

- Receipts of industrial sector (covering Manufacturing and Electricity, Gas & Water Supply) decreased by 4.1% year-on-year to MOP11.07 billion in 2018, with Value of Production (MOP10.92 billion) and Other Receipts (MOP148 million) dropping by 4.0% and 12.1% respectively. Expenditure of the sector went down by 4.0% to MOP7.96 billion, of which Intermediate Consumption (MOP5.80 billion) and Compensation of Employees (MOP2.16 billion) reduced by 4.8% and 1.9%.
- Gross Surplus (receipts less expenditure) of the industrial sector totalled MOP3.11 billion, down by 4.3% year-on-year. Gross Value Added that measures the sectoral contribution to the economy dropped by 3.3% to MOP5.27 billion.
- Number of operating industrial establishments went down by 20 year-on-year to 913, consisting mainly of manufacturing establishments with less than 30 persons engaged (844). Total number of persons engaged fell by 1.5% to 12,313.

Principal Indicators

Million MOP

	Total		Manufacturing Sector		Electricity, gas and water supply	
	2018	Change (%)	2018	Change (%)	2018	Change (%)
Establishments (No.)	913	-2.1	907	-2.2	6	-
Persons engaged (No.)	12 313	-1.5	11 201	-1.5	1 112	-1.4
Receipts	11 070	-4.1	7 100	0.7	3 970	-11.6
Value of production	10 922	-4.0	6 965	1.0	3 957	-11.7
Expenditures	7 961	-4.0	6 137	-0.9	1 824	-13.4
Intermediate consumption	5 803	-4.8	4 555	-1.2	1 248	-16.0
Compensation of employees	2 158	-1.9	1 582	0.2	576	-7.2
Gross value added	5 267	-3.3	2 545	4.3	2 722	-9.5
Gross fixed capital formation	1 886	60.5	273	-11.3	1 613	85.9
Gross surplus	3 109	-4.3	963	11.9	2 146	-10.1
Average gross surplus per establishment	3.4	-2.2	1.1	14.4	357.7	-10.1
Gross Surplus Ratio (%)	28.1	0# p.p.	13.6	1.4 p.p.	54.1	0.9 p.p.

Receipts of the industrial sector declined year-on-year, of which receipts of the Electricity, Gas & Water Supply sector dropped by 11.6% to MOP3.97 billion while those of the Manufacturing sector edged up by 0.7% to MOP7.10 billion.

Most of the statistical indicators that measure the performance of the industrial sector showed decreases. Yet, Gross Fixed Capital Formation increased by 60.5% year-on-year to MOP1.89 billion, on account of an increase in acquisition of machinery and equipment by some establishments in the Electricity, Gas & Water Supply sector.

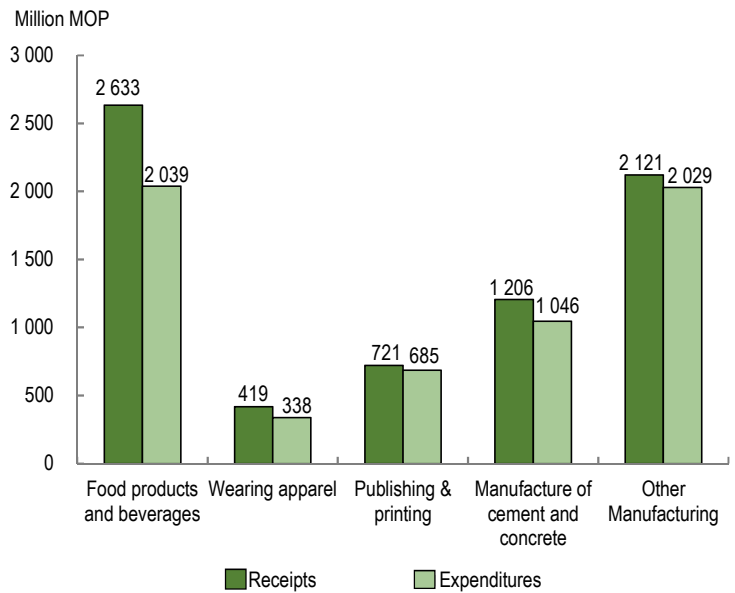
Gross Surplus of the industrial sector totalled MOP3.11 billion, a drop of 4.3% year-on-year. Gross Surplus of the Electricity, Gas & Water Supply sector (MOP2.15 billion) fell by 10.1% whereas that of the Manufacturing sector (MOP963 million) rose by 11.9%. Gross Surplus Ratio of the industrial sector was 28.1%, while the ratios for the Electricity, Gas & Water Supply and Manufacturing sectors were 54.1% and 13.6% respectively.

