

Building the System of National Accounts - basic concepts

Statistics Explained

This article is part of a [set of background articles](#) explaining in some detail how statistics producers, such as national or international statistical institutes, may build a coherent [system of national accounts \(SNA\)](#), especially in developing countries. The articles are based on the official Eurostat handbook [Essential SNA - Building the basics](#) and they focus particularly on the early stages of the implementation.

The basic concepts of the [2008 SNA](#) presented in the first section of this article offer a broad view of the fundamental requirements that should be envisaged in the strategic development of national accounts. They centre around the main categories that form the skeleton of the system: stakeholders in the economy, the economic activities they perform, and the scope of their actions, the rules applied to evaluating national accounts indicators. A separate section provides evidence relating to the main aggregates obtained from [national accounts](#) and used to characterise the economy.

Basic concepts

The [System of National Accounts \(SNA\)](#) should be able to describe economies which, over time, are becoming increasingly complex, whilst envisaging at the same time descriptive simplicity. They cover a wide variety of situations, from developed countries to developing countries, least developed countries and countries in transition. Irrespective of the stage of development, in order to 'measure the economy', commensuration limits need to be properly defined.

The 2008 SNA is a system of macroeconomic accounts based on a set of concepts, definitions, [classifications](#) and registration rules. It provides a framework within which economic data can be collected and analysed to assist decision-makers and provide guidance on economic policies.

National accounts aim to describe the economic activity (measurable in monetary terms) of every unit of a national economy. The basic concepts of the SNA are used to analyse and aggregate the numerous aspects of the elementary actions in the economy, and are capable of answering important questions:

- Who takes action in the economy?
- What do they do?
- Why do they take action?
- How are the actions known?

The definitions, classifications and accounting rules in the SNA give answers to these questions (see Figure 1).

Question	Explanation	The 2008 SNA concepts
Who?	Refers to the economic agents (institutions, firms, individuals) that perform activities in the economy.	Institutional units Institutional sectors Total economy and the rest of the world
What?	Refers to the transactions and other flows and stocks, which are the objects of the economy.	Transactions and other flows Assets and liabilities Products and producing units
Why?	Refers to the reason why an economic agent takes an action	Classifications by purposes of expenditure
How?	Refers to the recording of who, what and why.	Accounting rules: – recording – time of recording – valuation – consolidation and netting

Figure 1: Main concepts of the 2008 SNA

Who? Institutional units and sectors

The SNA is designed to represent the economy in a simplified way. However, given the complexity of an entire economy, a difficult task of aggregation is required which uses specific classifications.

- Classification by industry, called 'functional classification' because it represents the production process and the flows experienced by goods and services produced in the economy, in other words, it shows the balance between supply and demand. In this case, units are defined according to their technical-productive profile, so they are units of production in the strict sense of the term.
- Classification by institutional sector is another approach to the production process where the units are defined according to their economic behaviour, economic function and economic objectives. This classification highlights how income is obtained and distributed in an economy, how share capital is generated and how this is financed.

Sector Ownership	Non-financial corporations sector	Financial corporations sector	General government sector	Households sector	NPIs serving households sector
Public sector	Public non-financial corporations	Public financial corporations	All government units and government NPI		
National private sector	National private non-financial corporations	National private financial corporations		All households	All NPIs serving households
Foreign-controlled sector	Foreign-controlled non-financial corporations	Foreign-controlled financial corporations			

Figure 2: Institutional units cross-classified by sector and ownership - Source: System of National Accounts 1993 Training manual, SADC, 1999

Classification by industry is linked to supply and use tables (SUTs) while institutional classification is associated with integrated economic accounts (IEA).

An **institutional unit** has the following characteristics:

- it is entitled to own goods or assets in its own right, and therefore able to exchange ownership of goods or assets in transactions with other institutional units;
- it is able to take economic decisions and engage in economic activities for which it is itself held directly responsible and accountable at law;
- it is able to incur liabilities on its own behalf, to take on other obligations or future commitments and to enter into contracts;
- it has a complete set of accounts, including a balance sheet of assets and liabilities, or it would be possible and meaningful from an economic viewpoint, to compile a complete set of accounts if required.

Essentially two types of institutional units exist in an economy:

- persons or a **households** , including groups of persons staying in hospitals, retirement homes, prisons for long periods of time;
- **legal or social entities** .

With respect to legal units, the 2008 SNA distinguishes three main categories:

1. Corporations (financial and non-financial) are entities capable of generating profit or other financial gain for their owners, are recognised by law as separate legal entities from their owners who enjoy limited liability and are set up for purposes of engaging in market production. Under this category are included legally constituted corporations (such as incorporated enterprises, public limited companies, public corporations, private companies, joint-stock companies, limited liability companies, limited liability partnerships, etc.), national resident units (non-resident units which have a centre of predominant economic interest in the economic territory of a country other than their prior resident country) and quasi-corporations (an unincorporated enterprise owned by a resident institutional unit that has a complete set of accounts and is operated as if it were a separate corporation and whose de facto relationship to its owner is that of a corporation to its shareholders).
2. **Non-profit institutions (NPIs)** that are created for the purpose of producing goods and/or services but whose status does not permit them to be a source of income, profit or other financial gain for the units that establish, control or finance them.
3. Government units are legal entities established by political processes. They have legislative, judicial or executive authority over other institutional units within a given area. The principal functions of government units are to assume responsibility for the provision of goods and services to the community or to individual households and to finance their provision out of taxation or other incomes, to redistribute income and wealth by means of transfers, and to engage in non-market production.

Institutional units are grouped together into institutional sectors on the basis of their principal functions, behaviour and objectives. The 2008 SNA includes five main institutional sectors:

1. non-financial corporations;
2. financial corporations;
3. **general government** ;
4. households;
5. **non-profit institutions serving households (NPISHs)** .

For the SNA to provide information concerning relations between a national economy and *therest of the world* , transactions between residents and non-residents, such as claims by residents on non-residents, and vice versa are recorded in the rest of the world. It is not a sector for which complete sets of accounts have to be compiled, although it is often convenient to describe the rest of the world as if it were a sector. The rest of the world includes certain institutional units that may be physically located within the geographical boundary of a country, for example, foreign enclaves such as embassies, consulates or military bases, and also international organisations.

The allocation of a unit to an institutional sector is based on the following questions:

- Is the unit resident?
- Is it a household, institutional household (ex. a hospital) or a legal unit?
- Is the unit a non-market or market producer?
- Is the unit controlled by the government?
- Does the unit provide financial services?
- Is the unit foreign-controlled?

Institutional units can also be grouped according to ownership. A distinction is made between public, national private and foreign-controlled corporations. National private and foreign-controlled corporations belong to the private sector. General government belongs to the public sector in its entirety. Households and NPISHs belong to the private sector. Corporations are classified as public if the government, normally through ownership of more than half of the voting shares, controls them through government units or other public corporation(s).

