National Bureau of Statistics
STATISTICAL
BULLETIN

Catalogue Number: SIPI.2014/Q4 **Released: 27 February 2015**

SEYCHELLES INDUSTRIAL PRODUCTION INDEX (SIPI)

December 2014

The Seychelles Industrial Production Index (SIPI) decreased by 13% in December 2014 compared to November 2014. On a year on year comparison, the index increased by 0.3% from December 2013.

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1. INTRODUCTION

This bulletin presents a monthly measure of production from the perspective of the producer in the manufacturing industry. Concepts, sources and methods are given in Part 4.

This bulletin will be released every quarter and will contain monthly quantity indexes.

Figures for January 2013 to December 2014 with 2013 as the reference period are presented in this bulletin.

Table 1 presents the monthly SIPI index numbers and percentage changes for the total SIPI. Table 2 present the index number by manufacturing sector under the ISIC classification.

Charts 1 and 2 present index numbers and month on month percentage changes respectively.

2. RESULTS AND HIGHLIGHTS

The total Seychelles Industrial Production Index in December 2014 stood at 74.0 compared to 85.1 in November 2014. This represents a decrease of 13%. The year on year movement from December 2013 to December 2014 is -0.3%. Quarter 4 of 2014 showed a decrease of 3.2% from quarter 3 2014.

3. TABLES AND CHARTS

Table 1: Monthly and Quarterly Industrial Production Indices

	Monthly index	Month on month % change	Year on year % change	Quarterly Index	Quarterly change
2013					
Jan	117.6				
Feb	108.0	-8.2%			
Mar	110.4	2.2%		112.0	
Apr	104.5	-5.3%			
May	106.0	1.5%			
Jun	76.0	-28.3%		95.5	-14.7%
Jul	92.7	22.1%			
Aug	108.9	17.5%			
Sep	103.6	-4.9%		101.7	6.5%
Oct	106.4	2.8%			
Nov	92.2	-13.4%			
Dec	73.8	-20.0%		90.8	-10.7%
2014					
Jan	93.6	26.9%	-20.4%		
Feb	98.3	5.0%	-9.0%		
Mar	107.8	9.6%	-2.4%	99.9	10.0%
Apr	101.1	-6.2%	-3.3%		
May	100.1	-0.9%	-5.6%		
Jun	56.4	-43.7%	-25.8%	85.8	-14.1%
Jul	75.4	33.8%	-18.7%		
Aug	100.4	33.2%	-7.8%		
Sep	99.9	-0.5%	-3.6%	91.9	7.1%
Oct	107.9	8.0%	1.4%		
Nov	85.1	-21.2%	-7.7%		
Dec	74.0	-13.0%	0.3%	89.0	-3.2%

(1) Year on year % change is calculated as the percentage change from the same month of the previous year

(2) Quarterly index is calculated as the average of the monthly indexes for that quarter

