



# National Bureau of Statistics

## STATISTICAL

# BULLETIN

Catalogue Number: PPIM.2015/December

Released: 29<sup>th</sup> January 2016

### PRODUCER PRICE INDEX MANUFACTURING (PPIM) December 2015

The Seychelles Producer Price Index for Manufacturing (PPIM) increased by 3.0% in December 2015 compared to November 2015. On a year on year comparison, the index decreased by -26.2% from December 2014.

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## National Bureau of Statistics

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## 1. INTRODUCTION

The Producer Price Index for Manufacturing (PPIM) is compiled by the National Bureau of Statistics. It presents a monthly measure of inflation from the perspective of the producer in the manufacturing industry. Concepts, sources and methods are given in Part 4.

Figures for January 2013 to December 2015, with January 2013 as the reference period are presented in this bulletin. Table 1 presents the monthly PPIM index numbers and percentage changes for the total PPIM.

Charts 1 and 2 present index numbers and month on month percentage change respectively. Chart 1 now includes a seasonally adjusted series. Seasonal adjustment removes any seasonal effects from the original time series data.

## 2. RESULTS AND HIGHLIGHTS

The total PPIM Index in December 2015 stood at 80.0 compared to 77.6 in November 2015. This represents an increase of 3.0 %.

Most sub categories remained unchanged over the month. However, an increase occurred in the Processing and preserving of fish, crustaceans and molluscs (4.1%).

The year on year movement from December 2014 to December 2015 represents a decrease of 26.2%. The largest fall over this period occurred in the category Electric power generation, transmission and distribution (-49.4%).

Quarter 4 of 2015 decreased by 1.7% over quarter 3 of 2015.

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### 3. TABLES AND CHARTS

**Table 1: Monthly and Quarterly Producer Price Indices**

	Monthly index	Month on month % change	Year on year % change	Quarterly Index	Quarterly change
<b>2014</b>					
Jan	103.5	3.0%	-2.6%		
Feb	103.6	0.1%	4.2%		
Mar	104.5	0.8%	6.7%	103.9	2.7%
Apr	106.7	2.1%	9.4%		
May	105.3	-1.2%	6.3%		
Jun	106.3	0.9%	6.9%	106.1	2.1%
Jul	104.9	-1.3%	7.1%		
Aug	107.0	2.0%	10.0%		
Sep	107.0	0.0%	5.4%	106.3	0.2%
Oct	110.1	2.9%	7.3%		
Nov	112.0	1.7%	11.3%		
Dec	108.4	-3.2%	7.9%	110.2	3.7%
<b>2015</b>					
Jan	93.7	-13.6%	-9.5%		
Feb	93.2	-0.5%	-10.0%		
Mar	88.6	-4.9%	-15.2%	91.9	-16.6%
Apr	84.4	-4.7%	-20.9%		
May	83.3	-1.4%	-20.9%		
June	83.6	0.4%	-21.4%	83.8	-8.8%
Jul	79.2	-5.2%	-24.5%		
Aug	80.4	1.5%	-24.9%		
Sep	82.2	2.3%	-23.2%	80.6	-3.8%
Oct	80.0	-2.7%	-27.3%		
Nov	77.6	-3.0%	-30.7%		
Dec	80.0	3.0%	-26.2%	79.2	-1.7%

Source: National Bureau of Statistics

Notes:

- (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: Producer Price Index by Manufacturing Sector**

