ANALYSIS OF THE CONTENT OF NATIONAL ACCOUNTS

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Abstract

At the level of the national economy of any country that uses the System of National Accounts, nine macroeconomic accounts are registered and completed that follow the production cycle and that include all the elements, respectively resources, expenses, incomes, investments, international economic exchanges.

Macroeconomic accounts are drawn up on precise principles which were first specified in La comptable internationale in 1968 and which ensure coherence on macroeconomic accounts, which can be used to include elements obtained in the business cycle process. Of course, the interim costs or interim entries that need to be eliminated are considered because they would artificially increase the value of some indicators.

National accounts are presented as an interrelated system, as elements are found in differentiated forms in the structure of these accounts and they provide analysis of the structure of production, volume of production of goods and services, then ensure the structure of investments in the national economy, also provide a possibility see the final results that give the possibility to obtain incomes and here in economic and social plan the accounts include elements from which the obtained incomes are highlighted, the distribution of incomes and their redistribution, as well as the use of incomes for consumption or accumulation.

Also, there are accounts that show the sources of financing of the national economy on the basis of which investments are ensured and last but not least, there are a number of elements related to the indicators that are calculated in terms of international trade.

Keywords: national accounts, resources, expenditures, revenues, investments, indicators.

JEL classification: C10, H60

Introduction

In the article *Analysis of the content of National Accounts*, the authors started from specifying the structure of macroeconomic accounts, their presentation based on the elements contained in the two parts of this account. According to the accounting principle, the macroeconomic accounts must respect the equality of the elements on the left and those on the right, as in accounting we specify that the asset must be equal to the liability.

This article is presented by the authors starting briefly from the definition of the System of National Accounts to the presentation of the three calculation lines of accounts from economic agents to branches and then to the national economy.

Finally, a more detailed presentation is made of the content of each macroeconomic account, of the interdependencies that exist between the elements contained in these macroeconomic accounts and references are made to the fact that the nine macroeconomic accounts constitute an integrated and accurate registration system. measurement of the macroeconomic results obtained by a country, by Romania in this case.

The methodology according to which all these elements included in the system of the nine macroeconomic accounts are calculated based on the precise sources and methodologies used in the application of the National Accounts System by both the National Statistical Organizations and Eurostat or the Statistical Organization of the European Union. to ensure coherence and the possibility of real comparability of the macroeconomic indicators of results obtained by each country.

The article also presents a series of statistical-mathematical relationships that underlie the preparation of these accounts.

Literature review

National Accounts represent the method of recording and analysing data at the macroeconomic level. The System of National Accounts has been adopted by Romania since 1990, when it moved from the system of material production to the System of National Accounts as a form of highlighting the results of the national economy. The nine National Accounts, marked from zero to eight, include all the data related to the situation we encounter at the macroeconomic level. The content of the accounts is widely presented by a number of economists and researchers in studies over time. In this context we can mention Anghelache C., Anghel M.G. (2016) in the paper The Basics of Economic Statistics. Theoretical concepts and case studies. Also, Anghelache C., Capanu I. (2000) allocates an important space to economic indicators for micro and macroeconomic analysis, referring in detail to the content of National

Accounts from which are extracted the important elements for calculating macroeconomic aggregates and result indicators. respectively Gross Domestic Product, Gross National Product or National Income. Anghelache C. in 2008 in the Treaty of Theoretical and Economic Statistics allocates wide space to these aspects that refer to the content of the National Accounts. Also, Anghelache C., Mitruţ C., Voineagu V. in 2013 write an extensive paper on macroeconomic statistics and the System of National Accounts in which all aspects related to the nine macroeconomic accounts are elaborated in turn. Biji E. et al. In 2012 in the work Statistics for Economists deals extensively with this issue, which is important to understand the content of National Accounts. Also, Heiberger R.M., Holland B. (2004) performs a statistical analysis in connection with the macroeconomic analysis system with references to the National Accounts System. Isaic-Maniu A., Mitruț C. and Voineagu V. in 2003 in a statistics course make references to this aspect regarding the National Accounts System. Stan F. in 2005 in his work Statistical indicators - a means of calculating and assessing the results of economic activity at the company level makes a comprehensive analysis of the National Accounts System, their content and aggregates that can be calculated using the data contained in the nine macroeconomic accounts .

