

French services producer price indices

Main aggregates

Producing organisation: INSEE

- [Read the “Informations Rapides” related to this indicator.](#)

Introduction

The survey “Observation des Prix de l'Industrie et des Services” is the main source for the services producer price indices:

- [Presentation sheet of the OPISE survey](#) (version of May 2015 - pdf file - in French - 1.73 Mb).

Definitions and regulations

The services producer price indices respond to a national, European, and even international need. They are regulated by the European regulation (CE) on short-term statistics No [1165/98](#), modified several times since 19th of May 1998, for the services producer price indices, production sold to French businesses (market called “BtoB”, which actually include all legal entities established in France) and by the “STS package 2017” project for their extension to the services producer price indices, production sold on all markets (called “BtoAll”). The services producer price indices are also discussed internationally by the [Voorburg group](#) on service statistics, which depends of the UN, and guided by a methodological handbook coedited by Eurostat and the OECD. Five categories of indices have thus been defined, including three indices which are a partition of the first one:

Short European heading

Complete heading

BtoAll	Prices of services sold on all markets
BtoB	Basic prices of services sold to French businesses Market prices of services sold to French businesses
BtoC	Basic prices of services sold to households in France
BtoE	Prices of export services

In order to ensure the different uses according to the associated concepts and rules, the services producer price indices, production sold to French businesses (more exactly to legal entities established in France) are compiled in two variants:

- **at basic prices**, according to the concepts of the national accounts, which inspire the European regulation on short-term statistics. The aggregate “BtoAll” is thus obtained by the combination of the indices by markets “BtoB” at basic prices, “BtoC” and “BtoE” (which are also compiled at basic prices);
- **at market prices** for contract escalation.

The following table sums up the conceptual differences between the two approaches:

At basic prices

Output price of the activity
(income of the producer)
double net price concept, for turnover
Excluding taxes on products, excluding VAT
Subsidies on products included
Including intra-group transactions
Data definitive in May of year n+1

At market prices

Purchaser's price of the product
(cost of the first acquisition on the market)
ideally measured according to triple net concept
Including taxes on products, excluding VAT
Subsidies on products deducted
Excluding intra-group transactions
Data definitive at T + 150 days
or corrections mentioned in [BDM news](#)

The distinction between these two concepts is particularly clear in the case of publishing services, and programming and broadcasting services on the one hand, and advertising services on the other hand: the advertising revenues of newspapers or radio and TV channels are part of (excluding the commission or margin kept by the businesses of media representation services) the producers' revenues of these media activities, and this commission or margin constitutes the producers' revenues of media representation services, while the sum of these revenues is considered by the advertiser as a unique total expense for the product “advertising spaces”.

Except for this case and for taking into account taxes and subsidies on products, the separate calculation of these two variants is only conducted if the impact is significant.

The consumer price indices are naturally the main source for the basic prices for services sold to households in France. However, they are compiled and published including VAT and subsidies on products deducted, that is to say at “market prices”. They are thus recompiled at “basic prices” by being “fiscally adjusted”, following a similar computation as the one used for the “[Underlying index of services](#)” which is already published by INSEE. Furthermore, because the consumer prices are computed by “basic headings” (articulated with the [COICOP](#)) and not by “class of product” (the 4-digit level of the CPF 2008), it is necessary to build a correspondence table, which is sometimes imperfect. Lastly, the consumer price indices may include some imported services which are not produced in France. These few imperfections or conceptual differences between this source and the targeted definitions explain why the survey “Observation des Prix de l'Industrie et des Services” sometimes directly address the prices of some services sold to households.

Goals

These indices allow:

- **Economists to assess and analyse short-term trends**

Numerous public and private, French, European and global organizations use these price indices as short-term indicators and as advanced indicators of inflation ([ECB](#), [IMF](#), [OECD](#), etc.). These indices enables a monthly monitoring of prices, on different markets, at different stages of the production process.

The aggregation of the Member States price indices enables to set a service producer price index (production sold to businesses, or on all markets) for the whole European Union ;

- **National accountants to deflate production** that comes from structural business statistics and as such to carry out the breakdown between development of the activity in volume (quantity, quality, structure effect) and development of prices (“price-volume sharing”). In fine, they can then track the evolution of Gross Domestic Product and aggregates (prices of services sold to French businesses correspond generally to Intermediate Consumption and

Gross Fixed Capital Formation, prices of services sold to households in France to Final Consumption of households and exportations of services to exportations) ;

- **Businesses and local collectivities to escalate contracts.**

Businesses and business federations can use these indices to track the movements of selling prices or cost prices in their field, and evaluate their competitiveness compared to their competitors.

