

ECONOMIC AND SHORT-TERM INDICES DIVISION
Wholesale Prices and Price Indices Section

INFORMATION NOTE ON THE REVISION

OF SERVICES PRODUCER PRICE INDICES (SPPI) AND THE COMPILATION OF
THE PRICE INDICES IN THE BRANCHES OF ECONOMIC ACTIVITY

Base year 2015 = 100.0

Piraeus, December 2018

Revision of the Services Producer Price Indices and the compilation of the price indices in the branches of economic activity

(2015=100.0)

General notes

Services Producer Price Indices (SPPI) are compiled in compliance with the Council Regulation (EEC) No. 1165/98 “concerning short-term statistics”, as amended and is in force regulation (EEC) No.1158/05 of the European Parliament and of the Council. Moreover, these indices are compiled in compliance with the regulation (EEC) No.1893/2006, as well as by the regulation (EEC) No.451/2008 of the European Parliament and of the Council.

Like the other short-term indicators (STS), revision happens every five years and specifically in base year ending in 0 or 5, in accordance with article 11 of the Regulation 1165/98.

The SPPIs are quarterly indices, where the calculation and publishing in its current form for first time in Greece was with base year 2006=100.0, then with base year 2010=100.0, while the recent revision was with base year 2015=100.0.

The methodology of compilation of SPPIs is based on the referenced Regulations 1165/98 and 1158/05 of the EU for STS, as well as in Eurostat's methodological manuals.

Purpose of the indices

The purpose of these indices is to measure the quarterly rates of change in the producer prices of services and to record the prices evolution that reflect the supply and demand conditions in the service markets, for the analysis of the actual changes in the economy and in monitoring inflationary pressures.

The Services Producer Price Indices are output price indices for the production of services from domestic producers and show the evolution of prices for the services that are provided to customers which are enterprises or persons that represent enterprises, in other words, they refer to services that are used as intermediate use (Business to Business-B2B), without differing significantly from the overall index (Business to All-B2All). Particularly in the group of indices of: the air transport index and the sea and short sea shipping index (of the new branches of services) have already been compiled as overall index (B2All) and the two indices for postal and courier services and the telecommunication services, which are compiled as overall indices (B2All) and as sub-indices for businesses (B2B) and for consumers (B2C).

Particularly important is the usefulness of SPPIs, because on the one hand it allows the monitoring of price developments of different groups of services, and secondly, as a deflator, enables the calculation of change in the volume of services to national accounts statistics, after deduction of the price change.

Base period - Compiled indices – Revised indices

The base year 2015 was used as a base period for the compilation and calculation of the revised SPPIs.

The revised SPPIs are compiled with new base year 2015 = 100.0, for the following activities of sections H, J, M και N of the European statistical classification NACE Rev. 2 at 2-digit, 3-digit and 4-digit level:

- Freight transport services by road and removal services (group 494)
- Scheduled air transport services (division 51)
- Warehousing and storage services (class 5210)
- Cargo handling services (class 5224)
- Postal and courier services (division 53)
- Accounting, bookkeeping, auditing and tax consulting services (group 692)
- Technical testing and analysis services (group 712)
- Media representation services (class 7312)
- Market research and public opinion polling services (group 732)
- Security and investigation services (division 80)
- Cleaning services (group 812)

Since the previous revision with base year 2010 = 100.0, the SPPIs that were first calculated in the service sectors in the H, J, M, N sectors are:

- Sea and coastal passenger and freight water transport services (division 50: 501 & 502)
- Total telecommunications services (division 61)
- Computer programming, consultancy and related services (division 62)
- Information service on computers and related services (division 63)
- Legal services (group 691)
- Management consulting services (group 702)
- Architectural and engineering services, related technical consulting services (group 711)
- Services provided by advertising agencies (class 7311)
- Employment services (division 78)

Statistical classifications-product (service) selection

From the revision with base year 2006=100.0, the new statistical classification of economic activities NACE Rev. 2 have been used (in accordance with regulation 1893/2006 of the European

Parliament and of the Council), as well as the new product-service classification CPA 2008, (in accordance with regulation 451/2008 of the European Parliament and of the Council).

For the 2015=100.0 revision, criteria for the selection of products (services) of CPA 2008, were the size of the value (turnover) within the economic activity, as well as the ability of concentration of prices for these services over time.

Sources of the Weighting coefficients – Ad hoc statistical survey

The turnover of each service in a 6-digit CPA analysis was provided from the results of an Ad hoc statistical survey of the enterprises from the Statistical Business Register (SBR) of ELSTAT in year 2015.

