THEORETICAL CONCEPTS OF THE NATIONAL ACCOUNT SYSTEM - METHOD OF EVALUATION AND MACROECONOMIC CALCULATION

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Abstract

This article is conceived by authors as an attempt to express the consistency of the system of national accounts as a method of evidence and analysis at a macroeconomic level. The system of accounts is adopted by most of the countries operating on the free market principle. In this context, a number of points of view are expressed regarding the fact that the system of national accounts is a unitary macroeconomic evidence method, generally accepted by most states of the world. There is, of course, also a system of material production, which Romania used also in the period between 1945 and 1989, which was based on a system of gaining the added value only from direct productive activity. In this context, services were not considered as producing added value. In this article some references are made to the notions of economic circuit, which ensure, by the way in which the „black box" of the national economy is scientifically conceived. Also, the main ways of representing the economic circuit are briefly presented.

Keywords: *National accounts, macroeconomic evidence, statistical aggregate, indicator, production factor*

JEL Classification: E01, C10

Introduction

This paper refers to the system of national accounts, considered as a method of recording and control at a macroeconomic level. Sequences are presented in turn on this possibility of synthesizing macroeconomic outcomes in a system of national accounts. Also taking into account the flows that occur in the economy, as well as the fact that there is a circuit of the elements of the factors of production in the economy which ultimately materialize with the material result, they are presented and explained in turn. It also shows how certain modeled

expression possibilities can be achieved. Attention is paid to economic circuits, which make it possible to combine the factors of production that ultimately result from the macroeconomic activity. There are references to the macroeconomic situation, the macroeconomic structure, aggregates and many more.

Literature review

Anghelache, Anghel and Solomon (2017) addressed issues related to the role of the national accounts system in macroeconomic forecasts. Anghelache and Anghel (2017) presented the model of input-output tables usable in macroeconomic analyzes. Anghelache, Mitruţ, Voineagu (2013, 2010) and Anghelache, Mitruţ, Isaic-Maniu and Voineagu (2005) analyzed the main theoretical and practical elements regarding the system of national accounts. Anghelache (2004) presented the fundamental aspects of the European System of Accounts. Fuster, Laibson and Mendel (2010) studied macroeconomic fluctuations. Jones handled aspects of economic growth (2011). Miller and Blair (2009) studied the input-output relationship. Romer and Romer (2010) analyzed the macroeconomic effects of tax changes.

Research methodology, data, results and discussions

- National accounting is a „consistent, consistent set of rules for recording macroeconomic outcomes. This definition was given by CEE-Eurostat, EMI, the Organization for Economic Cooperation and Development, the UN and the World Bank in the 1993 National Accounts System.
- This evidence system has emerged and developed as a model accepted by all free market economies. Under this record system it is a question of clarifying a series of macroeconomic notions. Thus, it is important to analyze and define the concept of macroeconomic aggregate. In this context we will refer to:
- A macroeconomic aggregate links the production to the market reflecting the value result of the work done.
- By macroeconomic aggregate we designate a notion, statistical, by which the value of goods / services performed within a determined period. The aggregate does not include resold goods and services, calculating only the expenses involved in the commercial operation.
- The evaluation of results is based on the inputs of the factors of production, without including the trading-specific financial-trading transactions
- In calculating the macroeconomic indicators that highlight the results over a period of time, we refer to the products obtained in

the last phase of the economic process. This avoids the inclusion of intermediate consumption in the real economic result.

- The results indicators confirm, according to the calculation elements as a gross or net indicator. A gross indicator = net indicators + depreciation. A net indicator does not include accumulated amortization.
- When we do not take into account the results achieved by foreign firms, but only those obtained by the ones in the country considered, we obtain a gross or net national indicator.
- Indicators are expressed in factor prices and / or market prices. The market price is determined by subtracting from the factors of the subsidies (S) and adding the indirect taxes (Iind), which consist of the taxes due on the unit of goods or service produced (value added tax, excises), Ip and taxes owed to the unit good or changed / imported service (import rights, customs duties), marked with TV:

$$I^{ind} = I_p + TV \qquad\qquad (1)$$

From here, the relationship between market price and price of factors can be written:

$$P.P. = P.F. + IP + TV – S \qquad\qquad (2)$$

where:

P.P. = market price;

P.F. = factor prices.

or

$$P.P. = P.F. + I^{ind} – S \qquad\qquad (3)$$

or

$$P.P. = P.F. + I^{ind}_{nete} \qquad\qquad (4)$$

- The statistical sizes (indicators) can be expressed in current prices (of the year considered) or real, which ensure comparability. The shift from current prices to comparable prices is done through deflation, based on the inflation rate.

