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Macroeconomic Model of the Prognosis of the Formation and Utilization of the Population Incomes

The distribution principle of the incomes of the population on various structures and end-users starts from the establishing of certain alternatives of the correlations to be formed in the prognosis period between the various categories of incomes and the net mean remuneration.

The economic-mathematical model presented was conceived so as to determine the population real incomes volume, the incomes structure, the mean incomes on an individual beneficiary and their mode of utilization. It has also a version wherein the consumption fund may be dimensioned in terms of the mean remuneration level and dynamics.

Within the framework of the activity carried on in this country for the elaboration of some macroeconomic prognosis, for the national economy as a whole, a particularly important role devolves upon the prognosis of the formation and utilization of the population incomes, in close agreement with the national income level to be reached, and the proportion of its distribution for consumption and development.

In the indicators' system which characterizes the living standard, the total real incomes of the population (called further on incomes of the population) make up the most important synthetical indicator, as it allows to express in a general form the multiple aspects of the living standard. Through its synthetising power, all income categories the population obtains through various means of distribution, this indicator directly expresses the mass of goods and services intended to the population and which can be obtained during a year, both from the incomes got from the remuneration of labour, and from the social consumption funds.

The importance of the indicator "total real incomes of the population" within the prognosis process consists not only in the fact that it can globally mirror the mass of incomes devolved upon the population as a whole and upon its categories, but also in the fact that, once dimensioned, it allows to evaluate other indicators too, which measure the income level, e.g.: real wages, peasants' incomes, the social consumption funds, pensioners' incomes and the mean pension etc. At the same time, through presenting the ways and means and through estimating the sums on various expenses categories, precious information is obtained, which can be taken into account when establishing in a far off prospect, the economic development which, as a whole, is subordinated to the final target, the sole target of all activity — the increase of the living standard.

Forecasting the population incomes is a complex process, since their level depends on the volume and distribution of the national income, on the ensurance of a judicious correlation between the incomes of the various social categories of the population. At the same time, the necessary balance between the money resources and the volume of goods and services meant for individual consumption should be achieved.

The analysis of the formation and utilization of the population incomes, as well as their modelling permits a long-term estimation of the levels reached by the respective indicators for the whole and for structural elements, according to different working hypotheses. This is possible by means of computations performed in the electronic computer.

Forecasting the population incomes, as global volume, can be made through several methods, among which the following are worth being taken into consideration:

1. The dimensioning of the population incomes as a multiple of the sums established in a standard (normative) budget, wherein the various consumptions, irrespective of their covering source, are considered as optimal, reasonable or necessary to be reached within a given period.

2. The volume of the incomes which can be assigned to the population is directly connected to the mass of goods and services created by society within the process of developing national economy and which can be assigned to consumption; thus expressed, the population incomes level depends on the level of the national income, and on the growth rhythm of the latter and on the amount in which its utilization for the consumption fund can be foreseen, respectively. As a matter of fact, to use this mode of prognosis for the population incomes doesn't mean to ignore the formerly mentioned normative method; on the contrary, to make the prognosis of the population incomes, on the basis of the national income growth, it means to allow a more fundamental analysis of the possibilities and period wherein the objectives resulted after the first method, can be reached.

Within this study we are aiming at presenting the second mode of forecasting the population incomes; with this end in view, a macroeconomic simulation, aggregated model was elaborated, which is used in the planning and forecasting works.

I. THE OBJECTIVES TO BE ACHIEVED THROUGH THE MODEL

1. Determination of the total real population incomes, on the basis of the growth of the consumption fund from the national income

The first correlation through which the volume and the growth of the population incomes can be evaluated, must be the projecting of the growth rate of the consumption fund, whose contents is, as a rule, near to that of the population incomes.

As the evolution in time of the growth of the population incomes and of the consumption fund shows a practically close rhythm, the dynamics of both indicators was also supposed to be identical within the forecast period. When achieving the model, we had also in view the possibility of using a correcting coefficient of the incomes dynamics. This was made within the conditions wherein the appearance of some future phenomena is estimated. Those phenomena could have an influence on the forming of a different dynamics of the population incomes, as against that of the consumption fund (e.g. modifications in the evolution of the population savings).

Starting from the level of the consumption fund and of the population incomes in the basic year (t), as well as from the forecast consumption fund, determined on the basis of a variable magnitude of the consumption fund weight within the national income, we establish the prospective population income level.

