

A Note on Index of Eight Core Industries (ICI), Base year 2011-12

1. Introduction

The monthly Index of Eight Core Industries (ICI) is a production volume index. ICI measures collective and individual performance of production in selected eight core industries viz. Coal, Crude Oil, Natural Gas, Refinery Products, Fertilizers, Steel, Cement and Electricity. It is compiled and released by Office of the Economic Adviser (OEA), Department of Industrial Policy & Promotion (DIPP), and Ministry of Commerce & Industry. The inter-se weights of these eight industries are largely in alignment with the respective weight of these industries in the Index of Industrial Production (IIP). The base year of the ICI has been revised to 2011-12 from 2004-05 in alignment with the new series of IIP. Combined weight of these eight core industries is 40.27 percent of IIP with base 2011-12. The ICI with base 2004-05 had a weight of 37.90 percent in the IIP (2004-05). The comparison of industry-wise weights of different base years is given at Annexure.

ICI for a reference month is released with a time lag of one month on last day of the next month, which is about twelve days prior to the release of IIP for the reference month. It is an important lead indicator for overall industrial performance and general economic activities in the economy.

The ICI series was initially compiled with base 1980-81 and subsequent revisions were done with base 1993-94 and 2004-05. Prior to the 2004-05 series six core industries namely Coal, Cement, Finished Steel, Electricity, Crude petroleum and Refinery products constituted the index basket. Two more industries i.e. Fertilizer and Natural Gas were added to the index basket in 2004-05 series. The ICI series with base 2011-12 will continue to have eight core industries.

2. Base Year

The choice of the base year of ICI is according to the choice of base year for the IIP. The base year in the current series of ICI is 2011-12.

3. **Coverage :** The details of composition of the eight core industries and the source agencies are as given below:

Table 1.1: Composition of Eight Core industries for series at base year 2011-12

SI No	Industry	Unit	Item (Weights in IIP 2011-12 corresponding to these items have been considered)	Source Agency
1	Coal	Million Tonnes	Coal Raw	O/o Coal Controller
			Coal Middling	
			Washed Coal	
2	Natural Gas	Million Cubic Meter	Natural Gas (UT)	M/o Petroleum & Natural Gas
3	Crude Oil	Thousand Tonnes	Petroleum (Crude)	M/o Petroleum & Natural Gas
4	Refinery Products#	Thousand Tonnes	Bitumen	M/o Petroleum & Natural Gas
			Diesel	
			Aviation Turbine Fuel (ATF)	
			Furnace oil	
			Liquefied Petroleum Gas (LPG)	
			Kerosene	
			Naphtha	
			Petrol/motor spirit	
			PET coke	
5	Fertilizers \$	TMT	Urea	Department of Fertilizers
			NPK fertilizers	
			Diammonium Phosphate (DAP)	
			Superphosphate*	
			Ammonia Sulphate (A/S)	
			Calcium Ammonium Nitrate (CAN)	
6	Steel	Thousand Tonnes	Bars and Rods of Mild Steel	Joint Plant Committee
			Bars and Rods of Alloy and Stainless Steel	
			CR Coils & Sheets	
			HR coils and sheets of mild steel	
			HR Plates of mild steel	
			Pipes and tubes of Steel	
			Rail and rail materials	
			Steel Structurals (including angles, shapes, section, etc.)	
			Flat products of Alloy Steel	
			Flat products of Stainless Steel	
			Galvanised products of Steel (including colour coated, tin plates, TMBP and Tin free steel)	
7	Cement	Thousand Tonnes	Cement- all types	DIPP
8	Electricity	Million Kwh	Electricity	Central Electricity Authority

*:Reported as Single Super Phosphate

#: For consideration of weight, these 9 items of IIP basket is mentioned, but ICI takes into the account the entire basket of refinery sector.

\$. The fertilizer industry, includes, A/S and CAN in addition to the other 4 items which are present in the IIP basket. For the weight, only 4 items of IIP viz. Urea, NPK fertilizers, DAP and Superphosphate are considered.

4. Methodology

The ICI is based on fixed basket approach. The details of weights, procedure for data collection from source agencies and computation of indices are given as follows:

(i) Weighting diagram

The weights for industries in core index are derived from the weights assigned to corresponding industry/items in the IIP (2011-12). Accordingly, the weights of eight industries covered are assigned as follows:

Table 1.2: The Total weight for the Core Industries in IIP (2011-12) and Normalized weight

S.No.	Industries	Weights (% as in IIP 2011-12)	Weights(% in ICI)
1	Coal	4.1609	10.3335
2	Natural Gas (UT)	2.7690	6.8768
3	Crude Oil	3.6172	8.9833
4	Refinery Products	11.2896	28.0376
5	Fertilizers	1.0580	2.6276
6	Steel	7.2143	17.9166
7	Cement	2.1631	5.3720
8	Electricity	7.9940	19.8530
	Total	40.2660	100.0000

(ii) Collection of Production Data

The composition, unit of measurement and source agency for each of eight core industries is given in the Table 1.1. The number of items in an industry varies from one industry to another. The production for industries is taken at aggregate level. The unit of production also differs from one industry to other.