Businesses and local collectivities can also use these official indices, mainly the definitive data of the services producer price indices, production sold to the French businesses at market prices to escalate contracts. It should be noted that INSEE takes no position on the choice of the most appropriate indices for this purpose, a decision which is the sole responsibility of the co-contracting parties.

Statistical field

In line with the recommendations from the French “Conseil National de l'Information Statistique” (CNIS) in May 2007 and the European project “STS package 2017”, the field covered by the services producer price indices include the whole sections H, I, J, L, M and N of the CPF revision 2 of 2008 (namely market services which are neither commercial nor financial) except for the following products:

M70.1 - Services of head offices

M72 - Scientific research and development services

M75 - Veterinary services

But includes the following product:

S95 - Repair services of computers and personal and household goods

The choice of a coherent grouping of sections enables to compute indices at an aggregate level and even a price indice for the “total of services”, which is not possible if one takes account of the STS field only.

The extension of the “BtoB” market to all markets by identifying the “BtoC” market enabled to include the consumer price indices, which naturally already covered most of the field for this market. The branches and markets which are not tracked by the survey “Observation des Prix de l'Industrie et des Services” or by the consumer price indices are imputed (same branch but indicator of an other market, or same market indicator, but from an other branch), which is still the case for the majority of the export services producer price indices. The rates of coverage are detailed in the file of weightings below.

Technical characteristics

Methodology

The calculation of the services producer price indices is harmonized on a global level, thanks to the discussions of the [Voorburg group](#) on service statistics, and to a [Methodological handbook on developing services producer price indices](#) co-edited by Eurostat and the OECD (2005), which is currently being rewritten. The services producer price indices measure the raw price developments (not seasonal adjustment corrected). "Response series" of absolute prices are immediately converted

into "elementary series" under indices form in reference 2010, then aggregated into "indices series" according to an aggregation tree specific to each branch (a branch is a class of product, i.e. a CPF4 level of the official classification). At last, price indices of each activity are combined in order to obtain aggregates.

Aggregation and reference

Aggregates indices (CPA 4 digits and above) in base 2010 are chained Laspeyres indices, put into reference 2010, i.e. the price developments are weighted by annual NA and structural business statistics figures, and these weights are updated every year in August for definitive figures of first quarter, with sources usually on year n-2 (ideally n-1, in practice too for years 2006 to 2011 compiled by backcasting). Indices of activities and lower levels, although compiled according to the same formulas, are fixed-base Laspeyres indices, because their weights are usually updated only once in five years, with the renewal of the sample (20 % of activities are renewed every year : enterprises, providers, response-series, weights).

Year 2010 is strictly speaking the reference year (yearly average of 2010 = 100) of all levels, while year n-2 or n-1 is the base year of aggregates, and the year before the renewal of the sample the base year of each activity at fine level, source of data communicated by enterprises surveyed (fine weights are obtained by visits every five years).

Contrarily to numerous European countries, the computation of indices in base and reference year 2010 is not achieved in two steps (vs. fourth quarter n-1, then annual chain-linking) but in one, according to an equivalent formula of quarterly chain-linking with yearly update of weights:

We target this relation between two successive quarters:

$$I_p^{Q/1ref} = I_p^{Q-1/1ref} * \frac{\sum P_b Q_b}{\sum P_{Q-1} Q_b}$$

with Q = quarter observed, p = prices, q = quantities, b = base period, ref = reference period

The formula can be developed this way:

$$I_p^{Q/1ref} = I_p^{Q-1/1ref} * \frac{\sum ((P_b Q_b) * P_{ref} / P_b) * P_Q / P_{ref}}{\sum ((P_b Q_b) * P_{ref} / P_b) * P_{Q-1} / P_{ref}}$$

and then be rewritten with values and indices instead of quantities and prices:

$$I_p^{Q/1ref} = I_p^{Q-1/1ref} * \frac{\sum \left(\overbrace{(P_b Q_b)}^{\text{Weights in value}} / i_p^{Q/1ref} \right) * i_p^{Q/1ref}}{\sum \left(\overbrace{(P_b Q_b)}^{\text{Weights in value}} / i_p^{Q-1/1ref} \right) * i_p^{Q-1/1ref}}$$

Index of lower level

Correction of « chain-linking bias »

This formula makes appear the necessary correction to the introduction of new weights in value, in order not to count twice the change of prices between the reference period (here year 2010) and the base period (n-1 or n-2 according to cases), which would be responsible of a "chain-linking bias".

