

Producer price indices of French industry all markets (base 2010) - Main aggregates

Producing organisation: INSEE

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

Introduction

- [Presentation sheet of the OPISE survey](#) (version of May 2015, pdf file, in French, 1,774 kB).

Objectives

Producer price and import price indices serve an important national and European, even international, purpose. They are ruled by the European regulation on short-term statistics (regulation (EC) said “STS” No [1165/98](#) of the council of the 19th May 1998, modified by the CE regulation No [1158/2005](#) of the council of the 6th July 2005). More specifically, they are associated with the variables 310, 311, 312 and 340 from the annex A “Industry” of this regulation:

310 - Output prices

311 - Output prices of the domestic market

312 - Output prices of the non-domestic market

340 - Import prices

These indices are partly inherited from the “wholesale prices indices” calculated in France since 1911, modified in 1977 under the name “industrial sales prices indices” and mainly intended for contract escalation. In order to ensure the different uses according to the associated concepts and rules, the industrial producer price indices for the French market 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;
- **at market prices** for contract escalation.

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

At basic prices	At market prices
Output price of the activity (income of the producer) double net price concept, for turnover	Purchaser's price of the product (cost of the first acquisition on the market) ideally measured according to triple net concept
Excluding taxes on products, excluding VAT	Excluding taxes on products, excluding VAT
Subsidies on products included	Subsidies on products deduced
Including intra-group transactions	Excluding intra-group transactions
Data definitive at m + 180 days	Data definitive at m + 120 days or corrections mentioned in BDM news

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

These indices allow:

- **Economists to evaluate and analyze economic trends**

Numerous public and private, French, European and global organizations use them as economic indicators (European Central Bank ([ECB](#)), International Monetary Fund ([IMF](#)), Organization for Economic Co-operation and Development ([OECD](#)), etc.). These indices enables a monthly monitoring of prices, on different markets, at different stages of the production process.

The aggregation of Member States price indices enables an industrial producer price index to be established for the whole European Union. Additionally, import and producer price indices of non domestic markets allow the ECB to analyze flows inside and outside the euro area;

- **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 NA aggregates in volume;
- **Businesses and local collectivities to escalate contracts.**

Only “market prices” series displayed in group “Producer price indices of French industry for the French market” are to be used for the purpose of contract escalation, and preferably the definitive data because they are permanent in the database. The last three monthly values of these series are provisional and overwritten when the data are updated, the other ones are definitive, except in case of strong mistakes corrected and highlighted in [BDM news](#).

Businesses and business federations can use these indices to track the movements of import prices and materials' costs 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 producer price indices for the French market 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 that is the sole responsibility of the co-contracting parties.

Themes tackled

The four main indicators calculated, regulated by the "STS" regulation (EC) No [1165/98](#) of the council of the 19th May 1998 modified by the regulation (EC) No [1158/2005](#) of the council of the 6th July 2005, are the following:

1. **The industrial producer price indices for the French market:**

They measure the development of transaction prices of goods and services that come from French industrial activities and are sold on the French market. The measurement is conducted at “basic prices” and at “market prices”(see above);

2. **Industrial producer price indices for foreign markets:**

They track the development of transaction prices (converted into euro, therefore including exchange effects) of goods and services from the French industry activity designed to be sold on foreign markets. Thus, what is concerned here is “exported production” rather than

“exports” which also include re-exports or intermediations by traders (possibly from the same groups as the manufacturers). All exports are taken into account whether they are internal to groups or not. Foreign markets distinguish the eurozone from the rest of the world;

3. The combination of the two indices above determines the **industrial producer price indices for all markets** (French market and foreign markets);

4. **Import price indices of industrial products:**

They track the development of transaction prices (converted into euro, therefore including the exchange effects) of goods and services from foreign industrial activity sold on the French market. The measurement covers cost, insurance and freight (CIF) prices, which is to say that it is assessed at the French border exclusive of import taxes, in line with European regulation No [1165/98](#). All imports are taken into account, whether they are internal to groups or not.

They are completed in some activities by price indices of the total supply of industrial products which are the product of aggregating the industrial producer price indices for the French market at market prices and the import price indices. They track the prices of industrial products traded in France, wherever they may be produced.

Statistical field covered

In line with European regulations, the field of industry covered by the producer price indices includes sections B to E of the CPA revision 2 of 2008, except for the following products:

B07.21 - Uranium and thorium ore

C24.46 - Processed nuclear combustibles

C25.4 - Arms and munitions

C30.1 - Ships and boats

C30.3 - Aircraft and space engines

C30.4 - Military combat vehicles

E37 - Collection and treatment of used water, sewage sludge

E38 - Collection, treatment and elimination of waste and recuperation of materials

E39 - Pollution control and other waste management services

However the exclusion of “delicate” products is not of the same nature as the omission of activities related to environment, which were formerly considered as services activities. As a matter of fact, the activity “E38 Collection, treatment and elimination of waste and recuperation of materials” is now included in base 2010 in the field covered by the French industrial producer price indices, and the activity “E37 Collection and treatment of used water, sewage sludge” will also soon be included.

