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The Social Product and National Income System

This system plays a major part in the topology and mechanism of the general cybernetic system of the national economy; it characterises the whole process of the expanding socialist production, its rate, proportions and correlations. Through its functions within the economic mechanism this system synthesises the quantitative and qualitative results of all production and services activities taking place within the space of the national economy. The system under analysis *removes* the components of the social product, *distributes* the newly created values and *directs*, based on the decisions taken by the management system, the use of all resources destined for the development of the national economy and the increase of the standard of living (Fig. 1).

There are many connections between this system and that of management; through them the major options of the general strategy are achieved; these *options* are *fundamental* for the fulfilment of optimal economic growth programmes. They concern changes of the structure by branches of the production, the reduction of the weight of expenditure in the social product, the optimisation of the accumulation-consumption ratio, the constitution and use of the national fund for economic-social development, the distribution of nvestments between branches of the national economy, the achievement of the programme of the increase of the standard of living, etc...

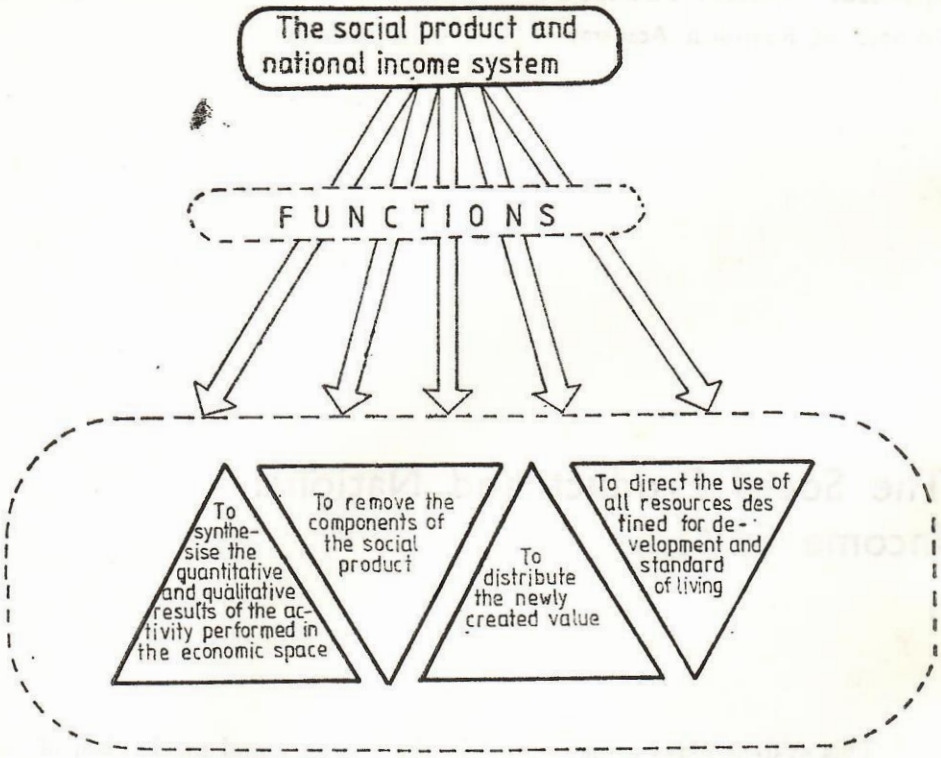

Fig. 1 — The social product and national income system

1. THE SYSTEM TOPOLOGY AND CONNECTIONS

The analysis of the role and functions of the social product and national income system within the economic mechanism shows the need to structure it into the following tightly interconnected subsystems: created national income; national income distribution; national income's final use; constitution and distribution of the national fund for economic-social development.

The main inputs of the social product and national income system are those from the goods production and services system, through which the connection with the research and development system is achieved, and also with other systems in the space of the national economy. One has to bear in mind the fact that the flow of inputs of the social product and national income system is composed of the totality of results obtained by productive branches (industry, agriculture, building, transport, etc.) in the process of producing goods and rendering services which are based on research and development.

