SOME METHODOLOGICAL ASPECTS CONCERNING THE STATISTICAL DETERMINATION OF INFLATION

PhD. Vasile V. DUMITRESCU
PhD. Gheorghe SĂVOIU

Abstract

This article continues the series of another two papers dealing with the same topic, which have already been published in the Supplement of the Romanian Statistical Review (Dumitrescu, Săvoiu, 2016a; 2016b;), and its two authors devoted it to the instrumental improvement of the methods of statistically determining inflation. After a brief necessary introduction, a section of proposals and solutions intended to construct indicators able to quantify inflation to a greater extent, as coverage and through a lower level of instrumental statistical error, the paper naturally anticipates the description of some of the conditions for building a ***general inflation index*** *(GII), which was defined and described structurally by the authors in their previous articles. Several concluding remarks insist on the need to reconstruct an increasingly suitable index of inflation in the European Union space, and its periodical re-quantification, in order to increase the accuracy of all analyses and confrontations of real economic developments, in such a wide geographical area, starting from the index built in Romania.*

Keywords: general inflation index (GII), proportions and correlations, focused/directed selection, selection, structuring and grouping criteria, nomenclatures, principles of homogeneity and representativeness, modalities of determining the content, the scope and the construction of specific indexes, of partial, and interpret indexes.

Jel codes: C43, C46, E31, P24.

1. Introduction

Statistics is one of the incipient, original sciences, and the statistician's profession is one of the traditional human activities, which has been attested for millennia, since the very first censuses and state information, which have survived the passage of the years. The science of statistics has developed and diversified over time, and so it currently has a large scope of applicability, generating a distinctive and expanding universe of its own research, focused on both hypothesis testing and decision-making on their validation or invalidation, as well as on sampling and final inference based on the survey theory, on scenarios simulations, and even multidisciplinary computational

experiments, generating methodologies, tools, and models with a growing, more and more varied role of prediction or prognosis. Statistical information through major derived indicators and distinct instruments is becoming more and more useful in almost all fields of scientific research, production, cultural and social services, being present where a statistical method is used, either a method of selecting, observing, collecting, aggregating data, or methods of substituting volatility of individual values by more stable indicators of the central trend (expressed by absolute or relative values, or by indices or rates), and even methods of association and correlation, intra-polarization and extrapolation, concentration and diversification, etc. All these methods ultimately allow a deeper understanding of real developments in a well-defined area, in parallel with the discovery of new aspects and elements that lead to the improvement, perfecting, and economic and social development of the area in question.

In the field of economic statistics, with special focus on the generalized increase in prices and the desire to update and compare statistical value indicators within the requisite terms of comparison, scientific research has a permanent character, operating with criteria, principles and techniques applied in the development of content-setting methodologies, the scope of the indicators that express the inflationary phenomenon, which involves study, searching and clarification work in terms of systems and methods of selecting the elements of the researched phenomenon that express, in a manner that is as real, faithful and complete as possible, the data and information necessary for the construction of the specific indices, both partial, and of the interpreter type. This requires permanent and sustained work on research and studying the policies applied to prices, tariffs and quotas, the national currency, and the income of the population, requiring updating, and even extending the samples, an analysis of the selection criteria, the nomenclatures and observation centers, as well as the points of data and information collection.

Within the national economic hypersystem there is a close correlation between the increase of the revenues in the consolidated state budget, the incomes of the population, and the increase in labour productivity, which is achieved in the process of financial and production relations, which lie at the basis of establishing the macroeconomic equilibrium ratios. Thus, between the increase in the income of the population (salaries, pensions, social assistance, etc.) from the state budget and the increase in the production sector of the real economy of goods and services, there is a direct relationship: any increase in the revenues in the budgetary sector without an increase in labour productivity triggers the "cutoff effect" in the balance of system, which leads to an increase in the budget deficit, prices, tariffs and taxes (inflation in general), and a

decrease in the purchasing/payment power of the national currency, and in the incomes of the population.

Macroeconomic proportions and correlations were influenced by the measures taken in 2015 and 2016 to reduce value added tax (VAT) from 25% to 20% in general, and to 9% for some commodities of strict necessity, which led to deflation, erroneously also called *negative inflation*, of –0.5%. In 2017 there was a decrease of the VAT rate from 20% to 19%, with other tax cuts, accompanied by an increase in the incomes of the population in certain sectors of activity, which led to a high consumption of goods and services, but also increases in prices for vegetables, fruit, natural gas, electricity, an increase in interest rates on bank loans, the increase in the value of insurance policies at the MTPL, the continuous depreciation of the exchange rate, all eventually leading to the leap in deflation in inflation, and then the rise in inflation.

