BASIC CONCEPTS OF NATIONAL ACCOUNTS AGGREGATES

Introduction

2.1 Various concepts of national income and related aggregates used in national accounts connote a particular meaning which may not necessarily conform to the one used in common parlance. It is, therefore, necessary that these are made familiar to the users to enable them to appreciate these in right perspective. It is with this objective that it has been considered necessary to refer to these in this publication. The basic concepts and definitions of the terms used in national accounts largely follow those given in the SNA. It is intended to give in the following paragraphs the major concepts used in National Accounts Statistics and the inter relationship particularly of those relating to macro-economic aggregates of national product, consumption, saving and capital formation.

National Product

2.2 National product by definition is a measure in monetary terms of the volume of all goods and services produced by an economy during a given period of time, accounted without duplication. The measure obviously has to be in value terms as the different units of production and different measures of services are not directly additive. In the case of a closed economy the measure amounts to domestic product. An important characteristic of this measure is its comprehensiveness. The measure covers all the goods and services produced by the residents of a country. Thus the goods cover all possible items produced, as for example, agricultural crops, livestock and livestock products, fish, forest products, mineral products, manufacturing of various consumer items for consumption, machinery, transport equipments, defence equipments etc., construction of buildings, roads, dams, bridges etc. The services similarly cover a wide spectrum including medical and educational services, defence services, financial services, transport services, trading services, domestic services, sanitary services, government services, etc.

2.3 All goods and services produced during the period have to be included whether they are marketed i.e., exchanged for money or bartered or produced for own use. For example, some of the products of agriculture, forestry and fishing are used for own consumption of producers and therefore an imputed value of these products are also to be included. Similarly, account must also be taken of the rental of buildings which are owned and occupied by the owners themselves. Own account construction activities are also similarly to be included. However, certain other activities like services of house-wives are excluded from production mainly due to the problem of measurement. Also excluded are illegal activities such as smuggling, black marketing, etc.

2.4 Another important feature of the measure is that it is an unduplicated value of output or in other words only the value added at each stage of processing is taken into account while measuring the total, i.e., in the measurement of national output a distinction is made between "final" and "intermediate" products and unduplicated total is one that is confined to the value of the final products and excludes all intermediate products. To use a simple example, if the production process during a year involves the production of wheat, its milling into flour and the baking of bread which is sold to consumers then the value of national output should equal the final value of the bread and should not count the separate value of the wheat and flour which have been used up in the course of producing bread. Thus the national product is not the total value of goods and services produced but only the value of the final product excluding the value of inputs of raw materials and services used in the process of production.

National Product and National Income

2.5 The national product measures all goods and services arising out of economic activity while national income is the sum of all incomes as a result of the economic activity. These two are synonymous. Since the production of goods and services is the result of the use of primary factors of inputs, namely, capital and labour, along with the raw materials, the process automatically generates income. This income is in the form of return to capital and labour used in production process. For example the total product originating in a firm making steel could be obtained by adding the total product and then deducting the intermediate product to obtain the value added. The value added of this firm consists of the income that accrued in the course of production, namely, wages and salaries and operating surplus. Thus the product of a firm must be income to someone whether it is their employees in the form of employment income or to the owners in the form of operating surplus. Hence, the unduplicated production is equivalent to the income which accrues to the factors of production. In other words national income of a country can also be viewed in terms of the money value of income flowing from the producing units to factors of production. National income is not simply an aggregate of all incomes. It includes only those incomes which are derived directly from the current production of goods and services called factor incomes. Other forms of income such as old age pensions, education grants, unemployment benefits, gifts etc., cannot be regarded as payments for current services to production. They are paid out of factor incomes and are called transfer incomes. Payments for which no goods or services are received in return are transfer payments. The national income, being the value of goods and services becoming available cannot include both factor incomes and transfer incomes.

