



## **2<sup>nd</sup> Meeting of the Country Operational Guidelines Task Force**

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### **Note on ICP-CPI Synergies: an Indian Perspective and Experience**

#### **1. Meaning and Scope**

1.1 International Comparison Program (ICP) - Consumer Price Index (CPI) synergy may be defined as utilizing the price data, of CPI, for compilation of Purchasing Power Parity (PPP) under the ICP. Since CPI is a permanent activity in any country, including India, therefore, making use of these data for ICP makes the program sustainable. This saves human as well as financial resources.

1.2 But this synergy has two dimensions: (a) matching of items' Structured Product Descriptions (SPDs) of CPI basket with those of ICP basket; and (b) applicability of survey mechanism, of CPI, to ICP. CPI measures temporal changes in the prices of the goods and services consumed, therefore, different SPDs of items in different locations (maintaining representativeness) makes the index more robust. But, in the case of ICP, we require same SPD to be priced across all the selected markets to compute national average. CPIs are compiled at regional as well as national levels; therefore, number of markets selected for price collection is greater than the required number of markets under ICP. If SPDs of items, even in a subset of the selected markets of CPI (of course spread across different regions of the country), match with those of the commodities of ICP basket, then the prices collected for CPI may directly be used for computing national average prices for estimating PPP.

#### **2. Existing Mechanism of Price Collection for CPI and ICP**

2.1 Central Statistics Office (CSO), Govt. of India compiles State/UT-wise as well as all India (national) CPI, therefore, it has a wide coverage of rural as well urban markets. Prices are collected every month for household consumable goods and services from 2295 markets (1181 rural markets, covering all the districts and 1114 urban markets spread across 310 towns). A proper sampling procedure has been followed for selection of markets. Population has been used as the basis for sample selection. Detailed procedure adopted for selection markets in rural and urban areas for the compilation CPI is given in **Annexure I**. The said sampling design provides implicit weights to different markets therefore simple average of the prices, from different markets, is in fact their weighted average.

2.2 In ICP 2017, prices are being collected from 577 urban and 320 rural markets spread over all the states (except Arunachal Pradesh, Mizoram and Lakshadweep) for items falling in the categories of Food (including beverages), Clothing & footwear and Education. These markets are subsets of 1114 urban markets of 310 towns of CPI (Urban) and 1181 rural markets of CPI (Rural) covering all the districts of the country. To make the sample more representative, all the segments of population in urban areas - affluent, middle and poor segments have been considered.

2.3 In ICP 2011, all the affluent and half of the middle segments urban markets (163 affluent and 414 middle markets) were taken for price collection of aforementioned items. No markets from poor segment were surveyed for price collection since the SPDs of items in ICP basket were generally of higher specifications. With the passage of time, poor segment people also started attempting to consume higher SPDs items. Further, the Expert Committee on ICP 2017, constituted to provide expert views on all the activities of ICP being carried out in this country, suggested for inclusion of one-third of the poor segment markets also, to remove bias of higher income class.

2.4 Therefore, the number of middle markets has now been reduced from 414 to 314 and 100 poor segment markets included. Thus, the break-up of 577 urban markets for ICP 2017 are: all 163 affluent markets; 314 middle markets (out of 674); and 100 poor markets (out of 274). In the case of rural, 320 villages (out of 1181 villages of CPI) have been selected for

price collection under ICP 2017. These villages have been allocated to different National Sample Survey Regions proportionately on the basis of population.

2.5 For items other than Food, Clothing & footwear and Education, prices would be collected only from 108 urban markets spread over 36 towns. The broad criteria followed for selection of towns are as follows:

- a. All State/UT capitals, except that of Arunachal Pradesh, Mizoram and Lakshadweep.
- b. All towns having population more than 10 lakhs as per Population Census 2001, which are covered under CPI (Urban).
- c. Maximum of two towns from any State/UT including State/UT capital.

Number of quotations allocated in the selected town is as follows:

Towns having population	No. of quotations
>50 lakh	8
>20 lakh and <50 lakh	4
>10 lakh and < 20 lakh	2
Remaining state capitals	2

2.6 At present parallel surveys are conducted for CPI and ICP because of very poor matching of SPDs of CPI vs. those of ICP. SPDs of only vegetables and fruits of CPI baskets can be mapped with those of ICP, rests are not matching. Therefore, CSO has to go for a parallel survey.

### **3. Synergies with Price Surveys for ICP and CPI**

3.1 As mentioned in para 1.2 that the synergy has two dimensions: (a) matching of items' Structured Product Descriptions (SPDs) of CPI basket with those of ICP basket; and (b) applicability of survey mechanism, of CPI, to ICP.

