

*ECONOMIC AND SHORT TERM INDICES DIVISION*

*PRODUCTION INDICES SECTION*

**INFORMATION NOTE ON THE REVISION  
OF TURNOVER INDEX IN INDUSTRY**

**BASE YEAR 2010 = 100.0**

*Piraeus, February 2015*

## **Revised Turnover Indices in Industry** (2010=100.0)

### **General note**

The Industrial Turnover Indices are short-term indices that are compiled on a **monthly** basis in the framework of requirements of Council Regulation (EC) No 1165/98 concerning short-term statistics, as well as Regulation (EC) No 1158/05 of the European Parliament and Council, amending the Council Regulation No1165/98. The indices were first compiled in 2006, with base year 2000=100.0 and has been recently revised and rebased with base year 2010=100.0.

### **Revision of Turnover Indices in Industry**

The latest revision of the Turnover Indices in Industry, with base year 2010=100.0, was based on the results of the Annual Survey of the Production and Sales of Industrial Products (PRODCOM), the Annual Industrial Survey, the Annual Mining-Quarrying Survey, the Annual External Trade Survey for the year 2010, all carried out by the ELSTAT. The revision took place in the framework of the requirements of the Council Regulation (EC) No 1165/98 concerning short-term statistics, according to which short-term indices are revised every five (5) years, particularly on calendar years ending with a 0 or a 5.

### **Statistical classification**

Since the previous revision of the indices (with base year 2005=100.0), the Eurostat classification NACE Rev.2 was implemented as required by Council Regulation 1893/2006, along with the Eurostat classification CPA 2008 at product level (Council Regulation 451/2008).

The revised Industrial Turnover Index (2010=100.0) covers all the activities listed in Sections B and C (Mining-Quarrying and Manufacturing) as defined in the NACE Rev. 2 classification.

### **Purpose of the industrial short-term indices**

The need for the aforementioned indices arose primarily from the signing of the Treaty of Economic and Monetary Union (EMU), which acknowledged the necessity of having reliable statistics rapidly available for the purpose of analysing the economic performance of each Member State within the framework of implementation of EU economic policy.

The Turnover Index in Industry is an indicator of an enterprise's business cycle, showing the monthly evolution of the market of goods and services in industry. The purpose of this index is to measure the activity of the industrial sector in terms of value. Turnover comprises the totals invoiced (without VAT) by the enterprise during the reference period, and corresponds to the market sales of goods or services supplied to third parties. The purpose and the characteristics of the turnover index in industry also apply to the corresponding sub-indices for domestic and non-domestic turnover, respectively.

### **Compiled indices**

The revised industrial indices, which are currently being compiled, allowing for the separation of transactions according to the product's destination (in compliance with the requirements of the aforesaid amending Regulation (EC) No 1158/05 of the European Parliament and Council), are the following:

## Turnover Indices in Industry

Turnover Index in Industry (Total Market)  
Turnover Index in Industry for the Domestic Market  
Turnover Index in Industry for the Non-Domestic Market  
Turnover Index in Industry for the Eurozone Countries  
Turnover Index in Industry for the Non-Eurozone Countries

### **Size of samples of enterprises/establishments**

The sampling unit used is the enterprise - KAU, and the sample of enterprises surveyed for the revised Turnover Indices in Industry comprises 1,099 enterprises out of a total population of 3,595 enterprises according to the results of the Annual Survey of the Production and Sales of Industrial Products (PRODCOM), the Annual Industrial Survey, the Annual Mining-Quarrying Survey, the Annual External Trade Survey for the year 2010. In the manufacturing section, only establishments employing ten or more persons were included, but there was no such a restriction in the other sectors covered by the Index.

Enterprises are selected by applying the purposive sampling, stratified by 4-digit NACE Rev.2 codes. The number of the selected four-digit codes for the compilation of revised turnover indices amount to 141. Initially, the four-digit codes were selected so that the sum of their value is higher than 70% of the total value at two-digit level of economic activity, according to the aforementioned surveys conducted for 2010. As regards turnover, the surveyed units of the sample cover 96,1% of the total turnover.

### **Computation of the Indices**

The revised Indices of Turnover in Industry (2010=100.0) refers to Greece total and are calculated using an equivalent form of the Laspeyres formula.

The method and the procedure of the calculation of the indices are described here. The Turnover Index in Industry, as regards Domestic Market, Eurozone Countries and Non-Eurozone Countries, is calculated initially at the four-digit level of economic activity and subsequently, with the implementation of appropriate weighting coefficients, the index is calculated at higher levels (three-level, two-level and one-level of economic activity) or at the level of Main Industrial Groupings (MIGs).

