

Quarterly Export and Import Price Indices

3rd Quarter 2019

(Base year: 2013=100)

1. Introduction

The Export Price Index (EPI) provides an overall measure of pure price changes (in Mauritian rupees) of goods exported to other countries. The Import Price Index (IPI), on the other hand, measures pure price changes (in Mauritian rupees) of goods purchased from other countries.

This issue of Economic and Social Indicators presents a series of export and import price indices for the period covering the 1st quarter of 2018 to the 3rd quarter of 2019 with year 2013 as base year. The weights have been derived from exports and imports data for the base year, while the average import and export prices of representative products in 2013 have been used as base prices. To facilitate analysis, chain-linked indices with base year 2013 for the period 1st quarter 2005 to 3rd quarter 2019 are given in Tables 4 and 8.

Detailed indices prior to 1st quarter 2018 are posted on Statistics Mauritius website in the historical series of external trade statistics:

<http://statsmauritius.govmu.org/English/StatsbySubj/Pages/External-Trade.aspx>

The methodologies used for the computation of the EPI and IPI are annexed.

2. Terms of trade

The terms of trade index is the ratio of export price index to import price index. A rise in this ratio indicates that the terms of trade have moved in favour of Mauritius. During the third quarter of 2019, export and import prices increased by 3.6% and 0.4% respectively when compared to the previous quarter. The terms of trade index increased by 3.4 points to reach 110.1 from 106.7 in the second quarter of 2019. Compared to the corresponding quarter of 2018, the terms of trade increased by 6.6 points.

Price indices	2018					2019		
	1st Qr	2nd Qr	3rd Qr	4th Qr	Year	1st Qr	2nd Qr	3rd Qr
Export	97.0	99.6	98.6	96.5	97.9	96.8	99.1	102.7
Import	87.2	93.8	95.3	92.0	92.1	89.0	92.9	93.3
Terms of trade	111.2	106.2	103.5	104.9	106.3	108.8	106.7	110.1

3. Export Price Index (EPI) – (Tables 1 - 4)

3.1 Structure of EPI

EPI covers four of the 10 sections of the Standard International Trade Classification (SITC Rev. 4), namely “Food and live animals”, “Chemicals and related products”, “Manufactured goods classified chiefly by material” and “Miscellaneous manufactured articles”. Exports of goods falling under these sections covered 91.0% of total exports in the base year. Sub-indices are also available at division and section level of the SITC (Table 1).

3.2 Changes in quarterly EPI (3rd quarter 2019)

3.2.1 Overall Index

The average quarterly EPI increased from 99.1 in the second quarter of 2019 to 102.7 in the third quarter, representing an increase of 3.6%. That was mainly due to increases in the prices of “Miscellaneous manufactured articles” (+4.9%) and “Food and live animals” (+2.2%).

Compared to price levels in the corresponding quarter of 2018, the index increased by 4.2%. That was mainly due to an increase in the prices of “Miscellaneous manufactured articles” (+7.8%), partly offset by a decrease in the prices of “Food and live animals” (-0.2%).

3.2.2 Section 0: Food and live animals

“Food and live animals” which carries 49.1% of the total weight, is the most important section covered by the export price index. It consists mostly of “Fish and fish preparations” (50.0%) and “Sugar, sugar preparations and honey” (41.4%).

During the third quarter of 2019, the index for “Food and live animals” increased to 82.4 from 80.6 in the previous quarter, representing a rise of 2.2%. That was mainly due to increases in the prices of “Sugar, sugar preparations and honey” (+3.8%) and “Fish and fish preparations” (+1.3%).

Compared to the corresponding quarter of 2018, the index fell by 0.2%, mainly due to a decrease in the prices of “Fish and fish preparations” (-1.5%), partly mitigated by an increase in the prices of “Cereals and cereal preparations” (+7.7%).

3.2.3 Section 5: Chemicals and related products, n.e.s

During the third quarter of 2019, the index for “Chemicals and related products, n.e.s” stood at 111.0 from 109.2 in the second quarter of 2019, representing an increase of 1.6%. This is mainly explained by an increase in the prices of “Medicinal and pharmaceutical products” (+1.7%).

