Quality Report for Industrial Producer Price Index, 2017

Republika Srpska Institute of Statistics,
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1 INTRODUCTION INTO THE STATISTICAL PROCESS AND ITS OUTPUT

1.1 Purpose of the survey

The industrial producer price index is a short-term statistical indicator that measures the change in monthly levels of prices of industrial products manufactured in Republika Srpska and sold on the domestic and the non-domestic markets.

Main purpose of the survey is to monitor levels and dynamics of prices of industrial products. The index is also used as a deflator of time series for national accounts and industry and in indexing purchase and sale contracts.

Industrial producer price index consists of two components:

a) industrial producer price index on domestic market – measuring changes in prices of industrial products sold on domestic market,

b) industrial producer price index on the non-domestic markets – measuring changes in prices on the non-domestic markets.

For the non-domestic markets, two sub-indices are calculated, according to the currency at which the products are sold:

a) industrial producer price index in the euro area – covering products sold by producers in the euro area countries: Austria, Belgium, Finland, France, Greece, Netherlands, Ireland, Italy, Cyprus, Latvia, Estonia, Lithuania, Luxembourg, Malta, Germany, Portugal, Slovakia, Slovenia and Spain,

b) industrial producer price index in the non-euro area – covering products sold by producers in countries outside the euro area.

1.2 Legal basis and responsibility of statistical institutions

Statistical survey Industrial Producer Price Index in Republika Srpska for 2017 is carried out based on the Statistical Programme of Republika Srpska for the period 2013-2017 (Decision of the Republika Srpska National Assembly No. 01-1901/12 on the adoption of the Statistical Programme “Official Gazette of Republika Srpska”, No.120/12) and in accordance with the Law on Statistics of Republika Srpska (“Official Gazette of Republika Srpska”, No.85/03).

1.3 Applicable classifications

For the calculation of industrial producer price index in 2017, the Nomenclature of Industrial Products – NIP BiH/PRODCOM 2015 is used. This Nomenclature is based on the NIP BiH 2010 and updated in accordance with the changes to the EU PRODCOM list.

1.4 Reporting unit

Reporting units are selected producers of industrial products with headquarters on the territory of Republika Srpska that produce selected industrial products defined by the Nomenclature of Industrial Products – NIP BiH/PRODCOM 2015, in the sections of economic activity B – Mining and quarrying, C – Manufacturing, D – Electricity, gas, steam and air-conditioning supply, and E – Water supply; sewerage, waste management and remediation activities.

The source for selection of industrial producers is the Annual survey on industrial production IND-21.

1.5 Statistical observation unit

Observation units are prices of selected industrial products. Products with the highest value of sales by division of industrial production are selected.

1.6 Scope and coverage

Representative list of industrial products (so-called basked) consists of industrial products with the highest value of sales by division of industrial production.

Producer prices of industrial products on the domestic market are collected in accordance with the representative list of products, which in 2017 consists of 386 products. Each month, 358 enterprises from the division within which they perform their activity are selected to submit 1,330 prices that represent trends of prices of industrial products in the given division.

Producer prices of industrial products on the non-domestic market are collected in accordance with the representative list of products, which in 2017 consists of 157 products. Each month, 201 enterprises from the division within which they perform their activity are selected to submit 624 prices that represent trends of prices of industrial products in the given division

1.7 Statistical concepts and definitions

Aggregate indices: indices calculated as weighted averages of elementary indices, referring to hierarchical positions starting from product level.

Aggregation (of indices): index synthesis, aggregation of producer price indices using the Laspeyres formula from the hierarchical level of products to the total level.

Article (item) is specified by an industrial enterprise/reporting unit that will select the most representative articles (items) for its product range for a particular industrial product code.

Base price: when developing the price ratio, the base price is in the denominator of the ratio between the current price and the base price; for industrial producer price indices, the base price is the price from December of the previous year.

Base period: the period from which data are used as the basis for calculating indices or other ratios, December of the previous year and Ø2015=100.

Frequency of collection: the frequency of collecting producer prices of industrial products is once a month.

Basket of products: a list of selected industrial products for which prices are collected, which have been selected for the purpose of representativeness.

Microdata: elementary units defined as the ratio between two prices: current and base.

