Annex

Producer Price Index – Manufacturing (PPI-M)

Methodology for the computation of the PPI-M

1. Definition

The Producer Price Index (PPI-M) measures changes in the effective prices received by producers in the manufacturing sector for that part of their output, which is sold on the domestic market. It reflects the price trends of a fixed basket of goods representative of the output of Non Export Oriented Enterprises (Non EOE).

The concepts and definitions of the PPI-M largely follow the guidelines provided in the "IMF Producer Price Index Manual Theory and Practice".

2. Scope

The PPI-M covers both large and small manufacturing establishments falling within divisions 10 to 33 of the National Standard Industrial Classification Rev.2 (NSIC Rev.2), which is an adapted version of the International Standard Industrial Classification (ISIC) Rev.4. The establishments are classified under 24 divisions, 71 groups, 137 classes and 240 sub-classes.

The following divisions have been excluded for reasons given in brackets:

(a) Division 12: Manufacture of tobacco products (no longer manufactured in Mauritius)

(b) Division 19: Manufacture of coke and refined petroleum products (weight in the overall index is not significant)

(c) Division 21: Manufacture of basic pharmaceutical products and pharmaceutical preparations (weight in the overall index is not significant and change of products is too dynamic)

(d) Division 26: Manufacture of computers, electronic and optical products (weight in the overall index is not significant and change of products is too dynamic)

(e) Division 33: Repair and installation of machinery and equipment (weight in the overall index is not significant and change of products is too dynamic)

The activities covered by the index represent around 97% of the gross output generated by the Non-EOE manufacturing sector during year 2013.

3. Frame

A list of all large establishments (engaging 10 or more persons) falling under the scope of the PPI-M was obtained from the 2013 Census of Economic Activities (CEA 2013). For small

establishments (engaging less than 10 persons), the list of respondents at the CEA 2013 was used.

4. Selection of establishments (producers)

A sample of 126 large establishments was selected from the list of large manufacturing establishments. Those establishments were the most important ones in terms of Gross Output (GO) in their respective 5-digit sub-class.

Small establishments selected for price collection were those engaged in the manufacture of wearing apparel, fabricated metal products and furniture as these activities were the most important ones performed by small manufacturing establishments.

Output of the selected establishments represented around 60% of the total GO generated by all establishments falling within the scope of the PPI-M.

5. Selection of products to be priced

Some 400 products have been selected for pricing. These are the most important ones in terms of contribution to the gross output or turnover of the selected establishments.

6. Price collection

Prices collected refer to the prices received by producers for the sale of their products on the local market. The prices exclude all taxes on products, namely excise duty and value added tax (VAT).

As from July 2013, prices are collected on a monthly basis and provisional monthly indices are compiled. The overall PPI-M on a monthly basis is published according to SDDS requirements.

For revised monthly and quarterly indices at division level and in some specific cases at even lower level, the selected establishments are visited on a quarterly basis and prices of the selected products are collected for each month of the reference quarter.

7. Updating of weights

7.1 Historical background

Statistics Mauritius first published a Producers Price Index limited to the “Manufacturing of food products, beverages and tobacco” in March 1994 with 1993 as base period (1993 = 100). The index was revised in June 2002 to cover all relevant industry groups of the former Non-EPZ manufacturing sector, based on the results of the 1997 Census of Economic Activities. The base period was 1998. The base year was subsequently revised to 2003 and 2007, based on the results of the 2002 and 2007 rounds of the Census of Economic Activities.

The current basket of goods has been updated based on the results of the 2013 Census of Economic Activities and the index is computed with year 2013 as base period.

7.2 Evolution of weights from 2007 to 2013.

It is to be noted that output of small establishments has been considered in the updating of the weights from 2007 to 2013. The share of the small establishments was estimated at around 25% of the total Non EOE manufacturing sector in 2013.

The weights for the current PPI-M have been calculated from the gross output figures derived from the 2013 Census of Economic Activities. Gross output is valued at basic prices, and thus excludes all taxes on products, namely excise duties and value added tax. The weight of a product group represents the share of its gross output out of the total output of the manufacturing sector.

The changes in the weights by division from 2007 to 2013 are given in table A. The main changes are due to the following:

(a) Some activities have gained more importance in the basket of products mainly due the inclusion of small establishments.
   (i) Manufacture of wearing apparel (from 1.6% to 3.4%)
   (ii) Manufacture of fabricated metal products, except machinery (from 3.8% to 7.6%)
   (iii) Manufacture of furniture (from 2.0% to 6.5%).