National Product and Expenditure

2.6 The production within the economy over a given period of time is spent either for consumption of its members or for addition of fixed assets or for addition to the stock of existing productive assets within the country. Hence, production can also be measured by considering the expenditure of those who purchase the finished or final goods and services. The national expenditure is the sum of expenditure of all spending of institutional sectors viz., government, households and enterprises. Here also, it is necessary to include only the expenditures on "final use" in order to avoid duplication i.e., one has to omit the network of intermediate sales of all products needed in further production. The expenditure on final goods and services may be purely for consumption purposes like consumption of food, clothing, shelter; services etc., or for capital formation such as addition to buildings, plant, machinery, transport equipment, etc. Some goods may not be immediately sold and may be kept aside as stocks. These goods which are added to stocks are also accounted for as final expenditure.

Production/Income/Expenditure

2.7 It may be noted from the above discussion that the national income of a country can be measured in three different ways, from the angle of production, from income generation and from final utilization. These three forms are circular in nature. It begins at the production stage where the productive units engage capital and labour and turn out goods and services, the total measure of which gives the national product. This production process generates a given amount of money income which is distributed by the productive units to the factors of production, namely, capital and labour. The measure of income this way indicates the share of national product distributed to the factors of production or in other words the national income by factor shares. The income thus received by the factors of production is then spent either by the labour in their capacity as households in terms of acquisition and consumption of goods and services or by the producers in acquiring more capital and thus increasing the physical assets of their production units. The national income by definition is the same whether measured at the point of production or at the point of income generation or at the point of final utilisation. In other words the total of net output, income flows and final expenditure will be identical. The significance of each arises from the fact that they reflect total operations of the economy at the levels of three basic economic functions, namely, production, distribution and disposition.

Production

2.8 Although national income can be measured in any one of the three alternative approaches but if a complete analysis of the economy is the object then it should be measured by all the three different approaches. For measurement of national income at the point of production, the method generally followed is to divide the whole economy into a given set of economic activities and to estimate the total value of output and the corresponding value of inputs of raw materials and services used for production and then arrive at the value added of each sector as a total value of output minus the value of inputs of raw materials and services. In the case of services the value added is measured in terms of the total amount of money paid in return for the services received minus the cost of inputs like expenditure on transport, advertisement, and other miscellaneous services.

Forms of income

2.9 As has already been pointed out the net value added available for each unit of production is equal to the amount of income generated by the unit in the process of production. This income is distributed between the two primary factor inputs, namely, capital and labour. In other words, income is distributed in the form of either capital income to the owner of the capital or labour income to the labour employed. The distinction between employment income and profits (operating surplus) cannot be made in the case of incomes of persons working on their own account. Such incomes are, therefore, separately classified as mixed income of the self employed.

2.10 The labour income takes the form of either wages and salaries including commission, pensionary benefits, bonus, etc., or supplementary contribution of the employers towards payments in kind.

2.11 Some portion of operating surplus is retained by the producer which remains undistributed and is partly used for further investment and balance is distributed. The distributed capital income is mainly in the form of dividends, interest and rent. The rent in the Indian context includes not only rent on land but also rent on buildings and structures. The capital income other than profit retained by enterprises distributed to the owners of capital who are either individuals or enterprises in the form of dividends. The mixed income generally accrues to the self-employed people who employ their own capital and labour for production. This income consists partly of profits of unincorporated enterprises and partly of labour income of the self employed. Thus the total income generated in the form of factor shares consists of (i) wages & salaries (ii) interest, (iii) rent, (iv) dividends, (v) undistributed profits, and (vi) mixed income of self employed.

Categories of expenditure

2.12 The income available to the individuals in the form of labour income or capital income or to the productive units in the form of retained income is then spent. This utilisation of the income can take various forms, namely, (a) household consumption expenditure, (b) government consumption expenditure, and capital formation comprising fixed capital formation, and stock accumulation.

