

Economic and Short-term Indices Division  
*Wholesale Prices and Price Indices Section*

**METHODOLOGICAL NOTE**

On the revision of

**THE IMPORT PRICE INDEX IN INDUSTRY (MPI)**

**Base year 2015 = 100.0**

*Piraeus, July 2019*

## **Revision of the Import Price Index in Industry (MPI) (2015=100.0)**

### General

The Import Price Index in Industry is monthly compiled in accordance with Council Regulation No 1165/98 concerning Short-Term Statistics (STS). This Index, like all other short-term indices, is revised every five years using as base year a calendar year ending with a 0 or a 5, in accordance with article 11 of Regulation 1165/98.

The Import Price Index in Industry was first compiled and published in its present form with base year (b.y.) 2000=100.0 as base year. Then, the revisions with b.y. 2005 and 2010=100.0 are followed, and the last revision with 2015=100.0 as base year, where the calculated new indices replaced the previous time series of the indices.

The methodology for compiling the Import Price Index in Industry is mainly based on Eurostat's methodological manuals, as well as on the above Regulations 1165/98 and 1158/05 (EC) concerning Short-Term Statistics.

### Objective, theoretical background

The objective of the Import Price Index in Industry (MPI) is to measure the monthly price changes of products from the mining, manufacturing and energy sectors, which are imported from abroad by national business units, irrespective of the activity of these units. The selected goods for collecting prices should remain comparable over time, with a clear identification of their characteristics (variety, unit of weight, measurement, etc.)

Countries of origin of the imported products are divided into two purchase zones, the euro-zone countries and other non euro-zone countries. Therefore, the sub-indices of the respective purchasing zones, which then compose the General Import Price Index in Industry, are compiled as an indicator recording the price changes for all imported products of the mining, manufacturing and energy sectors.

The usefulness of the index is particularly important because it allows the monitoring of the price evolution of different categories or groups of imported products, while as a deflator, enables the calculation of the change in import volume on external trade statistics and national accounts, after elimination of the price changes.

### Base period – Compiled indices

The year 2015 was used as the base year for the compilation and calculation of the Revised Import Prices Index in Industry.

The import data used for the current index revision were based on imports (purchases value) of the year 2015 and are divided into purchases from euro-zone countries and non euro-zone countries. The compilation of individual import prices indices for products coming from euro-zone and non euro-zone countries, pursuant to amending Regulation 1158/2005, is being done since the year 2004, as follows:

- Import Price Index (total)
- Euro-zone Import Price Index
- Non euro-zone Import Price Index

### Statistical classifications – Product selection

From the revision with b.y. 2005=100.0, the EC's (Eurostat) new statistical classification of economic activities is using (NACE-Rev.2, according to Regulation 1893/2006 of the European Parliament and of the Council), as it was applied the new product classification, CPA 2008 (in accordance with Regulation 451/2008 of the European Parliament and of the Council).

In the present 2015=100.0 revision, criteria for the selection of products was the size of the imports value (purchases) of products in each economic activity, as well as, the ability of collecting prices for these products over time.

In particular, selected to be monitoring 297 product codes (at 6-digit level in CPA 2008 classification), derived from euro-zone countries and 260 product codes, that originate from Non euro-zone countries.

### Weighting sources – Calculation of weights

The main data source used for calculating the weights, at all MPI levels, was the annual import data of the 2015 external trade survey. For the calculation of the index weights at all levels (product, economic activity, group, main industrial grouping, etc.) and in the zones of origin, import values at corresponding levels were taken into consideration, both as a total and in the individual zones of origin in 2015.

The weights that resulted from the 2015 industrial products import value, broken down into euro-zone and non euro-zone countries and into main industrial groupings, are shown in the table below.

**Table1:** Weights in Main Industrial Groupings (MIGS) (Base year: 2015=100.0)

<b>Main Industrial Groupings (MIGS)</b>	<b>Total zones (%)</b>	<b>Euro-zone countries (%)</b>	<b>Non Euro-zone countries (%)</b>
Intermediate goods	24.60	12.14	12.46
Capital goods	15.33	8.73	6.60
Durable consumer goods	3.09	1.50	1.59
Non durable consumer goods	27.64	17.68	9.96
Energy goods	29.34	1.66	27.68
<b>Total Imports</b>	<b>100.00</b>	<b>41.71</b>	<b>58.29</b>

