

- Receipts of the establishments that were engaged in industrial related activities (covering Manufacturing and Electricity, Gas & Water Supply) totalled MOP11.69 billion in 2019, with Value of Production accounting for MOP11.55 billion (98.8% of total), both of which recorded an increase of 5.0% year-on-year. Expenditure of these establishments rose by 7.7% to MOP8.64 billion, of which Intermediate Consumption (MOP6.27 billion, 72.6% of total) and Compensation of Employees (MOP2.37 billion, 27.4%) grew by 7.1% and 9.3% respectively.
- As the increase in expenditure was greater than that in receipts, Gross Surplus of the sector decreased by 1.9% year-on-year to MOP3.05 billion in 2019. Gross Value Added that measures the sectoral contribution to the economy went up by 2.7% to MOP5.41 billion while Gross Fixed Capital Formation declined by 10.0% to MOP1.74 billion.
- Operating establishments that were engaged in industrial related activities totalled 900, a decrease of 16 year-on-year. Total number of persons engaged increased by 124 to 12,553.

Principal Indicators

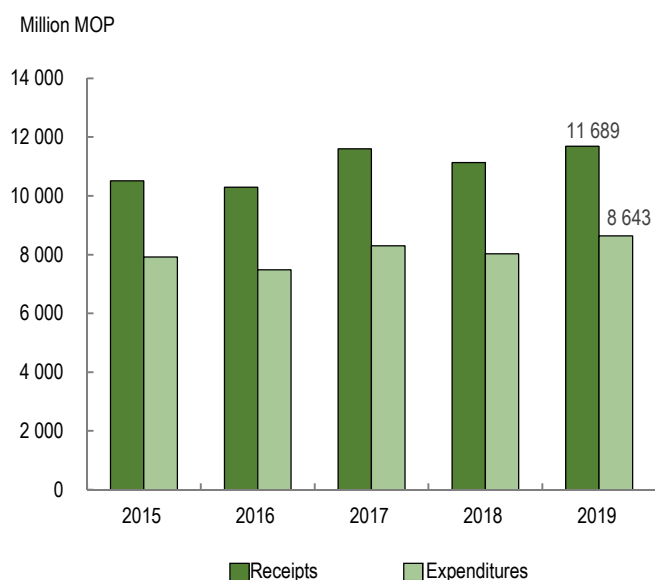
	Million MOP					
	Total		Manufacturing sector		Electricity, gas and water supply	
	2019	Change (%)	2019	Change (%)	2019	Change (%)
Establishments (No.)	900	-1.7	894	-1.8	6	-
Persons engaged (No.)	12 553	1.0	11 448	1.2	1 105	-0.6
Receipts	11 689	5.0	7 171	0.1	4 518	13.8
Value of production	11 546	5.0	7 041	0 [#]	4 505	13.8
Expenditures	8 643	7.7	6 229	0.4	2 415	32.4
Intermediate consumption	6 275	7.1	4 587	-0.5	1 687	35.2
Compensation of employees	2 369	9.3	1 641	3.2	727	26.3
Gross value added	5 415	2.7	2 584	1.3	2 831	4.0
Gross fixed capital formation	1 743	-10.0	268	-17.0	1 475	-8.5
Gross surplus	3 046	-1.9	943	-1.7	2 103	-2.0
Gross Surplus Ratio (%)	26.1	-1.8 p.p.	13.1	-0.3 p.p.	46.6	-7.5 p.p.
Gross Surplus-Expenditure Ratio (%)	35.2	-3.5 p.p.	15.1	-0.4 p.p.	87.1	-30.6 p.p.

Receipts of the Manufacturing sector were primarily generated from sales of goods produced by the establishment, which accounted for 83.1% of the total; receipts from industrial work and services rendered took up 9.8%. As for the Electricity, Gas & Water Supply sector, 47.4% of the receipts were gross margin on goods purchased for resale, 43.1% came from sales of goods produced and 9.2% were from industrial work and services rendered.

