

# NOTES ON METHODOLOGY AND REVISIONS IN THE ESTIMATES

The new series on National Accounts Statistics 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 entitled “Changes in Methodology and Data Sources in the new series of National Accounts (base year 2011-12)” released on 26<sup>th</sup> June, 2015 incorporating details of both the data base and the methodology employed in estimation of various aggregates. The estimates presented in this issue of National Accounts Statistics (NAS) are based on the methodology given in the above-mentioned brochure.

The present issue on National Accounts Statistics contains statements on macro-economic aggregates including sectoral analysis, accounts for non-financial corporations, financial corporations, General Government, Households and rest of the world. Besides these it also include aggregates by economic activities and disaggregated statements

The sources of revisions in the estimates made due to availability of fresh/ revised data are given below:

## REVISION OF ESTIMATES DUE TO FRESH/ REVISED DATA

The first revised (earlier referred to as “quick”) estimates and the estimates for the previous years of macro economic aggregates and their disaggregated components published in NAS 2016 have undergone revision due to fresh/ revised data becoming available. Sources of data utilized for the revision of the estimates are given below:

### **A: Output and Value Added**

#### ***1 Crops***

- 1.1 All India final estimates of Major crops and final estimates for horticulture Crops for the years 2013-14 and 2014-15 received from DESAg & Horticulture Statistics Division, Ministry of Agriculture and Farmers Welfare have been used. Fourth advance estimates for major Crops and final estimates for horticulture for the year 2015-16 received from DESAg & Horticulture Statistics Division, Ministry of Agriculture and Farmers Welfare have been used.
- 1.2 Land use statistics (LUS) – Area under crops for the year 2013-14 received from DESAg and LUS for 2014-15 received from States / UTs DES have been used.
- 1.3 Revised data on prices of agricultural commodities 2013-14 to 2014-15 received from States / UTs DES. For 2015-16, WPI of new series for prices have been used.

#### ***2 Livestock***

- 2.1 Final Estimates of production of Milk, Egg, Meat & Wool for the years 2013-14, 2014-15 and 2015-16 received from Department of Animal Husbandry, Dairying & Fisheries, and Ministry of Agriculture & Farmers’ Welfare.
- 2.2 Revised data on prices of Livestock products for the years 2013-14, 2014-15 received from States / UTs DES have been used. For 2015-16, WPI of new series for prices have been used.

### **3 Forestry & Logging**

- 3.1 Data on production and price (certain states for the year 2015-16) of Industrial Wood and Non-Timber Forest Products and data on prices of Fuel wood for 2013-14 to 2015-16 received from States / UTs DES. For 2015-16, WPI of new series for prices have been used.

### **4 Fisheries**

- 4.1 Data on production and price (certain states for the year 2015-16) of Marine Fish, Inland Fish & Prawns for 2013-14 to 2015-16 received from State Fisheries Departments, Department of Animal Husbandry, Dairying & Fisheries, Ministry of Agriculture & Farmers' Welfare and States / UTs DES. For 2015-16, WPI of new series for prices have been used.

### **5 Mining & Quarrying**

- 5.1 Mineral Production, March 2013, 2014, 2015 from "Monthly Statistics of Mineral Production", issued by Indian Bureau of Mines (IBM).
- 5.2 Annual Reports of the Mining Companies in Public Sector Enterprises
- 5.3 Private corporate data from Ministry of Corporate Affairs for the year 2011-12 onwards.
- 5.4 Input Data of Minerals for 2012-13 received from IBM
- 5.5 Production of minor minerals other than sand from 2012-13 onwards 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 Industry.

### **6 Manufacturing**

- 6.1 Data on Annual Survey of Industries, 2011-12 onwards, CSO, I.S. Wing, Kolkata
- 6.2 Index of Industrial Production from CSO
- 6.3 WPI from the Office of Economic Adviser, Ministry of Industry
- 6.4 Annual Reports of the Manufacturing Companies in Public Sector Enterprises
- 6.5 Private corporate data from Ministry of Corporate Affairs for the year 2011-12 onwards.
- 6.6 Budget documents of the Departmental Enterprises including those of Railway Workshops.

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

- 7.1 Annual reports of public sector companies for the year 2011-12 onwards.
- 7.2 MCA 21 data base for the Annual Reports of the Private Sector Companies.
- 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
- 7.7 Index of Industrial Production
- 7.8 Wholesale Price Index
- 7.9 Annual Survey of Industries

### **8 Construction**

- 8.1 Sources listed at Serial No. 3 and 6.