For import price indices of industrial products, the field is made up of sections B to D and excludes additionally the following products:

B09 - Support services for extraction industries

C18 - Printing and reproduction work

C33 - Repair and installation to machinery and equipment

E36 - Natural water, treatment and distribution of water

The exclusion of these industrial services is only due to the lack of an appropriate sampling frame. For the calculation of the “total industry”, all industrial activities are taken into account, be they covered by the STS regulation or not. The non-covered sectors are imputed (see below).

Technical characteristics

Methodology

The calculation of industrial producer price indices is harmonized within the European Union, and has led to the publication of a [Handbook on industrial producer price indices \(2012\)](#). Industrial 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 activity (CPA 4 digits). 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 in value for producer price indices and by the customs statistics on imports for import price indices, and these weights are updated every year in May for definitive figures of January, 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 (turnovers or amounts of imports).

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

We target this relation between two successive months:

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

with m = month observed, p = prices, q = quantities, b = base period, ref = reference period

The formula can be developed this way:

$$I_p^{m/ref} = I_p^{m-1/ref} * \frac{\sum ((p_b q_b) * P_{ref} / p_b) * P_m / P_{ref}}{\sum ((p_b q_b) * P_{ref} / p_b) * P_{m-1} / P_{ref}}$$

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

$$I_p^{m/ref} = I_p^{m-1/ref} * \frac{\sum \left(\overbrace{(p_b q_b)}^{\text{Weights in value}} / i_p^{b/ref} \right) * \overbrace{i_p^{m/ref}}^{\text{Index of lower level}}}{\sum \left((p_b q_b) / i_p^{b/ref} \right) * i_p^{m-1/ref}}$$

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 responsible of a “chain-linking bias”.

The survey covers 90% of the field in value for each indicator (98% according to the European convention). The 10% left (2% according to the European convention) have been imputed by close activities or indicators, therefore series created after 2010 will always be calculated and published in reference year 2010, which was not the case of previous bases. This technique allows a better consistency between main aggregation trees (official classification) and secondary aggregation trees (for instance MIGS ruled by the European regulation “MIGS” No [656/2007](#), which defines industrial clusters by destination: intermediate goods, equipment goods, energy, durable and non durable consumer goods).

Weightings

The below Excel file provides a table of weightings of the year 2010 for each class of products for each of the published indicators, and the total field of industry according to the European and French conventions.

- [Table of weightings of Production and import price indices in base 2010](#) (xls format - 74 kB).

Information sources

The operation brings together professional bodies, businesses and INSEE. The businesses surveyed are sampled, usually on a five-year rhythm, using sampling frames that INSEE has got:

- the Annual Production Survey in the industry excluding food industry, at same time structural business statistics survey in industry and survey designed for Prodcom regulation;
- the Structural Annual Survey in the food industry;
- Customs data by enterprises, mainly used for imports.

Each enterprise selected 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 (30% of the answers) or online (70% of the answers) through the [Site de Collecte de Réponse Par Internet](#). 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 producer price indices and the import prices are calculated using monthly price statements (or quarterly for some businesses) of some 26,841 products collected from 4,205 enterprises within the framework of a 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 Journal Officiel at the start of the year.

Statistical units

The statistical enterprise, or more precisely the industrial activity of a statistical enterprise (responsible of the production of an industrial product) in the case of industrial producer price indices.

Frequency of survey

Monthly.

Dissemination

The producer price indices and the import prices are disseminated on the last working day of the month following the month under review. The [publishing calendar](#) is announced four months in advance. Except specific mention, 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 monthly “Informations Rapides” [Industrial Producer and Import Price Indices](#) provide the main results with some comments.

All indices disseminated are present on the [Macro-economic database](#) (BDM).

They are also redisseminated by [Eurostat](#) along with other European countries under the theme “Industry, trade and services“, sub-themes “producer prices in industry” and “import prices in industry”.

Switch of series from 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). However, some mistakes have been corrected, as class “3521 - manufactured gas” which carried wrongly the price series of class “3523 - trade services of gas through mains”, or as price of sulphur dioxide (part of class “2013 - other inorganic basic chemicals”) which was attributed mistakenly to class “08.91 - chemical and fertiliser minerals” like crude sulphur. Some series have been updated and extended to the past, as price series of imports and exports of class “3511 - electricity”, thanks to source Powernext.

Time series of aggregated levels differ mainly between the two bases because of sets of weightings

and aggregation techniques: fixed-base year 2005 Laspeyres for base 2005, 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 PPI and import price series in industry in base 2005 have been stopped at the end of March 2013, and most of them have identical corresponding series in base 2010, with a connecting coefficient calculated on October 2012, last period calculated with a definitive figure in base 2005. The correspondance table hereafter allows to see all concerned series:

- [Correspondance table: base 2005 to base 2010](#) (zip archive containing an xls file, 192 kB).

For further information

- “The French producer price indices and business-service price indices”, Insee Méthodes No. 89.