

0. Prerequisites

0.1 Legal environment

0.1.1 Responsibility for collecting, processing, and disseminating statistics

Ministry of Statistics and Programme Implementation

The statistical system is decentralized, with the respective ministries having responsibility for the statistics on the subjects under their charge. The National Statistical Office (NSO), the statistical wing of the Ministry of Statistics & Programme Implementation (MoSPI), acts as the nodal agency for planning integrated development of the statistical system in the country.

Production index

In accordance with the *Government of India (Allocation of Business) Rules, 1961*, as amended from time to time, it is the responsibility of the Ministry of Statistics and Programme Implementation to compile and release the Index of Industrial Production data. The Central Statistics Office (CSO) on behalf of MoSPI carries out these functions.

0.1.2 Data sharing and coordination among data producing agencies

Ministry of Statistics and Programme Implementation

The overall coordination for compilation and data sharing is the responsibility of the MoSPI. There are 14 Government of India Ministries/ Departments/ organisations which are responsible for collection of primary data from the manufacturing establishments in accordance with the methodology/ guidelines laid down by the MoSPI.

Production index

There exists a mechanism of data sharing between MoSPI and other Ministries. Line ministries responsible for collecting primary data for production index follow a defined protocol to transfer the data to MoSPI. There exist various inter-ministerial mechanisms for these Ministries to implement various changes/ improvements in the protocols required from time to time.

0.1.3 Confidentiality of individual reporters' data

Ministry of Statistics and Programme Implementation

The frame of factories for IIP is derived primarily from the frame of Annual Survey of Industries (ASI), which is governed by the provisions of the Collection of Statistics Act, 2008. In accordance with rules 9 to 14 of Chapter III under the Collection of Statistics Act, 2008, identity of individual respondents is not disclosed directly/ indirectly.

	<p>Confidentiality of identification particulars of respondents is a general principle embodied in the National Data Dissemination Policy followed by the Union Government of India.</p> <p><u>Production index</u></p> <p>As per the National Data Dissemination Policy adopted by the Union Government of India, the index series are published at a level of aggregation that prevents direct or indirect disclosure of firm-level data. Unit level data on production and indices are provided to the users on request after suppressing the identification particulars.</p> <p>0.1.4 Ensuring statistical reporting</p> <p>At present, MoSPI does not exercise any legal authority for statistical reporting as the primary production data for IIP are collected by various administrative ministries/ departments/ organisations. Production data on majority of IIP items are collected by the Department of Industrial Policy and Promotion (DIPP), Ministry of Commerce and Industry from individual manufacturing establishments as per rules under <i>the Industries (Development and Regulation) Act, 1951</i>. Similarly mineral production data are collected by the Indian Bureau of Mines (IBM), Ministry of Mines as per rules under the <i>Mineral Conservation and Development Rules (MCDR), 1988 and further amended in 2016</i>. Other legal instruments in use are <i>The Electricity Act, 2003</i> for Electricity data, <i>Vegetable Oil Product Production and Availability (Regulation) order, 2011</i> for production of Edible Oils, Vegetable Oils and Fats, <i>Tea (Marketing And Control) Order 2003</i> for tea production data, <i>Essential Commodities Act 1955</i> for sugar production data, <i>Fertilizer Control Order (Under Essential Commodities Act) 1985</i> for fertilizer production, <i>Oilfields (Regulation & Development) Act, 1948</i> for production of Crude Oil and Natural Gas, <i>Industries (Development & Regulation) Act, 1951</i> for production of Petroleum Products, <i>Colliery Control Rules, 2004 under MCDR Act</i> for production of coal.</p>
<p><u>0.2 Resources</u></p>	<p>0.2.1 Staff, facilities, computing resources, and financing</p> <p>Activities relating to collection, compilation and publication of statistics and related managerial activities are carried out by Indian Statistical Service and Subordinate Statistical Service officials who are specially recruited and trained for the designated duties to be performed. These activities are performed with the help of in-house computer facilities as well as data warehousing and dissemination services provided by the Computer Centre of the MoSPI. Infrastructure facilities for data transmission and activities related to compilation of IIP are also available at respective workstations. Financial resources for sustained operation of all the facilities and their up-gradation/ technical up-keep are met through dedicated Plan Scheme for Capacity Development. Technical capacities of</p>

