



A Brief Note
on Methodology
Adopted for Compilation
of
Wholesale Price Index (WPI)
Output Producer Price Index (OPPI)
Input Producer Price Index (IPPI)
and
Service Producer Price Index (SPPI)
with
Base Year 2022-23

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1. Introduction

1.1 Base Year revision of macro-economic indicators, including price indices, is a periodic exercise to capture structural changes in the economy. As part of this exercise, the Base Year revision of *Wholesale Price Index (WPI)* from 2011-12 to 2022-23 has been carried out to incorporate recent economic changes. The necessary steps have been taken to examine the commodity coverage, weighting diagram, compilation methodology and other related aspects of the index.

1.2 In line with practices adopted by advanced economies and the recommendations of the International Monetary Fund (IMF), there is a growing need for India to transit from *WPI* to the *Producer Price Index (PPI)*. *PPI* is a set of price indices: *Output PPI* and *Input PPI*. Availability of both the types of price indices gives better understanding of the price movements of output items vis-s-vis inputs items being used in an industry. It also explains how inflation experienced by producers on input items are passed through the output being produced. In addition, availability of both the price indices enables carrying out '*Double Deflation*¹' in estimating the *Real GDP*.

1.3 Office of Economic Adviser (OEA), Department for Promotion of Industry and Internal Trade (DPIIT) constituted a Working Group (WG) for the revision of current series of *WPI* (Base 2011-12) under Chairmanship of Prof. Ramesh Chand, the then Member, NITI Aayog to provide technical guidance for carrying out the Base Year Revision exercise. The WG constituted five sub-groups for having detailed deliberations on sector-specific issues and methodological aspects of the indices. With the extensive process of consultation with stakeholders, including different Ministries, Industry Associations, Financial Institutions, Regulators and discussion held with the members of Sub-groups and WG, the methodologies for the revised series of *WPI* and new series of *PPIs* have been finalized.

2. Selection of Base Year of WPI and PPI

¹ In Double Deflation, input and output items are deflated by Input PPI and Output PPI respectively to compute Real GVA of an industry.

2.1 Base Year of any macro-economic indicator is chosen on the basis of following criteria: it should be a normal year; reliable price data are available; and it is consistent with the Base Year of other macro-economic indicators. Considering these aspects, the Advisory Committee for National Accounts Statistics (ACNAS) recommended the financial year 2022-23 as the Base Year of the next series of *GDP, WPI, PPI, and Index of Industrial Production (IIP)*. Accordingly, the Base Year for WPI/PPI/Service PPI has been taken as 2022-23.

3. Coverage

3.1 The revised series of *WPI* and *Output PPI (Goods)* cover all representative goods transacted in the economy, whereas *Input PPI (Goods)* covers all representative goods consumed by the Manufacturing Industry. Services viz., Banking, Securities Transaction, Insurance, Management of Pension Funds, Railways, Air (Passenger), and Telecom, have been covered in the first phase of *Service PPI*, while remaining services will be covered in next phase which would use the data collected through price collection survey of sampled establishments, obtained from GSTN.

4. Item basket and Weighting diagram

4.1 The *WPI* and *PPIs* are compiled using Laspeyres price index formula, which is written as follow:

Let I^t = Price Index at the time period t ;

P_i^t = Price of item i in the **current period (t)**;

P_i^0 = Price of item i in the **base year**;

Q_i^0 = Quantity of item i in the **base year**

$$I^t = \frac{\sum_{i=1}^n P_i^t Q_i^0}{\sum_{i=1}^n P_i^0 Q_i^0} \times 100$$

$$= \frac{\sum_{i=1}^n \frac{P_i^t}{P_i^0} * P_i^0 Q_i^0}{\sum_{i=1}^n P_i^0 Q_i^0} \times 100$$

$$\sum_{i=1}^n w_i^0 \frac{P_i^t}{P_i^0} \times 100$$

$$\text{where } w_i^0 = \frac{P_i^0 Q_i^0}{\sum_{i=1}^n P_i^0 Q_i^0} \dots \dots \dots (1)$$

$$= \sum_{i=1}^n w_i^0 \times I_i^t$$

where $I_i^t = \frac{P_i^t}{P_i^0}$ i. e. item or elementary index of *i*th item in time period *t*

4.2 From the above formula, it may be seen that item-wise weight represents their relative importance in the basket of the Price Index. It is the share of the value of an item in the total value of the basket. Selection of items and preparation of *Weighting Diagram* move together. The item basket should be of optimum size. On one hand, too large size of basket may lead to reluctance on the part of price reporting units/establishments; on the other hand, small size of basket would compromise on completeness. Therefore, a concept of representativeness is used to decide the optimum size of the basket. Under this concept, a benchmark or cut-off is used to decide the size of the basket and then item-wise shares of values are assigned as their respective weights.

4.3 In the revised series of *WPI*, weights of items have been prepared on the basis of *Gross Value of Output (GVO)*. This is an improvement on the existing series of *WPI* (with Base Year 2011-12), in which the weights are based on *Net Traded Value i.e. GVO+Net Imports*. It is suggested in the IMF manual that the value aggregate from the national accounts framework that aligns with the *basic price* received by the producer of goods and services is the value of production. Therefore, the best approach would be to have value of production weights at *basic prices* for all levels of index aggregation. In the *Net Traded Value* approach, on one hand, goods imported in large quantities/volumes may have higher weight even if -their domestic production is low; on the other hand, goods produced in large quantities/volumes may have lower weight if a significant portion of their output is exported. Also, there are significant challenges in item-level mapping of production and trade data because of non-

availability of one-to-one correspondence between *National Product Classification of Manufactured Product (NPCMS)* and *Harmonized System of Nomenclature (HSN) Codes*.

4.4 The GVO estimates² for the year 2022-23, from revised series National Accounts (*i.e.* with Base Year 2022-23) have been used for compilation of weights. Wherever the GVO estimates are not available at the desired level of disaggregation from National Account Statistics (NAS); the additional sources—such as information from the concerned administrative Ministries/agencies and survey data like Annual Survey of Industries (ASI) etc. have been used in splitting the respective group/sub-group weights to arrive at item-wise weights. A comparison of weights in different Major Groups of WPI of existing series and revised series is given below:

Major Group	Weights	
	WPI (2011-12)	WPI (2022-23)
Primary Articles	22.62	22.76
Fuel & Power	13.15	14.11
Manufactured Items	64.23	63.13
Total	100.00	100.00

Note: Prices of 'Primary Articles' has increased about 77% from 2011-12 to 2022-23 whereas that for 'Manufactured Items' has increased only about 43% during the same period. This has led to reduction in weights of 'Manufactured Items'. Further, Crude Oil & Natural Gas has been moved from 'Primary Articles' in WPI (2011-12) to 'Fuel & Power' in the WPI (2022-23). Coal is already part of 'Fuel & Power' since WPI (2011-12) series.