Macrodata: aggregate indices, from product indices to the total index.

Chain index: indices linked by an adopted common reference period for the so-called calculating indices, namely December of the previous year.

Names and codes of industrial products are taken over from the Nomenclature of Industrial Products – NIP BiH/PRODCOM 2015.

Nomenclature of Industrial Products – NIP BiH: a standard used for grouping and classification of industrial products primarily in industrial production statistics, in compiling short-term, annual and multi-annual statistical data and indicators.

NACE Rev.2 classification of economic activities of the EU, established by the Regulation EC No.1893/2006, applied since 1 January 2008.

Weights used for the calculation of industrial producer price indices represent a relative share of selected products in the total value of sales of industrial products on the domestic market and the non-domestic markets.

Production: an activity that results in a product. In the domain of industrial production, it represents a process that results in an industrial product defined by the Nomenclature of Industrial Products.

Product: represents the output/result of an industrial activity, defined by the Nomenclature of Industrial Products. This term is used as a generic name for goods that have a physical dimension, but also for services.

Enterprise: survey unit (reporting unit). Enterprises submit results of monthly recording of product prices to the Republika Srpska Institute of Statistics.

Industrial producer price on the domestic market is the price at which the producer sells the products to regular customers on the domestic market in the largest quantities, loaded free into a wagon (truck) where the producer is located. This price includes producer subsidies, if accomplished by the seller, while commercial rebate and discounts approved by the seller to the buyer, VAT and excise are excluded.

Industrial producer price on the non-domestic markets is the price of goods delivered at the domestic border, including transport costs, insurance costs and all other costs incurred to the border (FOB price), at which the producer directly sells the products to regular customers on the non-domestic markets.

PRODCOM is the title adopted by the EУ for industrial production statistics, that is, for activities classified in the sections B, C, D and E of the statistical classification of economic activities NACE Rev.2.

Reference base indices: indices calculated on the basis of 2015.

Reference index period: period with the index base =100.

Index change rate: measures an increase/decrease in index in the interval between two periods (change rates month-on-month, month to the same month of the previous year, etc.).

Questionnaire the form completed monthly by the reporting units.

2 RELEVANCE, ASSESSMENT OF USERS' NEEDS AND PERCEPTIONS

2.1 Users of the statistical survey data

2.1.1 Key users of the statistical survey data

There are external and internal users of data on producer prices of industrial products. External users include ministries and other state administration bodies, business entities, independent researchers, etc.

When it comes to internal users or users within the Institute, data on producer prices of industrial products are mainly used by the National Accounts Division, Industry Division and Agriculture Division.

2.1.2 Assessment of users' needs

User needs are assessed according to the number of requests pertaining to industrial producer prices. Users require data on trends of prices of industrial products for a particular industrial division for the purposes of market analyses, business decision making and writing of scientific papers.

2.1.3 Measuring users' perceptions and user satisfaction

The satisfaction of users with statistical data is measured through the User Satisfaction Survey of the Republika Srpska Institute of Statistics. The first user satisfaction survey was conducted in 2014. The results

of the latest User Satisfaction Survey from 2017 are available at the Institute's website, in the section Quality in statistics:
http://www2.rzs.rs.ba/static/uploads/dokumenti/kvalitet/Rezultati_Ankete_o_zadovoljstvu_korisnika_2017.pdf

2.2 Data completeness

2.2.1 Quality and performance indicator – Data completeness - rate (R1)

The data comply with EU Regulations concerning short-term statistics (Council Regulation (EC) No.1165/98) as regards definitions of variables, list of variables and frequency of data compilation (Commission Regulation (EC) No 1503/2006). EU Regulation concerning short-term statistics (Council Regulation (EC) No.1165/98) defines variables and their presentation in the form of indices in monthly dynamics, which is fully applied in statistics on industrial producer price index. Thus, the data completeness rate (R1) is 100%.

3 ACCURACY AND RELIABILITY

3.1 Sampling error

3.1.1 Quality and performance indicator – Sampling error (A1)

The indicator is not applicable, since the survey is not based on a random sample, but on a targeted (representative) sample with a sampling threshold. .

3.1.2 Activities to reduce sampling errors

Not applicable.

