

CAPITAL FORMATION**Coverage**

- 25.1 Gross capital formation (GCF) refers to the aggregate of gross additions to fixed assets (i.e., fixed capital formation), increase in stocks of inventories, hereinafter referred to as change in stocks during a period of account and net acquisition of valuables. Broadly two types of fixed assets namely construction and machinery & equipment (including transport equipment, software, breeding stock, draught animals, dairy cattle and the like) are covered. Construction for military purposes (other than construction or alteration of family dwellings for military personnel), defence equipment, durable goods in the hands of the households and increase in the stocks of defence materials are excluded from the scope of gross capital formation. However, capital outlays of defence enterprises on ordinance and clothing factories are included. Software which was earlier included in the machinery and equipment, is now segregated from machinery and equipment and shown as a separate item. Besides the above, a new category 'valuables' which covers the expenditures made on net acquisition of valuables, has been included for the first time in the compilation of the gross capital formation in the current series of NAS with base year 1999-2000, in accordance with the recommendations of 1993 SNA.
- 25.2 Construction activity covers all new constructions, major alterations and repairs of: buildings, highways, streets, bridges, culverts, railroad beds, railroads, subways, airports, parking areas, dams, drainages, wells and other irrigation sources, water and power projects, communication systems such as telephone and telegraph lines, land reclamations, bunding and other land improvements; planting and cultivating new orchards (tea, coffee, rubber, mango, cashew nut, areca nut, coconut, citrus, grapes and Sapota plantations); afforestation projects; installation of wind energy systems etc.,
- 25.3 Machinery and equipment comprises all types of machinery like agricultural machinery, power generating machinery, manufacturing, transport equipment, furniture and furnishings. Increments in livestock in respect of breeding stock, draught animals, dairy cattle and other animals raised for wool clippings are also included. Additions to livestock other than the said fixed assets are accounted in change in stock estimates.
- 25.4 The estimates of GCF for the economy as a whole, include all relevant items of new capital goods which are produced domestically (exclusive of exports) and new and second-hand imported goods. According to SNA, imports should include the outlays of the embassies, consulates and other extra-territorial establishments of the government of the given country, on new fixed assets reduced by the net sales of their second-hand and scrapped assets in foreign countries. Similarly, the net outlays of foreign embassies, consulates and other diplomatic bodies located in a country, on fixed assets produced within the country, are to be recorded in the exports and not in the gross fixed capital formation (GFCF) of the given country. The fixed capital outlays of international agencies located in the country are to be treated in an identical manner. Due to want of data, it has not been possible to account for these. The estimation, therefore, follows the domestic concept, whereby, only additions made to stocks of fixed assets and inventories within the geographical boundary of the country have been taken into account. Accordingly, the GCF refers to gross domestic capital formation (GDCF).
- 25.5 Additions to non-reproducible tangible assets such as land, mineral deposits and the natural growth of standing timber or crops have not been included in GCF. However, outlays on improvement of land and development or extension of mining sites, timber tracts and plantations are taken as part of capital formation. The outlays on incomplete construction works incurred during the period are included in the estimates of fixed assets.
- 25.6 Inventories consist of materials and supplies; work-in-progress; finished products; and goods in the possession of producers and dealers. Stocks of strategic materials, grains and other commodities of special importance to the nation, in the possession of government are also included in the estimates of change in stocks.
- 25.7 The estimates of GFCF for the country are prepared both by type of assets viz., construction, machinery and equipment, software, valuables and by industry of use.
- 25.8 The estimates of GDCF by type of assets are prepared separately for construction, machinery and equipment, software, change in stocks and valuables. The commodity flow approach is used for preparing the annual

Methodology and Sources of data**Domestic Capital Formation by Type of Assets at Current Prices**

estimates of pucca construction works as well as for machinery and equipment. The estimates of kutcha construction are prepared using the expenditure approach. The estimates of change in stock are prepared by industrial categories only.

25.9 **Construction:** The estimates of domestic capital formation in construction are compiled separately for pucca construction and kutcha construction. The total expenditure on construction is the aggregate of the values of both material inputs and factor payments in the form of payments to labour as well as to capital (i.e., rent, interest, profits etc.). The total value of construction undertaken during the year is inclusive of new construction including major repairs and replacements (herein after referred to as new construction) and current repairs and maintenance. To obtain the estimates of gross fixed capital formation, only new construction is considered.

25.10 The value of output of pucca construction is worked out at the aggregate level and its break up into new construction and repairs & maintenance by institution is not attempted by Commodity Flow Approach (CFA) for want of requisite data. On the other hand the new construction component of kutcha construction is estimated separately for each of the institutional sectors, i.e. public sector, private corporate sector and households as explained in the chapter on Construction. In order to work out the estimates of fixed capital formation for pucca construction, the current repairs & maintenance component is estimated and subtracted from the value of output of pucca construction. The estimates of current repairs & maintenance by institutions are prepared through expenditure approach. This approach, incidentally, also provides the estimates of fixed capital formation by type of institutions, as discussed below.

25.11 In case of public sector, the estimates of expenditure on new construction and repairs and maintenance are obtained by analysing the budget documents and annual accounts of public sector enterprises/companies. Such estimates for private corporate sector are based on RBI studies of sample joint stock companies and the estimates for the co-operative credit and non credit societies are based on the data obtained from the NABARD. The estimates of expenditure on new pucca construction and repairs & maintenance in case of household sector have been prepared in three parts - (i) rural residential buildings, (ii) urban residential buildings, and (iii) rural/urban non-residential

buildings & other construction works (repair & maintenance only). These are based on the data thrown up by AIDIS, 2002-03 in the current series of NAS. As the whole of the expenditure on construction estimated on the basis of AIDIS, 2002-03 comprises both pucca and kutcha construction, ratios based on NSSO 58th Round survey on "Housing conditions in India" Report No 488 and other sources are used to estimate the components of pucca and kutcha constructions. Although the point estimate of new construction for rural/urban non-residential buildings and other construction works, in respect of pucca construction, is also available in the report on AIDIS, 2002-03, the estimate for the Household Sector category of pucca construction is derived as residual i.e., by deducting the independent estimates of expenditure on new construction and repairs and maintenance of two institutional sectors (Public Sector and Private Sector) as detailed above from the estimates of total value of construction accounted in commodity flow approach.