4.5 For *Output PPI (Goods)* and *Input PPI (Goods)*, weights have been computed using the *Supply and Use Tables (SUT)* for the year 2022-23. For *Output PPI (Goods)*, *Total Supply (Output) at Basic Prices* vector from the *Supply Table* has been used, while for *Input PPI (Goods)*, *Inter-Industry Consumption or Intermediate Consumption (IC)* matrix from the *Use Table* has been used for compiling weights. At item level, the weights have been computed by splitting *SUT* commodities weights to different items

² GVO Estimates at disaggregated level of industries (the level up to which GVO is published in National Accounts Statistics) was provided by MoSPI

using their respective value of output/input. Weights of major groups of *Output PPI (Goods)* is given below:

Major Group	Weights
	<i>Output PPI (Goods)</i> (2022-23)
Agriculture, Forestry and Fishing	22.16
Mining and Quarrying	3.42
Manufactured Items	69.93
Electricity	4.49
Total	100.00

Note:

1. Manufacture of Petroleum Products i.e. Mineral Oils, a Group under 'Fuel & Power' in WPI, is covered under 'Manufactured Items' in Output PPI.
2. The groups viz., Coal and Crude Oil & Natural Gas, of 'Fuel & Power' in WPI, are covered under 'Mining and Quarrying' in Output PPI.

4.6 In the case of *Service PPI*, no weights are being assigned, since the seven services are not covering entire service sector. Accordingly, indices of the seven services namely, Banking, Securities Transaction, Insurance, Management of Pension Funds, Railways, Air (Passenger), and Telecom Service would be released without their respective weights.

4.7 For selection of items, following method has been adopted:

- a. In the Manufacturing sector, the standard procedure has been followed (as adopted in the earlier series), *i.e.*, items falling in the category of top 80% contributor to the *GVO* in respective Industry at *National Industrial Classification (NIC)*-3-digit class [on the basis of ASI 2022-23 data], have been selected in the basket. Many items, having the same *NPCMS codes*, occur in different *NIC* 3-digit classes. In such cases, *NPCMS code* with maximum value of output is retained in the respective *NIC* 3-digit class to make the item unique in the item

list. Similar selected *NPCMSs*, in Manufacturing sector, have been merged together to form an item, following the existing practice of *WPI*.

- b. In other major groups, viz., Primary Articles and Fuel & Power, items are selected mainly on the basis of relevance and the recommendations of the concerned Sub-Groups.
- c. An additional benchmark criterion – a minimum share of 0.01% in the overall *GVO* of the basket – has been taken to include those items, proposed by stakeholders, which do not meet the standard criterion of top 80% contributor to the *GVO* in respective *NIC-3-digit* class. However, the aforementioned criterion was relaxed in some cases by the respective Sub-Groups.

4.8 Thus, there are 957 items in the basket of the new series of *WPI* as against 697 items in the current series. A comparison of number of items in different Major Groups of *WPI* of existing and revised series is given below:

Major Group	No. of Items in	
	WPI (2011-12)	WPI (2022-23)
Primary Articles	115	129
Fuel & Power	18	25
Manufactured Items	564	803
Total	697	957

4.9 Procedure followed for item selection for *WPI* (as mentioned at para 4.7 above) has been followed for *Output PPI (Goods)* as well. Here, the selected *NPCMS*, in Manufacturing sector, has been kept as *Elementary Item* (unlike in *WPI*, where similar selected *NPCMSs*, in Manufacturing sector, have been merged together to form an item). Similar approach has also been followed for *Input PPI (Goods)*. In place of *GVO*, *Gross Value of Input* to Manufacturing sector has been used in selection of items for *Input PPI (Goods)*. The only difference in the procedure for *Input PPI (Goods)* is that the items are not made unique at *NIC 3 Digit* class [as has been done for *WPI* and *Output PPI (Goods)*], since the same item may be used as input in multiple industries for producing different outputs. Further, the additional benchmark criterion is not

applicable since there was no suggestion for inclusion of extra items in *Input PPI (Goods)* basket.

5. Selection of Item Specifications

5.1 Three criteria, considered for fixing item specification, are: representative/most common variety/grade/model, availability of price data for maximum months throughout the year, and reasonable demand in the market.

6. Types of Prices

6.1 *Basic Price*³ is collected for *WPI* and *Output PPI (Goods)*. Accordingly, the prices tracked are ex-factory price for manufactured products, ex-mine prices for minerals, ex-storage/ex-bottling price for mineral oils and agri-market (mandi) price for agricultural commodities. Further, *Minimum Support Price (MSP)* has not been included, as it is a notional price and its impact is already reflected in the mandi prices. Prices from captive mines have been excluded, except for Zinc, Lead and Copper. In the case of Coking and Non-coking coal, auction prices as well as notified prices are taken for computation of the indices of revised series, as against only notified prices in the current series of *WPI*.

6.2 For *Input PPI (Goods)*, *Purchaser's Price*⁴ (without GST) is collected. This includes the domestic as well as import prices since some of the input items are directly imported by industrial establishments.

7. Price Collection

7.1 For *WPI*, *Output PPI (Goods)* and *Input PPI (Goods)*, a dedicated web-portal has been developed to help data sources to submit data online, carry multi-level validation, scrutiny, and day-to-day monitoring. Monthly price data from April 2022

³ The basic price is the amount receivable by the producer from the purchaser for a unit of a good or service produced minus any tax payable on that unit as a consequence of its production or sale (i.e., GST), and plus any subsidy receivable on that unit as a consequence of its production or sale.

⁴ The amount paid by the purchaser, excluding any deductible VAT (one similar deductible tax viz. GST), in order to take delivery of a unit of a good or service at the time and place required by the purchaser. The Purchaser's price of a good includes any transport charges paid separately by the purchaser to take delivery at the required time and place.

onwards have been collected through data sources under various Ministries/Departments and from factories (through price collection survey conducted by Field Operations Division, National Statistics Office, M/o Statistics and Programme Implementation). In the case of *Output PPI (Goods)*, prices from Export Oriented Unit (EOU) have also been collected.

7.2 Data for services is provided by the concerned Ministry/Regulator/selected service providers (Insurance companies). In case of Air (Passenger) Service and Telecom Service, the data is collected from the website of the selected service providers.

7.3 The list of data sources is given below:

Data Sources for WPI/Output PPI (Goods)/Input PPI (Goods)

Major Group	Group	Data Sources
Primary Articles	Food and Non-food	Ministry of Agriculture & Farmers Welfare and other sources
	Minerals	Indian Bureau of Mines
		Indian Rare Earths Ltd.
		State Governments
Fuel & Power	Coal	Coal India Limited, M/o Coal
		Singareni Collieries Company Limited, M/o Coal
		Gujarat Mineral Development Corporation Limited
	Mineral Oils	Oil & Gas CPSEs under administrative control of M/o PNG
	Electricity	Central Electricity Authority, M/o Power
		Solar Energy Corporation of India Limited, M/o New and Renewable Energy
		Nuclear Power Corporation of India Limited, D/o Atomic Energy
Crude Petroleum and Natural Gas	Oil & Gas CPSEs under administrative control of M/o PNG, Sun Petrochemical Pvt. Ltd., Vedanta Ltd.	