All these politico-administrative measures had, and still have, a propagated, direct effect on the construction of the "General Inflation Index" (GII) indicator, which has a very wide scope and content of great diversity in terms of its structural elements belonging to different fields of activity, and where prices, tariffs and quotas, paid by the population, were practiced and are still practiced, which requires a completely different and instrumental approach of the way of determining the inflationary phenomenon. Thus, the inflation rate should include, besides *Consumer Price Index* (as a consistent and correct abbreviation, IPBC would be more appropriate than CPI), which is still considered to be the indicator that succeeds in expressing inflation, in official statistics, and other economic indicators that have in their content elements that express and lead to the reduction of the purchasing power of the national currency, and of the gross incomes of the population, such as: *Index of variation of incomes devoted to population's mandatory payments* (IVIDPMP), *Investment Price Indices* (IPI), *The Foreign Exchange Rate Index* (FERI) and the *Index of the stock-exchange values* (ISEV), where each has a specific, different, homogeneous content, which, through aggregation, expresses the level of total or general inflation recorded over a certain period of time (Dumitrescu, Săvoiu, 2016a, 2016b).

This wide range of indicators mentioned in other authors' articles implies a more laborious research, which would require, prior to the organization and introduction of the respective indicators into the statistical information system, an analysis instrumental to knowing the problems and the resulting aspects, which also characterize them, which elements lie at the basis of developing their building methodologies, establishing the criteria for drafting the product and service nomenclatures, the methods of observing and collecting statistical data and information, and ultimately allowing for a more

scientifically relevant approach, with an essential impact on expressing and completely quantifying this complex economic phenomenon.

2. Proposals and solutions for the construction of indices that express inflation

The science of statistics provides multiple methods and techniques for statistical research of inflation, from collection and concrete sampling to observation, collection and recording, followed by transmission, sorting, classification and aggregation of statistical data and information. All of the above give the opportunity to study and develop indicators that ensure the genuine and faithful expression of the inflationary phenomenon by exhaustively encompassing all the constituent elements that express any type of increase in this field.

Constructing the *Global Inflation Index* (GII) is a complex process meant to achieve a maximum economic synthesis indicator, which is composed of the following partial indices, each component then contributing both to covering the markets as a whole, and to the final calculation:

1. The *Consumer Goods Price Index* (CPI), in keeping with the calculation methodology, establishes the level of movement, variation and evolution of prices and tariffs applied to the purchase, procurement of goods and the use of services by the population.

An important role in constructing CPI is held by the process of developing the *basket*, or substantiating the nomenclature of products, grouped into food, non-food goods, and services, which results from a research process, aiming at maximizing initial knowledge, the coverage or subsequent coverage, and finally optimizing their selection, in keeping with the homogeneity, specificity, representativeness and characteristics at national level, in a sufficiently comprehensive number that ensures the full, balanced and proportionate amount, between the three groups, so as to correspond to the structure of the population's expenditures, and to efficiently and accurately express the effective movement of prices and tariffs at any level of calculation. At the same time, the fact must be taken into account that the varieties should have a specific character, satisfying, in concrete terms, certain personal needs, which are current, daily, natural, of strict necessity for the life of the people, as is the case of food, alcoholic and non-alcoholic beverages, articles of clothing, footwear, pharmaceuticals, household and electrical goods, as well as services such as electricity, natural gas, heating, telephony, cable or satellite television, rent, which are grouped by their nature, being homogeneous, with a value of, usually, less than ten thousand lei, and a service life of no more than five years,

