Quarterly Index of Industrial Production (QIIP)

First Quarter 2016

(Base year: 2013 =100)

1. Introduction

The Index of Industrial Production shows the evolution of the volume of output of the Industrial Sector which covers "Mining and quarrying", "Manufacturing", "Electricity, gas, steam and air conditioning supply" and "Water supply; sewerage, waste management and remediation activities" and accounts for around 18% of Gross Domestic Product (GDP). The index compiled on a quarterly basis is one of the most important industrial short-term indicators, which aims at measuring, on a quarterly basis, the changes in the volume of industrial output.

In order to reflect the changes in the relative importance of products or product groups within the Industrial Sector, a new set of weights has been calculated with 2013 as base period; the previous one being 2007. The weights for QIIP have been derived from the result of the 2013 Census of Economic Activities.

2. Contents of the publication

This issue of "Economic and Social Indicators" presents the quarterly indices for the first quarter of 2014 to the first quarter of 2016 with 2013 as base period and are therefore not strictly comparable with those previously published with 2007 as base period.

The indices are given separately for the four sections, namely, "Mining and quarrying", "Manufacturing", "Electricity, gas, steam and air conditioning supply" and "Water supply; sewerage, waste management and remediation activities". Within "Manufacturing", estimates by broad group, namely "Export Oriented Enterprises" (EOE), "Non-EOE" and "Sugar milling" as well as by main industry group are given. Wherever possible, the annual averages of the quarterly indices have been worked out and included in the tables. It is to be noted that, due to incomplete data, indices for the first quarter of 2016 are provisional and published at section and broad group level only. They are therefore subject to revision in future issues of the Economic and Social Indicators on QIIP.

The published indices are not seasonally adjusted. The user is therefore advised to base comparisons for a particular quarter of a year on the corresponding quarter of the previous year.

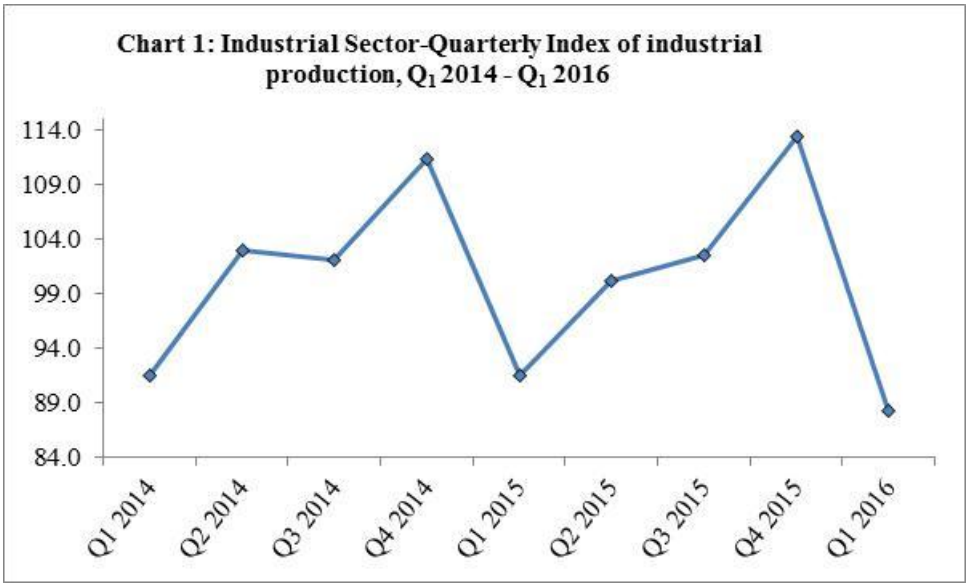
The methodology used and changes in the weights from 2007 to 2013 as well as main explanations for the changes are given in the annex of this publication.

3. The overall index - Industrial Sector

In the first quarter of 2016, the overall index of industrial production went down by 22.1% compared to the previous quarter and by 3.5% compared to the corresponding quarter of 2015.

In the year ending first quarter 2016, i.e. second quarter 2015 to first quarter 2016, real industrial output dropped by 0.9%. This is explained by contractions in real output of "Mining and quarrying" (-3.6%) and "Manufacturing" (-1.3%), partly offset by increases in

the output of "Electricity, gas, steam and air conditioning supply" (+4.0%) and "Water supply; sewerage, waste management and remediation activities" (+3.1%).