- 8.2 Data on area on 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 Budget documents and annual reports of public sector undertakings for the year 2011-12 onwards.
- 9.2 Private corporate data from Ministry of Corporate Affairs for the year 2011-12 onwards.
- 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 Sales tax collection data from Budget documents and turnover of corporate sector and NDCUs from MCA data and Annual Accounts respectively for the year 2011-12 onwards.
- 9.6 Sales figure of motor vehicles from SIAM.
- 9.7 WPI from the Office of Economic Adviser, Ministry of Industry.
- 9.8 TTM Index

#### **10 Railways, Communication, Public administration & Defence**

- 10.1 Budget documents for the year 2016-17 giving actual figures for the year 2014-15 and Revised Estimates for 2015-16.
- 10.2 Annual Accounts of public and private corporations.

#### **11 Financial services**

- 11.1 The NAS 2016 estimate for certain sub-sectors, including private banks, central and State finance corporations, private NBFCs, and public and private insurance corporations have been updated based on analysis of latest available annual reports of these enterprises and latest available data on credits and deposits. This has resulted in upward revision in the estimates for both the years 2013-14 and 2014-15. Revision in the estimates is also due to changes in the estimates of Consumption of Fixed Capital (CFC).

#### **12 Real Estate, Ownership of Dwellings, Business Services and Legal Services Sector**

- 12.1 Annual reports of public sector undertakings for the year 2011-12 onwards.
- 12.2 Private corporate data from Ministry of Corporate Affairs for the year 2011-12 onwards.
- 12.3 Data on repairs & maintenance of ownership of dwellings based on AIDIS for the year 2011-12 onwards.
- 12.4 Number of dwellings from Population Census 2011.
- 12.5 NSS 68th round/Population Census 2011 for Workforce (WF) estimates.
- 12.6 NSS 67th round on unincorporated enterprises for value added and weights of different categories of workers.
- 12.7 CPI (Miscellaneous services)/CPI(General)

#### **13 Other Services**

- 13.1 Budget documents and annual reports of public sector undertakings for the year 2011-12 onwards.
- 13.2 Private corporate data from Ministry of Corporate Affairs for the year 2011-12 onwards.
- 13.3 NSS 68th round/Population Census 2011 for Workforce (WF) estimates.

- 13.4 NSS 67th round on unincorporated enterprises for value added and weights of different categories of workers.
- 13.5 CPI (Education), CPI (Health), CPI (Recreation) and CPI (Miscellaneous services).
- 13.6 Data on Service Tax collection separately from beauty services and membership of clubs or associations.
- 13.7 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**

### ***14 Private Final Consumption Expenditure.***

- 14.1 Estimates have been revised from 2011-12 onwards due to availability of fresh/ revised data of output, change in stocks, export & import etc. The sources are as listed at 1- 13, 16.7 and 16.8.

### ***15 Saving***

- 15.1 Revised data on net deposits, investments in shares and debentures, net claims on Government, etc. for household sector received from RBI.
- 15.2 For revision in estimates of saving in physical assets, please see item 16.
- 15.3 Revised data on saving of private corporate sector.
- 15.4 Saving of Public Sector revised from 2011-12 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.

### ***16 Capital Formation***

- 16.1 Sources mentioned at Serial Nos. 6, 8, annual returns of NDCUs and budget documents.
- 16.2 Annual Survey of Industries, 2011-12 onwards, CSO, I.S. Wing, Kolkata.
- 16.3 Revised data on Private Corporations received from MCA
- 16.4 Capital Formation of Public Sector revised data.
- 16.5 Whole Sale Price Index: Office of the Economic Adviser.
- 16.6 Index of Industrial Production (IIP) - Central Statistics Office.
- 16.7 Import and Excise Duties – Statistics of Customs & Revenue Collection of the Indian Union from Tax and Research Unit, Ministry of Finance.
- 16.8 Export Import Data Bank, DGCIS, Ministry of Commerce & Industry.

### ***17 Consumption of Fixed Capital***

- 17.1 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. 16.

