



Note on Supply-Use Table (SUT)

2017-18 & 2018-19



National Accounts Division

Ministry of Statistics and Programme Implementation



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Foreword

The NSO is bringing out annual Supply and Use Table (SUT) since 2011-12 after revision of the base year. The annual National Accounts Statistics (NAS) published by NSO is based on diverse data sources which results in differences in the estimates derived from Production approach and Expenditure approach. The difference is published as 'discrepancies' in the NAS. System of National Accounts recommends compilation of SUT to obviate the issue of conflicting data sources in national accounting. After finalization of accounts till 2018-19, publication of SUT upto this year was comprehended to serve the demand of users.

The SUT framework is a set of two tables namely Supply Table and Use Table. Supply table provides information about the availability of goods and services in the economy. The table provides output of goods and services at the identified or selected product level in rows and by domestic industries as well as imports in columns. The Use table gives product wise information on the use of goods and services available in the economy and the cost structure of the industry. A Use table provides distribution of products by type of use: intermediate consumption by industry; private and government final consumption; gross capital formation (gross fixed capital formation, change in stock and valuables); and export. This framework is a powerful tool which primarily serves two objectives in the overall national accounting system. One is to create a coherent set of estimates of macroeconomic aggregates; and another is to facilitate analyses of functioning of the economy at more disaggregate level in a product by industry set up. SUT provides basis for preparation of Input Output Tables (IOT) for further detailed analysis of functioning of industries.

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The present SUT for 2017-18 and 2018-19 has been a collaborative effort from the officers of National Accounts Division (NAD). Though all officers of different units of NAD have contributed in compilation of SUT, some of them have actively been involved and therefore need to be acknowledged for their contribution. Shri Manish Bindal, Deputy Director, Shri Gopal Saha, Assistant Director, Shri Ashutosh Awasthi, Assistant Director, Shri Kunal Kapoor, Assistant Director and Dr. Priyanka Anjoy, Assistant Director need to be mentioned specially for their motivation and commitment towards finalization of SUT. Shri Rajeev Kumar, Director has made significant effort in preparation of SUT synchronizing efforts of the team for the task. The work has been carried out under the guidance of Shri Dilip Kumar Sinha, Deputy Director General.

The current series of SUT, since 2011-12, presents the national accounts in 66 industries and 140 products dimensions. Publication of SUT for year 2017-18 and 2018-19 is timely since the estimate till 2018-19 has been finalized. The methodological note on compilation of SUT is also published for users to contextualise the detailed information. It is hoped that this SUT will serve wide range of users working in Government, Industry and Academia. Their feedback on the SUT 2017-18 and 2018-19 will be useful in preparation of SUT for future years.


25.7.22
(Nivedita Gupta)

1. Introduction

1.1 Supply and Use Tables (SUT) play an important role as an integration framework of the national accounts. As a key feature of national accounts, SUT provides the ideal concept for balancing supply and demand and it is the best framework for compiling Gross Domestic Product (GDP) at current prices. SUT constitute a complete description of the economy, as it gives detailed information on the production processes, the interdependencies in production, the use of goods and services and generation of income through production. After balancing, SUT provide coherent data linking output of industries as products and intermediate and final uses of these products. These tables show the structure of the costs of production and the income generated in the production process, the flow of goods and services produced within the national economy and the flows of goods and services with the rest of the world.

1.2 The SUT framework is that part of the national accounts system which focuses on the production as well as use in an economy. It reflects the production of industries in which intermediate products and primary inputs are required, showing where goods and services are produced and where they are used as intermediate consumption, final consumption, gross capital formation and exports. The most important macroeconomic aggregates such as GDP, components of value added, imports, final consumption, capital formation and exports are obtained within this framework.

