

**Methodological Improvements in compilation of aggregates of National Accounts**  
**(Production/Income Approach)**

1. Ministry of Statistics and Programme Implementation is in the process of revising the base year of national accounts. An Advisory Committee on National Account Statistics (ACNAS) under the chairmanship of professor B.N. Goldar has been constituted to advise MoSPI, among other things, on inclusion of new data sources for improving the estimates of National Accounts and the methodology for compilation and presentation of National Accounts Statistics for purposes of economic analysis and policy formulation. The Committee has representation from various Central Ministries and Departments, State Governments, Academia and Research Institutions.

2. On the recommendation of ACNAS, FY 2022-23 has been chosen as the base year of new series and the estimates of new series are scheduled to be released on 27<sup>th</sup> February, 2026. With a view to apprise the users of national accounts data about the changes being made in the new series, Ministry has planned to release a couple of discussion papers on national accounts. This is the first discussion paper which focuses on changes in compilation of aggregates (using production/income approach) in both nominal and real terms. Next discussion paper is expected to cover methodological changes in compilation of aggregates using expenditure approach.

3. Following SNA 2008, the economy has been divided in the following institutional sectors:

- A. Non-Financial Private Corporations Sector
- B. Financial Corporations Sector
- C. General Government Sector
- D. Household Sector
- E. Non-Profit Institutions Serving Household (NPISH) Sector (In case of India, estimates for NPISH are included in Household Sector)

4. Estimates for each industry are compiled institution-wise. Methodology for each institutional sector remains the same across industries except for the Household Sector. In case of the Household Sector, estimates for Agriculture, Construction & Ownership of Dwellings industries are compiled following a methodology which is different from the one used in other industries. Methodological improvements made in the institutional sectors mentioned above are summarized below:

**A. Non-Financial Private Corporations (NFPC) Sector**

5. The estimates of Non-Financial Private Corporate (NFPC) Sector are compiled using the MCA-21 data following the methodology suggested by Sub-committee on Private Corporate Sector including PPPs<sup>1</sup> constituted for 2011-12 base revision.

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1: PPP stands for Public-Private Partnership. The report of the Sub-committee is available on the website of the Ministry.

6. In the intervening period since the last base revision, some new data sets, namely, frame of active companies (having enterprise level details on Paid-Up Capital, Company category viz. Govt/Non-Govt., etc.), Management & Administration related data (MGT-7/7A) and frame of active Limited Liability Partnership (LLP) companies (having LLP-wise details on industrial activity, Obligation to Contribution etc.) have become available. In the 2022-23 series, with a view to make the estimation process more robust, it was decided to make use of this additional information. Accordingly, following major methodological improvements have been undertaken in the NFPC sector:

## **I. Segregation of activities in case of multi-activity enterprises in Non-Financial Private Corporations (NFPC) Sector**

7. As per provisions laid out under the Companies Act, every incorporated enterprise is statutorily required to file an annual return, viz., Form No. MGT-7 or MGT-7A (for one-person companies or small companies). MGT-7/7A data contains information on the number of business activities undertaken by the enterprise, description of business activity as per NIC 2008 and percentage turnover from each business activity (industry) for each year.

8. In case of a multi-activity enterprise, presently, entire contribution is allocated as per its major activity. While rebasing, MGT data has been used to segregate economic activities and consequently the value added by each business activity of the enterprise. For each multi-activity enterprise, activity-wise share of turnover available in MGT-7/7A Form has been used to calculate activity-wise turnover. Thereafter, ‘Output-turnover Ratios’, calculated on the basis of single activity companies for each industry, were used to calculate activity-wise output. Activity-wise output so computed has been adjusted on pro-rata basis to match enterprise level output. For calculating activity-wise inputs, industry-wise ‘Input-output Ratios’ of single activity enterprises were applied over activity-wise outputs. Thereafter, activity-wise inputs were adjusted pro-rata to match enterprise level input. Activity-wise outputs and inputs so obtained were used to calculate activity-wise GVAs.