More specifically, in order to compile the index at the four-digit level  $k$ , for each of the above mentioned markets  $m$ , the value of turnover of all the surveyed enterprises, for the month  $t$ , in the market  $m$ , is computed and compared to the average monthly value of turnover of the base year (2010=100.0), as follows:

$$I_{k,m,t} = \frac{y_{k,m,t}}{y_{k,m,0}}$$

where:

- $I_{k,m,t}$  : the index at the four-digit level  $k$  for market  $m$ , during the month  $t$ .
- $y_{k,m,t}$  : the monthly turnover of all the surveyed enterprises at the four-digit level  $k$  during the month  $t$ , in the market  $m$ ,

- $y_{k,m,0}$  : the average monthly turnover value of all the surveyed enterprises at the four-digit level during the base year (2010), in the market m.

The aggregated Turnover Indices in Industry for the Non-Domestic Market (Eurozone and Non-Eurozone countries) and for the Total Market (Domestic and Non-domestic market), at the four-digit level k, are defined from the aggregation of the elementary indices (at the four-digit level k) of m markets, as follows:

$$I_{kt} = \sum_{m=1}^2 w_{k,m} I_{k,m,t}$$

where:

- $I_{kt}$  : the index at the four-digit level k during the month t, for Non-Domestic Market and for Total Market.
- $w_{k,m}$  : the weighting coefficient of m market at the four-digit level k (m=1,2).

The indices for each four-digit level are converted to typical month indices  $I'_{kt}$ , where typical month is the month adjusted according to the number of working days. The adjustment is made by multiplying the indices of four-digit level  $I_{kt}$  by the appropriate weighting coefficient ( $a_t$ ) calculated as follows:

$$a_t = \frac{\bar{x}}{x_t}$$

where:

$\bar{x}$ : the average monthly number of working days of current year,

$x_t$ : the number of working days in month t.

These weighting coefficient are reviewed annually.

At higher levels (three-level, two-level, categories, etc), for all markets, the unadjusted ( $I_t$ ) and adjusted ( $I'_t$ ) for working days index for the month t are compiled as follows:

$$I_t = \sum_k w_k I_{kt}$$

$$I'_t = \sum_k w_k I'_{kt}$$

where:

$$w_k = \frac{Y_{k,0}}{\sum_k Y_{k,0}} \text{ (weighting coefficient of the four-digit level k)}$$

-  $Y_{k,0}$ : the annual turnover value of all the enterprises of the four-digit level, in the base year 2010=100.0, according to the results of the Annual Survey of the Production and Sales of Industrial Products (PRODCOM), the Annual Industrial Survey, the Annual Mining-Quarrying Survey, the Annual External Trade Survey for the year 2010,

-  $\sum_k Y_{k,0}$ : the annual turnover value of all the four-digit levels k which compose the level for which the index is being compiled (three-digit, two-digit, one-digit level) for the year 2010.

### Backcasting of time series

The backcasted (by reduction) monthly and annual indices of sections for the period January 2000 - December 2009 are calculated on the basis of the average annual indices of sections in 2010, according to the formula:

$$R_{k(2010)}^{(t)} = R_{k(2005)}^{(t)} \cdot b_k$$

where:

$$b_k = \frac{100}{\bar{R}_{k(2005)}^{(2010)}}$$

$R_{k(2010)}^{(t)}$ : the index of the section k during the current period (month, year) t with base year 2010,

$R_{k(2005)}^{(t)}$ : the index of the section k during the current period (month, year) t with base year 2005 and

$\bar{R}_{k(2005)}^{(2010)}$ : the average annual index of the section k in the year 2010 with the base year 2005.

The indices from 2010 onwards have been calculated using the new weights and new turnover data.

### Publishing and data release of the revised Turnover Index in Industry

The data on the Turnover Indices in Industry are released on a monthly basis, 50 days after the end of the reference month t (t+50) and then they are transmitted to Eurostat.

The time series and metadata of the Turnover Indices in Industry (base year 2010=100.0) are available on the website of ELSTAT <http://www.statistics.gr/en/home/>, at the link:

<http://www.statistics.gr/en/statistics/-/publication/DKT24/>.

The first release of data on these indices concerns September 2014 and is held in 19 November 2014.

Finally, guidelines for the compilation of short-term statistics are available in the manual of Eurostat "Methodology of short-term business statistics, interpretation and guidelines", which is available at:

<http://ec.europa.eu/eurostat/en/web/products-manuals-and-guidelines/-/KS-BG-02-002>.

The tables below present the two digit level divisions of economic activity of NACE Rev.2 (Table 1), the weights of two-digit level divisions of economic activity (Table 2) and the weights of the Main Industrial Groupings - MIGs (Table 3) for the Overall Index by domestic and non-domestic market.

