Report on calculation of Industrial Production Index

Country practice

Country: Azerbaijan

Date: 25.08.2014

Contents

1. Short description of the observation

 Department of Industry and Construction Statistics observe industrial production index– variation of weight of producing wealth in comparing terms. This index is used in exploration of the production variation inshort term period and also in calculation of macro indicators and gross domestic product. Industrial production index is a short-term indicator. Basically IPI is calculated according to the industry and its fields.This index can also be calculated for the intermediate, investment, consumer goods and energy products.

Individual and common indexes are differentiated. Individual indexes express volume variation of one product and common indexes characterize variation of total weight of wealth including some types of products.

2. Classification system

The industry products are chosen on the basis of Statistic Classification of Industry Products (international PRODCOM classification) and industry activity-Economic Activity Types Classification (international NACE Rev 2 classifications - new version).

3. Legal explanation

Legal base for collection of the information is the law of the Republic of Azerbaijan on "Official Statistics".

4. Coverage

Calculation of the index covers main fields of economy as B-Mining, C-Manufacturing, D-Production and distribution of electricity, gas and steam, E-Water supply. To calculate, whole industry divides subfields and each field divides semi-fields (on the level of 3 digits by NACE). Representative commodity (each field at least 70% share having on types of products each month more than 400 industry product) basket which made according to each semi fields is assumed.

4.1 Statistics unit

Necessary information for calculating index is collected from the juridical person and natural entities.The total volume of the industry products produced by the households is obtained by way of the sample statistical survey and added to the totality. In monthly period information is collected from the large entrepreneurship subjects, but in quarterly period from small entrepreneur subjects.

4.2 Rules of registration

The activity of industrial enterprises is completely based on statistical observation. The enterprise are registered by the area where actually functioned.

4.3 Observational form

The database of industrial production index calculation is summary tables which based on information of "1 Production" annual and monthly report form and "1 Enterprise" annual report form.

4.4 Observation units

Information is calculated about 1000 product types of all industry enterprise one time in a year. 400 of these products are included to the exponent - product basket and quantity indicators are used in calculation of index.To preserve urgency of selection some products can be included to the exponent products list. These products can be added if they have valuable specific weight in the activity type which they belong. In calculation of IPI added value indicator of base year is used as weight. Quantity of production, price and structure of added value are fixed in base year. In calculation ofIPI the data of previous year is used as base year. Industrial production index is calculated in monthly and quarterly periods, in monthly term information is collected about 530 types of product in 537 large industry enterprises and in quarterly period information of 1971 small enterprises is added to the information of the large enterprises.

5.Theoretical base

4 alternative economic indicators are used in the process of calculation IPI.

- Output in value
- Output in kind
- Cost of the sold products
- Cost of the industry-based services

Output in value indicates total value of the finished products and sold half-finished products produced by the industry and non- industry enterprises and corporations. In this case price index of industrial product is used indeflation process for indicating information with comparative prices.

Output in kind is quantity of commodity in physical unit of measure. Cost of the sold product is synonym of the "turnover"and "loaded goods".Cost of the industry-based services includes cost of the services on oil and gas production, modernization of the equipment, transport, mechanism instruments, half-manufacturing of the materials and parts, complete purchased instruments and installing of the instruments, get ready equipment according to the contract.Deflation is applied while using indicators "cost of the sold product" and "cost of the industry-based services".

6. Calculation of Industrial Production Index (IPI)

Production index is the relative indicator which characterizes changing of product volume produced in comparison periods. Its main purpose is to provide a measure of the short-term changes in value added over a given reference period.Calculating of production index is realized on 4 stages: In the first stage the physical volume indices are formed by means of comparison of representative products' output (average annual prices of base year) that are estimated with the same prices in cash and kind during compared periods by semi fields; in the second stage the indices by all semi fields which made each extended industrial fields are generalized based on aggregation to get indices on extended fields. In the third stage calculating of industrial production index on industry is led by summarizing of index by extended industry fields.In the fourth stage, the corrections and additions are added to industrial production index of industrial products' production that was calculated based on representative commodities taking into the account of services and production -based work.

6.1 Method of calculation

The State Statistical Committee of the Republic of Azerbaijan calculates the producing indices using the fixed base Laspeyres approach.

$$L_t = \frac{\sum_{i=1} P_{i,0} Q_{i,t}}{\sum_{i=1} P_{i,0} Q_{i,0}} = \sum_i \left(w_{i,0} \frac{Q_{i,t}}{Q_{i,0}} \right)$$

Special weight is one of the basic elements of the index calculation.Weights are used in the aggregation process and calculated with this formula:

$$w_j = \frac{W_j(T_{0)}}{\sum_{j \in K} W_j(T_0)}$$

Data are collected monthly with imputation based on historical data to estimate for cases of non-response. Physical quantities are primarily used to obtain industrial production volumes. In some cases the deflated production values are used with Producer price indices (PPIs) used as the deflators. In total, 216 indices are produced for sections B, C, D and E. Seasonal adjustments are applied to the data and form the basis of the published results.

