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THEORETICAL PROBLEMS OF INDUSTRIAL  
PLANNING  
Part I

Introduction  
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# THEORETICAL PROBLEMS OF INDUSTRIAL PLANNING

## PART I

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## Preface

It is the author's intention to give by the following memos, published in series, a certain outline upon the most important and theoretical questions of industrial planning.

Industrial planning itself as an ingredient of national economic planning, as the ingredient, I would like to say, cannot be dealt without considering some principles of national economic planning as a whole.

Thus, the first number of the projected row of memos is dealing with some general or basic ideas concerning industrial planning and its position within the system of national economic planning.

Particular attention has been paid, for these reasons, to the problem of proportions ruling within an economy. These proportions are objective ones, and - at least latently - ruling in every national economy, no matter what special order of society. The difference, however, which must be stated, is the fact that according to existing property relations these proportions are coming to the fore either spontaneously - in case of capitalist mode of production- or due to plans - in case of socialist relations of production.

This feature cannot be changed by the fact that all over the capitalist world efforts are being made so as to establish a certain system of national economic planning.

Neither the French system of planification, nor that of the Netherlands, of Great Britain, or whatsoever the system may be, is able fully to realize the necessary and national economic proportions, necessary so as to make social reproduction process go smooth.

National economic planning must be a comprehensive system of planning comprising planning of productive units, of branches etc., and including all the single steps of planning from bottom to top and the other way round as well. Such a comprehensive system, however, can only be materialized under uniform and social property relations.



Usually, it cannot be the right of a state to give orders to an enterprise not being in direct possession of the state concerned. The private owner, of course, can be asked, for instance, for acting up to the recommendations of the state - as it is being practiced in the French system of planification - but never can <sup>he</sup> be forced to observe these advices like direct orders.

On the other hand, no private enterprise can be compelled to publish reliable figures concerning its input and output, concerning technical research, etc. But these figures - a.o., of course, not to be mentioned in this foreword - are the most important preconditions for determining further economic development.

No private owner can be induced to produce goods prescribed by a state planning authority. Never can he be forced to invest according to state directives. A private owner is accustomed to relying on his own investigations and experiences. But - and that is the point in question - a private producer is only able to form an estimate of the *economic situation from his own and limited* stand-point; never from the point of view of national economic requirements.

This national economic situation can only be estimated by a central planning authority having an entire survey upon the economy as a whole. But under capitalist relations of production even a central planning authority would not be able at all to estimate this situation in the right way and to give proceeding from that reliable directives concerning investment and production, because of the mentioned lacking of reliable figures on input, output, etc. of the single enterprises, branches, a.s.o.

There is no doubt, the now applied systems of planning in capitalist countries ~~are~~ marked by some vantages compared with former times, when the whole national economy had been run spontaneously and production happened anarchically. Nowadays, the established planning centres by and large are able roughly to observe happening violations of proportions. They can, therefore, function as a kind of warning service, and can proceeding



from their analysis give certain recommendations; they are able to utter certain desires of the concerned country's government. But they are not able to run the national economy in such a way that the economic development could be going without any ups and downs. It is, so to say, a control "following at a trot" and not a real planning in our sense of the word.

Thus, when speaking about real planning of economic proportions we always bear in mind a national economy marked by homogeneous social property relations, at least signed by a strong and determining public sector within production and circulation as well, being - for repeating this - one of the most important preconditions for planning at all.



## O. Introduction:

Planning of national economy requires scientifically-based foresight. Economic plans can only be expected to represent effective implements for realizing economic aims, if these plans are drafted by taking into consideration the economic laws which are commonly determining economic development.

Therefore, the knowledge of these economic laws is one of the most important preconditions for planning .

Simultaneously, a scientifically-based investigation of technical questions is urgently required by economic planning. This so, because only on this strength the development of productive forces can be planned in the right way. That means, in connection with elaborating economic plans the knowledge of natural science has to be considered.

Therefore, such a difficult task, as represented by planned management of many thousands of enterprises and organs, the coordination of the work of all the single elements of economy, can only be solved by using a scientifically-based organization of planning.

Planning of a national economy means, to lead national economy in such a way and to coordinate the development of the single branches and spheres of national economy in such a way that the proportions, necessary for a frictionless running off of the social reproduction process, are ensured. Furthermore, manpower, physical and financial means for solving all the tasks set must be distributed in such a way that the most economical use of social labour is guaranteed.