25.12 Similarly, in respect of labour intensive kutcha construction works, independent estimates of expenditure on new construction and repairs and maintenance are obtained for relevant categories. In respect of public sector, the estimates of expenditure on kutcha new construction are based on the analysis of budget documents. These relate to afforestation and reforestation, soil conservation and area development, capital expenditure on 'other construction comprising bunding, field drains, kutcha bridges etc. In the case of private corporate sector, kutcha construction covers expenditure on plantation crops. So far only ten plantation crops have been covered. Expenditure towards repairs and maintenance for these two categories is assumed to be nil. For the household sector, the estimates of expenditure on new construction and repairs and maintenance are based on the results of AIDIS, 2002-03. As stated earlier, ratios contained in the NSSO reports are used to estimate the components of kutcha construction separately for residential buildings, non-residential buildings and other construction works. The estimates in respect of public and private corporate sectors are based on current data for each year. However, in case of household sector the estimates of expenditure on new construction and repairs and maintenance based on the results of AIDIS, are moved backward and forward with suitable quantum and price indicators detailed in chapter 14 on Construction to obtain the corresponding estimates in other years, for kutcha construction in household sector.

- 25.13 **Machinery & equipment:** The GFCF from machinery and equipment includes the ex-factory value of capital goods produced in the registered and unregistered manufacturing sectors, the excise duties paid on them, net imports of capital goods including Import duties and TTMs, software production, fixed assets in livestock and installation charges of wind energy systems. The estimates of capital goods (at current prices) in machinery and equipment are prepared by the commodity flow approach. Latest available survey results (ASI 1999-2000-detailed results) have been used for determining the item basket of capital goods. In this regard, a revised capital goods item basket using the detailed results of ASI 1999-2000 based on NIC 1998 classification has been prepared. The results of NSS 56th Round (2000-01) on unregistered manufacturing enterprises have been taken into account to compile the estimates in machinery and equipment at current prices for unorganized sector.
- 25.14 Various items of machinery and equipment domestically produced and net of imports, are classified into (i) capital goods; (ii) parts of capital goods; (iii) partly capital goods and (iv) parts of partly capital goods. The total value of the items classified under (i) is taken on 100% basis for capital formation. In the case item (ii) 50 per cent of the total value is taken as capital formation and the rest is treated as intermediate consumption. The proportions of partly capital goods attributable to capital formation are given in *Appendix 25.4*. Similarly, half of the proportions applicable to partly capital goods is taken as the value of parts of partly capital goods for estimating fixed capital formation. Detailed methodology is given in the succeeding paras.
- 25.15 For the registered manufacturing sector, the estimated value of capital goods at four/ three/ two digit level has been prepared considering the nature of capital goods - fully capital goods (FCG), parts of fully capital goods (PCG), partly capital goods (Ply CG) and parts of partly capital goods (PPly CG) for the year 1999-2000. At 2-digit NIC 1998 level, the value of capital goods have been regrouped into the four categories, namely (i) non-electrical, (NIC 1998 codes 29 and 30), (ii) electrical (NIC 1998 codes 31 and 32), (iii) transport and other transport equipment (NIC 1998 codes 34 and 35), and (iv) others (NIC 1998 codes 20, 21, 22, 25, 27, 28, 33, 36, 37). For the succeeding years, the ratio observed between the value (GVO) of capital goods and the value of products and byproducts at 4-digit level in the base year has been used to compile the value of capital goods from the GVO estimates.
- 25.16 For the unregistered manufacturing sector, results of NSS 56th Round survey (2000-01) on unorganized manufacturing enterprises (GVO estimates at three and four digit level) have been used in compiling the estimates of value of capital goods from unorganized sector. Using the GVO estimates at the relevant 4-digit level from this survey and the ratio of value of capital goods to the GVO as available from the ASI 1999-2000 detailed results, the estimates of value of capital goods at 4-digit levels have been compiled for the unorganized sector.
- 25.17 To the ex-factory value of capital goods produced domestically, the amount of excise duties is added. Similarly, imports and import duties are also taken into account. From the total thus obtained, the value of re-exports is deducted to obtain the availability of capital goods. The value of capital goods so obtained is then marked up for trade, transport and other charges to obtain the value at purchasers' prices. Trade, transport and other installation charges have been estimated for the year 1999-00 on the basis of information obtained from the IOTT 1998-99. From the total value at purchasers' prices thus obtained, the value of exports is deducted to obtain the value of capital formation at site.
- 25.18 For estimating the value of additions to livestock taken to form part of fixed assets, all livestock (excepting bulls and bullocks over three years not in use for breeding or work, cows over three years not in use for work or breeding purposes, young male & female stock, goats under one year, female goats of one year and above and not in milk, pigs and poultry) are taken into account. As the annual data on livestock population are not available, these are estimated by extrapolation using geometric rate of growth determined from the data on 17th Indian Livestock Census (ILC) 2003 and 16th ILC 1997. For working out the estimates of capital formation, the number of livestock thus obtained have been evaluated at the average wholesale prices obtained for various categories.
- 25.19 **Valuables:** In accordance with the recommendations of 1993 SNA, the data on expenditures made on net acquisition of valuables on precious items like gold, gems, ornaments and precious stones etc, has been included under GFCF, as a separate category under "produced fixed assets" (separately from the GFCF and Change in Stocks). As per SNA 1993 (Page308), valuables are classified as:

- Precious metals and stones that are not held for use as inputs into production processes;
- Other valuables such as collections of jewelry of significant value fashioned out of precious stones and metals; and
- Antiques and other art objects such as paintings and sculptures.

25.20 In the current series the coverage of valuables has been restricted to include the precious articles with HS codes 7102 (diamonds), 7103 (other gems and stones), 7106 (silver), 7108 (gold), 7110 (platinum), 7113 and 7114 (gold and silver ornaments), keeping in view the data availability. The monetary gold is not regarded as 'Valuables'. The total production of valuables and net imports have been taken into for compiling the estimates of valuables. Since these valuables also have industrial use, norms of 95% and 10%, respectively for gold and silver, have been used, to arrive at the estimates on acquisition of these items as store of value. Suitable adjustments have been made on the export data on valuables to account for value addition done in the country (GVA and change in stock), so that imports and exports of valuables are on comparative quantity terms.

Domestic Capital Formation by Type of Institutions

25.21 The estimates of gross capital formation for the public sector & private corporate sector are also prepared by expenditure approach on the basis of analysis of budget documents and annual reports of enterprises. These estimates of public sector plus private corporate sector including co-operatives by type of assets (construction and M&E) are subtracted from the corresponding estimates of commodity flow to arrive at the estimates for household sector as a residual.

Gross Domestic Capital Formation by Industry of Use

25.22 An independent set of estimates of gross fixed capital formation (GFCF) and Change in Stock (CIS) for each of the industrial categories is prepared primarily following the expenditure approach. Initially, the estimates are prepared for the three institutional sectors separately and the estimates are then aggregated at the industry level to prepare the estimates of GCF by industry of use.