Manufacturing

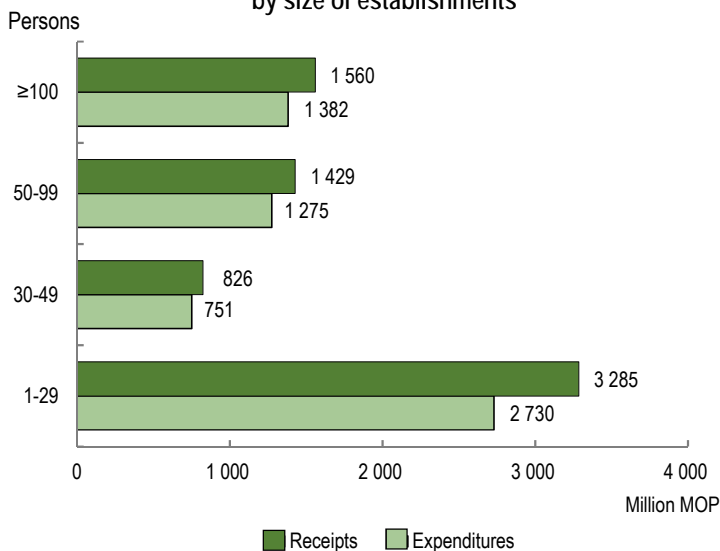
Number of establishments operating in the Manufacturing sector decreased by 20 year-on-year to 907, of which 414 were engaged in Manufacture of Food Products & Beverages. Number of persons engaged was 11,201, down by 174 (-1.5%).

Receipts of the Manufacturing sector increased by 0.7% year-on-year, underpinned by Manufacture of Food Products & Beverages. Expenditure went down by 0.9% to MOP6.14 billion, of which Intermediate Consumption (MOP4.55 billion) dropped by 1.2% but Compensation of Employees (MOP1.58 billion) inched up by 0.2%. As receipts increased and expenditure decreased, Gross Surplus of the sector grew by 11.9% to MOP963 million; Gross Value Added (MOP2.55 billion) also rose by 4.3% year-on-year. Gross Fixed Capital Formation slid by 11.3% to MOP273 million, mainly due to a drop in the acquisition of transport equipment by some establishments. Average Gross Surplus per manufacturing establishment was MOP1.06 million, a rise of 14.4% year-on-year. Gross Surplus Ratio grew by 1.4 percentage points to 13.6%.

Receipts and Expenditures of the Manufacturing sector



Receipts and Expenditures of the Manufacturing sector by size of establishments



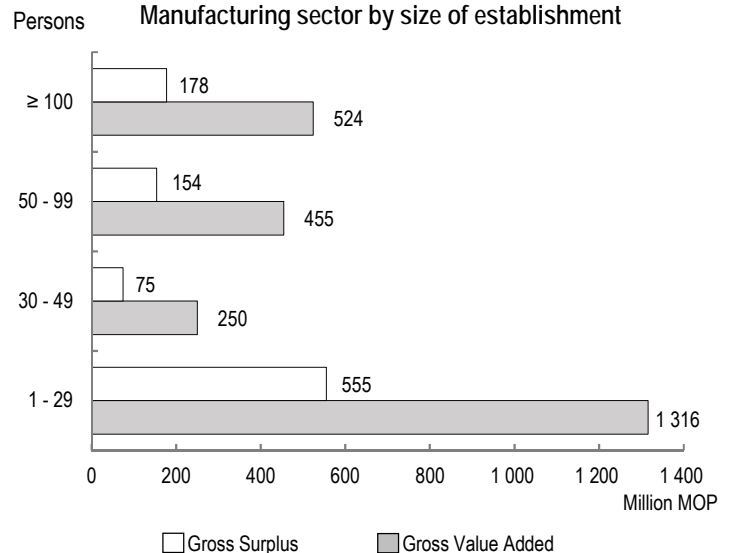
Number of small-scale establishments with less than 30 persons engaged dropped by 15 year-on-year to 844, accounting for 93.1% of the Manufacturing sector. Analysed by industry, small-scale establishments operating in the Publishing & Printing industry (178) took up 95.7% of the total, whereas the corresponding proportion of those engaged in Manufacture of Food Products & Beverages (386) made up 93.2% of the total. Receipts of the small-scale establishments grew by 12.0% year-on-year to MOP3.29 billion and Expenditure rose by 7.7% to MOP2.73 billion.