3.2 In *ICP*, the work starts from identifying the items, below *BH*. All the items, within a *BH*, having different *SPDs* are listed and a common basket, which may be priced in

different economies, is prepared. In *ICP*, total number of items (*below BH*) is about 1100. CSO conducted exploratory exercise for using the data of CPI for computation of State-wise Sub-national PPP. To start with, only *CPI (Urban)* data were used because of better comparability of *SPDs* as compared to *CPI (Rural)*. In *CPI*, *SPDs* are different from market to market in order to maintain representativeness of the respective locations. Therefore, it was very difficult to find overlap between two States. There are 287 *Weighted Items (Basic Heading)* in *CPI (Urban)* basket. Out of which, commodities falling in only 128 *BH*, varying from State to State could be mapped or overlapped. In *ICP*, they consider two locally popular brands as comparable, provided the features, quality etc. are matching. In *Sub-national PPP* also, we mapped, two different local brands as comparable, on the basis of auxiliary information about other characteristics. We know that *SPD* includes units and quantity. Therefore, even if the brand is same but the quantity is different in two markets, it would be considered as two different *SPDs*. In the *CPI* data, we got more than 5,000 below Basic Heading items. One thing is important to mention here, when all the *SPDs* were related to markets within India in compilation of Sub-national PPP even then finding an overlap of *SPDs* in two different States/UTs was difficult; this gives sufficient indication that there is very less possibility of getting overlap between the *SPDs* of *ICP* and those of *CPI*.

3.3 But, there is a strong synergy, in terms of mechanism of price collection. It has been explained well in paras 2.2 to 2.5 that prices for *ICP* are collected from a sub-set of the markets of *CPI*. This has many advantages: (a) The trained data collectors (having good understanding of price data and *SPDs*) are being used for *ICP* Survey, which ensures the quality of data; (b) we do not require a separate fleet of data collectors for the survey, which reduces the requirement of additional financial burden; and (c) the mechanism is sustainable. It is important to mention here that one of the objectives of the World Bank to emphasize *ICP-CPI* synergy is to make the programme sustainable. This objective is completely met by the method of data collection followed in India for the *ICP*.

#### **4. Statistical Capacity Building – Data Collection and Validation**

4.1 Though the data collectors, deployed for ICP survey, are trained personnel because of being engaged in price collection for monthly CPI, separate training programmes are organized at different places to educate them about the concept and importance of ICP, SPDs of different items, how to write remarks if there is minor deviations from the listed SPDs etc. The batch size of the participants is kept below 25 in order to make training more effective.

4.2 Frequencies of price collection have been kept different for different categories of items, following nature of price dynamics. Details of the said frequencies are as follows:

- a. Fruits and vegetables: **monthly**
- b. Other items of Food (including beverages), Clothing & footwear: **quarterly**
- c. Education: **annual**
- d. Remaining items: **half yearly**

4.3 The mechanism of inspection of price collection is already in place for CPI, which is used for ICP surveys as well. The collected prices are scrutinized on monthly basis. Doubtful cases are referred back to the field for confirmation. Further, month to month change in the prices of ICP items are cross validated with such changes in respect of similar items of CPI basket. Finally, quarter-wise national average price is computed and supplied to the ADB for inter-country validation.

### **Challenges and Opportunities**

5.1 India considers ICP-CPI synergy as an opportunity, because of following reasons:

- a. if this synergy is established, data for ICP can be made available without any additional cost; and
- b. the same data may be used for computation of sub-national PPP easily.

But the biggest challenge is striking balance between representativeness and comparability. If we keep the SPDs of ICP in our CPI basket, we lose the representativeness of consumption, which is a big compromise with the quality of the index; on the other hand

if we maintain the representativeness, we move away from the overlap between the SPDs of ICP with those of CPI.

5.2 One possible solution of the above-mentioned challenge is to include some of the SPDs of ICP, under each Basic Headings, in the price collection schedule of CPI (in addition to the SPDs of CPI basket) in respect of a subset of the markets. This would indeed put an additional burden on data collectors in price collection for CPI, but create synergy between these two programmes. We are conceptualizing to move ahead in this direction. The Base Revision exercise of the existing series of CPI has started. The possibility of inclusion of SPDs of ICP, in CPI schedule, would be examined during the market survey of the revised series of CPI.

## **6. Suggestions for other Countries**

6.1 Other countries may also adopt the same procedure, which is being followed by India. The data collection machinery of CPI should be utilized for ICP surveys and SPDs of ICP may be included in the price collection form of CPI as additional items, if there is poor overlap of specifications of ICP and CPI.

## Selection of towns and villages for price collection for compilation of CPI in India

Prices are collected from 1181 village markets covering all districts and 1114 urban markets distributed over 310 towns of the country. These villages and towns have been selected from all States/UTs adopting the following sampling procedure:-

### RURAL

All the districts of the country have been considered for collection of rural price.

- (i) Within each State/UT, top fifty villages (if villages in a district are more than 50, all villages if it is less than 50) have been arranged in the descending order on the basis of Census 2001 population for each district.
- (ii) Fifty villages selected above have been divided into two sets i.e. Set 1 and Set 2 (Set 1 consists of top 25 villages and Set 2 the remaining 25 villages).
- (iii) Within a district two villages (one each from Set 1 and Set 2) have been selected randomly from different tehsils. In case, there is only one tehsil available in a district, both the villages have been selected from the same tehsil.
- (iv) If in some UTs, the number of districts is less than three, minimum five villages were selected from within UT.
- (v) Sample size in some States, wherever required, was adjusted on the basis of total rural population of the State.
- (vi) Selected villages in a State/UT were distributed over four weeks of a month to take into account week to week variation in prices.
- (vii) In the selected villages, market survey was undertaken for: (a) identification of popular markets, (b) selection of shops/outlets for different commodities in the selected markets, and (c) determination of specifications of commodities to be priced.