By Prof. Fedorowitz, Warsaw, planning is, therefore, defined as follows:

Planning is the activity, aiming at :



- " a) establishing targets (aims) of economic character with the intention to implement them by coordinated economic and social actions,
- b) establishing or choosing means, necessary for the fulfillment of established targets,
- c) adjustment of targets and means in order to maximize the implementation of targets at a given level of disposable means".

And he continues<sup>2)</sup>

" ... planning does not include passive forecasting, deprived of any intension of the direct management of the economic life... planning cannot be considered a mere collection of different methods of establishing economic aims, of choosing means, and of their mutual adjustment; planning is an organisational activity, too, establishing links between different economic units, coordinating their economic decisions, and subordinating their activity to the achievement of general national targets. Therefore, the problems of economic planning and of management (economic administration) in a socialist economy are very strictly bound to each other in this meaning, that every pattern of the planning system is compatible with only one precise pattern of the management system and inversely".

In a way the same<sup>1)</sup> pointed out by Prof. Watkin<sup>3)</sup>, when saying that the tasks of the British planning authority, of the National Economic Development Council (NEDC), are represented by the following:

- 1 - the NEDC has to choose sensible, feasible targets, point<sup>2)</sup> to the advantages to be obtained from the attainment of these targets and suggest that many of the problems faced by the economy are avoidable through planning,
- 2 - to indicate what the obstacles to growth are,
- 3 - the NEDC has to offer from within itself and organizational framework through which some, if not all, of the major obstacles to growth can be removed,
- 4 - it must take the initiative in respect of alternative ideas as to how the high rate of growth required is to be attained.



But, as you see, only in a way the same is pointed out. Planning cannot be equal to planning. The character of planning, and that what we call real economic planning, depends to a high degree on the socio-economic structure of economy and society. Prof. Watkin is only talking about the aims of targets, which should be set by the planning authority. We however, are always and everywhere emphasizing that planning cannot be considered a mere collection of different methods of establishing aims, of choosing means, and of their mutual adjustment. Planning does not end in indicating the obstacles of growth, in offering ideas as to how major obstacles can be removed and as to how a high rate of growth can be obtained. Planning is, and I would like to stress this once again, an organizational activity, too, establishing links between different economic units, coordinating their economic decisions, and subordinating their activity to the achievement of general economic and national targets.

More in right, therefore, and somewhat nearer to truth is Gunnar Myrdal, a Swedish economist, when saying:<sup>4)</sup>

"A main purpose of every national development plan is to proclaim a decision to increase the total amount of investment aimed at raising the productive powers of the country, and to define the means by which this can be done.

The plan must determine this overall amount and must, in addition, determine the proportions of the capital to be allocated in different directions: to increasing overall facilities in transport and power production; to constructing new plants and acquiring the machinery for heavy industries, and for light industries of various types; to raising the level of productivity in agriculture by long-term investment in irrigation schemes, and short-term investment in tools, machinery and fertilizers; to improving the level of health, education and training of the working people, and so on."

And Myrdal goes on, making the important statement:<sup>5)</sup>

"To be practical and effective, the plan must not only be a general scheme, but must have this adequately worked out in detail directives



by careful planning of different sectors. And it must give instructions for the specific inducements and controls by which the realization of those directives becomes effected."

What Myrdal wants to express is that planning must be a comprehensive one, that it must be a general and detailed one simultaneously, and that it must be connected with control. But, and that is the crucial point, this character of national economic planning can only be realized under certain socio-economic circumstances, which are, again, determined by ruling ownership-relations.

At length, there can be observed the following property relations:

1. the public sector
2. the sector of co-operatives
3. the private sector, consisting of:
  - 3<sub>1</sub>. the capitalist sector
  - 3<sub>2</sub>. the sector of simple commodity production, i.e., small farmers, handicrafts, etc.

This structure is nearly the same in all the countries having reached a certain level of industrial development. The differences are only consisting in different balances of power between the single and mentioned strata.