(b) The weight of some divisions has decreased. The main ones are:
   (i) Manufacture of food products and beverages (from 60.8% to 55.2%) due to re-classification of mixed manufacturing and sales activities to “Wholesale and retail trade” in some cases.
   (ii) Manufacture of rubber and plastics products (from 5.9% to 3.1%) due to a significant reduction in the production of plastic bags.
   (iii) Manufacture of chemicals and chemical products (from 10.7% to 6.9%) mainly due to a reduction in the number of large establishments in this division.

(c) The weight for ‘Manufacture of other non-metallic mineral products’ has increased from 0.3% to 5.2% due to a re-classification of some establishments from Construction to Manufacturing.

Table A - Distribution of weights by division, 2007 and 2013

NSIC Division	Description	Weight 2007	Weight 2013
10	Manufacture of food products	442	374
11	Manufacture of beverages	166	178
13	Manufacture of textiles	4	6
14	Manufacture of wearing apparel	16	34
15	Manufacture of leather and related products	2	3
16	Manufacture of wood/wood products/cork, excl. furniture	0	5
17	Manufacture of paper and paper products	15	11
18	Manufacture of printing and reproduction of recorded media	56	28
20	Manufacture of chemicals and chemical products	107	69
22	Manufacture of rubber and plastics produts	59	31
23	Manufacture of other non-metallic mineral products	3	52
24	Manufacture of basic metals	34	11
25	Manufacture of fabricated metal products, except machinery	38	76
27	Manufacture of electrical equipment	12	2
28	Manufacture of machinery and equipment n.e.c	12	9
29	Manufacture of motor vehicle, trailers and semi-trailers	3	5
30	Manufacture of other transport equipment	4	16
31	Manufacture of furniture	20	65
32	Manufacture of other manufacturing	6	25
	Overall Index	**1000**	**1000**

8. Index calculation

The PPI-M is computed according to the Laspeyres Formula.

The formula used is given below

$$I_c = \frac{\sum W_i * (\frac{P_{ci}}{P_{oi}})}{\sum W_i} * 100$$

Where Ic = Index for current month
Wi = Weight associated with product i
Pci = Price of product i for the current month
Poi = Price for product i for the base period (2013)

The PPI-M is calculated at the 5-digit sub-class level of the NSIC Rev.2 by the above formula. The lowest level indices are determined as a geometric average of the price relatives of the basic observations. Indices at the division level (2-digit code) are then derived as a weighted average of the indices of the products falling within each division. Finally, the overall index is obtained as a weighted average of the division indices.

9. Uses of PPI

(a) The PPI is a leading indicator of the future status of inflation. Movement of PPI is usually indicative of a similar change of part of the Consumer Price Index (CPI). PPI can also be used in the economic analysis of inflation transmission process.

(b) It provides specific price deflators for the computation of national accounts at constant prices in order to measure real growth

(c) It is helpful in the formulation of contract agreement. It can be used as an escalation clause to protect buyers and sellers against inflation or deflation.

(d) PPI is also used in econometric models, in forecasting and in inventory accounting.

10. Missing prices

In case of temporarily missing prices for products, the change in the prices are assumed to be following the same trend as the average price in the 5-digit sub-class or of a higher level.

11. Treatment of product permanently disappeared

Products may disappear permanently for various reasons. The products may disappear from the market because new products have been introduced or the establishments from which the price has been collected have stopped selling the product. When a product disappears permanently, a replacement product of a similar nature will be included in the index.

12. Treatment of quality change

The index is a measure of only “PURE” price changes and should as far as possible measure the price changes of the same products. Hence, the products must not be affected by quality change. If the change is due to quality, an estimate of the proportion of the change attributed to the quality element is made and adjustment done accordingly.

13. Reliability of the PPI-M

The statistical accuracy of the PPI-M depends heavily on the quality of information provided by the selected establishments (respondents). This office places great emphasis on the need for reporting effective selling prices, i.e. prices after discounts and other price deductions rather than the list or catalogue prices.

Standard editing procedures are used to validate the accuracy and reliability of the data. Collected prices are validated during the field work and inconsistencies discussed with the respondents and corrected.

Further computer checks are made at office level when compiling the indices. Ccomparison is also made with the CPI and with the import/export price indices. Systematic analyzes of the source data are made in the context of weight and base year revisions that occur every five years.