Major Group	Group	Data Sources
Manufactured Products	Items related to Manufacturing	Concerned factories (<i>through price collection survey done by Field Operations Division, NSO, MoSPI</i>)
		Ministry of Railways
		Joint Plant Committee, M/o Steel
		Directly from factories in the case of very few items.

Data Sources for Services PPI

Service	Data Source
Banking Service	Reserve Bank of India*
Securities Transaction Service	Securities Exchange Board of India*
Pension Fund Management Service	Pension Fund Regulatory and Development Authority
Insurance Service	Insurance Companies
Railway Service	M/o Railways
Telecom Service	Data is collected from website of respective service providers
Air (Passenger) Service	

* RBI and SEBI provide compiled Banking Service Price Index and Banking Service Contribution Index; and STPI respectively.

8. Compilation of Indices

8.1 WPI: Elementary/Item indices have been compiled by adopting short-term formulation using chain-based Jevons⁵ method as against the long-term formulation method being used in the current series. It is pertinent to mention here that both the approaches result in same index number but the new method is preferred as it simplifies the computation process and eliminate the need to revise the base price in case of permanent substitution or specification change as required in the long-term formulation method. In the case of non-response or missing data, 'Targeted Mean Imputation' method is used to impute missing prices as compared to the 'Carry-forward' method of the last reported price, being followed in the current series. 'Targeted Mean

⁵ In Jevons formula, geometric mean of the price relatives is taken

Imputation' is an internationally recommended methodology in which, current month's missing price of a particular quotation of an item is imputed by multiplying the previous month price of that quotation with the geometric mean or average of price change ratios (current month price divided by previous month price) of available quotations of that item. An illustration of compilation of elementary indices using Short-term formulation and Long-term formulation method is given below:

Illustration 1: Computation of Elementary Index

Consider an item A, with seven quotations (A1, A2,...A7). The base year price (T0) for each quotation is available. Further, the quotation wise prices for period T1, T2 and T3 are given as under:

Table 1

Item	Quotations	Base Year Price	Prices		
		T0	T1	T2	T3
A	A1	10	11	22	28
A	A2	12	18	44	8
A	A3	15	29	11	33
A	A4	25	32	45	31
A	A5	30	26	38	35
A	A6	18	18	45	24
A	A7	26	37	40	18

There are two methods for computing the elementary index: - (i) Long Term Formulation Method, and (ii) Short Term Formulation Using Chain Base Method.

(i) Long Term Formulation Method:

In Long term formulation method, *Price Relative (PR)* is computed for each quotation as a ratio of current month price to its base year price. Each *PR* is multiplied by 100 to get the index of the quotation of the month. The geometric mean of indices of all the quotations in a month is the item index/elementary index.

For example, to compute the elementary index of item A in period T3, we first calculate the indices of all the quotations in period T3 as under:

$$\begin{aligned} \text{Index of quotation A1 in period T3} &= \text{PR of A1 in T3} \times 100 \\ &= \frac{\text{Price of A1 in T3} \times 100}{\text{Price of A1 in T0}} = \frac{28}{10} \times 100 = 280 \end{aligned}$$

Similarly, indices of other quotations are computed and are given in column (9) of the Table 2.

The Index of Item A i.e. Elementary Index in period T3

$$\begin{aligned} &= \text{Geometric Mean of Indices of A1, A2,..... A7 (Jevon's formula)} \\ &= \text{G.M. (280, 66.7, 220, 124....69.2)} \\ &= 127.5 \end{aligned}$$

Table 2

Item	Quota Tion	Base Price	Prices			Index using Long Term Formulation		
			T0	T1	T2	T3	T1	T2
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
A	A1	10	11	22	28	110.0	220.0	280.0
A	A2	12	18	44	8	150.0	366.7	66.7
A	A3	15	29	11	33	193.3	73.3	220.0
A	A4	25	32	45	31	128.0	180.0	124.0
A	A5	30	26	38	35	86.7	126.7	116.7
A	A6	18	18	45	24	100.0	250.0	133.3
A	A7	26	37	40	18	142.3	153.8	69.2
Index of Item A						126.0	175.8	127.5

(ii) Short term Formulation Using Chain Base Method

In this method, index of a quotation is computed as a ratio of current month price to the previous month price and is then multiplied with the Index of previous month. The geometric mean of indices of all the quotations in a month is the item index/elementary index.

For example, to compute the elementary index of item A in period T1, we first calculate the indices of all the quotations in period T1 as under:

$$\text{Index of quotation A1 in period T1} = \frac{\text{Price of A1 in T1} \times \text{Index of A1 in T0}}{\text{Price of A1 in T0}}$$

(Index of each quotation in the base year i.e. T0 is 100)

$$= \frac{11}{10} \times 100 = 110$$

Similarly, indices of other quotations are computed and are given in column (7) of the Table 3.

The Index of Item A i.e. Elementary Index in period T1

$$= \text{Geometric Mean of Indices of A1, A2,..... A7}$$

$$= \text{G.M. (110, 150, 193.3,142.3)}$$

$$= 126.0$$

Elementary Index of item A in period T2

$$\text{Index of quotation A1 in period T2} = \frac{\text{Price of A1 in T2} \times \text{Index of A1 in T1}}{\text{Price of A1 in T1}}$$

$$= \frac{22}{11} \times 110 = 220$$

Indices of other quotations are computed and are given in column (8) of the Table 3.

Elementary Index of A = Geometric Mean of Indices of A1, A2,..... A7

$$= \text{G.M. (220, 366.7, 73.3,....153.8)} = 175.8$$

Table 3

Item	Quota Tion	Base Price	Prices				Index using Short Term Formulation		
		T0	T1	T2	T3	T1	T2	T3	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	
A	A1	10	11	22	28	110.0	220.0	280.0	
A	A2	12	18	44	8	150.0	366.7	66.7	
A	A3	15	29	11	33	193.3	73.3	220.0	
A	A4	25	32	45	31	128.0	180.0	124.0	
A	A5	30	26	38	35	86.7	126.7	116.7	
A	A6	18	18	45	24	100.0	250.0	133.3	
A	A7	26	37	40	18	142.3	153.8	69.2	
Index of Item A						126.0	175.8	127.5	

Result: The index values computed using Long term formulation and Short term formulation using chain base method, are same.

Further, illustration for imputing missing prices is given below:

Illustration 2: Imputation of temporarily Missing Prices using Targeted Mean Imputation Method

Suppose there are three quotations of item A – A1, A2 and A3 with following price in the month of Jan, Feb and March.