(iii) Computation of Index

The Index for each industry is calculated as Production Relative of the industry expressed in percentage. Index of Eight Core Industries (ICI) is calculated as weighted average of

Production Relatives of industries. The indices are calculated using Laspeyre's fixed-base formula. The production relative is calculated dividing current month quantity of production (Qt) for an industry by quantity of production for the industry in base year (Q0). The index is further compiled using following formula:

Production Relative for the period (t) in industry (i) denoted by

$$(R_{ti}) = Q_{ti}/Q_{0i}$$

Index of industry (i) denoted by

$$(I_{ti}) = Q_{ti}/Q_{0i} \times 100$$

Combined index for Eight Core Industries for current month

$$(I_t) = \sum W_i R_{ti} / \sum W_i \times 100$$

Where W_i is weight of industry (i).

The industry can include a number of items but production of the industry is taken as the total of all those items which are relevant to ICI.

5. Data Sources

The data used in compilation of core index is sourced from six different government agencies/ Departments under Government of India. The steel production data is sourced from Joint Plant Committee (JPC), Kolkata. JPC is officially empowered by the Ministry of Steel, to collect data on iron and steel industries. Ministry of Petroleum and Natural Gas provides data on three industries viz. Crude Oil, Natural Gas and Refinery products. The monthly data on electricity generation from Conventional and Renewable sources is supplied by the Central Electricity Authority/Ministry of Power. Department of Fertilizer provides data on production of fertilizers. Cement Desk in Department of Industrial Policy & Promotion collects and supplies data on cement production in India. Each source agency provides data on production for the reference month, the revised data of production of previous and previous third month. The timeline for submission of the data for the reference month is the third week of following month.

6. Comparison of Coverage of Industry/Items with 2004-05 Series

The table given below presents the comparison of coverage of various items under the eight industries in 2004-05 and 2011-12 series:

Table 1.3: Details of items covered under industries in 2004-05 and 2011-12 series

S.No.	Industries	Items in Series	
		2004-05	2011-12
1	Coal	Single item Coal	Coal (Coal raw, Coal Middling, Washed Coal)
2	Crude Oil	Crude Oil	Crude Oil
3	Natural Gas	Gross Production	Net Production (Utilization)#
4	Refinery Products	93% of Crude Throughput	Total Production
5	Fertilizers	Total Production	Total Production
6	Steel	Non-Alloy, Alloy & Stainless steel	Non-Alloy, Alloy & Stainless steel ^
7	Cement	Cement –includes production of Mini cement plants	Cement – includes production of Mini cement plants
8	Electricity	Generation from conventional sources*	Generation from Conventional and Renewable sources\$

*Electricity generation figure from Renewable sources was included from October, 2016 onwards;

\$ Electricity generation figure from Renewable sources was included from April, 2014 onwards;

Utilisation is a sum of sales and internal consumption;

^ Items covered are given above at Table 1.1.

7. Comparison with corresponding industries covered under IIP

The item coverage of sectors namely Fertiliser, Steel and Refinery products slightly differ in the ICI vis a vis that of IIP. *The fertiliser sector includes 2 more items viz Ammonium Sulphate (A/S) and Calcium Ammonium Nitrate (CAN) in addition to the four items taken in IIP.* The Steel sector in IIP has broader coverage consisting of 18 items whereas in ICI the coverage is restricted to the identified 11 items which account for finished steel production. *The Refinery products include the entire basket of production of the sector whereas for IIP only 9 refinery products are covered.* The items Coal, Crude Oil, Natural Gas, Cement and Electricity have broadly the same coverage as in IIP.

8. Policy on Data Dissemination and revision of past data

The monthly Index of Eight Core Industries is released on the last working day of every month at 5.00 P.M. The index is released through Press Information Bureau (PIB) as well as on website of the Office of the Economic Adviser (**www.eaindustry.nic.in**).

In line with the release policy of IIP, the eight core industries index at first is released as provisional and is subject to subsequent two revisions carried out during the following first month and third month. The index for the month of April 2017 (released on 31st May 2017) shall undergo first revision along with the index for the month of May 2017 (released on 30th June 2017) and the final revision will be with the release of the index for the month of July 2017 (released on 31st August 2017).

The press release to PIB includes both index and growth rates for each industry and at aggregate level for monthly (13 months), cumulative (current year and previous year) and annual (last five year). The monthly, cumulative and annual data including actual production, index and growth rate for all eight industries since 2011-12 onward in Microsoft Excel are also uploaded every month on the website of Office of the Economic Adviser (www.eaindustry.nic.in). The detailed excel sheet on monthly data is also available at data.gov.in.

Annexure

S.No.	Industries	Comparative Weights in Eight Core industries based on IIP			
		1980-81	1993-94	2004-05	2011-12
1	Coal	6.61	3.22	4.379	4.16
2	Crude Oil	2.41	4.17	5.216	3.62
3	Natural Gas	-	-	1.708	2.77
4	Refinery Products	1.52	2	5.939	11.29
5	Fertilizers	-	-	1.254	1.06
6	Steel	5.21	5.13	6.684	7.21
7	Cement	1.6	1.99	2.406	2.16
8	Electricity	11.43	10.17	10.316	7.99
	Total	28.78	26.68	37.902	40.27