**REASONS FOR REVISION IN GROWTH RATE IN GVA, 2015-16 BETWEEN THE PROVISIONAL ESTIMATES RELEASED IN MAY 2016 AND THE ESTIMATES RELEASED IN NATIONAL ACCOUNTS STATISTICS 2017**

Sector	GVA growth 2015-16		Reasons for variation
	May 2016	Jan 2017	
1. Agriculture, forestry and fishing	1.2	0.7	Revision due to availability of fourth advance estimate of food grain, provisional final estimates of horticulture crops, final estimate of livestock and revised production data on Fisheries as per DADF, M/o Agriculture & FW data have been used. Revised the production of TOF due to latest data as per ISFR 2015 of FSI have been used.
2. Mining and quarrying	7.4	10.5	In NAS-17, the NDE and PC estimates are based on book of accounts/common companies' growth rates. Also the revised IIP and WPI have been used in NAS-17 estimates
3. Manufacturing	9.3	10.8	In NAS-17, the estimates are based on IIP in respect to Unincorporated part while the PC, NDE and the DE estimates are from the book of accounts/common companies growth rates. Also the revised IIP and WPI have been used in NAS-17 estimates.
4. Electricity, gas, water supply & other utility services	6.6	5.0	In NAS-17, DE, GG, NDE and PC estimates are based on book of accounts/common companies' growth rates. Also the revised IIP and WPI have been used in NAS-17 estimates
5. Construction	3.9	5.0	Revision due to new series of WPI & IIP with base year 2011-12 and revised data from source agencies.
6. Trade, hotels, transport, communication & services related to broadcasting	9.0	10.5	Due to incorporation of TTM index, CPI (Misc) and use of new base (2011-12) WPI
7. Financial, real estate & professional services	10.3	10.8	Updated data on credit & deposit change in price indices (new series WPI).
8. Public administration, defence and other services	6.6	6.9	Revision is on account of a) detailed analysis of 2015-16 (RE) from the Budget documents of the Central and State Governments as compared to use of total revenue expenditure of the Central and State Governments for indicator based estimation in May 2016 estimates and b) information received on local bodies and autonomous bodies.
GVA at basic prices	7.2	7.9	-----

**REASONS FOR REVISION IN GROWTH RATE IN GVA, 2014-15 BETWEEN THE ESTIMATES RELEASED IN NATIONAL ACCOUNTS STATISTICS 2016 AND THE ESTIMATES RELEASED IN NATIONAL ACCOUNTS STATISTICS 2017**

Sector	GVA growth		Reasons for variation
	2014-15		
	NAS 2016	NAS 2017	
1. Crops	-3.2	-3.8	Final estimates of food grain, horticulture and some state specific crop data have been used. Latest consumption of electricity and fertilizer supplied by CEA and FAI respectively in crop sector.
2. Livestock	7.3	7.4	Minor differences due to use of revised estimate of dung as per DES State.
3. Forestry and logging	-1.0	2.6	Final estimates of industrial wood and NTFP as per DES states / UTs have been used. Revised the production of TOF due to latest data published in ISFR 2015 of FSI have been used.
4. Fishing and aquaculture	5.0	7.5	Due to revision of production and curing activities as provided by DES states / UTs have been used.
5. Mining and quarrying	10.8	11.7	PC estimates have gone up due to the use of updated data. Also minor minerals estimates have gone up due to revision in the sand estimates due to the change in the IIP and the WPI.
6. Food Products, Beverages and Tobacco	5.0	13.1	PC estimates have gone up by 11% due to the use of more updated data source and due to use of ASI final results instead of IIP. Also the revised WPI at new base has been incorporated
7. Textiles, Apparel and Leather Products	5.1	1.6	There is a downward fall in the estimates of NDE, PC and HH due to the use of ASI (prov) results and revision in the WPI.
8. Metal Products	8.1	-11.8	Primarily DE (6.6%) and PC estimates (28.5%) have gone down due to the use of updated data and due to the use of ASI (prov) results and revision in the WPI.
9. Machinery and Equipment	5.7	9.1	A growth has been observed in the PC estimates (9%) due to the updated data and usage of WPI at revised base
10. Other Manufactured Goods	4.4	18.4	A growth has been observed in the PC (15.8%) and the HH (6%) sector due to the updated data and usage of WPI at revised base
11. Electricity, gas, water supply & other utility services	8.0	7.1	There is a dip in GG, NDE and PC part due to the usage of updated data and change in the WPI and IIP estimates.
12. Construction	4.4	4.7	Due to revision in value of output of construction materials on account of use of provisional ASI results, revision in WPI & IIP with base year 2011-12, updated data of private corporations from M/o