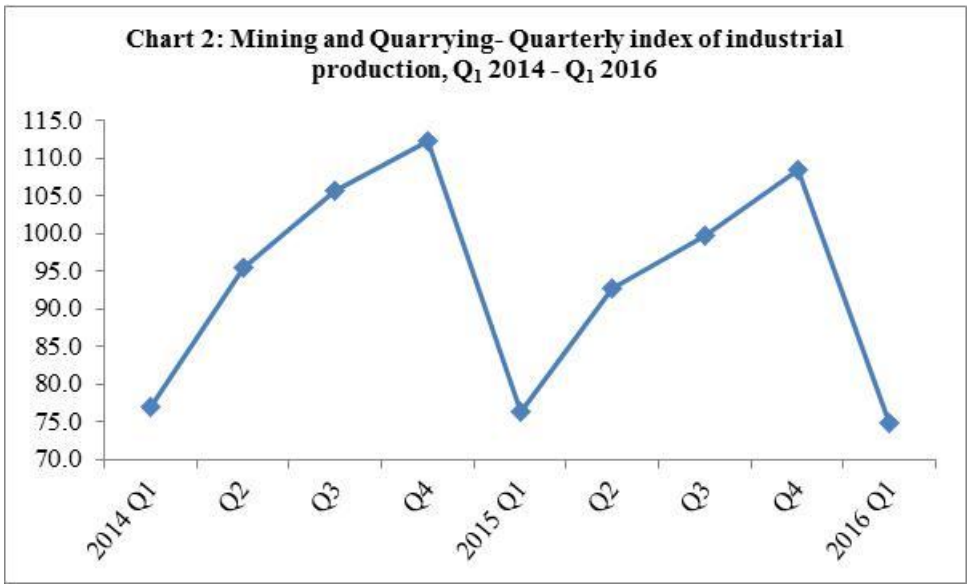


Within "Manufacturing", the fall of 1.3% was due to contractions of 5.8%, 3.1% and 0.1% in "Sugar milling", "EOE" and "Non-EOE respectively.

4. Changes by section

4.1 Mining and quarrying

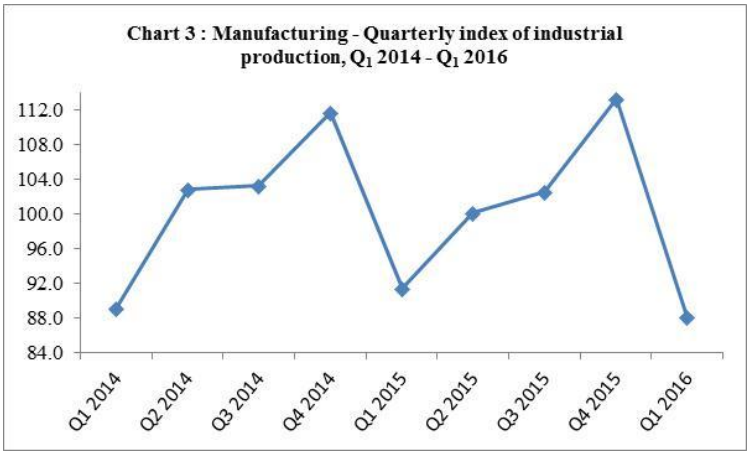
"Mining and quarrying" comprises activities relating to quarrying of decorative stones, sand and salt extraction as well as stone crushing and represents only 2% of the output of the industrial sector. In the first quarter of 2016, real output contracted by 31.0% compared to the previous quarter and by 2.0% compared to the corresponding quarter of 2015. In the year ending first quarter 2016, production went down by 3.6% (Table 1).

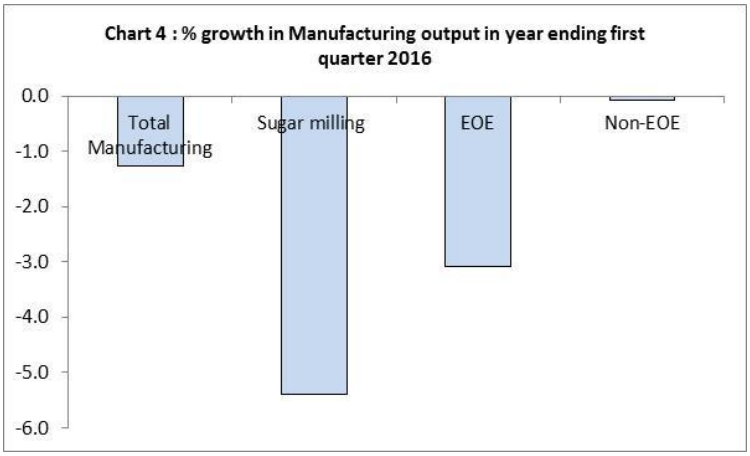


4.2 Manufacturing

Manufacturing output, which covers the production of a wide range of goods, represented 88% of the output of the industrial sector in 2013. For analysis purposes, "Manufacturing" is broken down into the following broad groups:

- Sugar milling representing 2% of manufacturing output
- EOE (39%)
- Non–EOE (59%)