• **Economic circuit - concept and content**

Economic activity is carried out in a flow from resources, labor, capital involved, highlighting the shift from these factors of production to products and services made in the economy. Starting from the fundamental relationship of the free market, the money in the production process transforms into goods and services, penetrates the market, exchanges, sells and then transforms into money again, thus resuming production continuously . It does not matter whether the technological process is long or short, but it matters that the economic circuit

is in fact the flows taking place within the national economy. There is the system of economic accounts, on three floors, on the economic subjects, on the sectors of activity and then on the accounts of the national economy, the ones marked from 0 to 8 ie nine macroeconomic accounts. Within this framework we can identify the basic relationships, synthesizing them in the form of logical schemes or in the form of relations with statistical-mathematical content. In reality, in an economy, an economic flow is represented by three circuits: first of all it is the material circuit ie the passage of the good, the service from one economic agent to another, or from one legal person to another physical, legal. The second stream is the documentary, the one that accompanies the good, usually including expeditions and bills. The third circuit is the financial one, ie in exchange for the purchased goods or services it is necessary to make the payment of the equivalent value. Of course, the forms of payment are those known according to the legislation, specific to the Romanian economy or to any other country, because the economic circuits as a way to synthesize the flows or the macroeconomic activities happen in the same way. Thus, the three closed circuits show that the transaction has been fully executed. If one of the circuits is not complementary to the commercial operation in question, we can discuss tax evasion, money laundering, debtors, going through the insolvency or bankruptcy process of one or other of the companies. Summing up on these aspects of the economic circuit, it is important to point out that, depending on each of these moments, they can be synthesized in different forms. Every transaction must be accompanied by the flow as we said, two or three circuits because some authors consider that some elements of the documentary circuit are specific to both the transfer of the asset and its payment. There are two flows, the material and the financial flows. Flows are specific from the point of view of the production, commercial and other activity of inputs and outputs, ie the flow that shows the inputs of the production activity and the second is the flow of outputs as a result of the production activity.

Income = Value of labor output = Production of goods and services = Expenses for consumption (5)

It results from this relationship:

$$Vp = \Sigma C_c \quad \text{și} \quad \Sigma V = \Sigma C_c \tag{6}$$

where:

Vp = Production value;

ΣC_c = Amount of expenditure for consumption;

ΣV = Amount of revenue

and

Patrimonial change due to the comparison of flows (income and expense):

$$V - C = I \text{ and } V - C = E \qquad (7)$$

Without this situation being too deep, it is important to show that macroeconomic activity can be synthesized based on economic circuits in various forms of presentation of the economic circuit. In the following without going too deeply, we will refer to the main ways of representing the economic circuits. The economic circuit can be represented as in Figure 1 in the form of a general scheme showing how the economic circuit is going. The two flows we are talking about are fully represented in the diagram below illustrating that in reality the value of the output must be equal to the sum of the consumption expenditure and the sum of the incomes obtained from the value of the output must be at least equal with the amount of expenses that were committed to the transaction.

**Economic Circle - Overview**

Figure 1
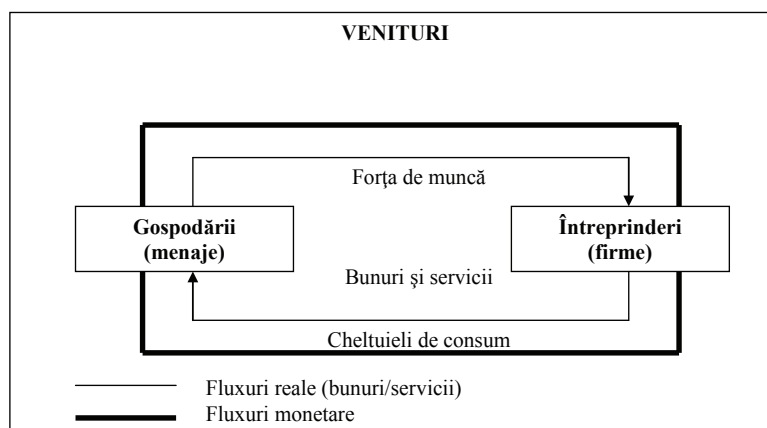
From the circuits of the economic circuits we can highlight the relations of calculation that lead to the idea that the incomes minus the expenses represent the economy that is made to an economic agent in a branch or the total of the national economy, and these economies that are acquired represent, in fact, the resources for us investment.