1.3 The supply use equation for any given product in an economy is mathematically expressed as:

$$\text{Output} + \text{Imports} = \text{Intermediate Consumption (IC)} + \text{Final Consumption [Government (GFCE) and Private (PFCE)]} + \text{Gross Capital formation (GCF) [including changes in stocks and valuables]} + \text{Exports}$$

1.4 To maintain the mathematical identity, due adjustments for price differentials should be made in respect of different items in both sides of the equation to get them

converted to the same (purchasers') price level. Since output is compiled at basic prices (BP), net taxes on products need to be added on left side of the equation. Accordingly, the above equation has to be re-written as:

$$\text{Output} - \text{Intermediate consumption} + \text{Taxes on products} - \text{Subsidies on products} + \text{Trade and Transport Margin (TTM)} = \text{Final consumption (government and private)} + \text{Gross capital formation [fixed (GFCF), changes in stocks (CIS) and valuables]} + \text{Exports} - \text{Imports}$$

1.5 The Private Final Consumption Expenditure (PFCE) includes both the household FCE and FCE of Non-profit Institutions serving Households (NPISH). It may be noted that left hand side and right-hand side in the above equation respectively represent GDP at purchaser's price (PP) and expenditure components of GDP.

Structure of Supply and Use Tables

1.6 Supply Table and Use Table are Product X Industry (Row X Column) matrices of equal dimensions with different entries. In the Supply Table, entries across columns show the value of the respective product by kind of supplier, distinguishing the domestic supply from foreign supply (imports). These are at basic prices. Total supply of each product at purchasers' price is obtained by adding taxes less subsidies on products and trade and transport margins and making CIF adjustment in the import of services of insurance and transport. On the other hand, entries across the column in a Use Table show use of the respective product or intermediate consumption by industries, final consumption, gross capital formation and exports. They are all at purchasers' price. Formats of Supply Table and Use Table having **m** products and **n** industries are shown as follows:

Supply Table

Industry/ Products	Industry1	- - -	Industry n	Domestic Output at BP	Import	CIF Adj.	Total Supply at BP	Net taxes (Tax- Subsidy) on products	TTM	Total Supply at PP
Product 1										
-										
-										
-										
Product m										
CIF Adj.										
Output at BP										

Use Table

Industry/ Products	Industry1	- - -	Industry n	Total Inter industry use	PFCE	GFCE	GCF (GFCF + CIS + Valuables)	Export	Total Use at PP
Product 1									
-									
-									
-									
Product m									
Total IC at PP									
GVA at BP									
Net taxes on Production									
Consumption of Fixed Capital (CFC)									
Compensation to Employee (CE)									
Operating Surplus (OS)/ Mixed Income (MI)									

1.7 Preparation of Supply and Use table involves following activities which are described in the subsequent paragraph:

A. Identification of Industries and Products

B. Compilation of Supply Table

C. Compilation of Use Table

D. Product Balancing

2. Identification of Industries and Products

2.1 The SUT of 2017-18 and 2018-19 have 66 industries and 140 products. The NAS publication divides the entire economic activities in 11 broad groups. These activities wise no. of industries and products identified in SUT are given below:

Sl. No.	Economic Activities	No. of Industries	No. of products
1	Agriculture, forestry and fishing	4	29
2	Mining and quarrying	6	11
3	Manufacturing	30	72
4	Electricity, gas, water supply & other utility services	4	4
5	Construction	1	1
6	Trade, repair, hotels and restaurants	2	3
7	Transport, storage, communication & services related to broadcasting	7	7
8	Financial services	2	2
9	Real estate, ownership of dwelling & professional services	5	6
10	Public administration and defence	1	1

Sl. No.	Economic Activities	No. of Industries	No. of products
11	Other services	4	4
	Total	66	140

Identification of products and industries have been carried out for each 11 economic activities separately and the process adopted is discussed below for each industry.

Agriculture, forestry and fishing

2.2 This economic activity consists of 4 industries namely agriculture covering agricultural and horticultural crops, livestock, forestry & logging and fishing & aquaculture industries. For the SUT 2017-18 and 2018-19, 4 industries have been kept as it is.

