cew/apps/table_maker/v4/table_maker.htm#type=11&year=2015&qtr=A&own=5&area=15000&supp=0> accessed March 1, 2017.

**Table 22.06-- GENERAL EXCISE TAX BASE FOR MANUFACTURING:
1987 TO 2016**

[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	1997	581,259	2007	766,208
1988	629,303	1998	535,371	2008	795,352
1989	630,997	1999	585,305	2009	752,237
1990	728,387	2000	586,039	2010	708,787
1991	714,407	2001	611,292	2011	695,442
1992	714,470	2002	612,658	2012	646,969
1993	717,423	2003	638,863	2013	655,222
1994	618,238	2004	642,245	2014	701,988
1995	614,771	2005	738,573	2015	750,372
1996	622,889	2006	781,626	2016	689,126

Source: Hawaii State Department of Taxation, "General Excise and Use Tax Base" (annual) and as revised. Beginning in 1997, <http://tax.hawaii.gov/stats/a5_3txcolrptarchive/> accessed April 24, 2017.

**Table 22.07-- 25 LARGEST INDUSTRIAL AND HIGH-TECHNOLOGY
PARKS BY ISLAND: 2010 TO 2013**

[The 2014-2015 Book of Lists does not include Industrial & Technology Parks]

Subject	State total	Hawaii	Maui	Molokai	Oahu	Kauai
2010						
Number of parks	25	4	5	1	13	2
Total acres	4,983.52	1,864.22	777.30	16.50	2,256.50	69.00
Developed acres	2,932.10	569.50	205.30	6.70	2,081.60	69.00
Number of tenants 1/	1,125	207	20	(NA)	883	15
Number of owners 2/	537	111	194	9	213	10
2011						
Number of parks	25	4	5	1	13	2
Total acres	4,753.38	1,864.00	701.30	16.50	2,102.58	69.00
Developed acres	2,917.68	609.00	251.30	6.70	1,981.68	69.00
Number of tenants 3/	733	216	20	(NA)	482	15
Number of owners 4/	438	111	145	9	163	10
2012						
Number of parks	25	4	5	1	13	2
Total acres	4,748.88	1,864.00	701.30	16.50	2,098.08	69.00
Developed acres	2,927.38	614.00	251.30	(NA)	1,993.08	69.00
Number of tenants 3/	721	212	20	(NA)	474	15
Number of owners 5/	377	111	90	(NA)	166	10
2013 6/						
Number of parks	25	4	5	1	13	2
Total acres	4,907.20	1,864.00	701.30	16.50	2,256.40	69.00
Developed acres	3,021.70	614.00	251.30	(NA)	2,087.40	69.00
Number of tenants 7/	691	212	20	(NA)	444	15
Number of owners 5/	408	111	90	(NA)	197	10

NA Not available.

1/ Data on number of tenants not available for 8 parks: 4 on Maui, 1 on Molokai, 2 on Oahu and 1 on Kauai.

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

3/ Data on number of tenants not available for 9 parks: 4 on Maui, 1 on Molokai, 3 on Oahu and 1 on Kauai.

4/ Data on number of owners not available for 7 parks: 2 on Maui, 4 on Oahu and 1 on Kauai.

5/ Data on number of owners not available for 9 parks: 3 on Maui, 1 on Molokai, 4 on Oahu and 1 on Kauai.

6/ Data revised from original list published in Vol. 51, No. 33 (October 11, 2013), p. 18.

7/ Data on number of tenants not available for 10 parks: 4 on Maui, 1 on Molokai, 4 on Oahu and 1 on Kauai.

Source: *Pacific Business News*, Vol. 47, No. 46 (January 8, 2010), p. 15; Vol. 48, No. 47 (January 14, 2011), p. 16; Vol. 50, No. 32 (October 5, 2012), p. 18; Vol. 51, No. 33 (October 11, 2013), p. 18; and *Book of Lists* (2014) Vol. 51, No. 43 (December 20, 2013), p. 76.

**Table 22.08-- PINEAPPLE COMPANIES AND CANNERIES, AND
SUGAR COMPANIES AND MILLS, 1955 TO 2016;
AND BY ISLAND: 2016**

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
1995	3	1	8	10
2000	3	1	3	4
2005	3	1	2	2
2006	3	1	2	2
2007	2	-	2	2
2008	2	-	2	2
2009	2	-	1	1
2010	2/ 2	-	1	1
2011	2/ 2	-	1	1
2012	2/ 2	-	1	1
2013	2/ 2	-	1	1
2014	2/ 2	-	1	1
2015	2/ 2	-	1	1
2016	2/ 2	-	3/ 1	3/ 1
ISLAND: 2016				
Hawaii	-	-	-	-
Maui	2/ 1	-	3/ 1	3/ 1
Oahu	2/ 1	-	-	-
Kauai	-	-	-	-

1/ In operation; excludes cooperatives.

2/ Includes Dole Food Company Hawaii & Haliimaile Pineapple Company, might exclude smaller diversified farms.

3/ Hawaiian Commercial & Sugar Company closed its sugar operation at the end of 2016.

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

Table 22.09-- SUGAR AND MOLASSES PRODUCTION: 1991 TO 2016

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	41,762	20,385	1,492,357	206,008	192,535	62,231
2008	39,663	20,426	1,422,296	185,171	173,061	62,278
2009	39,812	20,244	2/ 973,876	176,208	164,684	2/ 40,631
2010	34,693	15,488	1,195,345	171,949	160,704	50,161
2011	35,532	15,063	1,286,373	182,582	169,801	51,106
2012	36,746	15,867	1,259,453	178,549	166,872	49,300
2013	35,556	15,443	1,351,087	191,351	178,837	53,365
2014	35,556	14,193	1,261,235	161,525	172,828	51,615
2015	35,556	12,907	1,146,996	137,556	137,556	45,605
2016 3/	17,500	15,485	1,334,442	157,391	157,391	56,599

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/ Gay & Robinson data not available.

3/ Hawaiian Commercial & Sugar Company ended its sugar operation at the end of 2016.

Source: Hawaiian Sugar Planters' Association, *Hawaiian Sugar Manual* (annual), and records; Hawaii Agriculture Research Center, records; and Hawaiian Commercial & Sugar Company, records.