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"Nowadays cybernetics has an increasing importance in the management of industrial and economical processes, in reducing the human effort and in increasing the special productivity of man's work, in the overall progress of mankind".

NICOLAE CEAUȘESCU

from the Message addressed by the President of Socialist Republic of Romania to the Third International Congress of Cybernetics and Systems Bucharest, 1975

Economic Space and Economic Time Systemic Approach

Scientific socialism, the most authentic revolutionary doctrine of the working class has outlined the dynamic propelling role of production forces development, of production social relations corresponding to each production type in society, to each hystorical stage.

Based on the scientific method of revolutionary knowledge and action, on dialectic and hystoric materialism, on the social practice, the Romanian Communist Party has substantiated in its political programme the necessity of positioning the complex process of achieving the many-side developed socialist society and the transition to communism within the hystorically concrete spacial and temporal conditions in Romania.

Nicolae Ceaușescu, President of Socialist Republic of Romania, General Secretary of the Romanian Communist Party points out that: "starting permanently from the generally valid truth, from the principles of revolutionary concepts about world, nature and society, one must act

towards their application into life, by taking into consideration the hystorical, social and national realities in our country"[1].

The analysis of the cybernetic-economic systems and subsystems of the connection between them, of the specific activities taking place inside them, as well as the overall process of the planned, social-economic growth takes into account the position of all the phenomena in space and time. Thus, the concepts of "economic space" and "economic time" are basic categories of the economic cybernetics.

1. The concepts of "economic space" and "economic time"

The concept of economic space is a generalized representation of the characteristics of the cybernetic-economic systems, the reference medium of their evolution. The economic space defines the area of the activities performed by the cybernetic-economic systems and subsystems, reflecting the processes and phenomena connected to their behaviour and functions within the economic mechanism.

In this light the concept of "*national economic space*" synthesises the defining characteristics of the general cybernetic system of the national economy, the reference medium of its movement in the complex process of economic planned growth. The national economy space reflects the totality of the phenomena taking place inside the mechanism of the national economy, of the relations and interdependences formed between the components of the general cybernetic system of the national economy in the process of its development. The coordination of the national economy space reflects, through the parameters characterising the process of the optimal, balanced and proportional economic growth, the results of all economic activities carried out by the components of the general cybernetic system, and also their increase potential into a fixed time period.

The main characteristics of the space of the national economy are synthesised by the fact that it is unitary and indivisible — which is an expression of the national will, of the unitary national plan of development, of the national independence (Fig. 1).

The category of *economic time* — generalized image of the duration of the economic processes, of the intervals between them — is strongly connected to that of economic space. The category of economic time reflects the totality of the succession or simultaneity relations of the economic processes, the durations, the rhythms of the activities taking place in the cybernetic-economic systems, synthesising the dynamics of the economic-social development.

One must underline the fact that *there is a perfect osmosis between the concepts of cybernetic-economic system, national economic space and economic time*; none of them can be conceived without the others. This thesis represents the application in economy of the materialist-dialectic concept which states

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1) Nicolae Ceaușescu: "Speech addressed to the staffs Conference in the field of social sciences and political education". Editura Politică, 1976, pp. 15.

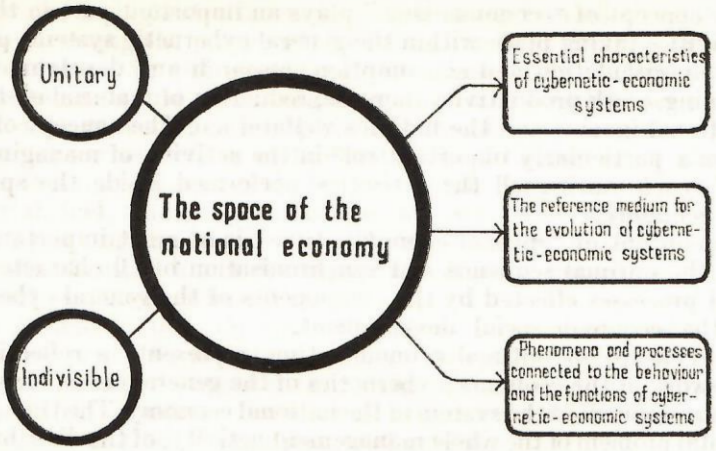

Fig. 1

the mutual dependence existing between the general concepts of space, time and matter movement. Referring to the problem of space and time Fr. Engels shows : "it is understood that both forms of matter existence are nothing without matter, they are only empty representations, abstractions existing only in our mind"[1].

The emphasis of the dialectical unity existing between the concepts of economic space and economic time, the action of considering them as fundamental forms of the existence of the cybernetic-economic systems, represents a fundamental, theoretical, practical and methodological premise of the economic cybernetics.

The spatial-temporal view over the cybernetic-economic systems has a great gnostic value, allowing the emphasis of their laws of movement, of the structure of the processes related to the optimal, balanced and proportional growth.