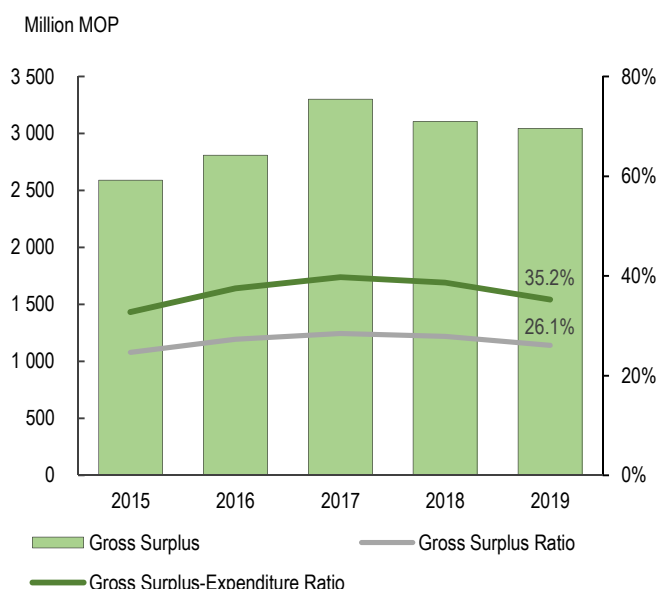
In terms of expenditure, Intermediate Consumption and Compensation of Employees made up 73.6% and 26.4% of the total expenditure of the Manufacturing sector, whereas the corresponding proportions for the Electricity, Gas & Water Supply sector were 69.9% and 30.1% respectively.

Gross Surplus Ratio (the percentage of Gross Surplus in receipts) of the Industrial sector was 26.1%, while the ratios for the Electricity, Gas & Water Supply sector and the Manufacturing sector were 46.6% and 13.1% respectively. As regards Gross Surplus-Expenditure Ratio that measures cost-effectiveness, the ratio for the Industrial sector was 35.2%, and the ratios for the Electricity, Gas & Water Supply sector and the Manufacturing sector were 87.1% and 15.1% respectively.

Receipts and Expenditures



Gross Surplus Ratio and Gross Surplus-Expenditure Ratio



Manufacturing

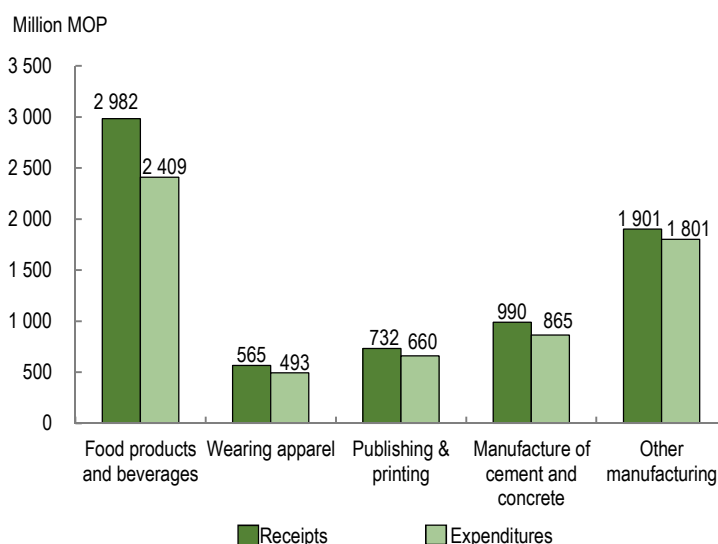
Number of establishments decreased by 16 year-on-year to 894, of which 422 were related to Manufacture of Food Products & Beverages. Number of persons engaged was 11,448, an increase of 131.