also being bought according to the needs of life, which in turn depend on desires, preferences, tastes, education, culture, profession, age, sex, fashion, habits, customs, traditions, the fact that they are found in the characteristic market, and, in particular, the material, pecuniary possibilities of each individual. Practically, it is not possible to include assortments of a different nature, such as housing insurance policies, RCA policies, car stickers, which do not meet a personal need and are completely different in nature, being in fact mandatory. Grouping goods as food, non-food commodities and services can be made according to their homogeneity, specificity, representativeness and the extent to which they are characteristic at national level, in a sufficiently comprehensive number, so as to obtains and assure a more than sufficient representation, even closer to the idea of exhaustivity of their scope, a proportionality, correlation, and balance reflected in the volume and structure of the three broad, famous groups, in accordance with the volume and structure of population expenditures, in order to genuinely and accurately express the effect produced, regarding the movement and evolution of prices and tariffs applied, for any level of structuring and aggregation of the final calculation. In order to effectively respond to the movement/evolution of prices and tariffs, the nomenclature will constantly be updated, depending on the occurrence and/or disappearance of some component parts with significant weight and representativeness, which are characteristic and possess a territorial or seasonal specificity, yet are also clearly necessary, or have significant increases that affect consumption (e.g., seasonal goods such as vegetables, fruits, medicines, various other food or non-food commodities) to continuously and correctly reflect the changes that occur during certain periods of the year, which require substitutes or substitutions in the nomenclature, with the corresponding weight, and the average price of the base period (0) is imputed by correlation. There are also assortments whose varieties have a great variety in price, for example in dress articles, ready-made clothing, knitwear, footwear, where a detailed presentation of the technical characteristics of each product will be included in the price record sheet, in order to define and individualize it, so that it can be included in the relevant group established according to certain criteria, such as gender (male or female), seasonality, model, material, appearance and quality, mode of execution, shapes, which all make up a certain assortment. Under these circumstances, the average price at the level of the current period (t) can be determined accurately and realistically for each assortment which has a great diversity, by recording both the nominal price and the amount sold in the current month (t), or the previous one (t-1), so that the average price at the level of the lot reflects the actual contribution of the nominal price of the component varieties. A particular segment of CPI, which should not be missed

in this approach, is represented by the nomenclature of village markets and fairs, which are significant through the weekly volume of sales.

Although important in supplying and demanding the majority of rural products, especially food, though also sometimes non-food commodities, peasant markets and fairs have had a relatively diminished role in the past two decades, although they traditionally cover a relevant percentage, constituting still visible areas of sales volumes. The inclusion of an optimal number of localities with peasant markets having significant percentages in the consumption of the urban and even rural population, together with the analysis of aggregations and weighting coefficients, constituted by the end of the 20th century an important topic of price statistical surveys, directly correlated with the study of family budgets. Even if, in the period of an excessive planned economy of Romania, with prices declared relatively stable, it was considered necessary to involve some experts in the field of price statistics such as C. Iţigan, C. Bugeanu, S. Mihăiescu, M. Samoilă, S. Comoroşeanu, M. Istrate, O. Dragu, T. Stavăr, and others, who sought to preserve the integrity and representativeness of the quantitative and qualitative research of traditional markets and fairs, only a decade after the transition of the national economy, that research was abandoned. Under the current conditions of increase in the number and diversity of the trade units and shops carrying out the sale of goods or the provision of services, which may be the subject of research, it is stringently necessary to extend the number of localities that possess observation and data collection centers and information on the level and dynamics of prices/tariffs for the assortments in the established basket, as well as for the tariffs of the catering and accommodation services in the classical type of tourism, or for the packages with different procedures for medical/spa treatment, etc., in localities such as Curtea de Argeş, Câmpulumg, Turda, Roman, Mizil, Urlaţi, Câmpina, Anina, Jimbolia, Corabia, Făgăraş, Băile Felix, Sinaia, Predeal, Olăneşti, Covasna, Sovata, Băile Şugatag, Mangalia, etc.

2. The *index of variation of incomes devoted to population's mandatory payments* (IVIDPMP), or the *Population Compensation Indicator*, is a specific indicator, heterogeneous through its content and scope, yet it is unitary because payments are mandatory for the population with regard to all that is provided in the Fiscal Code, in the laws or other normative acts, which vary in time, with an inflationary effect.

