

## **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 OF ESTIMATES DUE TO FRESH/ REVISED DATA**

The first revised estimates and the estimates for the previous years of macro-economic aggregates and their disaggregated components published in NAS 2018 have undergone revision due to fresh/ revised data becoming available. Sources of data utilized in NAS 2019 for preparing estimates for the years 2015-16, 2016-17 and 2017-18, 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 2016-17, final estimates of major Crops, namely cereals, pulses, oilseeds, sugars and fibres released by the DESAg 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 2017-18, fourth advance estimate of major Crops released by the DESAg and third advance estimates for horticulture crops released by Horticulture Statistics Division, Ministry of Agriculture and Farmers Welfare have been used. For 2015-16, final estimates of State specific crops like banana, potato, onion etc. have been used.
- 1.2 Land use statistics – For the years 2015-16 and 2016-17, latest area under crops released by Ministry of Agriculture & Farmers Welfare for some crops and that received from DESs of States/ UTs for remaining crops have been used.
- 1.3 Prices data – For 2015-16 and 2016-17, updated prices of agricultural commodities received from DESs of States / UTs have been applied. For 2017-18, where price data were not available, corresponding WPIs have been applied on prices of 2016-17.

## **2 Livestock**

- 2.1 For 2017-18, final Estimates of production of Milk, Egg, Meat & Wool released by Department of Animal Husbandry, Dairying & Fisheries\* 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 2017-18 were not received, corresponding WPIs have been used.
- 2.3 For all the years, 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 2017-18 were not received, corresponding WPIs have been used.

## **4 Fisheries**

- 4.1 Latest data on production and price of Marine Fish, Inland Fish & Prawns received from State Fisheries Departments; Department of Animal Husbandry, Dairying & Fisheries\* and DESs of States / UTs have been used for all the years. In a few cases, where prices for 2017-18 were not received, corresponding WPIs have 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) in March every year.
- 5.2 Annual Reports of the Mining Companies in Public Sector Enterprises.
- 5.3 Latest data from Ministry of Corporate Affairs.
- 5.4 Latest input 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 office of the Salt Commissioner.
- 5.7 Results of CBRI study and the value of material inputs used in the construction sector for the estimation of sand.
- 5.8 WPI from the Office of Economic Adviser, Ministry of Commerce & Industry.

## **6 Manufacturing**

- 6.1 Latest data on Annual Survey of Industries from Ministry of Statistics & P.I.
- 6.2 Index of Industrial Production (IIP) from Ministry of Statistics & P.I.
- 6.3 WPI from the Office of Economic Adviser, Ministry of Commerce & Industry.
- 6.4 Annual Reports of the Manufacturing Companies in Public Sector Enterprises.
- 6.5 Latest data from Ministry of Corporate Affairs.
- 6.6 Budget documents of the Departmental Enterprises, including those of Railway Workshops.

*\*Department of Animal Husbandry and Dairying (AH&D) and Department of Fisheries are the departments of the newly created Ministry of Fisheries, Animal Husbandry & Dairying which were earlier part of Ministry of Agriculture and Farmers Welfare.*

## **7 Electricity, Gas, Water Supply and Remediation**

- 7.1 Data from latest annual reports of public sector companies.
- 7.2 Revised data on Private Corporations received from MCA.
- 7.3 Budget Documents of the Departmental Enterprises.
- 7.4 Number of Bio-gas plants from Ministry of Non-Conventional Energy.
- 7.5 Value of Production from Khadi and Village Industries Commission.
- 7.6 Consumer Price Index (CPI) from Ministry of Statistics & P.I.
- 7.7 Index of Industrial Production from Ministry of Statistics & P.I.
- 7.8 Wholesale Price Index from Office of economic adviser, Ministry of Commerce and Industry.
- 7.9 Latest data on Annual Survey of Industries from Ministry of Statistics & P.I.

## **8 Construction**

- 8.1 Sources listed at Serial No. 3 and 6.
- 8.2 Data on area of plantation crops from State DESs.
- 8.3 Data on production of cement (from information on 8 core industries) from office of Economic Adviser.
- 8.4 Finances of non-Government companies from Ministry of Corporate Affairs.

## **9 Trade, Repair, Hotels and Restaurants**

- 9.1 Latest data from budget documents and annual reports of public sector undertakings.
- 9.2 Revised data on Private Corporations received from MCA.
- 9.3 NSS 68th round/Population Census 2011 for Workforce (WF) estimates.
- 9.4 NSS 67th round on unincorporated enterprises for value added per worker estimates.
- 9.5 Latest sales tax collection data from Budget documents, turnover of corporate sector and NDEs from MCA database and Annual Accounts respectively.
- 9.6 Sales figure of motor vehicles from SIAM.
- 9.7 WPI from the Office of Economic Adviser, Ministry of Commerce & Industry.
- 9.8 TTM Index.