Quotations of an Item A	Base Price	Price for the Month		
		Jan	Feb	Mar
A1	44	50	54	60
A2	42	40	42	47
A3	64	60	66	Missing Price

The price of A3 is missing in March, then imputed price will be computed as under:

Imputed Price for A3 for Mar

= Last month's price of A3 X Geometric mean of ratio (current month to last month's price) based on quotations having price

$$= 66 \times \left[\left\{ \left(\frac{47}{42} \right) \times \left(\frac{60}{54} \right) \right\}^{1/2} \right] = 73.6$$

8.2 Output PPI (Goods): The elementary indices (Item/NPCMS-wise) are compiled using the short-term formulation using chain-based Jevons method and aggregated using weighted arithmetic mean to arrive at SUT Commodity level indices and Industry-wise indices. Treatment of missing prices will be carried out similar to that in the WPI.

8.3 Input PPI (Goods): Industry-wise elementary indices (NPCMS-wise) are compiled using the short-term formulation using chain-based Jevons method. These are then aggregated to arrive at Industry-wise SUT Commodities indices, which are further aggregated to arrive at Industry-wise Input PPI (Goods)s. Treatment of missing prices will be carried out similar to that in the WPI.

8.4 Service PPI: The elementary indices are compiled for sub-services using short term chain based Jevons method and aggregated using weighted arithmetic mean (i.e

Laspeyres Index formula) to arrive at the index for a Service. Brief of the methodologies in respect of seven services, namely, Banking, Securities Transaction, Insurance, Management of Pension Funds, Railways, Air (Passenger), and Telecom Service have been given in **Annexure**.

9. Linking Factor for WPI

9.1 Linking Factor is computed as the ratio of the Geometric Means of the twelve-month indices of the old series and revised series for the latest overlapping financial year, provided the said year is a normal year. The normalcy of a year has been determined on the basis of coefficient of variation (CV) of twelve-month indices. The overlap year having minimum CV is used for computing the linking factor. The linking factor for 'All Commodities' and three major groups will be made available to the users.

Methodology for Compilation of Banking Service Price Index and Banking
Service Contribution Index

1. Product Basket of Banking Service Price Index (BkSPI)

The index with base year 2022-23 will comprise of two sub-indices – Direct and Intermediation. There are 24 types of services covered under Direct services and 11 under Intermediation services. These list of these services are given at Table below:

Category	Type of Service
Direct Services	<ul style="list-style-type: none"> i. Issue of Demand Draft ii. Inland Bill Collection iii. Foreign Bill Collection iv. Inland Cheque Collection v. Foreign Cheque Collection vi. Export L/C advised vii. Inland L/C opened viii. Import L/C opened ix. Forward Contracts x. TC & other Foreign Exchange Services xi. Bank Guarantees xii. NEFT-Outward xiii. RTGS-Outward xiv. IMPS Outward xv. ATM/Debit Card Business xvi. Credit Card Business xvii. Prepaid Card xviii. D-MAT Account xix. Loan Processing Charges xx. Insurance Service Commission xxi. Locker Rent xxii. Commission on Mutual Fund xxiii. SMS Alert facility charges xxiv. Cash Handling Charges (cash deposits, withdrawal etc.)
Intermediation Services	Loans <ul style="list-style-type: none"> i. Agriculture

Category	Type of Service
	<ul style="list-style-type: none"> ii. Industry - Mining and quarrying/ Manufacturing and processing/ Electricity, gas and water/ Construction iii. Transport iv. Professional and other services v. Personal Loans - Housing Loans/ Loans for purchase of consumer durables/ Other personal loans vi. Trade vii. Finance viii. Others
	Deposits <ul style="list-style-type: none"> i. Current Account ii. Saving deposits iii. Terms Deposits - Upto 90 days/ 91 days & above but less than 6 months/ 6 months & above but less than 1 year/ 1 year & above but less than 3 years/ 3 years & above but less than 5 years/ 5 years & above

2. Weights of Banking Service Price Index

For direct services, the weighting diagram is compiled based on total revenue generated through charge fees, commissions, brokerage etc., during the base year 2022-23. The weights for the direct services are derived based on the percentage share of the fee of the respective service in the aggregate fee of all direct services.

The weighting diagram for intermediation services is derived from the industry-wise share in the amount outstanding for Credits and Deposits as available in Basic Statistical Returns (BSR) system of the RBI for the financial year 2022-23.

3. Prices

For Direct services, price is the fees/commissions/ brokerage charged by the banks per unit of transaction.

For intermediation services, prices are not directly measurable and are defined in terms of a reference price or the opportunity cost and is calculated separately for loans and deposits using the following formulae:

$$\text{Price for Loan servicing (\%)} = \text{lending rate (\%)} - \text{Reference rate (\%)}$$

$$\text{Price for Deposit servicing (\%)} = \text{Reference rate (\%)} - \text{deposit Interest rate (\%)}$$

The reference rate for the BkSPI is the harmonic mean of the average of deposit interest rates (excluding the current account deposit component) and the average of the lending rates as reported by the reporting banks.

4. Data Source

The index with revised base 2022-23 is constructed from data provided by 31 banks (10 are public sector banks, 4 are private banks, 3 foreign banks, 1 small finance bank, 3 regional rural banks and 10 urban cooperative banks). The Index is compiled by RBI and provided to OEA, DPIIT.

5. Compilation of Banking Service Price Index (BkSPI)

BkSPI may be compiled using Laspeyres Formula as,

$$BkSPI = W_a * I_t^a + W_b * I_t^b$$

Where W_a and W_b are the proportions of direct services and intermediation services in total services respectively;

I_t^a is the Index for Direct service compiled as:

$$I_t^a = \sum_i \frac{P_{it}^a}{P_{i0}^a} * w_i * 100$$

where,

P_{it}^a is the average price of i^{th} direct service for month 't';

w_i is the weight of i^{th} direct service calculated as the proportionate fee income in the base year;

P_{i0}^a is the price of i th direct service in the base period.

I_t^b is the index for intermediation services

$$I_t^b = W_L * I_t^L + W_D * I_t^D$$

where, W_L is weight of loans calculated from the proportionate volume of loans to the total business (deposits including loans) and I_t^L is the Loan Price Index for month 't'.

Similarly, W_D is weight of deposits calculated from the proportionate volume of deposits to the total business (deposits including loans) and I_t^D is the Deposit Price Index for month 't'.

The loan and deposit price indices are then compiled as:

$$I_t^L = \sum_i \frac{\max(P_{it}^L - R_t, 0)}{\max(P_{i0}^L - R_0, 0)} * w_i * 100;$$

$$I_t^D = \sum_i \frac{\max(R_t - P_{it}^D, 0)}{\max(R_0 - P_{i0}^D, 0)} * w_i * 100$$

where, P_{it}^L is average interest rate of i th loan item for month 't'

P_{i0}^L is average interest rate of i th loan item at base period

P_{it}^D is average interest rate of i th deposit type for month 't'

P_{i0}^D is average interest rate of i th deposit type at base period

R_t and R_0 are the reference rates at time t and base period, respectively.

w_i is the weight of i th loan/deposit item calculated as the proportionate volume of loan/deposit in each item category.