Starting from the hypothesis that:

$$\frac{VT_{t+1}}{VT_t} = \frac{FC_{t+1}}{FC_t} \tag{1}$$

and replacing

$$FC_{t+1} = VN_{t+1} \cdot g_{t+1} \tag{2}$$

it results

$$VT_{t+1} = VT_t \cdot \frac{VN_{t+1} \cdot g_{t+1}}{FC_t}, \tag{3}$$

where:

VT_t represents the population incomes in year t,
FC_t — consumption fund in year t,
VN_{t+1} — forecast national income (year $t + 1$),
g_t — weight of the consumption fund within the national income in year t.

2. Determining the structure of the population incomes

Between the various population incomes categories obtained under the form of wages, pensions, benefits, grants for children, incomes from farming a.s.o., certain correlations were built up. Those correlations reflect a certain degree of differentiation between them, according to the established orientation in view of distributing the funds intended to the growsh of the living standard in a certain stage of the society development. For instance, there

is, at present, a certain ratio between the net mean wages on the one hand, and the mean pension, social insurance benefits, the state grants for children, on the other hand; there also exists a certain ratio between the income obtained by the working personnel and the income of a farmer, between the incomes of an active person working in Production farming co-operative (P.f.c.) and the incomes of a P.f.c.-pensioner.

We guess that, as the multilaterally developed socialist society will be built up and it will gradually pass over to the communist society, the existing relations between the incomes of the various population categories will be modified.

Starting from those premises, the principle of distributing the population incomes on various structures, contemplated within the model begins with the establishing of certain variations of the correlation which will be formed within the prognosis period between the main income categories, as follows: average net wages, average pension, average state grant for a child, average state social insurance benefit due to the working personnel, the farmers incomes from the work into agriculture by active person, free socio-cultural services (education, culture, health etc.); the net average remuneration is taken as standard.

The determination of the income volume for the various categories: pensioners, beneficiaries of grants for children etc., is carried out by means of the correlation ratio between the average income of the selected category and the average wages. This ratio is submitted to a correction through the number of beneficiaries ($N_i \cdot K_i$), with a view to obtaining a recalculated number of beneficiaries, whose income would accomplish the following balance condition:

$$\frac{R}{NP} = \frac{V_i}{N_i \cdot K_i} \tag{4}$$

where:

R represents the volume of the net incomes from the wages;
NP — number of the working personnel;
V_i — total incomes for the i-incomes category;
N_i — number of beneficiaries of the i category (personnel, pensioners, children etc.);
K_i — ratio between the mean incomes by person of i category, as against the net mean wages.

Starting from this relation, we infer that:

$$V_i = \widetilde{R} \cdot N_i \frac{K_i}{100}(1 + q_i);\ i = 1, 2, ..., n \tag{5}$$

wherein:

$\widetilde{R}$ represents the net mean yearly wages;
q_i — the weight of other funds afferent to i-incomes category (e.g.: scholarization fund and other remunerations connected to the incomes from wages);
n — number of categories of beneficiaries.

In this manner the following are determined:

A. *Money incomes of the working personnel and of pensioners*, derived from:

— wages;
— social insurance pensions and other pension categories;
— grants for children;
— benefits for the social insurances and welfare.

B. *Incomes from farming*

— from the work in the Production farming co-operatives (P.f.c.) and in the individual farms;
— the P.f.c. pensions;
— grants for the children of P.f.c. members;
— benefits and other incomes derived from the P.f.c. services.

C. *Incomes from socio-cultural services financed by the budget* *, from which:

— the share pertaining to the working personnel;
— the share pertaining to the farmers.

D. *Other incomes of the population*

3. Determination of the mean incomes by beneficiaries

The average incomes by beneficiaries (average nominal wages, average pension, grant devolving upon a child etc.) are determined according to the following formula:

$$\bar{V}_i = \frac{\frac{V_i}{1+q_i}}{N_i \cdot 12} \qquad (6)$$

where

$\bar{V}_i$ represents the average monthly income by end-users.

4. Grouping of the incomes of the population

The data resulted from the computations carried out on the basis of the presented model make it possible to group the population incomes in terms of various criteria, as against the necessities of analysis. In the framework of the model, following grouping are proposed:

a. according to the incomes forming sources:
— incomes from labour;
— incomes from social consumption funds **.

This grouping offers the possibility of analysing the evolution trends of the incomes from the social consumption funds, as against the labour incomes.

b. according to the form of the achievement of the incomes:
— in cash;
— in kind.

