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Compilation of Sectoral Flows and Stocks for Non-Financial Assets

Room document

COMPILATION OF SECTORAL FLOWS AND STOCKS FOR NON-FINANCIAL ASSETS

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INTRODUCTION

1.1   The purpose of this paper is to review the current status of compilation of sectoral accounts consistent with System of National Accounts(SNA) in India. The Central Statistics Office (CSO) of India has revised the base year of its national accounts to 2004-05, in January 2010. The three major components influencing this revision exercise included (i) revision of base year to a more recent year (for meaningful analysis of structural changes in the economy in real terms), (ii) complete review of the existing data base and methodology employed in the estimation of various macro-economic aggregates including choice of the alternative databases on individual subjects and (iii) to the extent feasible, implementing the recommendations of SNA 1993 and 2008. India compiles all the accounts using the 1993 SNA underlying concepts, definitions and classifications. The Indian National Accounts Statistics (INAS) records the essential elements of the Indian economy: production, income, consumption (intermediate and final), accumulation of assets and liabilities, and wealth. These elements comprise economic flows and stocks that are grouped and recorded, according to specified accounting rules, in a set of accounts for the economy as a whole and for various sectors and subsectors. The sectors and subsectors comprise groups of institutional units with the same economic role.

1.2   Major aggregates like GDP, GNI, GNDI and major components of these indicators can be derived from the flow accounts. Goods and services account is also compiled, both at current and constant prices. This makes it possible to compute GDP by final use data in addition to compilation of GDP by production and distribution of income methods.

1.3   This paper is organized into four sections. Section 2 deals with concepts of stocks and flows and recording of stocks and flows in the INAS. Section 3 discusses the status of implementation of 1993 and 2008 SNA. In Section 4, data gaps and challenges faced in compilation of sectoral accounts are discussed.

STOCKS AND FLOWS

2.1 The purpose of a system of national accounts is to record economic flows and stocks. Recording of stocks and flows is done through a certain accounting frame work. The SNA contains a number of conceptual elements that determine the accounting framework. These concepts are:

1. Institutional units and sectors
2. Transactions and other flows
3. Assets and liabilities
4. Products and producing units
5. Purposes

2.1 1 Institutional units and sectors

The fundamental units identified in the SNA are the economic units that can engage in the full range of transactions and are capable of owning assets and incurring liabilities on their own behalf. These units are called institutional units. The institutional units are grouped together to form institutional sectors, on the basis of their principal functions, behaviour and objectives. The institutional units identified are:

a. *Non-financial corporations* - principally engaged in the production of market goods and non-financial services.

b. *Financial corporations* - principally engaged in financial services including financial intermediation.

c. *General government* - consists of institutional units that, in addition to fulfilling their political responsibilities and their role of economic regulation, produce services (and possibly goods) for individual or collective consumption mainly on a non-market basis and redistribute income and wealth.

d. *Households* - institutional units consisting of one individual or a group of individuals. The entrepreneurial activities of a household consist of unincorporated enterprises that remain within the household except under certain specific conditions.

e. *Non-profit institutions serving households (NPISHs)-* legal entities that are principally engaged in the production of non-market services for households or the community at large and whose main resources are voluntary contributions.

The compilation practices of Indian National Accounts Statistics(INAS) broadly follow the accounting framework of 1993 SNA . The institutional sectors for which accounts are compiled are general government, households and NPISHs combined into one sector, financial corporations, non-financial corporations.

2.1.2 Coverage of Institutional Sectors

In the INAS, the CSO presently provides, among others, estimates of (i) Gross Domestic Product (GDP), (ii) Net Domestic Product (NDP) and (iii) factor incomes by industry of origin and also by organized and unorganized sectors of the economy. The data available from these three aggregates, and their sources, methodology and coverage have been used to prepare the institutional sector accounts. The total economy has been divided broadly into organised and unorganised segments.