6. Banking Service Contribution Index (BkSCI)

Prices of direct services are reported by the banks for each category as given at Table at para 1 above. However, as there is no direct price available for intermediation services provided by the banks, the common practice is to estimate the cost through Financial Intermediation Service Indirectly Measured (FISIM) method for such

intermediation services in terms of providing loans to meet the credit demand of the customers through channelizing customers' deposits. As the target is to compile a price index, the estimations of FISIM for loans and deposits are not formed as a part of this activity. The differences between lending rate and deposit rate from the reference rate are sufficient to arrive at the price index of the intermediation services.

It is evident that inflation is a major driver for making interest rate (policy rate) decision by the central banks. It is argued in monetary transmission theory that impact of the policy rate change by the central banks gets transmitted to the lending as well as to deposit rates, but with a lag. Moreover, researchers have established through empirical evidence, that the transmission in India has improved in the recent past. However, to capture the change in price of intermediation services more accurately, an Implicit Price Deflator (IPD) has been derived by RBI, which is the ratio of the loans and deposits for current year vis-à-vis the base year, to compute a Banking Service Contribution Index (BkSCI).

Compilation of Banking Service Contribution Index

BkSCI is be compiled as,

$$BkSCI = W_a * I_t^a + W_b * I_t^c$$

BkSCI differ from BkSPI only in terms of computation of Index for Intermediation services (I_t^c), where

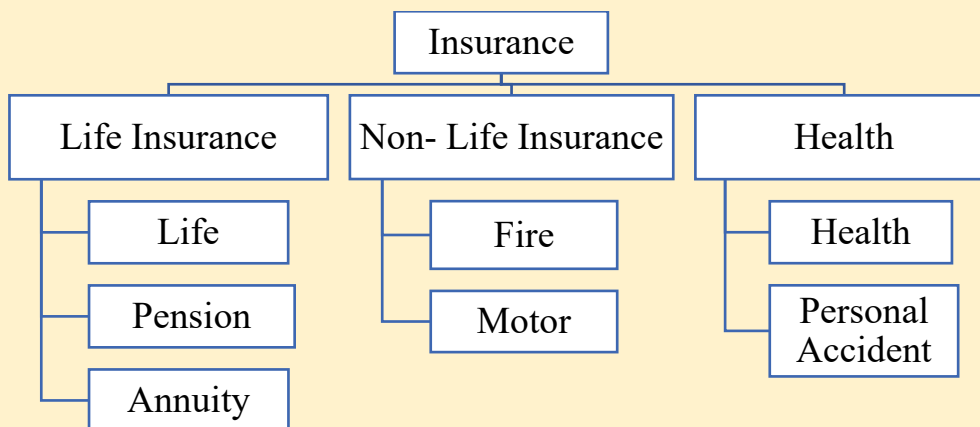
$$I_t^c = I_t^L * IPD_t^L * W_L + I_t^D * IPD_t^D * W_D$$

IPD_t^L is the implicit price deflator for loans and IPD_t^D is the implicit price deflator for deposits. These deflators are the ratio of the volumes of loans/deposits (as the case may be) for the current year in comparison to base year.

Methodology for Compilation of Insurance Service Price Index

1. Product Basket of Insurance Service Price Index

The product basket of insurance services has been grouped into three sub-indices based on broad insurance businesses: **Life Insurance Business, Non-Life Insurance Business and Health Insurance Business** for the compilation of Insurance Service Producer Price Index. Each business is then further disaggregated into popular segment under it. The categorisation of each business is given below:



In the compilation of sub-index for Life insurance Business is based on Individual products and excludes Group insurance products.

2. Weights for Insurance Service Price Index

Weight to a particular insurance business (Life, Non-Life & Health) has been assigned as per its share of premium to the aggregate premium in the base year 2022-23. The weight of each business is apportioned to its segments based on their respective share in the overall premium of the relevant business.

3. Price

The prices will be derived using the premium and the rate of return on investment. Segment-wise price is given in the Table below:

Business	Segment	Price
Life Insurance	Life	Premium per unit X (1+Rate of Return on invested portion of premium)
	Annuity	
	Pension	
Non-Life Insurance	Fire	
	Motor	
Health	Health	Average Premium Per Life X (1+Rate of Return on invested portion of premium)
	Personal Accident	Average Premium Per Lac of Sum Insured

4. Data Source

The price data for compilation of Index is sourced from Insurance Companies selected for each segment in the three lines of businesses.

5. Compilation of Insurance SPI

Insurance Service Price Index is compiled using Laspeyres formula which has two stages: compilation of elementary indices and compilation of aggregate indices. The elementary indices are compiled using Jevons formula i.e. taking the geometric mean of the price relatives using short term formulation.

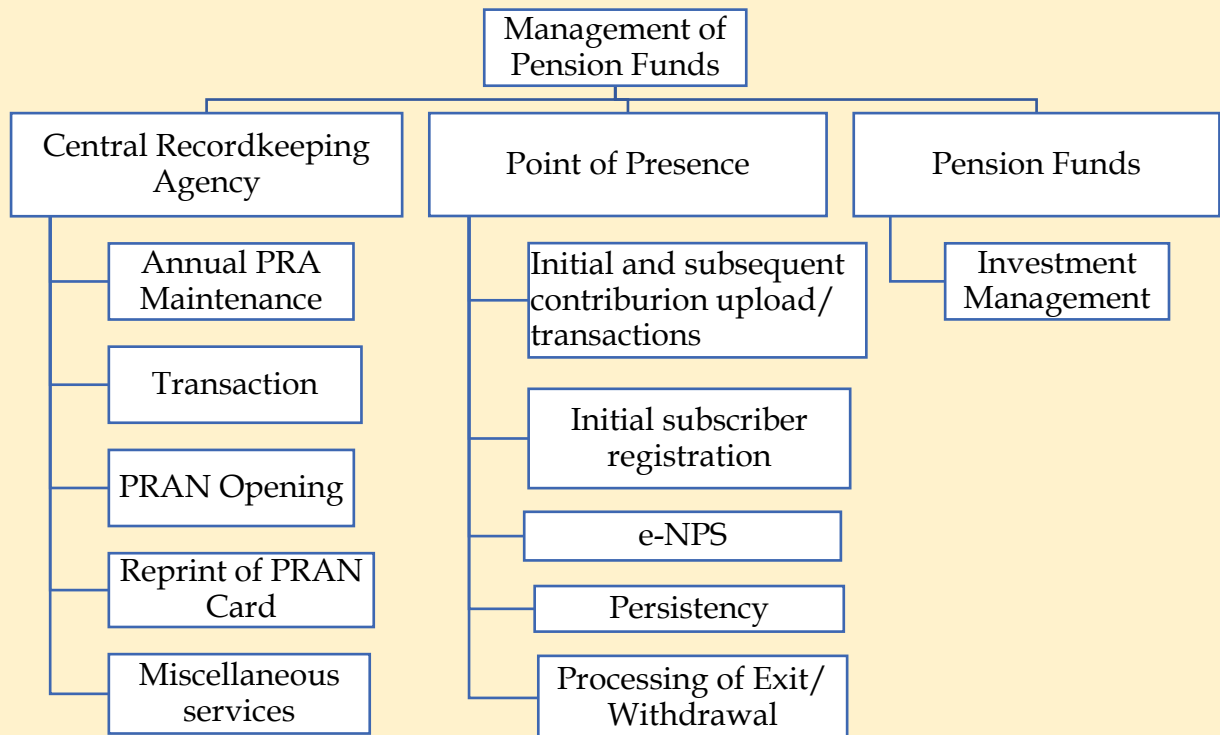
The aggregate/ higher level Index is computed as weighted average of the elementary price indices using Arithmetic Mean.