The selection of the enterprises of the sample was done with the application of purposive sampling from ELSTAT's SBR in year 2015, so as: a) to produce the services that were selected and b) their turnover in services to be significantly high in relation to the total turnover in the respective division of economic activity which are classified.

From the results of the above survey we calculated the weighting coefficients (in 6-digit CPA analysis), that were used on calculation of the indices in every respective sectors of economic activity, with the reduction to the available total turnover of 2-digit, 3-digit and 4-digit of NACE Rev. 2, as existed in the data of ELSTAT's SBR in year 2015.

Price collection - Geographical coverage

Subsequently, the quarterly prices were collected by the 362 enterprises of the sample, while the total number of observations (prices) was about 2500.

For the compilation of SPPIs are recorded the transactions that reflect the prices received by the producers for services actually sold to purchasers, including discounts, rebates or other charges. The collected prices are the basic prices for services sold. i.e. prices excluding VAT and other similar deductible taxes directly linked to turnover and also excluding all other taxes on products, but including any subsidies on products.

Primarily, the information of collected prices referred to the mid of the quarter, in a quarterly periodicity, so in this way, to ensure the comparison of the average price level of the current period (quarter), compared to the level of prices in the corresponding base period (quarter). The collection of prices is done with personal visits of price-collectors, by phone, by fax or by electronic mail (email).

The indices cover the whole of the country, since the selection of the enterprises where service prices are collected, was based on a criterion on the turnover achieved by the enterprises in the base year 2015, without taking into account the place of their headquarters.

More specific issues

The features of each service, which has been selected in the sample for collected prices of the index, are defined and identified fully and precisely (in cases like: kind of research, kind of

transport, postal expenses by weight, by packaging, by destination type, etc), as well as those characteristics associated with the transaction of the service (like: the usual amount, discounts in payment, etc).

In cases where in certain services are not available prices, because of the absence of transactions, the method which consists in “repeating of the last prices”, for the period of missing that price is used. When the certain service or the variations are no longer representative or when the characteristics that define it has changed or when they are no longer present in transactions, new services or their variations are used, replacing the older ones. In those cases, the special method of changing the base prices of substitute products is applied; where for calculation of their prices in the base year is done using price indices of the group to which they belong.

Calculation of the SPPIs

The SPPI indices in any industry are calculated using a variation of the Laspeyre’s 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 (quarter) t, at the highest level of aggregation,
 $R_i^{(t)}$, is the total index of grouping level i during the current period (quarter) t,

w_i = the weighting coefficient of grouping level i , where:

$$w_i = \frac{p_i^0 q_i^0}{\sum_{i=1}^n p_i^0 q_i^0}, \quad \sum_{i=1}^n w_i = 1, \quad i = 1, 2, \dots, n,$$

p_i^0 and q_i^0 are the price and quantity of the service (of businesses involved in weighting) in the lowest grouping level i in base period 0, respectively,

The successive phases of grouping from the lower to the higher level classifications are: service, sub-category (6-digit level), category (5-digit level), activity or class (4-digit level), group (3-digit level), division (2-digit level), B2B and B2C indicators, overall index.

The total index of each subcategory i , is calculated as weighted mean:

$$R_i^{(t)} = \sum_{j=1}^k w_{ij} R_{ij}^{(t)}, \quad \text{where: } \sum_{j=1}^k w_{ij} = 1,$$

w_{ij} = is the j company’s turnover in the subcategory i and $R_{ij}^{(t)}$ is the index of company j in the subcategory i , with $j = 1, 2, \dots, k$, companies.

The calculation of the index $R_{ij}^{(t)}$, is done using the arithmetic mean of the relative prices of the m varieties of each service r , in the subcategory i , in j companies.

Then:

$$R_{ij}^{(t)} = \frac{1}{N_r} \sum_{m=1}^{N_r} \left(\frac{P_{rm}^{(t)}}{P_{rm}^{(0)}} * 100 \right),$$

where: N_r , is the number of varieties m (when exist in j companies), of the service r , from all sources of price collection, $m=1,2,3,.. N_r$,

$P_{rm}^{(t)}$, is the price of m variety of the service r , the current period t ,

$P_{rm}^{(0)}$, is the price of m variety of the service r , in the base period 0 .

The calculation of the annual SPPIs is done using the arithmetic mean of quarterly SPPI in every sort of industry of NACE Rev. 2.

