

## **CHAPTER 7**

### **REGISTERED MANUFACTURING**

#### **Coverage**

7.1 For purposes of estimation of domestic product, the entire manufacturing activities are classified into two broad sectors, viz., manufacturing - 'registered' and 'unregistered'. The registered manufacturing sector covers all factories covered under sections 2m (i) and 2m (ii) of the Indian Factories Act (IFA), 1948 which respectively refers to the factories employing 10 or more workers and using power or those employing 20 or more workers but not using power on any day of the preceding 12 months and bidi and cigar establishments registered under Bidi and Cigar Workers (Condition of Employment) Act, 1966 and employing 10 or more workers using power or 20 or more workers and not using power.

7.2 A 'factory' or an 'establishment', in the context of registered manufacturing sector, is defined as any premises including the precincts thereof (i) whereon 10 or more workers are working or were working on any day of the preceding 12 months, and in any part of which a manufacturing process is carried on with the aid of power or is ordinarily so carried on or (ii) whereon 20 or more workers are working or were working on any day of the preceding 12 months, and in any part of which a manufacturing process is being carried on without the aid of power or is ordinarily so carried on - but does not include a mine subject to the operation of the Mines and Minerals (Regulation and Development) Act, 1957 or a railway running shed. The 'manufacturing process' is defined as any process for (i) making, altering, repairing, finishing, packing, oiling, washing, cleaning, breaking up, demolishing or otherwise treating or adapting any article or substance with a view to its use, sale, transport, delivery or disposal; (ii) pumping oil, water, sewage or any substance; (iii) generating, transforming or transmitting power; (iv) composing types for printing, printing by letter press, lithography, photogravure or other similar process or book binding; (v) constructing, reconstructing, repairing, refitting, finishing or breaking up of ships or vessels; (vi) preserving or storing any article in cold storage. Factories registered under IFA but not engaged in manufacturing activities are excluded. These registered factories are those whose activities are restricted to providing (i) water and sanitary services, (ii) recreation and cultural services, (iii) personal services which are excluded from the manufacturing sector but are covered under the "services" sector, and likewise those engaged in the generation, transmission and distribution of electricity are covered under "electricity" sector and manufacture of gas in gas works and operation of cold storage though classified under manufacturing are not covered in this sector but included respectively under trade, hotel, restaurants, storage and gas sectors. Railway workshops are, however, included under this sector but not under railways. Thus only industry divisions 2 & 3 and major group 97 are covered under manufacturing. Defence establishments though not covered under ASI are included in this sector.

7.3 All the factories forming a part of the registered manufacturing sector are classified into 19 industry groups as per the NIC-1970 in ASI. The NIC-1970, which inter-alia provided a uniform framework for grouping together economic activities of similar nature prevailing in the economy, has since been revised and replaced by the Revised National Industrial Classification of all Economic Activities (NIC-1987) w.e.f. April, 1988. To facilitate comparability of data a concordance table indicating inter-alia the conversion of data based on NIC-1970 according to NIC-1987 at major industry groups i.e. 2-digit level is given at Appendix 7.1.

#### **Methodology and Source material**

7.4 The estimates of GVA are worked out following the production approach. This approach requires estimates of value of output at ex-factory prices and the corresponding value of input at purchasers' prices. The output, in the context of manufacturing sector, mainly comprises (i) ex-factory value of all products and by-products including semi-finished goods manufactured, (ii) receipts for industrial and non-industrial services

rendered to others, (iii) value of fixed assets produced by the factory for its use, and (iv) net balance of goods sold in the same condition as purchased. Likewise inputs mainly comprise of purchase value of all items of (i) raw-materials, components, chemicals, packing materials and stores actually used for the production process, (ii) fuel, lubricants, electricity, water etc. consumed, (iii) costs of non-industrial services received from other concerns, (iv) cost of material consumed for repairs and maintenance of fixed assets including cost of work done by others to the fixed assets, (v) cost of contract and commission work done by others on materials supplied by the factories and (vi) cost of office supplies etc.

7.5 Data on output and inputs in respect of manufacturing sector are collected annually by the NSSO under the ASI. The survey covers all the factories registered under Sections 2m(i) and 2m(ii) of the IFA, 1948, bidi and cigar manufacturing establishments registered under Bidi and Cigar Workers (Condition of Employment) Act 1966 and employing 10 or more workers using power or 20 or more workers and not using power and all the electricity undertakings registered with the CEA and located in the country except the states of Arunachal Pradesh, Mizoram, Nagaland and Sikkim and Union Territories of Dadra & Nagar Haveli and Lakshadweep Islands. For purposes of ASI, all factories/establishments falling within the purview of ASI are classified into two sectors. The larger factories employing 50 or more workers and using power or 100 or more workers and not using power and all electricity undertakings constitute the Census sector\* and these factories are completely enumerated every year. The remaining factories employing 10 to 49 workers and using power or 20 to 99 workers and not using power constitute the Non-census sector and these factories are covered in two years on the basis of complementary 50 per cent sample\*\* in the alternate years except the industry groups at 3-digit level in which the total number of factories do not exceed 50 at the all-India level and factories located in relatively less industrialised states and union territories which are completely enumerated every year. Though the data collected under ASI are analysed by states and within each state by census and non-census sectors separately, the results pertaining to non-census sector are not published. Even the publication of these results pertaining to the census sector has been discontinued w.e.f. ASI 1983-84. However, major industry-wise estimates of capital formation, employment, output, input etc., covering both the census and non-census sectors at the state level are released in the CSO publication titled ASI-Summary Results for Factory Sector.