2.3 Fairly large number of crops, as products, is identified for the purpose of compilation of national account itself. NAS provides output of 133 products classified in 12 categories. Out of these, categories having minor contribution in the overall output have not been selected. From the remaining categories, only limited items, which accounts for the major contribution in the output of that category, have been selected. Items not exclusively selected using aforementioned criteria have been kept as residual item within the respective categories, for instance other pulses, other oilseeds, etc. to avoid the clubbing of all non-selected items in the overall residual of agricultural products. The residual product for overall agriculture products therefore constitutes the categories not represented by any of its products for example 'condiments & spices'. The category of Fruits & Vegetable of NAS has been split into two categories: Fruits; and Vegetables. Items not exclusively selected have been placed under other items of the split categories. Accordingly, mapping of products in NAS with SUT formed are given below in Table 1:

Table 1: Number of products of Agriculture and Horticulture in NAS and SUT

Categories	No. of Products in NAS	No. of Products in SUT
Cereals	9	3
Pulses	15	3
Oilseeds	12	4
Sugars	3	1
Fibres	5	2
Indigo, dyes & tanning material	1	-
Drugs & narcotics	9	3
Condiments & Spices	16	-
Fruits & Vegetables	52	1 (Fruits)
		1 (Vegetables)
Other crops	8	2
By products	2	-
Kitchen Garden	1	-

Thus, out of 39 products (including aforementioned other items) in SUT, 31 falls in the industry of Agriculture and remaining 8 to Horticulture.

2.4 Similarly for the Livestock industry, NAS publishes output for 16 products. The selection of four products has been made by clubbing the different products so that it can be specifically identified with the NPCMS. Table 2 illustrate the selection of these 4 products.

Table 2: Identification of Livestock products for SUT

Sl. No.	Name of product in NAS	Name of product in SUT
1	Milk group	Milk
2	Beef	Other livestock products
3	Mutton	Other livestock products
4	Pork	Other livestock products

Sl. No.	Name of product in NAS	Name of product in SUT
5	Meat products	Meat
6	Poultry meat	Egg & poultry meat
7	Eggs	Egg & poultry meat
8	Wool	Wool
9	Hides	Other livestock products
10	Skins	Other livestock products
11	Other by-products	Other livestock products
12	Hair & bristles	Other livestock products
13	Dung fuel	Other livestock products
14	Dung manure	Other livestock products
15	Silk worm cocoons & honey	Other livestock products
16	Increment in livestock	Other livestock products

2.5 For the forestry and logging industry, all three products of NAS namely, Industrial wood, Firewood and Non-timber forest products have been taken in SUT with changed name of third product as 'Other Forestry Products'.

2.6 Similarly the two products of fishing and aquaculture industry: Inland Fish; and Marine Fish of NAS have been selected for SUT as well. However, these two products are not classified as such in NPCMS. The classification is based on the species of the fish.

Mining and Quarrying

2.7 This industry has been divided in six industries in SUT. Fuel minerals have been split into three industries, namely, Coal & lignite, Crude Petroleum and Natural Gas. Metallic minerals are covered in two industries which are Iron ores and Non-ferrous

metal ores. The last being other mining, which covers all minor minerals also. Eleven products of this industry have been selected for SUT keeping in view the availability of product wise data and the respective share in the overall output of this industry.

Manufacturing

2.8 NAS provides output and GVA of manufacturing sector in 30 activity groups. These groups are named as compilation category which is combination of NIC codes representing similar activity. These 30 compilation categories have been kept as 30 industries in the SUT. Product wise information is not compiled in NAS. However, this sector provides maximum leverage in identifying the industry as well as products for the purpose of SUT due to availability of Annual Survey of Industries (ASI) data. ASI is an establishment-based survey which captures in detail the product wise output as well as input along with NPCMS codes.

