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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 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: 2012*.

**Table 22.01-- STATISTICAL SUMMARY OF MANUFACTURES (NAICS 31-33):
2016 AND 2018 TO 2021**

[In millions of dollars unless otherwise noted. Includes only establishments of firms with payroll.
2016 statistics based on the 2012 North American Industry Classification System (NAICS).
2018 to 2021 statistics based on the 2017 North American Industry Classification System (NAICS)]

Subject	2016	2018	2019	2020 1/	2021
All employees					
Number (1,000)	11.5	11.5	11.1	10.3	10.5
Annual payroll	568.3	561.5	561.1	490.3	514.0
Production workers					
Number (1,000)	7.1	7.9	7.7	6.9	7.1
Annual hours (1,000)	13.8	14.6	14.5	11.7	12.3
Annual wages	311.9	346.6	346.1	297.8	309.5
Value added by manufacture	2,092.8	2,414.0	2,270.6	1,582.2	2,350.7
Cost of materials	3,543.4	4,696.2	4,429.8	3,070.8	3,680.2
Value of shipments	5,686.3	7,019.7	6,628.1	4,821.9	5,798.6
Total capital expenditures	129.6	201.8	331.4	90.9	71.4

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://data.census.gov/table?q=am1831basic02&g=040XX00US15>> accessed June 16, 2023.

Table 22.02-- DETAILED MANUFACTURING STATISTICS (NAICS 31-33): 2017

[Statistics based on the 2017 North American Industry Classification System (NAICS)]

Item	Value
Number of firms	752
All establishments	783
All employees 1/	11,850
Total compensation (\$1,000)	740,856
Annual payroll	558,523
Total fringe benefits	182,333
Employer's cost for health insurance (\$1,000)	69,444
Employer's cost for defined benefit pension plans (\$1,000)	8,462
Employer's cost for defined contribution plans (\$1,000)	18,071
Employer's cost for other fringe benefits (\$1,000)	86,356
Production workers for pay period including March 12	8,171
Production workers for pay period including June 12	8,226
Production workers for pay period including September 12	8,329
Production workers for pay period including December 12	8,353
Production-worker annual hours (1,000)	14,983
Production-worker annual wages (\$1,000)	343,507
Total cost of materials (\$1,000)	4,049,336
Materials, parts, containers, packaging, etc., used	3,101,472
Resales	795,220
Purchased fuels	45,159
Purchased electricity	40,845
Contract work	66,640
Quantity of electricity purchased for heat and power (1,000 kWh)	161,820
Quantity of electricity generated (1,000 kWh)	(D)
Quantity of electricity sold or transferred (1,000 kWh)	(D)
Total value of shipments (\$1,000)	6,055,913
Value added (\$1,000)	2,251,458
Total inventories, beginning of year (\$1,000)	465,744
Finished goods	232,617
Work-in-process	59,330
Materials and supplies	173,797

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**Table 22.02-- DETAILED MANUFACTURING STATISTICS
(NAICS 31-33): 2017 -- Con.**

Item	2017
Total inventories, end of year (\$1,000)	832,321
Finished goods	436,420
Work-in-process	100,408
Materials and supplies	295,493
Gross value of depreciable assets (acquisition costs) at beginning of year (\$1,000)	2,786,909
Total capital expenditures (new and used)	136,148
Buildings and other structures	28,934
Machinery and equipment	107,214
Automobiles, trucks, etc., for highway use	7,289
Computers and peripheral data processing equipment	2,112
All other expenditures for machinery and equipment	97,813
Total retirements	23,456
Gross value of depreciable assets at end of year (\$1,000)	2,899,601
Depreciation charges during year (\$1,000)	103,010
Total rental payments (\$1,000)	71,193
Buildings and other structures	50,840
Machinery and equipment	20,353
Total other operating expenses (\$1,000)	336,744
Temporary staff and leased employee expenses	24,150
Expensed computer hardware and other equipment	7,754
Expensed purchases of software	2,043
Data processing and other purchased computer services	(D)
Communication services	(D)
Repair and maintenance services of buildings and / or machinery	76,972
Refuse removal (including hazardous waste) services	12,293
Advertising and promotional services	15,708
Purchased professional and technical services	20,418
Taxes and license fees	38,918
All other operating expenses	130,643

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

1/ Employees on payroll during the pay period including March 12.