There are numerous feedforward and feedback connections between the components of the social product and national income system; they are generated by the input and output flows of its subsystems. In this way,

for a given period of time, the output flow from the first subsystem (the created national income) is represented by the "shareable national income" within the space of the national economy, a flow that is the input of the next subsystem (the national income distribution system). As result of the mechanisms within this subsystem, the output flow, termed "final income", is generated. In turn, this flow constitues the input to the next subsystem, i.e. the final use of the national income subsystem, since its component parts (the accumulation and the consumption funds) represent, in fact, the effective use of the final income.

Within this framework, one has to note that the first three subsystems (concerning the creation, the distribution and the final use of the national income) reflect the national income stages of movement. They are different components but they are forms of behaviour of the same magnitude of the national income, as it will be shown when these subsystems are analysed.

One has to stress that the size of the created national income is decisive in intensifying the flows formed between these three subsystems. Therefore, the national income which is distributed and used for consumption and development depends — under the circumstances of a balanced commercial balance — on the magnitude of the created national income; this can be described by the *triad*;

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created → distributed → used for consumption and development.

The connections shown above represent, in fact, the expression of flows between the three subsystems concerning the national income movement.

The fourth subsystem of the social product and national income subsystem, i.e. that of constitution and distribution of the national fund for economic-social development, achieves through the sources of constitution a connection with the national income (final use) subsystem through the accumulation fund, and with the created national income subsystem through the sinking fund. The latter arises within the process of dividing the social product into its component elements (one refers to that part of the material expenses for production which is represented by the amortisation of fixed funds).

Since only a part of the national income destined for accumulation is a source of the national fund for economic-social development, its size is directly dependent on the value of the created national income and on the fundamental option concerning the degree of its use for accumulation and for consumption.

The social product and national income system achieves one of the crucial *feedback* connections for the dynamic character of the whole national economy (Fig. 2).

The optimisation of the proportion between the accumulation fund and the consumption fund, and the rate of accumulation and its effective use are ultimately the conditions of the dynamics of the created national income. One considers not only the magnitude of the rate of accumulation but also its structure, i.e. the part destined for productive accumulation, which pro-