For a planned economy the public sector is the most important one. Economic planning is not an end in itself. National economic planning represents a method for managing and directing national economy in accordance with national economic demands. Resulting from this, national economic planning renders necessary central planning authorities being entitled to give instructions and orders to subordinated organs and even to enterprises. This, however, is only possible in relation to nationalized enterprises. Over against private sector there are some certain limitations. They can be bound to a system of national economic planning, but not in a direct way, since private owners want to organize production process at own discretions. They usually want to determine kind, quantity and quality of production according to their own investigations of demand. State authorities are not allowed to set tasks to them. -That's from a superficial point



of view. Meticulously, we have to say, the possibility of planning results from the ruling economic laws, which are objective laws, acting outside and independent from human being's will. These economic laws, however, are determined by ownership-relations. And according to different ownership-relations within different orders of society different economic laws are acting.

Within the capitalist order of society private ownership relations are being prevalent marked by the existence of heterogenous enterprises being more or less isolated from each other, and producing, therefore, more or less isolatedly from each other. The motor of development, in such a case, can only be represented by the profit each enterprise is able to realize. And, thus, the production is being regulated by the law of value. That means, the regulation of capitalist production happens automatically and on the market, and, therefore, subsequently. Since that regulation cannot happen within production, but only subsequently on market, capitalist production is marked by a steadily disproportional development, what is equal to waste of time, waste of material, or waste of social labour in general.

There is a certain contradiction in capitalism. That is the contradiction between planning and organization of production within enterprises, on the one hand, and regulation of national economy on the other. The capitalist factory represents a very high stage of organization. The setting-into-operation of this complicated mechanism of production is carried through according to an uniform plan of organization, and each worker is forced to comply with this plan. But the organization ends at the gate of the factory. Outside and in the social scale there is no really planful organization;<sup>6)</sup> cannot be, because of the secret all enterprises are surrounded with.

A socialist economy, however, can in a way be compared with one large-scale enterprise, consisting of a great number of separate and productive departments and forming, therefore, an integral organism. Because of this new economic laws are coming into being. Among others the law of planned, proportional development. Of course, also capitalist economy requires proportional development. But-and that is the great difference - under capitalist conditions of production these proportions are, on the one hand, existing



(objectively existing), but their observance cannot be observed, and, therefore, steady violations of a proportional development are the rule, on the other hand.

What is the main content of the law of planned and proportional development ? - First of all , it is a matter of fact that the frictionless functioning of any economy requires definite relationships between all the different branches and spheres, forming the mechanism of a national economy. In a socialist economy now, and conditioned by uniform ownership-relations, these necessary relationships can and must be established in a planned way. There is no question, whether there are still existing other than socialist ownership-relations or not. The character of an economy is determined by the ruling property relations.

Realizing the objectively given possibility and necessity of planning, the socialist state can be considered a "tall-manager" who is managing a huge enterprise, comprising the national economy as a whole and consisting of all the single producing and distributing (trading) enterprises.

The main fact, however, is that the law of planned, proportional development really is an objective law; that means, the proportions of national economic development cannot be established arbitrarily or according to someone's wishes, desires, or discretions, but are governed by necessary requirements, the negligence of which inevitably leads to disorganizing social reproduction process.

When talking about social reproduction process, we have in mind not only the process of mere production, but the economic process by which all the necessities are being shaped so as to repeat production , either at the same level (sustaining reproduction; a merely theoretical construction; not possible to be realized) or at a higher level (expanding reproduction). Thus, we see, not only physical proportions between the separate branches or spheres of physical production have to be considered , i.e., investigated and contemplated as well, but also other proportions concerning, for instance, the value composition of gross national production, the distribution of national income, i.e., the share of accumulation and consumption, or, for



instance, the proportion between wage rates and the level of labour productivity, and so on.

Summarizing, we can state: socialist society cannot disregard the real position of the national economy and the existing resources and cannot change "by a wave of the hand" the relationships between production and consumption, and between accumulation and consumption. It goes without saying that it is completely impossible to realize the best intentions to increase sharply the volume of consumption omitting, however, to arrange in good time for a corresponding increase in production. Undoubtedly, as a result the existing stocks of commodities would rapidly be exhausted. The same would happen if the relationship between consumption and accumulation of resources earmarked for the expansion of production would arbitrarily be changed. A reduction in the share of accumulation will, for instance, inevitably slow down economic development and subsequently bring it to a halt, leading to a rapid consumption of fixed capital and to the disorganization and decline of the whole economic life. An excessive increase in the rate of accumulation, on the other hand, may weaken the material incentive of those engaged in production and ultimately affect the rate of growth of labour productivity. Nor can one disturb with impunity the proportions between wage rates and the level of labour productivity, between the monetary receipts of the population and the available fund of commodities, and so on.