State/UT-wise number of village markets selected is given in Table A below:

**Table A: Number of village markets selected for CPI (Rural)**

S.No	Name of the State/UT	No. of selected Village
1.	Jammu and Kashmir	28
2.	Himachal Pradesh	24
3	Punjab	34
4.	Chandigarh	5
5.	Uttarakhand	26
6.	Haryana	38
7.	Delhi	14
8.	Rajasthan	64
9.	Uttar Pradesh	140
10.	Bihar	74
11.	Sikkim	8
12.	Arunachal Pradesh	16
13.	Nagaland	16
14.	Manipur	18
15.	Mizoram	16
16.	Tripura	8
17.	Meghalaya	14
18.	Assam	46
19.	West Bengal	64
20.	Jharkhand	36
21.	Odisha	49
22.	Chhattisgarh	32
23.	Madhya Pradesh	70
24.	Gujarat	50
25.	Daman and Diu	5
26.	Dadra and Nagar Haveli	5
27.	Maharashtra	66
28.	Andhra Pradesh	34
29.	Karnataka	54
30.	Goa	6
31.	Lakshadweep	5
32.	Kerala	28
33.	Tamil Nadu	58
34.	Puducherry	5
35.	Andaman and Nicobar Islands	5
36.	Telangana	20
	All India	1181

## URBAN

- (i) All cities/towns having population (Census, 2001) more than nine lakh and State/UT capitals not covered therein have been selected purposively. Price markets have been allotted to these cities/towns as per the following criteria -

Towns having Population	No. of markets allotted
9 lakh - 25 lakh	8
25 lakh - 1 crore	12
More than 1 crore	24
Remaining State/UTs capitals	4

- (ii) After selecting and allocating the markets in towns/cities, purposively (as stated above), remaining markets have been allocated to each State/ UTs in proportion to their urban population as per Census 2001. For allocation within State/UTs, remaining towns have been classified into four strata according to the population size, as given below:-

Stratum I	Remaining Class I towns (population more than 1 lakh but less than nine lakh)
Stratum II	All Class II towns (population 50000 - 1 lakh)
Stratum III	All Class III towns (population 20000 - 50000)
Stratum IV	All Class IV towns (population less than 20000)

Stratum allocation of markets has been done in proportion to the stratum population.

- (iii) Number of towns to be selected from each stratum has been decided on the basis of stratum allocation of markets. For Stratum - I and II, number of towns to be selected is based on taking four markets per town. Similarly, for Stratum - III and IV, the criteria of taking two markets per town has been adopted for determining the number of towns to be selected.

- (iv) Once the number of towns to be selected adopting the above criteria, is decided, then towns have been selected from each stratum circular systematically ensuring regional representation. In all, 310 towns have been selected covering all the States and UTs from which 1114 price quotations are to be canvassed every month. Markets allocated to a particular town have been distributed by ensuring both the geographical coverage of the selected town and the different segments of population living in the town (poor, middle and affluent). Further, markets allotted for the town have been distributed over the four weeks of a month to take into account week to week variation in prices.
- (v) State/UT-wise number of towns and urban markets selected is given in Table B below:

**Table B: Number of urban markets selected for CPI (Rural)**

S.No	Name of the State/UT	No. of selected Towns	No of allocated markets
1.	Jammu and Kashmir	11	28
2.	Himachal Pradesh	7	16
3	Punjab	7	30
4.	Chandigarh	1	12
5.	Uttarakhand	12	32
6.	Haryana	9	32
7.	Delhi	1	24
8.	Rajasthan	15	50
9.	Uttar Pradesh	18	92
10.	Bihar	11	38
11.	Sikkim	3	8
12.	Arunachal Pradesh	7	16
13.	Nagaland	7	18
14.	Manipur	7	16
15.	Mizoram	7	16
16.	Tripura	7	16
17.	Meghalaya	7	18
18.	Assam	11	28
19.	West Bengal	13	64
20.	Jharkhand	10	30
21.	Odisha	9	26
22.	Chhattisgarh	10	30

S.No	Name of the State/UT	No. of selected Towns	No of allocated markets
23.	Madhya Pradesh	16	60
24.	Gujarat	12	60
25.	Daman and Diu	2	6
26.	Dadra and Nagar Haveli	2	6
27.	Maharashtra	15	86
28.	Andhra Pradesh	9	34
29.	Karnataka	17	60
30.	Goa	7	18
31.	Lakshadweep	1	4
32.	Kerala	11	32
33.	Tamil Nadu	16	62
34.	Puducherry	4	12
35.	Andaman and Nicobar Islands	3	8
36.	Telangana	5	26
	<b>All India</b>	<b>310</b>	<b>1,114</b>