Announcement of the revised SPPIs and transmission of them to Eurostat

The revised SPPIs with base year 2015=100.0 will be released on 31st of December 2018, included in a joint press release with the 3rd quarter 2018 as the first reference quarter.

The SPPI indices are released quarterly, in accordance with the amending regulation (EEC) No. 1158/05 of the European Parliament and of the Council, 90 days ($t+90$) after the end of the reference t quarter of the data, and then, transmitted to Eurostat.

Back casting of time series

The back casting calculation of indices is a simple reduction in the base year 2015=100.0, without recalculation of the indices with new weights 2015=100.0.

The quarterly and annual indices with base year 2010=100.0 were divided by the average annual individual indices of every service in the year 2015 (so that in the base year 2015 the mean is 100.0).

The SPPI indices for the 3rd quarter 2018 onwards have been calculated with the new weights of the 2015 revision.

In the following annex are presented in tables, the annual indices of the SPPIs for the period 2006-2017 (and the 1st quarter 2018) in base year 2015=100.0, as well as, the annual rates of change of the SPPIs in 2nd quarter of 2018 (compared to the 2nd quarter of 2017), such as these SPPIs were calculated in the 2nd quarter of 2018, underneath the two actual revisions in 2010 and 2015.

The methodological issue that includes a set of guidelines for the compilation of short-term statistics (STS) is available to the following link:

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

While, the methodological manual on Services Producers Price Indices (SPPI) by Eurostat, is available to the following link:

[Services producer price index \(2010\)](#)

ANNEX

Table 1 : Revised Producer Price Indices for Services (SPPI) 2006-2017, Q1-Q2 2018

Base year: 2015=100.0

Nace Rev. 2 code	Services categories	Annual Average 2006	Annual Average 2007	Annual Average 2008	Annual Average 2009	Annual Average 2010	Annual Average 2011	Annual Average 2012	Annual Average 2013	Annual Average 2014	Annual Average 2015	Annual Average 2016	Annual Average 2017	Q1-2018	Q2-2018
494	Freight transport services by road and removal services	103.0	107.2	112.9	113.3	109.9	108.7	104.0	102.9	101.5	100.0	99.6	100.2	100.2	100.6
50 (501_502)	Water transport services									95.1	100.0	104.6	104.6	97.7	102.8
51	Air transport services	110.3	107.3	108.3	101.6	106.1	118.4	118.1	126.0	113.1	100.0	93.1	98.2	83.5	97.9
5210	Warehousing and storage services	101.8	104.9	111.6	114.9	110.2	108.9	103.3	100.4	100.0	100.0	101.8	104.0	103.0	107.2
5224	Cargo handling services	89.7	91.1	95.6	95.4	94.9	94.9	99.6	99.3	100.0	100.0	99.8	100.0	101.9	106.3
53	Postal and courier services	79.5	81.3	85.7	87.1	90.1	94.2	95.2	98.4	100.2	100.0	98.7	97.3	98.2	99.1
531	Postal services under universal service	74.3	76.5	80.9	83.2	85.3	89.8	91.7	96.2	100.0	100.0	100.0	97.2	97.2	96.7
532	Other postal and courier services	87.9	89.2	93.1	92.9	97.7	100.9	100.0	100.5	100.4	100.0	96.8	97.4	99.7	100.0
61	Telecommunications services		96.3	94.0	94.5	97.3	99.8	99.6	96.7	96.2	100.0	110.0	126.4	133.0	131.2
62	Information technology services									99.2	100.0	100.6	101.3	101.9	101.4
63	Information services									96.7	100.0	97.8	96.4	97.2	97.6
691	Legal services										100.0	100.0	100.0	101.9	101.9
692	Accounting, bookkeeping and auditing services; tax consulting services	91.8	94.2	99.0	101.4	103.1	103.1	99.1	98.1	101.6	100.0	98.3	96.5	97.0	96.3
69	Legal and accounting services										100.0	99.1	98.1	99.2	99.1
702	Management consulting services									107.6	100.0	101.6	106.6	112.3	109.9
(69_702)	Legal, accounting and management consultancy activities		92.3	96.2	98.2	101.6	104.2	104.8	105.4	103.8	100.0	100.1	101.5	104.5	104.0
711	Architectural and engineering services, related technical consulting services									105.7	100.0	99.4	100.2	98.3	98.1
712	Technical testing and analysis services	70.2	101.4	100.9	102.4	102.6	102.8	103.1	103.6	103.9	100.0	99.9	100.4	100.3	99.9
71 (711_712)	Architectural and engineering services; technical testing and analysis services									105.0	100.0	99.6	100.2	99.0	98.3
7311	Services provided by advertising agencies									0.0	100.0	98.9	98.8	98.8	98.6
7312	Media representation services	86.0	83.6	91.7	89.4	94.0	95.4	91.0	94.4	99.4	100.0	100.4	96.7	97.4	93.5
731	Advertising services									99.7	100.0	99.1	98.6	98.6	97.8
732	Market research and public opinion services	113.8	118.3	123.2	124.0	123.5	116.8	108.3	101.7	99.1	100.0	98.9	98.9	98.4	98.7
73 (731_732)	Advertising and market research services									99.7	100.0	99.1	98.6	98.6	97.9
78	Employment services									103.4	100.0	92.7	91.8	92.5	94.0
80	Security and investigation services	79.0	84.8	88.2	92.7	95.8	96.0	97.3	98.6	97.3	100.0	102.1	103.2	103.2	102.9
812	Cleaning services	97.1	100.2	102.9	103.8	104.4	104.8	104.3	102.4	100.5	100.0	95.4	94.9	95.1	95.4