Methodology for Compilation of Management of Pension Service Price Index

1. Product Basket of Pension Fund Service Price Index

The product basket of the index consists of the services rendered by three major intermediaries – Central Record Keeping Agency (CRA), Point of Presence (PoP) Banks and Pension Funds – under PFRDA. CRA is responsible for maintaining records centrally, administering accounts, and handling customer service for subscribers. Point of Presence (PoP) are the authorized entities such as the banks, financial institutions etc. that act as the first point of interaction for registration, KYC, and contribution collection and are responsible for transmitting subscriber data to the CRA. Pension Funds are PFRDA-appointed entities – such as SBI, LIC, and UTI – that invest subscriber contributions in various asset classes (Equity, Corporate Bonds, Government Securities) based on the chosen strategy.

Services offered by each of the above intermediaries and included in the compilation of index are depicted in the figure below:



2. Weights for Pension Fund Service Price Index

Weights to the intermediaries have been assigned as per their respective share of revenue in the aggregate revenue earned by CRA, PoP and Pension Funds in the base year 2022-23.

The weight to the services under each intermediary has been calculated as the share of revenue of each service to the aggregate revenue of the respective intermediary in the base year 2022-23.

3. Price

For CRA, Annual PRA maintenance cost per account, charge per transaction, PRAN opening Charges, Charge for reprint of PRAN Card, Charge for miscellaneous services (request for physical card, reissue of IPIN/TPIN, Downgrading and Upgrading) comprise the price. In case of PoP, charges for uploading of initial and subsequent contribution, initial subscriber registration, e-NPS, Persistency and Processing of Exit/ Withdrawal have been considered. For Pension Funds, the per subscriber fee charged for Investment management has been taken as the price.

Details of prices used for each service of intermediaries is as under:

Intermediaries	Service	Prices
Pension Funds	Investment Management	Revenue per subscriber
Central recordkeeping Agency (CRA)	Annual PRA Maintenance	Quarterly charges available for sub-charges under each charge head.
	Transaction	
	PRAN Opening	
	Reprint of PRAN Card	
	Miscellaneous Services	
Point of Presence (PoP)	Initial and subsequent contribution upload/ transactions	Financial services: Median of minimum and maximum charge, Median of 0 and maximum charge

Intermediaries	Service	Prices
		where minimum charge was missing. Non-Financial services: quarterly charge.
	Initial subscriber registration	Median of minimum and maximum charge, Median of 0 and maximum charge where minimum charge was missing.
	e-NPS (for subsequent contribution)	Median of minimum and maximum charge; Median of 0 and maximum charge where minimum was missing.
	Persistency	Fixed charge per annum.
	Processing of Exit/Withdrawal	Median of minimum and maximum charge, Median of 0 and maximum charge where minimum was missing.

4. Data Source

Price data for compilation of Pension Funds Service Price Index is sourced from PFRDA.

5. Compilation of PFSPI

Pension Funds Service Price Index is compiled using Laspeyres formula which has two stages: compilation of elementary indices and compilation of aggregate indices. The elementary indices are compiled using Jevons formula i.e. taking the geometric mean of the price relatives using short term formulation.

The aggregate/ higher level Index is computed as weighted average of the elementary price indices using Arithmetic Mean.

Methodology for Compilation of Securities Transaction Service Price Index

1. Product Basket of STPI (base year 2022-23)

The STPI with base 2022-23 will consists for sub-indices for Primary Market, Secondary Market and Asset Management Activities. The classification for each of these sub-indices is given below:

Market	Segment	Sub-Segment
Primary Market	Equity	<ul style="list-style-type: none">i. Mainboard Public Issues (IPO and FPO)ii. SME Public Issues (IPO and FPO)iii. Rights Issueiv. QIPs
	Debt	<ul style="list-style-type: none">i. Debt Public Issuesii. Debt Private Placement
Secondary Market	Exchange	<ul style="list-style-type: none">i. Cashii. Currency Derivatives (CDS)iii. Futures and Options (F&O)iv. Interest Rate Derivatives (IRD)v. Commodity Derivatives (CD)
	Depository Participant	Depository Charges
Asset Management	Mutual Fund	<ul style="list-style-type: none">i. Close Endedii. Intervaliii. Open Ended
	Portfolio Management Services	<ul style="list-style-type: none">i. Advisoryii. Discretionaryiii. Non-discretionary
	Alternate Investment Fund	

2. Weights of Securities Transaction Price Index

Weights for each sub-segment/segment are assigned based on average annual revenue generated in each sub-segment/segment during three years keeping the base year in middle (presently being revised to 2022-23), viz. average revenue generated during 2021-22, 2022- 23 and 2023-24. The average revenue of all the three years is taken considering the dynamic nature of the securities market and to ensure that the index represents all the segments in correct proportion.

$$\text{Average Revenue} = (\text{Sum of three-year revenue}) / 3$$

$$\text{Weights} = Y_i / Z$$

where Z is the total average revenue and Y_i is the average revenue of i^{th} segment/sub-segment.

3. Prices

- a. Cost of Primary market services is calculated as per total issue related expenses as a percentage of the total issue size.
- b. Cost for Secondary market is computed as transaction cost per unit of turnover for different sub-segments under this activity.
- c. Cost for asset management activity is measured as total expenses as percentage of asset under management or the corpus on which the expenses are charged.

4. Data Source

The index with revised base 2022-23 is constructed from data provided by exchanges i.e. BSE, NSE, MCX and NCDEX; Security Depositories - CDSL, NSDL; Mutual/Investment Funds, Portfolio Managements. The Index is compiled by SEBI and provided to OEA, DPIIT.

5. Compilation of Securities Transaction Price Index

The sub-segment Transaction Price Index is computed based on short term chain method. Transaction Price Index (TPI) of sub-segments are aggregated using weighted average to compute the TPI of respective segments (viz. Primary Market

TPI, Secondary Market TPI and Asset Management TPI). If there is further segregation of sub-segments based on products, then the TPI of product is computed and subsequently aggregated (weighted average) to determine the TPI of the respective sub-segments. TPI of three segments are aggregated using weighted average to compute the Securities Transaction Price Index (STPI). Segment-wise index compilation methodology is as under:

(i) Primary Market (PMTPI)

Primary market TPI is classified into two sub-segments: Equity and Bond/Debt. Following primary market related costs are taken into consideration for calculating STPI

- Lead Manager Fee;
- Selling and Brokerage Commission;
- SCSB Processing Fee,
- Printing and Stationery Costs;
- Advertising and Marketing Expenses;
- Registrar Fees;
- Legal Counsel Fees;
- Auditor Fees;
- Listing Fees;
- SEBI Fees,
- Other Miscellaneous Expenses.