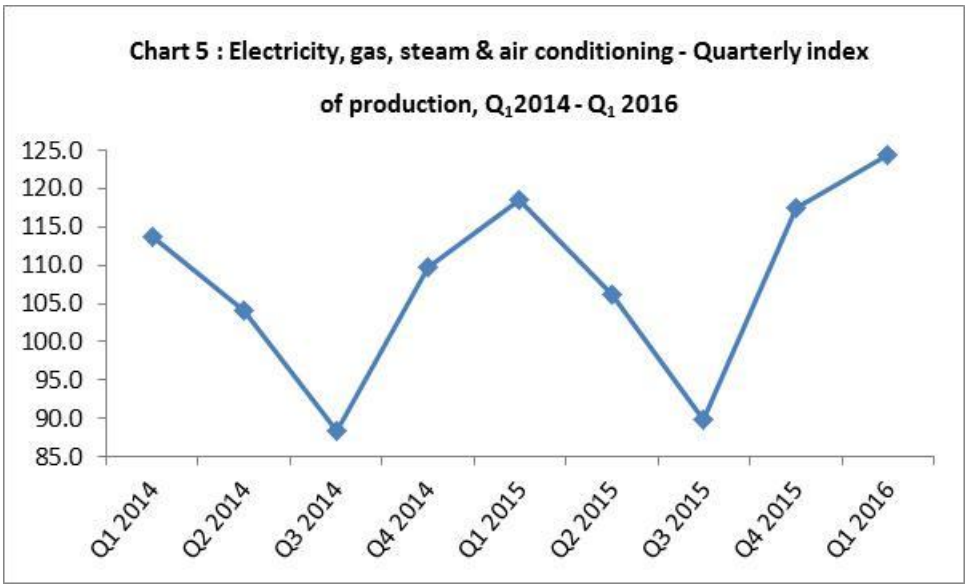




Manufacturing output in the first quarter of 2016 contracted by 22.2% compared to the previous quarter and by 3.6% compared to the corresponding quarter of 2015 (Table1). In year ending first quarter 2016, real output registered a negative growth of 1.3%. This is due to contractions of 5.4%, 3.1% and 0.1% in "Sugar milling", "EOE" and "Non-EOE" respectively. The performances of the "EOE" and the "Non-EOE excluding Sugar Milling" by detailed industry group up to fourth quarter 2015 are analysed separately in Section 5.

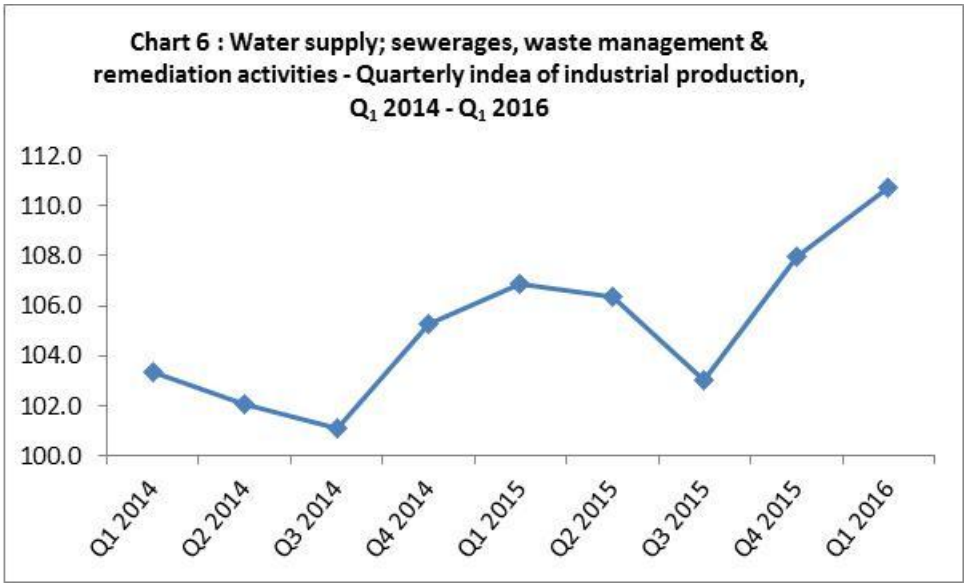
4.3 Electricity, gas, steam and air conditioning supply

"Electricity, gas, steam and air conditioning supply" accounts for 8.0% of the output of the industrial sector. In the first quarter of 2016, real output of this sector registered positive growths of 5.9% compared to the previous quarter and 4.9% compared to the corresponding quarter of 2015. In the year ending first quarter 2016, it expanded by 4.0% (Table 1).