IVIDPMP requires knowledge of payments made by the population, which are different by their nature, whether due to rights derived from the provision of activities (income tax) or the possession of goods, or they define some payments for participation in the formation of funds (social payments,

health payments), or payments due to deviations from the law or even non-compliance with the law (fines), and even some payments made to obtain services (fees, interest on bank loans) or payments to obtain damages in case of harm or accident (insurance policies), etc. The importance of developing this economic indicator results from the inflationary effect these payments have, through their multitude and diversity, as well as the fact that they apply at national, regional, county and local level, where there is the freedom for them to appear and be changed in keeping with various situations. A relevant example is the mandatory insurance policies, which are very diverse, the pursuit of which can be done through the national statistical information system, which allows to express the total value volume of their evolution and impact on inflation. As an example of significant developments not included in the quantification of inflation, one can simply cite the average insurance policy fee, which represents only a small part of the mandatory payments, which increased by 3.5% in 2016 compared with 2015. The drafting of the IVIDPMP construction methodology allows to establish the inflationary effect lent by the content, scope, structure and manner of deployment and grouping of the elements according to their nature, specific to these expenditures which express and quantify the inflationary effect, recorded both as a whole and per division, category, post, group and component position. The methodology will establish the criteria for deploying, grouping, and homogenizing the diversity of the component elements, which are taken up in different percentages, such as the income taxes, which are classified by their origin and type. The same goes for contributions, which are retained in detail for pensions, health insurance and unemployment, and which, as a rule, are differentiated in fixed percentage for the formation and consolidation of the respective funds. It is also possible to list other similar payments meant to cover interest on bank loans, structured according to the amount and period of refund, the quality of the beneficiary, including finally fees or fines, which again have a great diversity due to the way they are established, according to the example of insurance policies for different purposes, taking into account the exchange rate and stock exchange changes. The drafting of the nomenclature will be structured by components: taxes, contributions, fees, fines, bank fees, penalties, insurance policies. The grouping of the above components will of course be homogeneous, by their nature and distinctly in the case of division, with a high degree of representativeness, so that the contents of each group or category of payments can provide a breakdown at the level of post, position, individual element, for which the quotas will be pursued at a nominal or percentage level, depending on the way of expression and application. The drafting of the nomenclature will describe, in each division, taxes, contributions, interest rates applied by

individual banks, expressed as a percentage (%), fees, fines, exchange rates or quoted prices at nominal value, and all of them will include the total value by groups, detailed positions up to the nominal position and sub-position level, so that a ($^{0}/_{000}$) sales structure, which will represent the weighting coefficients of each element (individual) index, will finally be obtained. The data are collected and recorded from the respective institutions either by making use of the questionnaires of the Family Budget Survey (FBS), or by means of a specific survey for this purpose. For example, in order to obtain the variation of the division of interests on bank loans, which are represented in percentages as (%), the key banks in the banking system are introduced in observation (collection and recording), for example, BCR, BRD, Banca Transilvania, CEC Bank, ING, which set the benchmark for the bank interest rate variation, holding 80% of the total bank data and information necessary to establish the volume of housing loans, personal needs, investments and other requirements; within this group a step-by-step nomenclature is created, detailed for all types of loans, broken down according to the time of the interest repayment (for example, 30, 20 or 10 years, or even shorter periods), the data being also broken down in relation to the type of interest (fixed interest and variable interest), on the grid, up to the last position which includes the deployment of data on the banks in the observation, where we will have the percentage share of the nominal interest or the average, if there were changes within the calculation period (t) and the average share of the base/reference year (0) per bank, needed for the calculation of the element (individual) indices. The weighting ratios of the element (individual) indices will be taken over from the share of the bank credit interest rate split from the structure drafted for the index of variation of incomes devoted to population's mandatory payments (IVIDPMP), established in ($^{0}/_{000}$), and can be deployed on groups, positions and sub-positions (banks), at the nominal or average interest rate of the calculation period (t) and the average annual rate of the base/reference period (0). The quotas are assigned to the calculation of the element (individual) indices, weighted by the coefficient assigned to each bank, in order to obtain the position index, then by successive incremental aggregates, from the post to the group, we obtain the index on total bank interest taken into account to express its contribution, the index obtained applies to the weighted coefficient assigned to the total division as part of the IVIDPMP. Credits borrowed in foreign currency (euro, dollars, Swiss francs, etc.) will be converted or recalculated in RON, using the average exchange rate of the baseline period (0), in order to reflect their contribution by aligning the value of foreign currency loans in the total volume, thus ensuring a fair structure of the weighting coefficients for each credit category, thus achieving a correct participation of each credit category in the construction of the index

concerning the change in interest rates on bank loans. This index, along with the other indices calculated for the other component groups (divisions), will be obtained by successive IVIDPMP aggregations. Such a complex statistical information system, once created, allows to track all mandatory payment categories for all the components that are necessary for the construction of this index, having direct effects both for establishing the inflation, and for the respective units to regulate in relation to the tax system, with the revenues of the State, with the local incomes, with the incomes of the banks, of insurance companies and other institutions, where there is the freedom to periodically change the level of the respective quotas, according to necessities or policies.