Control by government may also be due to special legislation. The criterion of owning more than half of the voting shares also applies to the classification of corporations into national private or foreign-controlled.

The total economy and the concept of residence

The [total economy](#) is defined in terms of institutional units.

The **economic territory** of a country does not coincide exactly with its geographical territory. The term economic territory means the geographical territory administered by a government within which persons, goods, services and capital move freely. It also includes international waters declared as an exclusive economic zone where the country enjoys exclusive fishing, fuel and mineral exploitation rights. Finally, certain enclaves in foreign countries, such as embassies, consulates and military bases, are included in an economic territory. On the other hand, enclaves in a country used by foreign governments and international organisations are excluded from the economic territory of that country.

The concept of economic territory in the 2008 SNA coincides with that of the [Balance of payments and international investment position manual \(BPM6\)](#), sixth edition.

The concept of [residence](#) is not based on citizenship or legal criteria. Having a centre of predominant economic interest in a territory implies being engaged for an extended period (usually one year or more) in economic activities in this territory (e.g. to have ownership of land or ownership of structures or to engage in production in a territory).

Some clarifications on residence:

- A **household** is resident when it maintains a dwelling that the members of the household treat and use as their principal residence. All individuals who belong to the household are also residents. There are several special cases for considering households still resident:
 - students continue to be resident in the territory in which they were resident prior to studying abroad;
 - patients going abroad for the purpose of medical treatment, even if the treatment takes a year or more;
 - crews of ships, aircraft, oil rigs, space stations etc. that operate outside a territory or across several territories;
 - diplomats, military personnel and other civil servants employed abroad in government enclaves;
 - cross-border workers, who maintain their principal dwelling in the national territory;
 - refugees, when they do not change their home territory regardless of their legal status or intention to return.
- A **corporation or quasi-corporation** is considered as resident if it maintains at least one establishment where it plans to operate over a long period of time, e.g. at least one year. Practical considerations must often be made regarding construction by foreign enterprises, as they usually are borderline cases.

Enterprises, establishments and industries

Units engaged in production are recognised by the 2008 SNA as [enterprises](#). An enterprise may be a corporation,

a quasi-corporation, a non-profit institution or an unincorporated enterprise.

An institutional unit such as a corporation may be engaged in different kinds of production activities in different locations, producing various kinds of goods and services. This implies that some institutional units must be divided into smaller and more homogeneous units. Homogeneous activity is one criterion for dividing an enterprise into [kind-of-activity units \(KAU\)](#) .

An enterprise engaged in different activities has one or more locations and for the purposes of differential analysis it is useful to divide it accordingly into [local units](#) .

The combination of location and kind of activity of an enterprise results in what is called an '[establishment](#)' .

Establishments are also called 'local kind-of-activity units' (LKAU). Establishments allow for the possibility of carrying out one or more secondary activities, although they should be on a small scale compared to the principal activity. The main activity of an enterprise may also involve ancillary activities that facilitate the efficient running of the enterprise but do not normally result in goods and services that can be marketed (for example keeping records, purchases of material and equipment, repair and maintenance of machinery and equipment, cleaning and maintenance of buildings and premises, sales promotion, etc.) but which could not be separately identified.

An enterprise may have one or more establishments. On the other hand, an establishment can belong to one and only one enterprise. In practice, an establishment may usually be identified with an individual workplace in which a particular kind of productive activity is carried out: an individual farm, mine, quarry, factory, plant, shop, store, construction site, transport depot, airport, garage, bank, office, clinic, etc.

A complete set of accounts, including balance sheets, cannot be compiled for an establishment because it cannot have own assets, incur liabilities or engage in transactions with other entities in its own right. The only data that can be meaningfully compiled for an establishment are:

- the items included in the production and generation of income accounts;
- gross fixed capital formation and changes in inventories;
- stock of fixed capital and land;
- number of employees, types of employees, hours worked.

An SNA distinguishes, as an essential feature of its structure, between establishments that are market producers, producers for own final use and non-market producers.

Market establishments produce goods and services mostly for sale at prices that are economically significant. Producers for own final use produce goods and services mostly for final consumption or fixed capital formation by the owners of the enterprises in which they are produced. Non-market establishments supply most of the goods and services they produce without charge or at prices that are not economically significant.

A group of establishments engaged in the same, or similar, kinds of activity are classified into one [industry](#) according to [ISIC, Rev. 4](#) . The classification refers to the principal activity of the establishment as defined above. Certain activities produce more than one product simultaneously, while the same product may sometimes be produced by using different production techniques. The most important criterion used for classifying industries is the type of goods and services produced.

The enterprise is the main unit for national accounts because it represents the institutional unit for which production accounts are prepared and value added is estimated. Aggregating value added over activities is the one of the main activity of national accountants since this will directly yield [GDP](#) . Activities are grouped into 'industries' which are classified according to ISIC 4. In the same time, the main activity is one of the important variables of the [SBR](#) and base for defining the economic survey samples.

For more information concerning statistical business register and classifications see [Building the System of National Accounts - strategy](#) .

The principal activity determines the activity class in ISIC to which the enterprise belongs. It is important to realise that once this assignment has been made, the whole enterprise – including output for other activities – will belong to this class, even if some of the other output belongs to a different class. This other output is called secondary output. What distinguishes main from secondary output is determined by its relative importance. Typically, value

added is taken, but output, sales, wages and salaries and employment are also possible. If the value added for determining the inclusion criterion is selected, the main activity is the one with the highest value added of the unit. So there is only one main activity, but there can be more than one secondary activity. Value added of a secondary activity is usually less than that of the main activity, although this is not always necessarily the case. Usually, there is some minimum value that a share can take as well, e.g. 10%. Activities below this threshold are then ignored. It is quite normal for enterprises to have at least some secondary activities, although this is less likely for smaller enterprises than for larger.

It is important to realise that it is not necessary that the main activity account for 50 per cent or more of the total value added of a unit. When there are three activities A, B and C, with value added shares of 40 %, 30 % and 30 % respectively, activity A will be main and activities B and C secondary. It should also be noted that in order for activities to be either main or secondary, their output should be suitable for delivery outside the producer unit.