4.4 Water supply; sewerage, waste management and remediation activities

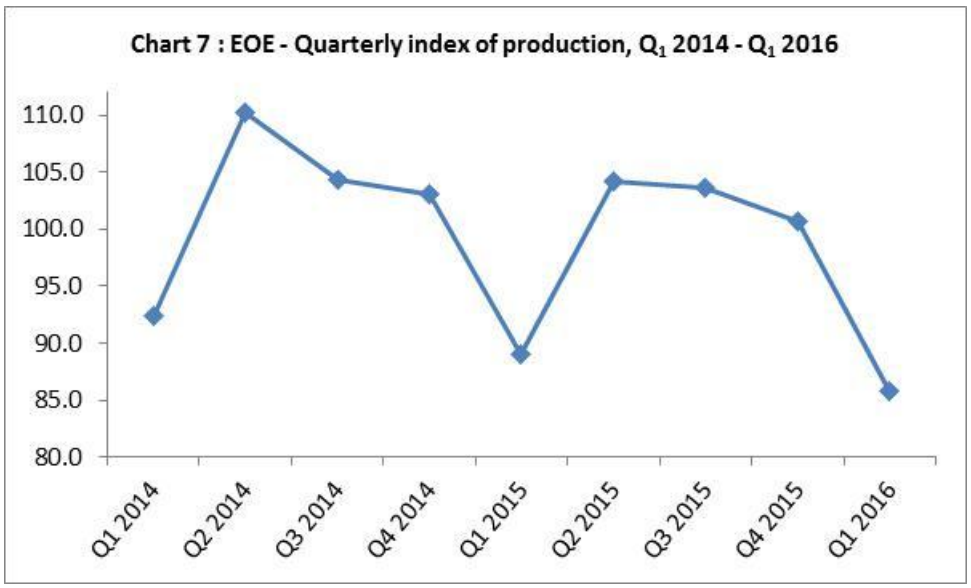
"Water supply; sewerage, waste management and remediation activities" accounts for around 2% of the output of the industrial sector. In the first quarter of 2016, real output of this sector went up by 2.6% compared to the previous quarter and by 3.6% compared to the corresponding quarter of 2015. In year ending first quarter 2016, an expansion of 3.1% has been noted (Table 1).



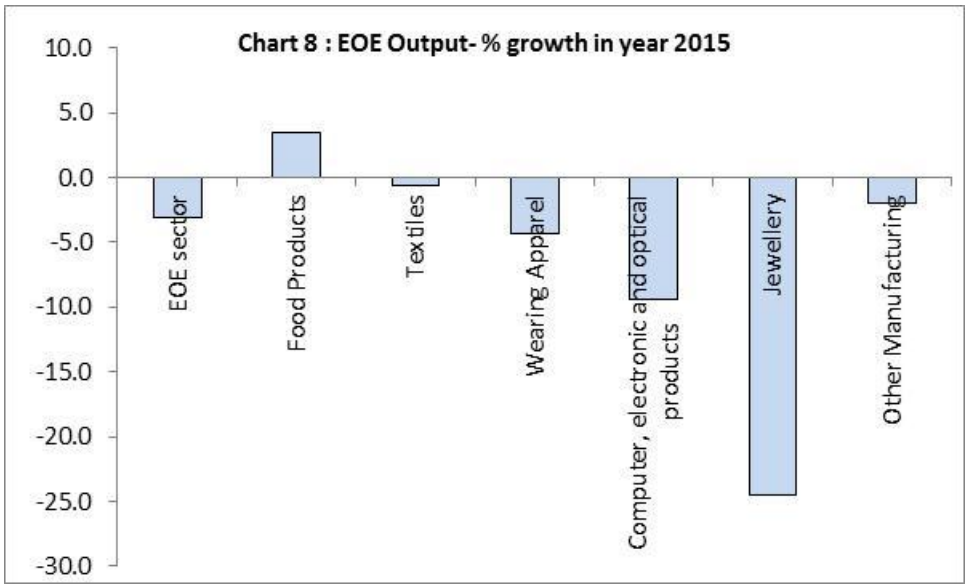
5. Changes by broad group

5.1 Export Oriented Enterprises (EOE)

Real output of the EOE dropped by 14.7% in the first quarter of 2016 compared to the previous quarter, and by 3.6% compared to the corresponding quarter of 2015. In year ending first quarter of 2016, output in the EOE dipped by 3.1% (Table1).