3. The *Investment Price Index* (IPI) expresses the variation in purchase prices, the purchase by individuals of durable goods and with a value of more than ten thousand lei/RON, which is characterized by their use, capitalization, development and wealth accumulation, such as housing, special constructions, land property, cars, machinery and other technical appliances, animals, art objects, gold, which are paid from own income, attracted income, bank loans or loans from other people.

Being a new indicator, an IPI building methodology is also useful, which shows the scope, the criteria for grouping and detailing the components, the method of developing and drafting the nomenclature with the main, representative elements, by categories of homogeneous objects, detailed up to the unit price level, the value volume that allows the weighting coefficients to be established, by total, by groups, by element positions at the nominal purchase price level of the current period (t), and the base/reference period (0), and establishing the selection system, the data collection system and the recording, transmission and processing system, as well as the IPI building method. The importance and necessity of calculating this index is given by the fact that they are elements that have certain characteristics, for instance, our country's agricultural land is fertile, of superior quality compared to the non-fertile, and possibly arid, desert-like land of other countries. Its valuation in dollars or euros will be achieved at a real, actual and current market level (possibly at a minimal price), given that it is tens or even hundred times higher than the price in the last decade of the last century, when the hectare of agricultural land was sold for several hundred dollars. Probably legal minimum regulation would be useful, very much as in the interwar period and during the planned post-war economy, when calculating national wealth was done, as well as observing criteria for classifying agricultural land in nine specific categories, and determining the price per hectare was based on the average crop yield per

hectare, taking into account the amount of annual yield per hectare for a period of several years (usually, 30-50) and the minimum price was structured in relation to the quality of the land, its position as to the locality, the access roads, etc. The price of one hectare of forest can be determined based on a limited period meant to enable restoration of deforested woodlands, in accordance with economic and scientific methods, which may vary depending on the area, the age, the predominant tree species, the specific amount of the "vertical wood growth" and other factors, for the value of *green gold*, as *the lungs* of our country are difficult to regenerate – in about 80-100 years. The price of residential buildings has an increasing dynamics due to an increasing demand, just like special constructions, which also have very different prices depending on the surface, the materials used for their construction, their appearance and their age, the year of their construction, the place where they are located in urban areas, by central, residential or peripheral areas, located on the seaside or in the mountains, requiring a classification, grouping according to certain criteria, which can separate them, make them easy to capitalize, and express them. Cars, agricultural machinery and equipment purchased by individuals for certain activities have a variety of prices depending on the make, the year of manufacture, the cylinder capacity, the engine power, and are used differently, which requires a clear separation. These aspects will be reflected in the IPI nomenclature and its breakdown by categories of purchased investment objects by homogeneous groups, and in order to establish and render their diversity, in a unitary form, the concentrated/directed selection of the representative elements is used, up to the nominal price level, which expresses the evolution and the contribution of each component item: the prices will be collected from real estate agencies, notary offices, shops, institutions or through special surveys.

4. The *foreign exchange rate index* (FERI) will have a building methodology that will contain the criteria for expressing the average variation of the exchange rate quoted when buying foreign currencies by individuals for different personal needs (payment of the foreign currency loans, trips abroad, purchase of consumer goods, payment of services, etc.), the level of the quoted price being the one set by the NBR, and the market variation influenced by a series of factors from the quotations recorded on the domestic market or on foreign markets, for country entries and/or exits of the capital.

FERI is aggregated, and can be constructed based on the centralized value of the NBR, and the data regarding the dynamics of the exchange rate will be collected from the territorial network, from selectively determined units, by means of the concentrated/directed method, finally bringing together the main

exchange offices having the largest sales. The weekly observation (collection and recording), for example on Thursdays, of both the day's quotation and the amount collected/cashed in lei/RON, will be made for each single currency, and with the obtained data a weighted average is established of each currency per current month (t), for each currency in the collected data. This average is compared to the average annual baseline/reference period (0), calculated on the basis of the baseline/reference data for that year (0), based on the two quotas for the current (t), and base period (0), establishing the element index (*i*) at the level of each currency, then the weighting coefficient is applied, and by aggregating it one can reach the final FERI value. The percentage weighting coefficients (%) at the level of each currency are obtained on the basis of the structure of the volume of the total value, collected in lei/RON in the base year/reference period (0), (country value, denominated in each currency, existing in the NBR, thus the setting being organized at country level). In the same category can be included the Bitcoin virtual currency, which has an investment and saving role, as well the part of currency, with a variation that directly influences both payments and the weakening of the purchasing power of the national currency.