Organised sector

For the purpose of compiling the GDP estimates separately for organized and unorganized sectors, the CSO follows the following definition of organized sector:

   1)   **Agriculture**

> government irrigation system, non-departmental enterprises and crop production in plantation crops of tea, coffee and rubber covered in private corporate sector

2) Forestry
> recorded production of industrial and fuelwood, as reported by the State Forest Departments

3) Fishing
> non departmental enterprises (public undertakings)

4) Mining & quarrying
> major minerals, as reported by the Indian Bureau of Mines

5) Manufacturing
> registered factories covered under Factory Act

6) Electricity, gas and water supply
> total activity of electricity, public sector part of gas and water supply

7) Construction
> construction works in the public sector and private corporate sector (Joint Stock Companies)

8) Trade, hotels & restaurants
> public and private corporate sector and cooperatives

9) Railways
> entire sector

10) Transport by other means
> public sector, private shipping companies and road transport under the private corporate sector

11) Storage
> warehousing corporation in public sector, cold storage covered under Factory Act

12) Communication
> public sector and companies covered under the private corporate sector

13) Banking and insurance
> total activity except the commission agents attached to life Insurance Corporation of India and unorganised non banking financial undertakings including professional moneylenders and pawn brokers

14) Real estate, ownership of dwellings and business services
> real estate companies in the private corporate sector and public sector

15) Public administration and defence
  ➤ entire sector

16) **Other services**
  ➤ public sector medical, education and sanitary services, TV and radio broadcasting and recognised educational institutions in the private sector

The main data sources for compiling the estimates of GDP by economic activities are the budget documents of centre and states, the annual accounts of public sector undertakings, the Annual Survey of Industries (ASI) and the results of company finance studies of the Reserve Bank of India (RBI), in respect of the organized sector.

Unorganised sector

For the unorganized segments of various economic activities (excluding the primary sectors), estimates of GDP are initially prepared for a benchmark year (which is the base year of national accounts statistics, presently 2004-05) on the basis of number of workers in each of the economic activities and the value added per worker. The data on workforce for the benchmark year is estimated from the results of National Sample Survey (NSSO) Quinquennial Employment and Unemployment Surveys and the decennial Population Census, after accounting for the employment in the organized sector. The estimates of value added per worker for the benchmark year are compiled from the results of follow-up enterprise surveys of CSO/NSSO, which are based on the areal frame provided by the Economic Census (carried out once in about 7 years). For the subsequent years, the benchmark estimates of GDP in respect of unorganised segments of each of the economic activities are extrapolated with appropriate physical indicators and the relevant price indices for estimating the GDP of these segments for these years.

In the institutional sector accounts compiled, unorganised sector has been treated as household (including the NPISHs) sector and organised sector has been sub-divided into, financial-corporations, non–financial corporations and general government.

The details of coverage of these three institutions are given below:

  (a) **General Government sector** This sector includes the administrative part of Centre, States/Union Territories, Local Bodies and autonomous institutions of the government and the Departmental Commercial Undertakings (DCUs), which are unincorporated enterprises owned, controlled and run directly by the public authorities.

  (b) **Financial corporations**

The Financial Intermediation sector in India is broadly divided into the following sub-sectors:

  (i) Commercial Banks,
  (ii) Banking Department of Reserve Bank of India.

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Public non-banking financial corporations (Centre & State)
Non-government non-banking financial companies engaged in trading in shares, investment holdings, loan finance and the like activities,
Unorganised non-banking financial enterprises and activities of professional money lenders and pawn brokers
Post office savings banks including operations concerning cumulative time deposits and national saving certificates
Co-operative credit societies
Employees Provident Fund Organisation.
Life and non-life insurance activities

(c) Non financial corporations

Public sector

These comprise the Non-departmental enterprises also referred to as Non-departmental Commercial Undertakings (NDCUs) and include (i) government companies (in which not less than 51 per cent of the PUC is held by the central government or state government or partly by the central government and partly by one or more state governments) and subsidiaries of government companies; and (ii) statutory corporations set up under special enactments of Parliament or State Legislatures. The NDCUs differ from the DCUs in that they hold and manage the financial assets and liabilities as well as the tangible assets involved in their business. These enterprises have separate Boards of Directors and present profit and loss accounts and balance sheets as in the case of private corporate sector.

Private corporate sector

The non-financial corporations under the private corporate sector include the joint stock companies registered under the Companies Act 1956 and the co-operative societies (other than those covered under the financial corporations).

(d) Household (including NPISHs) sector

For the purpose of compilation of accounts, the 1993 SNA institutional sectors of households and NPISHs have been combined into one institutional sector, namely the Household (including NPISHs) sector. This sector corresponds to the unorganised sector in the INAS.