Receipts of the Manufacturing sector amounted to MOP7.17 billion, a slight increase of 0.1% year-on-year. Expenditure rose by 0.4% to MOP6.23 billion, of which Compensation of Employees (MOP1.64 billion) grew by 3.2% while Intermediate Consumption (MOP4.59 billion) dropped by 0.5%. Gross Value Added (MOP2.58 billion) went up by 1.3%. Meanwhile, Gross Surplus decreased by 1.7% to MOP943 million owing to an increase in Compensation of Employees. Gross Fixed Capital Formation of the sector slid by 17.0% to MOP268 million.

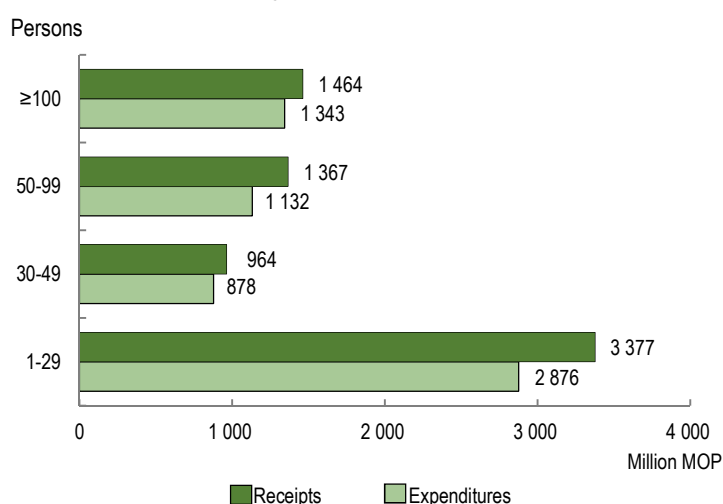
Among the establishments related to the Manufacturing sector, 92.4% were small-scale establishments with less than 30 persons engaged; number of these establishments dropped by 18 year-on-year to 826. Analysed by industry, small-scale establishments (164) accounted for 94.3% of the establishments operating in the Publishing & Printing industry, whereas those in Manufacture of Food Products & Beverages (389) constituted 92.2% of the total. Receipts of the small-scale establishments in the Manufacturing sector grew by 3.6% year-on-year to MOP3.38 billion in 2019, whereas Expenditure went up by 4.2% to MOP2.88 billion.

On the other hand, establishments with 100 or more persons engaged in the Manufacturing sector increased by 2 year-on-year to 12, of which 5 were related to Manufacture of Food Products & Beverages. Receipts and Expenditure of these establishments totalled MOP1.46 billion and MOP1.34 billion respectively in 2019, down by 6.2% and 2.9% year-on-year.

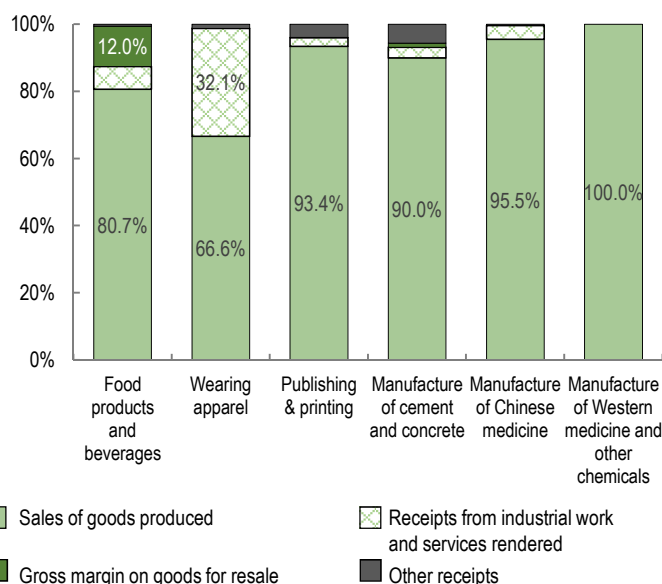
Receipts and Expenditures of the Manufacturing Sector