In addition to these proportions, mentioned above, many other branches of production and distribution as well are existing which cannot function without taking into consideration certain proportions. Thus, for instance, balance must be observed between the basic branches of national economy, such as industry, agricultural, and transport. Incalculable difficulties threaten if any of them falls behind. Definite relationships are required in the development of the heavy and light industry, between extractive and manufacturing industries. During a certain stage of economic development a faster rate of development of heavy industry ensures the advance of all branches of economy. Similarly, the raw-material and power industries have to be expanded faster than the manufacturing industries; so as to change the necessary reserves for the advance of the whole national economy, too.



In this connection a theoretical problem is arising. At first, we have to know that besides all these mentioned branches and spheres every national economy must be subdivided into two main branches, or - better said - into three main branches:

1. investment goods
2. intermediate goods
3. consumer goods

Commonly, the first of them are termed producer goods industry. Thus, we have to subdivide our national economy into:

1. producer goods industry and
2. consumer goods industry.

The first group, again, is called sector I or A, the second group sector II or B. This is the basic subdivision of every national economy. Sector I or A must be further subdivided into :

- $I_1$  or  $A_a$  = producer goods for producing producer goods and
- $I_2$  or  $A_b$  = producer goods for producing consumer goods.

It has been a rule, now, or even an axiom that the development of sector I, and within sector I sector  $I_1$  again, must be a faster one than that of sector II, or concerning sector I the development of sector  $I_1$  must be faster than that of sector  $I_2$ . In other words, the development of production of producer goods must be pushed ahead more quickly than the development of consumer goods industry; and within the production of producer goods the development of producer goods for producing producer goods must be brought forward more quickly than the production of producer goods for producing consumer goods. That means, the following mathematically expressed conditions must be observed:

$$Gr = (\Delta I_1 > I_2) > \Delta II$$

In words, the rate of growth ( $G_r$ ) of  $I_1$  must be bigger than that of  $I_2$  and the rate of growth of both of them together must be bigger than that of II.



Now a discussion is coming into being concerning even this proportion. Up to now all the socialist economists have believed that there must be a prior rank development of the section producing means of production always and everywhere. Now-a-days, however, some of them are trying to prove that the relation within the proportion of sector I and between sector I and sector II are changing or have to be changed according to the reached level of industrial and, therewith, national economic development.

In other words, they are meaning that the prior rank development of sector I, or sector  $I_1$  respectively, is only a necessary one during the first stages of industrial development. Later on, however, the development of consumer goods industry will be proceeding; or, to use their own words, the production of consumer goods will be the determining production within the duality of social production. These economists are going to make their assertion good by economic investigations concerning the national economy of the United States and other leading capitalist countries. They have found, for instance, that that prior rank development of sector I held true for the USA- up to 1920. Since that time consumer goods production is going more quickly than the production of producer goods. Similar results are at hand regarding the proportional development of Great Britain's industry, and so on.

What is to say to this problem? - First of all, concerning developing countries there is, at least in my opinion, no doubt that the prior rank development of sector I must still be stressed; since, regarding those countries, industrialization is still representing the main task. Only by a strong and - above all - comprehensive industrialization the just even now reached political and economic independence can be ensured or strengthened respectively.

Even for the most of the socialist countries, being in a way developing countries, too, prior rank development of sector I, and within sector I of the section of  $I_1$ , must be considered necessary.



Generally, I think, we have to proceed from the following consideration.

We do not intend, of course, to produce means of production because of the means of production. They have, and that is understood, no end in themselves. We produce means of production so as to produce by means of them consumer goods. That is the one problem. Another problem is that we are going to replace more and more living labour by dead labour. That means, we intend to improve people's standard of living by an ever growing scale of commodities - and that qualitatively as well as quantitatively- and by shortening the working-time per day as well as in general, i.e., by reducing the age of pensioning. It becomes evident without any difficulties that these two facts are diametrically opposed. If we intend to save living labour (or working-time, in general), but simultaneously we wish to increase the available number of goods, we are forced to set more and more fixed capital into operation. And not fixed capital anyhow, but we are forced (step by step, of course) to replace out-dated techniques by most modern machines.

And now, we are *faced* with a two-sided problem.