Household consumption expenditure

2.13 The household consumption expenditure referred to as private final consumption expenditure (PFCE) in National Accounts Statistics (NAS), consists of expenditure by households (including non-profit institutions) on non-durable consumer goods and services and all durable goods except land and buildings.

2.14 The durable goods are defined as those whose life time are more than one year and consist of items such as furniture, radios, televisions, automobiles, etc. Purchase and construction of residential buildings are not treated as consumption expenditure of the households but are included in the gross capital formation. In the case of owner occupied buildings, the imputed rent is included in the final consumption expenditure. Similarly, the primary products of sectors like agriculture, forestry, fishing etc., which are produced for own consumption by the households will form part of consumption expenditure. Payments for domestic services which one household renders to another, such as services of maid servants, cooking, child nursing and gardening are also included under consumption. However, as in the production measurement, activities such as cooking meals, scrubbing floor and minding children undertaken by household members fall outside the production boundary and are, therefore, excluded from consumption expenditure as well.

Government final consumption expenditure

2.15 The concept of government consumption expenditure has been debated by economists for a long time. The role of the government in the economy is essentially different from that of enterprises and households. To cite a few examples, the government offers services both to entrepreneurs and consumers and in most cases it receives no payment for that or even if it does receive payment, the same is likely to bear little or no relation to the value of the services to the user. In the course of organising collective services such as defence, justice, health and education, government purchases the services of its officials and also many non-durable goods and other services from other suppliers. Since these services are rendered free, these do not appear in the household consumer expenditure. These services are not only of economic value, but also create real final consumption value to the people. It is, therefore, necessary to reckon them in the national expenditure. Once it is agreed to include government services as part of national expenditure it would be necessary to find methods for valuing the services. Since these collective services are not sold, they can be valued in money terms only by adding up the money spent by the government in buying these services of teachers, doctors, public administrative employees, the armed forces etc., together with the goods and other materials purchased. This total is the consumption expenditure of the government and it consists of purchase of non-durable goods and services by the government. By convention, expenditure on durable goods which are used for defence is also treated as part of consumption expenditure of the government.

Gross capital formation

2.16 Gross capital formation consists of the acquisition of fixed assets and the accumulation of stocks. Fixed assets are physical productive assets, examples of which are buildings, civil works, machinery, vehicles etc. The stock accumulation is in the form of changes in stock of raw materials, fuels, finished goods and semi-finished goods awaiting completion. Thus gross capital formation is that part of country's total expenditure which is not consumed but added to the nation's fixed tangible assets and stocks.

Saving

2.17 Saving represents the excess of current income over current expenditure of various sectors of the economy. It is the balancing item on the income and outlay accounts of the producing enterprises, households, government administration and other final consumers. For the closed economy savings equals capital formation during the year whereas for the open economy savings equals capital formation plus net capital inflow from abroad during the year.

Private Income

2.18 Some of the national income accrues to the government in the form of property income of government departments and profits of government enterprises. The government also makes transfer payments to private sector in the form of grants, social security payments, gifts, etc. The government pays interest on national debt which accrues to the private sector. Private income is a measure of the income derived from national income by adding the sum of government transfer payments and interest on national debt and subtracting the property income of government departments and profits of government enterprises.

2.19 Transfer payments result from transactions which do not give rise to the exchange of commodities or factor services. A payment of money is made without a corresponding flow of goods and services in the opposite direction. It is the general practice to consider in national accounts only payments which are in exchange for goods and services as contributing to output. So transfer payments are not shown in the major accounts as an addition to total product. The value of transfer payments to households is included in the income aggregate of private income.

Personal Income

2.20 Personal income is a measure of the actual current income receipt of persons from all sources. It differs from private income in that it excludes the undistributed profits which accrue to Private Sector but are not received by persons. It also excludes the expenditure tax paid to government by the Private Corporate Sector. It is derived from private income by subtracting the savings of the private corporate sector and the corporation tax.