Per unit expense (X) is calculated for each product/sub-segment using formula;

$$\text{Per Unit Expense (X)} = \frac{\sum \text{Issue related Expense}}{\sum \text{Issue Size}} * 100$$

X for base year is computed by taking geometric mean of per unit expense of four quarters of 2022-23.

Transaction Price Index (TPI) is computed using Laspeyres formula, for Mainboard issues, SME issues, QIPs, Rights issue and Debt Issue. TPI for Mainboard

issues, SME issues, QIPs and Rights issue are aggregated (weighted average) to compute Equity TPI.

Moreover, Equity TPI and Bond/Debt TPI are aggregated using weighted average to compute the Transaction Price Index for primary market (PM-TPI).

(ii) Secondary Market (SMTPI)

Secondary market TPI has two sub-segments: Stock exchange and Depository. Following costs associated with secondary market transactions are considered for calculation of STPI –

- Brokerage Charge;
- Clearing Member Charges;
- Exchange Delivery Charges;
- Exchange Fee;
- SEBI Turnover Fee.

Per unit expense (X) is calculated for each product/sub-segment using formula;

$$\text{Per Unit Expense (X)} = \frac{\sum \text{Total transaction Cost}}{\sum \text{Client Turnover}} * 100$$

Per unit expense X for Depository;

$$\text{Per Unit Expense (X)} = \frac{\sum \text{Transaction Charges}}{\sum \text{No. of Transactions (Debit Side)}} * 100$$

X for base year is computed by taking geometric mean of per unit expense of four quarters of 2022-23.

Similarly, Transaction Price Index (TPI) is computed using Laspeyres formula for Cash Segment, Equity- Futures and Options, Currency Derivatives, Interest Rate Futures, Commodity Derivatives and Depository. TPI for Cash Segment, Equity-Futures and Options, Currency Derivatives, Interest Rate Futures and Commodity Derivatives are aggregated (weighted average) to compute Stock Exchange TPI. Stock

exchange TPI and Depository TPI are aggregated using weighted average to compute the Transaction Price Index for secondary market (SM-TPI).

(iii) Asset Management (AMTPI)

Asset management TPI has three sub-segments: Mutual funds, Portfolio Management Service and Alternate Investment Fund.

a. Mutual Fund TPI (MTPI)

Mutual Fund TPI is segregated based on schemes into Close-ended, Interval and Open-ended. Total expense ratio (TER) excluding brokerage is considered for STPI calculation. *(Brokerage is not included, as it has already been considered in the calculation of SMTPI)*

Per unit expense (X) is calculated for each scheme using formula;

$$\text{Per Unit Expense (X)} = \frac{\sum \text{Total Charges (other than brokerage)}}{\sum \text{Average AUM for the quarter}} * 100$$

X for base year is computed by taking geometric mean of per unit expense of four quarters of 2022-23.

$$\text{Average AUM for the Quarter} = \sum (\text{daily AUM}) / \text{no. of days}$$

Transaction Price Index (TPI) is computed using Laspeyres formula, for close-ended, interval and open-ended. TPI for close-ended, interval and open-ended are aggregated (weighted average) to compute TPI for Mutual Fund.

b. PMS TPI (PTPI)

PMS TPI is segregated based on services into Discretionary, Non-discretionary and Advisory. Following costs associated with PMS are considered for calculation of STPI

- Investment Management Fee;
- Performance Fees;
- Transaction Cost (other than brokerage);

- Custodian Fee;
- Exit Load;
- Audit Charges;
- Other miscellaneous charges.

(Brokerage is not included, as it has already been considered in the calculation of SMTPI). Per unit expense (X) is calculated for each service using formula;

$$\text{Per Unit Expense (X)} = \frac{\sum \text{Total Charges (other than brokerage)}}{\sum \text{Average AUM for the quarter}} * 100$$

X for base year is computed by taking geometric mean of per unit expense of four quarters of 2022-23.

$$\text{Average AUM for the Quarter} = \sum (\text{daily AUM}) / \text{no of days}.$$

Transaction Price Index (TPI) is computed using equation (3) for discretionary, non-discretionary and advisory. TPI for discretionary, non-discretionary and advisory are aggregated (weighted average) to compute TPI for PMS.

c. AIF TPI (ATPI)

For AIFs, out of 'Commitments Made', Amount Raised' and 'Investment Made' only 'Amount Raised' is considered. To compute the per unit expense (X) for a quarter, the quarterly expenses along with fixed annual charges (distributed evenly across the four quarters on an accrual basis), are to be considered irrespective of whether these charges are for Commitments made/ Amount Raised or Investments made.

Following charges are considered for STPI calculation-

- Investment Management Fee;
- Performance Fee;
- Operating Expenses (like; professional fee, Trustee fee, Audit fee, Valuation Fee, Administration Charges, Legal & Professional Charges, Custody Fee etc.);
- Other charges (excluding Set-up Fee and Brokerage)

(Brokerage is not included, as it has already been considered in the calculation of SMTPI)

Four-quarter moving average of mode of net amount raised/redeemed is considered since negative values in the amount raised represent redemptions (which are transactions by nature) and should not be excluded from the calculations. Any zero/negative values in expenses, and any zero values in net amount raised/redeemed were excluded from the calculations. Further, outliers are determined using the Inter-quartile range (IQR), where values less than 1st-quartile and greater than 3rd-quartile were excluded.

Per unit expense (X) is calculated using formula;

Per Unit Expense (X)

$$= \frac{\sum \text{Expenses in the given Quarter} + \text{Part of Fixed Annual Charges assigned to Given Quarter}}{\sum \text{Four Quarter Moving Average of Mode of Amount Raised/Redeemed}}$$

X for base year is computed by taking geometric mean of per unit expense of four quarters of 2022-23. Transaction Price Index (TPI) for AIF is computed using Laspeyres formula (short term chain method). MTPI, PTPI and ATPI are aggregated using weighted average to compute the Transaction Price Index for Asset Management TPI (AM-TPI).

Final Aggregation - STPI

The STPI is computed by aggregating PM-TPI, SM-TPI, and AM-TPI using weighted average.

Methodology for Compilation of Railway Service Producer Price Index

1. Product Basket of Railway Service Price Index

The index can be disaggregated into two sub-indices -

- a) Railway Freight Services, and
- b) Railway Passenger Services.

The Railway Freight Services index comprises thirteen items, specifically eleven major commodities - Coal, Iron Ore, Iron & Steel, Cement, Food Grains, Fertilizers, POL (Mineral Oil), Limestone and Dolomite, Stones and Other Marble, Salt, Sugar alongside container and automobile freight services.