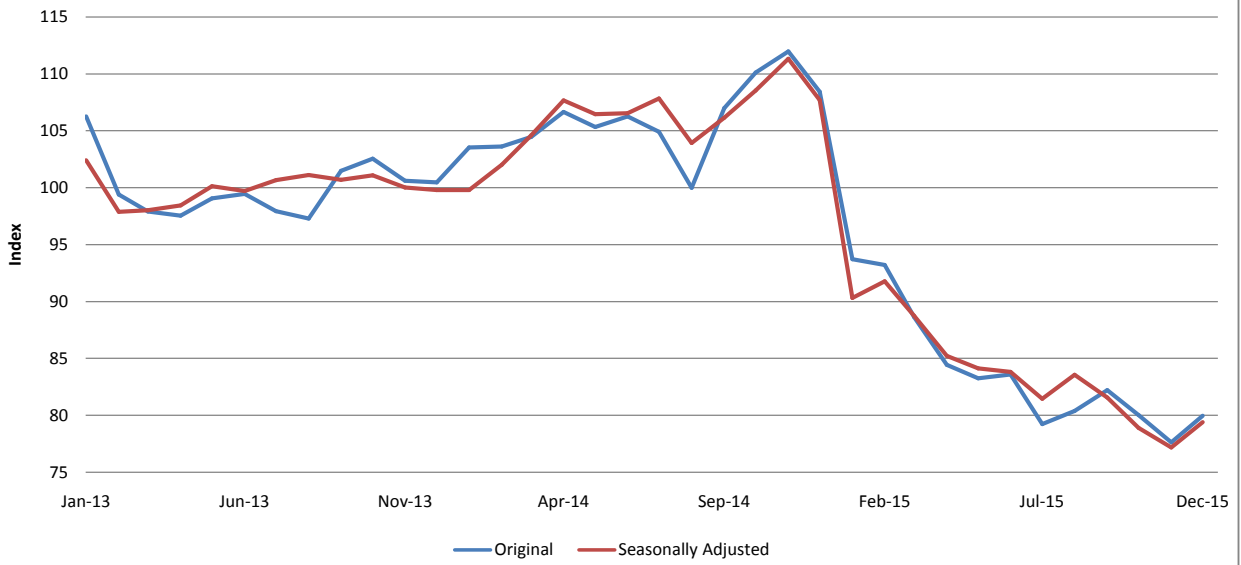
ISIC REV 4 FOURTH DIVISION CLASSIFICATION	Dec-14	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15
MANUFACTURING OF ARTICLES OF CONCRETE, CEMENT AND PLASTER	106.0	102.8	102.3	101.3	101.0	101.6	101.0	101.0	100.8	100.8	100.7	104.0	104.3
MANUFACTURE OF TOBACCO PRODUCTS	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
PROCESSING AND PRESERVING OF FISH, CRUSTACEANS AND MOLLUSCS	109.7	89.9	89.2	83.1	84.9	82.4	84.2	77.8	80.9	83.2	81.4	78.1	81.3
DISTILLING, RECTIFYING AND BLENDING OF SPIRITS	100.0	112.9	112.9	112.9	112.9	112.2	112.6	112.0	103.1	102.9	103.2	103.2	103.0
MANUFACTURE MALT LIQUORS AND MALT	100.4	100.4	100.4	100.4	85.9	100.6	83.8	82.6	64.1	64.2	63.9	64.1	63.0
MANUFACTURE OF SOFT DRINK; PRODUCTION OF MINERAL WATER AND OTHE	99.7	99.7	99.7	99.7	98.7	95.2	91.1	91.9	92.7	93.9	93.9	93.7	93.8
MANUFACTURING OF OTHER FOOD PRODUCTS N.E.C	99.3	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8
MANUFACTURE OF OTHER ARTICLES OF PAPER AND PAPERBOARD	98.4	98.4	98.4	98.4	98.4	98.4	98.4	98.4	98.4	98.4	98.4	98.4	98.4
TOTAL	108.4	93.7	93.2	88.6	84.4	83.3	83.6	79.2	80.4	82.2	80.0	77.6	80.0

Source: National Bureau of Statistics

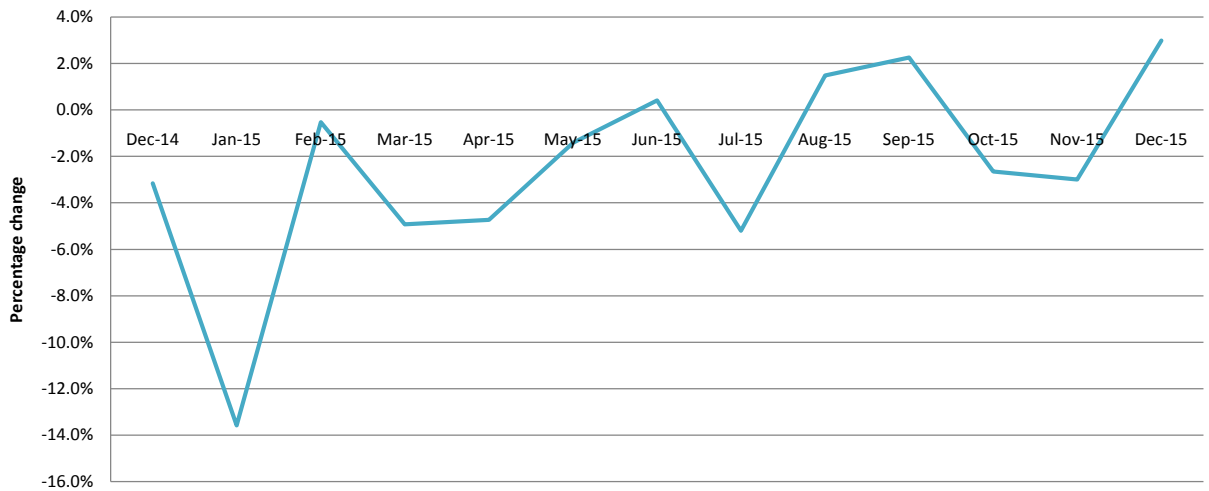
Notes:

\*Index reference period 2013 = 100

**Chart 1  
Producer Price Index**



**Chart 2  
PPI- Month on Month Percentage Change**



## 4. CONCEPTS, SOURCES AND METHODS

### 4.1 Introduction

The PPIM measures the monthly price change of products produced by the Seychelles manufacturing industry.