Receipts and Expenditures of the Manufacturing Sector by Size of Establishment



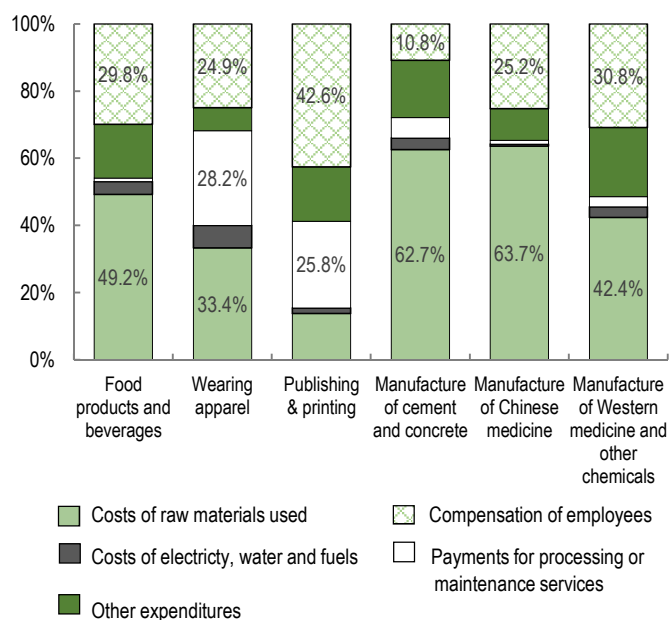
Structure of Receipts of Manufacturing Sector



Costs of raw materials used and compensation of employees were the major expenditure items of the Manufacturing sector. Costs of raw materials used made up 60% or more of the respective expenditure of Manufacture of Cement & Concrete and Manufacture of Chinese Medicine. Meanwhile, compensation of employees took up 42.6% of the expenditure of the Publishing & Printing industry, while the corresponding proportions for Manufacture of Western Medicine & Other Chemicals and Manufacture of Food Products & Beverages were 30.8% and 29.8% respectively.

The main source of receipts of the Manufacturing sector was sales of goods produced, which accounted for 95% or more of the respective receipts of Manufacture of Western Medicine & Other Chemicals and Manufacture of Chinese Medicine. Besides, 32.1% of the receipts of Manufacture of Wearing Apparel came from industrial work and services rendered, whereas 12.0% of the receipts of Manufacture of Food Products & Beverages were gross margin on goods for resale.

Structure of Expenditures of Manufacturing Sector



Manufacture of Food Products & Beverages

Principal Indicators

	Million MOP					
	Total		Chinese bakery products		Western bakery products	
	2019	Change (%)	2019	Change (%)	2019	Change (%)
Establishments (No.)	422	2.2	94	5.6	155	-0.6
Persons engaged (No.)	5 950	5.3	1 109	-	1 922	-6.8
Receipts	2 982	13.1	887	4.9	755	2.5
Value of production	2 966	13.0	887	4.9	753	2.5
Expenditures	2 409	15.6	536	1.2	648	3.8
Intermediate consumption	1 690	19.2	379	0.8	423	5.2
Compensation of employees	719	7.8	157	2.2	225	1.4
Gross value added	1 292	5.9	508	8.3	332	-0.6
Gross fixed capital formation	79	-39.5	19	-5.8	26	-44.1
Gross surplus	573	3.6	351	11.2	107	-4.5
Gross Surplus Ratio (%)	19.2	-1.7 p.p.	39.6	2.3 p.p.	14.1	-1.1 p.p.
Gross Surplus-Expenditure Ratio (%)	23.8	-2.7 p.p.	65.5	5.9 p.p.	16.5	-1.4 p.p.

There were 422 establishments related to Manufacture of Food Products & Beverages, an increase of 9 year-on-year; 94 of them were engaged in Manufacture of Chinese Bakery Products and 155 in Manufacture of Western Bakery Products. Number of persons engaged in the industry rose by 297 year-on-year to 5,950.