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	<p>the staff at various levels are continuously refreshed/ up-graded through in-house training programmes run by the National Statistical Systems Training Academy of MoSPI. Comprehensive manual on IIP and other related subjects apart from other courseware are available for maintaining standard concepts and methodology for the statistical products. All types of resources are reviewed from time to time.</p> <p>0.2.2 Ensuring efficient use of resources</p> <p>Rules of data validation as well as index compilation procedures and data file formats are standardized so that the reporting of production, validation of the data and compilation of indices can be undertaken efficiently and timely.</p>
<u>0.3 Relevance</u>	<p>0.3.1 Monitoring user requirements</p> <p>New or emerging data requirements as well as methodological issues are considered by the Standing Committee on Industrial Statistics (SCIS) and these are also taken into account at the time of revision of base year of IIP. Workshops with data users are organised from time to time.</p>
<u>0.4 Quality management</u>	<p>0.4.1 Quality policy</p> <p>Officers and staff are carefully instructed to comply strictly with all rules regarding integrity and confidentiality to prevent influence of other parties and data shortcomings. Consistency in concepts is ensured across various processes and statistical hierarchy. Staff are therefore trained and instructed to follow rules and procedures laid down in the manuals/ guidelines for compilation of the index, to ensure quality.</p> <p>0.4.2 Quality monitoring</p> <p>Measures are in place to monitor the quality of the various statistical stages. The data is carefully checked each month according to a fixed schedule of checking and validation of data, both manually and with the use of computer-aided tools.</p> <p>0.4.3 Quality planning</p> <p>In order to improve the quality of production data, the Ministry is having regular interactions with the source agencies to improve their system of data collection and estimation procedures in case of non-response. A quality assurance program is also being planned as per suggestions of various expert groups/ committees.</p>

1. Integrity	
<p><u>1.1</u> <u>Professionalism</u></p>	<p>1.1.1 Impartiality of statistics</p> <p><u>Ministry of Statistics and Programme Implementation</u></p> <p>The Ministry of Statistics & Programme Implementation impartially acts as the nodal agency for planning integrated development of the statistical system in the country under the overall supervision of the Minister in charge.</p> <p><u>Production index</u></p> <p>The <i>Government of India (Allocation of Business) Rules</i>, 1961, as amended from time to time, address the general need for the professional independence of the data producing agency and prohibits interference from others, including other government agencies, in the compilation and/or dissemination of the Index of Industrial Production. There is thus a long standing tradition of non-interference and impartiality.</p> <p>1.1.2 Selection of sources, methodology, and modes of dissemination</p> <p>The choice of source data, methodology used for compiling the index, data processing and validation are based solely on statistical considerations guided by technical groups constituted from time to time and the Standing Committee of Industrial Statistics (SCIS). Methodological Changes brought in the current series (i.e. 2011-12) are available on Ministry's website at: http://mospi.nic.in/iip</p> <p>1.1.3 Commenting on erroneous interpretation and misuse of statistics</p> <p>Efforts to prevent misinterpretation or misuse of statistics are made by providing explanatory materials and supporting documentation in the public domain.</p>
<p><u>1.2</u> <u>Transparency</u></p>	<p>1.2.1 Disclosure of terms and conditions for statistical collection, processing, and dissemination</p> <p><u>Ministry of Statistics and Programme Implementation</u></p> <p>The <i>Government of India (Allocation of Business) Rules</i> are available in public domain at:</p> <p>http://cabsec.nic.in/allocation_order.php</p> <p><u>Production index</u></p> <p>The terms and conditions under which the index is compiled and disseminated are publicly available on the homepage of MoSPI.</p>