Meanwhile, establishments with 100 or more persons engaged decreased by 1 year-on-year to 10, and 3 of them were engaged in Manufacture of Food Products & Beverages. Receipts and Expenditure of these establishments totalled MOP1.56 billion and MOP1.38 billion respectively, down by 12.5% and 10.4% year-on-year.

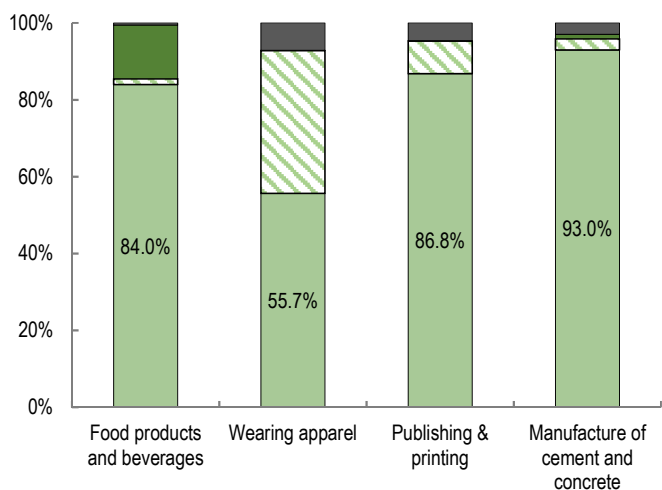
Sales of goods produced, the main source of receipts of the Manufacturing sector, accounted for 93.0% and 86.8% of the receipts of Manufacture of Cement & Concrete and Publishing & Printing respectively. Besides, 37.2% of the receipts of Manufacture of Wearing Apparel came from industrial work and services rendered, whereas 14.0% of the receipts of Manufacture of Food Products & Beverages were gross margin on goods for resale.

As regards Expenditure structure, costs of raw materials used and compensation of employees occupied significant shares. Costs of raw materials used took up 67.6% of the expenditure of Manufacture of Cement & Concrete, while Compensation of Employees made up 41.7% of the expenditure of the Publishing & Printing industry.

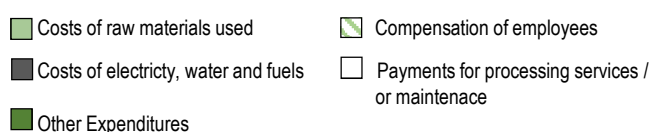
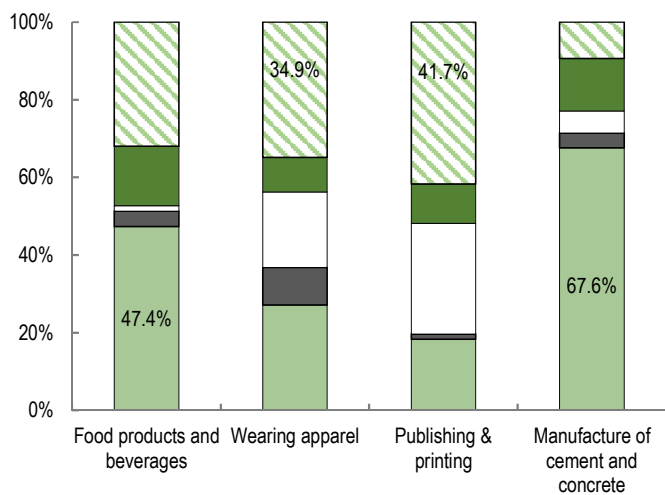
Gross Surplus and Gross Value Added of the Manufacturing sector by size of establishment