Receipts of the industry grew by 13.1% year-on-year to MOP2.98 billion and Expenditure went up by 15.6% to MOP2.41 billion. Gross Value Added (MOP1.29 billion) and Gross Surplus (MOP 573 million) rose by 5.9% and 3.6% respectively.

Receipts of Manufacture of Chinese Bakery Products increased by 4.9% year-on-year to MOP887 million, of which 63.7% were generated from sales of goods produced and 36.3% were gross margin on goods for resale; both proportions held steady year-on-year. Expenditure of the industry grew by 1.2% to MOP536 million. Gross Value Added rose by 8.3% to MOP508 million; Gross Surplus increased by 11.2% to MOP351 million and Gross Surplus Ratio grew by 2.3 percentage points to 39.6%.

Receipts (MOP755 million) and Expenditure (MOP648 million) of Manufacture of Western Bakery Products increased by 2.5% and 3.8% respectively. As the growth in expenditure outpaced that in receipts, Gross Surplus (MOP107 million) dropped by 4.5%. Gross Surplus Ratio decreased by 1.1 percentage points to 14.1%. Gross Value Added totalled MOP332 million, down by 0.6%.

Manufacture of Wearing Apparel

A total of 111 establishments were operating in the Manufacture of Wearing Apparel industry, an increase of 7 year-on-year; 81 of them were engaged in Manufacture of Tailor Made Clothing and 30 in Manufacture of Garment. Number of persons engaged in the industry rose by 164 to 1,298, with 1,106 working in establishments of Manufacture of Garment and 192 in establishments of Manufacture of Tailor Made Clothing.

Driven by an increase in orders from abroad, Receipts of Manufacture of Garment rose by 49.3% to MOP515 million, of which receipts from sales of goods produced (MOP331 million) surged by 87.9%. Intermediate Consumption went up by 82.5% to MOP342 million due to increased production. Gross Value Added (MOP173 million) and Gross Surplus (MOP65.78 million) grew by 9.9% and 8.6% respectively.

As regards Manufacture of Tailor Made Clothing, Receipts (MOP49.99 million), Expenditure (MOP43.98 million), Gross Value Added (MOP21.42 million) and Gross Surplus (MOP6.01 million) fell by 15.6%, 11.8%, 3.0% and 35.9% respectively.

Manufacture of Cement & Concrete

Number of establishments dropped by 1 year-on-year to 9. Number of persons engaged declined for the fourth consecutive year, down by 18 year-on-year to 381 in 2019.

Receipts of the industry slid by 17.9% year-on-year to MOP990 million in 2019, representing the fifth successive year of decline, which was ascribable to the decreasing demand for cement and concrete resulting from a decrease in number of local large-scale construction projects. Expenditure (MOP865 million), Gross Value Added (MOP218 million) and Gross Surplus (MOP125 million) of the industry went down by 17.3%, 15.4% and 21.7% respectively.

Publishing & Printing

Number of establishments decreased by 12 year-on-year to 174, with 1,679 persons engaged, down by 213.

Receipts of the industry totalled MOP732 million in 2019, up by 1.6% year-on-year. Expenditure fell by 3.7% to MOP660 million; apart from a decrease in Compensation of Employees, a reduction was also observed in payments for processing services rendered by third parties as some establishments acquired additional machinery for their own production. Gross Value Added (MOP353 million) and Gross Surplus (MOP72.64 million) of the industry recorded respective increases of 10.0% and 103.0%. Gross Surplus Ratio was 9.9%, up by 4.9 percentage points.