Chart 1

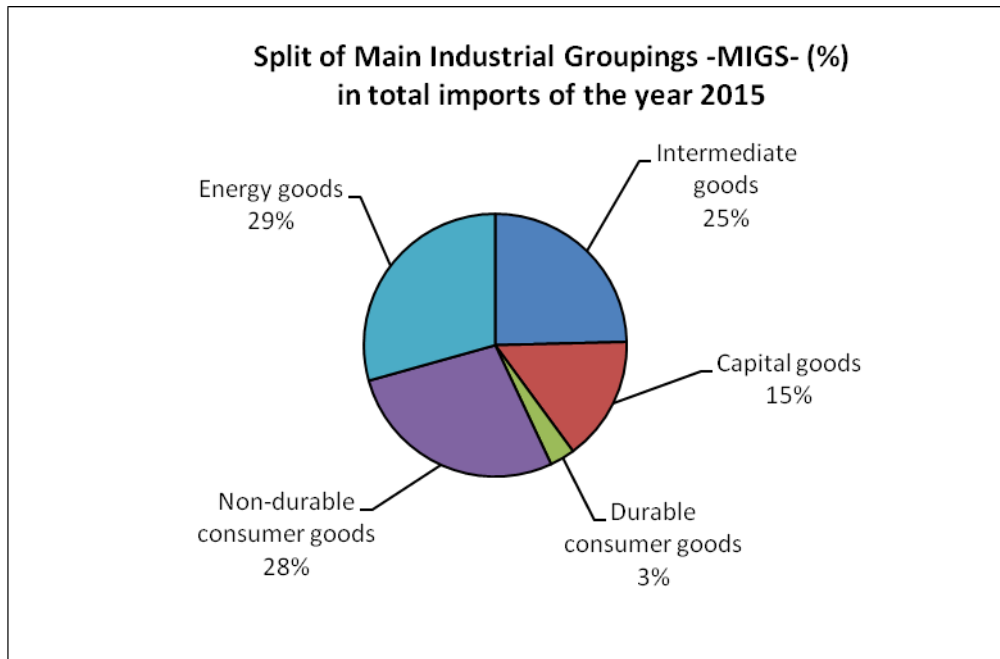
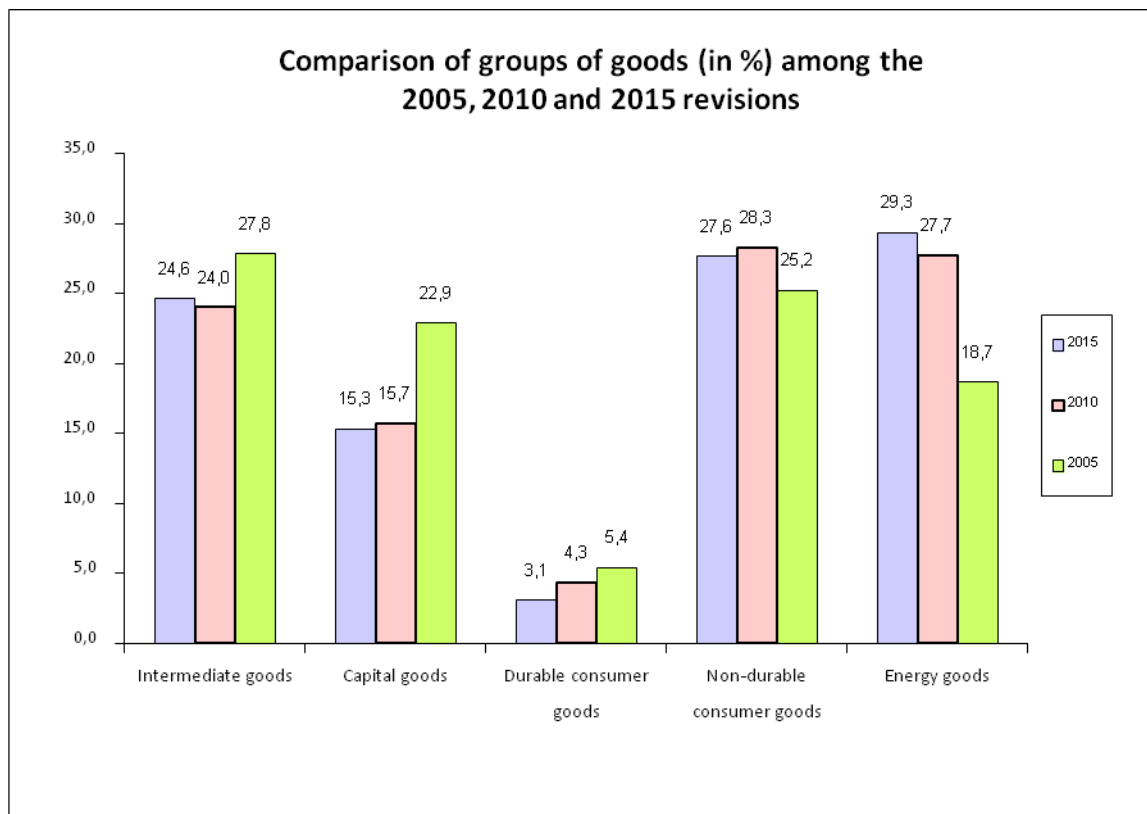