(3) Reference base is 2013 = 100

Table 2 - Seychelles Industrial Production Index by Manufacturing Sector

ISIC REV 4 FOURTH DIVISION CLASSIFICATION	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14
MANUFACTURING OF ARTICLES OF CONCRETE, CEMENT AND PLASTER	95.4	101.3	105.8	116.1	111.6	111.0	92.4	121.8	118.4	100.2	128.5	117.7	106.7
MANUFACTURE OF TOBACCO PRODUCTS	87.9	60.4	102.1	100.5	104.4	99.5	100.6	119.5	100.1	58.9	137.1	155.8	99.4
PROCESSING AND PRESERVING OF FISH, CRUSTACEANS AND MOLLUSCS	60.9	91.9	100.1	109.0	103.5	103.0	49.2	66.6	99.7	102.0	107.4	76.5	61.2
DISTILLING, RECTIFYING AND BLENDING OF SPIRITS	168.2	83.9	74.0	87.6	86.1	86.7	48.0	94.5	79.9	92.2	75.1	134.2	131.1
MANUFACTURE MALT LIQUORS AND MALT	153.1	150.6	95.5	133.0	4.1	3.7	15.6	106.3	111.5	104.6	104.1	101.1	157.9
MANUFACTURE OF SOFT DRINK; PRODUCTION OF MINERAL WATER AND OTHER BOTTLED WATER	133.4	61.2	62.6	56.6	131.2	122.2	66.3	81.2	84.5	81.8	85.8	74.7	115.8
MANUFACTURING OF OTHER FOOD PRODUCTS N.E.C	102.3	85.4	78.4	85.2	84.4	94.2	69.7	89.6	94.9	84.2	90.9	82.5	83.7
MANUFACTURE OF OTHER ARTICLES OF PAPER AND PAPERBOARD	80.5	102.4	104.2	105.5	74.9	79.8	71.9	86.1	82.5	107.7	127.2	106.3	98.7
MANUFACTURE OF PAINTS, VARNISHES AND SIMILAR COATINGS, PRINTING INK AND MASTICS	77.1	18.4	34.6	53.2	22.9	22.5	23.1	63.4	75.1	126.1	47.0	106.1	124.6
ELECTRIC POWER GENERATION, TRANSMISSION AND DISTRIBUTION	99.1	99.9	93.8	108.9	110.6	105.6	92.3	96.4	101.8	100.1	109.8	104.8	102.5
WATER COLLECTION, TREATMENT AND SUPPLY	100.5	115.1	108.3	100.2	102.5	111.9	106.8	109.0	120.9	106.4	112.6	114.3	97.5
TOTAL	**73.8**	**93.6**	**98.3**	**107.8**	**101.1**	**100.1**	**56.4**	**75.4**	**100.4**	**99.9**	**107.9**	**85.1**	**74.0**

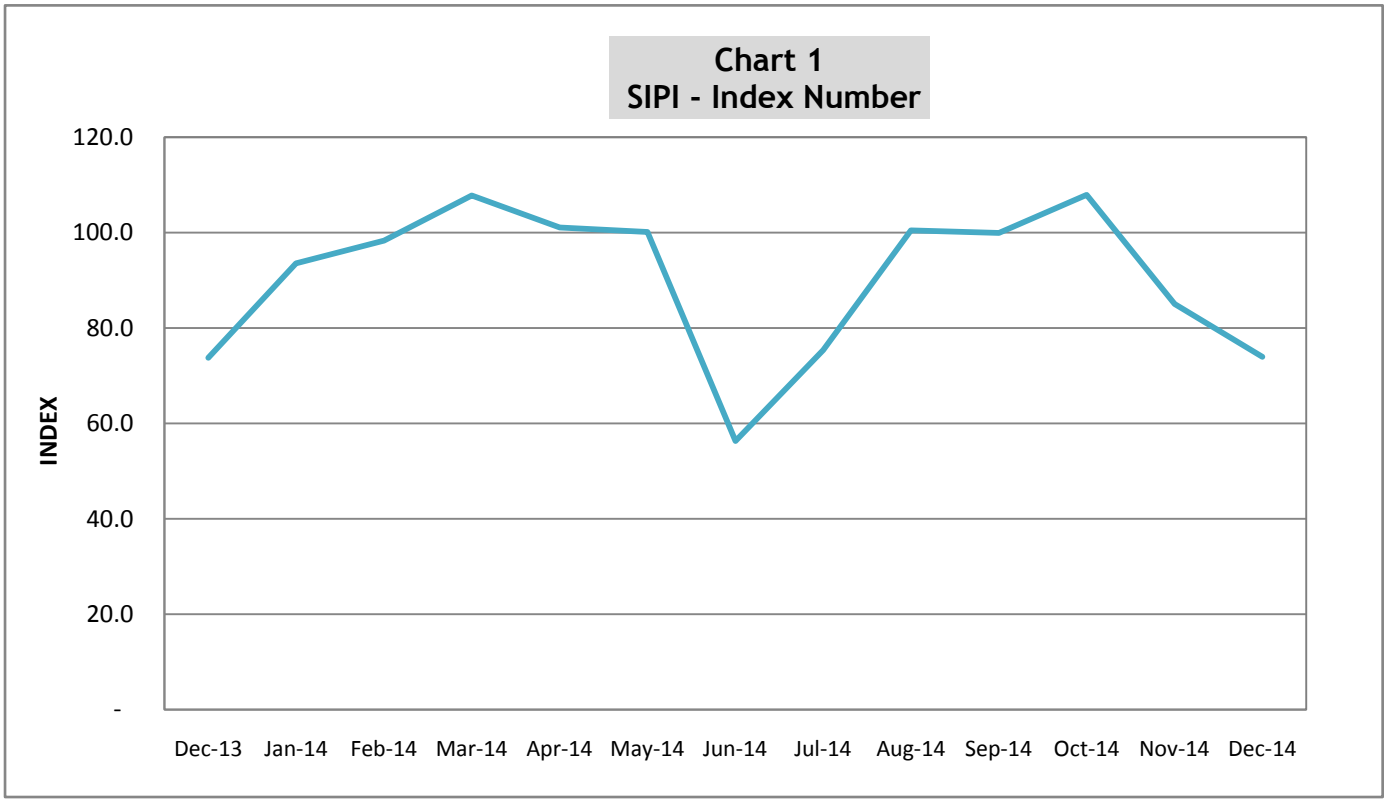
Chart 1
SIPI - Index Number
120.0
100.0
80.0
60.0
40.0
20.0
-
INDEX
Dec-13
Jan-14
Feb-14
Mar-14
Apr-14
May-14
Jun-14
Jul-14
Aug-14
Sep-14
Oct-14
Nov-14
Dec-14

