ADVANCE ESTIMATES OF GDP

Introduction

30.1 The Central Statistical Organisation (CSO) introduced the advance estimates of national income in the year 1993, beginning with the estimates for the year 1992-93. These estimates are now released on 7th February or the next working day, of each year. The approach for compiling the advance estimates is broadly based on the benchmark-indicator method. In this method, for each of the industry-groups, namely, agriculture, forestry, fishing, mining, manufacturing, electricity, gas and water supply, trade, hotels and restaurants, transport, storage and communication, banking and insurance, real estate, ownership of dwellings and business services, public administration, a key indicator or a set of key indicators for which data in volume or quantity terms is available during the year, are used to extrapolate the value of output/value added estimates of the previous year. For example, in the case of agriculture sector, the set of key indicators are the advance estimates of agriculture production (at individual crop level) and in the case of manufacturing sector, the key indicators are the index of industrial production (at 2-digit industry group level). The benchmark estimates are the previous year's Quick Estimates.

30.2 For compiling the Advance Estimates at constant prices, the benchmark estimates at constant prices are extrapolated with the growth rates observed in the physical/proxy key indicators. For compiling the estimates at current prices, firstly the implicit price deflators are estimated using the data on prices available from the wholesale and consumer price indexes of the respective industry groups. These industry-wise implicit price deflators are then super-imposed on the Advance Estimates compiled at constant prices, to obtain the industry-wise estimates at current prices.

30.3 A table giving the various indicators used in compiling the Advance estimates, sector-wise, is given at *Appendix 30.1*.

30.4 The industry-wise details of the methodology of estimating the Advance Estimates is described below:

Sources of data and Method of Estimation

Agriculture including livestock

30.5 The advance estimates of agriculture production of different crops are compiled by the Directorate of Economics and Statistics, Ministry of Agriculture (DESAg), based on the data received from the State Agricultural Statistics Authorities (SASAs). For the advance estimates of GDP, which are required to be compiled in the month of January/February, the advance estimates are based on kharif harvest and rabi sowings. The DESAg releases the advance estimates of crop production at quarterly periodicity, beginning with the first advance estimates of kharif production in September.

30.6 In the case of livestock sub-sector, estimates of production, mainly in the form of targets or likely projections are available for milk, egg, and wool, from the Department of Animal Husbandry, Ministry of Agriculture, based on the data received from the Animal Husbandry Departments of States.

30.7 The crops/livestock products for which the advance estimates of production available are rice, wheat, jowar, bajra, barley, maize. ragi, small millets, gram, tur, urad, moong, masur, khesari, moth, kulthi, peas & beans, other kharif pulses, other rabi pulses, groundnut, sesamum, rapeseed & mustard, linseed, castorseed, safflower, nigerseed, coconut, sunflower, soyabean, cotton, jute, mesta, sanhemp, blackpepper, dry chillies, dry ginger, turmeric, arecanut, cardamom, coriander, potato, tapioca, garlic, sweet potato, banana, onion, sugarcane, fruits and vegetables, tobacco, guarseed, milk, egg and wool.

30.8 For preparing Advance estimates of GDP for the current year, the crop-wise estimates of value of output of Quick Estimates, are extrapolated on the basis of growth in production as reflected in the advance estimates of production made available by the DESAg, for the above mentioned crops. For the remaining crops and the livestock products for which the advance estimates of production data are not available, the Quick Estimates of value of output of these crops are extrapolated to the current year, on the basis of past years' growth rates.

30.9 As regards estimation of value of inputs of agriculture sector, the input-ouput ratio of the Quick Estimates is assumed to be the same for the Advance Estimates.

Forestry

30.10 In the case of forestry sector, the advance estimates of value of output for the fuelwood is made in the same manner as

that in the case of Quick Estimates, which is to use the data on consumption of firewood from the results of NSS Consumer expenditure surveys. For the other two items, namely, industrial wood and minor forest products, the Quick Estimates of value of output of these crops are extrapolated to the current year, on the basis of past years' growth rates.

30.11 The inputs of forestry sector are taken to be 10 per cent of value of output, both for the Quick Estimates and the Advance Estimates.

Fishing

30.12 The Quarterly Estimates of production of inland and marine fish are compiled by the Ministry of Agriculture, based on the data received from the State Fisheries departments. For the Advance estimates, data is available for the first two quarters of the current financial year. For preparing Advance estimates for the current year, estimates of value of output of Quick Estimates are extrapolated on the basis of growth in production as reflected in the production duiring the first two quarters of the current year in respect of inland and marine fish. The Advance estimates of input for the current year are compiled using the input-output ratio of Quick Estimates in respect of the fishing sector.

