

NOTES ON METHODOLOGY AND REVISIONS IN THE ESTIMATES

The new series on National Accounts Statistics (NAS) was introduced through a Press Release on January 30, 2015 with base year 2011-12 in place of previous series with base year 2004-05. Later, a brochure titled “Changes in Methodology and Data Sources in the new series of National Accounts (base year 2011-12)” was released on 26th June, 2015 incorporating details of both the database and the methodology employed in estimation of various aggregates. The estimates presented in this issue of NAS are based on the methodology given in the above-mentioned brochure.

The present issue on NAS contains statements on macroeconomic aggregates including sectoral analysis, accounts for Non-financial Corporations, Financial Corporations, General Government, Households and Rest of the World. Besides these, it also includes aggregates by economic activities and disaggregated statements.

REVISION IN ESTIMATES DUE TO FRESH/ REVISED DATA

The First Revised Estimates (FRE) and the estimates of macro-economic aggregates for the previous years and their disaggregated components published in NAS 2022 have undergone revision due to fresh/ revised data becoming available. Sources of data utilized in NAS 2023 for preparing estimates for the years 2019-20, 2020-21 and 2021-22 which have contributed the most in revision of the estimates, are given below:

A: Output and Value Added

1 Crops

- 1.1 Production estimates - For 2020-21, final estimates of major crops, namely cereals, pulses, oilseeds, sugars and fibres released by the Directorate of Economics and Statistics, Ministry of Agriculture & Farmers’ Welfare for all States/UTs and final estimates for horticulture crops, namely fruits and vegetables, condiments and spices, released by Horticulture Statistics Division, Ministry of Agriculture and Farmers’ Welfare for most of the States/UTs have been used. For 2021-22, Fourth Advance Estimates of Major Crops released by the Directorate of Economics and Statistics, Ministry of Agriculture & Farmers’ Welfare and Third Advance Estimates for Horticulture Crops released by Horticulture Statistics Division, Ministry of Agriculture and Farmers’ Welfare have been used. For 2019-20, final estimates of state specific crops like banana, potato, onion etc., received from DESs of States / UTs, have been used.
- 1.2 Land Use Statistics – For the years 2019-20 and 2020-21, the latest area under crops released by the Ministry of Agriculture & Farmers’ Welfare for some

crops and that received from Directorate of Economics and Statistics (DESs) of States/ UTs for remaining crops have been used.

- 1.3 Prices data – For 2019-20 and 2020-21, updated prices of agricultural commodities received from DESs of States / UTs have been applied. For 2021-22, where price data were not available, WPI has been used.

2 Livestock

- 2.1 For 2021-22, final estimates of production of Milk, Egg, Meat and Wool released by the Department of Animal Husbandry & Dairying, Ministry of Fisheries, Animal Husbandry & Dairying have been used.
- 2.2 Revised data on prices of Livestock products received from DESs of States / UTs have been used for all the years. In a few cases, where prices for 2021-22 were not received, corresponding WPI has been used.
- 2.3 For all the years, the latest updated hatching rates received from DESs of States / UTs have been used to estimate production of poultry meat.

3 Forestry & Logging

- 3.1 Latest data on production and price of Industrial Wood & Non-Timber Forest Products and data on prices of Fuel wood received from DESs of States / UTs have been used for all the years. In a few cases, where prices for 2021-22 were not received, corresponding WPI has been used.

4 Fisheries

- 4.1 Latest data on production and price of Marine Fish, Inland Fish & Prawns received from Department of Fisheries, GOI, State Fisheries Departments and DESs of States / UTs have been used for all the years. In a few cases, where prices for 2021-22 were not received, corresponding WPI has been used. Latest data on curing activities, received from the State DESs have also been used.

5 Mining and Quarrying

- 5.1 Updated Mineral Production from “Monthly Statistics of Mineral Production”, published by Indian Bureau of Mines (IBM)
- 5.2 Annual Reports of the Mining Companies in Public Sector Enterprises.
- 5.3 Latest data from the Ministry of Corporate Affairs (MCA).
- 5.4 Latest deductible rate data of Minerals received from IBM.
- 5.5 Production of minor minerals other than sand from State Geological Departments.
- 5.6 Data on salt production and prices from the office of the Salt Commissioner.

- 5.7 The value of material inputs used in the construction sector for the estimation of sand.

6 Manufacturing

- 6.1 Latest data on Annual Survey of Industries from Ministry of Statistics & P.I.
- 6.2 Annual Reports of the Manufacturing Companies in Public Sector Enterprises.
- 6.3 Latest data from the Ministry of Corporate Affairs.
- 6.4 Budget documents of the Departmental Enterprises, including those of Railway Workshops.