Note: The indices and the percentage changes are published rounded up to one decimal figure.

Table 2 : Producer Price Indices for Services (SPPI) ,Comparisons on Q2 indices

Base year: 2015=100.0

Comparisons on Q2 indices into the years: 2018-2017 due to changes in weighting coefficients								
Nace Rev. 2 code	Services categories	Base Year: 2010=100.0			Base Year: 2015=100.0			Difference of changes (b-a %)
		2017	2018	Annual rates of change (a %)	2017	2018	Annual rates of change (b %)	
494	Freight transport services by road and removal services	100.1	100.0	0.0	100.3	100.6	0.4	0.4
50 (501_502)	Water transport services	99.9	100.3	0.4	104.5	102.8	-1.7	-2.1
51	Air transport services	104.8	99.7	-4.9	102.8	97.9	-4.8	0.0
5210	Warehousing and storage services	100.3	98.8	-1.5	104.4	107.2	2.6	4.1
5224	Cargo handling services	100.1	106.5	6.4	100.1	106.3	6.2	-0.2
53	Postal and courier services	98.3	101.0	2.8	95.6	99.1	3.6	0.9
531	Postal services under universal service obligation	97.1	100.0	2.9	94.4	96.7	2.4	-0.5
532	Other postal and courier services	100.0	102.6	2.6	97.4	100.0	2.7	0.1
61	Telecommunications services	98.9	106.2	7.4	125.0	131.2	5.0	-2.4
62	Information technology services	100.1	100.6	0.5	101.4	101.4	0.0	-0.5
63	Information services	99.8	101.3	1.5	96.2	97.6	1.5	0.0
691	Legal services	100.0	101.9	1.9	100.0	101.9	1.9	0.0
692	Accounting, bookkeeping and auditing services; tax consulting services	100.2	99.9	-0.3	96.7	96.3	-0.4	-0.1
69	Legal and accounting services	100.1	100.8	0.7	98.2	99.1	0.9	0.2
702	Management consulting services	101.5	103.2	1.6	108.2	109.9	1.6	-0.1
(69_702)	Legal, accounting and management consultancy activities	100.7	101.8	1.1	102.3	104.0	1.7	0.6
711	Architectural and engineering services, related technical consulting services	100.0	97.8	-2.3	100.2	98.1	-2.1	0.2
712	Technical testing and analysis services	100.0	99.9	-0.1	100.4	99.9	-0.4	-0.3
71 (711_712)	Architectural and engineering services; technical testing and analysis services	100.0	98.5	-1.5	100.2	98.3	-1.9	-0.4
7311	Services provided by advertising agencies	100.0	99.7	-0.3	98.8	98.6	-0.3	0.1
7312	Media representation services	102.7	97.8	-4.8	99.3	93.5	-5.9	-1.1
731	Advertising services	100.3	99.4	-0.9	98.9	97.8	-1.1	-0.3
732	Market research and public opinion services	100.0	99.7	-0.3	99.0	98.7	-0.3	0.1
73 (731_732)	Advertising and market research services	100.3	99.5	-0.9	98.9	97.9	-1.0	-0.2
78	Employment services	100.2	100.5	0.3	92.0	94.0	2.2	1.9
80	Security and investigation services	100.0	100.0	0.0	103.2	102.9	-0.3	-0.3
812	Cleaning services	100.3	100.2	-0.1	95.1	95.4	0.3	0.4

Note: The indices and the percentage changes are published rounded up to one decimal figure.