### **Estimates at Current Prices**

7.6 The estimates of GVA published in the ASI are not adjusted for the non-responding factories. Supplementary information regarding employment in the non-responding factories for the census sector is available. The industry-wise estimates of output and GVA published in the ASI are adjusted upwardly by the ratio of employment of the non-responding factories to the total employment of the responding factories of the census sector. The estimates of GVA obtained from ASI include banking charges paid by the manufacturing establishments. The value of such services forms a part of the income originating in the banking and insurance sector and as such, is deducted from the GVA of the registered manufacturing sector. In the absence of adequate details, adjustment for imputed banking charges are made only at the aggregate level. The nature of these services and the method of imputation of their values are described in the chapter relating to Banking and Insurance. The industry-wise adjusted estimates of Output and GVA for the base year 1980-81 are presented in Table 7.1.

### **Estimates at Constant Prices**

7.7 The estimates of GVA at 1980-81 prices are obtained by deflating the industry-wise estimates of GVA at current prices at 2-digit level of NIC with the relevant wholesale price indices

\* The coverage of census sector has since been modified to include the large sized factories having 100 or more workers, all three digit industry groups having less than 20

factories at state level in addition to all electricity undertakings as per the existing practice and the factories in the less industrialised states/union territories.

\*\* The non-census sector is now covered taking 1/3rd of the units as sample every year. for the year for which the ASI data are available. For recent years for which the ASI data are not available, the industry-wise constant price estimates of the latest available year are moved forward by using the relevant Index of Industrial Production. As there is no one-to-one correspondence between some of the NIC 2-digit level classification and the corresponding wholesale price indices classification, appropriate price indices are worked out using wholesale price indices of relevant items. For such of these groups at 2-digit level of NIC, a weighted average of the wholesale price indices of these items is worked out, the weights being the value of products and by-products as reported in ASI, 1968. A list of such relevant items/sub-groups is given in Appendix 7.2.

### Quality and limitations of data base

7.8 ASI data relating to both census and non-census sectors are quite comprehensive both in regard to the coverage and sample size and can be considered reliable. The sampling design followed in the case of non-census sector ensures through suitable stratification and arrangement of sampling unit etc., that estimates of adequate reliability are available (i) both at major industry groups (2-digit level of NIC-70) and industry groups (3-digit level of NIC-70) at the all-India level and (ii) at 2-digit level at the state level. However, there is time lag in the publication of ASI results. Consequently, for the years for which ASI results are not available, the industry-wise estimates of output and GVA are prepared on the basis of relevant indices of industrial production and wholesale prices. These estimates of output and GVA when revised on the basis of ASI data undergo changes.

7.9 The estimates at constant prices are prepared using single deflation method. The ideal method to arrive at the constant prices estimates is the double deflation method. This method inter-alia requires quantification of all items of output and input, availability of item-wise data on quantity and value and matching of items between the base year and the year for which these estimates are required. This method also involves estimation at very detailed level of items and is not feasible particularly for multi-product industry groups.

### APPENDIX 7.1: Concordance table from National Industrial Classification (NIC) -1987 TO NIC-1970 at 2-digit level of industry groups

NIC-1987	Description	NIC-1970	Description
(1)	(2)	(3)	(4)
20-21	Manufacture of food products	20&21+315	Manufacture of food products + inedible oils
22	Manufacture of beverages, tobacco and related products	22	Manufacture of beverages, tobacco and tobacco products
23	Manufacture of cotton textiles	23	Manufacture of cotton textiles
24	Manufacture of wool, silk and man-made fibre textiles	24-244	Manufacture of wool, silk and man-made fibre textiles except wool products not elsewhere classified
25	Manufacture of jute and other vegetable fibre textiles (except cotton & coir)	25+268.1	Manufacture of jute, hemp and mesta textiles +coir fibre and yarn

Continued.

**APPENDIX 7.1: Concordance table from National Industrial Classification (NIC) -1987 TO NIC-1970 at 2-digit level of industry groups**

(Concluded)