Compared to the corresponding quarter of 2018, the index rose by 1.6% as a result of an increase in the prices of “Medicinal and pharmaceutical products” (+1.7%).

3.2.4 Section 6: Manufactured goods classified chiefly by material

The index for “Manufactured goods classified chiefly by material” increased by 1.2% from 113.0 to 114.3 in the third quarter of 2019, compared to the previous quarter. This rise is explained by an increase of 1.2% in the prices of “Textile yarn and fabrics”.

Compared to the corresponding quarter of 2018, the index rose by 3.7% due to an increase of 3.7% in the prices of “Textile yarn and fabrics”.

3.2.5 Section 8: Miscellaneous manufactured articles

“Miscellaneous manufactured articles” carries about 45.7% of the total weight. It consists mainly of “Articles of apparel and clothing accessories” (92.6%).

The index for “Miscellaneous manufactured articles” increased from 117.6 to 123.4 in the third quarter of 2019 representing a rise of 4.9%. That was mainly explained by the higher prices of “Articles of apparel and clothing accessories” (+5.1%).

Compared to the corresponding quarter of 2018, the index increased by 7.8% mainly explained by an increase in the prices of “Articles of apparel and clothing accessories” (+8.3%).

4. Import Price Index (IPI) (Tables 5 - 8)

4.1 Structure of IPI

IPI covers nine out of the 10 SITC sections. The only section not covered is “Commodities and transactions not classified elsewhere”, because of the heterogeneity of the products and the inherent difficulties in pricing items of a constant quality. Imports of goods falling under the covered sections, make up for 89.0% of total imports in the base year. Sub-indices are also available at division and section level of the SITC (Table 5).

4.2 Changes in quarterly IPI (3rd quarter 2019)

4.2.1 Overall Index

The Import Price Index (IPI), calculated on a quarterly basis, increased by 0.4% from 92.9 in the second quarter of 2019 to 93.3 in the third quarter. That was mainly the effect of increases in the prices of “Food and live animals” (+1.6%), “Manufactured goods classified chiefly by material” (+1.6%) and “Machinery and transport equipment” (+1.7%), partly offset by a decrease in the prices of “Mineral fuels, lubricants and related materials” (-1.9%).

Compared to the corresponding quarter of 2018, the index fell by 2.1%, mainly as a result of a decrease in the prices of “Mineral fuels, lubricants and related materials” (-11.4%), partly mitigated by an increase in the prices of “Food and live animals” (+4.8%).

4.2.2 Section 0: Food and live animals

“Food and live animals” carries 25.1% of the total weight of the import price index. The two main components of this section are “Fish and fish preparations” (46.1%) and “Cereals and cereal preparations” (22.3%).

The index for this section increased by 1.6% from 94.9 in the second quarter of 2019 to 96.4 in the third quarter. This rise is mainly attributable to increases in the prices of “Vegetables and fruit” (+16.7%) and “Fish and fish preparations” (+0.7%).

Compared to the corresponding quarter of 2018, the index increased by 4.8%, mainly due to increases in the prices of “Fish and fish preparations” (+4.7%) and “Cereals and cereal preparations” (+8.3%), partly offset by a decrease in the prices of “Feeding stuff for animals” (-13.9%).

4.2.3 Section 1: Beverages and Tobacco

The index for “Beverages and Tobacco” increased by 0.8% from 149.3 in the second quarter of 2019 to 150.5 in the third quarter. This rise is explained by an increase in the prices of “Beverages” (+5.8%).

Compared to the corresponding quarter of 2018, the index remained unchanged at 150.5.

4.2.4 Section 2: Crude materials, inedible, except fuels

The index for “Crude materials, inedible, except fuels” increased by 1.4% to 107.6 from 106.1 in the second quarter of 2019 mainly due to an increase in the prices of “Textile fibres and their wastes” (+2.4%), partly offset by a decrease in the prices of “Crude fertilisers and crude minerals” (-5.0%).

Compared to the corresponding quarter of 2018, the index decreased by 3.6% as a result of a decrease in the prices of “Textile fibres and their wastes” (-6.0%), partly mitigated by an increase in the prices of “Crude animal and vegetable materials, n.e.s.” (+6.1%).