Referring to the necessity of spatial-temporal view over all phenomena and processes of nature and society, Fr. Engels shows in "Anti-Dühring" that the basic forms of any existence are space and time and an existence outside the time is an absurdity as great as the existence outside the space[2].

The time concepts plays an important part in the entire work of scientific socialism' creations. Showing that the work is " the substance creating value", K. Marx outlined in the very first pages of the "Capital": the work quantity itself is measured by its duration and in turn, work time has its measurement units, such as hours, days, etc.[3].

Karl Marx in "The Bases of Political Economy Criticism" shows: the work time or the work quantumum is the measure of value — this fact meaning that the work measure is the values measure.

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[1] Fr. Engels: "Nature Dialectics", Editura Politică, Bucharest, 1954, pp. 217.
[2] Karl Marx. Fr. Engels: "Works", vol 20, Editura Politică, Bucharest, 1964.
[3] Karl Marx, Fr. Engels: "Works", vol. 23, Editura Politică, Bucharest, 1966.
[4] Karl Marx: "Bases of Political Economy Criticism", vol. II, Editura Politică, Bucharest, 1974.

The concept of "economic time" plays an important part in the analysis of all activities taking place within the general cybernetic system: production, distribution, circulation and consumption, research and development, labour force training, work productivity increase, reduction of material costs, increase of the national income and the nation's welfare, a.o. The concept of economic time plays a particularly important role in the activity of managing, organizing and synchronizing all the activities performed inside the space of the national economy.

The concept of "optimal economic time" is of great importance since it considers the optimal sequence and synchronisation of all characteristic activities and processes effected by the components of the general cybernetic system of the economic-social development.

The concept of optimal economic time represents a reflection within the framework of the economic cybernetics of the general law of time saving — the precious resource of the system of the national economy. The time saving is a fundamental problem of the whole management activity, of the distribution of the nation's time fund on branches, subbranches and products so as to ensure the optimal, balanced and proportional growth of the entire national economy.

Karl Marx has devoted a special attention to the problem of time saving, to its role within the planned economy, showing that each production type corresponds to a time saving and to a specified work productivity.

"Both as an individual and as a society, all aspects of development, of consumption and activity depends on time saving. Any economy, is finally reduced to time savings. The society has to adequately share its time in order to achieve a production corresponding to its needs. The individual too has to adequately share his time in order to obtain knowledge in adequate proportions or to meet the needs of his activities".

Time saving — Karl Marx further outlines — as well as the planic sharing of work time among several branches of production are in fact the first economic law of a society based on collective production. They become laws even in a much higher degree[1]. Time-production ratio is denominated by the notion of work productivity.

The concept of economic time is directly tied to the *national time fund and its productive force.* Expression of the national time fund, the nation's work force potential and the efficiency of its use are elements which should be taken into consideration when designing the trajectories of optimal growth of the cybernetic-economic system in the space of the national economy. Therefore, one of the essential problems of the act of management of planning is the elaboration of the controls which place and maintain the general cybernetic system of the national economy on trajectories ensuring the achievement in the shortest time of the objectives of the rapid progress of the whole economic-social life of the country.

Under these circumstances a permanent care must be shown, at macro as well as at microeconomic level in order to use in the best manner the national time fund, to increase the work productivity by rationally distributing the work resources on branches, subbranches, groups of products, services,

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[1] Karl Marx: "Bases of Political Economy Criticism", vol 1, Editura Politică, Bucharest, 1972, pp. 107—108.

by using with the highest efficiency the labour force in all the regions of the country, by training the personnel, by increasing the labour technical endowment, by introducing and expanding the advanced technologies, by improving the production and labour organisation in all sectors of activity.

The achievement of the optimal economic time requires the saving of the live labour as well as of the materialized labour, especially by using with the maximal efficiency of the production capacities, by reducing the raw material, fuel, energy consumptions, by using replacements for expensive materials, by saving the labour force. The rapid use in the production activity of the results of research and development is of great importance in achieving the optimal economic time (Fig. 2).

The economic time, *the optimal economic time* respectively, represents a unity characterised by diversity, each component of the system of the national economy having its specific time. The optimal economic time varies as a function of the economic branch and subbranch, of the type of products or services, of the kind of the considered activity.

As exemple, in industry the optimal economic time is different from that in agriculture or in building activity. Also, within the industry, the optimal economic time is different, function of the kind of products and of the activities performed within each sector. The technologies required, for example, in the chemical industry need much less time than in the shipbuilding industry. The economic time, i.e. optimal economic time outlines the sequence and simultaneity of economic processes proper to the cybernetic economic system and sub-system in the national economy space.

The notion of optimal economic time must be analysed in relation with the strategy and tactics of economic-social development. A brilliant example of this point of view is the strategy and tactics of economic-social development adopted by the Romanian Communist Party shown by the development forecast and five-year and yearly plans.

The optimal economic time specific to each cybernetic-economic system and subsystem is connected by multiple and complex feedforward and feedback connections which ensures the synchronization of the general optimal time, the use with maximal efficiency of the nation's time fund.