Establishing the principal activity of one enterprise engaged in two or more activities for which the output serves a market is based on the so called 'top-down' method. The method operates according to the following rules:

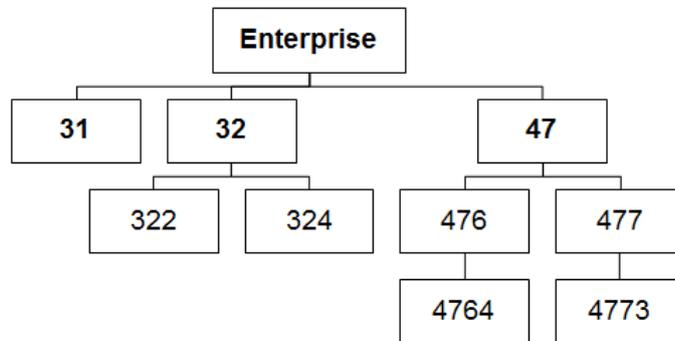
- In case one activity accounts for more than 50 % of value added, this activity determines the classification
- Activity is determined according to the ISIC class with the largest share of value added from top to bottom:
 - First determine the highest classification level (1-digit)
 - Then the lower (2- and 3-digit) levels
 - Finally the class (4-digit level)

Figure 3 presents one example of how to determine the main activity of the enterprise.

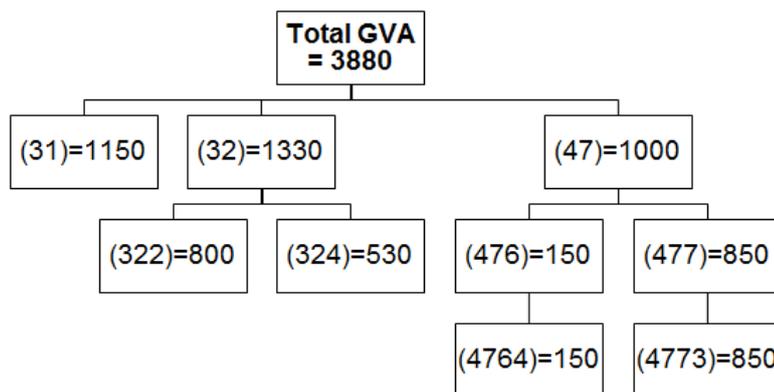
The enterprise A has 5 activities A1, A2, A3, A4, and A5, classified (fictitiously) as:

- A1: ISIC4 code = 310 (manufacture of furniture), value added = 1450
- A2: ISIC4 code = 322 (manufacture of musical instruments), value added = 1200
- A3: ISIC4 code = 324 (manufacture of game and toys), value added = 1330
- A4: ISIC4 code = 476 (retail sale of cultural and recreation goods in specialized stores), value added = 350
- A5: ISIC4 code = 477 (retail sale of other goods in specialized stores), value added = 750

There are 5 activities at 3-digit ISIC4 level, which can be grouped into three activities at the 2-digit level according to the following tree structure:



Given the above data on value added at 3-digit level, we can calculate the totals at 2-digit levels and for the enterprise as a whole. The value added totals are presented in the same tree structure:



Following the top-down method, the following results are obtained:

- the largest share in the total GVA has activity 32;
- of the total value added for 32, activity 332 has the largest share (800)

In these conditions, the activity 322 is the main activity and the whole enterprise is classified as 322 at 3-digit level, as 32 at 2-digit level and as 3 at 1-digit level.

Note: the activity 477 (value added = 850) has higher value added than this principal activity, but according to this methodology, it is still classified as a secondary activity.

Figure 3: Determining the main activity of enterprise

What? Flows and stocks

The aim of SNA accounts, tables and balance sheets is to register in monetary terms the economic actions or events that take place within a given period of time and the effect of these events on the stocks of assets and liabilities at the beginning and end of that period.

In the economy, institutional units have various economic functions: they produce, consume, save, invest, etc. When they produce, they can be engaged in various type of production (agricultural, industrial, trade, etc.) as entrepreneurs, providers of labour or suppliers of capital. The actions they undertake are aimed at creating, transforming, exchanging, transferring economic value, or changing the volume, composition or value of assets and liabilities. All these actions are economic flows.

The 2008 SNA distinguishes two broad categories of economic flows: transactions and other economic flows.

Transactions

Transactions are economic flows that result from interaction between institutional units by mutual agreement and can take place within institutional units or between establishments belonging to the same enterprise.

The main types of transactions are:

- Transactions in goods and services (products) describe the supply of products (domestic output or imports) and the use of products (intermediate consumption, final consumption, capital formation or exports). An example would be the output of shirts produced by an enterprise, the intermediate consumption of textiles and buttons used in the production of the shirts, investments in a new sewing machine, etc.
- Distributive transactions comprise:
 - Transactions by which the income generated in production (value added) is distributed as compensation of employees, or as taxes on production and imports (less subsidies), or as property income to different institutional sectors and the rest of the world (for instance gross salaries paid by the enterprise manufacturing shirts to its employees);
 - Transactions by which the generated income is redistributed as transfers between institutional sectors and/or the rest of the world (e.g. a general insurance premium paid by the enterprise for the building where the shirts are produced).
- Transactions in financial instruments include acquisitions and disposals of financial assets and incurrence, net of liabilities (e.g. the manufacturing enterprise pays for the raw material by cheque, with money from the deposit in national currency constituted in a bank).
- Other accumulation entries, as results of the transactions defined above which enable the change in the net worth of an institutional unit or sector between the beginning and the end of an accounting period (e.g. the consumption of fixed capital registered for the machinery used in the production of bread in a bread factory).

Transactions in goods and services are also classified according to type of product. The 2008 SNA recommends the use of the [Central Product Classification \(CPC\) Version 2](#) for the classification of goods and services. Besides products that, by definition, must be the output of productive activities, the CPC also accommodates some non-produced assets, such as land, patents, licences, trademarks and copyrights.

There are other schemes of classification of goods, mainly used in foreign trade statistics, namely the [Harmonized system \(HS 2007\)](#), which is very detailed, and the [Standard International Trade Classification \(SITC\) Rev.4](#). Both HS and SITC are also used in industrial statistics. These have a different dimension for classification of products compared to that used by CPC, namely the classification of products as market, own-account or other non-market products.

The section entitled, *Classifications*, in [Building the System of National Accounts - business register and statistical classifications](#) presents the main classifications used in the statistical system and the SNA.

Transactions may be categorised as monetary (e.g. a good is purchased or sold at a given number of units of currency) or non-monetary (e.g. barter and consumption of fixed capital).