Structure of Receipts of Manufacturing sector



Structure of Expenditures of Manufacturing sector



Manufacture of Food Products & Beverages

Principal Indicators

	Million MOP					
	Total		Chinese bakery products		Western bakery products	
	2018	Change (%)	2018	Change (%)	2018	Change (%)
Establishments (No.)	414	8.7	89	12.7	157	0.6
Persons engaged (No.)	5 527	0.2	1 025	2.5	2 072	5.4
Receipts	2 633	7.6	847	17.3	738	3.6
Value of production	2 620	8.6	847	17.4	736	3.8
Expenditures	2 039	-0.4	505	13.2	626	-8.2
Intermediate consumption	1 387	0.6	361	18.2	403	-6.6
Compensation of employees	652	-2.5	144	2.3	223	-10.9
Gross value added	1 246	16.6	486	16.6	335	19.4
Gross fixed capital formation	131	-19.9	20	107.7	47	-5.5
Gross surplus	594	48.4	342	24.0	112	268.5
Average gross surplus per establishment	1.4	36.5	3.8	10.0	0.7	266.2
Gross Surplus Ratio (%)	22.6	6.2 p.p.	40.4	2.2 p.p.	15.2	10.9 p.p.

A total of 414 establishments were operating in the Manufacture of Food Products & Beverages industry, an increase of 33 year-on-year; 89 of them were engaged in Manufacture of Chinese Bakery Products and 157 in Manufacture of Western Bakery Products. Number of persons engaged in the industry rose by 0.2% year-on-year to 5,527.

Receipts of the industry grew by 7.6% year-on-year to MOP2.63 billion while Expenditure went down by 0.4% to MOP2.04 billion. With a rise in receipts and a drop in expenditure, Gross Surplus of the industry surged by 48.4% to MOP 594 million. Gross Value Added rose by 16.6% to MOP1.25 billion.

Receipts of Manufacture of Chinese Bakery Products went up by 17.3% year-on-year to MOP847 million, of which 63.6% were generated from sales of goods produced, up by 12.2 percentage points; 36.4% of the receipts were gross margin on goods for resale, down by 12.1 percentage points. Expenditure increased by 13.2% to MOP505 million. Gross Surplus rose by 24.0% to MOP342 million and Gross Value Added grew by 16.6% to MOP486 million.

Receipts of Manufacture of Western Bakery Products increased by 3.6% to MOP738 million while Expenditure decreased by 8.2% to MOP626 million. Gross Surplus (MOP112 million) jumped by 268.5% attributable to increased receipts and decreased expenditure. Gross Value Added totalled MOP335 million, up by 19.4%.

Publishing & Printing

Establishments in the Publishing & Printing industry decreased by 4 year-on-year to 186, with 1,891 persons engaged, up by 7.4%.

The industry recorded MOP721 million in receipts and MOP685 million in expenditure, up by 20.6% and 12.3% respectively. As the growth in receipts exceeded that in expenditure, the industry achieved a turnaround from a deficit to a Gross Surplus of MOP35.78 million. Gross Value Added amounted to MOP 321 million, an increase of 20.9%.

Manufacture of Cement & Concrete

There were 10 establishments operating in the Manufacture of Cement & Concrete industry, the same as in 2017, and yet total number of persons engaged continued to fall, down by 2.2% to 399.

Receipts of the industry dropped by 16.5% year-on-year to MOP1.21 billion in 2018, representing a decline for four consecutive years due to a continued slowdown in the demand for cement and concrete following a decrease in local large-scale construction projects. Expenditure (MOP1.05 billion), Gross Surplus (MOP160 million) and Gross Valued Added (MOP258 million) of the industry went down by 13.4%, 32.1% and 21.7% respectively.