## **II. Change in the multiplier**

9. In 2011-12 series, as per the guidelines of the Sub-committee on Private Corporate Sector including PPPs, Paid-Up Capital (PUC) based multiplier was used for scaling up the estimates of reporting companies, to account for the contribution of active companies that had not filed their returns even after about a year and half from the end of the financial year. Due to non-availability of PUC at disaggregated level in 2011-12 series, multiplier was applied at economy level (though separately for Public Limited Companies and others). The following formula was used to arrive at the estimates:

$$Aggregate_{population} = Aggregate_{reporting\_PLC} \times \frac{(Global\ PUC)_{PLC}}{(Reporting\ PUC)_{PLC}} + Aggregate_{reporting\_NPLC} \times \frac{(Global\ PUC)_{NPLC}}{(Reporting\ PUC)_{NPLC}}$$

10. However, the availability of frame of active companies has enabled NAD to use the multiplier at disaggregated level in 2022-23 series instead of using it at overall level. Moreover, it was also observed that there were differences in capital intensity (measured by GVA to PUC ratio) across industries and size classes. Therefore, it was felt more appropriate to apply the scaling up factor at 'Industry x Size class' level.

### **III. Use of LLP data**

11. With the availability of frame of active Limited Liability Partnerships (LLP), LLPs are being covered comprehensively in the new series. In order to account for non-reporting LLPs, multiplier based on variable 'Obligation to contribution'<sup>2</sup>, available in both frame and reporting set, is being used.

### **B. Financial Sector**

12. The GVA estimates of the Financial Sector are compiled separately for each of the nine sub-sectors as per SNA classification. These sub-sectors are (i) Central Bank; (ii) Deposit taking Corporations except Central Bank; (iii) Money Market Funds (MMF); (iv) Non MMFs; (v) Other Financial Intermediaries except Insurance Corporations and Pension Funds (ICPF); (vi) Financial Auxiliaries; (vii) Captive financial institutions and money lenders; (viii) Insurance Corporations; and, (ix) Pension Funds. Financial Sector estimates, as per SNA, are compiled based on actual receipts as well as implicit services known as Financial Intermediation Services Indirectly Measured (FISIM). Deposit taking Corporations, Other Financial Intermediaries except ICPF and Money Lenders generate FISIM.

13. For the revised series, the compilation of each sub-sector has been revisited to incorporate improvements. The salient features of improvements incorporated are as follows:

- I. Data Sources used for compilation of estimates have been streamlined and updated. A major improvement is the use of Statistical Tables Relating to Banks in India (STRBI) for compilation of estimates for deposit taking corporations. The current series uses annual accounts of nationalized banks whereas STRBI is used for other deposit taking corporations.
- II. Use of MCA data for private NBFCs to cover the sub-sector "Other Financial Intermediaries except ICPF in a more comprehensive way. Current series estimates are compiled using loan-based ratios on the base year estimates obtained through RBI.
- III. Use of ASUSE data for intermediate consumption along with updated AIDIS 2019 data for stock of loan and associated rate to improve the estimates of Moneylenders.
- IV. Separate treatment of pension funds as contribution fund and its administrative fund in sub-sector "Pension Funds" and "Financial Auxiliaries" respectively. Inclusion of Coal Mines and Seamen Pension Funds in compilation of estimates for both these sub-sectors.

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2: Obligation to contribution is an agreed-upon contribution to the LLP's capital that the partners are legally bound to fulfill.

- V. Use of ASUSE data for estimating the intermediate consumption of Insurance Agents covered under the sub-sector “Financial Auxiliaries”.

### **C. General Government Sector**

14. The general government sector consists of institutional units that produce and provide non-market public and community services, which are primarily funded by compulsory payments imposed on institutional units belonging to other sectors. As government provides services on non-market basis, output of this sector is valued by the sum of the costs incurred in their production, namely, as the sum of:

- Compensation of Employees
- Intermediate Consumption
- Consumption of Fixed Capital

15. The major improvements proposed in estimation of this sector in the new series are summarized below:

#### **I. Adjustment for pension**

16. Net value added for government is taken as the compensation of employees which includes salary, wages, benefits and pension. In national accounts, for defined benefit pension schemes, present value of increase in pension entitlements due to service in current period are considered a part of compensation of employees. Accordingly, present value of the future pension entitlement for the serving employees is required to be imputed for each accounting period. In the 2011-12 series, the annual pension outgo to retired employees was treated as a proxy for the present value of increase in pension entitlement of the serving employees due to service in current period.