They can both be either of two kinds:

- Transactions with counterparts ('something for something'). There is an exchange between two parties in the transactions in products, labour, and/or assets.
- Transactions without counterparts ('something for nothing'). Only one party to the transaction gets something. Examples are taxes, social assistance and gifts in kind. Such transactions are called transfers.
- Classification of transactions

P1	Output
P11	Market output
P119	Financial intermediation services indirectly measured (FISIM)
P12	Output for own final use
P13	Non-market output
P2	Intermediate consumption
P3	Final consumption expenditure
P31	Individual consumption expenditure
P32	Collective consumption expenditure
P4	Actual final consumption
P41	Actual individual consumption
P42	Actual collective consumption
P5	Gross capital formation / P.5n Net capital formation
P51g	Gross fixed capital formation
P51c	Consumption of fixed capital (-)
P51c1	Consumption of fixed capital on gross operating surplus (-)
P51c2	Consumption of fixed capital on gross mixed income (-)
P51n	Net fixed capital formation
P511	Acquisitions less disposals of fixed assets
P5111	Acquisitions of new fixed assets
P5112	Acquisitions of existing fixed assets
P5113	Disposals of existing fixed assets
P512	Costs of ownership transfer on non-produced assets
P52	Changes in inventories
P53	Acquisitions less disposals of valuables
P6	Exports of goods and services
P61	Exports of goods
P62	Exports of services
P7	Imports of goods and services
P71	Imports of goods
P72	Imports of services

Figure 4: Transactions in products (P)

D1	Compensation of employees
D11	Wages and salaries
D12	Employers' social contributions
D121	Employers' actual social contributions
D1211	Employers' actual pension contributions
D1212	Employers' actual non-pension contributions
D122	Employers' imputed social contributions
D1221	Employers' imputed pension contributions
D1222	Employers' imputed non-pension contributions
D2	Taxes on production and imports
D21	Taxes on products
D211	Value added type taxes (VAT)
D212	Taxes and duties on imports excluding VAT
D2121	Import duties
D2122	Taxes on imports excluding VAT and duties
D213	Export taxes
D214	Taxes on products except VAT, import and export taxes
D29	Other taxes on production
D3	Subsidies
D31	Subsidies on products
D311	Import subsidies
D312	Export subsidies
D319	Other subsidies on products
D39	Other subsidies on production
D4	Property income
D41	Interest
D42	Distributed income of corporations
D421	Dividends
D422	Withdrawals from income of quasi-corporations
D43	Reinvested earnings on direct foreign investment
D44	Other investment income
D441	Investment income attributable to insurance policy holders
D442	Investment income payable on pension entitlements D443
D443	Investment income attributable to collective investment funds shareholders
D45	Rent

Figure 5: Distributive transactions (D)

D5	Current taxes on income, wealth, etc.
D51	Taxes on income
D59	Other current taxes
D6	Social contributions and benefits
D61	Net social contributions
D611 = D121	Employers' actual social contributions
D6111 = D1211	Employers' actual pension contributions
D6112 = D1212	Employers' actual non-pension contributions
D612 = D122	Employers' imputed social contributions
D6121 = D1221	Employers' imputed pension contributions
D6122 = D1222	Employers' imputed non-pension contributions
D613	Household actual social contributions
D6131	Household actual pension contributions
D6132	Household actual non-pension contributions
D614	Household social contribution supplements
D6141	Household pension contribution supplements
D6142	Household non-pension contribution supplements
	Social insurance scheme service charges (-)
D62	Social benefits other than social transfers in kind
D621	Social security benefits in cash
D6211	Social security pension benefits in cash
D6212	Social security non-pension benefits in cash
D622	Other social insurance benefits
D6221	Other social insurance pension benefits
D6222	Other social insurance non-pension benefits
D623	Social assistance benefits in cash
D63	Social transfers in kind
D631	Social transfers in kind - non-market production
D632	Social transfers in kind - purchased market production
D7	Other current transfers
D71	Net non-life insurance premiums
D711	Net non-life direct insurance premiums
D712	Net non-life re-insurance premiums
D72	Non-life insurance claims
D721	Non-life direct insurance claims
D722	Non-life re-insurance claims
D73	Current transfers within general government
D74	Current international cooperation
D75	Miscellaneous current transfers
D751	Current transfers to NPISHs
D752	Current transfers between resident and non-resident households
D759	Other miscellaneous current transfers
D8	Adjustment for the change in pension entitlements
D9	Capital transfers
D9r	Capital transfers, receivable
D91r	Capital taxes, receivable
D92r	Investment grants, receivable
D99r	Other capital transfers, receivable
D9p	Capital transfers, payable
D91p	Capital taxes, payable
D92p	Investment grants, payable
D99p	Other capital transfers, payable

Figure 6: Current transfers in cash and kind (D.5-D.8)

Other economic flows

Other economic flows arise from non-economic phenomena, recorded only in accumulation accounts. They include consumption of fixed capital, revaluation of assets and liabilities, economic appearance and disappearance of assets, natural growth of non-cultivated biological assets, uncompensated seizure and catastrophic losses of assets. 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 non-financial 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 (for example, wars) and finally, they include holding gains or losses, due to changes in prices (e.g; the holding gain of the enterprise due to price increases over a year of the value of the stock of the produced shirts), and some minor items.

Stocks are a position in, or holdings of, non-financial (produced or non-produced) assets and the financial assets and liabilities at a point in time. They must be subject to ownership rights (economic ownership prevailing over legal ownership) and must also be used in some kind of economic activity. Consumer durables are excluded, as are natural resources that are not owned.

Flows and stocks are recorded on both sides of accounts and balance sheets. A balancing item is derived as the difference between the sums of the entries on both sides of an account or balance sheet. Balancing items have analytical significance of great importance. As a matter of fact, many important variables in national accounts are calculated as balancing items, e.g. value added.

Why? Purposes

From the SNA point of view, purpose means the function relating to the type of need a transaction or group of transactions aims to satisfy. Transactions are first analysed in the SNA according to their nature. For certain sectors or type of transactions, they are analysed by purpose, in answer to the question 'for what purpose?'.

In this case, the SNA recommends using the following classifications for functional analysis:

- [Classification of individual consumption by purpose \(COICOP\)](#) (and of household final consumption expenditure);
- [Classification of the functions of government \(COFOG\)](#) (used to classify consumption expenditure, other current expenditure, capital expenditure and other government outlays);
- [Classification of the purposes of non-profit institutions \(COPNI\)](#) serving households (used to classify the same type of transactions as for governments);
- [Classification of outlays of producers by purpose \(COPP\)](#) can provide information on the 'outsourcing' of business services.

More information concerning the classifications is provided in [Building the System of National Accounts - business register and statistical classifications](#) , section *Classifications* .

How? Accounting rules

Transactions of economic agents (who), of their actions (what) undertaken for different purposes (why) are recorded in the SNA according to clear rules (how). These rules are related to the content of institutional units resources and uses, the valuation of transactions, the way and the [time of recording](#) them in a defined structure.

The accounting model

National accounts are built according to the accounting model used in business accounting (see [Building the System of National Accounts - administrative sources](#)). The two accounting systems have the following similarities:

Two-side presentation

- The left side of a 'T' business account is called debit and the right side credit;
 - In national accounts, the following terms are used:
 - **Resources** for transactions which add to the amount of economic value of a unit or a sector are presented on the right side of the account;
 - **Uses** for transactions that reduce the amount of economic value of a unit or sector are shown on the left side of the current account.