2.2 Transactions and other flows

Institutional units fulfil various economic functions; that is, they produce, consume, save, invest, etc. Transactions in goods and services (products) describe the origin (domestic output or imports) and use (intermediate consumption, final consumption, capital formation or exports) of goods and services. Distributive transactions consist of transactions by which the value added generated by production is distributed to labour, capital and government and transactions involving the redistribution of income and wealth (taxes on income and wealth and other transfers).

The SNA thus makes use of accounts to transform transactions and other flows into accounting entries for purposes of measurement. The sequence of accounts as suggested in the SNA, are grouped into three sub-accounts, (i) Current Accounts, (ii) Accumulation Accounts, and (iii) Balance sheet. The Current Accounts record (a) production of goods and services and (b) generation, distribution and use of income. Accumulation Accounts deals with changes in assets, liabilities and net worth. The Balance Sheet shows the stocks of assets, liabilities and net worth.

The following accounts and aggregates according to the framework of 1993 SNA are produced by CSO

(i)   for the total economy, the sequence of accounts (current accounts; and of the accumulation accounts only the capital account and finance account, and the rest of the world account);

(ii)   for the institutional sectors (general government, households and NPISHs combined into one sector, financial corporations, non-financial corporations) only the production and generation of income accounts (of the current accounts);

(iii)   for the general government and households (including NPISHs) sectors, the sequence of accounts upto finance account;

As part of the sequence of accounts for the total economy, following set of accounts are produced by CSO.

- Goods and Service Account
- Production Account
- Generation of Income Account
- Allocation of Primary Income Account
- Secondary Distribution of Income Account
- Use of Income Account
- Capital Account
- Financial Account

Goods and services account

Account 0: Goods and services account

The basic relationship in the goods and service account is the following:

Output + Imports   = Intermediate consumption
                     + Final consumption
                     + Gross capital formation
                     + Exports

Taxes on products less subsidies are also included on the resource side of the accounts. Taxes on products are recorded only at the level of the total economy. Output estimates presented here include market output, non-market output and output for own final use. Estimates of output prepared for all economic activities have been

summed up for the economy. The discrepancy is shown at the end of the account to have balance between all uses and all resources. This account also gives the GDP from the production and expenditure approaches.

Account I: Production Account

The basic relationship in the production account is the following:

Output = Intermediate consumption
+ Value added

The balancing item (value added) is obtained by subtracting intermediate consumption from output. Value added may be gross or net of consumption of fixed capital (CFC).

Account II.I.I: Generation of Income Account

The basic relationship in the generation of income account is the following:

Value added = Compensation of employees
+ Other taxes less subsidies on production
+ Operating surplus

Value added, the balancing item brought forward from the Production Account, is treated as a resource for the producer. Under uses are payments to labour as compensation of employees and to government in the form of taxes less subsidies on production and imports. Taxes on production consist of taxes payable on goods and services when they are produced, delivered, sold, transferred or otherwise disposed of by their producers plus other taxes on production, consisting mainly of taxes on the ownership or use of land, buildings or other assets used in production or on the labour employed, or compensation of employees paid. The balancing item in this account is operating surplus/mixed income.

Account II.I.2: Allocation of Primary Income Account

The basic relationship in the allocation of primary income account is:

Balance of primary incomes = Operating surplus
+ Property income received
- Property income paid

The balance of primary incomes also includes receipts of compensation of employees in the case of households and receipts of taxes less subsidies on production and imports in the case of government. Compensation of employees include also those receivable from non-resident institutional sector. Property income receivable from non-resident institutional sector and payable to rest of the world is also included.

Account II.2: Secondary Distribution of Income Account

The basic relationship in the secondary distribution of income account is:

Disposable income = Balance of primary incomes
+ Current transfers received
− Current transfers paid

In the Secondary Distribution of Income Account, the resources side of the account records current transfers and the balance of primary income (brought forward from the Allocation of Primary Income Account). The current transfers in cash described as follows: current taxes on income, wealth, etc. social contributions and benefits; current transfers, other current transfers from rest of the world and miscellaneous receipts. The same type of current transfers in cash, this time as payables,(other current transfers to rest of the world are recorded on the use side of the account. These pertain to those sectors for which these transfers are payables. The account measures disposable income, which is the balancing item of the account and is shown on the use side.