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	<p>1.2.2 Internal governmental access to statistics prior to release</p> <p>The Index is released at the same time to all users. No parties, including other government agencies, are supplied with data in advance, i.e. before the official release. An embargo advisory is issued along with press notification every month at the time of release of IIP results to prevent misuse of information prior to official release.</p> <p>1.2.3 Attribution of statistical products</p> <p><u>Ministry of Statistics and Programme Implementation</u></p> <p>A commentary accompanies the release of the data along with salient features such as major contributors in terms of products and industries, to growth/ contraction.</p> <p><u>Production index</u></p> <p>Data released to the public are clearly identified as the product of CSO of MoSPI.</p> <p>1.2.4 Advance notice of major changes in methodology, source data, and statistical techniques.</p> <p>Major changes in methodology are made only at the time of revision of the base year. The public are informed at the time of such changes through a Press Release.</p>
<p><u>1.3 Ethical standards</u></p>	<p>1.3.1 Guidelines for staff behavior</p> <p>Guidelines for staff behavior are outlined in the Civil Services Conduct Rules, which are implemented and followed in the daily work in the data producing agencies and in the contracts with users and respondents.</p>
2. Methodology	
<p><u>2.1 Concepts and definitions</u></p>	<p>2.1.1 Concepts and definitions</p> <p>Concept: Index of Industrial Production (IIP) is an abstract number, the magnitude of which represents the state of production of items individually and collectively as industry group for a given period of time. The inputs and technology used in the production of items under reference may or may not be the same.</p> <p>Strictly speaking, the IIP is a short-term indicator of industrial growth for the organized sector till the results from the Annual Survey of Industries (ASI) becomes available. This indicator is of paramount importance to the Government for planning purposes and is also being extensively used by</p>

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	<p>various organizations, including Industry, Research, and Academic Institutions.</p> <p>Definition: The Index of Industrial Production is a quantitative index, the production of the items being expressed in physical terms. The Index is compiled by taking into account the quantities of items produced during the current month, vis-à-vis the average monthly production in the base year.</p>
<u>2.2 Scope</u>	<p>2.2.1 Scope</p> <p>2.2.1.1 Scope of the data</p> <p>Industrial Coverage: Although UNSD guidelines state that IIP is to be compiled for activities in ISIC Rev. 4 Sections B, C, D and E, i.e. (i) Mining and quarrying, (ii) Manufacturing, (iii) Electricity, Gas, Steam and Air-conditioning supply and (iv) Water supply, Sewerage, Waste management and Remediation activities, due to constraints of the data availability and other resources, the index is being compiled with (i) Mining, (ii) Manufacturing and (iii) Electricity as scope of All India IIP. In the current base year (i.e. 2011-12), the index covers 839 items clubbed into 407 item groups under three sectors i.e. Mining (29 items clubbed into 1 item group), Manufacturing (809 items clubbed into 405 item groups) and Electricity (1 item) with weights of 14.37%, 77.63% and 7.99% respectively.</p> <p>The mining sector covers 29 items under different headings viz. Fuel Minerals, Metallic Minerals and Non-Metallic Minerals. This sector also includes Crude Petroleum, Natural Gas, Coal and Lignite. The manufacturing sector covers 809 items under different groups e.g. Food products, Beverages, Textiles, Chemicals and chemical products etc. The Electricity sector is treated as a single item.</p> <p>Product Coverage: Within an industry the products are covered on the basis of the concepts of Primary (Main) Product as well as Secondary (By) Product. All those items which represent at least 80% of the output within each industry group, i.e., 3-digit industry of NIC-2008 (based on ISIC 4) have been included in the Item basket. Essential products like tea, coffee, salt and sugar have been included. The over-riding criteria for finalization of item basket have been the regular monthly flow of production data from the source agencies/collection authorities.</p>