Methodology, data, results and discussions

The production account records the operations related to the production process. It is calculated for institutional sectors and branches of activity. It includes in resources the production of P and in uses the intermediate consumption of CI. The production account allows obtaining one of the main accounting balances of the system, namely the added value, which is the value created by any unit engaged in an activity that highlights a production process, and an essential aggregate: gross domestic product. The added value has an economic significance both for the institutional sectors and for the branches of activity. Value added (account balance) can be calculated - like all account balances - before or after deducting consumption of fixed capital. So we can talk about gross value added and net value added. Due to the fact that production is valued at basic price and intermediate consumption at purchase price, value added does not include taxes, but includes subsidies on products.

At the level of the total economy (national economy), the taxes from which the subsidies on products are deducted are added to the resources of the production account, to the production of goods and services. This allows obtain the gross domestic product at the market price.

The production account is related to the definition of production. Production is an activity carried out under the control and responsibility of an

institutional unit that combines resources (labour, capital, goods and services) to produce goods or to provide services. Purely natural processes without human intervention or control are not part of production.

SCN 2008 distinguishes between the productions achieved at the level of an institutional unit using a classification according to the types of activities carried out. The most aggregated level is the enterprise which is seen as an institutional unit engaged in production or, in other words, each institutional unit can be assimilated to the notion of enterprise. The term enterprise may refer to a company, non-profit institution or an enterprise without legal personality.

Most production is carried out by a relatively small number of large companies that are engaged in several types of production, with virtually no threshold for extending the diversity of production to a large enterprise. If enterprises are grouped on the basis of their main activities, at least some of the resulting categories are likely to be very heterogeneous in terms of the type of production processes carried out and also of the goods and services produced.

Thus, for the analysis of production in which production technology plays an important role it is necessary to work with groups of producers who are engaged, primarily, in the same type of production.

This requirement means that some institutional units must be divided into smaller and more homogeneous units, which the SNA defines as units with local economic activity or local institution. A local institution is an enterprise or part of an enterprise, which is located in a single location, and in which only one production activity takes place or in which the main productive activity holds most of the added value. Moreover, the SNA defines industries in terms of units. An industry consists of a group of units employed in the same sector of activity or carrying out the same type of economic activity.

Production (P.1) includes all products manufactured during an accounting period. The following particular cases are also included in production: the goods and services of a local economic activity unit supplied to another local economic activity unit belonging to the same institutional unit and the goods that are produced by a local economic activity unit; and which remain in stock until the end of the period during which they were produced, whatever their intended use.

However, goods and services produced and consumed during the same accounting period by the same local institution are not subject to separate records. They are therefore not recorded in the production or intermediate consumption of this unit.

The production of an institutional unit composed of several local institutions is equal to the sum of the productions of the respective units,

including parts of the production that the units exchange with each other. SCN distinguishes three types of production: market production; production for own final consumption and other non-market production.

The same distinction applies to local institutions and institutional units which may be: producers of market goods or services; producers of goods or services for own final consumption and other producers of non-market goods or services.

This distribution is fundamental because it determines the choice of the valuation principles that apply, i.e.: market production, production for own final consumption, total production of market producers and producers of goods or services for own final consumption are valued at basic price and the total output of other producers of non-market goods or services (local units with economic activity) is measured on the basis of the costs they incur.

In the process of building a price index, we will have to focus on those operations of organizational units that take place at economically significant prices - therefore we will be interested in market production. However, the prices collected for market production items can also be used to assess production for own final consumption. Thus, the scope of price indices can be extended to cover this component of non-market production as well.