The concept of economic time plays an important part in the process of the predicted reflexion as an economic basis of the scientific forecast. Therefore the concept of "economic time" has a major importance for the design of the trajectories of the economic growth, for forecasting and elaborating long term programmes and plans.

Thus, one considers in the strategy of social-economic development set up in Party programme that over the duration of several five-year plans the many-side socialist society will be possible built; during this time our country will attain the level of developed countries from an industrial point of view. This strategic objective was the deciding element for adopting year 1990 as an horizon of forecast studies in most fields of activity.

Of course, a longer time horizon has been chosen when other factors (biological, natural) occur, as in the case of population growth forecast (horizon—year 2010).

The experience of various countries concerning the plan elaboration has proved that a five year period represents an appropriate interval for the

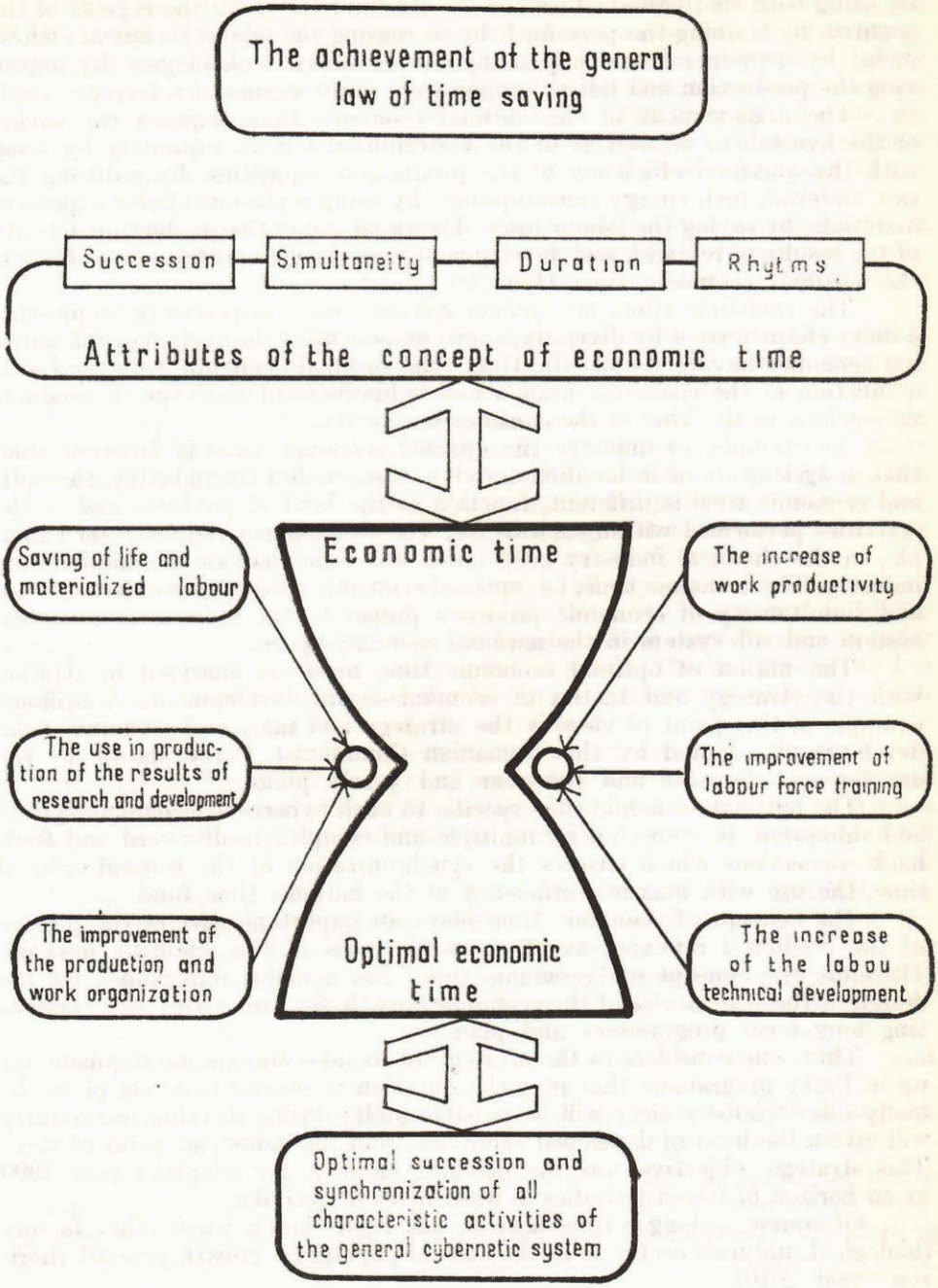
The achievement of the general law of time saving
Succession
Simultaneity
Duration
Rhytms
Attributes of the concept of economic time
Economic time
Saving of life and materialized labour
The use in production of the results of research and development
The improvement of the production and work organization
The increase of work productivity
The improvement of labour force training
The increase of the labou technical development
Optimal economic time
Optimal succession and synchronization of all characteristic activities of the general cybernetic system

Fig. 2

specification of the ways and the means of achieving the strategic objectives, of the detailed distribution of tasks for all domains of activity, for the whole economy, the branches, subbranches, products and groups of products and in territorial profile, for the fulfilment of the programmes concerning the increase of the standard of living.