Double-entry principle

- Business accounting is based on the principle of double-entry, whereby one transaction requires two entries, in principle one credit and one debit;
- National accounts reflect mutual economic relationships between different institutional units based on 'horizontal' double entry. This means that if an institutional unit provides something to another institutional unit, the accounts of both units will show the transaction: as a resource in the accounts of one unit and as a use in the accounts of the other. As for example, the compensation of employees paid by different economic units should be equal to the sum received by employees.
- In the accounts of an institutional unit, each transaction must be recorded twice, as a resource (or a change in liabilities) and as a use (or a change in assets). This is the so-called 'vertical' double-entry. Thus, the total of the transactions recorded as resources (or changes in liabilities) and the total of the transactions recorded as uses (or changes in assets) are equal, enabling consistency checking. Based on the previous example, the compensation of employees is recorded as a resource for the household sector and as a use for other sectors. The simultaneous application of both the vertical and horizontal double-entry bookkeeping results in quadruple-entry bookkeeping, that is the accounting system underlying the recording in the SNA ([financial accounts](#) must be compiled to take full practical advantage of the quadruple-entry principle).

As an example of a relevant transaction in national accounts, the 'Output' (P1) which measures the amount of goods and services produced during the accounting period is considered. In order to generate this output by a particular production process, inputs are required, such as raw materials, energy, transport, etc. The costs of these inputs are measured by the transaction 'Intermediate consumption' (P2). Between them, there exists an identity from the accounting point of view. For each institutional unit the resources (representing incoming money flows) and uses (representing outgoing money flows) are collected and presented in a T-account, with transactions involving resources on the right side and those involving uses on the left side.

Uses		Resources	
P2 Intermediate consumption	2800	P1 Output	4500
B1g Gross value added	1700		

For example, a social benefit in cash paid by a government unit to a household is recorded in the accounts of government as a use under the relevant type of transfers and a negative acquisition of assets under currency and deposits; in the accounts of the household sector, it is recorded as a resource under transfers and an acquisition of assets under currency and deposit.

Time of recording

The time of recording in SNA is different for flows and stocks:

- flows are recorded over a certain period of time;
- stocks are recorded at a certain point of time, namely at the beginning (opening balance) and at the end of the accounting period (closing balance).

The accounting period in national accounts usually corresponds to the calendar year or a quarter of a year.

The time of recording must be the same for the entries in the different accounts of all the stakeholders involved. There are three moments when flows can take place, each of them defining a basis for the timing:

- cash basis records cash flows at the time these payments occur;
- due for payment basis records flows at the time they are due to be paid;
- accrual basis records flows at the time economic value is created, transformed, exchanged, transferred or extinguished.

As a general principle, transactions between institutional units in the SNA have to be recorded when claims and obligations arise, are transformed or are cancelled; this time represents the 'accrual basis'. For example, in May a company delivers computers to a customer who will pay for it 30 days later. Under the cash method, the revenue from this sale will be recorded in June, when the money will be received; however the accrual method requires recording the income in May, in the month when the transaction took place.

The SNA favours accrual accounting because:

1. The timing of accrual accounting is in full agreement with the way economic activities and other flows are defined in the SNA. This agreement allows the profitability of productive activities to be evaluated correctly (that is, without the disturbing influence of leads and lags in cash flows) and a sector's net worth to be calculated correctly at any point in time;
2. Accrual accounting can be applied to non-monetary flows.

One of the problems for national accounts is that activities of institutional units often extend over periods in which several important moments can be distinguished. For example, many commercial sales start with the signing of a contract between a seller and a buyer, which includes the date of delivery, and a date or dates on which payments become due and are only completed as of the date the last payment is received by the seller. Each of these distinct moments is, to some extent, economically relevant.

With regard to taxes, for example, important moments are the day or the period in which the liability arises, the moment the tax liability is definitively assessed, the day that it becomes due for payment without penalty, and the day the tax is actually paid or refunds are made.

Some issues of the time of recording for the main transactions:

- The time of recording of the acquisition of goods is the moment when the economic ownership of those goods changes hands. When change of ownership is not obvious, the moment of entering in the books of the transaction partners may be a good indication and, failing that, the moment when physical possession and control is acquired.
- Imports and exports of goods are recorded when change of ownership occurs. In the absence of sources specifying the date on which ownership changes, there is a strong presumption that the goods will cross the frontiers of the countries concerned either shortly before or soon after the change of ownership takes place.
- Services are recorded in the SNA when they are provided. Some services are special in the sense that they are characteristically supplied on a continuous basis. Examples are operating leasing, insurance and housing services (including those of owner-occupied dwellings). These services are recorded as provided continuously over the whole period the contract lasts or the dwelling is available.
- The output is recorded over the period in which the process of production takes place. Thus, additions to work-in-progress are recorded continuously as work proceeds. When the production process is terminated, the whole of the work-in-progress accumulated up to that point is effectively transformed into a stock of finished product ready for delivery or sale.
- The intermediate consumption of goods or services is recorded at the time when the goods or services enters the process of production, as distinct from the time it was acquired by the producer.
- Inventories may be materials and supplies held as inputs by producers, output as yet unsold, or products held by wholesale and retail traders. In all cases, additions to inventories are recorded when products are purchased, produced or otherwise acquired. Deductions from inventories are recorded when products are sold, used up as intermediate consumption or otherwise relinquished.
- The distributive transactions, as for example, compensation of employees, interest, rent on land, social contributions and benefits are all registered in the period during which the amounts payable are built up.
- Entries for taxes are made at the moment on which the underlying transactions or other flows occur that give rise to the liability to pay. This implies that taxes on products and imports are recorded at the times the products in question are produced, imported or sold, depending on the basis for taxation.
- Current taxes on income are recorded when the income to which they pertain is earned although taxes deducted at source may have to be recorded when they are deducted.

Valuation

Under SNA a transaction must be recorded at the same value throughout all the accounts of all the sectors involved.

Transactions are valued at the actual price agreed upon by the economic agents. The basic reference for valuation in the SNA is **current market prices**. In the absence of market transactions, valuation is made according to costs incurred (for example, non-market services produced by the government) or by reference to the market prices for analogous goods or services (for example, services of owner-occupied dwellings).

Transaction valuation methods used in the SNA are based on more than one set of prices depending upon how taxes and subsidies on products, and also transport charges, are recorded.

The measurement of output in SNA is taken using two kinds of prices, namely, basic prices and **producer prices**.

Basic price measures the amount retained by the producer and is, therefore, the price most relevant to the producer's decision taking. It excludes any taxes on products the producer receives from the purchaser and passes on to government, but includes any subsidies the producer receives from government and uses to further lower the prices charged to purchasers.