7 Electricity, Gas, Water Supply and Remediation

- 7.1 Data from latest annual reports of public sector companies.
- 7.2 Latest data on Private Corporations received from MCA.
- 7.3 Budget Documents of the Departmental Enterprises.
- 7.4 Number of Bio-gas plants from the Ministry of New and Renewable Energy.
- 7.5 Number as well as production of Bio-gas plants installed by Khadi and Village Industries Commission.
- 7.6 Latest data on Annual Survey of Industries from Ministry of Statistics & P.I.

8 Construction

- 8.1 Latest data from budget documents and annual reports of public sector undertakings.
- 8.2 Latest data on Private Corporations received from MCA.
- 8.3 Latest data on Annual Survey of Industries from Ministry of Statistics & P.I.
- 8.4 Data on area of plantation crops from State DESs.
- 8.3 Index of 8 core industries from the office of Economic Adviser.
- 8.4 Export-Import Data Bank, DGCIS, Ministry of Commerce & Industry
- 8.5 WPI from the Office of Economic Adviser, Ministry of Commerce & Industry.
- 8.6 CPI from Ministry of Statistics & P.I.
- 8.7 Prevalent rates of GST, M/o Finance

9 Trade, Repair, Hotels and Restaurants

- 9.1 Latest data from budget documents and annual reports of public sector undertakings.

- 9.2 Latest data on Private Corporations received from MCA.
- 9.3 Sales figure of motor vehicles from Society of Indian Automobile Manufacturer (SIAM).
- 9.4 WPI from the Office of Economic Adviser, Ministry of Commerce & Industry.
- 9.5 Trade & Transport Margin (TTM) weighted WPI.

10 Transport by other means

- 10.1 Latest data from budget documents and annual reports of public sector undertakings.
- 10.2 Latest data on Private Corporations received from MCA.
- 10.3 Sales trends figure of motor vehicles from SIAM.
- 10.4 WPI from the Office of Economic Adviser, Ministry of Commerce & Industry.
- 10.5 CPI (Transport & Communication) from Ministry of Statistics & P.I.
- 10.6 Cargo Traffic handled at Major and Minor Ports from the Ministry of Shipping.
- 10.7 Rate of growth of Airlines Passenger Traffic and Cargo handled from Directorate General of Civil Aviation (DGCA).

11 Railways, Storage, Communication, Public administration and Defence

Railways, Public administration and Defence:

- 11.1 Budget documents for the year 2022-23 giving actual figures for the year 2020-21 and Revised Estimates for 2021-22.
- 11.2 Annual Accounts of public and private corporations.

Storage:

- 11.3 Latest data from budget documents and annual reports of public sector undertakings.
- 11.4 Latest data on Private Corporations received from MCA
- 11.5 WPI from the Office of Economic Adviser, Ministry of Commerce & Industry.

Communication:

- 11.6 Latest data from budget documents and annual reports of public sector undertakings.

- 11.7 Latest data on Private Corporations received from MCA
- 11.8 Goods & Service Tax (GST), M/o Finance
- 11.9 CPI (Transport & Communication) from Ministry of Statistics & P.I.
- 11.10 Minutes of usage, TRAI

12 Financial services

- 12.1 The NAS 2023 estimates for financial corporations have been updated based on analysis of latest available data and annual reports of financial agencies/ financial corporations and data on credits, deposits published by the RBI. Further, the estimate of the financial sector, at constant prices, uses the ratio of current and constant price estimates (unadjusted for FISIM) in the non-financial sectors as one of the deflators. The changes in these ratios for the years 2019-20 and 2020-21 have resulted in modifications in the constant price estimates for the financial services and sub-sectors within it.

13 Real Estate, Ownership of Dwellings, Professional Services

- 13.1 Latest data on budget documents and annual reports of public sector undertakings.
- 13.2 Latest data from the Ministry of Corporate Affairs.
- 13.3 Relevant CPI from Ministry of Statistics & P.I.
- 13.4 WPI from the Office of Economic Advisor.

14 Other Services

- 14.1 Latest budget documents and annual reports of public sector undertakings.
- 14.2 Latest data from the Ministry of Corporate Affairs.
- 14.3 CPI (Education), CPI (Health), CPI (Recreation) and CPI (Miscellaneous services) from Ministry of Statistics & P.I.

B: Private Final Consumption Expenditure, Saving and Capital Formation

15 Private Final Consumption Expenditure

- 15.1 Estimates have been revised from 2019-20 onwards due to availability of fresh/ revised data of output, change in stocks, export & import etc. The sources are as listed at sl. no. 1 to 14, 17.7 and 17.8.