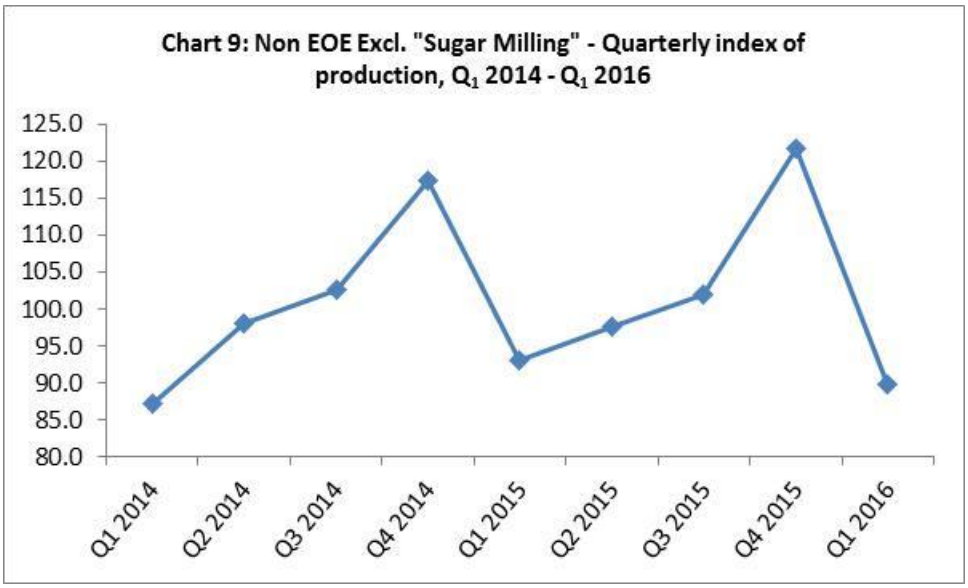


Lower level indices for the first quarter of 2016 are not yet available. However, an indication of the annual performance at sub-group levels can be obtained by comparing indices available for year 2015 to those for year 2014 (Table 3). Real output of "Wearing apparel", the most important industry group within the EOE, contracted by 4.4% and that of "Textiles" by 0.6%. These two sub-groups account for almost 69% of the total weight allocated to the EOE. Real growth for "Food products" showed an increase of 3.5% while negative growths were noted in "Computer, electronic and optical products" (-9.4%), "Jewellery, bijouterie & related articles n.e.c." (-24.5%) and "Other manufacturing" (-2.0%). Details of changes at sub-group level are shown in Chart 8.

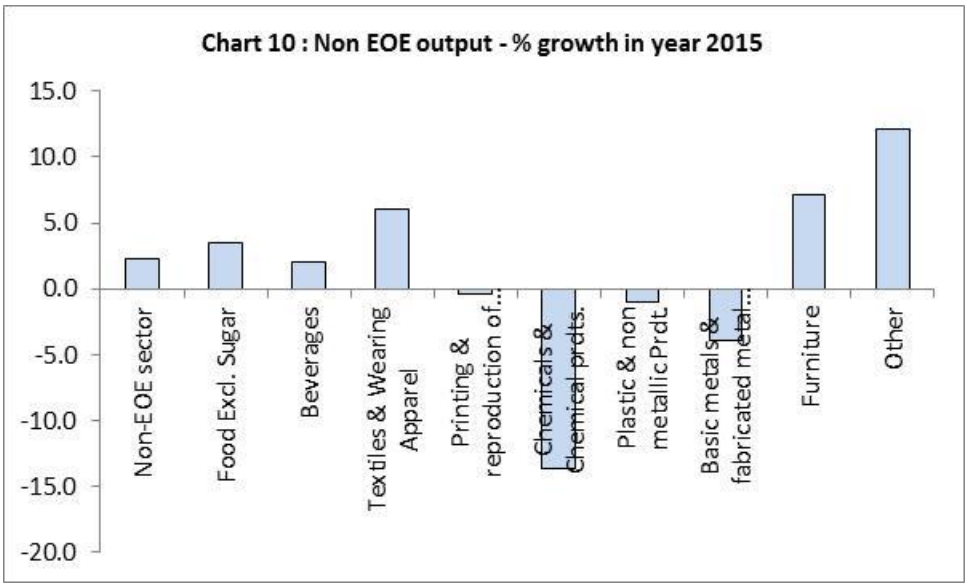


5.2 Non-EOE excluding "Sugar milling"

The real output of Non-EOE registered negative growths of 26.2% in the first quarter of 2016 compared to the previous quarter and 3.6% when compared to the corresponding quarter of 2015. In year ending first quarter 2016, a negative growth of 0.1% was noted (Table 1).



The annual performance at sub-group level is obtained by comparing the detailed indices available for year 2015 to those for year 2014 (Table 4). Expansions were registered in "Food products excluding sugar" (+3.4%), "Beverages" (+2.0%), "Textiles & wearing apparel" (+6.1%), "Furniture" (+7.1%) and "Other Manufacturing" (+12.1%). Contractions were noted in "Printing and reproduction of recorded media" (-0.4%), "Chemicals & chemical products" (-13.6%), "Plastic and non-metallic product" (-1.1%), and "Basic metals and fabricated metal products" (-3.9%). as illustrated in chart 10.



Statistics Mauritius

Ministry of Finance and Economic Development

PORT LOUIS

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Contact Persons:

1. Mrs. D. Ramphul (Statistician)
2. Mrs. J. Rambojun (Senior Statistical Officer)
   National Accounts Unit
   Statistics Mauritius
   5th Floor LIC Building
   Port Louis
   Tel.: 208 1800
   E-mail: sm-qiip@govmu.org

Table 1: Index of industrial production by sector - annual and quarterly indices, Q_1 2014 to Q_1 2016