**TABLE 1**  
**DIVISIONS OF ECONOMIC ACTIVITY**  
**OF NACE Rev. 2 CLASSIFICATION**

<b>B.</b>	<b>MINING AND QUARRYING</b>
05	Mining of coal and lignite
06	Extraction of crude petroleum and natural gas
07	Mining of metal ores
08	Other mining and quarrying products
<b>C.</b>	<b>MANUFACTURING</b>
10	Food
11	Beverages
12	Tobacco products
13	Textiles
14	Wearing apparel
15	Leather and related products
16	Wood and cork
17	Paper and paper products
18	Printing and recording services
19	Coke and refined petroleum products
20	Chemicals and chemical products
21	Basic pharmaceutical products and pharmaceutical preparations
22	Rubber and plastic products
23	Other non-metallic mineral products
24	Basic metals
25	Fabricated metal products
26	Computers, electronic and optical products
27	Electrical equipment
28	Machinery and equipment n.e.c.
29	Motor vehicles, trailers and semi-trailers
30	Other transport equipment
31	Furniture
32	Other manufactured goods
33	Repair and installation services of machinery and equipment

**TABLE 2**  
**WEIGHTING COEFFICIENTS**  
**BY DIVISION OF ECONOMIC ACTIVITY OF NACE Rev. 2**  
*(2010=100.0)*

NACE Rev. 2 Code	Divisions of economic activity	Weighting coefficients %				
		Total Market	Domestic Market	Non-Domestic Market	Non-Domestic Market Eurozone countries	Non-Domestic Market Non-Eurozone countries
	<b>TOTAL INDEX</b>	100.00	100.00	100.00	100.00	100.00
<b>B</b>	<b>MINING-QUARRYING</b>					
05	Mining of coal and lignite	0.10	0.14	0.00	0.00	0.00
06	Extraction of crude petroleum and natural gas	0.11	0.16	0.00	0.00	0.00
07	Mining of metal ores	0.27	0.15	0.56	0.55	0.56
08	Other mining and quarrying products	1.17	0.96	1.63	2.15	1.38
<b>C</b>	<b>MANUFACTURING</b>					
10	Food	17.91	21.75	9.33	15.29	6.37
11	Beverages	4.49	6.08	0.95	1.88	0.50
12	Tobacco products	1.08	0.96	1.35	0.98	1.54
13	Textiles	1.19	0.87	1.89	3.22	1.23
14	Wearing apparel	1.37	1.01	2.17	4.13	1.20
15	Leather and related products	0.28	0.34	0.15	0.30	0.08
16	Wood and cork	0.71	0.87	0.36	0.45	0.32
17	Paper and paper products	2.04	2.62	0.75	1.16	0.55
18	Printing and recording services	1.19	1.70	0.07	0.21	0.00
19	Coke and refined petroleum products	33.40	31.07	38.60	12.04	51.77
20	Chemicals and chemical products	4.89	4.53	5.69	6.26	5.40
21	Basic pharmaceutical products and pharmaceutical preparations	2.59	2.41	3.01	7.15	0.95
22	Rubber and plastic products	3.21	2.97	3.73	5.35	2.93
23	Other non-metallic mineral products	4.51	5.58	2.12	1.22	2.56
24	Basic metals	9.54	5.64	18.26	25.54	14.65
25	Fabricated metal products	3.19	3.42	2.68	3.87	2.09
26	Computers, electronic and optical products	0.34	0.17	0.72	0.94	0.61
27	Electrical equipment	2.39	1.79	3.72	5.19	2.99
28	Machinery and equipment n.e.c.	0.87	0.76	1.11	0.70	1.31
29	Motor vehicles, trailers and semi-trailers	0.27	0.26	0.29	0.36	0.25
30	Other transport equipment	0.43	0.40	0.49	0.42	0.53
31	Furniture	0.83	1.13	0.16	0.38	0.05
32	Other manufactured goods	0.24	0.26	0.21	0.26	0.18
33	Repair and installation services of machinery and equipment	1.39	2.00	0.00	0.00	0.00



**TABLE 3**  
**WEIGHTING COEFFICIENTS BY MAIN INDUSTRIAL GROUPINGS (MIGs)**  
*(2010=100.0)*

	MAIN INDUSTRIAL GROUPINGS (MIGs)	Weighting coefficients %				
		Total Market	Domestic Market	Non- Domestic Market	Non- Domestic Market Eurozone Countries	Non- Domestic Market Non- Eurozone Countries
1	Energy	33.61	31.37	38.60	12.04	51.77
2	Intermediate goods	31.85	28.94	38.39	49.88	32.69
3	Capital goods	4.57	5.20	3.16	3.29	3.10
4	Durable consumer goods	1.53	1.74	1.05	1.92	0.62
5	Non-durable consumer goods	28.44	32.75	18.80	32.87	11.82