16 Saving

- 16.1 Revised data on net deposits, investments in shares and debentures, net claims etc. for the household sector received from RBI.
- 16.2 For revision in estimates of saving in physical assets, please see Serial No. 17.
- 16.3 Revised data on saving of private corporations from MCA
- 16.4 Saving of Public Sector revised from 2019-20 to 2021-22 due to availability of additional/revised/fresh data in respect of Departmental Enterprises and Administrative Departments from budget documents, annual accounts of RBI and subsequent revision of Consumption of Fixed Capital estimates.

17 Capital Formation

- 17.1 Sources mentioned at Serial Nos. 6 & 8, annual reports of NDEs and budget documents.
- 17.2 Latest data on Annual Survey of Industries from Ministry of Statistics & P.I.
- 17.3 Latest data on Private Corporations received from MCA.
- 17.4 Revised data of Capital Formation in respect of the Public Sector.
- 17.5 WPI from the Office of Economic Adviser, Ministry of Commerce & Industry.
- 17.6 Index of Industrial Production (IIP), Ministry of Statistics & P.I.
- 17.7 Import and Excise Duties – Statistics of Customs & Revenue Collection of the Indian Union from Tax and Research Unit, Ministry of Finance.
- 17.8 Export-Import Data Bank, DGCIS, Ministry of Commerce & Industry.

18 Consumption of Fixed Capital

- 18.1 Estimates of consumption of fixed capital (CFC) have been revised due to revision of estimates of gross fixed capital formation as mentioned at serial no. 17.

Reasons of revision in GVA growth rate for FY 2021-22 (at 2011-12 prices) from the Provisional Estimates released in May-2022 to the estimates released in National Accounts Statistics (NAS)-2023

S. No.	Item	PE	NAS-23	Reason for Variation in NAS 2023
1	Agriculture, Forestry and Fishing	3.0	3.5	Fourth Advance Estimates of major Crops released by the Directorate of Economics and Statistics, Ministry of Agriculture & Farmers Welfare and Third Advance Estimates for horticulture crops released by Horticulture Statistics Division, Ministry of Agriculture and Farmers' Welfare have been used. Final Estimates of major livestock products as per Department of Animal Husbandry and Dairying (DAHD) has been used. Projected production of Industrial Wood (IW) / Trees outside Forest (TOF) / Non-Timber Forest Product (NTFP) as per latest data has been used. Final data on production of fisheries as supplied by the Department of Fisheries (DoF) has been used.
2	Mining and Quarrying	11.5	7.1	FRE is based on actual data received from sources whereas PE was indicator based.
3	Manufacturing	9.9	11.1	FRE is based on actual data received from sources whereas PE was indicator based.
4	Electricity, Gas, Water Supply & Other Utility Services	7.5	9.9	FRE is based on actual data received from sources whereas PE was indicator based.
5	Construction	11.5	14.8	FRE is based on actual data received from sources whereas PE was indicator based.

6	Trade, Repair, Hotels, Restaurants, Transport, Storage, Communication & Services related to Broadcasting	11.1	13.8	Data from source agencies along with detailed analysis of DE, NDE and Private Corporate sectors have been used for compilation of estimates for NAS-23, whereas provisional estimates were indicator based.
7	Financial Services, Real Estate, Ownership of Dwelling & Professional Services	4.2	4.7	(1) For Financial Services, FRE is based on annual reports and data released by RBI, IRDAI and other financial regulators, whereas the PE was based on benchmark indicator method. (2) For Real Estate, Ownership of Dwelling & Professional Services, data from source agencies along with detailed analysis of DE, NDE and Private Corporate sectors have been used for compilation of estimates for NAS-23, whereas provisional estimates were indicator based.
8	Public Administration, Defence and Other Services	12.6	9.7	(1) For Public Administration and Defence, in NAS - 23, results of detailed analysis of Budget documents (Centre and State Governments) and latest information of Local Bodies and Autonomous Bodies have been used for compilation of estimates, whereas PE were based on indicators. (2) For Other Services, data from source agencies along with detailed analysis of DE, NDE and Private Corporate sectors have been used for compilation of estimates for NAS-23, whereas provisional estimates were indicator based.
9	TOTAL GVA at basic prices	8.1	8.8	

Reasons of revision in GVA growth rate for FY 2020-21 (at 2011-12 prices) from the estimates released in National Accounts Statistics-2022 to the estimates released in National Accounts Statistics-2023