Mining

30.13 The data on production of coal, crude petroleum and the Index of Mining, are available on monthly basis and for 8 to 9 months for the current year, when advance estimates are compiled. The growth rate observed in these items is used to extrapolate the Quick Estimates of value of output of coal, crude petroleum, and other major and minor minerals, respectively. The Advance estimates of input for the current year are made using the annual input-output ratio of the Quick Estimates in respect of the mining sector, separately for fuel minerals and other minerals.

Manufacturing

30.14 The data on Index of Industrial Production (IIP) for the manufacturing sector is available on monthly basis at 2-digit level of National Industrial classification(NIC), and for 8 months for the current year, when advance estimates are compiled. The Advance Estimates of IIP at 2-digit industry groups for the current year are initially compiled by dividing the cumulative index for the 8 months of the current year, by the average of ratio of 8 months index to the annual index of past years. The estimated IIP so derived for the current year at 2-digit level is used to extrapolate the previous year's value added Estimates at 2-digit level, separately for the registered and unregistered manufacturing sectors.

Electricity, Gas and Water Supply

30.15 The indicators for the electricity and water supply sub-sectors are taken to be the monthly Index of Electricity and budget estimates of water supply. The Quick Estimates of Electricity sub-sector are extrapolated with the growth observed in the index of electricity of the current year (which is computed on the same lines as that mentioned above under the manufacturing sector), to arrive at the Advance Estimates of GDP for the electricity sub-sector. For the gas sub-sector, the Quick Estimates value added is extrapolated with the past years' average growh rate to arrive at the Advance Estimates of GDP for the gas sub-sector. For the water supply sub-sector, the Quick Estimates value added is extrapolated with the growth in the budget estimates of expenditure on water supply (after deflating by the CPI(IW)).

Construction

30.16 The construction activity is segregated into two components, namely, pucca construction and kutcha construction. For the pucca construction part, the key indicators are taken to be the production of cement, steel, bricks & tiles and the IIP relating to fixtures & fittings, data on which is available on monthly basis. For the Advance Estimates, data is available for about 8 months of current year. Based on the growth rates observed during the current year on these items, the four components, cement and cement products (using the indicator cement), iron & steel (using the indicator steel), bricks & tiles (using the indicator coal) and timber and roundwood (using the indicator IIP-wooden fixtures), of pucca construction are compiled. For the kutcha construction part, the GDP is estimated using last few years' annual average growth rates.

Trade, Hotels and Restaurants

30.17 The key indicator of the sector, namely, the index of gross trading income is computed on the basis of total estimated gross trading income. The gross trading income for each commodity producing sector (agriculture, livestock, forestry, fishing, mining, registered manufacturing, unregistered manufacturing and imports) is computed using the estimates of value of output of the respective sectors. From the estimated total gross trading income, an index of gross trading income is computed. For the

Advance estimates, the index of gross trading income is compiled by using the values of output of the commodity producing sectors during the current year. This index of gross trading income is used to extrapolate the Quick estimates of the previous year to arrive at the advance estimates.

Railways

30.18 The data on the two key indicators of this sector, namely, passenger kilometers and net tonne kilometers are available on monthly basis. For the Advance Estimates, data is available for about 8 months of current year. The two indicators are combined into one indicator with the weights as earnings from passengers and freight. The growth rate observed in this combined indicator is used to extrapolate the Quick estimates of the previous year to arrive at the advance estimates.

Transport other than Railways

30.19 The data on indicators of this sector, namely, number of commercial vehicles on road (estimated from the production of commercial vehicles), cargo handled at major ports and passenger kilometers flown and freight tonne kilometers flown (both domestic and international) in the case of civil aviation, are available on monthly basis. For the Advance Estimates, data is available for about 8 months of current year. Based on the growth rates observed during the current year on these items, the four components, road (using the indicator of total commercial vehicles on road), water (using the indicator of cargo handled at major ports), air (using the indicators mentioned for civil aviation) and services (using past few years' average growth rate), the Quick estimates of previous year are extrapolated to arrive at Advance Estimates of GDP of the sector.