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* Include services as: education, culture and arts, health, social welfare, physical education and sports etc.

** Include socio-cultural services, to which payments are added for: all kind of pensions, state grants for children, benefits of all kinds etc.

The importance of this grouping consists in the fact that it permits to distribute the net money income volume, whose equivalent will be found again in the amount of goods and services to be put at the disposal of the population for consumption and accumulation.

5. Determining the structure of the population expenses

The final destination of the population incomes is canalized in the following main directions:

— buying of commodities from the socialist commerce;
— buying of services;
— buying of produces from the farmers' market;
— buying of dwelling — places;
— growth of the money savings of the population.

For each of the above-mentioned expenses categories, a specific algorithm was established, by using various computation methods. For illustration, we mention:

a. *The commodities and services buying volumes* will be determined on the basis of the elasticity coefficients:

Starting from the formula:

$$E = \frac{S_{t+1}}{S_t} : \frac{VT_{t+1} - VT_t}{VT_t} \tag{7}$$

we infer the formula for establishing the respective indicators:

$$S_{t+1} = \frac{E \cdot S_t(VT_{t+1} - VT_t)}{VT_t} > S_t \tag{8}$$

where:

E represents the elasticity coefficient;

S_t — the commodities or services buying volume in the basis year (t).

b. *Buying of dwelling — places*

The numerical growth of the population, the structural mutations resulting from the urbanization extension, the reconstruction of the dwellings out of use and otherwisely damaged, combined with the population incomes growth, lead to the conclusion that also in the future a high rhythm of the demand for personal-property dwellings will be maintained. We appreciate, according to this hypothesis, that a growth of the dwellings buyings can be taken into account, namely in the limits of the population incomes growth.

c. *Buying of produces from the farmers' market*

As the calculation of farming produces buying on the farmers' market is conditioned by a series of unforeseeable economic and social factors, we appreciate, for a long-term prognosis, that their determination can be done by taking into account their weight as against the total farming production volume. This weight could be used at a constant level for the whole prognosis

period, or could be modified according to certain versions concerning the destination of the farming production. The calculation formula is as follows:

$$cPT_{t+1} = \frac{cPT_t}{PA_t} \cdot PA_{t+1} \tag{9}$$

where:

cPT represents the buying of produces on the farmers' market;
PA — the farming global production.

d. *The growth of the money-savings of the population* (growth of the Savings-Bank deposits and of the cash of the population) was determined by starting from the premise that it is formed proportionally to the net incomes volume *. Here is the used formula:

$$EB_{t+1} = VT_{t+1} \cdot \frac{EB_t}{VT_t} \tag{10}$$

where:

EB_t represents the money savings of the population in the basic year;
VB_t — total money incomes of the population in the basic year.

II. MODEL BUILDING UP

The schematic diagram of the connections between the indicators used in the model is given in Annex 1, while in Annex 2 the formalizations of the indicators model are presented.

The building up of this model, which ensures the establishing of the levels of the main indicators characterizing the formation and utilization of the population incomes on a forecasting period, was conceived on the basis of the following principles:

a. the whole series of calculations is carried out through elimination of the redistributing elements (charges, contributions etc.) or the levels are rendered under the form of real incomes (identical to the net incomes), respectively.

b. when carrying out the calculations, various methods were used in terms of the respective specific indicator, so as to ensure the veracity of the results. In this connection, we mention some of the used methods:

— the method of correlation (between the mean incomes, by categories of beneficiaries and mean salary);

— the elasticity coefficient method (the bought commodities and services volumes);

— the extrapolation method (growth of the population savings, incomes in kind by active person, from the total incomes from the farming labour-farmers);

— the limit values method (paid services).

c. For the necessities of the calculation of the state grants for children, the model also includes a symbol, by means of which the number of children,

* We can also adopt the hypothesis of a variable weight, with growth trends of the money savings as against the population incomes dynamics.

benerficiaries of grants, is established. This is done separately for the children belonging to the working personnel families, and separately for the farmers families children. The number of children that may benefit of grants is also taken into account.

III. OPTIONS INTO APPLYING THE MODEL

a. The systematic raising of the material and spiritual living standard of the population needs the adoption of a series of measures leading to the ensurance of the living conditions corresponding to the new period, for all categories of population. That is why we consider possible to take into the calculation, within the prognosis works — as mentioned in the first chapter — the formation of some ratios differing from those existing nowadays between the various categories of incomes of the population. In this connection, the model is based upon the adoption of some options that could mark, within the various stages of the prognosis period, the level reached by the various population incomes categories, as against the nominal wages.

