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Consideration Concerning the National Economy Potential Reproduction

1. GENERAL CONSIDERATIONS

The problem of national economy potential reproduction, in the actual stage of development, of the world's economic crisis, of the shortage of energetic resources and raw material, of the food crisis, of the financial and currency crisis, of arms race and of the ecologic environment degradation, gets a new, very particular significance. The very concept of economic growth and development, as well as the concept of reproduction, acquire new dimensions and other meanings than the ones we were accustumed to.

Certainly, this problem became particularly actual and complex, and it needs new theoretical approaches in the wide framework of systemic and cybernetic conception, as concerns the concept of national economy as system, its sphere and structure, its model of functioning, the relation between national economy potential and reproduction process.

The conception according to which the national economy reproduction is expressed only through the production and reproduction of the total social product, of the national income or of the gross internal product, doesn't any longer correspond, in our opinion. The realities have serious limits and they misrepresent, in many cases, the real sense of development and of population's living standard. The problem of defining the concept of national economy potential reproduction, the methods of measuring this potential, of identifying the trends and ways of reducing the lags between rich and poor countries has an important significance for the evolution model of contemporary world, for the political stability, and the deep understanding of the necessity of introducing a new international economic order.

The manner in which the specialty economic literature, as well as the countries' practice approaches the problem of social reproduction and of eco-

nomic growth must be reconsidered because a series of constraints are not taken into account. Among these, we mention:

a) behaviour of primary natural resources, especially of those which cannot be regenerated and cannot be any longer considered as unlimited resources of economic growth:

b) implications of the ecologic environment in the national economic potential reproduction process;

c) volume of domestic activities within husbandries (households not included in the national production and which have a rather important weight in reproducing economy's material and human potential);

d) contradictory behaviour of external economic relations, between developed and developing countries, which, through nonequivalent exchanges, influence also the inside process of reproduction, in these groups of countries;

e) external financing sources, in the conditions of nonequitable international practices, which, through high interest-rate policy, become serious obstacles for the development of the developing countries.

All these point to the necessity of a realistic approach of the concept of reproduction and of economic growth, of the economic potential, for providing some problems of comparability of the real development level of national economics, and for deciphering their evolution trends.

In this sense, there arises the necessity of a system conceptual approach of national economy, of its structure and functioning mechanism, and the complex, contradictory process of economy's potential reproduction.

In this direction, we shall mention the contribution brought by the Romanian school of economic cybernetics, lead by Academician Professor MANEA MANESCU, to the definition of the wide concept of national wealth, of economy's potential and to the ways of using it for the economic amplification and growth, and for providing socio-economic balances.

2. CONCEPT OF NATIONAL ECONOMY SYSTEM AND STRUCTURE

2.1. National economy system

The specialty literature gives various meanings to the sphere of national economy system concept. Thus, in some cases, national economy is circumscribed, mainly, in the material production system, being detached of its social and ecologic sides. In other cases, national economy is treated as a mere functioning mechanism of material production, without taking into account the whole, material and human, potential of it.

In this sense, we shall be based upon the general theory, which defines the system as *a set of elements, organized in structures, having various connections in a continuous interaction, making up a distinct entity and having a certain purpose or well-determined function.*

This would mean by short:

a) system's integrity, which means that the whole has priority upon the components;

b) system's hierarchifying, i.e. its capacity of locating itself into various hierachies of coordination, supracoordination or subordination (suprasystem and subsystem), in terms of certain conditions;

c) selfstabilization of selfcorrection, meaning the capacity of the system to adapt itself to environment, in the new balance conditions;

d) system's selforganization, i.e. its capacity of creating new stable states, which may assure the survival of the system under the pressure of environment's sollicitations.

In the present case, we shall start from the national economy concept as system, in a wider sense, considered as socio-economic system, made up of the unitary whole of production forces, of production relations, and of superstructure.

We shall define the national economy system as a unitary whole, of particular complexity, made up of a set of elements, forming economic and social units — with heterogeneous activity — organized in structures, with multiple connections being in a continuous process of interconditioning, and having, a final purpose, determined by the fundamental system's function.