## **10 Transport by other means**

- 10.1 Latest data from budget documents and annual reports of public sector undertakings.
- 10.2 Revised data on Private Corporations received from MCA.
- 10.3 NSS 68th round/Population Census 2011 for Workforce (WF) estimates.
- 10.4 NSS 67th round on unincorporated enterprises for estimates of value added per worker.
- 10.5 Production trends figure of motor vehicles from SIAM.
- 10.6 WPI from the Office of Economic Adviser, Ministry of Commerce & Industry.
- 10.7 CPI (Transport & Communication) from Ministry of Statistics & P.I.
- 10.8 Cargo Handled Traffic (Major+Minor Port) from Ministry of Shipping.
- 10.9 Rate of growth of private airlines passengers and cargo handled from DGCA.

## **11 Railways, Communication, Public administration and Defence**

- 11.1 Budget documents for the year 2018-19 giving actual figures for the year 2016-17 and Revised Estimates for 2017-18.
- 11.2 Annual Accounts of public and private corporations.

## **12 Financial services**

- 12.1 The NAS 2019 estimates for certain sub-sectors, including cooperative banks, NBFIs, Central and State Finance Corporations, financial auxiliaries and ESIC have been updated based on analysis of latest available annual reports of these enterprises and latest available data on credits, deposits and their distribution among different industries and households, published by the RBI in December 2018. Further, the estimate for financial sector, in constant prices, use 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 2015-16 and 2016-17 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 Ministry of Corporate Affairs.
- 13.3 Latest data on repairs & maintenance of ownership of dwellings based on NSS 70th round on AIDIS (2012-13).
- 13.4 Number of dwellings from Population Census 2011.
- 13.5 NSS 68th round/Population Census 2011 for Workforce (WF) estimates.
- 13.6 NSS 67th round on unincorporated enterprises for value added and weights of different categories of workers.
- 13.7 CPI (Miscellaneous services)/CPI (General) from Ministry of Statistics & P.I.

## **14 Other Services**

- 14.1 Latest budget documents and annual reports of public sector undertakings.
- 14.2 Latest data from Ministry of Corporate Affairs.
- 14.3 NSS 68th round/Population Census 2011 for Workforce (WF) estimates.
- 14.4 NSS 67th round on unincorporated enterprises for value added and weights of different categories of workers.
- 14.5 CPI (Education), CPI (Health), CPI (Recreation) and CPI (Miscellaneous services) from Ministry of Statistics & P.I.
- 14.6 Data on Service Tax collection separately from beauty services and membership of clubs or associations.
- 14.7 Data on estimated number of persons and MPCE (non-food items) from the 61st & 68th (Medical & Others) and 64th & 71st (Education) rounds of Consumer Expenditure Survey.

## **B: Private Final Consumption Expenditure, Saving and Capital Formation**

### **15 Private Final Consumption Expenditure**

- 15.1 Estimates have been revised from 2015-16 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 household sector received from RBI.
- 16.2 For revision in estimates of saving in physical assets, please see item 17.
- 16.3 Revised data on saving of private corporate sector.
- 16.4 Saving of Public Sector revised from 2015-16 to 2017-18 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 Revised data on Private Corporations received from MCA.
- 17.4 Capital Formation of Public Sector revised data.
- 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.

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**Reasons for revision in growth rate in GVA- 2017-18 between the Provisional Estimates released in May-2018 and the estimates released in National Accounts Statistics (NAS)-2019**