Gross Fixed Capital Formation

25.23 **Public Sector:** Under public sector, all the three institutional sub-sectors, namely Government Administration, Departmental Commercial Undertakings (DCU's) and Non

Departmental Commercial Undertakings (NDCU's) are covered for compiling the GFCF estimates. Using the information collected on the actual expenditures incurred on the new construction of Roads, Buildings, and Other Construction, and new expenditures made on acquisition of the Machinery, Transport vehicles and equipment, Software and other capital outlays on livestock, the estimates of the GFCF at current prices for the current year are prepared for Administration and DCUs. Here net purchase of second hand assets is also included. In case of the NDCUs, the information obtained from the books of Accounts is used. The expenditure incurred on usual/ routine repair and maintenance is not covered for compilation of capital formation.

25.24 **Private Corporate Sector:** In respect of the joint stock companies of private corporate sector, the estimates of GFCF and CIS for each industrial category are made available directly by the RBI on the basis of their sample studies of joint stock companies. The results of the sample studies are published in their publication entitled 'Finances of Public and Private Limited Companies'. Generally, the RBI gives data every year on GFCF and CIS for a set of three years based on the analysis of sample of companies for the Indian Economy. Moreover, once in 3 years, they also give industry wise distribution of the GFCF estimates of the joint stock companies for the first year of the set of three years. Using this distribution and yearly total of GFCF estimate at current price of the total economy, the industry wise annual GFCF estimates are derived. Whenever, the next set of estimates are received, the industry wise GFCF estimates are revised. The estimates of GFCF of private commercial banks and private insurance companies are estimated separately.

25.25 **Co-operatives:** Mostly, the cooperative societies are involved in the activities of Registered Manufacturing, Trade (non credit societies), Banking (credit societies). For compilation of GFCF estimates, all three activity groups are covered. In cooperative sector, the data obtained from the NABARD in the form of various tables are used.

25.26 **Household Sector:** For most of the industries, the GFCF estimates of household sector for the current year at current prices are derived from the bench mark surveys using appropriate indicators/ratios/norms etc or by capital output ratio. WPI for the appropriate industry group is used to convert at current prices estimates to

constant prices estimates, and vice versa in a specific industry. Wherever, an appropriate WPI is not available, WPI of all commodities is used.

25.27 Detailed industry wise methodology followed for obtaining the estimates of all the institutional sectors is as follows:

25.28 **Agriculture:** The estimates of GFCF are prepared separately for public, private corporate and the household sectors. Data on improvement of land and irrigation works and flood control projects, laying of new orchards and plantations and purchase of agricultural machinery and implements in the public sector are obtained by analyzing the budget documents and annual reports. The estimates of capital expenditure in respect of tea, coffee and rubber plantations which are mainly in the private corporate sector are prepared on the basis of data on area on extensions and replacements as available in the annual reports of Tea, Coffee and rubber Boards. As regards the estimates of GFCF in the household sector, the same are prepared separately for (a) construction and (b) machinery & transport equipment for the bench mark year on the basis of the data available from AIDIS, for the households engaged in farm business. The construction estimates so obtained from AIDIS are moved with the growth rate of simple aggregate of output of agriculture and increment in livestock for subsequent years. Then by applying the price index of rural/urban nonresidential buildings and other construction works (specially prepared for this purpose) current price estimates of new construction are obtained. For the estimates of machinery and equipment, the capital goods ratio (utilization for production) obtained on the basis of detailed analysis of ASI 1999-2000 results relating to "value of products and by products for the NIC 1998 code 2921" has been applied to obtain the value of capital goods for farm business. Excise duty/imports (item code 8432-8436, 8701), import duties and 18.8 % of the total value as TTM are also added. From this the value of (machinery portion of) private corporate sector and public sector are subtracted. This is used as indicator for moving the bench mark estimate of expenditure on machinery by the households to get their corresponding GFCF estimates at current prices. By adding the construction and Machinery estimates, the total GFCF estimate is thus arrived at. Increment in livestock (part of machinery) which is to be treated as fixed assets (livestock used for dairying, breeding, and draught purpose) is separately worked out using the information

from livestock censuses, based on geometric growth rates and other capital transfers from government (GFCE purpose classification 8.2). The estimates of capital expenditure incurred in cultivating the other Plantation crops in its gestation period (using the incremental area technique and the cost structure based on type studies conducted by the Commodity Boards and/or given by the NABARD) are also covered while compiling the GFCF estimates.

25.29 **Forestry and Logging:** In respect of this industry, no separate data is available for the private sector. The estimates of public sector are prepared first and then marked up by 5.4 per cent to account both the private corporate and household sectors. The norm has been obtained on the basis of the ownership of forests in the country. The estimates of GFCF in public sector are obtained by analyzing the budget documents and annual report of non departmental enterprises.

25.30 **Fishing:** For fishing industry, the estimates for Public sector and private sector are prepared separately. For public sector, the estimates are prepared by analyzing the annual accounts of non departmental enterprises. The private sector estimates are completely treated as that of household. The household estimates of gross fixed capital stock (GFCS) are compiled from the livestock census data on fishing boats and nets etc as benchmark estimate for the base year. The growth rate observed in the inputs is taken as indicator for moving the benchmark GFCS estimate. The GFCF estimates at constant prices are prepared as the difference of GFCS estimates between the successive years. A composite index of WPIs of timber, diesel engine and nylon terrene and mixed cotton is prepared and used for arriving at the estimates of GFCF at current prices.

25.31 **Mining & Quarrying:** The estimates of GFCF in the public sector non-departmental enterprises are obtained from the analysis of the annual reports of such enterprises. In respect of the private corporate sector, the estimates are made available directly by the RBI on the basis of their studies of sample joint stock companies. The GFCF estimate, in the Household Sector, for minor minerals is also prepared. For this purpose, the results of the Enterprise Survey for the year 1992-93 have been utilized to get benchmark estimates. For compiling the estimates of GFCF for other years at current prices, the growth rate observed in the output of minor minerals is used on the

bench mark level GFCF estimates.