Those options making up exogeneous elements of the model, present themselves as weights specific to each category of incomes.

b. The weight of the consumption fund within the total national income may differ from a stage to another one, in connection with the development of the production forces. This weight was also included in the list of the optimal exogenous elements, in the hypothesis that for the prognosis period, the consumption fund volume was not given initially.

c. Establishing the limit (maximal and minimal) values, in whose framework the growth of the paid services volume has to be foreseen. The option for the level of those limits may be done as against the proportion of the expenses for services, in the total expenses of the population from other countries, having a development degree corresponding to the foreseeable potential of our economy.

IV. MODEL RESTRICTIONS

In the case of some elements of incomes and expenses of the population, it was provided for, through the model, that some levels resulted on the basis of the calculation hypotheses taken into account, be corrected, if those are not within the pre-established limits. Thus, the volume of the paid services, set up according to the elasticity coefficient must be within the limit values allowed for the respective period. It was provided for that the verification and the corresponding influence, resulting from the non-observance of this condition be automatically carried out by the system. The resulted difference must correspondingly modify the expenses level and the sums intended for purchasing commodities, in order to observe the restriction imposed by the money income amount.

We mention that no restriction connected to the source of the farmers incomes (from labour, grants, pensions etc.), within the limits of the possibilities resulted from the farming production evolution, was taken into account. In this case, the dimensioning of the farmers incomes is made with respect to the future incomes of the staff from enterprises and institutions.

V. MODEL APPLICATION AND EXTENSION POSSIBILITIES

The model is devised so as to establish the level and evolution of the indicators concerning the forming and using of the population incomes on a longer time period; the possible levels are indicated every 5 years.

To apply the model, a series of exogeneous data are used:

— *constant magnitudes* taken from other prognosis calculations (population number, national income etc.).

— *variable magnitudes* resulted from options on other indicators' level (weight of the consumption fund in the national income, correlations of the mean incomes of the various categories of beneficiaries as against the mean wages); the modification of those indicators makes up the criterion of deciding between the prognosis versions;

— *magnitudes representing realizations of the basic period* (remuneration fund structure by composing elements, ratio of the volume of commodities bought by the population as against the retail sales total, etc.). Those magnitudes can be taken into the calculation depending on the option done for the respective version (with constant or variable level).

The model allows some extensions of the calculation, which could enrich the information area. We mention in this connection:

a. The calculation, for each element composing the population incomes, of the sums necessary for the foreseeable quantitative increase (e.g.: increase of the working personnel, increase of the pensioners number, etc.); this is done without taking into account the quantitative improvements (increase of the mean wages or pension etc.). On the basis of this hypothesis, the sums are determined which are necessary only to cover the quantitative increases smaller than the volume of the total incomes, whose distribution is possible as a result of the consumption fund increase; the difference is represented by the non-distributed funds which can be allotted for quantitative improvements.

b. The available funds for covering the qualitative increases in the prognosis period are determined and distributed by elements composing the population income; those qualitative increases are as follows: remuneration improvements, increase of mean pensions, of the state grants for children etc.

c. The incomes of the farmers families, resulting from the contemplated increase of the farming production, may be calculated as a parallel version. Within this calculation we can also determine the new mean income levels (mean remuneration, mean pension etc.), and the ratios built up betweenn them: those ratios will differ as against the options adopted under the influence resulting between the farmers incomes amount, determined in correlation with the mean remuneration and the incomes amount correlated to the farming production increase.

VI. MODEL VERSION: CORRELATION WITH THE REAL WAGES

On the basis of the same above-mentioned principles a version of the forecasting model of forming and using the population incomes was built up; instead of the consumption fund, that model uses the mean wages as starting point. In this case — by keeping or modifying the correlation ratios $\left(\frac{K}{100}\right)$

existing between the various categories of incomes and the real remuneration to each version of the remuneration increase will correspond a certain volume of population incomes.

Such a calculation seems to be justified, if we take into account the importance of the wages fund in the population incomes formation process. In this connection, the obtained results do facilitate the analyses and the decision making concerning the adoption of the model's exogeneous elements; they provide the possibility of comparing the results obtained by means of both models.