4.2.5 Section 3: Mineral fuels, lubricants and related materials

“Mineral fuels, lubricants and related materials” consisting mainly of “Petroleum, petroleum products and related materials”, makes up for 40.0% of the weight of the IPI.

The index for “Mineral fuels, lubricants and related materials” fell by 1.9% from 77.5 in the second quarter of 2019 to 76.0 in the third quarter. This is mainly explained by decreases in the prices of “Gas, natural and manufactured” (-23.0%) and “Petroleum, petroleum products and related materials” (-0.7%).

Compared to the corresponding period of 2018, the index decreased by 11.4%, mainly due to price decreases in “Petroleum, petroleum products and related materials” (-7.8%), “Coal, coke and briquettes” (-31.5%) and “Gas, natural and manufactured” (-32.7%).

4.2.6 Section 5: Chemical materials & related products, n.e.s

The index for “Chemical materials & related products, n.e.s” increased by 2.1% from 104.2 in the second quarter of 2019 to 106.4 in the third quarter. This rise is mainly explained by higher prices of “Medicinal and pharmaceutical products” (+2.4%) and “Essential oils and resinoids & perfume materials;toilet, etc.” (+2.9%).

Compared to the corresponding quarter of 2018, the index increased by 0.1%, mainly explained by increases in the prices of “Medicinal and pharmaceutical products” (+1.4%), “Chemical materials & products, n.e.s” (+10.9%) and “Essential oils and resinoids & perfume materials;toilet, etc.” (+1.8%), partly offset by a decrease in the prices of “Plastics in primary forms” (-22.0%).

4.2.7 Section 6: Manufactured goods classified chiefly by material

The index for “Manufactured goods classified chiefly by material”, with 11.2% of the total weight, stood at 106.0 in the third quarter of 2019. Compared to the previous quarter figure of 104.3, a rise of 1.6% is noted, mainly due to increases in the prices of “Non-metallic mineral manufactures, n.e.s.” (+2.5%) and “Textile yarn, fabrics, made-up articles, n.e.s” (+1.7%).

Compared to the corresponding quarter of 2018, the index rose by 2.7%, mainly due to increases in the prices of “Non-metallic mineral manufactures, n.e.s.” (+7.7%) and “Textile yarn, fabrics, made-up articles, n.e.s” (+2.9%), partly offset by a decrease in the prices of “Non-ferrous metals” (-4.5%).

4.2.8 Section 7: Machinery and transport equipment

The index for “Machinery and transport equipment” reached 111.7 in the third quarter of 2019 from 109.8, representing an increase of 1.7%. That was mainly due to an increase in the prices of “Road vehicles” (+1.9%).

Compared to the corresponding quarter of 2018, the index rose by 2.7%, from 108.8 to 111.7, mainly due to an increase in the prices of “Office machines and automatic data processing machines” (+9.0%).

4.2.9 Section 8: Miscellaneous manufactured articles

The index for “Miscellaneous manufactured articles” increased by 2.2% from 105.9 in the second quarter of 2019 to 108.2 in the third quarter. That was mainly due to increases in the prices of “Photographic apparatus, equipment and supplies and optical goods, n.e.s.; watches & clocks” (+5.0%), “Furniture & parts thereof” (+4.5%) and “Footwear” (+6.2%), partly offset by a decrease in the prices of “Professional, scientific and controlling inst. and app.” (-11.2%).

Compared to the corresponding quarter of 2018, the index increased by 11.3% from 97.2 to 108.2. This rise was mainly attributable to higher prices of “Photographic apparatus, equipment and supplies and optical goods, n.e.s.; watches & clocks” (+46.4%), partly offset by a decrease in the prices of “Professional, scientific and controlling inst. and app.” (-12.8%).

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December 2019

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Export Price Index (EPI)

Methodology for the computation of the EPI

1. Definition

The Export Price index (EPI) provides an overall measure of pure price changes in Mauritian Rupees of goods exported to other countries. This index is constructed from the export prices of a "constant" well-defined representative basket of commodities selected from trade data in the base year.