Account II.3: Redistribution of income in kind account

The redistribution of income in kind account takes the process of income redistribution one stage further. The basic relationship in the Redistribution of income account is:

Adjusted Disposable income = Disposable income
+ Social transfers received in kind
− Social transfers paid in kind

The social transfers in kind payable by government units are recorded on the left-hand side of their redistribution of income in kind accounts under uses. The same type of social transfers receivable by the household sector is recorded on the right-hand side of the account under resources. The resources side of the account also records disposable income (brought forward from Secondary distribution of Income Account). Assuming that social transfers in kind take place only between resident units, the total value of the transfers in kind receivable by resident households must equal the total value of those payable by government units.

Account II.4.1: Use of disposable Income Account

The basic relationship in the use of disposable income account is:

Saving = Disposable income
- Final consumption expenditure

The Use of Disposable Income Account, shows under resources disposable income which is brought forward from the Secondary Distribution of Income Account is also shown here. The balancing item of the account is savings .

Account II.4.2: Use of adjusted disposable income account
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The basic relationship in the use of disposable income account is:

$$\text{Saving} = \text{Adjusted Disposable income} - \text{Actual Final consumption expenditure}$$

Statistical discrepancy is also shown here. The balancing item of the account is savings which is reflected in the next account in the sequence, i.e., capital account. The actual final consumption of households is obtained by augmenting their final consumption expenditure by the value of social transfers in kind receivable, while that for government units is obtained by subtracting from their final consumption expenditure social transfers in kind payable. The two versions of the use of income account are not sequential or hierarchical. They are parallel accounts that serve different analytical or policy purposes.

III. Accumulation Accounts

Other accumulation entries cover transactions and other economic flows not previously taken into account that change the quantity or value of assets and liabilities. They include acquisitions less disposals of non-produced nonfinancial assets, other economic flows of non-produced assets, such as discovery or depletion of subsoil resources or transfers of other natural resources to economic activities, the effects of non-economic phenomena such as natural disasters and political events (wars for example). The coverage of assets is limited to those assets which are subject to ownership rights and from which economic benefits may be derived by their owners by holding them or using them in an economic activity as defined in the SNA.

Account III.I: Capital Account

The basic relationship in the capital account is given by:

Change in net worth due to saving and capital transfers = Gross fixed capital formation
-Consumption of fixed capital
+Acquisitions less disposals of other non-financial assets
+ Net lending

The Non-financial assets which are the concern of the Capital Accounts, consist of two main categories:

a) Produced assets
b) Non-produced assets

Produced assets are further sub-divided into three types: (i) fixed assets, (ii) inventories and (iii) valuables. Fixed assets consist of (a) tangible or (b) intangible assets that are used repeatedly in production for more than one year. Valuables are works of art, precious stones and metals, jewelry, etc. which are not used in production or consumption. Their economic value lies in the expectation that their price will increase.

Non-produced assets on the other hand, are economic assets needed for production but are not produced through production process, such as land and certain uncultivated forests or mineral deposits. Natural non-produced assets also include certain intangible assets such as patented entities, leases or other transferable contract, purchased goodwill, etc.

Account III.2: Finance account.

The basic relationship in the financial account is:

Net lending =   Net acquisition of financial assets
                −   Net incurrence of liabilities

 The financial account records transactions that involve financial assets and liabilities and that take place between institutional units and between institutional units and the rest of the world.   These transactions in the System show net acquisition of financial assets on the left side or net incurrence of liabilities on the right side. The balancing item is net lending (+) or net borrowing (-), which appears on the right side.

Account V.I: Rest of the world account (External Transactions Account)

The rest of the world account, following the general accounting structure with only minor variation, comprises those categories of accounts necessary to capture the full range of transactions that take place between the total economy and the rest of the world.

2.3 Purpose

The concept of purpose, or function, relates to the type of need a transaction or group of transactions aims to satisfy or the kind of objective it pursues. Transactions are first analysed in the SNA according to their nature. CSO produces following classification of expenditures:.

> (i)   Classification of the functions of the government; and
> (ii)   Classification of individual consumption according to purpose.

STATUS OF IMPLEMENTATION OF SNA 93 AND SNA 2008

3.1   The data cover the entire economy; include all activities within SNA production boundary. With reference to production of goods for own final use, this is limited to the goods in agriculture, forestry, and fisheries only. Due to lack of availability of data, manufactured goods produced within households exclusively for own final use (such as weaving of clothes, fetching of water, etc.), are not covered in national accounts. However, production of housing services by owner-occupiers and domestic services produced by employing paid domestic staff are included in the national accounts. Also covered in the national accounts is the output of own account capital formation. Thus the production boundary of Indian national accounts broadly corresponds to the 1993 SNA production boundary with the exception of manufactured goods produced within households exclusively for own consumption.