- 25.32 **Registered Manufacturing:** The estimates of GFCF are obtained separately for Public Sector and Private Corporate Sector. The estimates relating to public sector are obtained by analyzing budget documents and annual accounts of non-departmental enterprises. The estimates for private corporate sector as supplied by the RBI are used. Data on the Non credit cooperatives from NABARD are also included in the private corporate sector. Under the household sector, the contribution of individual proprietorship, joint family and partnership factories has been derived from the ASI 1999-00 results and taken as the bench mark estimates. For the other years, the growth rate observed in the output of total registered manufacturing is applied and GFCF of the household sector at current prices are thus obtained.
- 25.33 **Unregistered Manufacturing:** The GFCF estimate of manufacturing in the private sector for the base year are obtained by using the capital output ratio. From this estimate, an estimated portion is taken out (equal to a fixed proportion of the private corporate estimate of GFCF of the Registered Manufacturing as given by the RBI) and earmarked as that of private corporate and the residual estimate is treated as that of the GFCF in Household sector in unregistered manufacturing. The estimates for subsequent years are obtained by moving the base year estimates on the basis of GVA at constant prices and appropriate price index.
- 25.34 **Electricity, Gas & Water Supply:** The estimates for this industry are prepared for all three institutional sectors. Under water supply only public sector estimates are prepared. The capital transfers from government to the corporations for the purposes of water supply (purpose item no. 8.4) have been taken into account as fixed capital formation. For the entire activity, the private corporate estimates are obtained from the RBI. The capital investment made in the Bio-gas plants, wind energy systems are covered under household sector. The estimates are compiled using the data available on number of biogas plants, and unit prices for installation in case of biogas plants from the Ministry of New and Renewable Energy. The capital expenditure incurred in installation of wind energy systems is estimated separately using the NABARD cost structures and year wise installation capacities released by the Ministry of Non-Conventional Energy
- Sources. For this purpose, wind mills, aero generators and wind turbines are considered. The total capital expenditure estimated, is distributed among the three institutional sectors, and by type of assets using specified norms.
- 25.35 **Construction:** The estimates of GFCF in respect of public sector are obtained by analyzing the annual reports/budget documents. For the private corporate sector, the estimates are made available by the RBI based on their studies on sample joint stock companies. However, for estimating GFCF in household sector, the estimate of GFCF for entire economy are first prepared by using the capital stock to output ratio and deducting the estimates of public and private corporate sector. The bench mark ratio for the year (1993-94) at current prices has been applied to the Output of the base year (1999-2000) and its preceding year (1998-99) to get the GFCF estimates and thus GFCF (flow) at current prices of the base year, as difference. Thereafter, the GFCF estimates of public sector and private corporate sector in the base year are subtracted to arrive at the GFCF estimate of the household sector at current prices. The estimate of the private sector in the base year (private corporate and household) is then moved with the help of growth rate observed in the GVA in the construction sector at current prices to obtain the GFCF at current prices for the private sector and by subtracting the private corporate sector estimate from this, the GFCF estimates for household sector are obtained.
- 25.36 **Trade:** The estimates for public sector are obtained by analyzing the annual reports of statutory corporations/companies. The estimates of GFCF in respect of joint stock companies and cooperative societies as made available by RBI and obtained from NABARD publication relating to non credit society are used as belonging to private corporate sector. For household sector, the estimates of GFCF for bench mark year have been prepared using the capital output ratio (Capital Stock to GVA) and moved for subsequent years on the basis of respective GVA estimates.
- 25.37 **Hotels and Restaurants:** In this sector, the previous bench mark GFCF estimates of 1988-89 and 1993-94 are moved with the growth rate noticed in the number of enterprises (results obtained from the enterprise survey 1988-89 and 1993-94) to obtain the GFCF estimate at constant prices of the current year. The WPI of construction

and machinery is used to arrive at GFCF at current prices.

- 25.38 **Railways:** Estimates of GFCF for railways have been obtained by analyzing the budget documents and annual accounts of non-departmental enterprises. The estimates refer to transport services only and exclude capital employed in railway workshops & manufacturing units and construction activities undertaken by the railways. The latter are included in the respective industrial sectors.
- 25.39 **Transport by other means:** The estimates relating to transport by other means in public sector are obtained by analyzing the annual accounts of transport companies, International Airport Authority of India etc., and budget documents of Department of Civil Aviation. The estimate of GFCF in the case of private airlines is directly compiled from the annual reports of the private airline companies and is covered as a separate component of private corporate sector. The total estimate of private sector is prepared under the '*transport by other means*' using the capital output ratio and the estimate of Private Corporate Sector obtained from the RBI is deducted from the total to arrive at the household sector. The private corporate sector estimate obtained from the RBI is suitably adjusted (added) with the estimate of GFCF of private airlines prepared separately.
- 25.40 **Storage:** The public sector estimates of the GFCF under the storage activity are separately compiled from the analysis of the accounts of corporations/ companies engaged in storage. The private sector estimates are prepared based on the ASI results on storage. The enterprise survey results for the year 1992-93 on GFCF estimates have been moved to arrive at current price estimates for subsequent years for the Household Sector. This estimate is deducted from the private estimate as compiled from ASI to arrive at the estimate of private corporate sector at current price.
- 25.41 **Communication:** The public sector estimates are prepared by analyzing the budget documents and annual reports. The GFCF estimate of private communication is prepared using the growth rate of GVA relating to communication in Private sector and the proportion to public GFCF/Public GVA. The entire estimate of the private sector is treated as the estimate of private corporate sector.
- 25.42 **Financing, real estate, ownership of**
- 25.43 **dwellingings & business services:**** Under banking and insurance, estimates for household sector are not prepared. The private sector includes private banks, private insurance companies, foreign banks, financial joint stock companies and cooperative credit societies. The estimates of the private banks, including foreign banks, are compiled from the statistical tables relating to banks in India published by RBI. The estimates of GFCF, in case of financial joint stock companies, are directly obtained from RBI. Estimates relating to private insurance companies are compiled by analyzing their annual reports. The estimates of credit societies are obtained from the statistical tables released by NABARD. The estimates of GFCF in respect of public sector comprising RBI, nationalize banks, financial corporations and insurance companies are obtained by analyzing their annual reports.
- 25.43 The estimates of GFCF in respect of ownership of dwelling in public sector are prepared by analyzing the budget documents. For private corporate sector the estimates are supplied by the RBI based on their studies of joint stock companies. For household sector, the data obtained from AIDIS, 2002-03 in respect of '*Ownership of Dwellingings*' have been used. The governments' capital transfers to the households under this sector (GFCE purpose Item No 8.6) have also been accounted for. Under the business services, estimates of software component are prepared. The estimates are compiled by observing the capital output ratio of software companies and applying it on the production estimate (82 per cent of onsite production-data obtained from NASSCOM). Thus the stock estimate (GFCS) is obtained. The estimates of GFCF are obtained as net additions to fixed assets.
- 25.44 **Public Administration and Defence:** For the public sector, the data on GFCF by type of assets is culled out from the budget documents. The quasi government bodies dealing in public services are also taken into account. The GFCF, GVA estimates for the year 1999-00 have been estimated from the Books of Accounts and for the succeeding years, the GVA obtained from a sample of Quasi-bodies is used for moving the GFCF/GVA ratio to obtain the current year's GFCF estimates.
- 25.45 **Other Services:** The estimates of all the three sectors, namely, public, private corporate and households are prepared under the activity. The public sector

estimate is first prepared from the analysis of budget, documents and annual reports. The household sector includes three components, namely, educational, health, and sanitary & other services. Results of Enterprise survey, 1991-92 on other services in the unorganized sector have been made use of to arrive at the household sector estimate. The individual bench mark estimate for the three components arrived from the enterprise survey results are moved with the growth rate observed in the public sector to arrive at the current price estimates. The quasi-government bodies of private scientific and research services not elsewhere classified is taken into account under the private corporate sector in addition to the estimate obtained from the RBI from the private corporate sector.