3.2 Non-sampling errors

3.2.1 Non-sampling errors – Coverage errors

3.2.1.1 Quality and performance indicator – Over-coverage rate (A2)

Over-coverage rate is not calculated. The sample of industrial products for collecting producer prices is not random, but selected to meet specific survey objectives. The main objective of product selection is to ensure the representation of products in the value of sales on the domestic market and the non-domestic markets in terms of coverage of the most important products. The main objective of producer selection is to select producers that achieve the highest realisation by industrial divisions. The source for product and producer selection is the Annual report on industry IND-21, which is submitted by enterprises that are, in accordance with the Classification of Economic Activities KD BiH 2010 based on NACE Rev.2 classification, classified into the sections B – Mining and quarrying, C – Manufacturing, D – Electricity, gas, steam and air-conditioning supply, and E – Water supply; sewerage, waste management and remediation activities. Annual report on industry IND-21 covers all active enterprises from the register of business entities whose registered principal activity is industry, with value of sold products exceeding 100,000 or with more than 5 employees.

3.2.1.2 Quality and performance indicator – Common units - proportion (A3)

Not applicable.

3.2.1.3 Undercoverage error

Not applicable.

3.2.1.4 Measures to reduce coverage errors

Measures taken to reduce coverage errors include annual updating of the product basket based on data obtained through the Annual report on industry IND-21, as well as regular updating of addresses of reporting units throughout the year.

3.2.2 Non-sampling errors – Measurement errors

3.2.2.1 Reasons for the occurrence of measurement errors

Measurement errors occur during data collection. Reporting units can knowingly or unknowingly provide inaccurate data when filling out the questionnaire. Reasons for the occurrence of errors are mainly the following:

- The person filling out the questionnaire has not carefully read the instructions for completing it,
- Insufficient attention paid by the person who enters the data in the price table,
- Insufficient engagement when registering prices of the current item, that is, the replacement of an article that has not been produced for a longer period of time,
- Personal resistance and failure to cooperate with the statistical institution.

3.2.2.2 Measures to reduce measurement errors

The initial control of data is performed by statisticians in the regional offices. When collecting the questionnaires, the statisticians check whether the questionnaire is filled out properly, that is, whether there is information about performed sale. They also compare the price of an article (item) in the current month with the price of the article (item) in the previous month; if there is an increase or a decrease in the price, they check whether a logical reason for the price change is indicated (market conditions, price reductions, rebate, customer change, competition conditions, changes in material costs, updates to the price list, rebate period finished). When there is a significant increase or decrease (so-called outliers <50%) in prices of articles (items), units of measure, quality, dimensions of the article (item) and similar are checked. When prices are entered in the database, in addition to logical control of prices, technical/automatic price control is also performed in order to record all price changes exceeding 10%, for which a justified reason for the price change must be indicated. This reason is later verified during data processing. If an error is detected at any stage of price control, errors are corrected before calculating industrial producer price index. Errors are most often detected and corrected on the basis of direct telephone contact with the reporting unit. The number of errors is most effectively reduced by means of clear instructions for completing the questionnaire, which are submitted to the reporting units with the questionnaire, as well as through frequent telephone contact with enterprises and visits to enterprises.

3.2.3 Non-sampling errors – Non-response errors

3.2.3.1 Quality and performance indicator – Unit non-response - rate (A4)

Unit non-response rate is not calculated. Enterprises that are selected in the sample submit completed statistical reports in accordance with the predefined deadlines. If a reporting unit selected in the sample goes bankrupt, gets liquidated or changes its activity, the methods used to estimate the missing prices (for such enterprises, prices referring to the previous month are taken into account) are applied. Due to the fact that there is a fixed number of series/prices to be collected each month and methodological solutions for certain replacements and/or imputation, there is virtually no unit non-response.

3.2.3.2 Quality and performance indicator – Item non-response – rate (A5)

When it comes to item non-response, the rate is 0%. The number of prices collected every month is fixed and determined at the beginning of each year. If prices of certain articles (items) are not submitted, missing prices are estimated by taking into account the price of the specific article (item) from the previous month.