S. No.	Item	NAS 22	NAS 23	Reason for Variation in NAS 2023
1	Agriculture, Forestry and Fishing	3.3	4.1	
1.1	Crops	1.9	2.8	Final estimates of production of major crops, namely cereals, pulses, oilseeds, sugars and fibres released by the Directorate of Economics and Statistics, Ministry of Agriculture & Farmers Welfare for all States/UTs and final production estimates for horticulture crops, fruits and vegetables, condiments and spices, released by Horticulture Statistics Division, Ministry of Agriculture and Farmers Welfare for most of the States/UTs have been used. Latest Cost of Cultivation Study (CCS) rates of by-products have been used. Area and production of State/UT specific crops have been updated as per latest data received from DESs of some States / UTs.
1.2	Livestock	6.1	6.2	Revision in production data for milk and latest updated hatching rates received from DESs of States/UTs have been used to estimate production of milk and poultry meat respectively.
1.3	Forestry and Logging	0.7	5.8	Production of Industrial wood from Trees Outside Forest (TOF) for the year 2020-21 received from Forest Survey of India (FSI) has been used.

1.4	Fishing and Aquaculture	6.0	3.8	Latest data on production and curing activities, received from the State DESs have been used.
2	Mining and Quarrying	-8.6	-8.6	No Major Revision.
3	Manufacturing	-0.6	2.9	Provisional Estimates of ASI 2020-21 has been used in NAS 23, whereas combined growth rate of IIP & WPI was used in NAS 22.
3.1	Food Products, Beverages and Tobacco	3.7	-0.9	Provisional Estimates of ASI 2020-21 has been used in NAS 23 whereas combined growth rate of IIP & WPI was used in NAS 22
3.2	Textiles, Apparel and Leather Products	-18.4	-5.7	Provisional Estimates of ASI 2020-21 has been used in NAS 23 whereas combined growth rate of IIP & WPI was used in NAS 22
3.3	Metal Products	1.8	14.3	Provisional Estimates of ASI 2020-21 has been used in NAS 23 whereas combined growth rate of IIP & WPI was used in NAS 22
3.4	Machinery and Equipment	-6.3	-5.4	Provisional Estimates of ASI 2020-21 has been used in NAS 23 whereas combined growth rate of IIP & WPI was used in NAS 22
3.5	Other Manufactured Goods	7.2	7.5	Provisional Estimates of ASI 2020-21 has been used in NAS 23 whereas combined growth rate of IIP & WPI was used in NAS 22

4	Electricity, Gas, Water Supply & Other Utility services	-3.6	-4.3	Provisional Estimates of ASI 2020-21 has been used in NAS 23 whereas combined growth rate of IIP & WPI was used in NAS 22 and revision in NDE because of increased coverage of data analyzed.
5	Construction	-7.3	-5.7	Revision in value of output of construction sector due to use of updated ASI results and use of updated data of private corporations from M/o Corporate Affairs, budget documents and Annual Accounts of NDEs.
6	Trade, Repair, Hotels and Restaurants	-22.4	-21.2	
6.1	Trade & Repair Services	-19.3	-18.3	Revision in estimates of DE, NDE, Private Corporate and FISIM
6.2	Hotels & Restaurants	-56.4	-53.7	Revision in estimates of NDE, Private Corporate. and FISIM
7	Transport, Storage, Communication & Services Related to Broadcasting	-15.3	-16.5	
7.1	Railways	-18.4	-20.1	Revision is due to use of information of "Actuals" from the budget documents of the Ministry of Railways in place of "Revised Estimates" and use of updated information from Non-Departmental Enterprises (NDEs) and Private Corporate.

7.2	Road Transport	-24.1	-25.6	Revision in DE, NDE, Pvt Corp estimates and FISIM
7.3	Water Transport	-5.6	-5.6	Revision in estimates of DE, NDE, Private Corporate and FISIM
7.4	Air Transport	-65.3	-62.5	Revision in NDE & Private Corporate estimates and FISIM
7.5	Services Incidental to Transport	-10.9	-10.9	Revision in DE, NDE & Private Corporate estimates and FISIM
7.6	Storage	3.0	-2.4	Revision in NDE & Private Corporate estimates and FISIM
7.7	Communication & Services related to Broadcasting	1.8	0.8	Revision in DE, NDE, Pvt. corp. estimates and FISIM
8	Financial Services	5.1	5.1	Revision is due to the use of latest annual report/ data of financial corporations and use of updated price deflator based on non-financial sector.
9	Real Estate, Ownership of Dwellings & Professional Services	1.2	1.0	Revision in NDE, Pvt Corp, OD (GVA Rural) estimates and FISIM.