17. At present, two pension schemes are in operation for govt employees- Old Pension Scheme (OPS), a defined benefit plan and New Pension Scheme (NPS) (2004 recruitments and henceforth), a defined contribution plan. With the introduction of NPS, contribution from government towards pension of such employees as well as employees own contribution is directly available in the budget and is considered while compiling compensation of employees. In view of this, proportionate adjustment in pension disbursed through OPS (proxy when entire workforce is under OPS) needs to be done. The value of pension payment as per OPS being included in Compensation of Employees should taper off in the same manner as number of serving employees under OPS.

18. Accordingly, a factor based on length of service (39 years), has been applied to pension amount paid as per OPS. With each passing year, after implementation of NPS an additional 1/39th portion of OPS pension reported in budget document will be adjusted and only the remaining portion will be treated as CE. This will be compensated by new recruitees covered under NPS through government’s and employees’ own contribution towards NPS. In cases where OPS is still operational, no adjustments will be made (eg. some states and Armed forces covered under Ministry of Defence).

## **II. Imputation of accommodation provided by government in lieu of HRA**

19. To accurately capture the compensation to government employees who receive government accommodation instead of House Rent Allowance (HRA), imputation has been done for the value of the housing service provided by Government to its employees. This ensures that the compensation of these employees and hence valuation of services provided by government is properly captured in estimates of Output for General Government. The value of housing services provided by the government has been computed by cost of production approach. In the present series no such imputation was being done.

## **III. Improved coverage and regional spread**

20. Coverage of autonomous bodies and local bodies has been increased thereby increasing the portion of direct estimates of such bodies. Availability of DDO Code Location wise data has enabled direct allocation of central government estimates to different States.

## **D. Household Sector, Quasi Corporations and Non-Profit Institutions Serving Household (NPISH) Sector**

### **(Except Agriculture, Construction and Ownership of Dwellings)**

21. In the current series, GVA estimates in respect of unincorporated segment of manufacturing and services sectors are compiled indirectly through Effective Labour Input Method (ELI Method) using the benchmark-indicator procedure. In this method, benchmark GVA estimates were prepared at detailed activity level for base year using estimated workforce (i.e. total of principal and subsidiary workers engaged in an activity) from Employment and Unemployment Survey (EUS) 2011-12 and value added per worker (VAPW) in corresponding activity using Enterprise Survey (ES) 2010-11. For subsequent years, base year GVA estimates have been extrapolated using appropriate indicators for a concerned economic activity. Detailed methodology adopted in the current series is available on the website of the Ministry.

22. Presently, MoSPI is undertaking the Annual Survey of Unincorporated Sector Enterprises (ASUSE) and Periodic Labour Force Survey (PLFS) annually. GVA estimates of the unincorporated sector will now be compiled using industry-wise productivity information from ASUSE and corresponding workforce estimates from PLFS. In view of availability of annual results from the aforementioned surveys, estimates will be generated annually for unincorporated sector in the new series, as opposed to the indicator-based extrapolation approach followed in the existing series.

## **E. Agriculture and Allied Sector**

23. The sector comprises four sub-sectors *viz.*, (i) Crops (ii) Livestock (iii) Forestry and Logging (iv) Fishing and Aquaculture. The estimation procedure primarily relies on the direct (bottom-up) approach.

24. Gross Value of Output (GVO) of these sub-sectors are compiled state-wise using production data provided by the respective Ministries/Departments and price data from respective State Directorates of Economics and Statistics (DES). GVA estimates are obtained by deducting intermediate consumption, sourced from various agencies, from GVO. Detailed estimation procedure with data source is available on the website of the Ministry. The major improvements proposed in estimation of this sector in the new series are summarized below:

### **I. Use of updated and dynamic input-output ratio**

25. In contrast to the ease of availability of output data for agriculture and allied sector, input data for the sector is mostly not available on a regular basis from any administrative source and hence inputs are considered as fixed ratios of output in many cases. In the new series, attempts have been made to update these ratios, wherever possible, and also to incorporate dynamic ratios in place of fixed ones. Items for which ratios could not be updated in the new series for the want of data are listed in Annexure – I.

#### **i. Use of dynamic input-output ratio for compilation of GVA of forestry sub-sector**

26. Instead of using fixed input as 16.2 % of output (based on expenditure on the purchase of goods and services, including repairs and maintenance of fixed assets, for forestry sub-sector of General Government) for entire forestry sector, across all states, dynamic state-wise input-output ratios based on budget analysis have been used for the forestry sector, on an annual basis.