2.9 ASI output has been analysed product wise for identification of products. To start with, the output has been computed at seven-digits NPCMS codes. The major criterion used for selection of the product was its value of output. The products have been further clubbed to compute the output at lower digit of NPCMS codes. In a number of cases, residual products have been selected from lower digit NPCMS code if a particular product under it has been selected. The clubbing of products has been done to ensure homogeneity among the NPCMS codes as far as possible.

2.10 In addition to the NPCMS codes available for input and output in the ASI data (Block H, I and J), some other items are also captured as input and output which are not available in NPCMS codes (Block F and G). These items have been treated individually and assigned to the codes it is meant to capture or the nearest possible alternative. Table 3 lists these items along with its treatment in SUT. Some of the products identified have subsequently been merged also to ensure better meaning and facilitate balancing exercise.

Table 3: Treatment of items listed in Block F (Input) and G (Output) of ASI Schedule

Block	Description in ASI	SUT product
F	Work done by others on materials supplied by the industrial undertaking	Merged with Major Products of Industry
F	Repair & maintenance of Buildings and other construction	Construction and Construction Services
F	Repair & maintenance of(ii) Other fixed assets	Repair and maintenance of Motor Vehicles
F	Operating expenses	Other Utility Services
F	Rent paid for plant & machinery and other fixed assets	Renting of Machinery & Equipment
F	Expenses on Research & Development (R&D)	Research & Development Services
F	Purchase value of goods sold in the same condition as purchased	Trade
G	Receipts from manufacturing services (including work done for others on materials supplied by them and sale value of waste left by the party)	Merged with Major Products of Industry
G	Receipts from non-manufacturing services (including non-industrial services)	Merged with Major Products of Industry
G	Value of electricity generated and sold	Electricity
G	Rent received for plant & machinery and other fixed assets	Renting of Machinery & Equipment
G	Sale value of goods sold in the same condition as purchased	Trade

Construction

2.11 Construction is included as a single industry and single product which is construction and construction services.

Services

2.12 The 25 industries of this category, mostly taken directly from NAS, have been identified for SUT. Some industries have been divided on the basis of available

information or using previous SUTs framework. Similarly, 28 products have been identified which are mainly from the NAS or using previous SUTs.

Compilation of Supply Table

3.1 Supply table provides information about the resources of goods and services. As mentioned earlier, it is a product by industry table. The table provides output of goods and services at the identified or selected product level in rows and also by domestic industries as well as imports in columns. The supply table is generally prepared at basic prices as NAS also compiles the output of industries at basic prices. However, to account for the final utilization of the products, the supply table provides mechanism which moves the valuation of products from basic prices to purchaser's prices. This mechanism will be dealt in detail under valuation vectors. The succeeding paragraph describes compilation of Supply table in detail separately for each domestic industry.

Agriculture and allied activities

3.2 Ministry of Agriculture provides crop-wise value of output. These values are grouped into crops of the supply table. In addition, the value of output of operation of government irrigation system is also included in the output of crops. The output of livestock products (milk, wool, hides & skins and other livestock products), inland fish and marine fish, industrial wood, firewood (estimated on the basis of NSS survey on Consumption expenditure) and other forestry products are included in the respective livestock, fishing and forestry industry sectors.

Mining and Quarrying

3.3 Industry wise outputs have been obtained by aggregating the output data from the analysis of the private corporate (MCA) data and annual reports of Non-Departmental Commercial Undertakings (NDCUs). For apportioning Mining output data into output of various SUT mining products as mentioned above, output pattern

observed in the Indian Bureau of Mines (IBM) data on minerals has been used. The product wise distribution thus obtained has been directly taken from NAS. The output of Crude Petroleum and Natural Gas has been obtained in the ratio of 68.8% and 31.2% from the total output of Petroleum & Natural Gas in NAS.

Manufacturing

3.4 In the case of manufacturing, detailed Industry wise and product wise data from the Annual Survey of Industries (ASI) is analyzed from unit level data. Separate supply table for Private Corporate, Departmental Enterprises, Non-Departmental Enterprises, ASI Quasi Enterprises and Unorganized sector have been compiled.