- 25.46 The GFCF estimates thus arrived at differ with those of by type of assets. The GFCF estimates obtained from commodity flow approach for the entire economy are taken as firmer estimates and the industry wise GFCF estimates for Private Corporate and Household Sectors compiled by the expenditure method, are adjusted proportionately with the estimates compiled by institutions through the commodity flow approach.

Change in Stock

- 25.47 The estimates of Change in Stock (CIS) at Current Price (CP) and Constant Price (KP) and estimates of inventory at CP and KP are compiled for all three institutional sectors (Public sector, Private corporate sector and Household sector) and for each industry category. These are estimated through the expenditure method. They are compiled first for each of the three institutional sectors or sub sectors wherever data is adequately available separately and thereafter the industry level estimates are obtained by combining them.
- 25.48 The general methodology used is described below using the mathematical formulae /notations.

$$I_t \text{ at c.p} = BCIS_t \text{ at c.p} + I_{t-1} \text{ at c.p}$$

$$I_t \text{ at k.p} = I_t \text{ at c.p} * WPI_0 / WPI_t$$

$$CIS_t \text{ at k.p} = I_t \text{ at k.p} - I_{t-1} \text{ at k.p}$$

$$CIS_t \text{ at c.p} = CIS_t \text{ at k.p} * WPI_t / WPI_0$$

Where

- I_t at c.p is Inventory at current prices for the current year 't';
- $BCIS_t$ is the book value of change in stock during the year 't' at current prices obtained from the books of accounts;

- I_t at k.p is Inventory at constant prices for the current year 't', obtained using the appropriate index numbers;
- WPI_t/WPI_0 is the ratio of the appropriate price index numbers used for conversion of estimates from constant to current prices;
- CIS_t is the change in stock for the current year 't';
- C.P current prices; and
- K.P constant prices.

- 25.49 The book value of the change in stock for the current year at CP is added to the previous year's inventory at CP to derive the current year's inventory at CP. Appropriate WPI is used to obtain the inventory of the current year at KP. Difference between two successive years' inventory estimates at KP is taken as CIS estimate of the current year at K.P. Using the same WPI, the CIS estimates at CP are obtained.

- 25.50 Generally the above said method is followed to compile the estimates of CIS and inventory in Public Sector and Cooperative Sector. In case of co-operative societies, the industries covered are manufacturing and trade. The estimates of private corporate sector are supplied by RBI after revaluation of inventory estimates. For household sector, estimates are not prepared for all industrial categories. The industries covered are Agriculture, Mining & Quarrying, Registered Manufacturing, Un-registered Manufacturing, Trade, Hotels and Restaurants, Transport by other means, Storage and Warehousing.

- 25.51 Detailed industry wise, methodology followed is given in the succeeding paras Generally, for most of the industrial categories under public and private corporate sector, the CIS estimates for the current year at CP are directly available. However for household sector, the CIS estimates are not available directly. The same are derived from the bench mark surveys using appropriate indicators / ratios/ norms etc. Thereafter, inventory and CIS estimates both at CP and KP are prepared. WPI index for the appropriate industry group is used to convert CP estimates to KP estimate, and vice versa in a specific industry. Wherever, an appropriate WPI is not available, WPI of all commodities is used.

- 25.52 **Agriculture and allied activities:** The estimates of change in stocks in agriculture sector have been prepared separately for (i) public sector (ii) private corporate

sector, (iii) household sector. Livestock is covered under the household sector. The estimates of public sector are based on data available from budget documents and annual reports. The estimates of change in stocks in respect of coffee and rubber plantations in the private corporate sector are prepared on the basis of data on stocks and prices at the beginning and end of the year collected from the respective boards. The change-in-stocks have been obtained as difference of the stock at the end and at the beginning of the year. The change is first obtained in quantitative terms. It is then multiplied with the ratio of the WPIs of the current and constant years to get the current and constant price estimates.

- 25.53 **Live Stock:** As the annual incremental data on species wise livestock are not available, these are estimated by projection method at the All India / state level using geometric growth rate determined from the latest available quantitative data from Indian Live Stock Censuses (ILC 1992, 1997 and 2003). The incremental value of livestock thus obtained has been evaluated at the corresponding average wholesale prices of livestock categories obtained from the DESs. The constant price estimates are obtained by using the appropriate wholesale price indices. The additions to livestock other than those coming under the fixed assets are accounted under change in stocks. The categories of animals which form part of increase in livestock are bulls and bullocks over three years not in use for breeding or work, cows over three years not in use for breeding, young male and female cattle stock, goats, sheep, camel and horses, ponies, donkey, mules, yak, maithun under one year, and goats, sheep, camel and other animals of one year and above and not in milk, or not reared for wool clipping or not used as draught animals etc. In fact, a fixed percentage of the incremental value of livestock in each category is taken as change in stock. In case of the pigs and poultry, the entire incremental livestock is taken into compilation of change in stock estimate.
- 25.54 **Forestry and logging:** Forests come mostly under the public sector (DCUs and NDCUs). The CIS estimates are prepared based on the budget and their books of accounts. In the absence of any adequate information for the private sector, no estimates for private sector are prepared.
- 25.55 **Fishing:** For the public sector under the NDCUs, the CIS estimates are prepared based on their books of accounts. No estimates are prepared for private sector

due to lack of adequate data.