Sector	GVA growth		Reasons for variation
	2014-15		
	NAS 2016	NAS 2017	
			Corporate Affairs and Annual Accounts of NDCUs.
13. Trade & repair services	10.8	9.4	Incorporation of TTM index.
14. Hotels & restaurants	9.5	6.3	Incorporation of TTM index in place of WPI.
15. Railways	7.7	9.4	Revision on account of use of Actual data for 2014-15 instead of 2014-15 (RE) used in Jan 2016 for DE and updated information record from private corporate and NDE.
16. Road transport	6.3	6.5	Revision in data.
17. Water transport	8.2	8.3	Revision in data.
18. Air transport	12.8	14.0	Revision in data received from DGCA.
19. Services incidental to transport	7.0	7.4	Combined effect of Road, Water & Air transport.
20. Storage	16.8	6.4	Change in WPI and dip in storage volume index.
21. Communication & services related to broadcasting	13.0	13.3	Revision in data.
22. Financial services	7.9	9.0	Due to updated data of credits & deposit with respect to central financial corporations and companies, State Financial corporations and POSB.
23. Real estate, ownership of dwelling & professional services	11.8	12.1	Incorporation of CPI (Misc.)
24. Public administration and defence	9.8	6.7	Revision is on account of a) use of 2014-15 actual data from the Budget documents of the Central and State governments as compared to use of 2014-15 (RE) data in January 2016 estimate and b) use of fresh data on Local Bodies and Autonomous Institutions.
25. Other services	11.4	9.3	Revision in General Government data.
GVA at basic prices	7.1	7.2	-----

**REASONS FOR REVISION IN GROWTH RATE IN GVA, 2013-14 BETWEEN THE ESTIMATES RELEASED IN NATIONAL ACCOUNTS STATISTICS 2016 AND THE ESTIMATES RELEASED IN NATIONAL ACCOUNTS STATISTICS 2017**

Sector	GVA growth		Reasons for variation
	2013-14		
	NAS 2016	NAS 2017	
1. Crops	4.2	5.4	After conformation of DESAg about final production of certain crops, these figures have been used. Apart from this, some state specific crop data have been used.
2. Livestock	5.6	5.6	----
3. Forestry and logging	-1.5	5.9	Final estimates of industrial wood and NTFP as per DES states / UTs have been used. Revised the production of TOF due to latest data published in ISFR 2013, ISFR 2015 of FSI have been used.
4. Fishing and aquaculture	7.6	7.2	Due to revision of production and curing activities as provided by DES states / UTs.
5. Mining and quarrying	3.0	0.2	A downward trend is seen in NDE and HH part due to the updated data and use of new WPI.
6. Food Products, Beverages and Tobacco	-0.1	-0.6	There is a downward trend in all the institutional sector mainly DE and NDE due to the use of updated data and revision in the IIP and WPI.
7. Textiles, Apparel and Leather Products	22.4	22.0	There is a minor dip in the estimates of NDE, PC and HH sectors.
8. Metal Products	26.2	16.3	DE and PC estimates have gone down while NDE and HH part have shown a rise due to the availability of the updated data and use of IIP and WPI
9. Machinery and Equipment	-8.2	-6.0	PC corporate estimates have gone up by 3.4% due to the availability of the updated data and use of IIP and WPI.
10. Other Manufactured Goods	1.9	3.1	Primarily PC sector estimates have gone up by 1.3% due to the use of updated data and revision in the IIP and WPI.
11. Electricity, gas, water supply & other utility services	4.7	4.2	Minor dip in GG, NDE and PC part is due to the usage of updated data and change in the WPI and IIP estimates.
12. Construction	4.6	2.7	Due to revision in value of output of construction materials on account of use of final results of ASI, 2013-14 and new series of WPI & IIP with base year



