PRODUCER PRICE INDEX FOR INDUSTRIAL PRODUCTION: QUALITY DESCRIPTION

Name, definition, periodicity of the indicator

A producer price index for industrial production (PPI) is a relative indicator reflecting the overall change in prices of industrial products manufactured by Lithuanian producers and sold on the Lithuanian and non-Lithuanian markets over a definite period of time.

The PPI is calculated and published on a monthly basis.

The indicator is produced by the Price Statistics Division of the Department of Statistics Lithuania.

Statistical data sources

The main statistical data source for the compilation of the PPI is statistical data of the industrial enterprises selected on representative products, provided through an annual questionnaire (report) for the selection of industrial products sold KA-09 (hereinafter referred to as "questionnaire KA-09") and a monthly producer prices for industrial production questionnaire (report) KA-08 (hereinafter referred to as "questionnaire KA-08"). An additional source of statistical information for the preparation of a weighting structure is statistical data on sales of industrial products in value terms, VAT and excise excluded.

Time spent by respondents on the filling in of questionnaire KA-09 makes, on average, 2 hours, questionnaire KA-08 – about 1 hour.

Methods used

Calculation methods

In calculating the PPI, the Laspeyres formula is applied. The PPI is calculated from the lowest level, i.e. representative products, to the highest level, i.e. the all-items PPI.

The lowest level price index is calculated as a ratio of the price in the reporting month to the price in the base month. The lowest level price indices are then aggregated into higher level price indices according to the Laspeyres formula, using the base weights generated starting with the highest level of the national version of the of the Products, Goods and Services Classification (PGPK) and ending with the lowest level, i.e. representative products. Each higher level price index is calculated as a weighted arithmetic mean of lower level price indices. Representative product price indices are grouped into 502 product codes, 157 classes, 81 groups, 29 divisions, 4 sections, as well as five main industrial groupings (Energy products, Intermediate goods, Capital goods, Durable consumer goods and Non-durable consumer goods), and price indices for total industrial production. Price indices for industrial output sold on the Lithuanian and that sold on the non-Lithuanian market are calculated separately. A general (all-items) industrial production price index is calculated as a weighted arithmetic mean of these price indices.

Estimation of missing prices

Each month, on average, about 8 per cent of prices are not collected for various reasons (seasonality, production and sale malfunctions, termination of enterprise activity, termination of production of a certain product).

For seasonal products (clothes, footwear, preserved fruit, vegetables, etc.), for the months when they are neither produced nor sold, the last registered price is repeated. Price indices are not seasonally adjusted.

For the estimation of prices of products which were not reported for other reasons, the following methods are used:
– the price in the previous month may be repeated in case in other enterprises the price of a similar product has not changed or the change was insignificant;
– the missing price may be estimated using the PPI calculated based on the prices of other products within the same group.

Quality adjustment methods
Where the production of the selected representative item has been terminated or its output has been considerably reduced, an item identical, or similar in its quality, technical and other characteristics, to the item surveyed is selected for the survey. In such case, an enterprise has to provide information on the characteristics, changes in quality, etc. of the new selected representative item. Where changes in quality of the new item are insignificant, the price of the new, mostly representative item of the reporting month is directly compared with the previous price. Where the quality of the new selected item is considerably different from that of the original surveyed item, the impact of the change in quality upon the increase or decrease in the price should be assessed in order to maintain the comparability between the prices of the original and the new items. This is performed by adjusting the price in the base period of the original item and eliminating the influence of the change in quality. The following quality adjustment and price correction methods may be used:

– *overlap method*. Under this method, the prices of both the original and the new representative items are collected within the same month that is deemed the linking month for the backward price index series of the original representative item and the forward price index series of the new representative item. It is considered that the price change before the linking month is represented by the change in the price of the original representative item and that the price change after the linking month is represented by the change in the price of the new representative item. The difference between the prices of the original representative item and the new representative item in the linking month is considered as the change in the price caused by the change in quality and does not influence the time series.

– *expert estimation method.* In this case, the impact of the change in the quality upon the price is measured by a specialist of the enterprise who enters in the KA-08 report the value of the impact of the change in quality upon the price change in per cent. Upon receipt of this information, the specialists of the Price Statistics Division adjust the price of the base period by eliminating the impact of the change in quality.

– *option pricing method*. Based on this method, expenditure on the new representative element of a product (item) is estimated. Then, the price of the representative product (item) in the base period is recalculated based on the assumption that the previous representative product (item) had the new element, and, subsequently, the price of the new representative product (item) in the reporting month is compared to the recalculated price of the old (original) representative product (item) in the base period;

– *quantity adjustment method*. This method is used when the size of the measurement unit for a representative product (item) changes in the reporting period, which does not imply a change in the properties of the product (item) itself, rather it occurs due to changes in terms of sales thereof. In

such a case, the price of the representative product (item) in the base period as it would be if the measurement unit was the same as in the reporting month should be calculated.

Minor changes in quality are disregarded.