- 25.56 **Mining and quarrying:** The estimates of change in stocks in respect of the major and minor minerals covered exclusively in the public sector are based on the analysis of annual accounts of public sector undertakings. However, estimates in respect of other minerals are based on RBI's analysis of joint stock companies. In the household sector, the CIS estimates for minor minerals are compiled on the basis of enterprise survey 1992-93. For this purpose, 32.9% of value of output in minor minerals is taken as current inventory level at current prices for the current year. The value of inventory at KP is obtained using the WPI index on minor minerals. The difference between two successive years of inventory at KP is taken as CIS at KP. The estimates of change in stock at CP are thereafter derived using appropriate WPI.
- 25.57 **Registered manufacturing:** The CIS estimates for public sector are prepared on the basis of budget documents and analysis of annual accounts. Private corporate sector estimates are supplied by the RBI. The estimates of inventory relating to registered manufacturing in the household sector, for the current year at CP are prepared by moving the total invested capital of the base year (difference of the total capital and the fixed capital for the current year) with the growth rate noticed in GVO (current year's estimate to base year). From the estimate of inventory at CP, the estimate of inventory at KP is obtained using appropriate WPI. Thereafter, CIS at KP and CP are obtained using the general formulae.
- 25.58 **Unregistered manufacturing:** The estimates of change in stocks in unregistered manufacturing are estimated using the proportion of inventory to GVA obtained from the survey results of the Report (No.280/6, 'Tables with Notes on Survey of Self Employed Households in Non-Agricultural Enterprises'-Detailed Results for All-India, 29th Round: 1974-75 (NSSO, 1978), Survey of Small Scale Industries in the un-organized sector in Urban Areas, 1971-72, mimeograph (CSO, 1975) and Special Tabulation of census of Small Scale Industries undertaken by DCSSI in 1977. The GVA estimate of unregistered manufacturing for the current year at CP is multiplied by the inventory to GVA proportion to obtain the inventory at CP. The CIS at KP and CP are derived using the formulae and previous years' inventory at CP. The requisite commodity-wise details on change stock were not available from NSS

- 56th Round survey on unorganized manufacturing.
- 25.59 **Construction:** The CIS estimates are built up on the basis of analysis of balance sheets of construction companies in the private corporate and public sectors. No CIS estimate is being compiled for household sector.
- 25.60 **Electricity, gas and water supply:** In Public sector, the estimates of CIS are prepared separately for NDCUs (covering Electricity, Gas, Water supply), DCUs (covering only electricity) and Administration (covering only Water supply). For the private corporate sector, the estimates cover only electricity sub sector and are based on analysis of joint stock companies by RBI. No CIS estimate for household sector is prepared for Electricity, Gas & Water Supply.
- 25.61 **Railways:** In case of Railways, stocks consist of 'Miscellaneous Advances, Revenue and credits under current suspense account. In the Capital Account, stocks consist of stores, suspense and some expenditure on works. For working out change in stocks for railway transport, the change in stocks under the manufacturing activities is netted out.
- 25.62 **Transport by other means:** The estimates of CIS are prepared separately for DCUs and NDCUs, in respect of road, water, air transport, and port activities by analysing the budget and books of accounts respectively. In the case of private corporate sector, the estimates of CIS are obtained for the entire activity from the RBI data. In the household sector, the value of machinery and equipment used in the activity for the base year is obtained first and moved by a specified factor obtained from available past sample survey results, to obtain the current year's value at CP. A proportion of the value of machinery and equipment used in the activity (2.31%) for the current year is taken as the estimate of inventory at CP. Using the standard formulae, and the value of Inventory for the previous year at KP, the estimates of CIS at KP are derived. These are then converted to CP estimates by using appropriate WPI.
- 25.63 **Communication:** In case of communication, stocks consist of general stores, factory stores, manufacturing suspense account, civil engineering stores and purchases. There are some recoveries also in communication under the stores suspense (general factory and civil engineering stores) and manufacturing expenses. For the private sector, the ratio of CIS to the GVA in communication observed in the public sector is applied to the GVA of private sector and CIS at CP is obtained for the current year. Thereafter, the Inventory at CP and KP, CIS at KP are prepared using the formulae and appropriate WPIs.
- 25.64 **Storage:** In Public sector, the estimates of CIS are prepared by analysing the books of accounts and using standard formulae for the NDCU sub sector only. RBI estimates are used for private corporate sector. In the household sector, the estimates of inventory at CP in storage are prepared using enterprise survey 1992-93 and the annual growth rate observed in GVA at CP. Thereafter using the standard formulae, the estimates of CIS at KP/CP and Inventory at KP are arrived at.
- 25.65 **Banking and insurance:** The estimates of change in stocks in the private sector are based on RBI analysis of joint stock companies. The estimates of change in stocks of banking & insurance in the public sector relate only to non-departmental commercial undertakings and are based on analysis of their annual accounts.
- 25.66 **Trade:** Estimates of change in stock in the trade sector have been prepared separately for food grains and other commodities and for public and private sectors. The estimates for public sector relate only to NDCUs and are based on the analysis of their annual accounts. For private trade in commodities other than food grains, the estimates are worked out separately for registered and un-registered establishments. The estimates for registered establishments have been prepared separately for (i) joint stock companies, (ii) co-operative societies, and (iii) household enterprises. The estimates in respect of joint stock companies are based on the analysis of annual accounts of private trading companies published by RBI and those in respect of co-operative societies and household enterprises are prepared on the basis of data available from the Statistical Statements Relating to Co-operative Movement in India (RBI) and data on bank advances to household trading establishments available in the Banking Statistics (RBI) supplemented with the information available in RBI Bulletins.
- 25.67 For the trading activity in household sector, bench mark estimates which are based on DTE survey 1990-91, and NSS report No. 403- Small Trading units in India 1990-91, are moved on the basis of growth rate of trade credit to households to get the current year inventory level at CP. Thereafter using

standard formulae, the CIS estimates at KP and CP are prepared.

- 25.68 **Hotels and restaurants:** The estimates of change in stocks in hotels and restaurants in the private corporate sector are based on the results of analysis of joint stock companies by RBI. The estimates for the public sector are obtained from the analysis of the accounts of the non-departmental commercial enterprises. For the household sector, the estimates are based on enterprise survey report on hotels and restaurants. From survey report, it is presumed that the estimated number of enterprises (restaurants and hotels) are increasing by 1.04 per cent growth rate over the previous year. This fixed growth rate is also used in moving the inventory at constant prices. The estimate of the Inventory for the year 1998-99 at KP 1993-94 prices has been obtained and converted to the inventory at KP 1999-2000 prices. This has been multiplied by 1.04 per cent growth rate successively to obtain the benchmark year's (1999-2000) and other year's inventory at constant prices (1999-2000). Using the respective WPIs the inventory of the current year at current prices are obtained. Using the standard formulae and the estimates of the inventory at constant prices, CIS estimates at KP and CP have been obtained.
- 25.69 **Real estate:** The estimates of change in stocks in real estate are compiled for public sector based on the budget estimates and the estimates of private corporate sector are based on the analysis of joint stock companies by RBI.
- 25.70 **Public administration & Defence:** The change in stocks for this activity is estimates for the administrative departments of the government (public sector). It is obtained as a result of economic and purpose classification of the annual budget documents/accounts of public authorities. The stocks held by the administrative departments are in the nature of (i) policy stocks like food, fertilizers etc., and (ii) work-stores under the Civil Works Departments which mainly consist of cement, bricks, steel etc. The policy stocks are given in the budget documents in the form of purchases and sales during the year and the net purchases during the year are classified as change in stocks. In the case of work-stores, suspense accounts are maintained by the government under the appropriate heads of account, formation of the stock is shown against the suspense appearing in the expenditure side, while the

withdrawals from out of these stocks during the year are shown against the 'receipt and recoveries' of capital accounts of the detailed demands for grant. The purchases during the year minus withdrawals are treated as change in stocks.