Personal Disposable Income

2.21 Even the above subtractions are not sufficient to derive personal income which is actually available for spending. Disposable personal income is derived from personal income by subtracting the direct taxes paid by individuals and other compulsory payments made to the government. It is a measure of amount of the money in the hands of the individuals and available for their consumption or savings.

National versus Domestic Concept

2.22 The discussion so far did not make any distinction between national or domestic income. The concept of national versus domestic arises because of the fact that the economy is not closed in the sense that it has transactions with the rest of the world in the form of exports and imports, gifts, loans, factor income flows etc.

2.23 National income or product is that income or product which accrues to the economic agents who are resident of the country. Most of the national income is derived from economic activity within the country. But some income arises due to the activities of the residents outside the country. Similarly, some of the product or income arising in the country may be due to the activities of the non-residents. The difference between these two flows is referred to as net factor income from abroad.

2.24 The measure of production arising out of the activities of economic agents within the country is termed as domestic product even if a part of that income accrues to non-residents. When adjustments are made to this product by deducting the income of non-residents within the country and adding the income of residents abroad, the national product is obtained. Hence, the difference between the national and domestic concept is the net factor income from abroad and in a closed economy national and domestic incomes are synonymous.

2.25 If the desire is to measure the activity within the country, interest is centered on the location of the factors employed in production. The measure of output of factors located in the country irrespective of ownership will be the domestic product. The importance of the distinction between location and ownership lies in the simple fact that flows of factor income directed out of the country produces benefits elsewhere. The receivers of that income will be unlikely to spend it on the purchase of the output of the country from which it came. The money will be spent in the country of the residence of the receivers and it is to these countries that the benefits will accrue. In some countries these flows are relatively unimportant. In some other countries where a large part of the capital stock is foreign owned these flows may be relatively large. In such cases a significant part of domestic income might be part of national income of another country. In many countries there are also important examples of international flows of wage payments since migrant labour is very important in these countries.

2.26 The relation of the domestic to national income is perfectly straight forward in principle: the former is merely adjusted for net factor income from abroad.

Gross Versus Net Value Added

2.27 The discussion thus far has been centered on the economic activity of the nation before any charges for consumption of fixed capital (CFC) or depreciation are deducted. The aggregates include as part of the value of current output, the value of capital services consumed in the production of output. It is desirable to have accounts which show the output net of capital consumption allowances. Thus the national income could be measured either as on a gross basis or on a net basis. The difference between the two is that in the gross estimates no deduction is made for CFC which takes place in the process of production, whereas in the net measure such allowances are made. Capital is one of the primary factors used in production and this results in the CFC and hence, a reduction in the economic life of the capital. In other words, the capital depreciates as a result of its use in the process of production. The CFC measures the replacement value of the part of the capital stock which has been used up in the production process during the year.

Factor Cost versus Market Prices

2.28 The production and income approach measures the domestic product as the cost paid to the factors of production and is known as domestic product at factor cost. However, the various forms of final output when considered from the point of expenditure are valued at market prices i.e., the actual price which either the consumers or producers pay for purchase of goods and services whether for consumption or for investment. This measurement is called the expenditure at market prices. When valued in this way this measure will be different from the product or income measure at factor cost. The market value of the goods and services will include the indirect taxes like excise duties, customs, sales tax etc., levied by the government on goods and services. Similarly, the price paid by the consumer will not include any subsidy which the government pays to the producer. Hence, the market value of final expenditure would exceed the total obtained at factor cost by the amount of indirect taxes reduced by the value of subsidies. Domestic or national product can, therefore, be measured either at market prices or at factor cost one differing from the other by the amount of net indirect taxes (indirect taxes less subsidies).