Operative management of economic growth processes is ensured by yearly plans detailed by quarters and monthes for certain sections — which improve the planning mechanism in our country. Economic-space — economic-time symbiosis is synthesised by unitary national plan of country's economic-social development (Fig. 3).

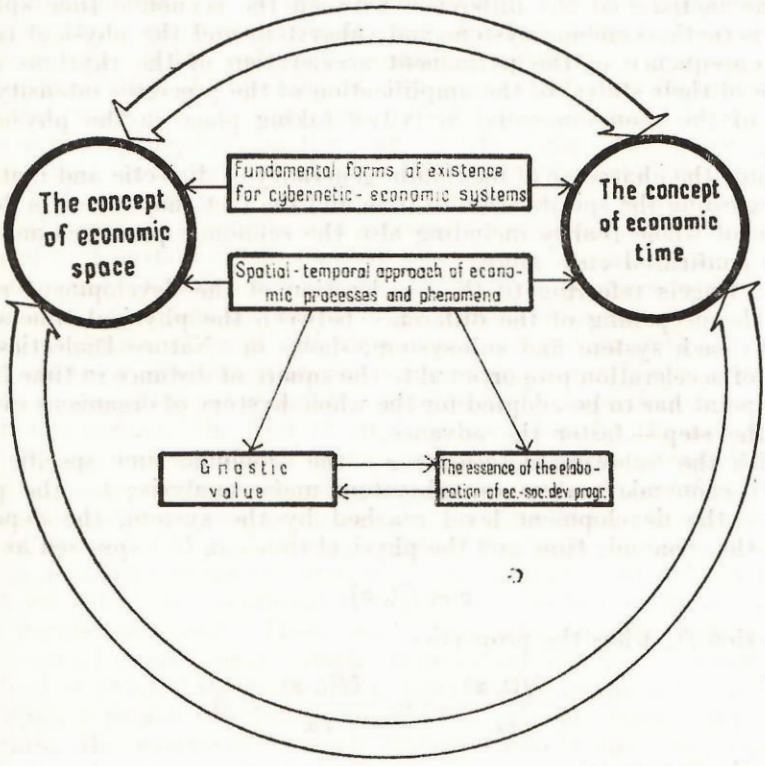

Fig. 3

When emphasising the phenomena related to the process of optimal growth of the cybernetic-economic systems to their evolution inside the space of the national economy, one must show that, dynamically, the economic time reflects an increasing density of production economic-social activities taking place over a time period, therefore an amplification of the work productivity.

The productive force of each unit of economic time growths permanently gains a greater and greater value as result of the technological advance, of the increase of the social division of labour. In this way, following the

general increase of the work productivity, a unit of economic time corresponding, for example to the year 1978 has a much larger value, i.e. productive force, than a unit corresponding to the year 1950. Thus the qualitative differences between the economic time and that shown by the calendar, between the economic time of the year 1978 compared to that of the year 1950 are emphasized.

The fast changes induced by the contemporary technical-scientific revolution, by the amplification and diversification of the activities performed inside the space of the national economy have a larger and larger contribution to the increase of the difference between the economical and the physical time recorded over various periods.

The increase of the difference between the economic time specific to each cybernetic-economic system and subsystem and the physical time is a direct consequence of the permanent acceleration of the rhythms and the sequence of their states, of the amplification of the processes intensity, of the density of the economic-social activities taking place in the physical unit of time.

Thus, the character of maximum generality of dialectic and materialism thesis regarding the specification of time and the fact that time is a definying attribute of whole reality including also the economic processes and phenomena is confirmed once more.

Fr. Engels referring to the acceleration of the development rates, in fact to the deepening of the difference between the physical time and that proper to each system and sub-system, shows in "Nature Dialectics" that: the law of acceleration proportional to the square of distance in time from the starting point has to be adopted for the whole hystory of organisms evolution. Higher the step — faster the advance.[1)]

With the following notations: e — the economic time specific to the cybernetic-economic system or subsystem under analysis; t — the physical time; α — the development level reached by the system, the dependence between the economic time and the physical time can be expressed as

$$e = f(t, \alpha)$$

The function $f(.,.)$ has the properties

$$\frac{\partial f(t, \alpha)}{\partial t} < 0; \quad \frac{\partial f(t, \alpha)}{\partial \alpha} < 0$$

and the Hessian matrix

$$\begin{Vmatrix} \frac{\partial^2 f(t, \alpha)}{\partial t^2} & \frac{\partial^2 f(t,\alpha)}{\partial t \, \partial \alpha} \\ \frac{\partial^2 f(t, \alpha)}{\partial \alpha \, \partial t} & \frac{\partial^2 f(t, \alpha)}{\partial \alpha^2} \end{Vmatrix}$$

is positive semi-definite.