In the first quarter of 2013 the OPISE survey covered 77 % of the field in value for the services sold

to French businesses, 15 % for the services sold to households in France, 39 % for export services and 59 % for the services sold on all markets. The consumer price indices, fiscally corrected, completed up to 93 % of the direct cover of the field of services sold to households in France, and up to 78 % of the cover of the services sold on all markets. The 22 % left were imputed by close price indicators (from an other market or an other class of product), most particularly in export services.

In principle, only series of which the rate of (direct) coverage by OPISE survey or Consumer Price Indices overpass 60 % are disseminated.

Weightings

The Excel file below provides a table of weightings of the year 2010 for each class of service for each of the published indicators, and the total field of services according to adopted conventions.

- [Weightings of the services production price indices in reference 2010](#) (xls file - 54 kB).

Information sources

The operation brings together professional bodies, businesses and INSEE. The businesses surveyed are sampled, usually on a five-year rhythm, using the sampling from the Structural Annual Survey in services and transports.

Each selected enterprise is contacted by an INSEE engineer-interviewer. During the interview, the witness transactions ("response-series") are decided upon, chosen to be both representative of the business's price developments and easily accessible in order to limit -as far as possible- the statistical burden of the enterprise. The questionnaire is therefore tailored individually to each enterprise participating to the survey. The data are then collected monthly or quarterly by post (50 % of the answers in the first quarter of 2013) or online (50 % of the answers in the first quarter of 2013) through the [Site de Collecte de Réponse Par Internet](#) (online answer to surveys). The information is regularly updated, either thanks to an interview with an engineer-interviewer (at least every five years) or thanks to the information directly given by the enterprise (deletions and creations of response-series, transmissions of auxiliary data).

The services producer price indices are calculated using about 9,800 quarterly price statements (or biannually for some businesses) collected from 1,725 enterprises within the framework of the compulsory survey "Observation of Business Services and Industry Prices" (OPISE). This survey is part of an annual program of public statistical service surveys analysed by the [CNIS](#) (National Council of Statistical Information) and published by decree in the Official Journal at the start of the year.

Statistical units

The statistical enterprise, or more precisely the branch of service of a statistical enterprise (responsible of the production of a service) in the case of the services producer price indices.

Frequency of survey

Quarterly.

Dissemination

The services price are disseminated on the last working day of the second month following the quarter under review (Q+60 days). The [Publishing calendar](#) is announced four months in advance. Except if specifically mentioned, the indices are provisional for a period of three months. Revisions integrate enterprises' late responses and changes of weights consecutive to the continuous renewal of the indices.

The quarterly “Informations Rapides” [Services producer price indices](#) provide the main results with some comments.

All indices disseminated are present on the [Macro-Economic database](#) (BDM). They are also disseminated by [Eurostat](#) under the theme “Industry, trade and services”, group “Short-term business statistics (sts)”, sub-group “Trade and services (sts_ts)”, domain “Service producer prices (SPPI) (sts_os_pp)”.

Switch of base 2005 to base 2010

Time series of class level (4 digits code) or infra have only been re-referenced between the two bases (application of a rule of three, so as to obtain 100 for annual average of year 2010). In some cases (mainly transport), the attribution of time series by markets has been reconsidered (for instance, international transport of freight is reclassified in exportations). Aggregated time series differ between two bases mainly because of sets of weights and aggregation techniques : fixed base year 2005 Laspeyres indices for base 2005 (fixed base year 2006 for transport, ruled before by SOeS), chain-linked Laspeyres in reference 2010 for base 2010, with updated weightings since 2005 included. The [Macro-Economic database](#) (BDM) indicates, when possible, the corresponding series that allows to extend a stopped series, with the necessary connecting coefficient. All SPPI price series in base 2005 have been stopped at fourth quarter of 2012 and most of them have identical corresponding series in base 2010, with a connecting coefficient calculated on third quarter of 2012, last period calculated with a definitive figure in base 2005. The correspondence table hereafter allows to see all concerned series:

- [Cross table, base 2005 to base 2010](#) (xls file - 96 kB)

For further information

- [“The French producer price indices and business-service price indices”](#), Insee Méthodes No. 89.