Chart 2



## Price collection – Reporting units – Geographical coverage

The import prices that are collected come from units-enterprises, which import the products originally selected and are used for the MPI's compilation. This means that the prices mainly refer to transactions between units-enterprises established in the country, which act as importers of products and units-enterprises established abroad acting as exporters of products to Greece.

Prices are collected from approximately 880 enterprises that import products with head offices in Attica and in other 32 former Prefectures of the Country (under the "Kapodistrias" administrative system). The index covers the country as a whole, since the main criterion for selecting the units-enterprises, from which import prices are collected, was the value of the enterprises' imports during base year 2015, without taking into account the location of their head office.

The collected prices of imported products are CIF (Cost Insurance Freight) prices at the Greek border, free of all taxes and duties payable by the import enterprises. This means that they include the product transport (freight) and insurance costs incurred by the enterprise for their importation.

Transactions between units belonging to the same enterprise (e.g. parent and subsidiary) are taken into consideration for the time period during which the prices are based on the market or affected by it and their differences compared to market prices are minimal.

Prices refer to actual transaction prices and not to price list prices and therefore include discounts that can be made.

In order to show the actual evolution (change) of prices, in the context of the index's compilation, all the elements that contribute to the fixing of product prices are taken into account, with the view to correcting quality changes and maintaining their comparability over time.

The information collected for the prices refer mainly, to the middle of the reference month, with monthly periodicity, while, in exceptional cases reported at the monthly average prices of this period; so, in this way to ensure, the comparison of the average prices level of the current period, compared to the corresponding level of prices in the base period.

When collected product prices are indicated in foreign currency, they are converted to Euros using the Euro-foreign currency exchange rate, according to the average monthly fixing rates of the Bank of Greece.

## More specific issues

For each of the products selected in the index sample of items for which prices were collected, all the elements that define it (variety, weight, packaging, other features) were fully and precisely determined, including those relating with the market conditions for its transaction (usual quantity, discounts, mode of payment, country of origin, etc). Prices resulting from transactions of affiliated units-enterprises, such as those between parent and subsidiary company, are taken into consideration under certain conditions.

Quite often, prices were no longer available. In such cases, when prices were not available because of the absence of transactions or seasonality, we used the method which consists in "repeating the last prices", for the intermission period. When certain product types or variations are no longer representative or when the characteristics that define them have changed or when they are no longer present in transactions, new types or their variations, which replace the older ones, are used. In such cases, the special method of changing the base prices of substitute products is applied.

## Calculation of the Import Prices Index

The MPI in Industry is calculated by means of a variation of the Laspeyres formula, as follows:

$$I^{(t)} = \sum_{i=1}^n R_i^{(t)} * w_i$$

where :

$I^{(t)}$ , is the general index of the current period (month) t,

$R_i^{(t)}$ , is the individual index of the product i during the current period (month) t

$$w_i = \frac{p_i^{(0)} q_i^{(0)}}{\sum_{i=1}^n p_i^{(0)} q_i^{(0)}}, \quad \sum_{i=1}^n w_i = 1$$

$w_i$  = the corresponding weight of product  $i$ , where  $p_i^0$  and  $q_i^0$  are, respectively, the prices and quantities of product  $i$  during the base period 0.

$p_i^{(0)}$ ,  $q_i^{(0)}$ , the price and quantity of product  $i$  during the base period 0,

$i = 1, 2, \dots, n$ , products

$t$  = current period (month or year)

The individual index of product  $i$ , i.e.  $R_i^{(t)}$ , is calculated as the simple arithmetic mean of the relevant prices of the product's variations from all reporting units (enterprises).