3.5 Supply tables for Private corporate have been prepared on the basis of structure of Non-Government Company- Public and Private & Limited Liability Partnership in the ASI data. Similarly, supply table for Departmental Enterprises and Non-Departmental Enterprises have been prepared on the structure of Government Company- Public and Private. For Non-Departmental Enterprises the structure is used for distribution of output within the 30 compilation categories of the NAS. For supply table of unorganized sector, the ASI structure of Individual Proprietorship and Partnership establishments have been used. Supply of ASI Quasi Enterprises have been prepared using the structure of Individual Proprietorship, Partnership, Co-operative Society and Others type of establishments in ASI data.

3.6 Some adjustment in the product allocation as shown by ASI data has been made mainly to contain the output of a particular industry among the products of its interest. ASI data shows a very diverse matrix of output which necessitated this adjustment.

Services

3.7 The estimate of output of various economic activities under services is compiled institution wise (General Government, DCUs, NDCUs, private corporate and unincorporated sectors). Since most of the services produced are single product, mapping

of product outputs to the SUT industry sectors has been assigned against the single product of the industry. Other Services has been distributed in two products i.e. 'Community, social and personal services' and 'Recreation, entertainment and radio & TV broadcasting and other services'. First product covers 'Services of membership organization' and second covers 'Art, entertainment & recreation', 'Private household with employed person' and 'Remediation and other utility services'.

Import

3.8 Distribution of total import is treated separately for goods and services. The data on import of goods have been taken from EXIM Data Bank of Ministry of Commerce and Industry. The data on import of services is obtained from Reserve Bank of India (RBI). For distribution of import among selected products, the import data at eight digits level of ITC-HS Codes have been mapped into the corresponding products by doing a concordance exercise of imported ITC-HS Codes with the selected SUT products. For import of services, the RBI data provides product wise import which is easily identifiable with the products of services.

CIF Adjustment

3.9 Import of goods obtained from the Exim data bank is available on CIF basis which includes cost of insurance and freight also. On the other hand, import of services obtained from RBI also includes the import of insurance and transport (mainly Water and Air) services. This implies that the data on share of imports by foreign carriers only is to be taken into account for import of the freight service adjustment. Therefore, CIF adjustment is made to remove the double counting of these services which are included in the import value of goods. For this, the 50% of insurance service and 50% import of water and air transport services are taken for CIF adjustment.

Valuation Vectors

Import Duty

3.10 Total import duty has been distributed among the goods by analyzing the custom duty of 2017-18 and 2018-19 taken from the website of Central Board of Indirect Taxes and Customs. The total duty has been distributed on prorata basis of the custom duty thus derived.

Product Taxes less Subsidies

3.11 The distribution of product taxes less subsidies is done to get the output at the producers' prices from basic prices. Compilation of aggregate product taxes and subsidies are being done by analyzing the budget documents of Governments and Local Bodies. Distribution of aggregate product taxes among the selected products has been done using ratio of product taxes based on the GST rates of 2017-18 and 2018-19. For distribution of subsidies, budget heads of each subsidy, available in the budget document, has been mapped with the appropriate products. Though, the compilation of taxes and subsidies have been done separately, it is presented as consolidated entry in SUT as Product Taxes less Subsidies.

Trade and Transport Margin (TTM) Adjustment

3.12 The computation of TTM for SUT 2017-18 and 2018-19 has been mediated through using the NPCMS wise purchaser prices and basic prices data available from Annual Survey of Industries (ASI) for the respective years. J-block (Output Block) and H-block (Input Block) of the ASI schedule provide NPCMS wise BP and PP values respectively. The ratio of PP and BP for the products provide a multiplying factor to obtain net taxes plus trade and transport margins. The ratio of previous years or ratio of similar products have been taken for the NPCMS not derived from ASI. The unreasonably high or low ratios (i.e., mostly where ratio is greater than 2 or less than 0.5) have been left out in order to exclude the impact of extreme values. Then SUT product level ratio has been computed using the geometric mean of the NPCMS level ratios of products contained therein. TTM has been obtained after reducing the share of net taxes. The total value of adjustment has been distributed among the products in the ratio of TTM multiplying factor. The total

value of adjustment includes the entire output of trade and part of transportation services (Rail, Land, Air and Water) utilized for transporting goods.