In this case, the general formula for determining the real population incomes starting from a given level of the real wages, is as follows

$$V = \sum_{i=1}^{n} [\bar{R} \cdot K_i] N_i \cdot 12(1 + q_i) \qquad (11)$$

where:

V represents the total real incomes of the population.
i — incomes categories (pensions, grants etc.)
$\bar{R}$ — mean monthly wages
N_i — number of beneficiaries in the i — category of incomes
K_i — ratio between the mean income person from the i — category of incomes, as against $\bar{R}$.
q_i — weight of other funds as against the i-category incomes (school education fund etc.).

The schematic diagram of the connections between the model's indicators is rendered in Annex 3.

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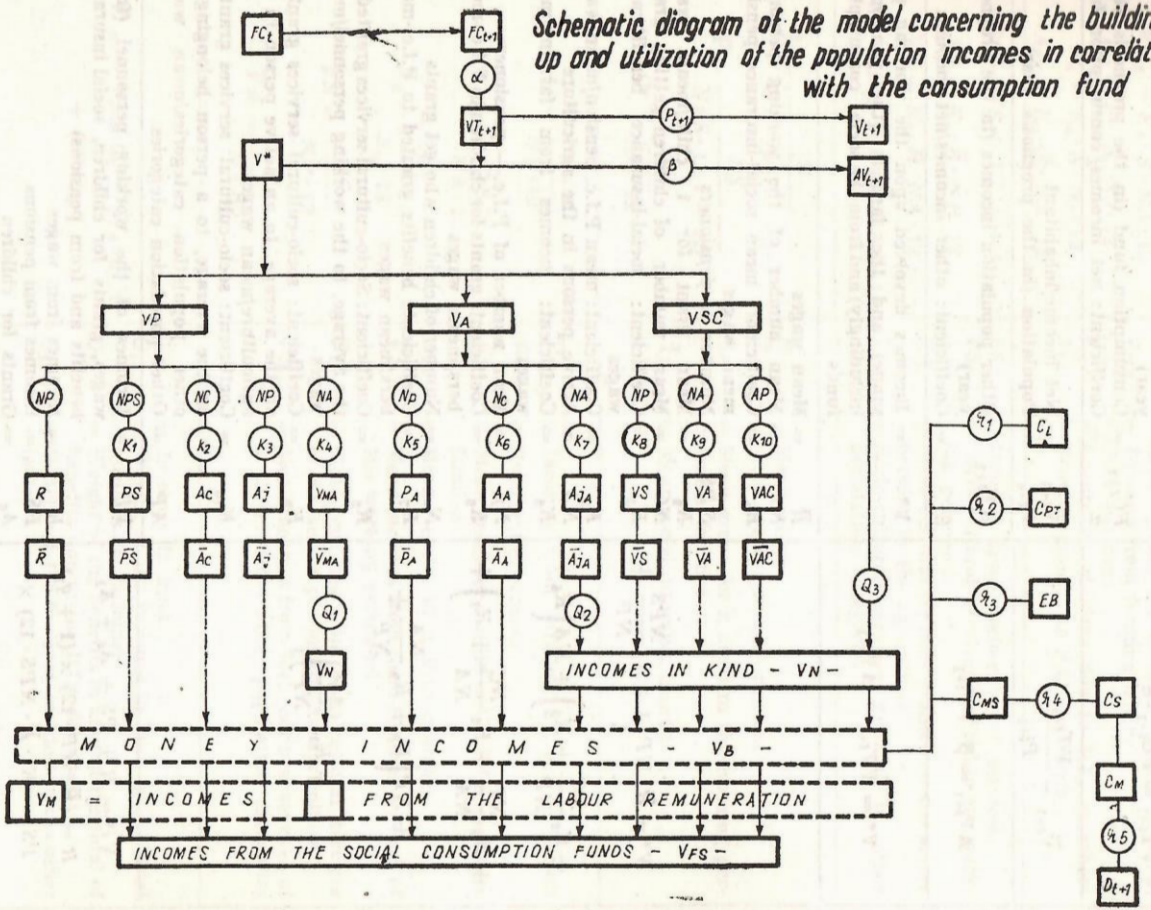
The presented economic-mathematical model fully demonstrated their utility for elaborating macroeconomic prognosis works. With their help, the increase of the real population incomes, the ways of formation and the utilization of the incomes within both the State Planning Committee and the teams especially set up for the prognosis works, were projected up to 1990–2000.

The execution velocity of the calculations by means of computer allowed to elaborate a multitude of versions concerning the building up and the utilization of the population incomes; the options went to those versions corresponding to the orientations set up in the party documents for the raising of the population welfare in the next two decades.

