THE CONTENT AND CALCULATION OF THE MACROECONOMIC RESULTS INDICATORS

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Abstract

In this article, the authors focused on presenting key macroeconomic outcomes indicators that can ensure internal and international comparability. Attention is paid to the content of macroeconomic indicators as well as to their calculation methods, by enhancing the methods and relations of calculation of these indicators. The authors' study highlights the fact that the macroeconomic indicators of results, of course deflated according to the same methodological principles of the statistics, undoubtedly provide a possibility of real comparability of these macroeconomic results indicators, of which we mention the gross domestic product, the gross domestic product, the domestic product net national product, there are others, calculated according to the same methodology both in the Eurostat system and the UN statistical methodology, gives the possibility to express these indicators in comparable values.

Keywords: *economic circuit, aggregate, index, gross domestic product, national income*

JEL Classification: E01, E25

Introduction

This study has started from the fact that the macroeconomic indicators of results calculated according to the same methodological system in all EU Member States and beyond, can ensure real international comparability. In this context are presented the main indicators, expressing the relations of calculation of the elements that ensure the international comparability and based on them, by computing these structured indicators according to the elements used there is provided complex complexity, both general and structural, on the respective elements. The computational relationships are expressed in the article with the necessary explanations, thus ensuring that those who wish can do so. The article has a theoretical character, with the possibility to be easily transformed for concrete studies on the basis of the data provided by the National Institute of Statistics or the statistical institutes of the other countries, Eurostat or the United Nations Statistics Department.

Literature review

Andreou, Ghysels and Kourtellos (2013) addressed a number of issues related to the work of those in charge of macroeconomic forecasting. Anghelache and Anghel (2016) presented the main economic indicators usable in macroeconomic analyzes. Anghelache (2008) is a reference work in the field of economic statistics. Anghelache and Sacala (2016) proposed a theoretical model applicable to macroeconomic analysis. Anghelache, Mitrut and Voineagu (2013) have the main aspects of the national accounts system. Anghelache, and Capanu (2004) and Anghelache and Capanu (2003) presented the theoretical and applicative elements of macroeconomic statistics. Carroll (2003) discussed the macroeconomic expectations of households. Clark and Ravazzolo (2015) studied aspects of performance in the macroeconomic forecasts. Turnovsky (2000) studied methods of macroeconomic dynamics.

Research methodology, data, results and discussions

The economic circuits we have outlined above are not only intended to represent a variant in which, in the national economy, compared to a ,,black box", activity takes place in accordance with the elements of the production function (capital, labor and financial resources), but more so that, on the basis of these economic circuits, we can calculate macroeconomic indicators that express the results obtained in the national economy. Of course, macroeconomic outcomes can be expressed in quantitative terms, based on physical indicators or in form and value reflection, thus achieving a totalizing magnitude that expresses the results obtained in the entire national economy over a period of time. This is the beginning of the emphasis from the economic subjects, the activity sectors, then by concentration, by aggregation, at the level of the national economy, in which the macroeconomic accounts contain all the totalizing elements, on the basis of which all macroeconomic quantities to help with a complete analysis and an adequate interpretation. Thus, the calculated macroeconomic indicators make it possible to analyze the concrete results over a period of time, can help with a structural analysis, which is also the subject of the present study (PhD thesis), so that statistical methods can be used to growth of production. An important role in this direction is played by macroeconomic aggregates and ways of ensuring their aggregation. Aggregation has several meanings. One would be to sum up, to achieve a cumulative cumulation of the results obtained in various fields of activity. Another is to obtain and forecast a total value for perspective, but last but not least, the aggregation is closely related to the index method and theory. On the basis of these elements included in the national economy accounts, as well as in the economic circuits I mentioned, a series of macroeconomic indicators can be calculated. Regardless of the content of these macroeconomic indicators, in macroeconomic statistics, three methods and summed sums are used respectively; of revenue, which means the aggregation, the aggregation of all inputs of the inputs and the third, that of the expenditure, which refers to the consumption (costs) that the production and the services that were obtained were assumed. From the point of view of the content of these sizes, we mention indicators as they are:

- gross domestic product calculated by aggregating the revenues, expenditures or gross value added by all economic agents operating on the national territory of a country, in this case Romania;
- the gross national product, which aggregates the gross added value, the incomes or the expenses according to the calculation method used, made by all economic entities that are of Romanian nationality, ie they have the nationality of the state for which they are calculated.

Between the two calculated macroeconomic sizes, there are also some differences in the sense that many countries that have developed the economy and are participating with multinationals in other states have much higher revenues, which they record after the second process, the nationality or the membership of society the economic agent to one state or another. In the theory and practice of macroeconomic statistics, indicators are calculated taking into account the two criteria, national or extra-national, and they are calculated on several categories according to their real content. Thus, the macroeconomic aggregation based on the accounting and the principles of the National Accounts System is calculated: gross domestic product, gross domestic product, net domestic product, net national product, national income, population income and disposable income. Next we will look at how these indicators are calculated using the methods I have mentioned.