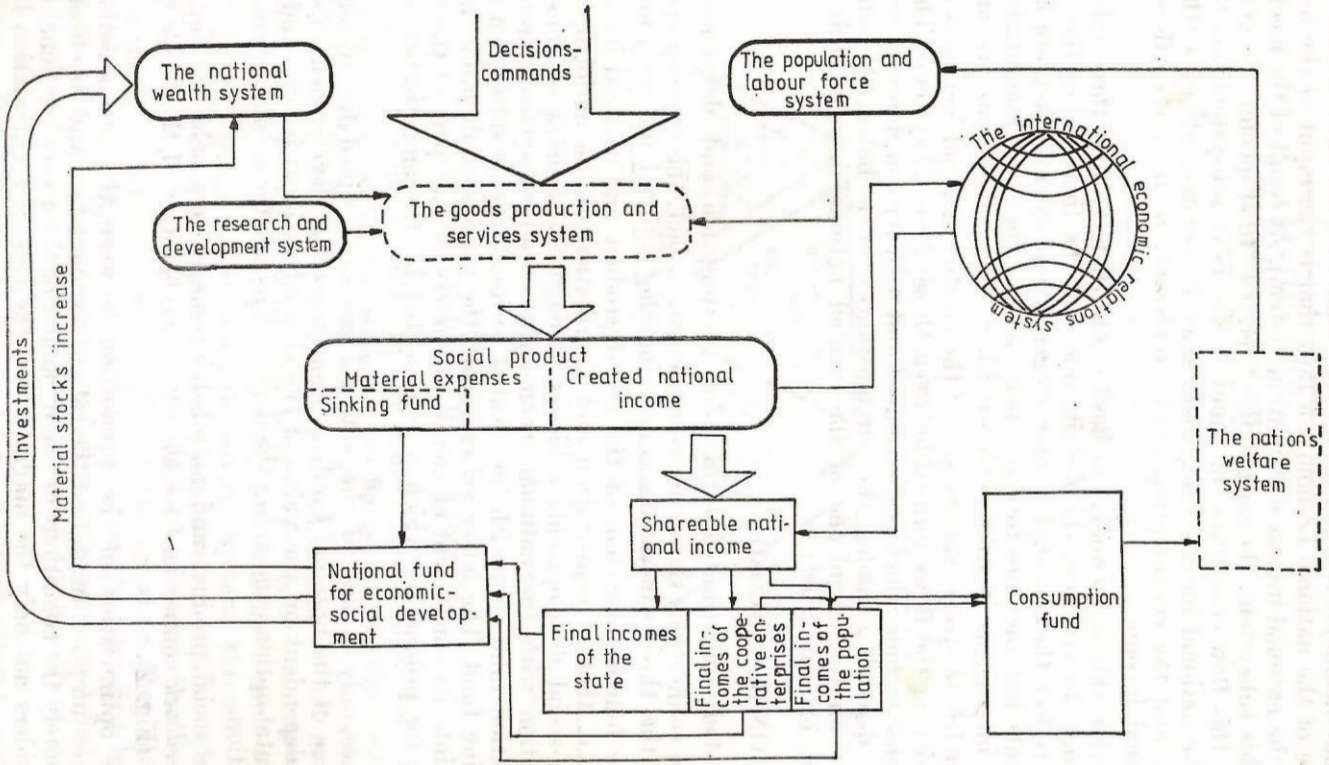

Fig. 2 — Feedback connections with other systems

vides the necessary resources for large scale production and for the continuous increase of the social product and national income.

The accumulation-consumption correlation is a fundamental *social command* of the management system that is decisive for the growth trajectories of all systems and subsystems in the space of the national economy, on which the increase of the national wealth and thus of the nation's welfare eventually depends.

The feedback between the national income (final use) subsystem and that of the created national income shows the existence of multiple interrelations between all the component parts of the general cybernetic system of the national economy. In fact, the magnitude of the national income is the vectorial resultant of all activities taking place inside the goods production and services system, where the country's social product is created. Here, essential components interact and mingle, relating to material flows inside this system and also to flows produced by other systems, such as that of the population and labour force, research and development and national wealth (through fixed funds and cash). In this way, the fusion between the labour force, its creative potential and production funds is achieved.

The social product and national income system and its subsystems provide the correlation between the sizes of material and financial flows and the harmonisation of their development. The representation by three subsystems of the national income movement ensures a reflection of the connections formed between the created national income and the national income (final use) subsystem.

The topology used for the social product and national income system enables one to emphasise the mechanisms taking place inside the national income distribution subsystem, which connects the creation and the final use of the national income. Its role is that of focusing attention on the complex process of the national income distribution characterised by several phases: primary distribution, redistribution and constitution of the final income of the state, co-operative enterprises and population. Only after passing through all these phases of the distribution process (phases which reflect the real flows of various categories of income by forms of property and by owners) does the mechanism start for establishing the necessary directions of using the national income according to the size of the final income of the state, co-operative enterprises and population. By the final income necessary for accumulation and consumption one ensures, in fact, the harmonisation of the mechanisms taking place within the created national income subsystem with those inside the final use subsystem, of material flows with value flows, i.e. of the movement of goods and services produced during a given period of time with the financial flows inside the economy.

2. THE CREATED NATIONAL INCOME SUBSYSTEM

This subsystem reflects the mechanism of creating the national income as a cumulative process of quantitative and qualitative results of activities performed by the goods production and services system, and is measured by the net production of each of its subsystem: industry, agriculture, building, transport, trade and other relevant branches and sectors.

The process of removing the social product is of vital importance in the dynamic evolution of the created national income subsystem, as well as for the entire system. There exists a need to ensure the most effective solution in order to increase the weight of the newly created value and then to reduce expenditure in the social product. This is achieved by a better use of material resources, the reduction of raw materials, fuel, energy consumption on each product unit, the rational use of production capacity, etc.

The output of the created national income subsystem, which is the input of the national income distribution subsystem, is termed "shareable national income" in order to emphasise some effects on the created national income when there is a difference between export and import. The shareable national income is obtained by combining the national income with the foreign trade balance as evaluated with internal prices.