That is :

$$R_i^{(t)} = \frac{1}{N_i} \sum_{j=1}^{N_i} \left( \frac{p_{ij}^{(t)}}{p_{ij}^{(0)}} * 100 \right)$$

where :

$N_i$ , is the count of product  $i$  variations from all reporting units

$p_{ij}^{(t)}$ , is the price  $j$  of product  $i$  variation in the current period t

$p_{ij}^{(0)}$ , is the price  $j$  of product  $i$  variation during base period 0,  $j=1, 2, 3, \dots, N_i$ .

The above calculations are applied for the compilation of the General Import Price Index and for the compilation of the individual Import Price Indices from euro-zone countries and other non euro-zone countries. The General Import Price Index in Industry, as a composite index of the individual indices, is calculated as the weighted average of the above two distinct prices indices.

## Publication of the revised Import Prices Index in Industry and transmission of the data to Eurostat.

The data of the revised MPI in Industry will be published on 12 July 2019, by means of a special Press Release, with May 2019 as the first reference month.

In conformity with amending Regulation 1158/2005 of the European Parliament and of the Council, data have to be published monthly, 45 days after the end of the data reference month and then, are transmitted to Eurostat at Division 2-digit level of detail and above.

### Back casting of time series

Backdated calculations for the monthly and annual Import Price Index in Industry, for the period January 2000 - February 2019, were calculated using the individual annual price index of every product in 2010 year, according to the following type:

$$R_{i(2015)}^{(t)} = R_{i(2010)}^{(t)} * \frac{100}{\bar{R}_{i(2010)}^{(2015)}}$$

Where:

$R_{i(2015)}^{(t)}$  : is the individual index of material  $i$  in the current period (month, year)  $t$  with 2015 as base year,

$R_{i(2010)}^{(t)}$  : is the individual index of material  $i$  in the current period (month, year)  $t$  with 2010 as base year and

$\bar{R}_{i(2010)}^{(2015)}$  : is the mean individual annual index of material  $i$  in 2015, with 2010 as base year.

For the new products for which individual indices were not available, those of the correspondent groups where they belong to were used.

The following tables show the weighting coefficients for the 2015 revision (by grouping at 2-digit of NACE Rev.2 classification) and by market, as well as the annual General Import Prices Indices for the period 2016-2019/04 with base year 2015=100.0.

The methodological manual for the Import Price Indices, which includes a comprehensive set of guidelines for the compilation of short-term statistics, is available into:

[Methodology of short-term business statistics - Interpretation and Guidelines](#)

**Table 2: Weighting Coefficients of MPI by activity sectors and by market (b.y.: 2015=100.0)**

NACE Rev.2	Economic Activity Sectors	Imports by market:		
		Total Imports (%)	Euro-zone countries (%)	Non euro-zone countries (%)
05	Mining of coal and lignite	0.06		0.06
06	Extraction of crude petroleum and natural gas	20.67		20.67
07	Mining of metal ores	0.09		0.09
08	Other mining and quarrying	0.19	0.03	0.16
10	Manufacture of food products	11.04	7.31	3.73
11	Manufacture of beverages	0.68	0.36	0.32
12	Manufacture of tobacco products	0.48	0.25	0.23
13	Manufacture of textiles	1.47	0.48	0.99
14	Manufacture of wearing apparel	3.58	2.02	1.56
15	Manufacture of leather and leather products	1.77	0.96	0.80
16	Manufacture of wood and of products of wood and cork	0.60	0.17	0.43
17	Manufacture of paper-pulp, paper and paper products	2.37	1.39	0.98
19	Manufacture of coke and refined petroleum products	7.46	1.25	6.21
20	Manufacture of chemicals and chemical products	9.27	6.00	3.27
21	Manufacture of basic pharmaceutical products and pharmaceutical preparations	7.38	5.46	1.91
22	Manufacture of rubber and plastic products	2.60	1.27	1.33
23	Manufacture of other non-metallic mineral products	0.99	0.45	0.54
24	Manufacture of basic metals	5.00	1.45	3.55
25	Manufacture of fabricated metal products except machinery and equipment	1.60	0.83	0.77
26	Manufacture of computer, electronic and optical products	6.64	3.08	3.57
27	Manufacture of electrical equipment	3.08	1.38	1.71
28	Manufacture of machinery and equipment n.e.c.	4.87	3.02	1.85
29	Manufacture of motor vehicles, trailers and semi-trailers	3.48	2.28	1.20
30	Manufacture of other transport equipment	0.48	0.26	0.23
31	Manufacture of furniture	0.62	0.26	0.36
32	Other manufacturing	2.36	1.33	1.03
35	Electricity, gas, steam and air conditioning supply	1.17	0.42	0.75
	<b>Total</b>	<b>100.00</b>	<b>41.71</b>	<b>58.29</b>