Unrecorded activity is not explicitly accounted for. As regards illegal activities, a part of these are included in the national accounts through indirect methods, such as covering the entire cropped area (through land-use statistics and village level records), accounting for total workforce (through labour force surveys), etc. However, smuggling and other explicit illegal activities are not directly covered in the national accounts. Coverage of certain intangible assets such as patented entities, leases or other transferable contract, purchased goodwill, etc. is to the extent data is available in the reports of public sector . Currently NPISH is incorporated into the household sector. NPISH production activities are covered in establishment surveys while consumption is included in household consumption expenditures. India has plans to compile accounts of NPIs as per guidelines provided in the UN hand book on NPIs in the System of National Accounts.

3.2 Features of 1993 and 2008 SNA implemented by CSO

While introducing the new series of NAS in January, 2010 (base year 2004-05) CSO made efforts to implement some of the recommendations of the 1993 and 2008 SNA, to the extent available data permits. These relate to:

(i) valuation of non-market agricultural crops on the basis of prices of similar products made by market producers and their inclusion in the production boundary;

(ii) inclusion of own-account production of housing services by owner-occupiers and of domestic and personal services produced by employing paid domestic staff;

(iii) inclusion of premium supplements in respect of life and non-life insurance output estimates;

(iv) inclusion of reinvested earnings of foreign direct investors in the rest of the world account. This treatment affects gross national product, saving and capital formation;

(v) imputed value of own-account labour treated as mixed income of self-employed;

(vi) expenditures on mineral exploration treated as capital expenditure;

(vii) allocation of financial intermediation services indirectly measured (FISIM) to the users of these services, as intermediate consumption to industries and as final consumption to final users;

(viii) inclusion of expenditures on valuables, which are held as stores of value, and are treated as Gross Capital Formation;

(ix) treatment of expenditures on software as Gross capital formation;

(x) inclusion of natural growth of livestock as Gross capital formation

(xi) inclusion of expenditures made on few tree crops during the gestation period as Gross capital formation;

(xii) addition of capital expenditure incurred on installing the wind energy systems in the Gross Fixed Capital Formation

(xiii) User cost approach is used for estimating the services of owner occupied dwellings in rural areas as against the practice of imputing these services on the basis of rent per dwelling.

(xiv) Construction component and machinery/transport outlay of Defence capital account is being treated as capital formation, which was earlier being treated as intermediate consumption in the Indian national accounts.

(xv) estimation of consumption of fixed capital of all fixed assets including government buildings, roads, dams etc. as Perpetual Inventory Method (PIM);

(xvi) adopting the practice of changing base year every 5 years.

DATA GAPS AND CHALLENGES FACED IN COMPILATION OF SEQUENCE OF ACCOUNTS.

4.1 The main data gaps for compilation of full set of accounts as recommended in the SNA are lack of detailed data on (a) non- financial corporations, (b) unorganized segment of financial corporations, annual economy-wide non- manufacturing enterprise surveys , annual labour force surveys, income-expenditure surveys of households, data on non-profit institutions serving households and lack of a broad based business register. Also, India has large informal sector (what is usually referred to as **unorganised** sector in the Indian national accounts, which is the household sector including private unincorporated enterprises. The unorganised sector also includes some formal activities on which there is no regular system of data availability). There are also no annual labour force, enterprise and retail trade surveys in India, which can provide information on the current status of economic activities and can be used for making annual estimates of unorganised sector. Therefore, different procedures are adopted for different industries to measure GVA. These include a number of rates and ratios and indirect methods (such as benchmark-indicator methods, where benchmark estimates prepared based on long-term surveys are extrapolated with proxy indictors for the annual estimates). Therefore, the relevance of proxy indicators used in the indirect methods assume utmost importance.

4.2 Compilation of sectoral accounts is a challenge to national accountants. The main concern is the availability of detailed data on income and expenditure of various institutional sectors. Other challenges concern the inclusion of the informal sector in the national accounts in a regular basis. There is also a requirement of source agencies like the Central bank and Ministry of finance to introduce relevant modifications in BOP and GFS. This is also essential for harmonizing national accounts with other systems of macro economic statistics and business accounting.

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