4. Compilation of Use Table

4.1 The use table gives product wise information on the use of goods and services supplied to the economy and the cost structure of the industry. A use table shows the use of products by type of use: intermediate consumption by industry; private and government final consumption; gross capital formation (gross fixed capital formation, change in stock and valuables); and export. Use table is compiled at purchaser's prices as the information on use of resources is available at this price.

4.2 Compilation of product-wise intermediate consumption by different industries makes the use table more data demanding. The table, therefore, provides gross value added at basic prices by industries (production approach) and GDP at purchaser's prices by deducting imports from final uses (expenditure approach).

4.3 Moreover, it also shows the components of value added by industry i.e. taxes less subsidy on production, consumption of fixed capital, compensation of employee and operating surplus. Though this information is not directly derived from the SUTs, it is included after estimating from other sources which makes it comprehensive, systematic and consistent framework of national account.

4.4 As mentioned before that detailed data are required for compilation of Use Table, it is not possible to get this information for each product or industry. Therefore, appropriate ratio has been applied wherever the said information is not available. Major data sources and methodology employed to compile the use table is detailed below:

Agriculture and allied activity

4.5 NAS compiles item wise input of agriculture and horticulture combined together under seed; organic manure; chemical fertilizer; current repair, maintenance of fixed

assets & other operational costs; feed of livestock; irrigation charges; market charges; electricity; pesticides & insecticides; diesel oil. Separate input structure of agriculture and horticulture has been compiled using cost of cultivation studies (CCS) conducted by Directorate of Economics and Statistics (DESAg), Ministry of Agriculture and Farmers Welfare and distribution of input among the products have also been done using the CCS.

4.6 Input of livestock consists of feed of livestock and maintenance of fixed assets & other operational costs which are distributed among the relevant products using the input structures. The product wise distribution of these input has been done using input structure used in previous years which is based on the CCS and All India Debt and Investment Survey (AIDIS) data.

4.7 For Forestry and Fishing, detailed input structure available from the MCA data for private corporate and annual reports of non-departmental enterprises has been analysed. The input items available in these sources have been mapped to SUT products. Input listed under the material cost and consumables have been distributed among the goods in the ratio of input structure of goods products in SUT 2016-17.

Mining and Quarrying

4.8 The detailed input structure available from the MCA data for private corporate and annual reports of non-departmental enterprises has been analysed. The input items available in these sources have been mapped to SUT products. Input listed under the material cost and consumables have been distributed among the goods in the ratio of input structure of goods products in SUT 2016-17.

Manufacturing

4.9 The input structure of manufacturing industries has been derived using the ASI data for the respective years. The blocks of ASI containing indigenous input (block H), imported input (block I) and other input (block F) have been used to arrive at the total input structure. First, the product by industry matrix has been generated at most

disaggregated level i.e. seven-digits NPCMS and five-digits NIC codes which has been reduced using the mapping of NPCMS codes with identified products and mapping of NIC codes with identified industries. The mapping is explained in the identification of products and industries section. The treatment of input of block F have been explained in table 3.

Construction

4.10 NAS compiles estimate of construction sector using commodity flow approach. Accordingly, it identifies cement & cement products, iron & steel, bricks & tiles, timber & round wood, bitumen & bitumen mixtures, glass & glass products, fixtures & fittings and other construction materials & service charge as the input material for construction. These products have been distributed among their representative products of SUT in the ratio of output.