Source: 2017 Economic Census: ECNBASIC2017, "Manufacturing: Summary Statistics for the U.S., States, and Selected Geographies: 2017" <<https://data.census.gov/cedsci/table?q=EC1731BASIC%3A%20Manufacturing%3A%20Summary%20Statistics%20for%20the%20U.S.,%20States,%20and%20Selected%20Geographies%3A%202017&g=0400000US15&hidePreview=true&tid=ECNBASIC2017.EC1731BASIC>> accessed June 8, 2021.

**Table 22.03-- STATISTICAL SUMMARY OF MANUFACTURING
(NAICS 31-33), BY COUNTY: 2017**

[Statistics based on the 2017 North American Industry Classification System (NAICS)]

Subject	State total	City and County of Honolulu	Hawaii	Maui	Kauai
All establishments 1/	783	501	110	120	52
All employees					
Number	11,850	9,240	1,433	845	332
Annual payroll (\$1,000)	558,523	439,008	66,728	40,789	11,998
Production workers					
Number 2/	8,171	6,342	1,046	561	222
Annual hours (1,000)	14,983	11,662	1,871	1,122	328
Annual wages (\$1,000)	343,507	270,937	40,508	25,007	7,055
Value added by manufacture (\$1,000)	2,251,458	(NA)	(NA)	(NA)	(NA)
Cost of materials 3/ (\$1,000)	4,049,336	3,663,851	260,153	102,171	23,161
Value of shipments 3/ (\$1,000)	6,055,913	5,325,424	447,348	220,436	62,705
Total capital expenditures (\$1,000)	136,148	(NA)	(NA)	(NA)	(NA)

NA Not available.

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

2/ For pay period including March 12.

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: 2017 Economic Census: ECNBASIC2017, "Manufacturing: Summary Statistics for the U.S., States, and Selected Geographies: 2017" <<https://data.census.gov/cedsci/table?q=EC1731BASIC%3A%20Manufacturing%3A%20Summary%20Statistics%20for%20the%20U.S.,%20States,%20and%20Selected%20Geographies%3A%202017&g=0400000US15&hidePreview=true&tid=ECNBASIC2017.EC1731BASIC>> accessed June 8, 2021.

**Table 22.04-- MANUFACTURING, BY SELECTED INDUSTRY GROUP
(NAICS 31-33): 2021**

[Includes only establishments of firms with payroll. Statistics based on the 2017 North American Industry Classification System (NAICS)]

Subject	Total	Food NAICS 311	Beverage and tobacco product NAICS 312	Wood product NAICS 321	Non- metallic mineral NAICS 327	Fabricated metal product NAICS 332
All employees						
Number	10,501	3,856	1,257	329	956	380
Annual payroll (\$1,000)	513,976	154,712	60,364	14,231	65,930	26,803
Production workers						
Number 1/	7,141	2,437	925	238	681	247
Annual hours (1,000)	12,322	3,630	1,766	453	1,280	520
Annual wages (\$1,000)	309,471	79,979	40,949	8,583	47,391	13,744
Total cost of materials (\$1,000) 2/	3,680,176	541,350	101,581	76,880	(D)	(D)
Total value of shipments (\$1,000) 2/	5,798,570	1,016,175	299,062	137,145	347,674	113,477
Value added (\$1,000)	2,350,726	477,531	208,206	(D)	(D)	71,982
Capital expenditures	71,434	(D)	11,488	4,595	14,525	5,248

D Withheld to avoid disclosing data for individual companies.

1/ For pay period including March 12.

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://data.census.gov/table?q=am1831basic02&g=040XX00US15&n=31-33:N0300.00&tid=ASMAREA2017.AM1831BASIC02&nkd=YEAR~2021>> accessed June 16, 2023.