Communication

30.20 The data on indicators of this sector, namely, the total stock of telephone connections, separately for landline including WLL and cellular, are available on monthly basis. For the Advance Estimates, data is available for about 9 months of current year. Based on the growth rates observed during the current year on the indicators, the Quick estimates of previous year are extrapolated to arrive at Advance Estimates of GDP of the sector.

Banking and Insurance

30.21 For the banking sub-sector, the physical indicator is the sum of aggregate deposits and bank credits (deflated by the wholesale price index), and for the insurance sub-sector, the indicators are the net premiums collected for life and non-life insurance (deflated by the wholesale price index). For the Advance Estimates, data is available for about 8 months of current year. Based on the growth rates observed during the current year on these physical indicators, the Quick estimates of previous year are extrapolated to obtain the Advance Estimates of GDP, separately for the banking and insurance sub-sectors.

Public Administration & Defence

30.22 The indicator for the Advance estimates of GDP is taken as the revenue expenditure of the central and state governments for the first 9 months of the year, deflated by the consumer price index (industrial workers) [CPI(IW)]. Based on the growth rates observed during the current year on this physical indicator, the Quick estimates of previous year are extrapolated to arrive at Advance Estimates of GDP, for the sector.

Other Services

30.23 The Advance estimates for the public sector part of other services are compiled using the growth rate observed in the budget estimates of revenue expenditure of central and state governments. For the non-public sector part of this sector, the advance estimates are made using the past few years' average growth rate, in the absence of data on any relevant indicators of the sector.

Estimates at current prices

30.24 For compiling the advance estimates at current prices, firstly estimates of Implicit Price Deflators (IPDs) are prepared for the current year. The IPD is the ratio of estimates at current prices to those at constant prices. The IPDs for the current year are estimated by extrapolating the previous year's IPDs with the growth rate observed in the relevant WPI/CPIs. The Advance estimate at current prices for a particular sector is compiled as a product of the estimated IPD of the sector and the corresponding Advance estimate of GDP of the sector at constant prices.

INDICATORS USED FOR ADVANCE ESTIMATES OF GDP

SECTOR	INDICATORS
1. Agriculture	<u>Principal Crops</u>: Advance estimates of crop production <u>Other crops</u>: Average of past few years' growth rates <u>Inputs</u>: Previous year's input-output ratio
2. Livestock	<u>Milk, egg and wool:</u> Targets/projections <u>Other products</u>: Average of past few years' growth rates
3. Forestry	<u>Fuel wood</u>: NSS consumer expenditure surveys <u>Other items</u>: Average of past few years' growth rates <u>Inputs</u>: fixed ratios of output, as in the case of previous year
4. Fishing	<u>inland and marine fish</u>: Quarterly production data <u>Inputs</u>: Previous year's input-output ratio
5. Mining and quarrying	<u>Coal and crude petroleum:</u> Monthly Production data <u>Other Items</u>: Index of Industrial Production (Mining) <u>Inputs</u>: fixed ratios of output, as in the case of previous year, separately for fuel minerals and other minerals
6. Manufacturing	Index of Industrial Production (Manufacturing)
7. Electricity, gas and water supply	<u>Electricity</u>: Index of Industrial Production (Electricity) <u>Water Supply</u>: budget estimates of central government revenue expenditure deflated by CPI(IW) <u>Gas</u>: average of past few years' growth rates
8. Construction	<u>Pucca construction</u>: Production of cement, steel, coal and IIP (27) <u>Kutcha construction</u>: average of past few years' growth rate
9. Trade, hotels and restaurants	Gross Trading Index, which is computed using the value of output of commodity producing sectors and imports
10. Railways	Net tonne Kms. and Net passenger Kms. The two indicators are combined using the weights of respective earnings
11. Transport by other means	<u>Road</u>: Number of commercial vehicles on road, estimated using the data on production of commercial vehicles <u>Water</u>: Cargo handled at major ports <u>Air</u>: passenger kilometers flown and freight tonne kilometers flown (both domestic and international) <u>Services</u>: average of past few years' growth rates
12. Communication	Total stock of telephones, both fixed line including WLL and Cellular
13. Banking and insurance	<u>Banking</u>: Total of aggregate deposits and bank credits deflated by the wholesale price index for the sub-sector, <u>Insurance</u>: Net premium received on life and non-life insurance business deflated by the wholesale price index
14. Public administration	Central and state government revenue expenditure deflated by consumer price index (industrial workers)
15. Other services	For the public component, budget estimates of central and state government revenue expenditure deflated by consumer price index (industrial workers) and for the private part average of past few years' growth rates.