Services

4.11 The detailed input structure available from the MCA data for private corporate and annual reports of non-departmental enterprises has been analysed. The input items available in these sources have been mapped to relatable SUT products. Input listed under the material cost and consumables have been distributed among the goods in the ratio of input structure of goods products in SUT 2016-17.

Final Use Vectors

Government Final Consumption Expenditure (GFCE)

4.12 The final consumption expenditure of the Government comprises compensation of employees, consumption of fixed capital and intermediate consumption (purchase of goods and services including repair and maintenance less sales). NAS compiles overall GFCE for the economy which has been divided among the products on the basis of the estimate of output of General Government excluding Capital Heads Salary.

Private Final Consumption Expenditure (PFCE)

4.13 Commodity flow approach, as followed in the National Accounts, has been applied for PFCE estimates. The commodity flow approach considers the availability, supply from domestic production and imports of a product, duly converted to purchaser's prices by applying taxes less subsidies on products and TTM and then from it the intermediate consumption, government consumption, exports and change in stocks are knocked out to arrive at the PFCE estimates which conceptually include the Household FCE and NPISH FCE including any errors and omissions. Since all this is already done in the compilation of PFCE for National Accounts Statistics, for the purpose of SUT, the product wise PFCE estimates have been made to concord to the SUT product. To distribute, wherever required, the ratio of available output (total supply at purchaser prices less intermediate consumption) has been used.

Gross Fixed Capital Formation (GFCF)

4.14 NAS compiles GFCF for four broad groups namely, Dwellings, other buildings and structures; Machinery and equipment; Cultivated biological resources; Intellectual property products. These are further divided into 16 sub-groups. For three broad groups except Machinery and equipment, the SUT product level concordance is direct against each sub-groups' value. For Machinery and equipment, firstly SUT products of categories Electrical, Non-electrical, Transport and Others are identified. Then, the total GFCF for Machinery and equipment is distributed into these products using the ratio of SUT 2016-17.

Change in Stock (CIS)

4.15 Industry wise CIS is compiled in the process of NAS publication. CIS of crop sector has been distributed among the crop products on the basis of its output. For other industries, the industry wise CIS of NAS is first distributed among the SUT industries in

the ratio of their output. Then the distributed CIS of industries have been distributed among its products on the basis of its intermediate consumptions.

Valuables

4.16 Estimate of valuables compiled in the NAS is being assigned to products covered under the NPCMS codes 3821-3825.

Export

4.17 Distribution of total export is treated separately for goods and services as in case of import. The data on export of goods have been taken from EXIM Data Bank of Ministry of Commerce. The data on export of services is obtained from Reserve Bank of India (RBI). For distribution of export among products, the mapping of ITC-HS Codes with SUT products have been used. For export of services, the RBI data provides product wise export which is easily identifiable with the products of services.

GVA estimate using Income Approach

4.18 The components under income approach are Production Taxes less subsidies, Consumption of Fixed Capital (CFC), Compensation to Employee (CE) and Operating Surplus/Mixed Income (OS/MI). NAS provides estimates of these components at broad economic activity level. These component wise estimates have been distributed among the SUT industries as explained below:

Production Taxes less subsidies and CFC

4.19 Production Taxes less subsidies have been distributed among the industries, wherever required, in the ratio of total intermediate consumption of the industry. CFC has been distributed in the ratio of GVA of the industry except for industries of manufacturing sector where it is distributed using the CFC ratio obtained from ASI data (Block C of ASI Schedule).

Compensation to Employee (CE) and Operating Surplus/Mixed Income (OS/MI)

4.20 For industries of manufacturing sector, CE and OS/MI has been distributed using the ratio of ASI data. For other industries, it is distributed in the ratio of GVA, wherever required.