[1)] Karl Marx, Fr. Engels: "Works" vol. 20; Editura Politică, Bucharest, 1964, pp. 601.

The achievement of the optimal economic time in the development of all activities taking place in the national economy space is a fundamental condition in ensuring the optimal economic growth process, a basic task of each productive unit, of companies and corporations, of ministries and people's councils.

2. Basic elements in representing the space of the national economy

The process of the increase of the general cybernetic system of the national economy, as well as its components, are described by the dynamics of the state variable vector. Its components represent synthetic economic indices, the magnitude of which allows the full characterization, at each moment of time, of the cybernetic-economic systems.

The possibility of obtaining at any moment of time information concerning the state, i.e. the "position" of the system inside the space of the national economy depends on the way in which the *state space*, in other words the state variables, are identified for each cybernetic-economic system or subsystem. For the same purpose and on the basis of a relevant economic analysis the optimum number of parameters necessary to determine the position of each system in the space of the national economy, is established. The state space identification represents the first problem which must be solved in order to define the space of the national economy.

The evolution of each cybernetic-economic system in the space of the national economy, its transition from one state to another is accomplished under the action of the *input variables* which reflects the action of the environment on the system. The first of all decisions taken by the political body, for example in the case of cybernetic-economic systems representing production units, the main system inputs quantify the tasks derived from the unitary national plan, as well as the intensity of the flows, of labour force, raw materials, technology, fixed assets, information, financial flows, a.o.

The command-decision variables have an important role in the class of input variables; they represent the options of the management, command, control, regulation system. These result from the unitary national plan of economic-social development, which reflects the political strategy adopted in the field of optimal balanced and proportional economic growth. The command inputs represent the forces which direct the processes and phenomena determining the evolution of each system towards the convergence, the global optimal economic growth.

A second category of input variables is represented by those of *input-coupling*, produced by other systems operating inside the space of the national economy and through which the coupling between the considered system and the rest of the system is accomplished. For example, one of the important coupling variables for the goods production and services system is that which quantifies the intensity of the production fund flow, generated by the national wealth system.

The ensemble of the input variables defines from a cybernetic point of view the *input space*. Therefore, input state identification represents the second problem of the representation of the space of the national economy.

Cybernetically speaking, each input variable of a system represents in fact an *output variable* generated by another system. Through them the connections through which each system acts upon the other systems within the space of the national economy, is quantified. Therefore, the variables which quantify the magnitude of the production funds are input-coupling variables for the goods production system and, at the same time, output-coupling variables for the national wealth system.

The output variables, taken as a whole, define from the cybernetic point of view the output space; they can be divided into two large classes, namely:

— *information-type output variables*, characterising the trajectories of economic growth over the space of the national economy; through the economic data processing system they are applied to the management, command, control, regulation system;

— the *output — coupling variables* which quantify the action of each system on the other components of general cybernetic system of the national economy.

From the point of view of the economic cybernetics the input-output relation is essential for the evolution of each system inside the space of the national economy, as well as the relation between the taken decision and the obtained results. The fundamental elements of the system evolution are described by *trajectories over the output space.*

The relation between inputs and outputs quantify the global efficiency of the processes taken place within a cybernetic-economic system or subsystem. This relation is influenced by the system topological structure and its state variable magnitude, which reflects its level of development.

Starting from the elaborated analysis it results that *the cybernetic notion of national economic space is defined by the ensemble formed by the input space, state space and output space* (Fig. 4).

One notes by Φ the input space, by X — the state space and by ψ — the output space. The space of the national economy is defined by the *triplex* $\{\Phi, X, \psi\}$.

In this expression the concept of national economic space reflects the totality of values, relations and interdependences associated to the components of the general cybernetic system of the national economy, to all processes and phenomena taking place inside it. The triplex which defines the national economic space, containing the ensemble of the state variables of all components of the system of the national economy, includes also the parameter which quantifies the country's surface, i.e. the geographical space together with soil resources (agricultural land, forests, rivers, etc.) and the mineral resources (fuel, useful minerals, etc.), representing its elements.