#### **ii. Use of updated input-output ratio for marine & inland fisheries in fisheries sub-sector**

27. In the current series, in absence of data derived from scientific studies, operational costs (including repair and maintenance expenditure) for different categories of fisheries were determined based on consultations with State Fisheries Departments (SFDs). Accordingly, operational costs were assumed to constitute 22.5% of the value of output for marine fish and prawns, 10% for inland fish, and 1% for subsistence fish. For the activity of sun-drying and salting of fish, the input costs were also assumed to be 1% of the corresponding value of output. These fixed national level input rates were used across all States to arrive at the GVA of fisheries sub-sector from 2004-05.

28. For the new series, updated State wise input-output ratio (for major fish producing States) have been used both for marine fisheries and inland fisheries based on the study conducted by Central Marine Fisheries Research Institute (CMFRI), Kochi and Central Inland Fisheries Research Institute (CIFRI), Barrackpore, Kolkata respectively. For the States not covered under the purview of these studies, national average input rates have been used in the new series.

### **II. Use of new rates and ratios for calculating output of fodder and grass in crop sub-sector**

29. In the existing series, State wise estimation of fodder production is carried out using fixed productivity norms of 50 metric tonne per hectare for irrigated areas and 25 metric tonne per

hectare for unirrigated areas under fodder crops. State-wise grass production is estimated using area information from Land Use Statistics (LUS) and productivity from National Sample Survey (NSS) Report, 1955–56.

30. For the new series, a dedicated study on productivity of fodder and grass to update corresponding productivity parameters, across States, was undertaken by the Indian Grassland and Fodder Research Institute (IGFRI), Jhansi, and the same was completed in July 2021. In the study, green fodder production was estimated based on the major fodder crops grown in each State. A uniform dry matter conversion ratio of 22% was adopted to derive estimates of dry fodder production from green fodder output. Further, area under permanent pastures and other grazing lands was estimated as a percentage of the total geographical area at the State level using LUS data.

31. After deriving total quantities of fodder and grass production, the aggregate output at the State level has been valued using the prevailing prices of fodder and grass, as reported by respective State DES in the new series.

### **III. Update in coverage of other crops**

32. Presently, there are 13 different groups of crops within the crop sub-sector. In each category, based on availability of data for production and price, effort has been made to segregate a few crops from ‘other crops’ category. Further, prices of ‘other crops’ in a particular category have been estimated using a weighted average price of selected crops in that category and State.

### **IV. Bifurcation of feed of livestock between crop and livestock sector:**

33. The value of feed of livestock as an input was distributed among crop and livestock sub-sectors, in 2011-12 series, considering the number of adult male cattle and adult male buffalo population only for crop sub-sector and remaining animals for the livestock sub-sector. The numbers were derived using results of livestock census.

34. However, population of adult male buffalo and adult male cattle based on their use is available in Livestock Census report as follows: (i) Used for breeding only; (ii) Used for agriculture only; (iii) Used for both agriculture and breeding; (iv) Used for bullock cart/farm operations; and (v) Others.

35. For better coverage of feed consumption across livestock and crop sub-sectors in the new series, further bifurcation of adult male cattle and buffalo population in crop and livestock sub-sectors has been done as follows:

$$\text{For livestock sector: } category (i) + category (iii) * \frac{category (i)}{\text{sum of categories (i) and (ii)}}$$

$$\text{For crop sector: } category (ii) + category (iv) + category (v) + category (iii) * \frac{category (ii)}{\text{sum of categories (i) and (ii)}}$$

## **F. Construction:**

36. Unlike other industries, GVO/GVA of Construction is estimated using ‘Commodity Flow Approach’. Commodity flow method tracks the availability of goods and services used in production, thereby balancing the total supply and use to ensure consistency.

37. In current series, estimate of output of construction sector is compiled using the commodity flow approach based on availability /use of basic construction materials and factor inputs. The basic materials considered for construction in the 2011-12 series are (i) cement and cement products, (ii) iron and steel, (iii) bricks and tiles, (iv) timber and round wood (including imports of timber products and veneer plywood) (v) fixtures and fittings (vi) bitumen and bitumen mixtures and (vii) glass and glass products. The ratios /share of other materials and factor inputs in various construction activities were derived from study carried out by Central Building Research Institute (CBRI), Roorkee.