Economic Circulation by Income, Expenses and Savings (Investments)

Figure 2
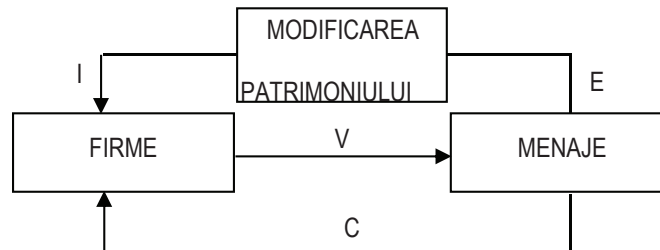
Thus, in a graphical presentation of economic circuits, it is not entirely enlightening when the growth of transactions or subjects of legal entities, ie commercial companies, occurs.

By comparing circuit flows, we identify equality:

$$V = C + I \; ; \; V = C + E \; ; \; I = E. \tag{8}$$

However we analyze, here we take the relation 8, it follows that through the mathematical relation we can establish the possibility to present an economic circuit as a result of the incomes and expenses that take place. Another form of presentation of the economic circuit is the matrix. This matrix form shows us, as shown in Figure 3, below, what is the state of exchanges and circuits that is happening in the economy. Synthesized in tabular form, both in the subject and in the predicate, we have the firms, households, and patrimony changes. This chart (table) lists the flows that occur. Thus, analyzing the rows of the table shows that firms provide household income. From the incomes obtained, the households spend expenses, and the remaining difference is the achieved economy. Lastly, after comparing earnings with expenditures, we find that companies are investing. The columns show the economic flows made by companies for spending on households and investments. The second column includes household revenue. The third column highlights the savings (investments) used to modify (increase) patrimony. From the chart we realized that the savings are equal to the investments $(E = I)$, and the table of household expenses plus the investments of the companies is equal to the total expenses and savings made by households.

Circuit as material form

Figure 3

|	Companies	Housekeeping	Patrimonial change	Total
Companies	-	V	*	V
Housekeeping	C	-	E	C+E
Patrimonial change	I	-	-	I
Total	C+I	V	E	X

Another analysis can be made from the statement of the economic circuit through accounts in the sense that all the accounts we have at our disposal, in which we record the revenues, expenses, reserves and other accounting elements give the possibility of a concrete interpretation and analysis of the situation of the circuit economic activity and the results of its activities in the economy.

The circuit diagram of accounts is based on the fact that on the right the receipts / revenues are recorded and on the left, in return, the expenses incurred.

Considering accounts for businesses, households, and patrimony changes we make the following points. In the companies' account, we record the revenue to the left, and to the right the expenses incurred. The census account is on the left-hand side of the spending and the revenue side on the right. The economic circuits thus presented in the two accounts show that housekeeping economies ensure the patrimony change, as company investments ensure the patrimony change. The simplified scheme highlights savings.

Schema of accounts used in the presentation of the economic circuit

Figure 4
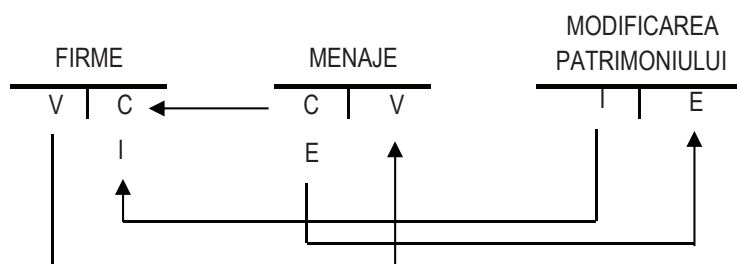
The flows describing this economic circuit are shown in Equation 9, where IM represents state savings, the balance between current receipts and current expenses.

$$I_M + I_F = V^{ST}_G + Pl_{ST} + T_G + S + E_{ST};$$ (9)

where:

E_{ST} represents state savings (balance between current receipts and current expenses).

The next form of highlighting an economic circuit is that which also takes into account the place the state has in this economic circuit. Equation 9 shows this.