Also, the variables quantifying the human resources (the active population, the population being in the process of training etc.), the fixed funds for production and services, the housing fund, the roads, the railways, the material stocks and reserves, a.o. represent components of the space of the national economy. The ensemble of production, of research and development

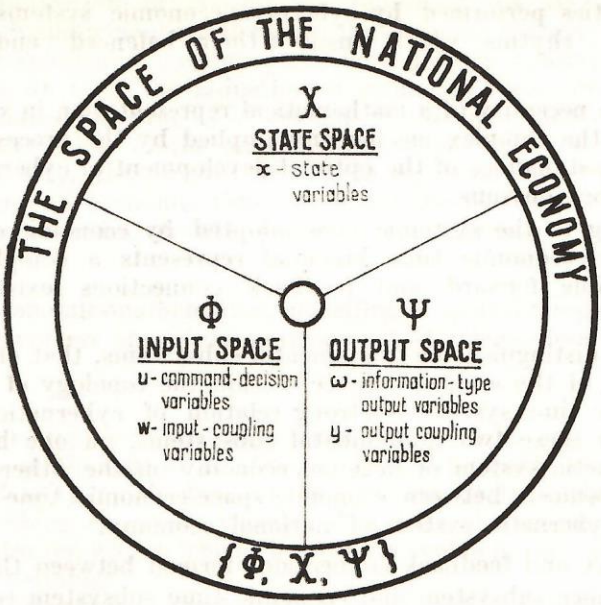

Fig. 4

processes, as well as all variables quantifying the intensity of the processes performed within the general cybernetic system are components of the space of the national economy.

At the same time, the variables quantifying the ensemble of the results obtained as result of the activities taking place within the cybernetic-economic systems and subsystems, representing their output variables, are elements of the space of the national economy.

The defining characteristic of the space of the national economy is its vertical structure (economic unit, section, place of work) and its horizontal structure (territorial, region, town, village, etc.).

The examples provided illustrate the great generality of the concept of national economic space, its encompassing character.

3. Economic space — economic time binomial — a complex cybernetic system

The cybernetic analysis performed in the preceeding paragraphes has emphasised the strong osmosis between the concepts of cybernetic-economic-system, economic space and economic time.

The space of the national economy $\{\Phi, X, \Psi\}$, through its three components, i.e. the input space, the state variable space and the output space, synthesises the ensemble of activities performed by each cybernetic-economic system and subsystem, their behaviour and function during the process of economic growth. In turn, the economic time, i.e. the optimal economic time reflects the totality of succession or simultaneity relations characteris-

ing the activities performed by cybernetic-economic systems, the optimal duration and rhytms which ensure their balanced and proportional development.

Thus the necessity of a mathematical representation in *spatial-temporal coordinates* of the complex mechanisms implied by the process of economic growth, by the dynamics of the optimal development of cybernetic-economic systems becomes obvious.

According to the systemic view adopted by economic cybernetics the economic space-economic time binomial represents a complex cybernetic system; multiple forward and feedback connections exist between its components.

One can distinguish the fundamental subsystems, that of the economic time and that of the economic space, within the topology of the economic space-economic time system. A strong relation of cybernetic isomorphism exists between these two fundamental subsystems, on one hand, and the general cybernetic system of national economy on the other hand. Figure 5 shows the osmosis between economic space-economic time binomial and the general cybernetic system of national economy.

The direct and feedback connections formed between the components of economic space subsystem and economic time subsystem reflect, in fact, the dialectic process of general cybernetic system development.

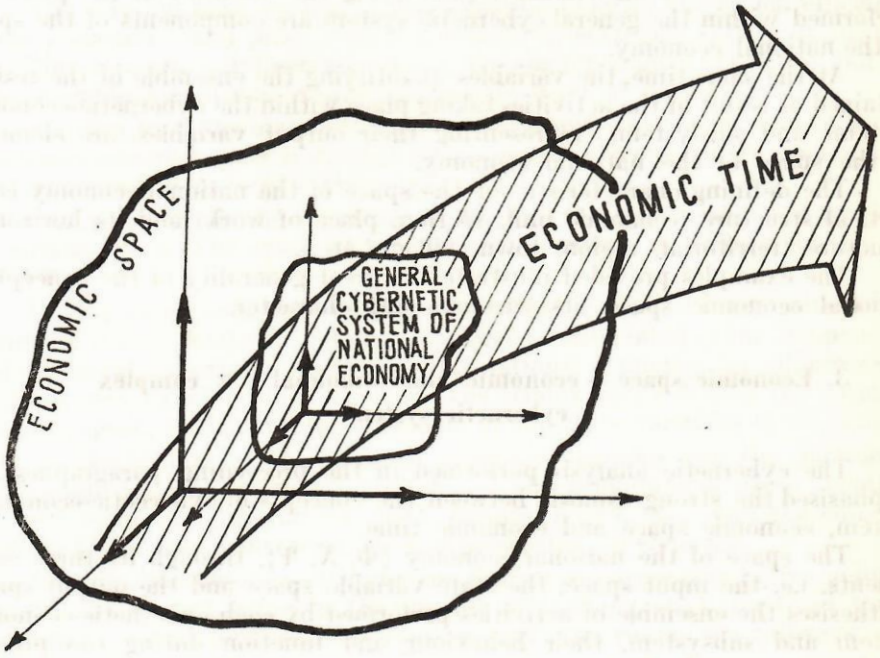

Fig. 5

The amplification of coordinates reflecting the development level reached by each components of the general cybernetic system; i.e. its coordinates in state space and output spaces acts directly towards reducing the economic time. In turn, the reduction of economic time directly influences the amplification of the process of developing the components of the general cybernetic system thus to the amplification of the economic space coordinates. In this way, the forward and feedback connection formed between economic space and economic time, the economic feedback which is fundamental to the economic growth process, is emphasised.