38. Applying these ratios on the value of basic construction materials, overall output of construction is estimated. Estimates of output of construction industry in General Government and Departmental enterprises, Public Corporations and Private Corporations are compiled independently from budget documents, annual reports, and corporate filings (M/o Corporate Affairs database) respectively. The estimate of GVO for the unincorporated sector (including quasi corporations, household enterprises, non-profit institutions serving households and own account construction by household sector) is derived as residual i.e. after removing the estimated value of output from General Government and Departmental enterprises, Public Corporations and Private Corporations from overall output of construction.

39. In the new series, in place of estimating the total GVO of construction industry using commodity flow, the commodity flow of material inputs is planned to be used to arrive at total material inputs only. Thereafter, the material inputs available to the household sector would be derived by using residual approach i.e. by subtracting the value of material inputs used in construction activity by organized sector, (*viz.* General Government, Departmental enterprises, Non-departmental enterprises and Private Corporations). This modified commodity flow approach will be used to derive the inputs used by unincorporated sector in the country. The material input to GVO and GVA to GVO ratio for the unincorporated sector will be estimated based on the rates and ratios derived from the Pilot Survey on Construction Sector carried out by National Sample Survey Office, MoSPI during 2025. These ratios will be applied on the residual material inputs to arrive at GVO and GVA of unincorporated sector.

40. Results of recent surveys (Annual Survey of Industries (ASI), Annual Survey of Unincorporated Sector Enterprises (ASUSE) , All India Debt and Investment Survey(AIDIS), Household Consumption Expenditure Survey (HCES),) and studies (State-wise Unit Cost for plantation crops from NABARD for plantation) will be used in estimating the ratios for inter-industry consumption at granular level, bifurcation of output from household sector into residential/non-residential/other construction works, kutcha/pucca construction etc.

## **G. Ownership of Dwellings**

41. SNA production boundary includes, ‘the production of housing services for owner-occupiers’ own final consumption. This service is captured as Ownership of Dwellings (ODs) in NAS.

42. In the present series, Gross Value Added (GVA) for ownership of dwellings in urban areas was estimated as the gross rental value comprising both actual rents paid for rented dwellings and imputed rents for owned dwellings, less the cost of repairs and maintenance. For rural areas, the user cost approach was applied to estimate the value of output of housing services. In the new series, the benchmark cost of repair and maintenance of the dwellings has been derived from All India Debt & Investment Survey (AIDIS) 2019 and will be updated with availability of new survey result.

43. For urban areas, the new series continues to follow the same methodological framework, with updates reflecting the most recent data on dwellings and rents per dwelling. However, the output of the ownership of Dwelling will be adjusted for employer provided housing services for General Government and Private & Public Corporations sectors as it is captured in the respective institutional sectors production account. The number of dwellings has been estimated using Ministry of Health and Family Welfare’s (MoHFW) projected population figures along with average household size and average rent per dwelling from the Household Consumer Expenditure Survey (HCES) 2022–23. Once data from the next Population Census become available, the estimates for the number of dwellings will be updated accordingly.

## **H. Compilation of Constant Price Estimates**

44. In 2011-12 series, for most of the industries single deflation was used to arrive at constant price estimates. Volume extrapolation was used only in a few industries viz. electricity, gas, transport services, telecommunication and some sub-sectors of Financial Services. Whereas both inputs and outputs were separately revalued for Agriculture. In 2022-23 series, effort has been made to use single extrapolation or, in some cases, double deflation. Double deflation is data intensive, as it requires data on a broad range of price measures for both outputs and inputs. Therefore, single extrapolation/volume extrapolation method is considered an acceptable second-best method.

45. As input structure as well as price indices for input and output items for manufacturing sector are available, double deflation has been used in manufacturing industry. For remaining sectors where single deflation was being used, use of volume extrapolation has been explored. Volume extrapolation implicitly assumes that the input-output ratio (in volume terms) is constant in the short term, which is often a more reasonable assumption than single deflation's implicit assumption that the price of inputs moves in sync with the price of output. Industry-wise deflators used in 2011-12 series and those proposed to be used in 2022-23 series are summarized in the Annexure – II.

46. Since the base year of indices (Wholesale Price Index, Consumer Price Index and Index of Industrial Production) are being revised, the constant price estimates of the new series would be revised thereafter.