According to the SNA, the economically significant price is the price with a significant effect both on the quantity that a producer is willing to offer and on the quantity that a buyer is willing to buy. Normally, these prices occur when the manufacturer is stimulated to adjust his offer either in order to make a long-term profit or to cover his costs, and when the buyer is free to buy or not, and the choice is made depending on the prices charged.

The revenue use account shows, for the institutional sectors that have a final consumption, how the disposable income (or adjusted disposable income) is distributed between the final consumption expenditure (or actual final consumption) and the savings.

In SNA, only public administrations, non-profit institutions serving households and households have a final consumption. In the SNA, the operations of goods and services are noted using P.n. Flows for these goods and services can be broken down into price and volume components and are therefore of interest to price statisticians.

The final consumption expenditure is codified in the SNA by the extension P.3, which includes the individual consumption expenditures P.31 and the collective consumption expenditures P.32. This expense is the one that is retained by statisticians.

Final consumption expenditure, financed by the various sectors considered: households, public administrations and non-profit institutions serving households, is included in the use of disposable income account.

In the SNA there is also a notion used for final consumption, namely the actual final consumption, identified by the extension P.4. This notion corresponds to the value of the goods and services actually available to households for their final consumption, even if their acquisition is financed by public administrations or non-profit institutions serving households. Consequently, the actual final consumption of general government corresponds only to the collective final consumption. The final consumption expenditure of non-profit institutions in the service of households being considered as individualized in its entirety, their actual final consumption is zero.

Household consumption can have three distinct meanings. The first can mean the total set of individual goods and services acquired by households, including those received as social transfers in kind. The second refers to the actual payments made by the population to purchase a subset of products and services for their own use. In order to distinguish between these two meanings, SCN 2008 describes the first as the actual consumption of households, and the second is found under the notion of consumption expenditure of households. The third possible interpretation of household consumption is the actual physical process of consuming goods and services, the process in which the notion of utility appears and which determines the standard of living of households. The process of consuming or using goods and services can occur after their acquisition, as many consumer goods can be stored.

The existence of social transfers in kind is not recognized by consumer price indices, although it is desirable to take them into account, especially when approaching the evolution of the cost of living. Moreover, governments may begin to charge for services that were previously provided free of charge, a practice that has become increasingly common in many countries. Goods and services provided free of charge as well as social transfers could, in principle, be seen as part of household consumption expenditure, but at zero price. The transition from a zero price to a positive one is therefore a price increase that can be captured by a consumer price index.

Not all household expenses are monetary. A monetary expense is one in which the equivalent of the good or service purchased is the creation of a certain type of financial obligation. This obligation can be settled immediately by a monetary payment, but many monetary expenditures are made on credit. Household consumption expenditures also include certain imputed expenditures for goods or services that households produce for their own consumption. These are treated as expenses because households bear the costs of their production (in contrast to social transfers in kind, which are paid by public administrations or non-profit institutions).

The imputed household expenses accepted by the SNA include all expenses incurred for goods that households produce for their own consumption (mainly agricultural products), but exclude all domestic services produced for their own service except housing services produced by the occupying owners. The imputed prices at which the included goods and services are valued are their estimated market prices. In practice, most countries comply with the SNA by including owner-occupied housing in the CPI. Other imputed prices, such as the prices of vegetables, fruits, dairy products or meat products produced for own consumption, could be included if they represent a sufficiently large component of household consumption expenditure. It is worth noting that all household expenses are individual expenses by definition.

Within the SNA, the following classification of aggregate indicators for household consumption can be distinguished, relevant for CPI indices:

- P.41 Actual individual consumption:
- D.63 Social transfers in kind (general government expenditure P.31 of general government S.13 and NPISHs S.15)
- P.31 Expenditure on individual consumption, of which:
- P.311 Monetary expenditure on consumption
- P.312 Default measured financial intermediation services (FISIM)
- P.313 Charged expenses for services from owner-occupied dwellings
- P.314 Other charges charged for individual consumption

The capital account records acquisitions less disposals of non-financial assets by resident units and measures changes in net worth due to the economy (final balance of current operations accounts) and capital transfers.