4. The economic-mathematical modelling in spatial-temporal coordinates of the process of optimal development of cybernetic-economic system

In order to represent the trajectories of growth for cybernetic-economic systems by a mathematical relation in spatial-temporal coordinates, it is necessary to identify, on the basis of the economic analysis, the mathematical relations describing the state variable dynamics characterising the system in hand, and also the way in which the outputs evolve in time under the action of the input variables.

The general economic-mathematical model, which synthesize in spatial-temporal coordinates the development process of a cybernetic-economic system comprises four large categories of *vectorial equations*:

— the equations of the state variables characterising the cybernetic-economic system. These are vectorial functions of the taken decisions and also of the input-coupling variables;

— the vectorial equation representing the restrictions to be obeyed by the cybernetic-economic system during the process of its development;

— the vectorial equation of the spatial-temporal dynamic of the information-type output variables which are transmitted to the management, command, control, regulation system;

— the vectorial equation of the spatial-temporal dynamics of the output-coupling variables directed towards the other components of the system of the national economy.

In order to produce the economic-mathematical model, which reflects in spatial-temporal coordinates the process of economic growth, one notes by T — the time horizon over which the trajectories of growth are designed, in other words the time over which the system is investigated.

Based on the economic analysis of the activities performed by the cybernetic-economic system, of their succesion and simultaneity relations during the process of economic growth, of their duration and rhythms, one can identify the model "strobe". i.e. *the measure unit for the economic time.*

The following notations are used concerning the spatial coordinates reflecting the development process:

u — decision variable vector. The vector u belongs to the input space, hence $u \in \Phi$

w — input-coupling variables vector, also belonging to the impact space, hence $w \in \Phi$

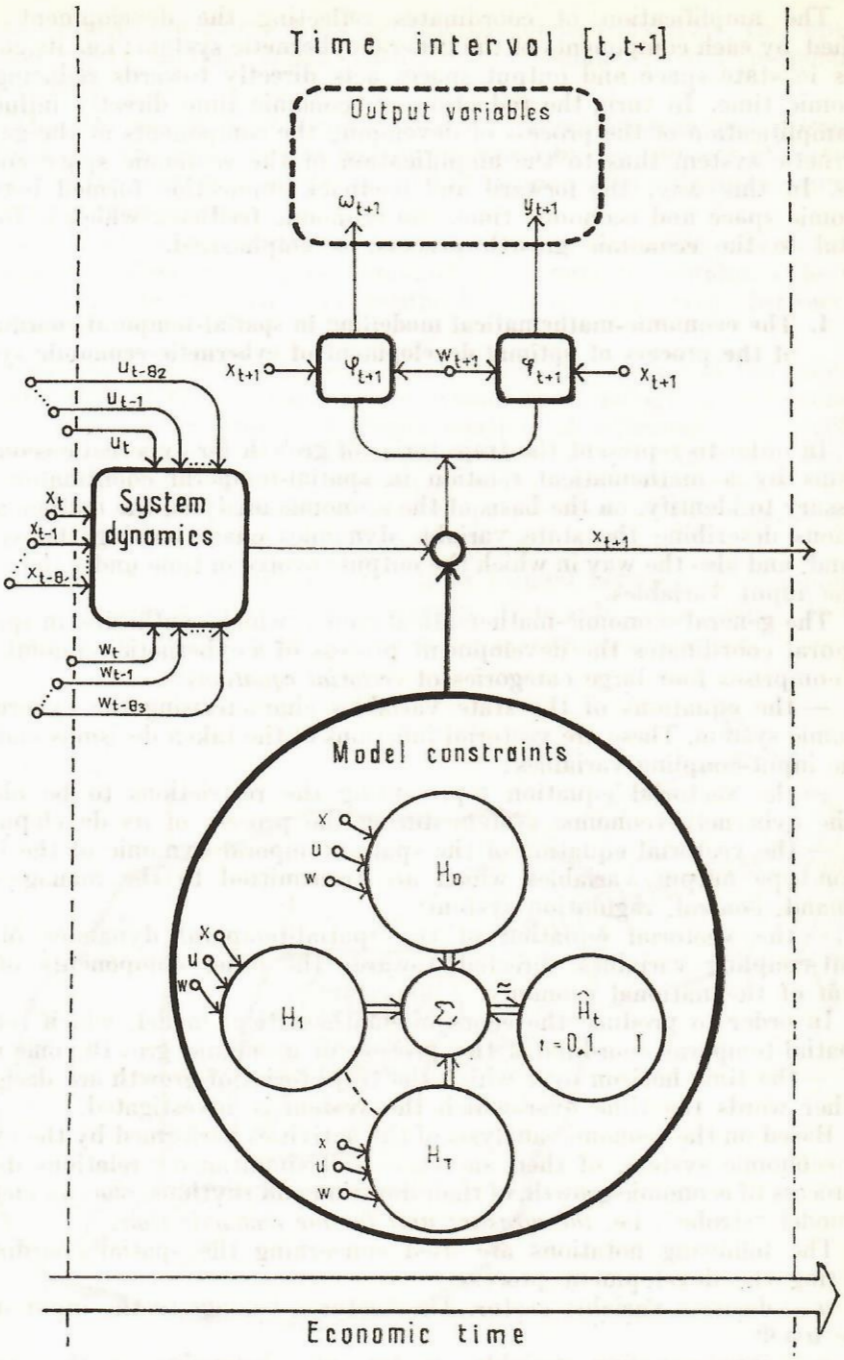
Time interval [t,t+1]
Output variables
ω_{t+1}
y_{t+1}
x_{t+1}
φ_{t+1}
w_{t+1}
φ_{t+1}
x_{t+1}
$u_{t-\theta_2}$
u_{t-1}
u_t
x_t
x_{t-1}
$x_{t-\theta_1}$
System dynamics
x_{t+1}
w_t
w_{t-1}
$w_{t-\theta_3}$
Model constraints
x
u
w
H_0
H_1
Σ
$\hat{H}_t$
t = 0,1, ... T
H_T
Economic time