**Comments/feedback are invited on the methodological improvement outlined in the preceding paras. Comments/feedback may be shared on the email ID-[ddg1.nad@mospi.gov.in](mailto:ddg1.nad@mospi.gov.in)**

## Annexure – I

Sub-sector	Item	Rate
Crop	Production of raw tea	4.44 times production of processed tea
	Production of tobacco stem	86.63 % of production of tobacco leaves
	Price of tobacco stem	50% of price of tobacco leaves
Livestock	Output of dung fuel	40% of production of raw cake
	Production of poultry meat	(a) chickens & ducklings killed = 1/3 of egg hatched rate and production of egg, 50% of hens & cock population, 50 % of ducks & drakes population, population of chickens & ducklings, 62.5 % of other poultry population less population of hens ,cocks , ducks , drakes , chickens , other poultry for next year (b) adult fowls killed = 50% of population of hens & cocks (c) adult ducks killed = 50% of population of ducks & drakes (d) other poultry = 37.5 % of other poultry
	Operational Cost	0.25% of output of Milk Group, Hides & Skin, Poultry Meat, Eggs Group, Wool Group, Silk & Honey Group & Increment Group
Forestry and logging	Unrecorded value of Industrial wood inside forest	10% of recorded value of output of Industrial wood inside forest
Fishing and aquaculture	Production of subsistence fish	12.5% of production of inland fish
	Input rate of fish salting/ sun dried/ subsistence	1% of value of output of salted fish (let out)/ sundried (let out) /subsistence fish respectively

**Annexure-II**

<b>Industry</b>	<b>Deflator used in 2011-12 series</b>	<b>Deflator used in 2022-23 series</b>
Crops	GVO is compiled as current year production * base year price	GVO is compiled as current year production * base year price
Livestock		
Forestry and logging		
Fishing and aquaculture		
Mining and quarrying	<p>Single Deflation of fuel minerals by using WPI of relevant fuel minerals.</p> <p>Revaluation using data on production and prices of other metallic and non-metallic minerals from Indian Bureau of Mines.</p>	Volume Extrapolation using mineral-wise index of production
Manufacturing	Compilation category-wise single deflation using relevant WPI	Double Deflation except for some NIC based compilation category wherein share of imported items used as inputs is substantial and reliable import price indices are not available.
Electricity	Volume Extrapolation using quantum index of generated electricity	Volume Extrapolation using quantum index of generated electricity
Gas	Volume Extrapolation using quantum index of sales of gas.	Volume Extrapolation using quantum index of consumption of LPG, PNG, CNG.

<b>Industry</b>	<b>Deflator used in 2011-12 series</b>	<b>Deflator used in 2022-23 series</b>
Water Supply	Single Deflation using CPI (G)	Single extrapolation using index of deflated GVO (CPI (Water Charges) to be used for deflating GVO)
Remediation (Recycling)	Single Deflation using relevant WPI	Single extrapolation based on relevant WPI (Index of Basic Iron and Steel and casting of iron and steel, fabricated metal products, plastic products)
Remediation (Sewerage)	Single Deflation using CPI (G)	Single Extrapolation based on CPI(General)
Construction	Single Deflation using composite index of WPI and CPI	Single Extrapolation  (Intermediate Consumption in reference year deflated by using composite index based on relevant WPI and CPI, then applying Output to Input ratio of the base year to arrive at Output at constant prices for the reference year)
Trade & repair services	TTM based WPI as deflator	Single extrapolation using TTM based WPI
Hotels & restaurants	TTM based WPI as deflator	Single extrapolation using index based on relevant CPI items
Railways	Volume extrapolation using index of combined earnings of goods and passengers where goods earnings were deflated using WPI and class-wise passenger earnings were extrapolated using Passenger Kilometers	Volume extrapolation using index of combined earnings of goods and passengers where commodity-wise goods earnings have been extrapolated using Net Tonne Kilometers and class-wise passenger earnings using Passenger Kilometers