If the import volume is greater than that of exports, their difference, calculated on the basis of internal prices, is added to the national income created in the country; if the opposite obtains, then their value expressed in internal prices is subtracted from the national income created during the time period under analysis. In this way, the influence of connections formed through the international economic relations system in the space of the national economy and that of the world economy is quantified within that of the social product and national income.

3. THE NATIONAL INCOME DISTRIBUTION SCHEME

The second subsystem emphasises the complex mechanism of forming the final income of the state, co-operative enterprises and population, and the successive phases of the flows converging towards the determination of its size.

In the first stage the process of national income distribution is characterised by *primary income flows* (wages, benefits, goods circulation taxes, etc...). These benefit from them who directly participate in the creation of the social product and national income within the goods production and services system.

In practice, the magnitude of the primary income is established differently for each branch of goods production (industry, agriculture, building, transport etc...), for each form of owernship and type of income. At the same time, on the basis of these elements, one can determine the magnitude of the required and surplus products.

The phase necessarily following the primary distribution, namely that *of national income redistribution* in order to ensure the operation of all components of the economic mechanism, is stressed inside the national income distribution subsystem. This stage of national income movement is achieved by the financial and prices system which plays a major part in the process of redistribution and in concentrating the multiple input-output financial flows from and to the population, productive units and social-cultural institutions; it represents a true centre of attracting and distributing these flows.

One can distinguish within this mechanism various forms taken by input financial flows to the population, which constitute the income receiv-

ed through the redistribution process (pensions, grants, children allowances, wages for civil servants, etc.); at the same time, one can see financial output flows from the population to the financial system (taxes, contribution for supplementary pension etc.). As a result of this process a separate redistribution balance for the state sector, cooperative sector and population is formed, representing the difference between the input flows and those of the income and expenditure.

4. THE NATIONAL INCOME FINAL USE SUBSYSTEM

The third phase of the national income distribution stresses the process of combining the primary income with the redistribution balance, thus forming the *final income of the state, co-operative enterprises and population.*

During the phase of forming the primary income the flows converge only towards those directly involved in the creation of national income, but in the phase of forming the final income the flows encompass all those taking part in social activities, therefore including those working in social-cultural institutions, civil servants etc... Thus the final income characterises the total of income flows obtained by the state, co-operative enterprises and population, following the primary distribution and redistribution of the national income.

These incomes form the output flow of the national income distribution subsystem and, at the same time, the input of the *national income (final use) subsystem.* The analysed mechanism, in the realisation of which the financial and prices system plays a major part, is presented in the balance of creation, distribution and final use of the national income (Table a).

The payments in the first of Table a reflect the branch participation in the social product and national income creation and also in their primary distribution between those directly taking part in its creation. The second part of Table a shows the national income redistribution and its final use (the constitution of the consumption fund and the economic-social development fund).

The connections between the final income and the use of the national income for consumption and acuumulation require, as an objective necessity, the achievement of a material structure of the social product and national income (production means and consumer goods) able to ensure a correlation with the volume and structure of the foreseeable use of the final income of the state's co-operative enterprises and population for accumulation and for consumption.

Thus the material form of the consumption fund must match in volume and in structure the goods required by the population. Also, the size and the structure of the accumulation fund implies a particular composition of the social product, (i.e. particular quantities of machines, equipment, building materials etc...). This emphasises the way in which the main connections between the national income (final use) subsystem and that of the created national income, and also those between the latter subsystem and the international economic relations system, are concentrated and harmonised through the exchange of material values.

Table a

A. *NATIONAL INCOME CREATION AND DISTRIBUTION*

BRANCHES WITHIN WHICH THE SOCIAL PRODUCT AND NATIONAL INCOME IS CREATED	Social Product	Expenditure	National income	National income distribution-primary distribution		
				State sector	Cooperative sector	Population
Industry	X_1	θ_1	Y_1	Y_{11}	Y_{12}	Y_{13}
Agriculture	X_2	θ_2	Y_2	Y_{21}	Y_{22}	Y_{23}
Building	X_3	θ_3	Y_3	Y_{31}	Y_{32}	Y_{33}
Transport	X_4	θ_4	Y_4	Y_{41}	Y_{42}	Y_{43}
Goods circulation	X_5	θ_5	Y_5	Y_{51}	Y_{52}	Y_{53}
Other branches	X_6	θ_6	Y_6	Y_{61}	Y_{62}	Y_{63}
TOTAL	$\sum_{i=1}^{6} X_i$	$\sum_{i=1}^{6} \theta_i$	$\sum_{i=1}^{6} Y_i$	$\sum_{i=i}^{6} Y_{i2}$	$\sum_{i=1}^{6} Y_{i2}$	$\sum_{i=1}^{6} Y_{i3}$