The producer price includes taxes on products (taxes payable per unit of output) and excludes subsidies on products (subsidies receivable per unit of output). It is the price, excluding VAT, that the producer invoices to the purchaser. It is becoming increasingly common in many countries for producers to itemise taxes separately on their invoices, so the purchasers are informed about how much they are paying for the product (to the producer) and how much for the taxes (to the government).

A purchaser has two options to buy:

- directly from the producer: in this case, the **purchaser price** may exceed the producer price by (a) the value of any non-deductible VAT, payable by the purchaser and (b) the value of any transport charges on a good paid separately by the purchaser;
- from a wholesaler or retailer: in this case, it is necessary to consider also the trade margins that the retailer will apply.

Figures 7 and 8 present the relationships between prices.

BASIC PRICE

- + Taxes on products excluding invoiced VAT
- Subsidies on products

= PRODUCER'S PRICE

- + VAT not deductible by the purchaser
- + Separately invoiced transport charges
- + Wholesalers' and retailers' margins

= PURCHASER'S PRICES

Figure 7: Relationships between prices - Source: The 2008 SNA, European Commission, IMF, OECD, UN, World Bank, 2009

Imagine the following situation:

An enterprise produces cigarettes. The value of the total production costs and the enterprise profit for a packet of cigarettes is 200 units. The enterprise must pay an excise duty, which is 20% applied to the value of each packet. The packet of cigarettes is sold to a retail trader. The transport cost is valued at 10 units and the trade margin is 20 units. In the country, the value added tax (VAT) is 20%.

The final consumer of the packet of cigarettes pays 324 units.

Evaluation at **basic price** = 200 units.

Evaluation at **producer's price** = production at basic price + taxes on products = $200 + (20\% \times 200) = 200 + 40 = 240$ units.

Evaluation at **purchaser's price** = production at producer's price + transport cost + trade margin + VAT = $240 + 10 + 20 + [(240 + 10 + 20) \times 20\%] = 324$ units.

Figure 8: Example of relationships between prices

Accounts and main aggregates

Accounts

The immense number of individual transactions and other flows and assets has to be aggregated in a manageable number of analytically useful groups, representing the accounts according to standard SNA classifications.

The sequence of accounts describes how income is generated, distributed, redistributed and used for consumption or the acquisition of assets and when assets are disposed of, or a liability is incurred, in order to acquire other assets or undertake more consumption than current income permits. The accounts of the economy presented in the SNA are:

a) **Current accounts** consist of a production account and accounts showing the primary distribution of income, the secondary distribution of income and the use of income. In addition to these accounts the entries from the rest of the world account (imports and exports of goods and services) show the value of goods and services that reach the national economy from the rest of the world and those that are produced in the national economy but are provided to the rest of the world. In detail, the accounts are: a production account; a generation of income account; an allocation of primary income account (including an entrepreneurial income account and an allocation of other primary income account); a secondary distribution of income account; a use of income accounts (including a use of disposable income account and a use of adjusted disposable income account).

b) **Accumulation accounts** are represented by four accounts dealing with changes in the values of assets held by institutional units, recording transactions in non-financial and financial assets and the other changes in the volume of assets: capital account; financial account; other changes in assets account; revaluation account. The effects of price changes are recorded in the revaluation account. These four accounts enable the change in the net worth of an institutional unit or sector between the beginning and end of the accounting period to be broken down into its constituent elements by recording all changes in the prices and volumes of assets, whether resulting from transactions or not. The impact of all four accounts is brought together in balance sheets.

c) **Balance sheets** present, with respect to a particular point in time, the values of assets owned and the liabilities owed by an institutional unit or group of units. A balance sheet may be drawn up for institutional units, institutional

sectors and the total economy. It includes: an opening balance sheet; total changes in assets; a closing balance sheet.

d) **Goods and services account** (see below).

e) The **accounts for the rest of the world** . The entries in the integrated accounts for the rest of the world correspond to the entries in the [balance of payments](#) , as set out in BPM sixth edition.

An alternative view of the economy focuses less on income and more on the processes of production and consumption and is presented in a [goods and services account](#) .

The goods and services account is the basic identity in the SNA. It captures the idea that all output plus imports must be accounted for in one of the two basic activities of the SNA (consumption of goods and services or accumulation of goods and services). The whole sequence of accounts is built around the goods and services account by adding transactions relating to the generation, distribution and redistribution of income and saving.

The total amount of goods and services supplied to the economy must be equal to the total use made of those goods and services. The identity is the following:

**Output + imports + taxes less subsidies on products
= Intermediate consumption + final consumption + export + capital formation**

Based on this equation, it reflects the fact that goods and services produced in the current period are used:

- to generate more goods and services in the current period (intermediate consumption);
- to generate more goods and services in future periods (capital formation);
- to satisfy human needs immediately (final consumption).

Due to the fact that no economy is entirely closed, it is necessary to add those goods and services supplied from outside the economy (imports) and those goods and services used by other economies (exports).

Main aggregates

Aggregates in national accounts are composite values that measure one aspect of the activity of the entire economy.

They are summary indicators and key magnitudes for the purposes of macroeconomic analysis and comparisons over space and time. For user needs, the aggregates of the SNA provide a simplified but complete and detailed picture of an economy.

Some aggregates can be obtained directly as totals of particular transactions in the SNA, such as total production, final consumption, gross fixed capital formation, etc. Others result from aggregating [balancing items](#) of institutional sectors accounts: value added, balance of primary incomes, disposable income and savings, etc.

Balancing items reflect the application of general accounting rules to specific entries on both sides of an account. They do not relate to any specific set of transactions, or any set of assets, and so they cannot be expressed in terms of their own price or quantity units. Balancing items are often used as key macroeconomic indicators to assess economic performance. Balancing items in sector accounts are presented in Figure 9.

Account	Balancing items	
	Code	Name
Production account	B1	Value Added/ Domestic Product
	B11	External balance of goods and services
Generation of income account	B2	Operating Surplus
	B3	Mixed Income
Allocation of primary income account	B5	Balance of primary incomes/ National Income
Entrepreneurial income account	B4	Entrepreneurial income
Allocation of other primary income account	B5	Balance of primary incomes/ National Income
Secondary distribution of income account	B6	Disposable Income
Redistribution of income in kind account	B7	Adjusted disposable Income
Use of disposable income account	B8	Saving
	B12	Current external balance
Capital account Changes in assets Change in liabilities and net worth	B9	Net lending (+) / net borrowing (-)
	B101	Change in net worth due to saving and capital transfers
Financial account	B9	Net lending (+) / net borrowing (-)
Other change in the volume of assets account	B102	Changes in net worth due to other changes in volume of assets
Revaluation account	B103	Changes in net worth due to nominal holding gains/losses
Balance sheets	B10	Changes in net worth, total Net worth
	B90	Net worth

Figure 9: List of balancing and net worth items - Source: The 2008 SNA, European Commission, IMF, OECD, UN, World Bank, 2009

Based on balancing items, the main aggregates of the 2008 SNA used as key indicators for assessing economic performance are:

- gross domestic product (GDP);
- [gross national income \(GNI\)](#) and net national income (NNI);
- gross national disposable income (GNDI) and net national disposable income (NNDI).