The capital account makes it possible to determine the extent to which acquisitions less disposals of non-financial assets have been financed through savings and capital transfers. It gives rise to either a financing capacity, which is the amount available to a unit or sector to finance, directly or indirectly, other units or sectors, or a financing need corresponding to the amount that a unit or sector the sector is obliged to lend it to other units or other sectors.

As we have already mentioned, the element that attracts attention from the point of view of the decomposition into volume and price component is marked with the letter P, in this case being the gross capital formation.

It would be easy to conclude, from those previously presented about institutional units and organizations, that the smallest economic unit to which the capital account can refer is the institutional unit. It is known that only institutional units draw up balance sheets and can monitor stock changes. However, the physical capital goods whose evolution is pursued in the capital account can be, and should be transferred if possible, to local institutions.

Such data are especially useful for productivity analysis, even if full capital accounts cannot be prepared at the local institution level.

Imports of goods and services are recorded in the resources of the foreign operations account, exports of goods and services in uses. The difference between resources and uses is the balance of the account, also called the balance of external trade in goods and services. If its value is positive, then there is a surplus for the rest of the world and a deficit for the total economy, and vice versa if it is negative.

In order to be consistent with the basic price of production of resident units, imports of goods are recorded at a level equivalent to the basic price, i.e. excluding import taxes but including import subsidies.

Imports and exports of goods recorded in the external account of operations on goods and services are measured in FOB value, i.e. at the border of the exporting country.

On the other hand, when transport and insurance services included in the FOB value of imports of goods (i.e. between the enterprise and the exporter's border) are produced by resident units, we note that they must be accounted for in the value of services exports of the importing economy goods. Symmetrically, when transport and insurance services included in the FOB value of exports of goods are produced by non-resident units, they must be included in the value of imports of services of the exporting economy of goods.

The tables of established resources and uses (TRU) are matrices by branches of activity (industry) and by products that describe, in great detail, the activities of domestic production and product operations of the national economy. Presented are: the structure of production costs and the income generated by production activities; flows of goods and services produced in the national economy and flows of goods and services with the rest of the world. The table of resources comprises the resources of goods and services by product and by origin, distinguishing between domestic production and imports. An example of a resource table is shown in Table (1).

Two fundamental identities link the table of resources to that of uses:

- Identity by branch: Production by branch = Entries by branch;

- Product identity: Total resources per product = Total uses per product.

Production + Imports + Taxes minus Subsidies per product and import
= Intermediate consumption + Exports + Final consumption expenditure + Gross capital formation

These industry and product identities serve to verify and improve the consistency and completeness of estimates.

The tables of resources and uses serve statistical and analytical purposes. The main statistical needs that can be covered are the following:

- identifying gaps and inconsistencies affecting basic data;
- aggregation and calculation of indices measuring price and volume;
- verifying and improving the consistency, reliability and completeness of the data contained in the tables of resources and uses and derived figures (such as those of production accounts).

By drawing up tables of resources and uses in current and constant prices for two or more years, the variations in volume, price and value are balanced simultaneously. Compared to the isolated integration of one-year resource and use tables, this is a major step forward in terms of the efficiency of the integrated framework. With the help of the tables linking the sector accounts, it is possible to make a direct comparison with the latter data, for example those relating to income distribution, savings and financing capacity (which represents the balance of financial operations). This way at least ensures that, once the balancing process is completed, the resource-use table as well as the sector accounts are consistent.

According to the SNA, the valuation of imports of goods is made at the CIF price but in total, the import is adjusted to the FOB value using a CIF-FOB transformation coefficient. The sum of the elements in this column is zero. This column appears only in the resource-use table, but does not appear in the SCN accounts.