Table a

B. *NATIONAL INCOME REDISTRIBUTION AND FINAL USE*

	Primary income	National income redistribution			Final income of State's coperative enterprises and population	National income final use	
		Payments to the financial system	Payments from the financial system	Difference between payments received and made		Consumption fund	Development fund
The goods production sphere (creating national income)							
— state sector	Y_s^1	Q_1	H_1	Δ_1	V_1	—	D_1
— cooperative sector	Y_c^1	Q_2	H_2	Δ_2	V_2	—	D_2
Social-cultural services sphere							
— state sector	—	Q_3	H_3	Δ_3	V_3	—	D_3
— cooperative	—	Q_4	H_4	Δ_4	V_4	—	D_4
TOTAL POPULATION	Y_p^1	Q_5	H_5	Δ_5	V_5	C_5	D_5

The national income (final use) subsystem is linked with the nation's welfare system by the consumption fund, and with the national wealth system by the accumulation fund.

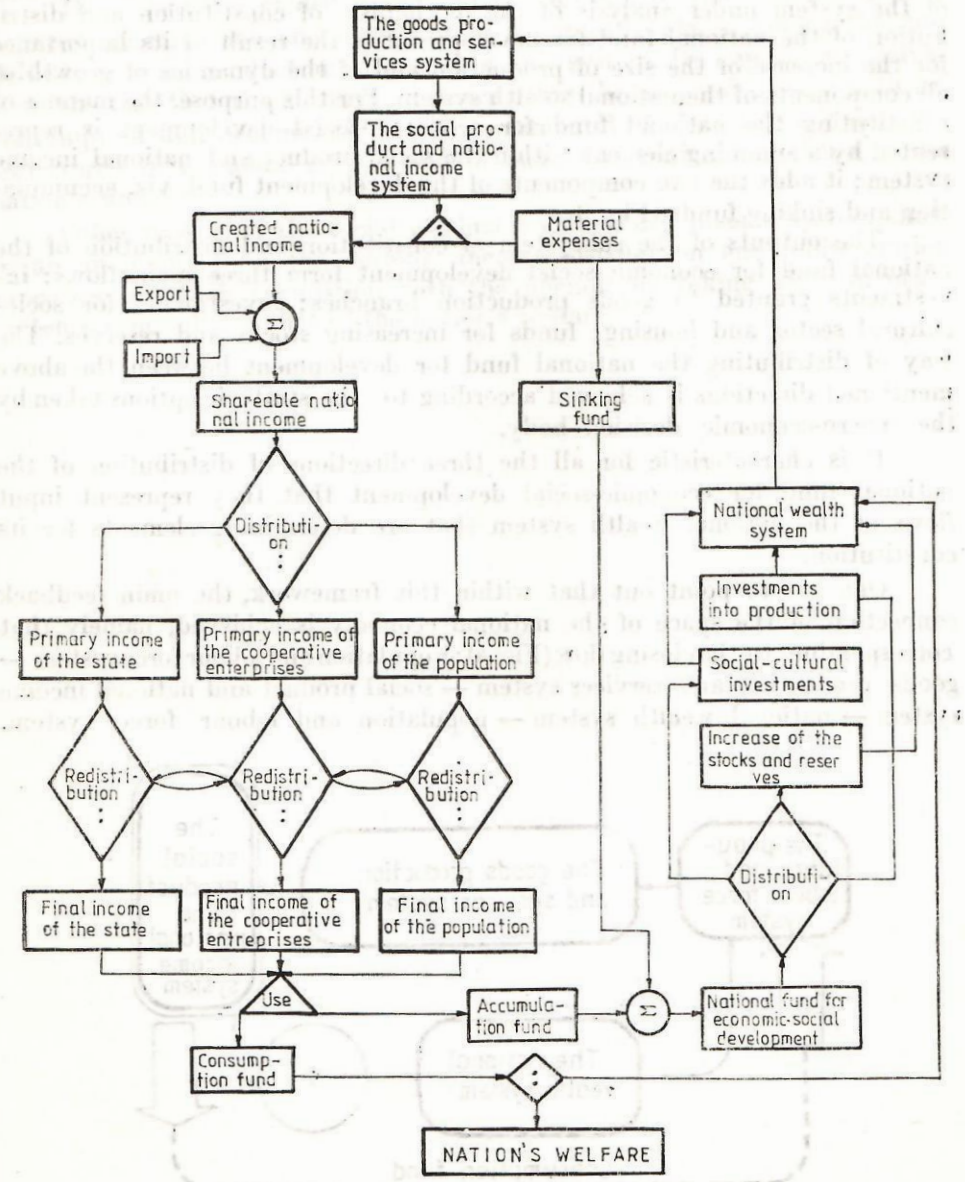

Fig. 3 — Connection between accumulation and national wealth

5. THE SUBSYSTEM OF CONSTITUTION AND DISTRIBUTION OF THE NATIONAL FUND FOR ECONOMIC-SOCIAL DEVELOPMENT

The strong connection between accumulation and national wealth is achieved by the subsystem of constitution and distribution of the national fund for economic-social development. The emphasis within the topology of the system under analysis of the mechanism of constitution and distribution of the national fund for development is the result of its importance for the increase of the size of production and of the dynamics of growth of all components of the national wealth system. For this purpose, the manner of constituting the national fund for economic-social development is represented by a summing element within the social product and national income system; it adds the two components of the development fund, viz. accumulation and sinking funds (Fig. 3).