2.2. Criteria which are at the basis of the economic system structure

The delimitation of the national economy's system structure may be approached, from several points of view, in terms of the target proposed by the economic analysis.

In this sense, we may speak of certain *structure typologies*, in terms of the criteria which are at the basis of their construction, as for instance:

a) *nature and function of the composing elements* — human resources, accumulated resources — as a result of human labour — primary natural resources; resources expressing the creative potential;

b) *according to the labour's social division criterion* — structures by branches and subbranches of economy, activity sectors, units, working places (we have in view the distribution by economy branches of the national income, of the fixed assets, of manpower, of energy etc.);

c) *according* to the mode and character *of economic potential components reproduction* — regenerable and non-regenerable resource;

d) *according to the criterion being at the basis of the necessity of system's organization and management* — institutional or organizational structures with two subsystems: *in the vertical* (factory, enterprise, central, ministries), and *in the horizontal* — in territorial profile (commune, town, municipality, district);

e) *according to the criterion being at the basis of the identification of economy's correlation and proportions* — synthesis structures: economic, demoeconomic, territorial, of habitat (urban-rural), social, socio-professional etc.).

3. NATIONAL ECONOMY STRUCTURE

The national economy structure elements, in the first place, may be analysed *statically*, as an "invariant state" of not changing the main economy's variables. This approach model belongs to *economic statics*, through

which all laws and connections of the socio-economic systems are analysed, and investigated beyond the temporal factor. This knowledge and determination of the connections of static nature is absolutely necessary, for dynamically approaching reproduction, a fact for which economic statics represents the start point, the moment of economic dynamics.

3.1. National economy potential structure

The national economy potential, as expression of the national wealth, can be defined as a socio-economic category of maximal generalization, comprising, in natural units and money units, the material and spiritual resources, accumulated as a result of human labour, the primary natural resources which can be exploited, the human resources and their creative capacity.

3.1.1. *Structure of material resources accumulated as a result of human labour*

A. Human and assimilated production means

Material goods: 1. fixed assets in the material production spheres and in the non-material sphere; 2. assimilated fixed assets (bridges, highways, aqueducts etc.); 3. unfinished investments, ; 4. suspended investments; 5. raw-materials and materials stock (in production process and in circulation process); 6. reusable materials stock; 7. stock of exploitable biomass; 8. other material resources.

B. Financial-currency means

a) Gold stock (or of other precious metals); b) objects manufactured from precious metals, and jewels; c) strategic materials stock; d) stock of foreign currency and other foreign and assimilated payment means; e) other financial-currency means.

C. Spiritual means and values

a) *Stock of science and technology* — accumulated (inventions, patents, licenses, technical works).

b) *Stock of culture and civilization* (works of culture, literature, art, sculpture, architecture etc.).

c) Stock of information.

D. Consumption goods and means

a) Dwellings stock; b) stock of alimentary and non-alimentary consumption goods with the population: current, semidurable and durable (of long-lasting usage) consumption goods.

3.1.2. *Structure of exploitable primary natural resources*

A. Regenerating natural resources as area

a) *agricultural fund:* tillable, hayfields, pastures, vineyards orchards; b) forest resources; area covered by woods and regeneration class; state water

resources (areas covered by water); d) tourist pieces of ground; e) other grounds of the land resources.

a) stock of raw wooden mass in the woods; b) stock of sweet water: in natural regime, in fit-up regime, underground water (ground water table); c) cynegetic stock; d) piscicultural stock; d) reed stock; e) other regenerable natural resources.

B. Non-regenerating primary natural resources

a) *which are consumed in the production process* — primary fuel resources (coal, petroleum, natural and oil gas etc.).

b) *which can be reused in the production process* — ferrous ores, non-ferrous ores, non-metalliferous ores etc.).

3.1.3. *Structure of human resources*

a) *typologies by big groups of age:* **I-st age,** i.e. the young population, consuming but not producing; **II-nd age,** population of working age (16—60 year old women, 16—64 year old men) which produces more than it consumes; **III-rd age** — full age population (pensioners) of 65 year old and over, which consumes from what it produced during the active life.

b) *typologies of physical capacity* (population's health stock).

c) *typologies of intellectual capacity* (stock of public education); primary school, secondary school studies, technical studies and higher-school studies.

d) other structures (socio-professional, territorial, social-life environments, matrimonial characteristics etc.).