S.No.	Item	PE	NAS-19	REASON FOR VARIATION in NAS 2019
1	Agriculture, forestry and fishing	3.4	5.0	Fourth advance estimate of major Crops released by the DESAg and third advance estimates for horticulture crops released by Horticulture Statistics Division, Ministry of Agriculture and Farmers Welfare have been used. Final Estimate of major livestock products as per DADF*, MoAgFW has been used. Projected production IW / TOF / NTFP as per latest data used. Final data on production of fisheries as supplied by DADF*, MoAgFW used.
2	Mining and quarrying	2.9	5.1	In NAS-19; the PC and NDE estimates are based on books of accounts/common companies' growth rates whereas PE estimates were based on smaller sets of corporate filings / indicator based.
3	Manufacturing	5.7	5.9	In NAS-19, the DE, GG, PC and NDE estimates are based on books of accounts/common companies' growth rates whereas PE estimates were based on smaller sets of corporate filings / indicator based.
4	Electricity, gas, water supply & other utility services	7.2	8.6	In NAS-19, the DE, GG, PC and NDE estimates are based on books of accounts/common companies' growth rates whereas PE estimates were indicator based.
5	Construction	5.7	5.6	In NAS-19, data from source agencies have been used. PE estimates were indicators based.
6	Trade, repair, hotels, restaurants, transport, storage, communication & services related to broadcasting	8.0	7.8	Data from source agencies along with detailed analysis of DE, NDE and Private Corporate sectors have been used for compilation of estimates for NAS-19 estimates whereas provisional estimates were indicator based.
7	Financial services, Real estate, ownership of dwelling & professional services	6.6	6.2	(1) For Financial Services, first RE based on annual reports and data released by RBI, IRDAI and other financial regulators, whereas the PE has 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-19 whereas provisional estimates were indicator based.
8	Public administration, defence and Other services	10.0	11.9	(1) For public administration and defence, in NAS - 19, results of detailed analysis of Budget documents (Centre and State Governments) have been used for compilation of estimates whereas PE were based on indicators derived from total revenue expenditure of the Centre and States. (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-19 whereas provisional estimates were indicator based.
9	<b>TOTAL GVA at basic prices</b>	<b>6.5</b>	<b>6.9</b>	

*\*Department of Animal Husbandry and Dairying (AH&D) and Department of Fisheries are the departments of the newly created Ministry of Fisheries, Animal Husbandry & Dairying which were earlier part of Ministry of Agriculture and Farmers Welfare.*

**Reasons for revision in growth rate in GVA 2016-17 between the estimates released in National Accounts Statistics-2018 and the estimates released in National Accounts Statistics-2019**

S.No.	Item	NAS 18	NAS 19	REASON FOR VARIATION in NAS 2019
1	Agriculture, forestry and fishing	6.3	6.3	
1.1	Crops	6.9	5.0	Final estimates of production of major Crops, namely cereals, pulses, oilseeds, sugars and fibres released by the DESAg 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.
1.2	Livestock	6.5	9.9	Latest updated hatching rates received from DESs of States/UTs have been used to estimate production of poultry meat
1.3	Forestry and logging	1.3	1.4	Final Estimate of production of Industrial wood and Minor Forest Product as per DESs of States/UTs have been used.
1.4	Fishing and aquaculture	6.1	10.0	Latest data on production and curing activities, received from the State DESs have also been used.
2	Mining and quarrying	13.0	9.5	Revision in NDE values and revised estimates of Minor minerals and Sand Values.
3	Manufacturing	7.9	7.9	
3.1	Food products, beverages and tobacco	3.4	10.4	Revision in Pvt Corporate and HH estimates.
3.2	Textiles, apparel and leather products	5.6	1.9	Revision in Pvt Corporate estimates.
3.3	Metal products	10.8	26.4	Revision in Pvt Corporate and HH estimates.
3.4	Machinery and equipment	6.5	9.5	Revision in Pvt Corporate estimates.
3.5	Other manufactured goods	9.4	3.4	Revision in Pvt Corporate estimates.
4	Electricity, gas, water supply & other utility services	9.2	10.0	Due to NDE estimates.
5	Construction	1.3	6.1	Revision in value of output of construction sector due to use of updated ASI results in compilation process, use of updated data of private corporations from M/o Corporate Affairs and Annual Accounts of NDEs.
6	Trade, repair, hotels and restaurants	8.9	10.1	
6.1	Trade & repair services	8.9	10.3	Revision in DE, NDE and Pvt Corporate data.
6.2	Hotels & restaurants	8.6	8.7	Revision in NDE and Pvt Corporate data.
7	Transport, storage, communication & services related to broadcasting	4.3	3.4	
7.1	Railways	-1.0	-3.9	Revision due to use of actual data for 2016-17 instead of 2016-17 RE, which was used in NAS 2018 for Departmental enterprises (DEs) and updated information from Non-Departmental enterprises (NDEs) and Pvt. Corporate.
7.2	Road transport	5.9	5.6	Revision in DE, NDE and Pvt. Corporate data.
7.3	Water transport	5.9	5.8	Revision in DE, NDE and Pvt. Corporate data.