5. The *Index of the stock-exchange values* (ISEV) is based on existing and stock-exchange data (cf. Stock Exchange), where the units are listed where individuals own shares, by selecting or listing all units, and it includes both the value, and the number of shares, the nominal price of a share in the current period (t), whether there were several price changes in that period (month), being calculated as a weighted average price, and finally the average price in the reference year (0) based on data from that period.

On the basis of the two prices, individual indices are calculated for each unit, and they are weighted by the weighting coefficient resulting from the structure of the total value volume of the units within the base period (0), structured by units in percents (%), if less than one hundred units, or in promiles ($^{0}/_{00}$), if they are more than one hundred, and their aggregation gives the total index. If stock prices are denominated in a foreign currency, all of the above will be recalculated in RON at the average rate of the reference period (0) to participate in establishing the weighting coefficients under similar conditions, thus ensuring statistical comparability, or becoming equivalent to the others as a unit of measure. This does not include the secondary stock market for oil, electricity, gold, cereal products, etc.

3. Some conditions in the calculation of the General Inflation Index (GII)

In its most pragmatic version, the *General Inflation Index* (GII) is an indicator built on the basis of a polynomial formula which represents the sum of the aggregation of the five specific, partial, interpreter-type indices, plus weighting the free term (W free). Thus, the content of the *General Inflation Index* (GII) can be calculated by making use of a free term, and thus virtually correcting the formula set forth in the previous paper (Dumitrescu, Săvoiu, 2017b, p. 9):

$$IGI = W_{CPI} \times CPI + W_{IVIDPMP} \times IVIDPMP + W_{IPI} \times IPI + W_{FERI} \times FERI + W_{ISEV} \times ISEV + W\ free$$

where:

Wi = weighting factors for specific, partial interpreter indices, which are determined on the basis of the structure, the actual destination of the total gross incomes of the population, respectively the expenditures incurred over a one-year period, preferably the current year (t), or in the previous year (t-1).

W can be different in size, and the sum of the five weightinf coefficients, plus the free term (W free), is equal to one, so:

$$W_{CPI} + W_{IVIDPMP} + W_{IPI} + W_{FERI} + W_{ISEV} + W\ free = 1$$

The free term (Wfree) comprises the share of the savings owned in banks or saved in people's "socks", the spending by individuals on gambling (lotto, bingo, game machines, casino roulette, and/or betting houses). The total national amount of money is quite large. The sum of money collected at betting houses alone was 1.4 billion lei in 2016. These incomes, saved or spent, according to their nature, cannot be included in the five groups described by CPI = the *Consumer Price Index*; IVIDPMP = the *Index of variation of incomes devoted to population's mandatory payments*; IPI = the *Investment Price Index*; FERI = the *Foreign Exchange Rate Index*; ISEV = the *Index of the stock-exchange values*.

The free term (W free) is added, which is not weighted in a typical calculation, illustrated below, where the formula of the *General Inflation Index* (GII) is applied, where:

$$W_{CPI} + W_{IVIDPMP} + W_{IPI} + W_{FERI} + W_{ISEV} + Wfree = 0,53 + 0,31 + 0,08 + 0.03 + 0,03 + 0,02 = 1$$

and

CPI = 103.5; IVIDPMP = 105.1; IPI = 102.4; FERI= 102.2; ISEV= 104.2.
which leads, in the illustrative calculation, to:
IGI = 0.53 × 103.5 + 0.31 × 105.1+0.08 × 102.4+0.03 ×102.2+0.03 ×104.2 + 0.02 × 100 = 54.9+32.6+ 8.2+3.1+3.1+2.0 = 103.9%.