NIC-1987	Description	NIC-1970	Description
(1)	(2)	(3)	(4)
26	Manufacture of textile products (including wearing apparel)	26+244-265.1	Manufacture of textile products (including wearing apparel other than footwear)+ Manufacture of wool products n.e.c minus umbrellas
27	Manufacture of wood and wood products, furniture and fixtures	27	Manufacture of wood and wood products, furniture and fixtures
28	Manufacture of paper and paper products and printing, publishing and allied industries	28	Manufacture of paper and paper products and printing, publishing and allied industries
29	Manufacture of leather and products of leather, fur and substitutes of leather	29	Manufacture of leather and leather and fur products except repair
30	Manufacture of basic chemicals and chemical products (except products of petroleum and coal)	31-315	Manufacture of chemicals and chemical products (except products of petroleum and coal) minus inedible oils /fats
31	Manufacture of rubber, plastic, petroleum and coal products and processing of nuclear fuels	30+319P	Manufacture of rubber, plastic, petroleum and coal products plus processing of nuclear fuels
32	Manufacture of non-metallic mineral products	32-321.5	Manufacture of non-metallic mineral products minus optical glass
33	Basic metal and alloys industries	33	Basic metal and alloys industries
34	Manufacture of metal products and parts, except machinery and transport equipment	34	Manufacture of metal products and parts, except machinery and transport equipment
35	Manufacture of machinery, machine tools and parts except electrical machinery	35	Manufacture of machinery, machine tools and parts except electrical machinery
36	Manufacture of electrical/electronic machinery, apparatus, appliances and supplies and parts	36-366.2	Manufacture of electrical/electronic machinery, apparatus, appliances and supplies and parts minus electronic control instruments
37	Manufacture of transport equipment and parts	37	Manufacture of transport equipment and parts
38	Other manufacturing industries	38+265.1+321.5+366.2	Other manufacturing industries + umbrellas + optical glass + electronic control instruments
39	Repairs of capital goods	39	Not defined
97	Repair services	97	Repair services

**APPENDIX 7.2: List of relevant items/sub-groups of Wholesale Price Indices used for deflating current price estimates**

NIC-1970	Industry Description	Items/Sub-groups
(1)	(2)	(3)
20-21	Manufacture of food products	Food Products, Tea, Coffee, ghee, butter
22	Manufacture of beverages, tobacco and related products	Beverages, Tobacco & Tobacco products
23	Manufacture of cotton textiles	Cotton Yarn, Cotton Cloth (Mills) Handloom & Powerloom cloth
24	Manufacture of wool, silk and synthetic fibre textiles	Woolen Yarn and Textiles, Silk, Art Silk & Synthetic Fibre Textiles
25	Manufacture of jute, hemp and mesta textiles	Jute, Hemp and Mesta Textiles
26	Manufacture of textile products (including wearing apparel other than footwear)	Other Textile Products
27	Manufacture of wood and wood products, furniture and fixtures	Plywood, Particle Board
28	Manufacture of paper and paper products and printing, publishing and allied industries	Paper & Paper Products, Particle Board
29	Manufacture of leather and leather & fur products except repair	Leather & Leather Products
30	Manufacture of rubber, plastic, petroleum and coal products	Rubber & Rubber Products, Mineral Oil, Coke
31	Manufacture of chemicals and chemical products (except products of petroleum and coal)	Chemicals & Chemical Products, Photo Films
32	Manufacture of non-metallic mineral products	Non-metallic Mineral
33	Basic metal and alloys industries	Basic Metal & Alloys
34	Manufacture of metal products and parts, except machinery and transport equipment	Metal Products
35	Manufacture of machinery, machine tools and parts except electrical machinery	Non-electrical Machinery
36	Manufacture of electrical machinery, apparatus, appliances and supplies and parts	Electrical Machinery
37	Manufacture of transport equipment and parts	Transport Equipment
38	Other manufacturing industries	Watches & Clocks, Fountain Pens, Bones Crushed, Industrial Instruments, Tooth Brushes, House Service Meters, Combs
97	Repair services	Footwear, Transport Equipment, Watches & Clocks, Electrical Mechanical appliances

**TABLE 7.1: Estimates of Output & Gross Value Added, 1980-81**

(Rs. crore)

NIC-1970	Industry Description	Value of Output*	Gross Value Added
(1)	(2)	(3)	(4)
20-21	Manufacture of food products	8047	845
22	Manufacture of beverages, tobacco and related products	1110	246
23	Manufacture of cotton textiles	5652	1567
24	Manufacture of wool, silk and synthetic fibre textiles	2040	443
25	Manufacture of jute, hemp and mesta textiles	896	324
26	Manufacture of textile products (including wearing apparel other than footwear)	874	132
27	Manufacture of wood and wood products, furniture and fixtures	329	71
28	Manufacture of paper and paper products and printing, publishing and allied industries	1763	526
29	Manufacture of leather and leather & fur products except repair	528	77
30	Manufacture of rubber, plastic, petroleum and coal products	6171	614
31	Manufacture of chemicals and chemical products (except products of petroleum and coal)	8165	1854
32	Manufacture of non-metallic mineral products	1694	474
33	Basic metal and alloys industries	7272	1556
34	Manufacture of metal products and parts, except machinery and transport equipment	1410	363
35	Manufacture of machinery, machine tools and parts except electrical machinery	3613	985
36	Manufacture of electrical machinery, apparatus, appliances and supplies and parts	3668	918
37	Manufacture of transport equipment and parts	3390	1007
38	Other manufacturing industries	1443	456
97	Repair services	722	182
	Total	58787	12640
	Imputed Banking Charges		359
	Gross value Added (excluding Banking Charges)		12281

\* - Adjusted for non-responding units.