Sector	GVA growth		Reasons for variation
	2013-14		
	NAS 2016	NAS 2017	
			2011-12.
13. Trade & repair services	7.7	6.0	Incorporation of TTM index.
14. Hotels & restaurants	2.4	-0.4	Incorporation of TTM index.
15. Railways	6.0	6.5	Revision is on account of use of new series of WPI
16. Road transport	6.2	6.4	Revision in data.
17. Water transport	4.2	4.2	-----
18. Air transport	8.7	8.8	Revision in data received from DGCA.
19. Services incidental to transport	5.0	5.6	Combined effect of Road, Water & Air transport.
20. Storage	-7.9	-8.9	Change in WPI and dip in storage volume index.
21. Communication & services related to broadcasting	18.0	16.0	Revision in data.
22. Financial services	4.8	9.1	Due to updated information from SFCs, Scheduled Commercial Bank, Deposit of Cooperative Credit societies and NBFIs and use of new series of WPI
23. Real estate, ownership of dwelling & professional services	12.5	12.1	Incorporation of CPI(Misc.)
24. Public administration and defence	3.2	1.7	Revision is on account of use of fresh data on Local Bodies and State autonomous institutions and use of revised data on economic and purpose classification of State Government budget of Rajasthan.
25. Other services	5.6	5.7	Minor revision in GG data.
GVA at basic prices	6.3	6.1	-----

**REASONS FOR REVISION IN GROWTH RATE IN GVA, 2012-13 BETWEEN THE ESTIMATES RELEASED IN NATIONAL ACCOUNTS STATISTICS 2016 AND THE ESTIMATES RELEASED IN NATIONAL ACCOUNTS STATISTICS 2017**

Sector	GVA growth 2012-13		Reasons for variation
	NAS 2016	NAS 2017	
1. crops	0.2	0.2	Some states specific crops have been revised. Also by-products have been revised based on latest CCS data.
2. livestock	5.2	5.2	Minor difference is due to change in methodology of arriving at the value of feed of livestock. Now we are using WPI of cattle feed instead of Fodder.
3. forestry and logging	0.3	0.2	Fodder from forest was revised on the basis of WPI of cattle feed.
4. fishing and aquaculture	4.9	4.9	Due to revision of production and curing activities as provided by DES of states / UTs.
5. Mining and quarrying	-0.5	0.6	There is a minor change due to the change in the NDE estimates due to the revision of WPI
6. Food Products, Beverages and Tobacco	-6.3	-7.8	There is a downward trend in all the institutional sector mainly DE and NDE due to the use of updated data and revision in the IIP and WPI.
7. Textiles, Apparel and Leather Products	19.7	15.8	There is a downward trend in NDE, PC and HH mainly due to the use of revision in the IIP and WPI.
8. Metal Products	1.7	3.9	The use of new WPI has caused a minor increase in the HH part.
9. Machinery and Equipment	3.0	3.3	Minor increase in the growth rates are due to the use of the new WPI in the PC and the HH part.
10. Other Manufactured Goods	9.9	8.7	There is a downward trend in all the institutional sector mainly DE (7.7%) and NDE (3.2%) due to the use of updated data and revision in the IIP and WPI.
11. Electricity, gas, water supply & other utility services	2.8	2.7	Minor dip is in GG and NDE part due to the change in the WPI and IIP estimates.
12. Construction	0.6	0.3	Due to revision in value of output of construction materials on account of use of new series of WPI & IIP with base year 2011-12.

Sector	GVA growth 2012-13		Reasons for variation
	NAS 2016	NAS 2017	
13. Trade & repair services	11.8	12.0	Incorporation of TTM index.
14. Hotels & restaurants	3.3	3.4	Incorporation of TTM index.
15. Railways	12.8	13.1	Revision on account use of new series of WPI
16. Road transport	7.6	7.6	-----
17. Water transport	2.1	2.1	-----
18. Air transport	-7.0	-4.8	Revision in data received from DGCA.
19. Services incidental to transport	4.4	4.5	Combined effect of Road, Water & Air transport.
20. Storage	11.8	11.9	Change in WPI and dip in storage volume index.
21. Communication & services related to broadcasting	6.8	6.8	----
22. Financial services	9.6	10.3	Due to updated data on price indices(new series of WPI) and some modification in data of Pvt. Life Insurance, Credit and Deposits of banks.
23. Real estate, ownership of dwelling & professional services	9.4	9.5	Incorporation of CPI (Misc.)
24. Public administration and defence	1.6	2.1	Revision on account of use of fresh data on Local Bodies and State autonomous institutions.
25. Other services	6.3	6.3	-----
GVA at basic prices	5.4	5.4	-----