This Railway Passenger Services Price Index monitors fluctuations in fare structures across diverse service tiers, categorized into suburban and non-suburban segments (including both upper and lower classes). These categories are further stratified into sub-classes. The details are given in the table below:

Sl. No.	Category	Class	Subclass
1	Suburban	1 st Class	
		2 nd Class	
2	Non-Suburban	Upper Class	Executive Class
			A.C. First
			A.C. 2 Tier
			A.C. 3 Tier
			First Class
			A.C. Chair Car
		Lower Class	Sleeper Class
			Ind Class

2. **Weights for Railway Service Price Index**

The overall weights for Railway Services – Freight and Passenger - have been computed based on their respective share in the total revenue for the base year 2022-23.

Weighting for the Railway Freight and Passenger index at granular level have been determined by the revenue contribution of the considered categories in the total revenue generated during the base year 2022-23.

3. **Price**

a) **Railway Freight Service**

The Freight SPPI is compiled using the **freight rate per tonne** based on the identified average lead⁶ for each commodity. The index uses **Train-load freight rates** rather than wagon-load rates for all identified items.

Dynamic Pricing

To accurately reflect market volatility under the **Indian Railways' Dynamic Pricing Policy**, the index incorporates **Busy Season Charges (BSC)**. These charges are applied during the relevant months to ensure the SPPI reflects the actual effective price paid by the user.

b) **Railway Passenger Service**

For each category within the Non-Suburban Upper and Lower classes, representative popular trains have been mapped. Since, passenger fares vary across different distance slabs, the Railway Board has provided average lead Values to each specific category. The price is captured from the specific distance slab into which the identified average lead falls. Specific trains have been identified for the compilation

⁶ Average lead for a commodity/class is the average distance a freight commodity is transported/ average distance travelled by passenger in that particular class. The average lead is fixed for the base year

of the Railway Passenger SPPI index alongside the average lead values, and corresponding distance slabs.

Dynamic Pricing and Flexi-Fare Adjustments

The index accounts for the Indian Railways' Dynamic Pricing Policy (Flexi-Fare) to capture actual price realization:

- This is applicable only to **AC 2-Tier, 3-Tier, and AC Chair Car** in Rajdhani, Shatabdi, and Durgam services.
- **Adjustment Factor:** An average flexi-fare adjustment factor of 1.3 of the base fare is applied throughout the year.

4. Data Source

The price data is sourced from the rate circulars available on the official website of Ministry of Railways. The data is confirmed with the Railway Board through email correspondence.

5. Compilation of Railway Service Producer Price Index

Railway Service Price Index is compiled using Laspeyres formula which has two stages: compilation of elementary indices and compilation of aggregate indices. The elementary indices are compiled using Jevons formula i.e. taking the geometric mean of the price relatives using short term formulation.

The aggregate/ higher level Index is computed as weighted average of the elementary price indices using Arithmetic Mean.

Methodology for Compilation of Telecom Service Producer Price Index

1. Product Basket of Telecom Service Price Index

The product basket of telecom services has been grouped into two broad segments: **Wireless (Mobile) and Wireline (Landline)** for the compilation of Telecom service price index. The wireless segment is further divided into two sub-segments viz. **Prepaid** and **Postpaid** services.

2. Weights for Telecom Service Price Index

Weights are assigned between the wireless and the wireline services based on respective share of **number of subscribers** in the total number of telephone subscribers in the base year 2022-23. The weights are then apportioned between the sub-segments '**Prepaid**' and '**Postpaid**' on the basis of the number of subscribers in the respective sub-segments to the total number of wireless subscribers.

3. Price

Prepaid wireless services: Specifications of Prepaid plan may change in terms of no. of days which ultimately result in change in effective price. Therefore, price per day has been taken as price for Prepaid services (exclusive of GST).

Postpaid wireless services: The value of the plan (exclusive of GST) for 30 days validity is taken.

Wireline services: The monthly price of the plan is taken.

4. Data Source

The price data is collected from the official website of the Telecom service provider using web search.

5. Compilation of Telecom SPI

Telecom Service Price Index is compiled using Laspeyres formula which has two stages: compilation of elementary indices and compilation of aggregate indices.

The elementary indices are compiled using Jevons formula i.e. taking the geometric mean of the price relatives using short term formulation.

The aggregate/ higher level Index is computed as weighted average of the elementary price indices using Arithmetic Mean.

Methodology for Compilation of Air (Passenger) Service Producer Price Index

1. Product Basket of Air (Passenger) Service Price Index

The product basket of Air (Passenger) services comprises of passenger services offered on domestic and international routes by the scheduled domestic carriers.

84 domestic routes and 66 international routes have been identified for the collection of prices based on 50% criterion, i.e., the routes which accounted for 50% of the total air passenger traffic volume in the year 2022-23. Further, only those routes are selected where atleast two airlines are operational in order to obtain two data points for each route.

For each domestic and international route, airlines were selected on the basis of 80% criterion, i.e., the airlines carrying $\geq 80\%$ of the air passenger traffic on the respective route in the year 2022-23.

Major airlines have been selected for domestic and international routes

A reserve list of ten additional routes is maintained for the substitution of the routes, if required in the future.

2. Weights for Air (Passenger) Service Price Index

The weights to passenger carriers (airlines) operating on each domestic and international route is calculated by dividing the passenger footfall of a particular airline on a particular route by the total passenger footfall of all the airlines selected for domestic and international routes respectively in the year 2022-23. The weight of each route is then obtained by aggregating the weights across all the airlines operating on that particular route.

The weights are assigned to the domestic routes and the international routes along with the weights to airlines.

In line with the practice followed by the Singapore Department of Statistics in compiling the Services Producer Price Indices, where the weight reference period and the price reference period may differ, the Sub-Group recommended adopting 2022-23

as the weight reference period and 2025-26 as the price reference period for the compilation of the Air (Passenger) SPPI.

3. Price

The lowest Base Airfare (exclusive of taxes & fees and convenience charges) of the economy class of the airlines is captured in the current month for the corresponding day in the subsequent month followed by another 6 days, for specific identified domestic and international routes based on a calendar prepared on a monthly basis, using web search. For instance, on 1st April the price data will be collected from 1st May till 7 May for specific routes. The data for seven days is collected in order to capture the price data for weekends.

4. Data Source

The prices are collected from the websites of the airlines using web search.

5. Compilation of Air (Passenger) Service Price Index

Air (Passenger) Service Price Index is compiled using Laspeyres formula which has two stages: compilation of elementary indices and compilation of aggregate indices.

The elementary indices are compiled using Jevons formula i.e. taking the geometric mean of the price relatives using short term formulation.

The aggregate/ higher level Index is computed as weighted average of the elementary price indices using Arithmetic Mean.

Due to non-availability of price data for the backlog period, the Air (Passenger) Service Producer Price Index is being compiled with base year 2025-26, i.e., price reference period, while weights are derived based on Passenger footfall data of 2022-23 (i.e. weight reference period).