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<u>2.3</u> <u>Classification/</u> <u>sectorization</u>	2.3.1 Classification / Sectorization Classification: The current series of IIP (base 2011-12) follows the National Industrial Classification 2008 (NIC-2008) which is based on ISIC-Rev 4 published by UNSD.
3. Accuracy and reliability	
<u>3.1 Source data</u>	3.1.1 Source data collection programs The data for compilation of IIP is furnished by 14 data source agencies located in various Central Ministries/ Departments/ Subordinate Offices of the Government of India which, in turn, collect data from their primary sources (factories). Source of Weights: The source data used for the calculation of weights for the current series of IIP with the base year 2011-12 are the results of Annual Survey of Industries pertaining to the year 2011-12. The Annual Survey of Industries (ASI) is conducted by the Ministry of Statistics & Programme Implementation every year for the organized manufacturing sector throughout the country. The ASI covers following industries: <ul style="list-style-type: none">• All the factories and industrial units registered under Sections 2m(i) and 2m(ii) of the Factories Act, 1948, employing 10 or more workers using power and 20 or more workers but not using power on any day of the preceding 12 months;• Bidi and Cigar Manufacturing Establishments registered under the Bidi and Cigar Workers (Conditions of Employment) Act, 1966 employing 10 or more workers using power and employing 20 or more workers but not using power on any day of the preceding 12 months;• Certain services and activities like Cold Storage, Water Supply, Repair of Motor Vehicles and Other Consumer Durables like watches, etc. Unit Selection: Frame for coverage of units is decided by the source agencies which collect data from the factories. For compilation of IIP both large and medium factories are covered for collection of data by the source agencies. Sample Size: The sample size for data collection is decided by the source agencies. Generally, efforts are made to cover all the major units. Data Collection Methods: The manufacturing sector's data for compilation of IIP is supplied regularly on monthly basis by 12 source agencies located

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	<p>in various Ministries/ Departments/ Subordinate Offices of the Government of India. For Mining Sector the index is compiled by the Indian Bureau of Mines (IBM), Ministry of Mines. IBM collects data in respect of metallic and non-metallic minerals under the MCDR, 1988 further amended in 2016. For the Electricity Sector, the monthly production data are collected by the Central Electricity Authority, Ministry of Power under the Electricity Act, 2003. These organisations collect the data through various methods including mail, questionnaires, paper forms at the level of individual establishments. Only item-wise total production of all the units and not the production of individual factories/ establishments is reported by the source agencies to CSO for compilation of IIP.</p> <p>Item/ Production Specification: Specification of the item is not taken into account in collection of production data by the source agencies.</p> <p>3.1.2 Source data definitions, scope, classifications, valuation, and time of recording</p> <p>Nature of Indicators Used: The basic data used for compilation of the index is the production in terms of quantity. However, there are certain items especially capital goods such as Machinery, Machine Tools, Ship Building etc. on which the production data is furnished in value terms. In order to remove the effect of price rise from the index, the production figures of such items are deflated on the basis of Wholesale Price Indices (Base 2011-12), compiled by the Office of Economic Adviser, Ministry of Commerce and Industry, before compilation of index.</p>
<p><u>3.3 Statistical techniques</u></p>	<p>3.3.1 Source data statistical techniques</p> <p>Procedures for Non-Response: In India, the Index of Industrial Production is based on the responded production as well as estimated production for non-responding units. The production estimates for the non-responding units are developed using various methods including: repetition of last available data; taking the average production data for the last few months; using previous year's growth rate; etc. The appropriate estimation procedure is decided by the source agencies themselves in consultation with CSO.</p> <p>Treatment of Missing Production: The index is compiled on the basis of the data on a fixed number of items collected from the source agencies which in turn collect the data from different factories and estimate the data on their own, as per the requirements.</p> <p>For selection of replacement items, and introduction of new units and products, a Technical Review Committee is constituted to</p> <ol style="list-style-type: none">i) Review periodically the list of products in the item basket of IIP and suggest methodology for inclusion of new important items and