Base period: Year 2013 = 100

			Manufacturing						
	Industrial sector	**Mining and quarrying**	**Total**	Total exc. sugar milling	Sugar milling	EOE	Non-EOE	**Electricity, gas, steam and air conditioning supply**	**Water supply; sewrage, waste management & remediation**
NSIC Division/Subclass	05 - 33, 35 - 39	05 - 09	10 - 33	10 - 33 except 10720	10720	10 - 33	10 - 33	35	36-39
Weight (Year 2013)	1000	15	882	869	13	347	523	80	22
Annual									
2014	102.0	97.5	101.8	101.8	100.8	102.5	101.3	104.0	102.9
2015	101.9	94.3	101.9	101.9	91.9	99.3	103.6	108.0	106.1
Quarterly									
2014 Q1	91.6	76.9	89.2	89.2	70.8	92.4	87.1	113.8	103.3
Q2	103.0	95.4	102.9	102.9	111.5	110.3	98.1	104.1	102.1
Q3	102.1	105.6	103.3	103.3	111.0	104.4	102.7	88.4	101.1
Q4	111.4	112.3	111.7	111.7	109.9	103.1	117.4	109.8	105.3
2015 Q1	91.5	76.3	91.5	91.5	64.5	89.0	93.1	118.6	106.9
Q2	100.2	92.6	100.2	100.2	101.6	104.2	97.6	106.2	106.4
Q3	102.6	99.7	102.6	102.6	101.2	103.6	101.9	89.9	103.0
Q4	113.3	108.4	113.3	113.3	100.2	100.6	121.6	117.4	108.0
2016 Q1	88.2	74.8	88.2	88.3	72.6	85.9	89.8	124.3	110.7
% change, latest quarter over: [1]									
previous quarter	-22.1	-31.0	-22.2	-22.1	-27.5	-14.7	-26.2	5.9	2.6
same quarter a year ago	-3.5	-2.0	-3.6	-3.5	12.6	-3.6	-3.6	4.9	3.6
% growth in output in year ending [1]									
1st Quarter 2016	-0.9	-3.6	-1.3	-1.3	-5.4	-3.1	-0.1	4.0	3.1

[1] Provisional

Table 2: Index of industrial production of the manufacturing sector by main industry group, Q_1 2014 to Q_4 2015

Base period: Year 2013 = 100

		Main industry group									
	Total manufacturing	Food Incl. sugar	Beverages	Textile	Wearing apparel	Printing & reproduction of recorded media	Chemical products	Non Metallic Products	Basic Metals& fabricated metals	Furniture	Other
NSIC Division	10 -33	10	11	13	14	18	20 & 21	22 & 23	24 & 25	31	15-17, 19, 26-30,32,33
Weight (Year 2013)	1000	208	149	53	251	24	50	55	62	47	103
Annual											
2014	101.8	101.7	103.3	97.4	105.7	125.3	104.1	90.1	96.1	92.7	99.7
2015	101.9	105.3	105.6	98.2	101.9	121.2	98.3	88.2	91.7	98.8	103.7
Quarterly											
2014 Q1	89.2	93.5	84.7	83.1	91.1	105.0	80.3	70.5	87.2	120.1	83.1
Q2	102.9	103.0	94.8	112.6	109.8	124.8	105.1	96.0	96.7	76.3	106.3
Q3	103.3	103.3	101.7	103.4	105.5	124.8	110.0	96.1	92.9	92.7	107.0
Q4	111.7	106.9	132.0	90.6	116.2	146.7	120.9	97.9	107.4	81.5	102.6
2015 Q1	91.5	98.4	92.9	85.9	88.3	111.7	85.7	66.9	86.7	117.0	88.6
Q2	100.2	104.8	97.2	111.5	100.6	117.7	97.7	82.4	85.0	106.6	101.6
Q3	102.6	107.4	96.8	93.9	107.4	112.3	96.2	99.5	91.6	90.5	107.4
Q4	113.3	110.4	135.6	101.4	111.3	142.9	113.5	103.9	103.3	81.1	117.1
% change, latest quarter over:											
previous quarter	10.5	2.8	40.1	8.0	3.6	27.2	18.0	4.5	12.7	-10.4	9.0
same quarter a year ago	1.5	3.3	2.7	12.0	-4.2	-2.5	-6.1	6.1	-3.8	-0.6	14.2
% growth in output in year:											
2015	0.1	3.5	2.2	0.8	-3.6	-3.3	-5.6	-2.2	-4.6	6.6	4.0

Table 3: Index of industrial production of the EOE sector by main industry group , Q_1 2014 to Q_4 2015

Base period: Year 2013 = 100

		Main industry group					
	EOE, Manufacturing	Food Products	Textiles	Wearing Apparel	Computer, electronic and optical products	Jewellery	Other Manufacturing
NSIC Division/Subclass	10 - 33	10	13	14	26	32100	11-18, 20-22, 25, 27, 32 except 32100, 33
Weight (Year 2013)	1000	140	118	570	23	18	130
Annual							
2014	102.5	98.2	94.1	107.5	101.7	87.2	95.2
2015	99.3	101.6	93.6	102.8	92.1	65.9	93.3
Quarterly							
2014 Q1	92.4	97.6	81.1	94.0	98.0	99.2	88.1
Q2	110.3	107.0	109.6	114.4	118.3	92.4	97.4
Q3	104.4	104.9	103.7	107.1	95.3	82.0	97.4
Q4	103.1	83.5	82.1	114.6	95.4	75.2	98.0
2015 Q1	89.0	98.4	83.7	89.9	100.2	64.7	82.7
Q2	104.2	114.9	112.0	102.9	93.9	67.9	100.6
Q3	103.6	105.4	91.6	109.9	84.8	60.4	93.6
Q4	100.6	87.8	87.0	108.5	89.7	70.5	96.4
% change, latest quarter over:							
previous quarter	-2.9	-16.7	-5.0	-1.3	5.8	16.8	3.0
same quarter a year ago	-2.4	5.2	6.0	-5.3	-5.9	-6.2	-1.6
% growth in output in year :							
2015	-3.1	3.5	-0.6	-4.4	-9.4	-24.5	-2.0