Principal Indicators

Million MOP

	Wearing apparel		Cement & concrete		Publishing & printing	
	2019	Change (%)	2019	Change (%)	2019	Change (%)
Establishments (No.)	111	6.7	9	-10.0	174	-6.5
Persons engaged (No.)	1 298	14.5	381	-4.5	1 679	-11.3
Receipts	565	39.8	990	-17.9	732	1.6
Value of production	558	42.8	935	-20.1	704	2.3
Expenditures	493	47.6	865	-17.3	660	-3.7
Intermediate consumption	370	65.0	772	-18.6	379	-5.2
Compensation of employees	123	12.0	93	-5.1	281	-1.7
Gross value added	195	8.3	218	-15.4	353	10.0
Gross fixed capital formation	56	1 909.5	-13	..	68	39.0
Gross surplus	72	2.6	125	-21.7	73	103.0
Gross Surplus Ratio (%)	12.7	-4.6 p.p.	12.6	-0.6 p.p.	9.9	4.9 p.p.
Gross Surplus-Expenditure Ratio (%)	14.6	-6.3 p.p.	14.5	-0.8 p.p.	11.0	5.8 p.p.

Principal Indicators

Million MOP

	Chinese Medicine		Western Medicine & Other Chemicals	
	2019	Change (%)	2019	Change (%)
Establishments (No.)	5	-16.7	5	-
Persons engaged (No.)	104	-2.8	246	-1.2
Receipts	73	77.8	274	-14.1
Value of production	73	77.2	274	-14.1
Expenditures	56	11.9	249	-10.5
Intermediate consumption	42	11.1	173	-16.4
Compensation of employees	14	14.4	77	6.5
Gross value added	31	810.2	102	-9.8
Gross fixed capital formation	2	-81.8	59	-40.8
Gross surplus	17	..	25	-38.5
Gross Surplus Ratio (%)	23.4	..	9.1	-3.7 p.p.
Gross Surplus-Expenditure Ratio (%)	30.6	..	10.1	-4.6 p.p.

Manufacture of Chinese Medicine

Number of establishments engaged in Manufacture of Chinese Medicine decreased by 1 year-on-year to 5, and number of persons engaged dropped by 3 to 104.

With an increase in goods sold abroad, Receipts of the industry surged by 77.8% year-on-year to MOP73.10 million. Expenditure rose by 11.9% to MOP55.96 million. Gross Surplus totalled MOP17.14 million, indicating that the industry turned a profit.

Electricity, Gas & Water Supply

Number of establishments remained at 6, whereas number of persons engaged decreased by 7 to 1,105.

With increased local electricity production, which drove up the consumption of natural gas used for electricity generation, Receipts of the sector rose by 13.8% year-on-year to MOP4.52 billion. Receipts from sales of goods produced (MOP1.95 billion) and gross margin on goods purchased for resale (MOP2.14 billion) went up by 17.0% and 6.1% respectively. In terms of the structure of receipts, the proportion of gross margin on goods for resale shrank by 3.5 percentage points while the share of receipts from industrial work and services rendered expanded by 2.3 percentage points.

Expenditure of the sector grew by 32.4% to MOP2.41 billion; costs of raw materials used (MOP1.24 billion) and payments for processing or maintenance services (MOP246 million) increased by 38.3% and 60.4% respectively, with their proportions in expenditure rising by 2.2 and 1.8 percentage points respectively. Gross Surplus decreased by 2.0% year-on-year to MOP2.10 billion owing to increased expenditure. Gross Surplus Ratio dropped by 7.5 percentage points to 46.6%, and Gross Surplus-Expenditure Ratio fell by 30.6 percentage points to 87.1%.

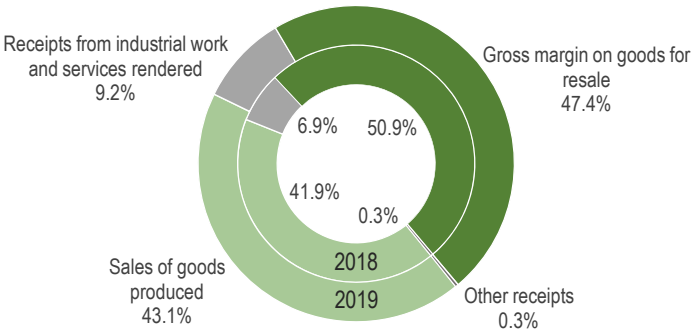
Gross Value Added of the sector amounted to MOP2.83 billion, up by 4.0% year-on-year. Gross Fixed Capital Formation decreased by 8.5% to MOP1.48 billion.