**Reasons for revision in growth rate in GVA 2016-17 between the estimates released in National Accounts Statistics-2018 and the estimates released in National Accounts Statistics-2019**

<b>S.No.</b>	<b>Item</b>	<b>NAS 18</b>	<b>NAS 19</b>	<b>REASON FOR VARIATION in NAS 2019</b>
7.4	Air transport	18.7	18.5	Revision in NDE and Pvt. Corporate data.
7.5	Services incidental to transport	7.4	7.0	Combined effect of Road, Water and Air Transport.
7.6	Storage	-3.2	-2.9	Change in WPI and Storage Volume Index.
7.7	Communication & services related to broadcasting	2.5	1.0	Revision in Pvt. Corporate data.
8	Financial services	1.3	3.6	Revision is due to use of latest data of Cooperative banks, financial auxiliaries and ESIC received from NABARD, MCA and ESIC respectively.
9	Real estate, ownership of dwellings & professional services	8.0	10.8	Revision in NDE and Pvt Corporate.
10	Public administration and defence	12.7	8.6	Revision is on account of a) use of 2016-17 actual data from the budget documents of the Central and State Governments (NAS-18 was on the basis of 2016-17 (RE)). b) use of revised and additional data on Local bodies and Autonomous Institutions.
11	Other services	9.0	9.7	Revision in GG, NDE and Pvt Corporate data.
12	<b>TOTAL GVA at basic prices</b>	<b>7.1</b>	<b>7.9</b>	



**Reasons for revision in growth rate in GVA-2015-16 between the estimates released in National Accounts Statistics-2018 and the estimates released in National Accounts Statistics-2019**

S.No.	Item	NAS 18	NAS 19	REASON FOR VARIATION in NAS 2019
1	Agriculture, forestry and fishing	0.6	0.6	
1.1	Crops	-3.2	-2.9	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	7.9	7.5	Latest updated hatching rates received from State/UT DESs have been used to estimate production of poultry meat.
1.3	Forestry and logging	1.8	1.7	Latest data on production of Industrial Wood and Non-Timber Forest Products received from DESs of States /UTs have been used.
1.4	Fishing and aquaculture	10.0	9.7	Latest data on production of Marine Fish, Inland Fish & Prawns received from State Fisheries Departments, Department of Animal Husbandry, Dairying & Fisheries*, Ministry of Agriculture & Farmers Welfare and DESs of States/UTs have been used.
2	Mining and quarrying	13.8	10.1	Due to the revised estimates of Minor Minerals and NDE data.
3	Manufacturing	12.8	13.1	
3.1	Food products, beverages and tobacco	7.2	16.2	Revision in Pvt Corporate estimates.
3.2	Metal products	-9.1	-13.7	Revision in ASI Non Corporate estimates
3.3	Machinery and equipment	16.3	20.3	Revision in Pvt Corporate estimates.
3.4	Other manufactured goods	18.2	16.7	Revision in Pvt Corporate estimates.
4	Construction	3.7	3.6	Due to use of final ASI results in the compilation process.
5	Trade, repair, hotels and restaurants	10.8	11.1	
5.1	Trade & repair services	10.7	10.8	Revision in NDE and Pvt Corporate data.
5.2	Hotels & restaurants	12.9	13.3	Revision in NDE and Pvt Corporate data.
6	Transport, storage, communication & services related to broadcasting	9.3	8.9	
6.1	Road transport	6.6	7.0	Revision in NDE and Pvt. Corporate data.
6.2	Services incidental to transport	6.7	7.4	Combined effect of Road, Water and Air Transport.
6.3	Storage	9.6	13.0	Change in WPI and Storage Volume Index.
6.4	Communication & services related to broadcasting	17.1	14.3	Revision in Pvt. Corporate data.
7	Financial services	7.5	7.3	Revision is due to updated price deflator based on non-financial sector and use of updated data for cooperative banks.
8	Real estate,	12.4	12.1	Revision in NDE, Pvt Corporate data.

**Reasons for revision in growth rate in GVA-2015-16 between the estimates released in National Accounts Statistics-2018 and the estimates released in National Accounts Statistics-2019**

<b>S.No.</b>	<b>Item</b>	<b>NAS 18</b>	<b>NAS 19</b>	<b>REASON FOR VARIATION in NAS 2019</b>
	ownership of dwellings & professional services			
9	Public administration and defence	3.9	3.9	Minor revision is on account of use of revised and additional data on Local bodies and State Autonomous Institutions and use of revised data on economic and purpose classification of some State Governments.
10	<b>TOTAL GVA at basic prices</b>	<b>8.1</b>	<b>8.0</b>	
<i>*Department of Animal Husbandry and Dairying (AH&amp;D) and Department of Fisheries are the departments of the newly created Ministry of Fisheries, Animal Husbandry &amp; Dairying which were earlier part of Ministry of Agriculture and Farmers Welfare.</i>				