**Table 3:** General Import Price Indices in Industry for the period: 2016-2019/04 (b.y.: 2015=100.0)

<b>NACE Rev.2</b>	<b>Economic Activity Sectors</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019-01</b>	<b>2019-02</b>	<b>2019-03</b>	<b>2019-04</b>
	<b>Overall Import Price Index</b>	97.2	102.9	109.8	107.4	109.6	114.5	116.5
05	Mining of coal and lignite	97.3	97.0	95.7	95.4	95.4	94.0	94.0
06	Extraction of crude petroleum and natural gas	91.2	115.8	148.2	136.5	145.6	153.7	161.6
07	Minings of metal ores	100.6	102.1	106.6	108.5	108.5	108.5	108.5
08	Other mining and quarrying	100.6	99.5	100.0	100.4	100.4	101.6	101.6
10	Manufacture of food products	100.8	102.7	102.3	102.3	102.6	102.6	102.6
11	Manufacture of beverages	100.9	99.7	99.6	99.3	99.4	100.0	100.0
12	Manufacture of tobacco products	96.9	96.5	96.6	98.6	98.6	98.2	98.1
13	Manufacture of textiles	100.6	101.4	102.0	102.1	102.1	103.0	102.9
14	Manufacture of wearing apparel	100.1	100.3	101.3	101.9	102.9	102.9	102.6
15	Manufacture of leather and leather products	99.6	99.4	99.3	99.6	99.5	99.8	100.0
16	Manufacture of wood and of products of wood and cork	100.7	100.6	100.5	100.8	100.8	100.8	101.4
17	Manufacture of paper-pulp, paper and paper products	99.8	100.2	102.5	103.7	103.8	103.9	103.9
19	Manufacture of coke and refined petroleum products	83.1	104.2	128.8	117.8	127.6	137.7	142.7
20	Manufacture of chemicals and chemical products	98.3	98.8	99.7	99.1	99.6	99.6	99.2
21	Manufacture of basic pharmaceutical products and pharmaceutical preparations	98.3	95.3	92.5	92.3	93.4	93.8	92.9
22	Manufacture of rubber and plastic products	99.2	99.6	99.6	99.7	99.7	100.1	100.0
23	Manufacture of other non-metallic mineral products	100.2	101.2	101.0	101.0	101.1	100.7	101.6
24	Manufacture of basic metals	95.4	102.5	105.5	105.4	106.0	104.8	104.7
25	Manufacture of fabricated metal products except machinery and equipment.	99.6	99.9	100.0	100.5	100.4	100.5	101.1
26	Manufacture of computer, electronic and optical products	99.6	99.2	99.2	99.1	99.6	98.9	98.8
27	Manufacture of electrical equipment	99.2	100.5	99.8	99.9	99.8	100.0	100.2
28	Manufacture of machinery and equipment n.e.c.	99.9	100.5	100.8	100.9	100.9	100.8	100.8
29	Manufacture of motor vehicles, trailers and semi-trailers	100.9	102.4	102.7	103.0	102.0	102.2	103.1
30	Manufacture of other transport equipment	100.4	100.5	103.6	104.1	104.3	104.1	104.3
31	Manufacture of furniture	99.3	100.2	101.0	99.8	100.1	101.3	102.1
32	Other manufacturing	100.8	100.9	100.5	100.7	100.9	101.1	101.1
35	Electricity, gas, steam and air conditioning supply	96.2	94.7	108.3	127.0	123.6	122.0	120.3

**Table 4:** Import Price Indices in Main Industrial Groupings (MIGS): 2016-2019/04 (b.y.:2015=100.0)

<b>Main Industrial Groupings (MIGS)</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019-01</b>	<b>2019-02</b>	<b>2019-03</b>	<b>2019-04</b>
Indermediate Goods	98.4	100.1	101.2	101.2	101.6	101.5	101.4
Capital Goods	100.2	100.6	100.8	100.9	100.6	100.5	100.7
Durable Consumer Goods	99.9	100.0	100.3	100.3	100.4	99.4	99.3
Non Durable Consumer Goods	99.9	99.8	99.1	99.1	99.7	99.9	99.6
Energy Goods	89.6	112.5	142.5	132.0	140.8	148.2	155.0