- 25.71 For arriving at the estimate of change in stocks in the case of public administration and Defence activity, the change in stocks relating to activities like education, medical and health, water supply, sanitary services and construction are subtracted from the total change in stocks for all administrative departments.
- 25.72 **Other services:** In the absence of any reliable data for the household sector, only the estimates of change in stocks in the public administration & DCU, NDCUs and private corporate sectors as obtained from analysis of budget documents, annual accounts of NDCUs and accounts of joint stock companies (from RBI) are used.

Errors and Omissions

- 25.73 The estimates of Gross Capital Formation (GCF) by the industry of use are obtained, as by aggregating the corresponding estimates of fixed capital formation (adjusted as said earlier) and change in stocks prepared industry wise through expenditure method. A separate independent estimate of GFCF by type of assets (construction and machinery & equipment) is also obtained by commodity flow method. The estimates of gross domestic saving added with the net capital inflow from abroad (Current Account's deficit) give rise to another estimate of total domestic capital formation, (by funds flow method). These independent estimates of Gross capital formation thus obtained differ and do not tally. Using the measure of saving as the controlling total (the funds flow method as more confirmed method), domestic capital formation by type of assets is adjusted for the difference and this difference is treated as 'errors and omissions'. For measuring the rate of capital formation, total domestic capital formation by funds flow method (or the adjusted gross capital formation for 'errors and omissions') is used.

Estimates at Constant Prices

Capital formation by Type of Assets

- 25.74 **Construction:** The estimates of the value of output from construction at current prices are adjusted to obtain the corresponding constant price figures using appropriate

deflators for different types of construction specially prepared for the purpose. The deflators for construction are prepared separately for (i) general 'pucca' construction excluding residential buildings, (ii) rural residential buildings, (iii) urban residential buildings, (iv) rural/urban non-residential buildings and other construction works not covered by the commodity flow method and (v) plantations under the household sector. The weights allotted to price indices of different inputs for various kinds of construction works are given in Appendix 25.5. The value of all constructions other than residential buildings covered in the commodity flow method is deflated by the index of cost of general pucca construction excluding residential buildings. The values of construction of rural and urban residential buildings are deflated by the indices of cost of construction of rural and urban buildings respectively. The estimates of construction for public sector and private corporate sector at current prices are deflated on the basis of weighted index combining index number of wholesale prices with the weights of the value of building, roads & bridges and other construction for the base year 1999-2000 for public sector and private corporate sectors respectively. By further aggregating the various components thus obtained gives the total value of construction at 1999-2000 prices.

- 25.75 **Machinery and Equipments:** The estimates of machinery and equipment at constant prices for each institutional unit are prepared using separate indicators. The estimates of machinery and equipment for household sector are deflated using index of machinery and transport equipment (motor), the index number of wholesale prices compiled by the Office of the Economic Advisor. The estimates of public sector and private corporate sector are deflated by a weighted composite index of WPIs prepared on the basis of machine tools, non-electrical machinery, electrical machinery and transport equipment.

Gross Fixed Capital formation by Industry of Use

- 25.76 For preparing constant price estimates of GFCF by industry of use, corresponding estimates at current prices separately for each industry group are deflated. To the extent data are available; each component of capital formation is deflated separately by relevant price index numbers. The set of indices used are construction cost indices of "pucca/kutchra" construction, index of wholesale prices of machinery, transport

equipments and prices of livestock by categories.

Change in Stock and Inventory

- 25.77 The estimates of CIS and Inventory at constant prices (KP) are prepared for each industrial category and for each Institutional unit mainly using appropriate index number. Detailed methodology has already been recorded in the above paras under the change in stock.

Quality and limitations of data base

- 25.78 The methodology described above suffers from a number of limitations due to the paucity of data, which are briefly described as under:

- The estimates of capital formation in machinery and transport equipment are, to a large extent, dependent on the figures of domestic production and imports of machinery and equipment. Broadly, statistics of domestic production as given in ASI factory sector reports for different categories of machinery and equipment can be considered to be dependable. Estimates, however, are quite deficient in regard to domestic production in unregistered manufacturing sector. The estimates of capital formation by type of assets suffer from another limitation. The proportions used for estimating the production of capital goods out of partly capital goods and part of capital goods are based on data on household durable goods as obtained from NSS survey results.
- Estimates of GFCF by industry of use have been prepared mainly following expenditure approach. A critical evaluation of the estimates in the context of data base shows that for a large percentage share of the aggregate capital formation (about 70 per cent) originating in organised industry groups like registered manufacturing, electricity, gas, railways and public administration sector etc in public sector, the estimates are based on direct annual data. For the remaining sectors, (Private corporate and household sectors) the estimates are based on either benchmark estimates or analysis of balance sheets of selected companies in the corporate sector. Industry wise distribution of capital formation and CIS is based on the distribution for a given year. The estimates for some of these industry activities where private share is dominant, therefore, need to be based on more

satisfactory information and current years data in order to improve their reliability.

25.79 The estimates of change in stocks in registered household trading establishments are prepared on the basis of bank credit /

advances and, therefore, these estimates may not be very reliable. The estimates of change in stocks of food grains in trade and small scale manufacturing are also unsatisfactory mainly because of non-availability of data.