Manufacture of Western Medicine & Other Chemicals

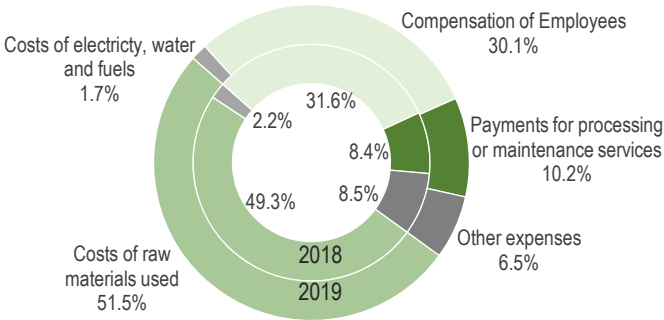
Number of establishments stayed at 5 year-on-year, while number of persons engaged decreased by 3 to 246.

With a decrease in orders from abroad, Receipts of this export-oriented industry dropped by 14.1% year-on-year to MOP274 million. Expenditure (MOP249 million) declined by 10.5%. Gross Value Added (MOP102 million) and Gross Surplus (MOP25.10 million) slid by 9.8% and 38.5% respectively. Gross Surplus Ratio fell by 3.7 percentage points to 9.1%.

Structure of Receipts



Structure of Expenditures



Historical Data on Principal Indicators

	2014	2015	2016	2017 ^r	2018 ^r
Establishments (No)	863	899	882	932	916
Persons Engaged (No)	12 308	11 905	12 047	12 502	12 429
Receipts (Million MOP, the same below)	10 681	10 507	10 297	11 597	11 132
Intermediate Consumption	6 528	5 970	5 428	6 097	5 860
Compensation of Employees	2 012	1 945	2 059	2 199	2 166
Gross Surplus	2 141	2 592	2 809	3 301	3 105
Gross Fixed Capital Formation	995	1 218	1 134	1 175	1 936
Gross Value Added	4 152	4 537	4 869	5 500	5 272
Manufacturing	1 912	2 164	2 293	2 492	2 550
Food Products & Beverages	574	690	774	1 069	1 220
Wearing Apparel	150	131	169	152	180
Publishing & Printing	248	308	274	266	321
Cement & Concrete	390	506	403	330	258
Other Manufacturing Industries	550	528	673	675	570
Electricity, Gas & Water Supply	2 240	2 373	2 576	3 008	2 722
Mining & Quarrying	-	-	-	-	-
Average Value Added per Person Engaged ('000 MOP)	337	381	404	440	424
Gross Surplus Ratio (%)	20.0	24.7	27.3	28.5	27.9
Gross Surplus-Expenditure Ratio (%)	25.1	32.7	37.5	39.8	38.7

Survey Coverage

The Industrial Survey covers all establishments engaging in activities related to Section C (Mining & quarrying), Section D (Manufacturing) and Section E (Electricity, gas & water supply) of the Classification of Economic Activities of Macao, Revision 1 (CAM-Rev.1). Since 2014, there is no establishment in Macao operating in activities under Section C. When an enterprise has more than one establishment engaging in the same industry, these establishments are considered as one statistical unit.

Sampling and Statistical Inference of Results

Samples were selected by stratified random sampling based on the list of establishments originated from the Statistics and Census Service (DSEC). For those strata with limited number of statistical units, establishments with 100 or more persons engaged, as well as statistical units comprising multiple establishments, full enumeration was undertaken.

The strata were formed according to CAM-Rev.1 and the number of persons engaged. Some industries of small significance were grouped under "Manufacturing not elsewhere classified". Number of persons engaged was classified into less than 30, 30 – 49, 50 – 99 and 100 or more.