6.2 The characteristic of base indicators

While calculating, index of industry production is based on in kind data on the types of produced products and then calculates by aggregating to total industry index. The indicator of value-added of basis period is used during aggregation. In case of occurred strictly changes in the structure of field appropriate amendments are done in the weights of base periods.

In the monthly product index, the data received in the result of observation of products that are produced by medium and large enterprises (by 726 enterprises, volume of annual turnover of which is more than 500 thousand manat and number of employees is 1-49 persons) is covered by all industry enterprises (by 2800 enterprises) annually and quarterly.The data is represented at official statistical reports and presented to national statistical bodies directly or with post by registration units and national statistical bodies send to SSC. The reports are presented online.

6.3 Seasonal factor

Sometimes the indexes are adjusted according to the seasonal factors. Different statistical methods are used to regulate seasonal hesitation:

- absolute difference method
- relative difference method
- calculation seasonal indexes

Occasionally some software as TPP DEMETRA and X-12-ARIMA are used for adjusting indexes according to the seasonal factors.
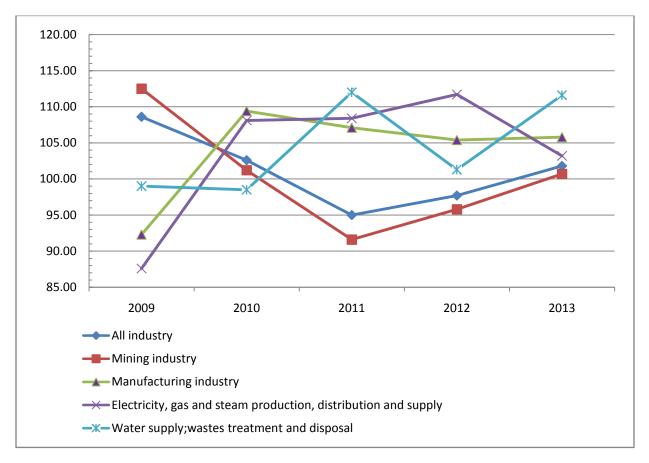
7. Time coverage

IPI cover all years and the results are indicated in dynamic series. IPI of Azerbaijan Republic and indicators on economic activities are shown in dynamic series. These figures cover the period from 1991 till current year.

Theese figures are shown in dynamic series:

-Annual index- covering all republic

-Annual index- according to the economic activities

Short description of the IPI(by kind of economic activity), to previous year

- All industry
- Mining industry
- Manufacturing industry
- Electricity, gas and steam production, distribution and supply
- Water supply;wastes treatment and disposal

8. Comparability

8.1 Geographical comparability

Indexes are calculatedon country level and regionally. In calculating IPI on the country level "added value" is used as specific weight, but in regional level is "output". As a result small diffence can be observed.

8.2 Relevance and comparability

Calculation of IPI is based on the methodology which is widely used in calculation of indexes by foreign countries.

9. Timeliness

The interval between acceptance of information and calculation of IPI is no longer than two days. Information about manufacture of the most important types of industrial products in natural value is stored

with specific software. Stored data is urgently analyzed and IPI is calculated. IPI is calculated according to the classification of economic activities.

10. Review of data

Policy on regulation of data based to the "Regulation on review of data". This regulation is placed on the web-page of the SSC.

11. Dissemination and data access

11.1 Dissemination calendar

Dissemination of the IPI realized according to the general standards and time-tables on dissemination of the information of IMF. Information on the IPI is disseminated every month in the form press-release according to the dissemination calendar.

11.2 Equal access and clarity

Some broadcast devices are used for paying demand of users after preparation of information on IPI.As all information is indicated in press-releases, bulletins and year-books which are placed on the web page of SSC. Information about IPI is disseminated in printed form – "Main indicators of industry" monthly bulletin.

Usable devices for information dissemination

1	The webpage of SSC of the Republic of Azerbaijan	www.stat.gov.az
2	Press-releases	www.stat.gov.az
3	Database	www.azstat.org/MESearch/search?department=2&lang=az
4	"Azerbaijan in figures"	www.stat.gov.az/menu/6/statistical_yearbooks/
5	"Azerbaijan industry"	www.stat.gov.az/menu/6/statistical_yearbooks/
6	"Statistical Yearbook of Azerbaijan"	www.stat.gov.az/menu/6/statistical_yearbooks/

12. Punctuality

The Department of Industry and Construction statistics put on methodological work unceasingly by way of increasing quality of IPI calculation. The staff of the local statistics bodies takes part in seminars and they are operatively informed with methodology innovations.

13. Evaluation of users' demand

Meetings with users are hold unceasingly every year for explore demands of users and offered suggestions are discussed and taken into consideration by department.

14.Economic efficiency

For providing quality of statistic process realization of all statistics programsbased on the principles such as reliability, objectivity, relevance in present situation, statistical confidentiality and transparency.Department reform the list of exponent products in case of base year is renewed. Some products are included to the renewed list and some of them are excluded from the list.

15. Confidentiality, transparency and security

Dissemination of the primary data has been prohibited according to the law on "Official Statistics". Primary information of the individual and juridical persons is confidential. Department of Industry and Construction statistics take measures to keep confidential the primary data.

16.Termination

It's expedient to run work increasing the quality of calculation, programming the process calculation.