The concept 'domestic product' is basically a production concept: it measures the total value created in the production of goods and services. On the other hand, national income and national disposable income are income concepts designed to measure different aspects of the total incomes receivable in the economy.

The ways of calculating the main aggregates using different approaches are presented in Figure 10.

Production Approach (1)	Expenditure Approach (2)	Income Approach (3)
+ Sum of values added at basic prices of all producers + Taxes on products - Subsidies on products	+ Final consumption expenditure + Gross fixed capital formation + Changes in inventories + Exports of goods & services - Imports of goods & services	+ Compensation of employees + Taxes on production and imports - Subsidies + Operating surplus / mixed income
= Gross domestic product (GDP) at market prices (I)		
- Consumption of fixed capital = Net domestic product		
(I) + Primary incomes receivable from the rest of the world - Primary incomes payable to the rest of the world		
= Gross national income (GNI) at market prices (II) - Consumption of fixed capital = Net national income at market prices		Can also be calculated as the sum of the balance of primary incomes of all institutional sectors.
(II) + Current transfers receivable from the rest of the world - Current transfers payable to the rest of the world		
= Gross national disposable income at market prices (III)		Can also be calculated as the sum of the disposable incomes of all institutional sectors.
- Consumption of fixed capital = Net national disposable income at market prices		

Figure 10: Main aggregates in SNA - Source: System of National Accounts 1993, Training manual, SADC, 1999

The most well-known and used aggregate is GDP. The objective of the first phase of implementation of national accounts is to estimate it by production and expenditure.

The three methods of GDP estimation define the needs and the limits for the generation of statistics in support of national accounts which differ from country to country. In these conditions, there are several national accounts compilation practices, from the very simple GDP compilation by industry and type of expenditures to more comprehensive systems of national accounts, including supply and use tables, institutional sector accounts, flow of funds analysis, balance sheets, and, recently, satellite extensions such as environmental accounts or human resources accounts, based on milestones (see [Building the System of National Accounts - strategy](#), point 2.1. Phase A: Aims and objectives).

(1) The production approach

GDP using the production approach is obtained in the framework of the production account. Producers engaged in production can be either institutional units classified by institutional units or establishments classified by industry. The latter is the most common in practice.

The compilation formula is:

GDP at market prices = **gross value added (GVA)** at basic prices

+ taxes on products

- subsidies on products

Value added represents a measure of the additional value created in the process of production and it is equal to:

Gross value added = production – intermediate consumption

(2) The expenditure approach

GDP using the expenditure approach is estimated in the framework of the goods and services account. The extended compilation formula is:

GDP at market prices = Final consumption expenditure (of Households, of NPISHs, of Government)

+ Gross capital formation (Gross fixed capital formation and Change in inventories)

+ Exports of goods and services

- Imports of goods and services

(3) The income approach

GDP estimated using the income approach is derived from the generation of income account for producers classified by industry or by institutional sector. The produced value added components are entered into the formula (see Figure 10). For this reason, this procedure is sometimes used as an alternative to the production approach for calculating values added.

Figure 10 shows that **net aggregates** can be obtained by deducting consumption of fixed capital from gross aggregates. Consumption of fixed capital is not a value created in the production process; it is a production cost. Therefore, values added, domestic product and income measures should be preferably measured net. However, it is very difficult to measure consumption of fixed capital properly and many countries do not measure it at all. Gross aggregates are more often available and more widely used.

The production-expenditure-income approaches constitute the basic ways of compiling national accounts and correspond to the objectives of Milestones 1 and 2. These simplest approaches to national accounting aim at estimating GDP and its alternative breakdowns by economic activity or industry, by expenditures, and by income (which represents the cost components of value added). The scope of this approach is represented in Figure 11.

Supply and use table

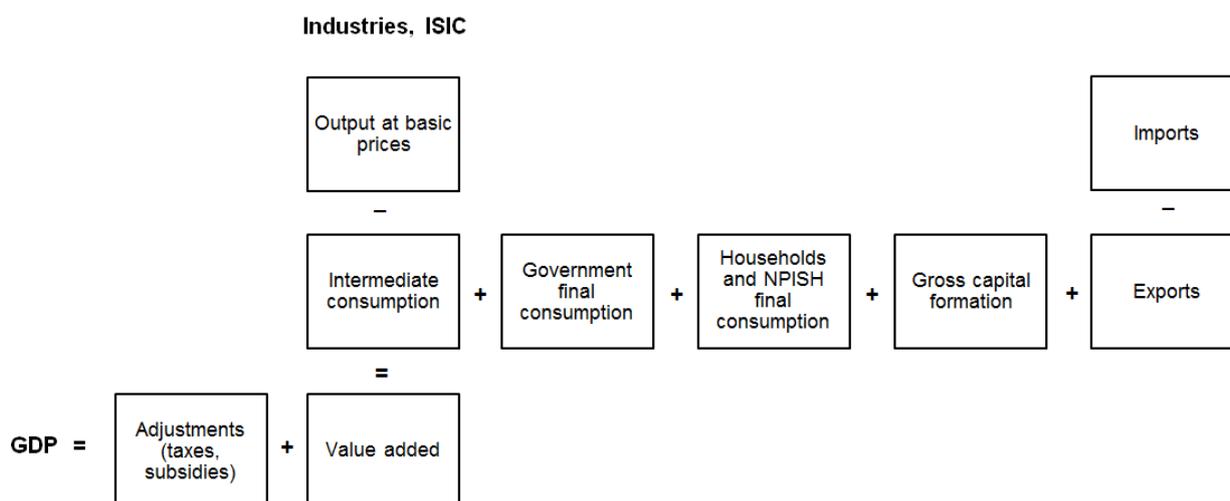


Figure 11: Production, expenditure, income approaches to national accounts compilation - Source: A system approach to national accounts compilation, Studies in methods, Series F, No77, UN 1999

There are countries where often the GDP estimation follows one or two approaches; in most of the cases the income approach is missing as it is generally regarded to be the most difficult one to compile. Most often, GDP is estimated by the production approach. The basic statistical units used may be establishments, which group production activities with similar characteristics in terms of output, inputs and technology used; alternatively, in less refined approaches, institutional units may be used. Total output and intermediate consumption are compiled and

hence value added is obtained as the difference between the two. The statistical sources that are used range from specific surveys and censuses (agriculture, industry, etc.) to business accounts of public and private enterprises from financial and non-financial sectors as well as administrative records concerning government revenues and expenditures. Initial estimates may be further adjusted for output of households for own consumption, imputations for the output of financial intermediaries (FISIM) and insurance, and so on.