The concepts and definitions of the EPI largely follow the guidelines provided in the "IMF Export and Import Price Index Manual, Theory and Practice, 2009".

2. Scope

The 2013 index is based on the Nomenclature of the Standard International Trade Classification of the United Nations (SITC Rev 4). The EPI covers four of the 10 sections of the SITC, namely "Food and live animals", "Chemicals and related products", "Manufactured goods classified chiefly by material" and "Miscellaneous manufactured articles". Exports of goods falling under these sections covered 91.0% of total exports in the base year. Separate sub-indices are produced for each SITC section and division.

The EPI covers total exports (domestic exports and re-exports). The most important commodities in the 2013 EPI are "Articles of apparel and clothing accessories", "Fish and fish preparations" and "Sugar".

However, some commodities were excluded in the computation of the weights because of their heterogeneity and the inherent difficulties in pricing them to a constant quality. Those were precious stones, jewellery, recorded media and free publications, and all products classified within the Sections 1, 3, 7 and 9 of the SITC; together they accounted for around 9% of total exports in 2013.

The index thus covers about 91% of the value of merchandise exported during 2013. Commodities directly represented (i.e, price movements followed) constitute 70% of the total value of exports. For the 21% not directly represented, their prices are considered to move similarly to those represented directly.

3. Selection of products to be priced and outlets

Around 55 exporters (outlets) have been selected from trade declarations submitted to the Customs Department in 2013 for pricing of the commodities through quarterly price surveys. These exporters are the major ones trading on a regular basis.

A total of around 140 products, representing the 34 commodities directly represented in the index, were selected for pricing on the basis of their share in total exports, regularity of trade

of exports and also their importance in the trader's exports. There must also be a sustained demand for the product variety.

Specifications of products to be priced (physical and qualitative) were established in collaboration with the selected exporters to ensure that same items are priced at each price survey. Specifications include: pricing basis, contract basis, country of destination, unit of measurement, mode of transport, terms of payment, currency and any other conditions like quality and quantity of the product, that have a bearing on the price.

4. Price collection

Regarding price collection, the selected exporters are visited every quarter but prices are collected for each month of the quarter for the computation of quarterly indices. The collected prices are reported on a free on board (F.O.B.) basis and are mostly contract prices.

5. Updating of weights

Weights for each section, division, group and commodity are based on their export values. Products selected for pricing purposes represent all commodities that fall within that weight group.

5.1 Historical background

Statistics Mauritius first published the EPI in August 1996 with 1993 as base period (1993 = 100). The base year was subsequently revised to 1997, 2003 and 2007.

The current weights have been updated with year 2013 as base period.

6. Calculation of the EPI

The lowest level (SITC 7 digit) indices are calculated as a geometric average of the price relatives of the basic observations (products). Laspeyres formula, based on the weighted average of price relatives, is used to calculate higher level indices. The mathematical form of the formula is shown below:

$$I_{ot} = \frac{\sum w_i \times \frac{P_{it}}{P_{io}} \times 100}{\sum w_i}$$

Where I_{ot} is the index for period t compared to base period 0

w_i is the weight of the i^{th} element

P_{io} is the base price of the i^{th} element

P_{it} is the price of the i^{th} element in period t

$\frac{P_{it}}{P_{io}}$ is the price relative of the i^{th} element
in period t relative to base period 0

Σ means summation over all selected elements

7. Uses of the EPI

The Export Price Index is an important economic indicator which is used, inter alia, to

- (i) measure changes in prices of exports
- (ii) analyse the effect of export price changes on the various sectors of the economy
- (iii) calculate changes in the volume of exports
- (iv) calculate the terms of trade (that is the ratio of export prices to import prices)
- (v) analyse the effect of exchange rates on export prices.

It also serves as a basis to assess the competitiveness of Mauritian products in relation to price trends of common products of other countries with which Mauritius competes for markets.

Import Price Index (IPI)

Methodology for the computation of the IPI

1. Definition

The Import Price Index (IPI) provides an overall measure of pure price changes in Mauritian Rupees of goods imported into the country. This index is constructed from import prices of a "constant" well-defined representative basket of commodities selected from imports data in the base year.