Sample size of the Industrial Survey 2019 comprised 425 statistical units, of which 91 establishments were excluded due to inactivity, closure, non-contact, etc. Hence, survey results were extrapolated from the information collected from 334 completed questionnaires.

Statistical inference:

1) Estimation of the total value of variable Y of a particular industry:
$$\hat{Y}_j = \sum_{h=1}^4 \sum_{i=1}^{n_{hj}} w_{hj} * y_{hji}$$

2) Estimated variance of parameter Y of industry j :
$$\hat{V}(Y_j) = \sum_{h=1}^4 \left(1 - \frac{1}{w_{hj}} \right) * N_{hj}^2 * \frac{s_{hj}^2}{n_{hj}}$$

Of which:

j : industry group; h : number of persons engaged; i : a specific establishment of the sample $w_{hj} = \frac{N_{hj}}{n_{hj}}$
 y_{hji} : observed value of variable y of sample i n_{hj} : number of sample establishments of stratum hj ; N_{hj} : total number of establishments of hj ; S_{hj} : standard deviation of variable y of stratum hj

Standard error of principal indicators

					'000 MOP
Persons engaged (No.)	Compensation of employees	Receipts	Intermediate consumption	Gross value added	Gross fixed capital formation
239	36 844	127 560	105 818	36 846	3 483

Glossary

Establishment

An economic unit which engages, under a single legal entity, in one or predominantly one kind of industrial related activities at a single location.

Persons Engaged

Individuals who work for the establishment as at the last working day of the reference year, including employees and unpaid workers; however, those who are absent on that day and are absent for an indefinite period are excluded.

Compensation of Employees

Remuneration paid by the establishment to the employees before any deductions, including remuneration in kind and payments for other employees' welfare.

Value of Production

Sales of goods produced by the establishment (including production for own use); plus receipts from industrial work and services rendered to other establishments (e.g. processing work, repair, maintenance and installation services rendered, research and development performed); gross margin on goods for resale, and changes in inventories of goods.

Other Receipts

Receipts from non-industrial work/services rendered to others, e.g. rent from leasing industrial equipment and plant; income from operating canteen or providing other services to staff; commission; income from patents and trademarks, etc.

Receipts

Value of production plus other receipts.

Cost of Production

Costs of raw materials, water, electricity and fuels acquired, plus expenses on industrial work performed by others and changes in inventories of raw materials.

Intermediate Consumption

Cost of production plus other expenses (e.g. rental payments incurred for the use of plant and industrial buildings, machinery and equipment; expenses on communications, etc.).

Expenditure

Intermediate consumption plus compensation of employees.

Value Added of Industry

Value of production less cost of production.

Gross Value Added

Total receipts less intermediate consumption.

Gross Fixed Capital Formation

Equals the value of acquisition minus disposal of fixed assets (new, used and produced by the establishment for own use), which include buildings, furniture, machinery and equipment, vehicles and other durable goods with a usable span of one year or more. Also included are major repairs, alterations and extensions made to the existing assets.

Gross Surplus

Receipts less intermediate consumption and compensation of employees.

Gross Surplus Ratio

Gross Surplus divided by receipts and then multiplied by 100%. The higher the ratio, the more effective a business is at converting receipts into gross surplus.

Gross Surplus-Expenditure Ratio

Gross Surplus divided by expenditure (including Intermediate Consumption and Compensation of Employees) and multiplied by 100%. The higher the ratio, the more cost-effective an establishment is.

Average Value Added per Person Engaged

Gross Value Added divided by number of persons engaged. An indicator that measures the sectoral contribution of each person engaged to the economy.

Symbols

r	Revised Figures
-	Absolute value equals zero
MOP	Macao Patacas
'000	Thousand
..	Not applicable
0 [#]	Magnitude less than half of the unit employed
p.p.	Percentage point

For additional information:

<http://www.dsec.gov.mo/e/ind.aspx>