3.2.3.3 Procedures in cases of non-response

The procedures applied in the case of unit non-response are identical to those applied in the case of item non-response. Therefore, if prices of certain articles (items) are not submitted, in accordance with the methodological solutions, missing prices are estimated by taking into account the price of the specific article (item) from the previous month.

3.2.3.4 Procedures to reduce non-response rate

Sound selection of representative products and enterprises/reporting units, multiple contacts with the reporting unit, revisions of the questionnaires and instructions for completing the questionnaire to facilitate their completion, combining several different methods of data collection (mail, fax, email).

3.2.4 Revision

3.2.4.1 Quality and performance indicator – Data revision – average size (A6)

Monthly indices have not been subject to revision.

3.2.5 Imputation

3.2.5.1 Quality and performance indicator – Imputation - rate (A7)

There is no information that would allow calculating the rate of imputed data.

4 TIMELINESS AND PUNCTUALITY OF PUBLICATION

4.1 Timeliness of publication

4.1.1 Quality and performance indicator – Time lag – first results (TP1)

Only final data are published. The indicator (TR1) is not calculated.

4.1.2 Quality and performance indicator – Time-lag – final results (TP2)

Timeliness of final data publication for 2017

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Average
Publication date, final results	22 Feb	22 Mar	24 Apr	22 May	22 Jun	24 Jul	22 Aug	22 Sep	23 Oct	22 Nov	22 Dec	22 Jan 2018	/
Time lag (number of days)	T+22	T+22	T+24	T+22	T+22	T+24	T+22	T+22	T+23	T+22	T+22	T+22	T+22.4

Annual average timeliness of published final results is 22.4 days.

4.2 Punctuality of publication

4.2.1 Quality and performance indicator – Punctuality – delivery and publication (TP3)

Indicator for producers of statistics

Data on punctuality of publication of industrial producer price index for 2017

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Average
Planned date of publication (according to the Release Calendar)	22 Feb	22 Mar	24 Apr	22 May	22 Jun	24 Jul	22 Aug	22 Sep	23 Oct	22 Nov	22 Dec	22 Jan 2018	/
Actual date of publication	22 Feb	22 Mar	24 Apr	22 May	22 Jun	24 Jul	22 Aug	22 Sep	23 Oct	22 Nov	22 Dec	22 Jan 2018	/
Time lag (number of days)	T+0	T+0	T+0	T+0	T+0	T+0	T+0	T+0	T+0	T+0	T+0	T+0	T + 0

Punctuality of publication (TP3) is T+0.

Indicator for users of statistics:

The rate of punctuality of data publication is 100%.

4.3 Reasons for significant delays and measures to improve timeliness and punctuality

There were no discrepancies between the planned date of publication according to the Release Calendar and the actual date of publication.

5. COHERENCE AND COMPARABILITY

5.1 Coherence

5.1.1 Quality and performance indicator – Coherence between different data sources (CH1)

Not applicable, as there are no multiple data sources.

5.1.2 Reasons for major discrepancies

Not applicable.

5.2 Comparability

5.2.1 Quality and performance indicator – Assymetry for mirror flows statistics (CC1)

Not applicable, there are no mirror flows statistics.

5.2.2 Quality and performance indicator – Length of comparable time series (CC2)

The length of comparable time series for industrial producer price indices on the domestic market is 120 months, from January 2007 to December 2017.
The length of comparable time series for industrial producer price indices on the non-domestic markets is 60 month, from January 2013 to December 2017.

5.2.3 Breaks in time series

A break in time series of data resulted from changes in the Classification of Economic Activities KD BiH and changes to the years in which the reference base for indices is changed (in general, the reference year is changed every 5 years).

5.3 Geographical comparability

5.3.1 Comparability with other members of the European Statistical System

Results of the survey on producer prices of industrial products comply with the conditions of the domestic economy and are comparable with the members of the European Statistical System. The survey complies with EU Regulations concerning short-term statistics (Council Regulation (EC) No.1165/98) as regards definitions of variables, list of variables and frequency of data compilation (Commission Regulation (EC) No 1503/2006). EU Regulation concerning short-term statistics (Council Regulation (EC) No.1165/98) defines variables and their presentation in the form of indices in monthly dynamics, which is fully applied in statistics on industrial producer price index.