Finally, based on the data in the above example, the decrease in the purchasing power of the national currency, and, respectively, in the income of the population, is obtained by calculating the *Index of the Payment Power of the National Currency* (IPPNC):

IPPNC = 100 / GII, i.e. 100 / 103.9 = 96.2%

In the construction of the *General Inflation Index* (GII), it is necessary to take action to improve, develop and build up new methodologies for the five specific, partial interpreter-type indices, which could respond to the ethics of statistical practice: a) determining the content, the scope and coverage sphere, the manner of constructing the five specific, partial, interpreter-type indices, in keeping with the nature, the object and the purpose of their elaboration; b) the drafting of the nomenclature will be based on a statistical survey in the respective domains aiming at obtaining data and information that will respond to a detail presentation, having as a structuring criterion the principle of homogeneity, consisting in the ordering and grouping of the component elements by their nature, and their structuring is to be done in accordance with a step-model pyramidal hierarchy, based on a type of detailing expressing the lowest element level corresponding to the price, tariff, nominal quota, and the constituents at each level being retained using the concentrated/guided selection method, based on the principle of representativeness, which are characteristic, specific, having a high weight in the incomes/expenses of the population representative of the respective indicator, and which represent at least 60% of its total value, thus encompassing the entire sphere of the specific, partial interpreter-type index constructed; c) the baseline/reference year weighting coefficients (W_0) will be obtained by dividing gross incomes/ expenditures of the population for the five specific, partial interpreter-type indexes, according to the detailed structure of each nomenclature developed, in keeping with the component elements and the size of the value volume of each separate index, which are expressed in relative sizes such as the promiles ($^0/_{00}$), or the prodecimiles ($^0/_{000}$), in accordance with the volume and structure of each index; d) the specific, partial interpreter-type indexes are obtained from element (individual) indices, which represent the variation/movement of

price, tariff, nominal quota of the varieties, or the representative assortments in the established group, in keeping with their nature and homogeneity, which express the trend and the level for all the other components that are part of the respective group, which are not included in the calculation, the average index obtained, which applies to the weighting coefficient established for the total level of the group and by successive aggregations in the higher stages, performed according to the same system, until, in the end, the whole sphere of the specific, partial interpreter-type index is reached.

For the construction of the *General Inflation Index* (GII), some conditions related to the theoretical calculation formula are also needed, so as to enable the five specific, partial interpreter-type indexes to get aligned, e.g. a) being built using the Laspeyres formula (with fixed weights), as in the example of the calculation of the Consumer Price Index (PCI):

$$PCI = \frac{\sum_{i=1}^{n}(p\text{ti} \times \text{w0i})}{\sum_{i=1}^{n}(p\text{0i} \times \text{w0i})} \quad \text{where:}$$

Pti = prices/rates/tariffs (P) of the current period (t);
Woi = weighting coefficient (W) of base period or reference period (0);
Poi = prices/rates/tariffs (P) of the base / reference period (0);
b) having shares of the same period, base year/reference period (0);
c) showing the prices, tariffs and/or quotas, in the numerator, for the same period of the calculation (t) month, and the average of the base year/ reference period (0), in the denominator.

4. Conclusions

Establishing a new index for the quantification of inflation, in a new concept, is of particular importance due to the fact that it has a broader and more appropriate scope, with a higher degree of coverage of those factors that "erode" the power of payment of the national currency, which reflect and can influence a series of economic policies related to the exchange rate, the export-import trade relations, the external balance of payments, the revenues to the State budget, the price levels, the mandatory tariffs and quotas, and, respectively, the incomes of the population. Through its contents, scope and mode of calculation, the *General Inflation Index* (GII) provides a complete view of inflation, which allows the National Bank to more accurately make forecasts, politicians and policy makers to take suitable measures, researchers to make more realistic analyses and studies, thus correctly delineating the level and the structure of inflation, calculated and rendered by specific, partial interpreter-type indexes, based on the current consumer price categories, service tariffs, mandatory tax rates, contributions, fees, bank interest rates, insurance policies, the purchase prices

of durable goods, the exchange rate fluctuation and stock market quotations. The need to build the *General Inflation Index* (GII) also derives from the effect resulting from the econodynamic research of all the policy measures applied in the relationships, proportions and correlations in the macroeconomic system, from the dynamics and strategies adopted, concerning the various theories of impact in the economy, from the theory of the "open gates", supported, nearly one hundred years ago, by the professor and political man Virgil Madgearu (1887-1940), up to the "by ourselves" theory with the "control of the foreign capital of our country's economy", advocated by the political man, finance minister, prime minister and party leader Vintilă I. C. Brătianu (1867-1930) and, in particular, by the theory of "consumption" or "investments made in vital sectors" with state and European funds, generating jobs, welfare and profit, and thus allowing a rapid, efficient, real and lasting development of this country.

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