Wearing Apparel

A total of 103 establishments were operating in the Manufacture of Wearing Apparel industry, a decrease of 14 year-on-year; 78 of them were engaged in Manufacture of Tailor Made Clothing and 25 in Manufacture of Garment. Number of persons engaged in the industry dropped by 45 to 1,155, with 966 working in establishments of Manufacture of Garment and 189 in establishments of Manufacture of Tailor Made Clothing.

Electricity, Gas & Water Supply

The Electricity, Gas & Water Supply sector had 6 establishments, the same as in 2017; number of persons engaged decreased by 1.4% to 1,112.

Owing to a reduction in local electricity production, the sales volume and consumption of natural gas used for electricity generation decreased, causing Receipts and Expenditure of the sector to decline. Receipts of the sector reduced by 11.6% year-on-year to MOP3.97 billion, of which those from sales of goods produced (MOP1.66 billion) dropped by 39.6% while gross margin on goods for resale which were sourced outside Macao (MOP2.02 billion) rose by 30.3%. Expenditure went down by 13.4% to MOP1.82 billion. Gross Surplus and Gross Value Added of the sector amounted to MOP2.15 billion and MOP2.72 billion respectively, down by 10.1% and 9.5%. Gross Fixed Capital Formation soared by 85.9% to MOP1.61 billion.

Principal Indicators

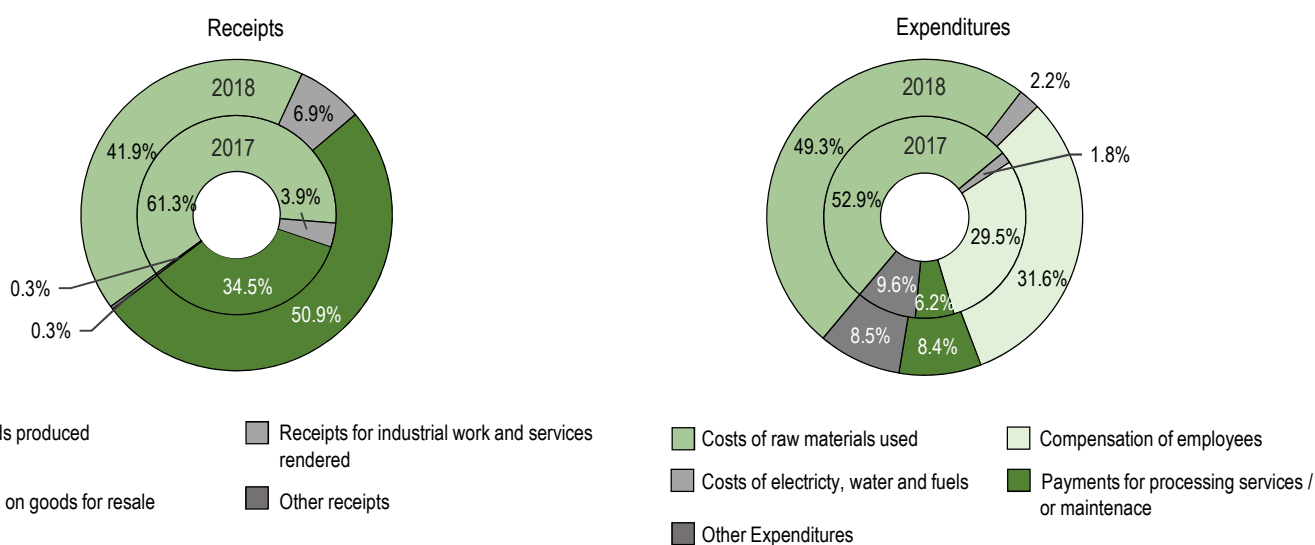
Million MOP

	Publishing & printing		Cement & concrete		Wearing apparel	
	2018	Change (%)	2018	Change (%)	2018	Change (%)
Establishments (No.)	186	-2.1	10	-	103	-12.0
Persons engaged (No.)	1 891	7.4	399	-2.2	1 155	-3.8
Receipts	721	20.6	1 206	-16.5	419	8.3
Value of production	688	18.7	1 171	-15.2	389	5.8
Expenditures	685	12.3	1 046	-13.4	338	-2.6
Intermediate consumption	400	20.3	948	-14.9	220	-6.0
Compensation of employees	286	2.8	98	4.4	118	4.6
Gross value added	321	20.9	258	-21.7	199	30.4
Gross fixed capital formation	49	103.1	-10	..	3	-95.0
Gross surplus	36	..	160	-32.1	81	102.8
Average gross surplus per establishment	0.2	..	16.0	-32.1	0.8	130.4
Gross Surplus Ratio (%)	5.0	..	13.2	-3.1 p.p.	19.4	9.0 p.p.