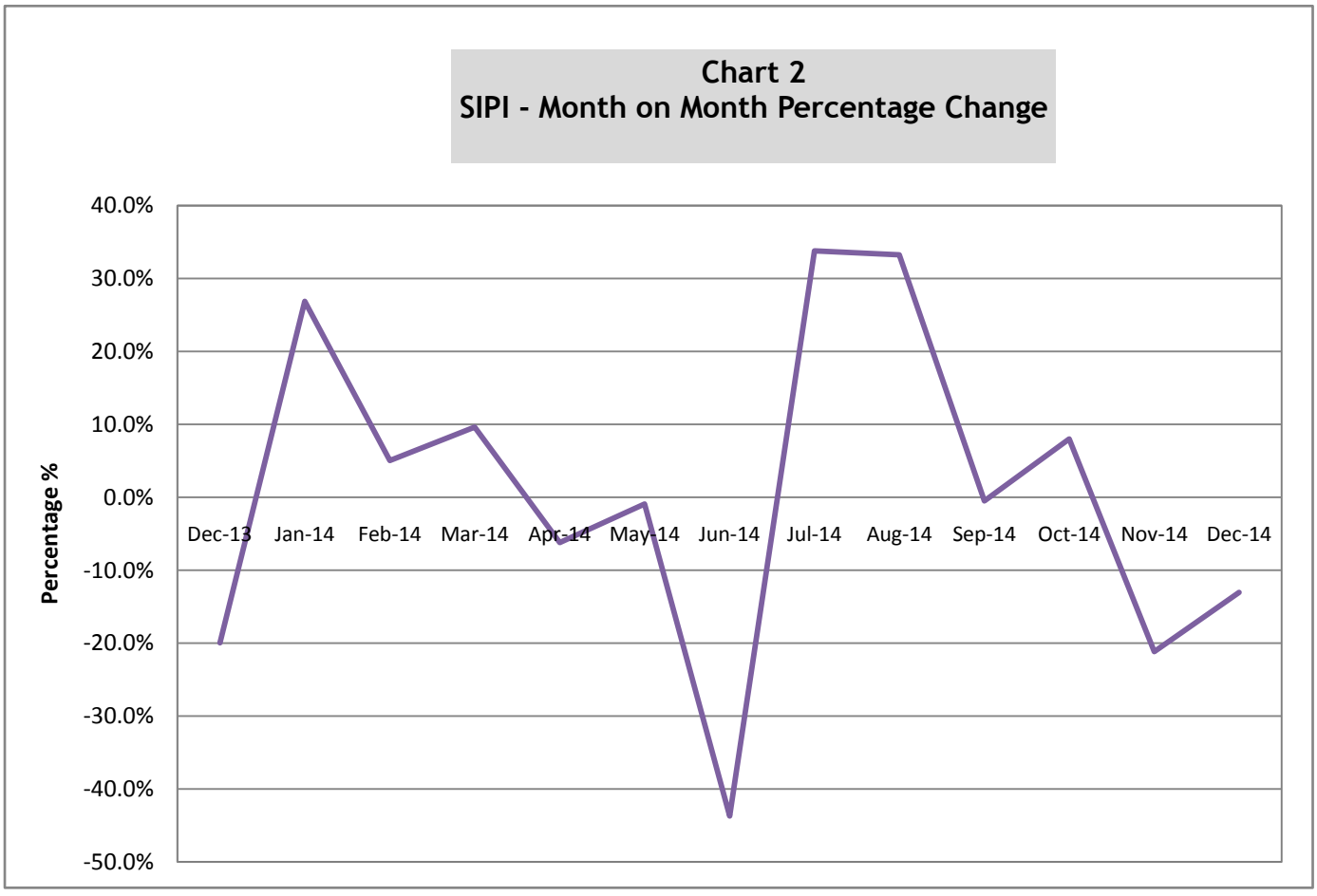
Chart 2
SIPI - Month on Month Percentage Change
40.0%
30.0%
20.0%
10.0%
0.0%
-10.0%
-20.0%
-30.0%
-40.0%
-50.0%
Percentage %
Dec-13
Jan-14
Feb-14
Mar-14
Apr-14
May-14
Jun-14
Jul-14
Aug-14
Sep-14
Oct-14
Nov-14
Dec-14