Taxes and subsidies on product appear in the revenue allocation account for the general government sector, whose balance is denoted by B.5 and is called the gross balance of primary revenues. B.5 is equal to the sum of the balance B.2 Gross operating surplus, D2 Taxes on production and imports, D4 Property income minus D3 Subsidies.

Having these aspects, the user can associate with greater fidelity the aggregate value mentioned by the national accounts with one of the most important price indices IPP, IPC, IPE or IPI. An example of such an association is the one mentioned in table 6, where the location of each price index, among the four most important indices, in the resources-uses table is presented. This location takes into account the scope of both the aggregate value and the price indices used for the association.

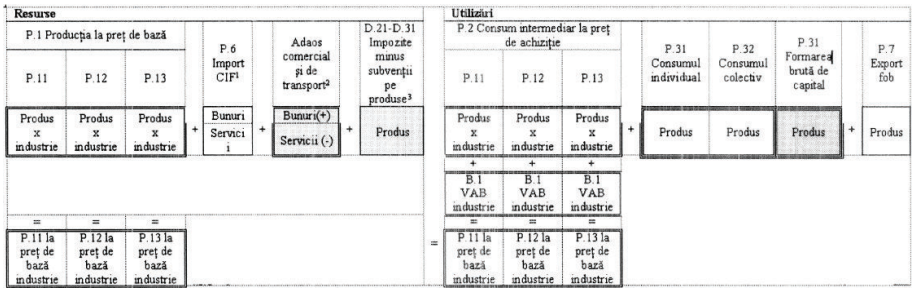
The price index is a function of relative prices and weights, noting that in addition to the calculation formula, an important role is also given by the characteristics of the aggregate value, determining for the weighting system and relative prices.

We remind here that the aggregate value defines the following aspects of the price index: which product must be included in the index; how to set

the price per product; the type of transactions with the products included in the index and how the weights are established, and from what source these weights should be built.

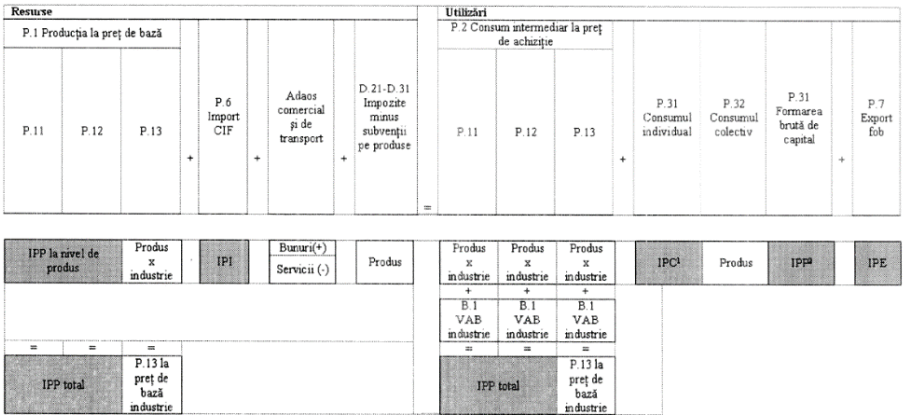
Uses resources table

Table 1



Location of the main price indices in the resources-uses table

Table 2



1. It covers only the monetary consumption expenditure of households

2. Covers finished products part of the variation of stocks. The characteristics of the aggregate value taken into account for the elaboration of the four price indices are the following:

Characteristics of the four price indices

Table 3

index	Products included	Price type	Covered transactions	Source of weights
IPP	All goods and services produced or processed on the domestic market and valued at market price	Base price	Production of resident enterprises, including sales of goods and services and stocks of goods	Annual business survey. The detailing up to elementary level is done according to the existence of specific surveys for products or services (PRODCOM)
IPC	All goods and services purchased by households for individual consumption	Purchase price	Consumer monetary expenditure	National accounts and family budget survey
IPE	All goods and services purchased by non-residents from residents. Also included are products exported, without transfer of ownership, for significant processing by non-residents and subsequently re-imported.	FOB, excluding export taxes and transport and distribution surcharges up to the national border and including export subsidies	All transportable goods and services produced or processed by residents and purchased by non-residents	National accounts and foreign trade statistics at product level
IPI	All goods and services purchased by non-residents from residents. Also included are products imported, without transfer of ownership, for significant processing by non-residents and subsequently re-exported.	FOB, excluding import taxes and transport and distribution surcharges up to the national border and including import subsidies	All transportable goods and services produced or processed by non-residents and purchased by residents	National accounts and foreign trade statistics at product level

The main users of the four most important price indices are central banks, whose monetary policy is focused on targeting inflation. The most widespread index in terms of availability is the CPI, in some states this index may be the only one available.

Another index that may be available monthly but late compared to the CPI is the PPI. When both indices are available, it is useful to analyse the

differences between their evolution and why not to decide which of them can be taken into account for measuring inflation.

The CPI generally covers only 50-60 percent of the total value of transactions in goods and services, with the remainder being the purchase of intermediate or capital goods. The CPI is assessed using purchase prices, which may not be desirable when talking about some core inflation indices. In contrast, PPI covers, in principle, total production, which by definition includes individual consumption and value added. Another important feature of the PPI is that it provides information on the transmission of inflation in the economy through the processing stage.

All other types of indices generated in the national accounts are implicit price indices, in the sense that they are not developed in the classical direct compilation system used for the main price indices mentioned above.

The best known implicit price indices of national accounts are: GDP deflator, resource price index and use price index.

The GDP deflator is an implicit measure of price dynamics in an economy, estimated starting from a higher level of construction than the classical one, used for price indices and based on information already existing in the price statistical system (CPI, PPI, IPA), without making a separate price observation based on an independent statistical survey.

For those products and services for which there is no reliable and relevant statistical information on price indices, the deflator of national accounts is calculated by the ratio between the current value and the constant value measured on the basis of the volume index. This way of measuring the deflator is most often encountered in the case of non-market products and services.

In the case of deflators used for external demand (export and import) the statistical indicators used are unit value indices, which are known to differ conceptually from price indices at least in terms of the definitions used for the two statistical quantities that stand at the basis for building the indices: the unit value and the price, but also in terms of the elementary level from which the construction of the index starts, where homogeneity and continuity in observation at the level of the product included in this level is not required.

Last but not least, it must be borne in mind that the final deflator is built on a resource-use balance of macroeconomic aggregates used to calculate GDP and is not a direct construction, as is the case with price indices.

By breaking down the total resource into price and volume components, the base price resource price index can be seen as a weighted average of total IPP (IPPT) and IPI. The total PPI is also formed in turn by the production price index, obtained in the classical system of building price indices, for market

production and for own consumption and the default deflator obtained for non-market production.

The purchase price resource price index derives from the weighting of the basic price resource price index and the net tax price index. Product-level resource price indices are useful for reconciling discrepancies in the resource-use table expressed in terms of volume.

End-use price indices include price indices for final consumption, gross capital formation and exports.

Conclusions

The System of National Accounts is a unitary whole made on account of the principles underlying the development of macroeconomic activity based on the unitary methodology developed by each state based on the same methodology.

The study of these data shows that this system of national accounts is a sure, safe way to analyse, based on the entries in the nine national accounts, the macroeconomic results recorded in the economy.

Another conclusion is that the nine national accounts are constituted in a system of macroeconomic accounts, which includes all the elements necessary for static and dynamic analyses, as well as structural or international comparability analyzes. Comparisons can be made in relation to some structural elements, but also to the whole economy based on macroeconomic performance indicators.

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