Appendix 25.1

Estimates of Gross Capital Formation by Institutions

(Rs. Crore)

items	1999-2000
1 Gross capital formation	509518
1.1 public sector	144610
1.2 private corporate sector	143475
1.3 household sector	205914
1.4 valuables	15519
2. Gross fixed capital formation	456416
2.1 public sector	129286
2.1.1 construction	80658
2.1.2 machinery & equipment	48628
2.2 private corporate sector	127412
2.2.1 construction	19907
2.2.2 machinery & equipment	107505
2.3 household sector	199718
2.3.1 construction	126443
2.3.2 machinery & equipment	73275
3. Change in stock	37584
3.1 public sector	15324
3.2 private corporate sector	16063
3.3 household sector	6196
	15519
4. Less consumption of fixed capital	185593
4.1 public sector	76154
4.2 private corporate sector	44540
4.3 household sector	64899
5. Net capital formation	323925
5.1 public sector	68456
5.2 private corporate sector	98935
5.3 household sector	141015
	15519
6. Errors & omissions	-3274
7. Net capital formation adjusted for errors & omission	320651
8. Gross capital formation adjusted for errors & omission	506244

Estimates of Gross Capital Formation by industry of use, 1999-2000

(Rs. Crore)

industry	GFCF	change in stocks	GCF
1. agriculture, forestry and fishing	46375	3776	50151
1.1 agriculture	39724	3749	43473
1.2 forestry & logging	1024	27	1051
1.3 fishing	5627	0	5627
2. mining & quarrying	9994	-1358	8636
3. manufacturing	144868	29230	174098
3.1 registered	106331	29492	135823
3.2 unregistered	38537	-262	38275
4. electricity, gas & water supply	38780	-1513	37267
5. construction	8913	-3409	5504
6. trade, hotels & restaurants	11564	9088	20652
6.1 trade	8610	8764	17374
6.2 hotels & restaurants	2954	324	3278
7. transport, storage & communication	58448	-427	58021
7.1 railways	5121	186	5307
7.2 transport by other means	36097	-772	35325
7.3 storage	248	152	400
7.4 communication	16982	7	16989
8. financing, insurance, real estate & business services	83764	170	83934
8.1 banking & insurance	7231	170	7401
8.2 real estate, ownership of dwellings & business services	76533	0	76533
9. community, social & personal services	53709	2027	55736
9.1 public administration & defence	34415	1408	35823
9.2 other services	19294	619	19913
10. total gross capital formation by industry of use-Unadjusted	456416	37584	493999
11. Valuables			15519
12. total GCF by Industry of use Unadjusted(including Valuables)			509518
13. gross capital formation by type of assets adjusted			506244
14. difference (13-12)			-3274

Estimates of Gross Fixed Capital Formation by Institutions and Assets, 1999-2000

(Rs. Crore)

	item	GFCF
1	Construction	
	residential buildings	50000
1.1	private	47846
1.2	public *	2154
2	non-residential buildings	97046
2.1	private	82176
2.2	public	14870
2.2.1	enterprises **	6266
2.2.2	administrative departments	8604
3	other construction	79962
3.1	private	16328
3.2	public	63634
3.2.1	enterprises	35650
3.2.2	administrative departments	27984
4	total construction	227008
4.1	private	146350
4.2	public	80658
4.2.1	enterprises	41916
4.2.2	administrative departments	38742
5	breeding stock, dairy cattle etc.	1055
6	transport equipment	52547
6.1	private	47343
6.2	public	5203
6.2.1	enterprises	4139
6.2.2	administrative departments	1064
7	other machinery & equipment ***	175806
7.1	private	132381
7.2	public	43425
7.2.1	enterprises	38464
7.2.2	administrative departments	4961
8	total machinery & equipment	229408
8.1	private	180780
8.2	public	48628
8.2.1	enterprises	42603
8.2.2	administrative departments	6025
9	total gross fixed capital formation	456416
9.1	private	327130
9.2	public	129286
9.2.1	enterprises	84519
9.2.2	administrative departments @	44767

* does not include public sector enterprises

** includes residential buildings also

*** includes computer software

@ includes quasi govt. bodies also

Note: Enterprises refer to both DCUs and NDCUs

PROPORTION OF PARTLY CAPITAL GOODS TREATED AS CAPITAL GOODS

Sl No	Item Code Assigned by NSSO	Name of the item	percentage
1	550	Bedstead (Wooden)	73
2	551	Almirah, dressing table (Wooden)	73
3	552	Chair, stool, bench, table	73
4	553	Suitcase, trunk, box handbag and other travel goods	24
5	554	Foam, rubber cushion (dunlop pillow type)	24
6	555	Carpet, daree & other floor matting	24
7	556	Paintings, drawings, engravings etc.	69
8	557	Other furniture & fixtures (couch sofa etc)	73
9	560	Gramophone & record player	5
10	561	Radio	5
11	562	Television	5
12	563	VCR/VCP/DVD & other goods for recreation	26
13	564	Camera & photographic equipment (Digital camera/ hand movie camera)	26
14	565	Tape recorder, CD Player	34
15	566	Gramophone & record, audio video cassette	34
16	567	Musical instruments	85
17	580	Stainless steel utensils	27
18	581	other metal utensils	27
19	582	Casseroles, thermo, thermo ware	27
20	590	Electric fan	74
21	591	Air conditioner, air cooler,	74
22	593	Sewing machine	69
23	594	Washing machine	59
24	595	Gas Stove	27
25	596	Pressure cooker/pressure pan, other cooking /household appliances	27
26	597	Refrigerator	59
27	598	Electric iron, heater, toaster, oven & other electric heating appliances	74
28	610	Bicycle	69
29	611	Motor cycle, scooter	69
30	612	Motor car, jeep and other transport equipment	69
31	613	Tyre & Tubes	69
32	620	Glass eyes, hearing aids & orthopedic equipment and other medical equipment	34
33	630	Clock, watch	34
34	631	Other machines for household work	34
35	640	Bathroom and sanitary equipment	34
36	641	Plugs, switches & other electric fittings	74
37		Type writers	69
38		PCs	69

**WEIGHTS ALLOTTED TO DIFFERENT INPUTS IN THE PREPARATION OF DEFLATORS
FOR VARIOUS TYPE OF CONSTRUCTION**

Inputs	Types of Construction				
	General Pucca construction excluding residential buildings	Rural residential buildings	Urban residential buildings	Rural & urban non-residential buildings & other construction works (Un-Accounted)	Others *
1.Cement	11.8	12.0	11.9	-	-
2.Iron & Steel	20.4	9.2	21.6	-	-
3.Bricks	4.9	42.8	6.6	-	-
4.Timber	4.6	3.7	5.5	-	-
5.Fixture and fitting	9.7	-	10.5	-	-
6.Electric Apparatus	5.1	-	3.3	-	-
7. Paints	2.8	-	2.5	-	-
8. PVC Pipes and Tubes	3.7	-	3.6	-	-
9. Others	10.5	-	11.9	-	-
lime		1.1		-	-
sand		6.9		-	-
10. Rural Construction Worker	8.9	24.3		14.9	
11. Urban Construction Worker	17.6		22.6	55.5	
12. Rural Unskilled labour				29.6	100.0
	100.0	100.0	100.0	100.0	100.0

* Construction under the category "others" covers plantations and afforestation and other "Kutchha construction" outside household sector.