	<p>exclusion of no longer representative items from the existing basket;</p> <p>ii) Review periodically the panel of factories/ establishments for compilation of IIP and suggest methodology for including new representative units that emerge along with suggesting methodology for adjustment of back series;</p> <p>iii) Consider cases of closed units during the currency of the base year and recommend the methodology for replacing such units by new ones;</p> <p>3.3.2 Other statistical procedures</p> <p>The production figures, if not reported by all the units in the current month due to any reason, are estimated for the current month and revised subsequently in the next month, and finally in the third month on the basis of which the final indices for a month are calculated.</p> <p>Nature of Weights: The weights for the three sectors (mining, manufacturing, and electricity) are based on share of the sector in total domestic production in the base year. The overall weight of the manufacturing sector is apportioned to the industry groups at the 2-digit, 3-digit- and 4-digit level of the National Industrial Classification (NIC) 2008, on the basis of the Gross Value Added (GVA). The weighting diagram for the current series of IIP is prepared on the basis of GVA up to the 2-digit, 3 and 4 digit level of NIC based on the results of ASI 2011-12. At the final level (i.e. 5 digit level of NIC), weights to items have been distributed on the basis of Gross Value of Output (GVO). The weights of selected items within an industry group are apportioned on the basis of the value of output.</p> <p>In view of heavy subsidies involved in the industry group ‘Manufacture of Refined Petroleum Products’, weights for this group were calculated by incorporating the subsidies in the GVA. In case of ‘Manufacture of chemical fertilisers’ the subsidies are already accounted for in the calculation of GVA hence no adjustment was made in this industry group.</p> <p>Period of Current Index Weights: The current index weights are based on the value of production of the industries during the base year period viz. April, 2011 to March 2012 as reported in the Annual Survey of Industries for the year 2011-12. The same weights are used until the revision of the base year is done.</p> <p>Frequency of Weight Updates: The weights are revised with every revision of the base year. The base year was revised to 2011-12 from 2004-05 in May. Efforts would be made to revise the base year once in every five years as per UNSD's recommendations (the previous base years of the index were 2004-05, 1993-94, 1980-81, 1970, 1956, 1951 and 1946).</p>
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	<ul style="list-style-type: none">• Computation of lowest level indices: The lowest level, for which an index is prepared, is the item group. It is compiled as the ratio of production quantity in the current month with respect to its average monthly production quantity in the base year.• Aggregation: The IIP is calculated using the Laspeyres formula as a weighted arithmetic average of production relatives. The index is primarily quantity based, although for some item groups the quantity relatives are obtained by price deflation. The index at group level/2-digit level of NIC is compiled by using the Laspeyres' formula, i.e.: $I = \frac{\sum (W_i * R_i)}{\sum (W_i)}$where R_i is the production relative and W_i is the weight of an item. The index is prepared for each two-digit level of NIC. Also the index is prepared on the basis of the following use-based classification: Primary Goods, Capital Goods, Intermediate Goods, Infrastructure/ Construction Goods, Durable Consumer Goods and Non-Durable Consumer Goods.• Alignment of Value of Weights and Base Period: No alignment of the weights is required as the weights as well as the base year production relate to the same reference period viz. April, 2011 to March 2012.• Linking of Re-weighted Index to Historical Index: Whenever there is change in the base year, the new series can be linked with the old series by preparing linked series. For the common period, the index series are available with both old weights & new weights for linking the two series.• Reference Period: The reference period for the current index of industrial production in India is 2011-12, when the index=100.• Seasonally Adjusted Indices: Not being done at present.
<u>3.4 Data validation</u>	<p>3.4.2 Assessment of intermediate data</p> <p>Verification of Data: Before releasing the index, the accuracy of the production data wherever significant deviation from the last month's production and previous year's production are observed, is confirmed from the source agencies and corrections required are incorporated.</p> <p>Verification of Processing: The index is prepared every month through a built-in software specially made for this purpose.</p>