Circuit including the state

Figure 5
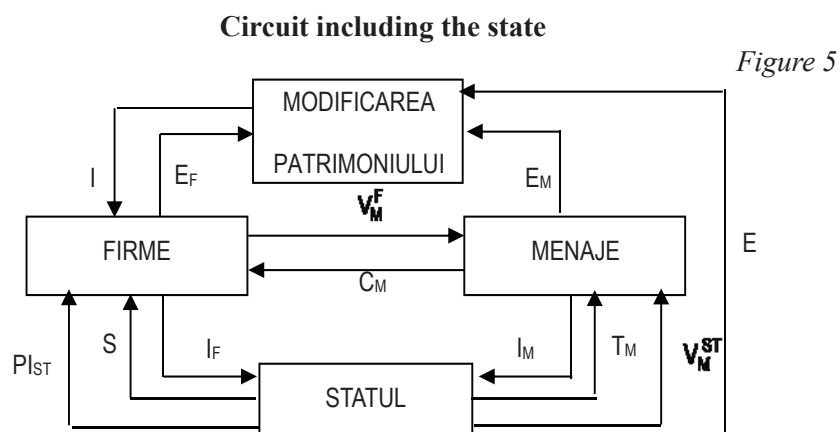
Another form of the economic circuit is that in which the place of foreigners is introduced in the economic circuit considering that any economy, has relations with foreigners, materialized in total international trade.

No country can have a closed, autocratic economy. Therefore, there are a series of circuits with the outside, realized through the activity of international economic relations. From this complex activity we get the relationship:

$$E_G + E_F + E_{ST} + E_{STR} = I$$ (10)

where:

E_G = household savings;

E_F = company economies;

E_{ST} = state savings;

E_{STR} is the economy of foreign affairs (if ESTR has a positive value, then foreign economies are used to finance domestic material assets, if not part of domestic savings are used to finance the material assets of foreign, not consumption).

Relațiile economice internaționale în circuitul economic
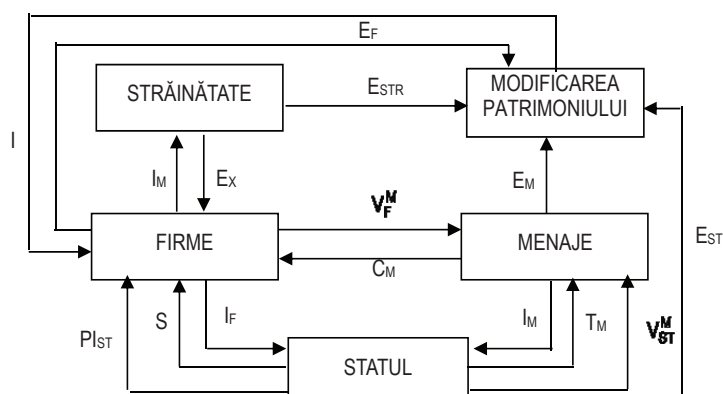
From the comparison of import and export values, we obtain the so-called net export, which may have positive or negative value depending on the situation of the analyzed country. From this point of view, we can see that countries can be surplus, those that have a positive net export ie that exports are higher than imports. The others are countries with a balance of deficient foreign relations, accusing a deficit, ie exports are lower than imports. From the study of such a representation of economic circuits we understand that if the country is deficient in the trade relationship it means that it exports less and then from the domestic achievements it has to make imports that practically diminish the value of the global macroeconomic indicators that are being calculated. These imports are not always interpreted as a negative factor. In the context of imports being made to complement and the continued high output of production activity, that is, of bringing additional capital, of purchasing resources that are not in the country, often by specialists for completing labor resources, on the structure required by a particular economic activity of production. Of course, here too we can introduce the role of economic research from this point of view.

Conclusion

The study shows that the macroeconomic activity should start from the form of macroeconomic evidence synthesized in the national accounts. Hence, we conclude that the use of this method ensures the international comparability of the calculated macroeconomic indicators as well as the possibility of time analysis of the results of a national economy. The national accounts system is a form of macroeconomic evidence that methodologically

ensures the possibility of comparability with all other countries using this system. Although there are countries still using the material production system, as used by Romania in the period 1946-1989, there are synthetic tables transiting the result elements from one system to another. The final conclusion is that these methodological aspects ensure the possibility of substantiation on the basis of the macroeconomic modeling of the possibility to compare in time the results of the national economies.

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