Table 4: Index of industrial production of the Non-EOE sector (exc. Sugar) by main industry group, Q_1 2014 to Q_4 2015

Base period: Year 2013 = 100

		Main industry group								
	Non-EOE manufacturing	Food Excl. Sugar	Beverages	Textiles & Wearing Apparel	Printing and reproduction of recorded media	Chemicals and Chemical products	Plastic & non metallic Product	Basic metals & fabricated metal products	Furniture	Other
NSIC Division	10-33	10	11	13 &14	18	20	22 & 23	24 &25	31	15-17, 19, 26-30, 32-33
Weight (Year 2007)	1000	252	245	49	33	64	80	94	77	106
Annual										
2014	101.3	102.9	103.2	95.1	128.7	110.2	180.5	190.3	92.5	101.0
2015	103.6	106.4	105.3	100.9	128.2	95.1	178.5	182.8	99.0	113.2
Quarterly										
2014 Q1	87.1	92.0	84.5	71.0	103.9	80.0	136.8	152.8	120.4	76.9
Q2	98.1	101.5	94.8	80.2	127.0	113.3	194.8	189.5	76.1	105.8
Q3	102.7	102.7	101.8	92.4	126.4	116.3	192.9	206.1	92.9	113.5
Q4	117.4	115.4	131.7	136.9	157.6	131.1	197.4	212.6	80.5	107.8
2015 Q1	93.1	98.4	92.8	78.6	116.0	84.6	134.0	168.0	117.5	92.0
Q2	97.6	101.6	96.9	84.1	124.8	94.4	166.9	179.3	107.5	106.0
Q3	101.9	108.1	96.5	87.8	119.2	90.0	203.4	188.6	90.8	121.0
Q4	121.6	117.8	134.9	153.1	152.7	111.4	209.8	195.3	80.3	133.7
% change, latest quarter over:										
previous quarter	19.3	9.0	39.9	74.3	28.1	23.8	3.1	3.5	-11.6	10.5
same quarter a year ago	3.6	2.0	2.4	11.8	-3.1	-15.0	6.3	-8.2	-0.2	24.1
% growth in output in year :										
2015	2.2	3.4	2.0	6.1	-0.4	-13.6	-1.1	-3.9	7.1	12.1

Annex

Quarterly Index of Industrial Production (QIIP)

Methodology for the computation of the QIIP

1. Introduction

The Index of Industrial Production shows the movement of the volume of output of the Industrial Sector. Prior to 2001, the index was calculated annually and published in the Digest of Industrial Statistics. Following the needs expressed by various institutions, both public and private, Statistics Mauritius started to compile and disseminate the index on a quarterly basis as from the first quarter of 2001. The compilation and dissemination of high frequency (monthly/quarterly) Index of Industrial Production is also one of the requirements of the **I**nternational **M**onetary **F**und (**IMF**) **S**pecial **D**ata **D**issemination **S**tandard (**SDDS**)**.**

2. Objectives

The **Q**uarterly **I**ndex of **I**ndustrial **P**roduction (**QIIP**) is one of the most important industrial short-term indicators which aims at measuring, on a quarterly basis, the ups and downs of the volume of industrial output with a special focus on detecting, as early as possible, the turning points of the business cycle. This enables planners, decision makers and the business community at large to be aware of any sign of change in the progress of the economy in order to take appropriate and timely measures.

The index provides useful and reliable inputs for the estimates of quarterly and annual value added for the Industrial Sector.

3. Concepts and definitions

Basically, the Index of Industrial Production is a measurement of the change in real value added (value added at constant price). Value added is defined as the difference between output and input. Computation of quarterly value added at current and constant prices requires data on inputs and outputs in the different industry groups within a given time frame. In the absence of the detailed data required, an approximation of the index is based on change in deflated turnover, physical quantity of goods produced and other indicators of change in real value added generated by industrial enterprises.

The indicators/methods used in compiling QIIP and data sources by sector/industry group are given at section 5.

4. Scope and classification

The indices are compiled by industry group according to the National Standard Industrial Classification Rev.2 (NSIC Rev.2), based on the UN International Standard Industrial Classification Rev.4 (ISIC Rev.4).

The Quarterly Index of Industrial Production covers the Industrial Sector, which comprises the following sections of NSIC Rev.2:

Section B: Mining and quarrying;

Section C: Manufacturing;

Section D: Electricity, Gas, Steam and Air Conditioning Supply; and

Section E: Water Supply; Sewerage, Waste Management and Remediation Activities

5. Indicators and data sources

The table below shows price and volume indicators used as well as corresponding data sources by industry group.