The concepts and definitions of the IPI largely follow the guidelines provided in the "IMF Export and Import Price Index Manual, Theory and Practice, 2009".

2. Scope

The commodities are classified according to the United Nations Standard International Trade Classification (SITC Rev 4). The IPI covers nine out of the 10 Standard International Trade Classification sections. The only section not covered is "Commodities and transactions not classified elsewhere", because of the heterogeneity of the products and the inherent difficulties in pricing items of a constant quality. Imports of goods falling under the covered sections, make up for 89.0% of total imports in the base year. Sub-indices are produced by SITC section and division.

For the computation of the 2013 weights, some commodities accounting for around 11% of total imports in 2013 were excluded because of their heterogeneity and the inherent difficulties in pricing them to a constant quality. Those were: precious stones, jewellery, cellular telephones, recorded media and free publications, aircraft, helicopters and marine vessels, certain machine parts, textile wastes and Section 9 of the SITC described as "Commodities and transactions not classified elsewhere".

Thus, the index covers about 89% of the value of merchandise imported in 2013. Commodities directly represented (price movements followed), constitute around 55% of the total value of imports. For the 34% not directly represented, their prices are considered to move similarly to those represented directly.

3. Selection of products to be priced and outlets

Some 142 importers (outlets) have been selected from trade declarations submitted to the Customs Department in 2013 for the pricing of the commodities. These importers are the major ones importing the selected commodities on a regular basis.

A total of around 260 products, representing the 104 commodities directly represented, were selected for pricing on the basis of regularity of imports and also their importance in the trader's imports. There must also be a sustained demand for the product variety.

Specifications of products to be priced (physical and qualitative) were established in collaboration with the selected importers to ensure that same items are priced every quarter.

Specifications include: pricing basis, contract basis, country of origin, unit of measurement, mode of transport, terms of payment, currency and any other conditions like quality and quantity of the product, that have a bearing on the price.

4. Price collection

Regarding price collection, the selected importers are visited every quarter to collect required prices for updating the index. Given that most imports occur at intervals longer than a month; prices refer to the last consignment of the quarter. The collected prices are reported on a cost, insurance, freight (C.I.F) basis and are mostly contract prices.

5. Updating of weights

Weights for each section, division, group and commodity are based on their import values. Products selected for pricing purposes represent all commodities that fall within that weight group.

5.1 Historical background

Statistics Mauritius first published the IPI in July 2004 with 2002 as base period (2002 = 100). The base year was subsequently revised to 2007.

The current weights have been updated with year 2013 as base period.

6. Calculation of the IPI

The lowest level indices (SITC 7 digit) are determined as a geometric average of the price relatives of the basic observations (products). Laspeyres formula, based on the weighted average of price relatives, is used to calculate higher level indices.

The mathematical form of the formula is shown below:

$$I_{ot} = \frac{\sum w_i \times \frac{P_{it}}{P_{io}} \times 100}{\sum w_i}$$

Where I_{ot} is the index for period t compared to base period 0

w_i is the weight of the i^{th} element

P_{io} is the base price of the i^{th} element

P_{it} is the price of the i^{th} element in period t

$\frac{P_{it}}{P_{io}}$ is the price relative of the i^{th} element
in period t relative to base period 0

Σ means summation over all selected elements

7. Treatment of petroleum products and rice

It is to be noted that the index for petroleum products is calculated differently given that these products, namely gasoline, gas oil, aviation fuel, fuel oil, LPG are imported more than once during a quarter. All prices available for the quarter are collected and average prices for the quarter are computed for each product. The same pricing system is applicable for rice imported by the State Trading Corporation.

8. Uses of the Import Price Index

The Import Price Index is an important economic indicator, which is used, inter alia, to:

- (i) measure changes in prices of imports
- (ii) analyse the effect of import price changes on the various sectors of the economy
- (iii) calculate changes in the volume of imports
- (iv) calculate the terms of trade (that is the ratio of export prices to import prices)
- (v) analyse the effect of exchange rates on import prices.