At sector level, global consumption (PGI) reduces intermediate consumption (Ci) and results in gross added value (VABi):

$VAB_1 = PG_i - C_i \tag{1}$	(1)
$PIB = \Sigma VAB = PG - C_i \text{ or}$	(2)

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$PIB = VPB_i - C_i$		(3)

VAB_i expresses the balance of the production account.

VABi is the net branch-level result and shows the difference between PGi and Ci. Taking the Vb_i of the branches we obtain this indicator at national level.

PIB_{pp} results from the relationship:

 $PIB_{pp} = \sum_{i=1}^{n} VAB_{ipf} + Ip + TV-SP$ (4)

Ip = taxes on unit of goods or service, including value added tax; TV = customs duties;

SP = subsidies per unit of good or service produced or imported,

IP = taxes on products = Ip + TV.

Considering that Ip + TV forms product taxes (IP), the gross domestic product calculation at market price can be rewritten as:

$$PIB_{pp} = \sum_{i=1}^{n} VAB_{ipf} + Ip + TV-SP$$
(5)

The calculation of GDP by the expenditure method involves the aggregation of three elements (final consumption, gross investment and net exports).

The calculation relationship is: $PIB_{pp} = CF + FBC + EXN$ (6) or detailed: $PIB_{pp} = C_p + CPL + FBCf + VS + (E - I)$ (7)where: CF = Final consumption; FBC = Gross Capital Formation; EXN = net export (E-I);Cp = private consumption; CPL = public consumption; VS = stock change;E = export;I = import;Stocks can be: - stocks of raw materials, semi-finished products and finished products at the producer; - production stocks; - general stocks; - goods for marketing; - stocks of finished products or raw materials available to the Government for strategic purposes. The revenue method involves using the relationship below: The calculation relationship is: $PIB_{pp} = RS + EBE + AIP - ASP + Ip + TV - SP \text{ or}$ $PIB_{pp} = RS + EBE + AIP - ASP + IP - SP \text{ or}$ $PIB_{pp} = RS + EBE + IPI - S$ (8) (9) (10)where:

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RS = labor cost (wages);EBE = gross operating surplus; AIP = taxes;ASP = grants;Ip = taxes on unit of goods or service; TV = customs duties; IP = product taxes = Ip + TV;SP = subsidies per unit of good or service produced or imported; S = SP + APSP;S = grants;IPI = IP + AIP = taxes on production and imports;S = SP + AIP.(11)Se aplică relația de calcul: $PNB_{pp} = PIB_{pp} + SVABS_{pp}$ (12)where:

 $SVABS_{pp}$ = the balance of the inputs of the factors of production relative to the foreign ones.

Net Domestic Product Calculation Relationship to Factor Prices:

 $PIN_{pf} = PIB_{pp} + S - (Am + I_{ind}) = PIB_{pp} - Am - I^{nete}_{ind} = PIB_{pf} - Am$ (13) or

$$\operatorname{PIN}_{pf} = \sum_{i=1}^{n} \operatorname{VABpf} - \sum_{i=1}^{n} \operatorname{Am}_{i} = \sum_{i=1}^{n} \operatorname{VANpf}$$
(14)

The net domestic product computation ratio at market prices is calculated based on the relationship:

 $PINpp = PINpf + I^{nete}_{ind} \text{ or } PINpp = \sum_{i=1}^{n} VANpf + I^{nete}_{ind}$ (15) At factor prices, the Internal Net Product is determined by the relationship:

 $\operatorname{PIN}_{\mathrm{pf}} = \sum_{i=1}^{n} \mathrm{VF}$ (16)

For calculating the national net product, the calculation relation is applied: PNNpf = PINpf + SVFS (17) where:

SVFS = income earned abroad.

At market price this indicator is calculated using the calculation relation:

$$PNN_{pp} = PNB_{pp} - Am \text{ sau } PNN_{pp} = PIB_{pp} + SVABS - Am \text{ or } PNN_{pp}$$
$$= PIB_{pp} - I^{nete}_{ind} + SVFS - Am$$
(18)

Personal income is determined by the relationship:

$$VP = VN - VAS + TM$$
(19)

where:

VAS = Revenue from other sectors: social security contributions (CAS), undistributed company profits, company income taxes;

TM = Transfers to government and business households (pensions,
unemployment benefits, other grants, scholarships, allowances,
compensations) and interest received by the population (net).For the personal income available, the calculation relation is:
VPD = VP - ITPPG(20)
(20)where:Image: State of the personal formed by the population

ITPPG = taxes and fees paid by the population.

Conclusion

From this article it is concluded that the macroeconomic results indicators, calculated on the basis of the same methodology, offer an extremely wide scope in terms of international comparability. From the presentation of the calculation elements of the macroeconomic indicators of results it is concluded that there is a quick and real possibility to concretize by certain data hierarchies that ensure international comparability. Also, attention is paid to the methodological aspects that conclusively speaking, if used in the sense in which they are conceived, give clear results to those who wish to extend their analyzes to a wider international context, to compare the evolution and development of each country. From this article we conclude that it is only a theoretical presentation, which can be extended also by using macroeconomic models, it can be ensured that results are obtained that have consistency in the appreciation of the evolution of the analyzed country or of several states in the case an international comparability process.

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