At present, our concern is to improve the models and particularly to widen the correlations sphere. In this connection, a special attention is paid to the setting up of some relations of interdependence with other economic indicators, e.g. the labour productivity in the industry and agriculture, the social labour productivity, etc. It will be thus possible that we use more efficiently this modern instrument of economic forecasting in the works carried out in this country.

ANNEX 1

Schematic diagram of the model concerning the building up and utilization of the population incomes in correlation with the consumption fund



Formalization of the indicators included in the model

Annex 2

Symbol explanation

$VT_{t+1} = FC_{t+1} \cdot \alpha$	VT_{t+1} = Net population incomes (in the prognosis year) FC_{t+1} = Consumption fund (in the prognosis year) α = Coefficient: net incomes/ consumption fund
$\widetilde{V}_{t+1} = \frac{VT_{t+1}}{P_{t+1}}$	$\widetilde{V}_{t+1}$ = Net income/inhabitant P_{t+1} = Population (in the prognosis year)
$AV_{t+1} = \beta \cdot VT_{t+1}$	AV_{t+1} = Other population incomes (in the prognosis year) β = Coefficient: other incomes/net incomes
$V^* = VT_{t+1} - AV_{t+1}$	V^* = Incomes devolved upon the working personnel and the farmers (the pensioners includingly) and from the social consumption funds
$V^* = \bar{R}\left[NP\left(1 + K_1 \frac{NPS}{NP} + K_2 \frac{NC}{NP} + K_3\right) + NA\left(K_4 + K_5 \frac{NP}{NA} + K_6 \frac{NC}{NA} + K_7\right) + NP\left(K_8 + K_9 \frac{NA}{NP} + K_{10} \frac{AP}{NP}\right)\right]$	$\bar{R}$ = Mean wages NP = Mean number of the working personnel K_1 = Coefficient: mean social-insurance pension/ mean wages NPS = Number of pensioners K_2 = Mean grant for 1 child/mean wages NC = Mean number of children getting grants K_3 = Coefficient: social-insurance benefit/mean wages K_5 = Coefficient: mean P.f.c. pension/mean wages NA = Acrive persons in the agriculture K_4 = Coefficient: incomes from farming/mean wages Np = Mean number of P.f.c. — pensioners K_6 = Coefficient: grants for children to P.f.c.-members/mean wages N_c = Number of children who get grants K_7 = Coefficient: benefits granted to P.f.c.-members/mean wages K_8 = Coefficient: Socio-cultural services granted on the average, to the working personnel/mean wages K_9 = Coefficient: socio-cultural services granted, on the average, to an active person in the agriculture/mean wages K_{10} = Coefficient: socio-cultural services granted, on the average, to a person belonging to other population categories/mean wages AP = Other population categories
$VP = R + PS + A_c + A_j$ $R = (\bar{R} \cdot NP \cdot 12) \times (1 + q_1)$ $PS = (K_1 \cdot \bar{R} \cdot NPS \cdot 12) \times (1 + q_2)$ $A_c = K_2 \cdot \bar{R} \cdot NC \cdot 12$ $A_j = K_3 \cdot \bar{R} \cdot NP \cdot 12$	VP = Incomes of the working personnel (from wages, grants for children, social insurance benefits and from pensions) R = Incomes from wages PS = Incomes from pensions A_c = Grants for children A_j = Social insurance benefits q_1 = Weight of other wages categories in the total of wages q_2 = Weight of other pension categories in the total of pensions