6 ACCESSIBILITY AND CLARITY, DISSEMINATION FORMAT

6.1 Releases providing the data

Industrial producer price indices are published in a monthly release which presents the most important results in a summary review: table of indices at the total level, by purpose of consumption (5), by main industrial sections (4) and industrial divisions (29 for the domestic market and 24 for the non-domestic markets), in accordance with the Nomenclature of Industrial Products NIP BiH PRODCOM 2015. Data provided in monthly statistical releases are available in pdf and xlsx format, at the Institute's website, under the section:
http://www.rzs.rs.ba/front/category/19/148/?&add=None

6.2 Publications providing the data

In addition to monthly releases, industrial producer price indices on domestic market are published in the following publications:

- Monthly Statistical Review, current indices in relation to different time periods, for the total index, by purpose of consumption (5), by main industrial sections (4) and industrial divisions (29), in accordance with the Nomenclature of Industrial Products NIP BiH PRODCOM 2015. The data are available at the Institute's website:
  http://www.rzs.rs.ba/front/article/2551/?left_mi=None&add=None

- Prices, Statistical Bulletin, providing annual data, i.e. indices shown in tables referring to different time periods for the year being published, it is available at the Institute's website:
  http://www.rzs.rs.ba/front/category/149/

- Statistical Yearbook of Republika Srpska, providing multi-annual data for industrial producer price indices, available at the Institute's website:
  http://www.rzs.rs.ba/front/category/8/?left_mi=287&add=287

- This is Republika Srpska, providing basic data for the year for which the data are published, available at the Institute's website:
  http://www.rzs.rs.ba/front/category/308/?left_mi=288&add=288

6.3 Online database

Industrial producer price indices are also available in an online database of the Institute, within the prices section:
http://www3.rzs.rs.ba/rzs/faces/indicators.xhtml

6.4 Access to microdata

Individual data on producer prices of industrial products are protected, that is, they are subject to general legal frameworks of confidentiality and are used for statistical purposes only (Law on Statistics of Republika Srpska, "Official Gazette of Republika Srpska", No.85/03). When it comes to microdata, the conditions under which certain users can have access to microdata and methods of protecting confidential data (statistical protection of individual and aggregated data) are regulated in detail by the Rules of protection of confidential data of the Republika Srpska Institute of Statistics.

6.5 Availability of methodological documentation

Methodological documents and the most important information about the survey are available in electronic form and in the form of a publication. The methodology is available at the Institute's website: http://www.rzs.rs.ba/front/category/19/147/?&add=None

6.6 Measures to improve clarity of disseminated results

Each publication provides basic methodological information (purpose and aim of the survey, sources and methods of data collection, coverage, classification applied, formulas, etc.).

6.7 Quality and performance indicator – Data tables - consultations (AC1)

Not available.

6.8 Quality and performance indicator – Metadata - consultations (AC2)

Not available.

6.9 Quality and performance indicator – Metadata completeness - rate (AC3)

The rate of metadata completeness (ESMS v.2.0) for Industrial Producer Price Index for 2017 is 100%.

7 SURVEY COSTS AND BURDEN ON RESPONDENTS

7.1 Costs of the statistical survey implementation

When it comes to costs of the survey on producer prices of industrial products, the annual number of forms submitted to the reporting units is known:

Number of hours worked	Not available/insignificant
Material costs (printing and delivery of forms to the field o)	Not available/insignificant
Annual number of forms delivered to reporting units	640*36=23,040 277*36=9,972 Total 33,012

7.2 Burden on respondents

The indicator of burden on respondents is calculated by multiplying the number of reporting units with the (estimated) time required to complete one form (in the survey on producer prices, it is possible that one reporting unit fills out several forms).

Number of respondents that completed the form	529
Time required to complete one form (estimate), min	12
Total time spent, min	6,348

7.3 Measures to reduce costs and burden

Measures to reduce the burden on respondents would include the possibility of contacting reporting units in case they need assistance in completing the questionnaire and the possibility of collecting prices using an online questionnaire.