4. STRUCTURE OF THE NATIONAL ECONOMY FUNCTIONING MECHANISM

The national economy functioning mechanism provides the growth, development and reproduction of the socio-economic system. Its essential feature consists in the fact that the economy functioning mechanism, through its system of structure, organization, management and connections has a particular importance for the utilization of the national economy potential, the dynamics of the whole socio-economic activity, for accumulation orientation, directing of production, distribution, exchange, consumption, distribution by branches and sectors of material and human resources, economic efficiency, the very achievement of system's purpose.

4.1. Structures of national economy system

In this typology we shall include those functional subsystems of the economic mechanism which have the mission of providing the management, command, control, adjustment and balance of the system, in view of achieving its objective-function.

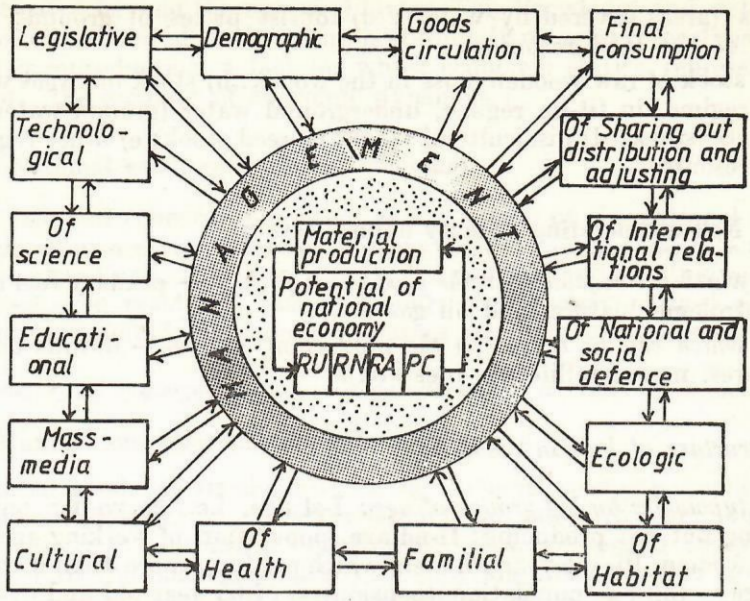


Fig. 1 Subsystems of national economy

4.1.1. *Management subsystem :* — it has the mission of organizing, orienting, adjusting the national economy through the decision-making-informational system as part of the management science.

4.1.2. *Production and material services subsystem* — it has as main function the transformation of the national — economy potential resources into new material values, which have a capital importance in maintaining and balancing the system.

4.1.3. *Legislative (juridical) subsystem* — it has in view to assure the normative framework of system functioning, of determining the juridical relations between subsystems and of those from their interior, with a view to providing the system functioning safety.

4.1.4. *Demographic subsystem* — it has the task of assuring the human resources reproduction under demographic aspect — marriage-rate, birth-rate, death-rate, natural growth increase of the population's general life potential and active life potential.

4.1.5. *Educational subsystem* — it pursues the general education of human resources, their upbringing, the raising of the professional training degree of the population, according to the national economy necessities.

4.1.6. *Cultural subsystem* — it achieves, in organized forms the raising of population's cultural level, through the so-called "cultural consumption": access to works of literature, art, music, sculpture etc.

4.1.7. *Health and social assistance subsystem* — it fulfills the function of maintaining a high health degree of the population, of maintaining the population's production capacity and a high potential of active life.

4.1.8. *Science subsystem* — it has the mission of investigating and exploring new possibilities of updating the system, of researching new fields of progress, science, thus becoming a remarkable production force.

4.1.9. *Technological subsystem* — it aims at assuring the applying in production of the new conquests of science, which would lead to the rise of system's performance, to the growth of production and labour productivity, of economic efficiency.

4.1.10. *Sharing-out, distribution and adjusting subsystem* — it has the task of assuring the sharing-out and the distribution of the national product, of the material and human resources by branches and sectors, of adjusting the national economy.