Receipts of the industry increased by 8.3% year-on-year to MOP419 million, whereas Expenditure decreased by 2.6% to MOP338 million. Therefore, Gross Surplus (MOP81.11 million) and Gross Value Added (MOP199 million) leapt by 102.8% and 30.4% respectively.

Receipts of Manufacture of Garment (MOP359 million) rose by 9.2% while Expenditure (MOP 288 million) dropped by 3.7%, causing Gross Surplus (MOP71.74 million) and Gross Value Added (MOP177 million) to soar by 135.7% and 39.9% respectively. As regards Manufacture of Tailor Made Clothing, Receipts (MOP59.22 million) and Expenditure (MOP49.85 million) increased by 3.5% and 4.5% respectively. As expenditure grew faster than receipts, Gross Surplus (MOP9.37 million) and Gross Value Added (MOP22.07 million) fell by 1.9% and 15.6% respectively.

Average Gross Surplus per establishment was MOP 358 million, down by 10.1% year-on-year. Gross Surplus Ratio reached 54.1%, up by 1.0 percentage point.



Historical Data on Principal Indicators

	2013	2014	2015	2016	2017 ^r
Establishments (No)	915	863	899	882	933
Persons Engaged (No)	13 016	12 308	11 905	12 047	12 503
Receipts (Million MOP, the same below)	9 424	10 681	10 507	10 297	11 544
Intermediate Consumption	5 724	6 528	5 970	5 428	6 097
Compensation of Employees	1 828	2 012	1 945	2 059	2 199
Gross Surplus	1 871	2 141	2 592	2 809	3 248
Average Gross Surplus per Establishment	2.0	2.5	2.9	3.2	3.5
Gross Fixed Capital Formation	1 090	995	1 218	1 134	1 175
Gross Value Added	3 699	4 152	4 537	4 869	5 447
Manufacturing	1 734	1 912	2 164	2 293	2 439
Food Products & Beverages	555	574	690	774	1 069
Wearing Apparel	228	150	131	169	152
Publishing & Printing	182	248	308	274	266
Cement & Concrete	256	390	506	403	330
Other Manufacturing Industries	513	550	528	673	622
Electricity, Gas & Water Supply	1 963	2 240	2 373	2 576	3 008
Mining & Quarrying	3	-	-	-	-
Average Value Added per Person Engaged ('000 MOP)	284	337	381	404	436
Gross Surplus Ratio (%)	19.9	20.0	24.7	27.3	28.1
Gross Surplus-Expenditure Ratio (%)	24.8	25.1	32.8	37.5	39.1

Survey Coverage

The Industrial Survey covers all establishments engaging in activities under 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 was 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 2018 comprised 429 statistical units, of which 104 establishments were excluded due to inactive, closure, non-contact, etc. Hence, survey results were extrapolated from the information collected from 325 completed questionnaires.

Statistical inference:

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

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

Of which:

$$j : \text{industry group}; \quad h : \text{number of persons engaged}; \quad i : \text{a specific establishment of the sample} \quad w_{hj} = \frac{N_{hj}}{n_{hj}}$$

$$y_{hji} : \text{observed value of variable } y \text{ of sample } i \quad n_{hj} : \text{number of sample establishments of } hj; \quad N_{hj} : \text{total number of establishments of } hj; \quad S_{hj} : \text{standard error of variable } y$$

Standard error of principal indicators

'000 MOP

Persons engaged (No.)	Compensation of employees	Receipts	Intermediate consumption	Gross value added	Gross fixed capital formation
297	41 802	174 790	119 081	67 714	14 707

Glossary

Establishment

An economic unit which engages, under a single legal entity, in one or predominantly one kind of economic activity 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 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 for 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 for 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 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 is an establishment.

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>