Fig. 6

x — state variable vector, belonging to the state space, hence $x \in X$

ω — information-type output variable vector. The vector belongs to the output space, hence $\omega \in \Psi$

y — output-coupling variable vector, also belonging to the output spaces hence $y \in \Psi$.

The general economic-mathematical model which *reflects in spatial-temporal coordinates* the optimal development process of cybernetic-economic system has the following aspect: (see also Fig. 6).

$$x_{t+1} = F_t(x_t, x_{t-1}, \ldots, x_{t-\theta_1}; \; u_t, u_{t-1}, \ldots, u_{t-\theta_2};$$

$$w_t, w_{t-1}, \ldots, w_{t-\theta_3}); \quad t = 0, 1, \ldots, T-1;$$

$$\sum_{t=0}^{T} H_t(x_t, x_{t-1}, \ldots, x_{t-\theta_1}; u_t, u_{t-1}, \ldots, u_{t-\theta_2};$$

$$w_t, w_{t-1}, \ldots, w_{t-\theta_3}) \leqslant \widehat{H}_t$$

$$\omega_t = \varphi_t(x_t, u_t, w_t); \quad t = 0, 1, \ldots, T;$$

$$y_t = \xi_t(x_t, u_t, w_t); \quad t = 0, 1, \ldots, T.$$

The vector $\widehat{H}_t$ is established by the unitary management, command, control, regulation system and takes into account the constraints and the proportions to be obeyed by the modelled system during its process of growth.

The first equation of the aforementioned economic-mathematical model represents the spatial-temporal dynamics of the state variable vector. It describes the internal system behaviour, i.e. the way in which the system state at $t+1$ depends on the time sequence of the states at $t, t-1, \ldots, t-\theta_1$, on the decision parameter vectors at $t, t-1, \ldots, t-\theta_2$, and also on the magnitude of the input-coupling variable vector at $t, t-1, \ldots, t-\theta_3$.

The vectorial functions $F_t(\cdot)$ reflecting in a mathematical form the systems spatial-temporal dynamics, are identified on the basis of the methods elaborated by the economic forecast.

The second vectorial relation of the model describes the constraints to be obeyed by the system during its growth process. The constraints quantify the decisions received from the management, command, control, regulation, as well as the intrinsic system characteristics.

One should emphasise that, in order to achieve an overall view over the complex process of the system development, the constraints must encompass the entire time horizon over which the system is analysed; by expressing these constraints only for strobe period one cannot produce an appropriate perspective of the process. Obviously, constraints for particular system components may be considered over subintervals of the economic time interval for which the trajectory of the system growth is designed. The mathematical description of the constraints to be obeyed by the cybernetic-economic system during its development process allows the separation within the space of the national economy of its zone of accessibility and also of that of growth.

The third vectorial relation of the economic-mathematical model describes the information transmitted to the management, command, controll regulation system, and the fourth relation quantifies the spatial-temporal dynamics of the system output-coupling variables.

Delayed variables occur in the designed economic-mathematic model due to the fact that, for some cybernetic-economic systems, as a function of the specific activities performed by them, the size of state variables at moment $t + 1$ depends on the size of state variables and on that of decision variable, at moment t and also on their size during previous periods of time.

The spatial-temporal view over the optimal development process of the economic-cybernetic systems based on the materialist conception on the dialectics of movement represents an extremely efficient element in designing the optimal balanced and proportional growth trajectories. The deep understanding of the structures of each component of the general cybernetic system of the national economy of the interdependence between them and also of the systems spatial-temporal dynamics represents an essential condition for elaborating efficient methods and techniques aimed at foundating the design of economic growth trajectories, in establishing the efficient steps required to achieve and exceed the parameters set by the plans of country's economic-social development.

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