5. Balancing Supply and Use

5.1 The balancing of supply and use of a product in the economy is the most crucial aspect of the exercise as it makes the tables coherent and also helps in identifying the discrepancies observed in compilation of NAS using production and expenditure approach. However, since the final revision of 2017-18 and 2018-19 estimates are over, the present exercise is mostly limited to distributing the discrepancies to make the table coherent. For achieving the product balance, estimates of PFCE and CIS has been suitably modified.

5.2 Since PFCE is estimated following commodity flow approach, products which are consumed by the households have been balanced by suitably modifying its estimates. The modification has been done in terms of addition mostly, however in some cases, estimates have been shifted also between similar products. Further, estimates of product wise CIS, as obtained from the above mentioned method, has been modified to balance the products. The estimates of CIS have been used for balancing since its estimate is not as robust as other vector of the Use table. Additionally, other vectors and intermediate consumption have been shifted among the similar products and industries to achieve the balancing keeping aggregates published in the NAS as control. More notably, the input structure of industry 'Manufacture of coke and refined petroleum products' has been changed suitably from the structure thrown by ASI to achieve the product balance of its main input product i.e. crude petroleum. Therefore, some variation in the estimates of data might be observed from the above mentioned method. The compilation of

GVA/GDP based on SUT 2017-18 and 2018-19 using the three approach viz. Production, Expenditure and Income is given in Table 4 and Table 5 respectively.

**Table 4: GVA/GDP by Production, Expenditure and Income approach from SUT
2017-18**

Approach	Item	Value (in Rs. Crore)
Production	Output	3,03,66,427
	Intermediate Consumption	1,48,60,760
	Product Taxes less Subsidies	15,84,377
Expenditure	PFCE	1,02,04,434
	GFCE	18,40,119
	GFCF	49,35,726
	CIS	3,53,998
	Valuables	2,41,685
	Export	32,11,521
	Import	36,97,442
Income	Production Taxes less Subsidies	-39,426
	CFC	17,64,814
	CE	52,75,678
	OS/MI	85,04,602

**Table 5: GVA/GDP by Production, Expenditure and Income approach from SUT
2018-19**

Approach	Item	Value (in Rs. Crore)
Production	Output	3,47,66,894
	Intermediate Consumption	1,75,91,766
	Product Taxes less Subsidies	17,24,540
Expenditure	PFCE	1,12,91,529
	GFCE	20,45,552
	GFCF	55,68,422
	CIS	4,02,340
	Valuables	2,26,104
	Export	37,66,294
	Import	44,00,572
Income	Production Taxes less Subsidies	-43,345
	CFC	19,84,284
	CE	59,13,926
	OS/MI	93,20,264

Abbreviations

Acronym	Full Form
ASI	Annual Survey of Industries
AIDIS	All India Debt and Investment Survey
BP	Basic Prices
CIS	Change in Stock
CBR	Cultivable Biological Resources
CFC	Consumption of Fixed Capital
CE	Compensation to Employee
CCS	Cost of Cultivation Studies
DESAg	Directorate of Economics and Statistics
DCUs	Departmental Commercial Undertakings
FCE	Final Consumption Expenditure
GCF	Gross Capital formation
GFCE	Government Final Consumption Expenditure
GDP	Gross Domestic Product
GFCF	Gross Fixed Capital Formation
GVA	Gross Value Added
IC	Intermediate Consumption
IBM	Indian Bureau of Mines
ITC-HS	Indian Trade Classification-Harmonized System
MI	Mixed Income
MCA	Ministry of Corporate Affairs
NPISH	Non-profit Institutions serving Households
NAS	National Accounts Statistics
NIC	National Industrial Classification
NPCMS	National Product Classification for Manufacturing Sector
NPCSS	National Product Classification for Services Sector

NDCUs	Non-Departmental Commercial Undertakings
NSS	National Sample Survey
OS	Operating Surplus
PFCE	Private Final Consumption Expenditure
PP	Purchaser's Price
R&D	Research & Development
RBI	Reserve Bank of India
SUT	Supply and Use Tables
TTM	Trade and Transport Margin