**Table 22.05-- MANUFACTURING EMPLOYMENT AND WAGES (NAICS 31-33),
BY SELECTED NAICS CODE: 2022**

[Includes only establishments with payroll. Statistics based on the 2017 North American Industry Classification System (NAICS)]

NAICS code	Industry	Average establishments	Annual average employment	Total annual wages (\$1,000)	Annual wages per employee
	Total	1,102	12,476	653,173	52,353
311	Food	392	5,815	227,980	39,203
3112	Grain and oilseed milling	4	33	665	20,101
3113	Sugar & confectionery product	35	581	22,515	38,769
3114	Fruit & vegetable preserving & specialty	24	261	10,531	40,310
3115	Dairy product	19	408	20,182	49,445
3116	Animal slaughtering & processing	24	506	23,064	45,597
3118	Bakeries & tortilla	165	2,139	77,170	36,074
3119	Other food	119	1,848	71,969	38,939
312	Beverage and tobacco product	53	1,251	72,708	58,136
314	Textile product mills	25	149	7,069	47,603
315	Apparel	54	304	11,145	36,641
316	Leather and allied product	9	77	2,534	32,833
3169	Other leather and allied product	5	23	1,079	46,930
3212	Plywood & engineered wood product	6	113	4,744	41,856
321	Wood product	22	196	8,877	45,386
322	Paper	3	83	4,827	58,159
323	Printing & related support activities	107	549	22,374	40,742
325	Chemical	56	409	24,267	59,393
3251	Basic chemical	17	210	14,099	67,193
3254	Pharmaceutical and medicine	8	17	1,801	103,419
3256	Soap, cleaning compound & toiletry	24	109	4,643	42,498
326	Plastics & rubber products	20	264	15,620	59,112
327	Nonmetallic mineral product	45	733	61,623	84,127
3273	Cement & concrete product	22	591	53,547	90,617
3279	Other nonmetallic mineral products	13	80	4,791	59,580
332	Fabricated metal product	44	319	20,741	65,088
3323	Architectural and structural metals	28	195	12,529	64,143
3327	Machine shops products	6	29	1,203	41,718
3328	Coating, engraving & heat treating metals	6	19	951	50,495
333	Machinery	5	39	2,331	59,641
334	Computer & electronic product	17	204	18,480	90,772
3345	Navigational, measuring, electromedical, and control instruments	7	170	15,037	88,714
3346	Reproducing magnetic and optical media	4	3	348	104,328

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**Table 22.05-- MANUFACTURING EMPLOYMENT AND WAGES (NAICS 31-33),
BY SELECTED NAICS CODE: 2022 -- Con.**

NAICS code	Industry	Average establishments	Annual average employment	Total annual wages (\$1,000)	Annual wages per employee
336	Transportation equipment	30	610	53,644	87,990
3366	Ship & boat building	22	599	52,485	87,609
337	Furniture & related product	53	329	17,261	52,439
3371	Household and institutional furniture	44	265	13,967	52,641
339	Miscellaneous	155	786	35,865	45,649
3391	Medical equipment & supplies	29	170	8,395	49,385
3399	Other miscellaneous	126	616	27,470	44,618

Source: U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages, "Private, All Industry Aggregations, Hawaii 2022 Annual Averages"
<https://data.bls.gov/cew/apps/data_views/data_views.htm#tab=Tables> accessed June 16, 2023.

**Table 22.06-- GENERAL EXCISE TAX BASE FOR MANUFACTURING:
1987 TO 2022**

[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	1999	585,305	2011	695,442
1988	629,303	2000	586,039	2012	646,969
1989	630,997	2001	611,292	2013	655,222
1990	728,387	2002	612,658	2014	701,988
1991	714,407	2003	638,863	2015	750,372
1992	714,470	2004	642,245	2016	689,126
1993	717,423	2005	738,573	2017	733,105
1994	618,238	2006	781,626	2018	607,793
1995	614,771	2007	766,208	2019	587,979
1996	622,889	2008	795,352	2020	558,052
1997	581,259	2009	752,237	2021	446,034
1998	535,371	2010	708,787	2022	473,407

Source: Hawaii State Department of Taxation, "General Excise and Use Tax Base" (annual). Beginning in 1997, Full Monthly Tax Reports By Year <https://tax.hawaii.gov/stats/a5_3txcolrpt/> accessed June 16, 2023.

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

[Since the 2013-2014 edition, the *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 2022; AND BY ISLAND: 2022

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
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
2017	2/ 2	-	-	-
2018	2/ 2	-	-	-
2019	2/ 2	-	-	-
2020	2/ 2	-	-	-
2021	2/ 2	-	-	-
2022	2/ 2	-	-	-
ISLAND: 2022				
Hawaii	-	-	-	-
Maui	1	-	-	-
Oahu	1	-	-	-
Kauai	-	-	-	-

1/ In operation; excludes cooperatives.

2/ Includes Dole Food Company Hawaii and Maui Gold 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.