2.29 Indirect taxes are taxes assessed in respect of production, sale, purchase or use of goods and services of producers which they charge to the expenses. The main taxes in this category are excise duties, value added tax, sales tax, import and export duties, entertainment tax etc. Their effect is to make the prices paid in a transaction higher from the actual receipts of the factor of production involved. Direct taxes do not have the same effect since they do not impinge directly on transaction but are levied directly on the income. Indirect taxes are, therefore, added to obtain estimates at market price from that at factor cost.

2.30 Subsidies include all grants on current account which industries recover from the government. As a matter of long-standing convention, subsidies are regarded as payments necessary to elicit factor services. Accordingly they are included in the sum of factor incomes. They must, therefore, be subtracted if the estimates are required at market prices.

Current versus Constant Prices

2.31 National income regardless of the concept is obviously measured at prices prevailing during the period or in other words at current prices. When calculated over a number of years, the changes in national income would, therefore, include implicitly not only the effect of the changes in production but also the changes in prices. This estimate compared over the period would not, therefore, give a proper measure of the overall real increase in production of the country or the economic welfare of the people or growth of the economy. Therefore, it would be necessary to eliminate the effect of prices, or in other words to recompute the whole series at given prices of one particular base year. National income thus computed is termed as national income at constant prices or in real terms.

2.32 The national income in real terms provides a measure of the growth of the economy. When available by industry of origin, these estimates give a measure of the structural changes in the pattern of production in the country which is vital for economic analysis. The distribution of national income by factor shares measures the changes in the shares of either labour or capital or individual partly owning capital and partly contributing labour. This reflects not only the variation in the productivity of these groups but also changes in their respective ownership position. Finally, at the point of utilisation, the change in the shares of either consumption expenditure or capital formation give an idea of the common welfare of the people and changes therein as well as the extent by which the capital assets of the country are either increasing or decreasing.

2.33 There are several other terms which need to be defined in the context of national accounts. For ready reference the Glossary of Main Terms used in NAS given in this publication may be referred to.

The production identities

Gross value added = Output – Intermediate consumption

GDP at Market Prices = Gross value added + Indirect taxes – Subsidies

GDP = final consumption expenditures/actual final consumption + changes in inventories + gross fixed capital formation + acquisition less disposals of valuables + exports of goods and services – imports of goods and services

GDP at Market Prices = compensation of employees + operating surplus / mixed income + CFC+ Indirect taxes – Subsidies

GDP at factor cost = GDP at market prices – indirect taxes + subsidies

NDP = GDP –Consumption of fixed capital

Income and saving identities

Gross National Income (GNI) at market prices = GDP at market prices + taxes less subsidies on production and imports (Net receivable from abroad) + Compensation of Employees(Net receivable from abroad) + property income (Net receivable from abroad)

Net National Income (NNI) at market prices = GNI at market prices - consumption of fixed capital

Net National Disposable Income (NNDI) = NNI + net taxes on income and wealth receivable from abroad + net social contributions and benefits receivable from abroad.

Net saving = NNDI-final consumption expenditure + net equity of households on pension funds receivable from abroad + net capital transfers receivable

Net saving + net capital transfers = changes in net worth due to savings and capital transfers

Saving and investment identities

Net saving + net capital transfers receivable = gross fixed capital formation -CFC+ changes in inventories + acquisitions less disposals of valuables and non-produced non–financial assets + net lending/ net borrowing

Net lending (+)/borrowing(-) = net acquisitions of financial assets less net incurrence of financial liabilities

Economic performance indicators

Indicators	Interpretation
GDP rate of growth	The performance of the economy
GDP per capita	The level of economic development in comparison to other countries
Compensation of employees per work hour	Labour cost
Compensation of employees/gross value added	Income share of employees in GDP
Operating surplus/ gross value added	Income share of capital in GDP
Gross fixed capital formation / GDP	Share of investment in capital goods in GDP
Saving/GDP	Saving rate of the nation
Saving/gross fixed capital formation	Domestic funding of investment
Saving of an institutional sector/ total saving	Contribution of each sector to total saving
Saving of households/disposable income of households	Saving rate of households

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