$V_A = V_{MA} + P_A + A_A + A_{jA}$ $V_{MA} = K_4 \cdot \bar{S} \cdot NA \cdot 12$ $P_A = K_5 \cdot \bar{S} \cdot N_p \cdot 12$ $A_A = K_6 \cdot \bar{S} \cdot N_c \cdot 12$ $A_{jA} = K_7 \cdot \bar{S} \cdot NA \cdot 12$	V_A = Incomes from farming (from labour, pensions, grants for children, other benefits) V_{MA} = Incomes from farming labour P_A = P.f.c.-pensions A_A = Grants for children due to P.f.c.-members A_{jA} = Benefits granted to P.f.c.-members
$VSC = VS + VA + VAC$ $VS = K_8 \cdot \bar{R} \cdot NP \cdot 12$ $VA = K_9 \cdot \bar{R} \cdot NA \cdot 12$ $VCA = K_{10} \cdot \bar{R}(NPS + N_p) \cdot 12$	VSC = Incomes from socio-cultural services VS = Socio-cultural services granted to the working personnel VA = Socio-cultural services granted to the active persons in the agriculture VAC = Socio-cultural services granted to other population categories
$\bar{R} = \frac{R}{NP \cdot 12\,(1 + q_1)}$ $\bar{P} = \frac{PS}{NPS \cdot 12(1 + q_2)}$ $\bar{A}_c = \frac{A_c}{NC \cdot 12}$	$\bar{R}$ = Mean wages $\bar{P}$ = Mean social-insurance pension $\bar{A}_c$ = Mean grant for a child in the working personnel families $\bar{A}_j$ = Mean social insurance benefit
$\bar{A}_j = \frac{A_j}{NP \cdot 12}$ $\bar{V}_{MA} = \frac{V_{MA}}{NA \cdot 12}$ $\bar{P}_A = \frac{P_A}{N_p \cdot 12}$ $\bar{V}S = \frac{VS}{NP \cdot 12}$ $\bar{V}A = \frac{VA}{NA \cdot 12}$	$\bar{V}_{MA}$ = Incomes from farming by active person $\bar{P}_A$ = Mean P.f.c.-pension $\bar{A}_A$ = Mean grant for a child in the P.f.c.-members families A_{jA} = Mean benefit of a P.f.c.-member $\bar{V}S$ = Mean incomes from socio-cultural services of the working personnel $\bar{V}\bar{A}$ = Mean incomes from socio-cultural services of an active person in the agriculture $\bar{V}\bar{A}$ = Mean incomes from socio-cultural services of a person from other population categories
$\bar{V}_N = V_{MA} \cdot Q_1 + A_{jA} \cdot Q_2 + AV \cdot Q_3$	V_N = Incomes in kind Q_1 = Weight of the incomes in kind in the total incomes in farming Q_2 = Weight of the benefits in kind in the total of benefits due to the P.f.c.-members Q_3 = Weight of the incomes in kind in the other incomes
$V_B = VT - V_N$	V_B = Money incomes
$V_M = R + V_{MA} + AV$	V_M = Incomes from wages
$V_{FS} = VT - V_M$	V_{FS} = Incomes from the social consumption funds

Symbol explanation

$\bar{V}_1 = \bar{R} + \bar{P} + \bar{A}_c + \bar{A}_j + \bar{V}S$	$\bar{V}_1$ = Net mean income/worker
$\bar{V}_2 = \bar{V}_{MA} + \bar{P}_A + \bar{A}_A + \bar{A}_{jA} + \bar{V}a$	$\bar{V}_2$ = Mean income of an active person in the agriculture
$V_0 = \bar{V}_2/V_1$	V_0 = Mean income of an active person in the agriculture/mean income of the working personnel
$C_L = r_1 \cdot V_B$	C_L = Purchasings of houses by the population r_1 = Weight of the houses purchasing from the total of money incomes
$C_{PT} = r_2 \cdot P_a$	C_{PT} = Purchasings on the peasants market r_2 = Coefficient: purchasings from the peasants market/global farming production P_a = Global farming production
$E_B = r_3 \cdot V_B$	E_B = Population's money savings r_3 = Population's money savings from the total of money incomes
$C_{MS} = V_B - (C_L + C_{PT} + E_B)$	C_{MS} = Purchasings of commodities and services
$C_S = r_4 \cdot C_{MS}$ $C_M = C_{MS} - C_S$	r_4 = Coefficient: services/purchasings of commodities and services C_M = Purchasings of commodities C_S = Purchasings of services
$D_{t+1} = D_t + (D_t \cdot r_5)$	D_1 = Commodities sales volume (in the prognosis year) r_5 = Coefficient: purchasing sof commodities/commodities sales volume