10	Public Administration and Defence	2.3	-0.6	Revision is on account of a) use of information of “actuals” from the budget documents of the Central & State governments in place of “Revised Estimates”. b) Use of revised and additional data on Local Bodies and Autonomous Institutions.
11	Other Services	-11.5	-13.1	Revision in DE, NDE estimates and FISIM.
12	TOTAL GVA at basic prices	-4.8	-4.2	

Reasons of revision in GVA growth rate for FY 2019-20 (at 2011-12 prices) from the estimates released in National Accounts Statistics-2022 to the estimates released in National Accounts Statistics-2023

S. No.	Item	NAS 22	NAS 23	Reason for Variation in NAS 2023
1	Agriculture, Forestry and Fishing	5.5	6.2	
1.1	Crops	5.5	5.7	Area and production of State/UT specific crops have been updated as per latest data received from DESs of some States / UTs. Latest CCS rates of by-product and revised FISIM have been used.
1.2	Livestock	7.5	7.5	

1.3	Forestry and Logging	0.3	6.1	Latest data on production of Industrial Wood and Non-Timber Forest Products received from DESs of States /UTs have been used. Latest Production data for TOF has also been used.
1.4	Fishing and Aquaculture	4.4	4.5	Latest data on production of Marine Fish, Inland Fish & Prawns received from State Fisheries Departments, Department of Fisheries, Ministry of Fisheries, Animal Husbandry & Dairying and DESs of States/UTs have been used.
2	Mining and Quarrying	-1.5	-3.0	Use of revised sand, other minor minerals estimates.
3	Manufacturing	-2.9	-3.0	Final Estimates of ASI 2019-20 has been used in NAS 23 whereas combined growth rate of IIP & WPI was used in NAS 22.
3.1	Food Products, Beverages and Tobacco	-4.1	-15.8	Final Estimates of ASI 2019-20 has been used in NAS 23 whereas combined growth rate of IIP & WPI was used in NAS 22.
3.2	Textiles, Apparel and Leather Products	-2.1	-3.0	Final Estimates of ASI 2019-20 has been used in NAS 23 whereas combined growth rate of IIP & WPI was used in NAS 22.
3.3	Metal Products	-0.9	0.9	Final Estimates of ASI 2019-20 has been used in NAS 23 whereas combined growth rate of IIP & WPI was used in NAS 22.
3.4	Machinery and Equipment	-4.5	-7.8	Final Estimates of ASI 2019-20 has been used in NAS 23 whereas combined growth rate of IIP & WPI was used in NAS 22.

3.5	Other Manufactured Goods	-2.5	2.7	Final Estimates of ASI 2019-20 has been used in NAS 223 whereas combined growth rate of IIP & WPI was used in NAS 22.
4	Electricity, Gas, Water Supply & Other Utility Services	2.2	2.3	Small Revision due to use of Final Estimates of ASI 2019-20 in NAS 23 whereas combined growth rate of IIP & WPI was used in NAS 22.
5	Construction	1.2	1.6	Due to use of final ASI results.
6	Trade, Repair, Hotels and Restaurants	7.1	7.1	
6.1	Trade & Repair Services	7.1	7.2	Revision in estimates of NDE and FISIM.
6.2	Hotels & Restaurants	6.7	6.0	Revision in estimates of NDE and FISIM.
7	Transport, Storage, Communication & Services related to Broadcasting	3.6	3.6	
7.1	Railways	-9.9	-9.9	No Change
7.2	Road Transport	3.5	3.5	Revision in estimates of NDE and FISIM.

7.3	Water Transport	3.1	3.1	Revision in estimates of NDE and FISIM.
7.4	Air Transport	-2.6	-2.6	Revision in estimates of NDE and FISIM.
7.5	Services incidental to Transport	2.6	2.6	Revision in estimates of NDE and FISIM.
7.6	Storage	1.0	1.7	Revision in estimates of NDE and FISIM.
7.7	Communication & Services related to Broadcasting	11.2	11.1	Revision in FISIM estimates.
8	Financial Services	3.5	3.5	Revision is due to the use of latest annual report / data of financial corporations and use of updated price deflator based on non-financial sector.
9	Real Estate, Ownership of Dwellings & Professional Services	8.0	8.1	Revision in NDE estimates, OD (GVA Rural) estimates and FISIM.
10	Public Administration and Defence	5.1	5.5	Minor revision in the data of State Governments and Local Bodies.

11	Other Services	7.2	7.4	Revision in GG, NDE estimates and FISIM.
12	TOTAL GVA at basic prices	3.8	3.9	