Statistical and administrative data sources used for national accounts compilation are presented in [Building the System of National Accounts - statistical sources](#) and the section, ' [What are administrative sources?](#) ', of "Building the System of National Accounts - administrative sources".

When using the expenditure approach, the different elements are estimated in the following way:

- Government final consumption expenditure is estimated based on data obtained from government records concerning its expenditures and revenues;
- Household final consumption expenditure is estimated based on retail sales statistics or, where available, household expenditure surveys and other appropriate sources;
- Data on fixed capital formation is obtained from specialised surveys or from general production surveys and, in the case of government and public corporations, directly from the accounts;
- Changes in inventories are more difficult to estimate, especially because of the related problems of stock valuation.
- Import and export estimates are based on foreign trade and balance of payments statistics, which are in general readily available.

The income approach is used by relatively few countries because of statistical measurement problems. If applied, however, independent estimates are most frequently made for compensation of employees which are based on labour statistics and wage rates, and taxes on production and imports which are estimated based on government data. Estimates of consumption of fixed capital are often not included because they can only be made if produced capital stock data are available. The operating surplus can be estimated using as a basis profit and loss accounts and similar statements of enterprises.

Normally, the three approaches described above should be used simultaneously and independently from each other. If that is the case, the data resulting from each approach can be used as checks to evaluate and analyse the data obtained from the other two approaches and to determine the final data.

In the section, ' [Phase C: Compilation](#) ', of the article "Building the System of National Accounts - strategy", the estimation process for national accounts is presented.

The reconciliation of GDP obtained based on the three approaches independently should be realised at a detailed level, by cross-checking, for example, 'final expenditures by products' and 'industries producing those products'.

The previous practices could be characterised as the more simple approach to implementing milestone 1. The next degree of complexity is reached by including, in addition to the data elements of Figure 11, output and intermediate consumption for all industries and by introducing a systematic breakdown of the supply and use rows by products or CPC categories, as well as by including data on labour inputs per industry. This could be considered as the more complete approach to milestone 1; the result is shown in Figure 12, which represents a genuine supply and use framework. The compilation methods that utilise the product detail, as represented in Figure 12, are generally characterised as the 'commodity flow' approach to national accounts compilation. The inclusion of additional detail on output, intermediate consumption and labour inputs serves for more comprehensive analyses based on production functions.

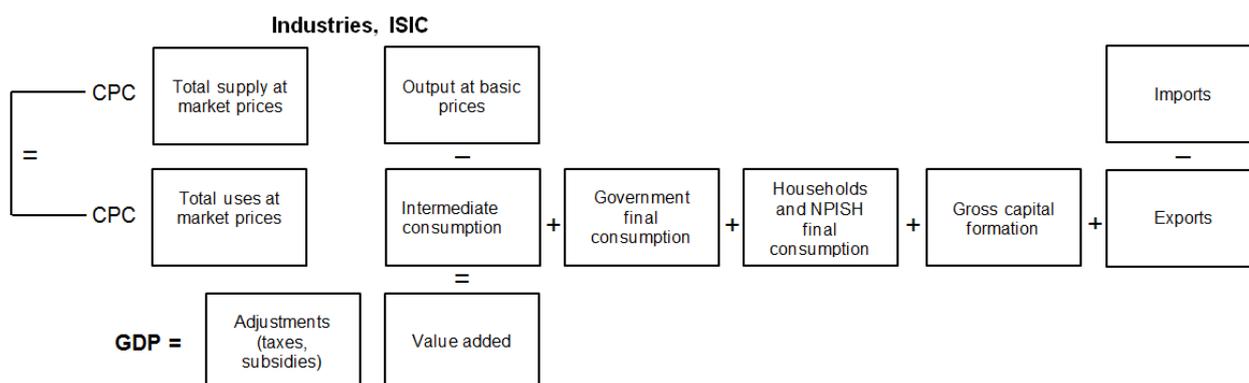


Figure 12: Commodity flow approaches to national accounts compilation - Source: A system approach to national accounts compilation, Studies in methods, Series F, No77, UN 1999

The basic principle of the methods described is that, on the level of the total economy, the identity for total resources and total uses must hold for each individual product category.

Concerning the statistical sources for the commodity flow method, they are similar to the sources mentioned above, with the additional requirement of a detailed product (i.e. goods and services) breakdown. Where detailed annual information is not available, structural parameters such as input/output coefficients or intermediate/final consumption proportions are used to distribute the supply of products over the uses.

The commodity flow method provides a very detailed set of data reconciliation checks at the level of product or commodity groups, and improves the reliability of the GDP data as compared to the estimates resulting from the production-expenditure-income approaches which often only reconcile data at the aggregate GDP level.

The compilation approaches mentioned so far are strongly production-oriented and yield results which correspond to what was defined as milestone 1. When the coverage of national accounts is extended to describe not only the production process, but also the ensuing income distribution and redistribution processes, and the linkages to capital and financial flows and stocks, the country passes to milestone 2. The extension of the previous compilation approach to this more comprehensive approach requires that data not only be compiled on the basis of establishments that are grouped together by industries, but also for institutional units – corporations, households, government units – that together define the institutional sectors of the 1993 SNA. The introduction of institutional units in the collection of statistical data often required costly changes in the content of surveys and survey procedures. This represents one of the objectives of the SNA implementation strategy and its advocacy should be developed.

For more information see the section, ' [2008 SNA implementation strategy](#) ', of "Building the System of National Accounts - strategy".

Other articles

- [Building the System of National Accounts](#) (online publication, overview of all articles)

Dedicated section

- [International statistical cooperation](#)

Publications

- [Essential SNA - Building the basics](#)
- [Handbook on price and volume measures in national accounts](#)

External links

- Afristat - [Guide méthodologique pour l'élaboration des comptes nationaux dans les états membre d'Afristat](#) , Serie Méthodes No.4, 2001; Chapter I: Introduction au system de comptabilité nationale
- IMF - [Balance of Payments and Investment Position Manual \(BPM6\)](#) , Sixth Edition, 2009
- OECD - [Understanding National Accounts](#) , Lequiller F., Blades D., 2006; Chapter IV: Production: what it Includes and Excludes; Chapter V: Defining Final Uses of GDP
- United Nations

[National Accounts: A practical introduction](#) , Studies in Methods, Series F, No.85, UN 2003; Chapter I: Overview; Chapter II: Production account and goods and services account; Chapter XIII: Price and volume measures in national accounts

[The 2008 SNA](#) , European Commission, IMF, OECD, UN, World Bank, 2009; Chapter II: Overview; Chapter III: Stocks, flows and accounting rules; Chapter IV: Institutional units and sectors; Chapter V: Enterprises, establishments and industries