The outputs of the subsystem of constitution and distribution of the national fund for economic-social development form three main flows: investments granted to goods production branches; investments for socio-cultural sector and housing; funds for increasing stocks and reserves. The way of distributing the national fund for development between the above mentioned directions is achieved according to the strategic options taken by the macro-economic decision body.

It is characteristic for all the three directions of distribution of the national fund for economic-social development that they represent input flows of the national wealth system that are determining elements for its constitution.

One has to point out that within this framework, the main feedback connection of the space of the national economy is achieved, namely that corresponding to the closing flow (Fig. 4): Population and labour force system → goods production and services system → social product and national income system → national wealth system → population and labour force system.

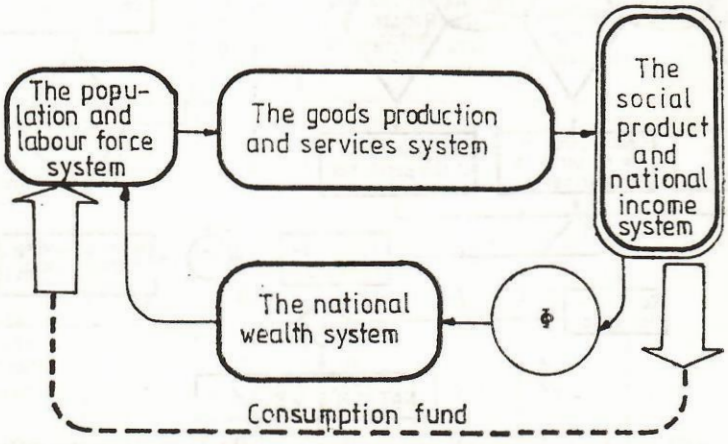

Fig. 4 — The main feedback connection.

This feedback connection refers to the flows of human and material resources going to the goods production and services system; here the production process takes place, the result of which is reflected by the size and structure of the social product and national income which, as it has been shown, is used for consumption and development.

The cybernetic model of optimal distribution of the national income between accumulation and consumption is centrally placed among the models of the social product and national income system. Its importance derives from the fact that the strategy of distributing the national income between consumption and accumulation is a fundamental element in designing the trajectories of economic growth and in increasing national wealth and the nation's welfare.

Other models of the social product and national income system show in an analytical form the national income distribution and redistribution processes and their correlation with the phenomena taking place in other systems, especially in that of the nation's welfare.