4.1.11. *Goods turnover (exchange) subsystem* — it provides the exchange of activities between national economy subsystems, thus assuring uniterrupted links between production and consumption.

4.1.12. *Mass-media subsystem* — it has the mission to provide the broadcasting of information in mass, for assuring uninterrupted communications within the systems.

4.1.13. *International relations subsystem* — it assures the exogeneous links of the system in the fields of commercial exchanges, of technical-scientific cooperation, of cultural exchanges and of political relations.

4.1.14. *Ecologic subsystem* — it pursues to assure the conservation and the non-alteration of the environment as a fundamental condition for maintaining the balance of the whole socio-economic system and of life quality.

4.1.15. *Habitat subsystem* — it deals with the distribution of human resources by environments of social life by modelling the balance between urban and rural population, within the general process of homogenizing.

4.1.16. *National and social defence subsystem* — it has the mission of assuring the integrity and sovereignity of the territory and national economy, of maintaining social order, so as to provide the necessary conditions for the system functioning.

4.1.17. *Familial subsystem* — it pursues to assure the social balance, the family being the basic cell of society, multiple functions: demographic, economic, social and of consumption.

4.1.18. *Final consumption subsystem* — it has the mission of carrying out the objective-function of the system, population's consumption of alimentary and non-alimentary goods, and of services.

Of course, according to the system theory principles, each of the above —mentioned subsystems may be organized in other subsystems, as for instance those of nation's wellfare, of social structure, of economic structures, of territorial structures etc.

It would also be possible, to further divide some subsystems, as for instance the demographic subsystem, which could be divided into masculine and feminine population, school population, demoeconomic population, active population, employed population etc.

5. NATIONAL ECONOMY POTENTIAL REPRODUCTION

According to Marxist Theory, the reproduction represents the dialectic unit of: a) production; b) distribution; c) exchange and d) consumption, known also under the denomination of phases or spheres of reproduction. "Looked at in its continous connection and in the continuous flow of its renewal, any social production process is hence, at the same time, a reproduction process" (Karl Marx).

Within the reproduction process, an uninterrupted series of functional connections is established. "These may be direct or indirect, simple or complex, intermediate, univocal or non-univocal dependency relations. These links may also be determinist or stochastic, and this has a particular importance, for the knowledge, management and adjustment of the system.

The feedback, which represents essentially the action of the inputs upon the outputs within the system, becomes more important for the study of complex cybernetic systems.

5.1. Constraints of reproduction

We shall lay stress on the fact that, in the present-day conditions of national economies development, the limiting of the reproduction concept only to total social product, to national income or to gross internal product, may become a direct contradiction of what we called national economy potential. Thus-on the basis of the arguments which will be examined further down-there may exist cases when some economies, especially the underdeveloped or the developing ones, with an apparently extended reproduction of the gross internal product or of the national income, may suffer through the feedback system, a non-reproduction or a narrowed reproduction of their economy's potential, with implications upon the medium or long-term reproduction process itself*.

All those are deciphered from the so contradictory mechanism, which characterized the world economy evolution.

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* For necessities of complex analysis, a new indicator was suggested: net internal product or net national income, which is calculated according to relation:

$$Q_n = Q_b - (A + Ce + Me + De)$$

where:

Q_n represents the net internal product or the net national income;

Q_b — gross internal product or gross national income;

A — armament productions;

Ce — losses from foreign trade;

Me — value of the degradation of the ecologic environment;

De — growth of the debit balance of external debt.

(See MIRCEA BULGARU "Considerations on the concept of net economic growth" (Romanian). In Studii şi cercetări de calcul economic şi cibernetică economică, no. 1, 1982, Bucahrest.