### 4.2 Purpose and uses of PPIM

Like the Consumer Price Index (CPI), the PPIM is a measure of price inflation. Whereas the CPI measures price change from **the Household purchaser's perspective**, **the PPIM measures price change from the perspective of domestic producers**.

The CPI is an **input** price index which measures change in the price of products purchased. The PPIM is an **output** price index which measures change in price of products produced for sale.

Aside from being a measure of price changes of the output of producers, the index can also be used as an indicator to monitor changes in wholesale prices.

An important use of the PPIM is in the production of the National Accounts where it is used as a deflator to produce GDP in volume measures.

### 4.3 Coverage and classification

In concept, the pricing basis of PPIM is at basic prices, meaning that it excludes taxes (such as the VAT), trade margins and transport margins. It is measuring prices from the factory.

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:

- Manufacturing of Articles of Concrete, Cement And Plaster;
- Manufacture of Tobacco Products;
- Processing and Preserving of Fish, Crustaceans and Molluscs;
- Distilling, Rectifying and Blending of Spirits;
- Manufacture Malt Liquors and Malt;
- Manufacture of Soft Drink; Production of Mineral Water and other Bottled Water;
- Manufacturing of other Food Products N.E.C;
- Manufacture of other Articles of Paper and Paperboard;

### 4.4. 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.

### 4.5 Price indexes

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

For an index to provide information on price 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 PPIM Total between

June 2013 and December 2013. The same procedure is applicable for any two periods.

	Index numbers
December 2013	101.5
Less June 2013	99.3
Equals change in index points	2.2
Percentage change =	2.2 / 99.3 x 100 = 2.2%

The PPIM does not attempt to measure the actual level of prices but is limited to the measurement of the change in prices from one period to another.

#### 4.6 Calculation of the PPIM

##### Concept

There are a number of different formulas which can be used to calculate price indexes. The PPIM 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:

$$I_{Laspeyres}^{0:t} = \frac{\sum_{i=1}^n P_i^t q_i^0}{\sum_{i=1}^n P_i^0 q_i^0} \times 100$$

Where:

$P_i^t$  is the price in period t

$P_i^0$  is the price in the base or reference period

$q_i^0$  is the quantity produced in the base or reference period

The Laspeyres formula can be rearranged into the equivalent value share form where:

$S_i^0$  is the reference period value share (or weight) of product i.

$$I_{Laspeyres}^{0:t} = \sum_{i=1}^n \left( \left( \frac{P_i^t}{P_i^0} \right) \times \frac{P_i^0 q_i^0}{\sum_{i=1}^n P_i^0 q_i^0} \right) \times 100$$

$$= \sum_{i=1}^n \left( \left( \frac{P_i^t}{P_i^0} \right) \times S_i^0 \right) \times 100$$

$$\text{where } S_i^0 = \frac{P_i^0 q_i^0}{\sum_{i=1}^n P_i^0 q_i^0}$$

##### 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 PPIM, weights reflect the relative importance of a product, product group or industry within the overall scope of industrial production.

In practice, when compiling the PPIM, the first process is to derive a set of value shares or weights which will be used to combine price 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 price

This is the information that is gathered on a monthly basis from the participating manufacturers and is the monthly wholesale prices of the products produced.

In Seychelles, we recognise that some products are seasonal and therefore unit prices are not always available each month. In cases where the information is missing, an imputation is made based on last known price to ensure the PPI reflects the price increase or decrease when the product becomes available in the next season.

### Price Relative

The price relative is calculated by taking the price in the current month divided by the reference price. The reference price is the average of monthly prices 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 PPIM is chain linked.

## 5. FUTURE IMPROVEMENTS

There is an Excel spreadsheet containing time series of PPI dating from 2013 available now on the NBS website.

We welcome user feedback and suggestions regarding the monthly Producer Price Index.

## 6. NEXT RELEASE

The next issue of the PPI will be released on Monday 29th February 2016 and will contain data for January 2016.

## 7. CONTACT US

For more information regarding this Bulletin, the concepts, sources or methodology to compile producer price indexes, please contact Mrs JeanneD'arc Camille on Tel: + (248) 4 611 659 | Fax: + (248) 4 225 634 or email: [jeannedarc@nbs.gov.sc](mailto:jeannedarc@nbs.gov.sc)

To access any of our statistics please visit our website: [www.nbs.gov.sc](http://www.nbs.gov.sc)

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