Sector/Industry group	Indicators used	Data sources
Mining and quarrying	Value added deflated by relevant components of Consumer Price Index (CPI)	• Quarterly survey of establishments • Monthly and quarterly data from VAT Department
Industry groups within manufacturing (excluding sugar milling)	Turnover data deflated by: (i) Export Price Index (EPI) for EOE (ii) Producer Price Index – Manufacturing (PPI-M) for Non-EOE (iii) Relevant components of CPI for small establishments	• Monthly and quarterly data from VAT Department • Quarterly exports statistics • Quarterly Stock Survey • Expenditure on "Clothing and footwear" from the Continuous Multi-Purpose Household Survey (CMPHS) for small establishments engaged in the manufacture of these products. • Building permits statistics for small establishments engaged in the manufacture fabricated metal products and wooden furniture.
Sugar milling	Gross output deflated by sugar prices and inputs deflated by a weighted price index based on relevant components of CPI.	• Annual survey of establishments • Production of sugar and prices from Mauritius Sugar Syndicate
Electricity, gas, steam and air conditioning supply	Volume of electricity produced	• Quarterly returns from Central Electricity Board and Independent Power Producers (IPPs)
Water supply; sewerage, waste management and remediation activities	Volume of water sold used as volume indicator for water supply and waste management services; Value added deflated by relevant components of CPI for other activities.	• Quarterly returns from Central Water Authority • Monthly and quarterly data from VAT Department

6. Weights

6.1 Calculation of weights

Weights for the QIIP are derived from value added by detailed industry group (5-digit subclass level) compiled from the Census of Economic Activities (CEA). The current weights have been based on the results of the 2013 CEA.

For the manufacturing sector the weights are computed separately for Export Oriented Enterprises (EOE) and Non-EOE sub-sectors. Prior to 2008, the weight of the Non-EOE sub-sector was based on large establishments (engaging 10 or more persons) only. As from 2008, value added of small establishments (engaging less than 10 persons) has been considered in the calculation of the weights.

6.2 Evolution of weights from 2007 to 2013

The weights by industry group for 2007 and 2013 are given in the table below. The main changes from 2007 to 2013 are as follows:

(i) The share of “EOE" in the industrial sector has decreased from 40.0% to 34.7%, mainly due to decrease in “textile and wearing apparel” (30.6% to 23.9%).

(ii) The share of “Non EOE” in the industrial sector has increased from 47.2% to 52.3%, mainly due to increase in “Food products and beverages” (22.0% to 26.2%)

Distribution of weights by industry group, 2007 and 2013

Industry group	Weight 2007	Weight 2013
Mining and quarrying	**20**	**15**
Manufacturing	**899**	**882**
Sugar milling	*27*	*13*
EOE	400	347
of which		
Food & beverages	*53*	*50*
Textiles and wearing apparel	*306*	*239*
Other	*41*	*58*
Non-EOE	472	523
of which		
Food & beverages	*220*	*262*
Textiles and wearing apparel	*33*	*26*
Other	*219*	*235*
Electricity, gas, steam and air conditioning supply	**60**	**80**
Water supply; sewrage, waste management and remediation	**21**	**22**
Total	**1,000**	**1,000**

7. Reliability of the indices

The practical difficulties in compiling an index showing the evolution of value added at constant prices requires a number of approximation methods which are listed at section 5. Each of these methods has a number of constraints, the main ones being:

Deflated turnover:

- Quality of the data from the different sources. The output figures in a given industry group may include output of some other activities (secondary activities) which should have been classified elsewhere;
- Time-lag between production and sales may lead to a late identification of a turning point in the business cycle;
- Turnover data need to be adjusted for changes in stocks for a true picture of production. This exercise is partly done, based on available information from the Quarterly Stock Survey;
- The quality of the index is subject to the precision and relevance of the different price indices used for deflation; and
- The base year ratio of value added to gross output is maintained throughout the period covered by the indices, when, in fact, the ratio may change as a result of technological changes, productivity changes as well as seasonal variation in the production structure.

Volume of production:

- does not take account of quality changes

Indirect Indicators

- In the absence of data for small establishments, indirect indicators such as household consumption expenditure and building permits are used for activities concerned

In spite of the above limitations, it is observed that the index shows relative consistency and is of reliable quality for the measurement of quarterly and other changes. However, great care should be taken when interpreting small changes at the more detailed level.

8. Index calculation

The QIIP is calculated according to a modified Laspeyre's index as follows:

$$I_t = \frac{\sum W_i \, (Q_{it}/Q_{io})}{\sum W_i} \quad X \quad 100$$

with I_t = index for quarter t

W_i = weight for activity i

(Q_{it}/Q_{io}) = is the growth in real value added of activity i in quarter t relative to the base year as estimated by an appropriate proxy indicator