8 CONFIDENTIALITY

8.1 Confidentiality - policy

Data collected for the purposes of statistics of producer prices of industrial products are subject to general legal frameworks of confidentiality and are used for statistical purposes only.
The confidentiality of data and protection of personal information are guaranteed by Articles 25 and 27 of the Law on Statistics of Republika Srpska ("Official Gazette of Republika Srpska", No. 85/03) and the Rules of protection of confidential data of the Republika Srpska Institute of Statistics. The confidentiality of statistical data is also ensured through the Law on the protection of personal data ("Official Gazette of BiH", No. 49/06).

8.2 Confidentiality – data handling

Confidentiality and statistical protection of data are ensured at all stages of the production of industrial producer price index. In this regard, statistical staff must act in accordance with the provisions of the Law on Statistics of Republika Srpska ("Official Gazette of Republika Srpska", No. 85/03) on data confidentiality and protection. One of the confidentiality measures is ensured through a written statement on the protection and safekeeping of statistical data, which is signed by all the Institute's employees. In addition, all written documents through which information is requested for statistical purposes also indicate articles of the legal provisions regulating this field. Data protection is also ensured by passwords required to access each personal computer at the Institute. Detailed measures of statistical data protection are described in the Rules of protection of confidential data of the Republika Srpska Institute of Statistics.

9 STATISTICAL PROCESSING

9.1 Source of data

The data necessary to calculate industrial producer price indices are collected on the basis of a targeted sample. In 2017, it served to collect 1,330 individual prices for sale on the domestic market and 624 individual prices for sale on the non-domestic markets.
The source on which the set of data required to compile industrial producer price indices is based is the Annual survey on industry IND-21, which provides the value and structure of production.

9.2 Frequency of data collection

The data are collected on the monthly basis.

9.3 Data collection

The data are collected using the reporting method. Prices are collected through the questionnaires C-41 and C-41 nd, which are sent to the reporting units by the Institute at the beginning of the year, in 36 copies (three copies for each of the 12 months). Reporting units are supposed to fill out three questionnaires, keeping one copy for themselves and sending two to the relevant regional office. The regional office forwards one copy to the Republika Srpska Institute of Statistics.

Questionnaires C-41 and C-41 nd are adapted to each individual enterprise, taking into account their specific assortment of products. The questionnaire includes prices for the current month, prices for the previous month, and information whether the sale was performed in the current month. Each month, prices are recorded for a defined article (item), with defined physical characteristics, quality, units of measure, packaging, etc. If the

production of an article (item) being monitored is interrupted, the enterprise chooses a replacement article (item) that is most similar to the article (item) from the previous period in terms of physical characteristics and quality, provided that its production is planned in the future.

9.4 Data validation

Validation of data/prices of articles (items) is carried out during and after the entry of prices within the application. For all prices that vary +/- 10% a reason for the price change has to be entered. Once the entry is completed, confirmation (validation) of these prices is required. During data validation, it is necessary to (especially for significant changes in prices):

- Compare entered data with data provided in the questionnaire, to detect entry errors,
- Check whether the explanation provided by the reporting unit adequately describes the change in price,
- Check with the reporting unit whether the price is an outlier error or not,
- Compare the price of the item with a similar item by another producer,
- Check the completeness of the entry, that is, whether there is a price that equals 0.

If there is no justifiable explanation for differences in prices, the reporting unit fills out the questionnaire again and submits it to the Institute by e-mail, or the price is corrected on the basis of a telephone agreement.

9.5 Data compilation

Industrial producer price index is calculated form elementary indices at product level (EPI), which represent the ratio between the price in the current period and the base price (December of the previous year). A simple geometric mean is used as a measure of the mean value.
Elementary indices at product level are used to calculate aggregate indices, i.e. indices of classes, divisions, sections and the total index, using the Laspeyres formula for weighted arithmetic mean. The reference year for the calculation of indices is 2015.

Weights used for the calculation of producer price indices represent a relative share of selected products in the total value of sales of industrial products on the domestic market and the non-domestic markets. The main source of data for weights in 2017 is the Annual report on industry IND-21 from 2015. The structure of weights changes every five years, while each year weights are corrected based on the price increase occurring in the previous year.

9.6 Adjustment

In the survey on producer prices of industrial products, adjustment methods refer to extreme prices (outliers) and replacements of articles (items) with the most similar article in terms of characteristics and quality.

9.6.1 Seasonal adjustment

Not applicable.