Compliance with EU legislation
The PPI complies with the requirements set in Council Regulation (EC) No 1165/98 of 19 May 1998 concerning short-term statistics, as last amended by Regulation (EC) No 596/2009 of the European Parlament and of the Council of 18 June 2009 (hereinafter referred to as "Regulation (EC) No 1165/98").

Purpose and users
The PPI is used for the calculation of national macroeconomic indicators at constant prices, analysis of economic development, assessment of inflationary processes in industry.

Users − national public authorities and agencies, the Bank of Lithuania, Eurostat, European Central Bank, EU institutions, other international organisations, the media, representatives of business and science.

Comparability

Length and characteristics of PPI time series
Before 2009, the PPI was calculated based on the national version (EVRK Rev. 1.1) of the Statistical Classification of Economic Activities in the European Community (NACE Rev. 1.1). The calculation of PPIs for mining and quarrying and manufacturing (EVRK Rev. 1.1, sections C and D) was launched in 1992. From 1996, the calculation of PPIs for electricity, gas and water supply (EVRK Rev. 1.1, section E) and a general index for sections C–E was launched. The use of the Laspeyres formula for the calculation of price indices was launched; prices were used VAT and excise excluded. The PPI time series for 1998–2002 have been recalculated.

From 2009, Statistics Lithuania has been publishing the PPI and price changes based on a new revision of EVRK (EVRK Rev. 2). At the moment, PPI time series are comparable from 1998, i.e. those time series which have been recalculated based on EVRK Rev. 2. Moreover, Statistics Lithuania has recalculated PPI time series from 1998 based on the 2010 index base period (2010 = 100).

PPIs of the reporting year are chain-linked with PPIs of the previous year. The linking period is December of the previous year.

Coherence
The PPI has been harmonised with the PPIs compiled by other EU countries in compliance with the requirements of Regulation (EC) No 1165/98.

No other institutions of Lithuania produce such an indicator.

Accessibility
The PPI is published in a separate press release, at 11 a.m., on the fifth working day after the end of the reporting month; on the website and in the Database of Indicators of Statistics Lithuania; in a monthly publication *Economic and Social Development in Lithuania*; in the *Statistical Yearbook of Lithuania*; in a Eurostat's press release *Euro-indicators*; in Eurostat's publications *Eurostatistics. Data for short-term economic analysis* and *Quarterly panorama of European business statistics*.

The information published includes the price changes over a month, for the period from the beginning of the year, over 12 months, index time series and weights, used for the index calculations by economic activity and main industrial grouping.

Timeliness and punctually

Enterprises report actual selling prices of products as on the 15th day of the reporting month. In case an enterprise does not calculate one-day prices, it is allowed, having agreed it with Statistics Lithuania, to report the average monthly price, calculated as a weighted arithmetic mean.

Statistical information is published in accordance with schedules approved by the Director General of Statistics Lithuania.

Accuracy

PPI time series based on the 2010 index base period are calculated accurate to all decimal places. The PPIs obtained are rounded to four decimal places, and such PPIs are published in the Database of Indicators of Statistics Lithuania and submitted to Eurostat. Monthly, annual, average annual and other periods' price changes are calculated using PPI time series accurate to all decimal places and published rounded to one decimal place.

Quality of the statistical indicator

Reporting period	Punctuality (date of publication)		Non-response rate, number of reports, %	Prices collected from enter-prises	of which		Prices not submitted for various reasons, %	of which		Number of prices of new representative products, which had replaced the old ones, provided by enterprises, %
	press release	submission to Eurostat			changed, against the previous period, %	estimated due to product quality change, %		repeated due to seasonality, %	estimated, %	
January	February 13, 11 a.m.	February 17	–	1701	39.4	0.4	-	-	-	1.0
February	March 7, 11 a.m.	March 18	–	1700	40.4	0.6	3.0	1.8	1.2	1.4
March	April 8 11 a. m	April 11	–	1700	39.7	0.5	2.9	1.8	1.1	1.2
April	May 8 11 a.m.	May 16 .	–	1700	39.8	0.7	3.0	1.6	1.4	1.5
May	June 5 . 11	June 17	–	1700	40.2	0.6	3.3	1.7	1.6	1.9
June	July 5 . 11	July 15	–	1700	39.4	1.2	3.8	2.2	1.6	1.7
July	August 7 11	August 16	–	1700	39.4	0.6	3.3	1.8	1.5	0.7
August	September 6 11	September 16	–	1700	39.4	0.5	3.1	1.1	2.0	1.2
September	October 7 11.	October 15 .	–	1700	39.8	0.3	3.4	1.8	1.6	1.2
October	November 8 11	November 18	–	1700	40.4	0.2	4.8	2.5	2.3	1.4
November	December 6 11	December 16	–	1700	39.1	1.4	4.4	2.0	2.4	1.5
December	2014 January 8 11	2014 January 15	–	1700	37.5	1.7	4.3	2.0	2.3	1.2

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25 February, 2014