<b>Industry</b>	<b>Deflator used in 2011-12 series</b>	<b>Deflator used in 2022-23 series</b>
Road Transport	Volume extrapolation using sales data of commercial vehicles (SIAM)	Volume extrapolation using sales data of commercial vehicles (SIAM)
Water Transport	Volume extrapolation using cargo handled at major and minor ports	Volume extrapolation using cargo handled at major and minor ports
Air Transport	Volume extrapolation using data on cargo and passenger traffic	Volume extrapolation using data on cargo and passenger traffic
Services Incidental to Transport	<p>Volume extrapolation using combined growth rates of road, air, and water transport (except household sector)</p> <p>For household sector, volume extrapolation using combined growth rates of road and water transport</p>	<p>Volume extrapolation using combined growth rates of road, air, and water transport (except household sector)</p> <p>For household sector, volume extrapolation using combined growth rates of road and water transport</p>
Storage	<p>For Public and Private Corporate: Storage &amp; Warehousing index</p> <p>For unorganized sector: WPI as deflator</p>	Single extrapolation using Storage and Warehousing Price Index

<b>Industry</b>	<b>Deflator used in 2011-12 series</b>	<b>Deflator used in 2022-23 series</b>
Communication & Services Related to Broadcasting	<p>i. For postal, courier activities and cable operator, broadcasting and publishing: CPI (Transport &amp; Communication) as deflator.</p> <p>ii. Telecommunication: Volume extrapolation using minutes of usage and data usage.</p>	<p>i. For postal + courier activities: single extrapolation using CPI (Transport &amp; Communication)</p> <p>ii. Telecommunication: Volume extrapolation using minutes of usage and data usage.</p> <p>iii. Cable operator, broadcasting and publishing: Single extrapolation using index based on relevant CPI items</p>
Financial Services	Single deflation / Volume extrapolation. Implicit Price Deflator (IPD) of Non-financial sector GVA is used for deflating the stock of deposits and loans as well as other volume indicators.	Volume extrapolation. For real estimate of FISIM in the Sub-sector Deposit taking Corporations except Central Bank, the base year spread of lending and deposit rate vis-à-vis reference rate is proposed to be used. Further, it is proposed to use CPI(G) for deflating the stock of deposits and loans as well as other volume indicators.
Real Estate & Professional Services	<p>For Public Sector: Single Deflation using CPI (G)</p> <p>For Private Corporate and Household Sector: Single Deflation using CPI (Misc.)</p>	Single Extrapolation using index based on relevant CPI items
Ownership of Dwelling	<p>Rural: Current Price deflated by CPI(R)</p> <p>Urban: Using growth in Number of dwellings</p>	<p>Rural: Single Extrapolation using Index of rural residential buildings</p> <p>Urban: CPI Housing (Urban)</p>

<b>Industry</b>	<b>Deflator used in 2011-12 series</b>	<b>Deflator used in 2022-23 series</b>
Public Administration and Defence	CE is deflated by Consumer Price Index (G) while IC is deflated using composite weighted index.	CE deflated by Consumer Price Index (IW) while IC by composite weighted index.
Other services	<p>(a) Education: Single Deflation using CPI (Education)</p> <p>(b) Health: Single Deflation using CPI (Health)</p> <p>(c) Recreational, cultural and sporting activities: Single Deflation using CPI (Recreation)</p> <p>(d) Activities of membership Organization: Single Deflation using index CPI (Misc.)</p> <p>(e) Personal services: Single Deflation using index CPI (Misc.)</p> <p>(f) Private Household with employed persons: Single Deflation using index CPI (General)</p>	<p>(a) Education: Single Extrapolation using CPI (Education)</p> <p>(b) Health: Single Extrapolation using CPI (Health)</p> <p>(c) Recreational, cultural and sporting activities: Single Extrapolation using CPI (Recreation)</p> <p>(d) Activities of membership Organization: Single Extrapolation using index based on relevant CPI items</p> <p>(e) Personal services: Single extrapolation using index based on relevant CPI items</p> <p>(f) Private Household with employed persons: Single extrapolation using index based on relevant CPI items</p>
Product Taxes	Volume Extrapolation using GVO growth in relevant industries	Volume Extrapolation using GVO growth in relevant industries
Product Subsidies	Single Deflation using IPD of total GVA	Volume Extrapolation using growth in quantum of different subsidized items (eg. for fertilizer subsidy, component wise growth observed in the sale of NPK fertilizers; for electricity subsidy, growth observed in sales of electricity by concerned states)

Note: Wherever price indices have been used for single extrapolation, deflated output index (using the price index) is the volume indicator used for extrapolating GVA. Present compilation of real estimates is detailed in 'Changes in Methodology and Data Sources in the New Series of National Accounts Base Year 2011-12'.