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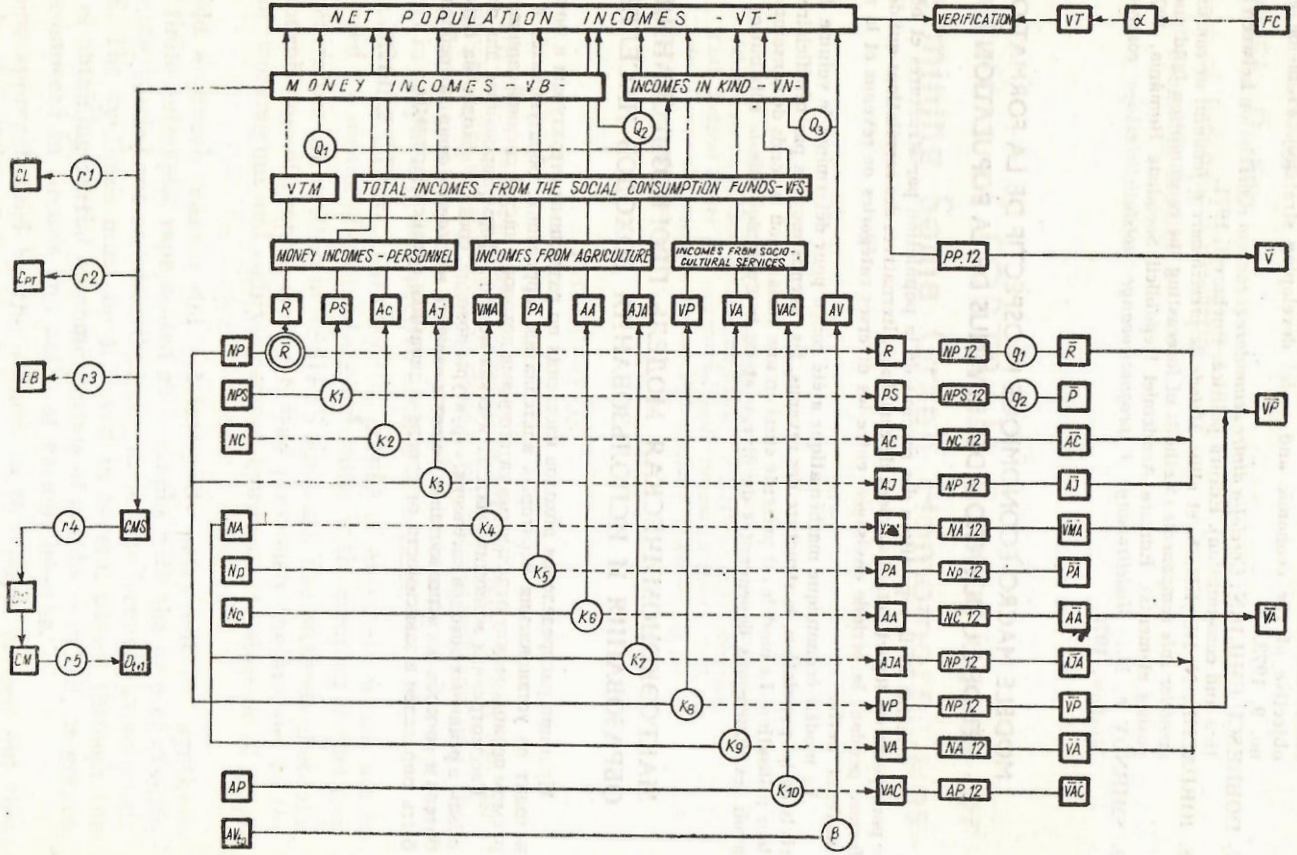
Schematic diagram of the model regarding the formation and utilization of the population incomes in correlation with the real wages



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MODELE MACRO-ECONOMIQUE PROSPECTIF DE LA FORMATION ET DE L'UTILISATION DES REVENUS DE LA POPULATION

Le principe de la répartition des revenus de la population par structures et bénéficiaires a pour point de départ l'établissement de certaines alternatives des corrélations qui devraient se former pendant la période envisagée, entre les diverses catégories de revenus et la rétribution moyenne nette.

Le modèle économique mathématique a été conçu pour déterminer le volume des revenus réels de la population, la structure des revenus, les revenus moyens par bénéficiaire, ainsi que leur utilisation. Le modèle est présenté aussi en une variante où le fonds de consommation peut avoir les dimensions dépendantes du niveau et de la dynamique de la rétribution moyenne.

МАКРОЭКОНОМИЧЕСКАЯ МОДЕЛЬ ПРОГНОЗИРОВАНИЯ ОБРАЗОВАНИЯ И ИСПОЛЬЗОВАНИЯ ДОХОДОВ НАСЕЛЕНИЯ

Принцип распределения доходов населения по различным структурам и потребителям исходит из установления некоторых альтернатив корреляций, образующихся в прогнозируемом периоде между отдельными категориями доходов и чистой средней зарплатой.

Рассмотренная экономико-математическая модель, сформулированная для определения объёма реальных доходов населения, структуры доходов, средних доходов на одного потребителя и способа их использования, имеет и вариант, в котором фонд потребления может быть определён в зависимости от уровня и динамики средней зарплаты.

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