This is why, in our opinion, for characterizing the national economy potential reproduction model, one must introduce into calculation a series of constraints, as follows:

a) constraints concerning the *ecologic environment* — its degree of deterioration, as a consequence of the production process. We shall remind that, in some countries, the deterioration value of the ecologic environment lies between 8 and 10% from the created gross national production, and this proves clearly that a diminuation of the economic growth and of the national economic potential is essentially the matter;

b) constraints concerning *the degree of employment of the own natural resources*, and in the first place of the non-regenerable resources. A too strong "pressure" for attracting the latter in the economic circuit, can lead indeed to the growth of the gross national product, but at the same time it can bring about the diminution of the potential of these exhaustible resources, if the inputs, i.e. the discovery of new resources, are less than the outputs;

c) constraint concerning *the external financing sources* for development, when the credits are not repaid in due time and when the debit balance of the external debts increases — especially in the case of the developing countries. In certain cases, these unpaid credits, to which increased interests must be added, do diminish the value of the created national product and, in some cases, even the potential of resources accumulated as material gods;

d) constraint concerning the mechanism of the inequitable international exchange relations, when, through the negative action of the foreign trade, the gross internal product or the used national income is reduced as against the created one, which is also reflected in the reproduction process;

e) growth of the arms stock, within the accumulated potential of the national whealth, which diminishes sometimes appreciably the real economic growth and the real economic sense of the economic potential, in favour of the military potential. It is well known that, in the last 3 decades, the states of the world devoted between 5 and 8% of the resources available at a world's level for armings. At present, the world's military expenses are of about 600 billion dollars, which means more than the total investments carried out by the developing countries;

g) losses from the national economy potential, as a consequence of the destructions caused by the numerous military conflicts between certain countries, and by other random factors.

5.2. **Input-output factors and economy's potential**

5.2.1. *Input factors*

We shall consider as input factors all these complex factors, in natural, natural-conventional and value expression, which increase the country's material, natural and human potential, in a certain period of time.

Thus we shall include:

a) growth of the national product and of the national income, or of the gross national product or of the gross internal product, according to the methodology of the countries;

b) growth of the total and net product from the domestic activity, which has an important weight in the formation of the economic potential, and which is not included in point "a";

c) "value" of the non-regenerating primary natural resources, rediscovered and attracted into the economic circuit;

d) "value" of the non-reproducible primary natural resources, attracted into the economic circuit;

e) growth of the soil production capacity and of the utile substance content of non-regenerating resources;

f) growth of the population's public education and health stock, growth of the training degree;

g) growth of reusable materials, which must be turned to good account within the production process;

h) growth of the demoeconomic resources used in production in the examined time interval;

i) growth of the credit balance in the external economic relations;

j) growth of the "value" of the ecologic environment and the quality improvement of the latter.

5.2.2. *Output factors*

As we did with the input factors, we shall take into calculation also the output factors from the national economy potential.

Thus, we shall identify;

a) productive consumption of raw materials and materials, concretized in the end product;

b) consumption of fixed assets under the form of physical and moral wear, and of amortizations;

c) consumption of assimilated fixed assets;

d) outputs under the form of demoeconomic resources, of people in age of pensioning;

e) value of interrupted investments and of investment taken out from the production process;

f) Restricting non-regenerating primary natural resources;

g) reduction of the productive potential of some non-regenerating natural resources;

h) diminution of soil production capacity, of its fertility;

i) degradation of the ecologic environment;

j) losses from the national wealth, as a consequence of the impairment and degradation of material goods;

k) losses from the national wealth potential, as a consequence of destructions caused by military conflicts and random factors (floods, drought, hurricanes etc.).

l) increase of external employment balance;

m) final alimentary and non-alimentary consumption of population's goods and services.

Thus, in the present-day conditions of world economy's evolution, the reproduction process is developed under certain specific conditions, with cer-

tain constraints, fact revealing the necessity that the natio nal economy potential and the reproduction mechanism to be approached as a whole.

At the same time, we have to take into calculation and to analyse all the economic, social and political subsystems, with priority for the material production system. The complex reproduction requires to calculate all the factors contributing to production both the endogeneous factors and the exogeneous ones, the factors of the ecologic environment and of the external economic changes, respectively. At present, none of the reproduction models can anylonger be worked out separatelly from the natural resources behaviour, especially of those ones which are non-regenerable, exhaustible. In a last analysis, the reproduction of the national economy potential means the reproduction of a certain production structure in zoning the consumer goods which to assure the growth of life quality and of population's material and cultural standard for a long time horizon under the conditions of an economic-social equilibrium state.