4. CONCEPTS, SOURCES AND METHODS

4.1 Introduction

The Seychelles Industrial Production Index (SIPI) describes the change of the volume of goods and/or services produced by manufacturers in Seychelles over time.

4.2 Purpose and uses of SIPI

Its main purpose is to provide a measure of the short-term changes in value added over a given reference period. However, since it is difficult to collect high-frequency data to accurately measure value added, gross output measures such as quantity data is used. The SIPI being a volume index means the index is not influenced by price fluctuations.

The SIPI is an important short-term economic indicator in official statistics. It is an important indicator in its own right as well as being used in comparison to or conjunction with other short-term indicators to assess the performance of an economy. The SIPI is also in Seychelles as a key input for calculating volume measures as part of the compilation of the quarterly national accounts.

4.3 Methodology

Output is defined as the set of goods and services (products) produced by an establishment, excluding the value of any goods and services used in an activity for which the establishment does not assume the risk of using the products in production, and excluding the value of goods and services consumed by the same establishment except for goods and services (used for capital formation fixed capital or changes in inventories) or own final consumption. Whenever a production process extends over two or more accounting periods, it is necessary to calculate the work-in-progress completed within each of the periods in order to be able to measure how much output is produced in each period.

Output is measured in physical quantities often referred to as the volume extrapolation approach. Physical quantity of output data are, in general, also obtained via the use of quarterly production survey. This approach measures product output in terms of the number of items, tonnes, litres, etc in order to track the development of production.

The volume extrapolation method utilizes the movements in volumes directly to calculate SIPI. The volume measure in the current period is compared to the volume measure in the base period and the resulting volume relative is used to calculate the SIPI. This process has been illustrated below.

	Period T_0		Period T_1	
	Volume (Tonnes of coal)	IIP	Volume (Tonnes of coal)	IIP
Coal	20,000	100.0	22,000	110.0

Data relating to volume/quantity (tonnes) of coal are collected in periods T_0 and T_1 as part of a monthly IIP survey. This single data item of physical quantity of output (tonnes of coal) is used to calculate a volume index. The IIP volume index in period T_1 is calculated by:
tonnes (T_1)/tonnes(T_0) * 100, i.e.: (22,000/20,000 * 100.0) = 110.0.

4.4 Coverage and classification

The design of the index is based on the International Standard Industrial Classification (ISIC) Rev 4. Currently, index coverage is restricted to Section C Manufacturing and includes only those

Divisions for which there is manufacturing activity in the Seychelles.