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4. Serviceability	
<u>4.1 Periodicity and timeliness</u>	<p>4.1.1 Periodicity</p> <p>Monthly</p> <p>4.1.2 Timeliness</p> <p>Within six weeks (42 days) after the end of the reference month.</p>
<u>4.2 Consistency</u>	<p>4.2.2 Temporal consistency</p> <p>The Ministry of Statistics and Programme Implementation website http://mospi.nic.in/press-release-0</p> <p>disseminates the following time series data: (1) monthly and annual indices at the 2-digit level of National Industrial Classification (NIC)-2008 along with the three sector sub-indices (mining, manufacturing, and electricity) starting from April 2012; (2) monthly and annual indices for use-based categories (primary goods, capital goods, intermediate goods, infrastructure/ construction goods, consumer durable goods, and consumer non-durable goods) starting from April 2012.</p> <p>4.2.3 Inter-sectoral and cross-domain consistency</p> <p>Consistency with Other Indicators of Industrial Production: Index of Industrial Production is only a short term indicator, used till the detailed results of Annual Survey of Industries are available. Till the ASI results are available, the IIP figures are used in compilation of National Accounts and hence the GDP figures are in close alignment with the IIP.</p>
<u>4.3 Revision</u>	<p>4.3.1 Revision schedule</p> <p>The data are provisional when first released. The Quick Release index for a reference month is revised twice: (1) after one month; and (2) after three months following the end of reference month.</p> <p>4.3.2 Identification of preliminary and/or revised data</p> <p>The press release clearly indicates whether the data are provisional or final.</p>

5. Accessibility	
<u>5.1 Data</u>	<p>5.1.1 Statistical presentation</p> <p>Data are disseminated on the Index of Industrial Production (IIP), a Laspeyres' index (2011-12 = 100) which measures changes in the volume of production in the mining, manufacturing and electricity sectors.</p> <p>The data are not seasonally adjusted.</p> <p>5.1.2 Dissemination media and format</p> <p>5.1.2.1 Hard copy - New release</p> <p>The <i>Press Note on Quick Estimates of the Index of Industrial Production and Use-based Index (Base 2011-12 = 100)</i> is available in Hindi and English, free of charge, on request from the contact person (see details at the end)</p> <p>5.1.2.2 Hard copy - Monthly Bulletin</p> <p>The Press Note on Quick Estimates of the Index of Industrial Production and Use-based Index (Base 2011-12 = 100) is available in Hindi and English, on request from the contact person (see details at the end).</p> <p>5.1.2.3 Electronic - On-line bulletin or data</p> <p>IIP data (production index data published in the press release and the time series data) is available on MoSPI website at:</p> <p style="text-align: center;">http://mospi.nic.in/</p> <p>5.1.2.4 Electronic - Other</p> <p>The data published in the <i>Press Note on Quick Estimates of Index of Industrial Production and Use-based Index (Base: 2011-12 = 100)</i> is made available in the Ministry's website and can be provided over e-mail.</p> <p>5.1.3 Advance release calendar</p> <p>An advance release calendar which gives one-quarter-ahead notice of the precise release dates is disseminated on the Internet on the IMF's Data Dissemination Standards Bulletin Board (<u>DSBB</u>). A regular notice to this effect is published in the <i>Press Note on Quick Estimates of the Index of Industrial Production and Use-based Index (Base 2011-12 = 100)</i>.</p>

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	<p>5.1.4 Simultaneous release</p> <p>The data are released simultaneously to all interested parties by the Ministry of Statistics and Programme Implementation by issuing the press release <i>Press Note on Quick Estimates of Index of Industrial Production and Use-based Index (Base 2011-12=100)</i> in the Ministry's website: www.mospi.gov.in.</p>
<u>5.2 Metadata</u>	<p>5.2.1 Dissemination of documentation on concepts, scope, classifications, basis of recording, data sources, and statistical techniques</p> <p>A document on frequently asked questions on the new series of IIP with base 2011-12 elaborating the salient features, scope, classifications, methodologies for drawing of item basket and weighting diagram, etc., is available in the website of this Ministry at the following link:</p> <p>http://mospi.nic.in/sites/default/files/iip/FAQ_IIP_new_series_12may17.pdf</p>

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