These are:

- Manufacture of food products;
- Manufacture of beverages;
- Manufacture of tobacco products;
- Manufacture of paper and paper products;
- Manufacture of chemicals and chemical products;
- Manufacture of other non-metallic mineral products.

4.5. Data source

The information used in the compilation of the index is gathered from a monthly survey of selected large businesses in the manufacturing industry and data from Production Indicators.

4.6 Production indexes

Production index numbers are compiled from collected quantity observations through time; their significance lies in a series of index numbers which compare volumes between a particular period and a reference base.

For an index to provide information on production changes, at least two index numbers from the same series need to be available, and these index numbers must relate to the same basket of goods.

Movements in indexes from one period to any other period can be expressed as either changes in index points or percentage changes. The following example illustrates these calculations for total SIPI between June 2013 and December 2013. The same procedure is applicable for any two periods.

	Index numbers
December 2013	70.5
Less June 2013	73.7
Equals change in index points	-3.2
Percentage change =	-3.2/ 73.7x 100 = -4.3%

The SIPI attempts to measure the actual level of change in quantities but is limited to the manufacturer from one period to another.

4.7 Calculation of the SIPI

Concept

There are a number of different formulas which can be used to calculate indexes. The SIPI is calculated using the Laspeyres formula, which is considered acceptable by international standards. The Laspeyres method measures percentage change in the production value of a set of products whose quantities are fixed in an earlier period.

The Laspeyres formula is represented as follows:

Formula 1: Laspeyres index formula

$$L_t = \frac{\sum_i p_{i,0} q_{i,t}}{\sum_i p_{i,0} q_{i,0}} = \sum_i w_{i,0} \frac{q_{i,t}}{q_{i,0}} ; \qquad w_{i,0} = \frac{p_{i,0} q_{i,0}}{\sum_j p_{j,0} q_{j,0}}$$

where: $p_{i,0}$: prices for product, product group or industry i at the base period 0

$q_{i,0}$: quantity for product, product group or industry i at the base period 0

$q_{i,t}$: quantity for product, product group or industry i at period t

$w_{i,0}$: relative share (of "value of output") for product/product group or industry i in the base period 0

i: products, product groups or industries to be aggregated (i=1,2,...,n)

Value shares (weights)

Weights are a key element in the construction of any index as they provide a measure of the relative importance of each index component. In the case of the SIPI, weights reflect the relative importance of a

product, product group or industry within the overall scope of industrial production.

In practice, when compiling the SIPI, the first process is to derive a set of value shares or weights which will be used to combine quantity movements. Value shares are derived from the value of production for the previous year and are updated every January. The information that forms the value of production is requested from the participating manufacturers and consists of the monthly output quantity of production by commodity and the monthly price by commodity. Quantity is multiplied by price to derive production value. Monthly production values are aggregated to an annual production value which is then used to derive the proportional value shares (or weights) per commodity.

Unit Quantity

This is the information that is gathered on a monthly basis from the participating manufacturers.

Quantity Relative

The quantity relative is calculated by taking the quantity in the current month divided by the reference quantity. The reference quantity is the average of monthly quantity for the previous year.

Index aggregation

This index creates detailed indexes at the International Standard Industrial Classification (ISIC) Rev4 class level. The indexes are aggregated using value shares.

Annual chaining

When the value shares and reference prices are updated every January, the SIPI is chain linked.

5. FUTURE IMPROVEMENTS

There are plans to review the treatment of seasonal products. We welcome user feedback and suggestions regarding the monthly Industrial Production Price Index.

6. NEXT RELEASE

The next issue of the SIPI will be released on Friday 29 May 2015 and will contain data for January, February and March 2015.

7. CONTACT US

For more information regarding this Bulletin, the concepts, sources or methodology to compile the Seychelles Industrial Production Index, please contact Rudy Sinon on Tel: + (248) 4 611 657 | Fax: + (248) 4 225 634 or email: rudy@nbs.gov.sc

To access any of our statistics please visit our website: www.nbs.gov.sc