- 1- when replacing living labour by dead labour, the share of net product (value added or new value or national income) in gross national product is a relatively decreasing one. In our opinion, only living labour is able to produce additional values. By dead labour (machines, buildings, etc.) only already existing values can be transferred to the newly produced goods. Of course, the mentioned decrease is only a relative one, for it is compensated by the growing quantity of produced national income. But this is a question of distribution; at least, it is closely connected with distribution. - But that holds true, for being able to compensate the relative decrease of national income, the increase in production, made possible by using modern techniques, has to reach a considerable and calculable level. That means, when investing and applying new technique, we are forced to



calculate very meticulously the economic efficiency of our investment, even under the point of view of compensating the decrease in national income; and not only of compensating, but also under the point of view of surpassing this decrease. The national income, now, can roughly be subdivided into fund of accumulation and fund of consumption. These are the two main ingredients of national income. It goes without saying that the fund of accumulation, which serves so as to expand production, can only be increasing, when the above mentioned condition is fulfilled. - But the fund of accumulation must be an increasing one so as to satisfy enterprises' requirements for financial investment means. - But ensuring of financial means is only one side of the problem ; and we are touching the second side.

2. These financial means, available for investing, have to be physically covered; that means, the necessary and most modern machines must be produced according to the requirements of the proportional development of national economy, and resulting from the above mentioned conditions of saving living labour along with a simultaneously increasing production. - Thus, we have to state that the production of means of production, even considered only under that point of view, must be a steadily and quantitatively as well as qualitatively increasing one.

But this problem is further touched by the problem of moral wear and tear. As commonly known the process of moral wear and tear depends to a high degree on the rapidity of technical progress. Technical progress, however, is proceeding the more quickly, the higher the level of industrialization, forcing us to replace out-dated equipments long before their physical using up. This fact, again, is caused by two things:



- 1- by the fact mentioned above and concerning the rapid increase of gross national production and especially the increase in national income so as to meet interior national economic requirements; and
- 2- by the economic competition existing between the socialist and the capitalist camp.

of course, these two points are closely connected to each other, since the internal economic situation of a country is influencing the position of that country on world market and in the world at all, and, vice versa, the internal economic and generally public situation of country is highly being influenced by that mentioned position.

Proceeding from these considerations we should come to the conclusion that there is a certain trend to priority regarding the production of means of production and there, again, regarding the production of means of production used for producing means of production. But hitherto this trend has been considered an axiom. In the view of socialist economists it has been completely impossible to violate this trend of priority or even to neglect it. This opinion, however, is a dogmatic one and not to be supported any longer. It would mean, in a way, to produce means of production because of the means of production; and that cannot be the aim of any socialist economy. We do not produce because of production, but we produce because of satisfying social and individual requirements as well. And for realizing this intention we have to look at and for the optimum proportions necessary to attain this high aim. These proportions, on the other hand, are changing once - historically and nationally conditioned - and our national economic planning might not be, therefore, a rigid system, led by dogmatic axioms, but a flexible one corresponding at any moment of time to these special conditions.



Therefore, I would like to say concludingly:  
conditioned by technical progress, by the intention to save living labour,  
and by the necessity to increase market production more and more, by the  
purpose, finally, to raise people's standard of life, a lawful trend  
can be perceived regarding a prior rank development of sector I. This  
prior rank development, however, cannot be a rigid one. Certain chan-  
gings are conditioned by:

1. historical factors; i.e., we have to make differences between the first and the further stages of industrial and national economic development;
2. by proportions resulting from plan tasks, where by under socialist conditions of production, production is being determined so as to satisfy individual and social requirements of an ever growing consumption; i.e., sector I has to be developed according to optimum proportions ensuring, in such a way, the fulfilment of the above mentioned task;
3. by the development of international division of labour; the more developed the system of international division of labour the closer the international economic relations, and the bigger, therefore, the possibility of national specialization; the comprehensive, and organic economic development happens then on a wider scale, or, in other words, the separate national economies are compensating each other.

Summarizing the theoretical side of the problem of proportions the following classification can be made:

There are by and large two big groups,

1- proportions between separate branches and spheres

These proportions are resulting from division of labour existing within the system of every national economy. They are resulting, therefore, from the division into single branches and spheres, from the position



of the separate branches and spheres, from their tasks within the national economy, and from their relations to each other, or, in other words, their interdependent relations. The productive dependence of the separate branches, spheres and enterprises renders necessary a strong coordination of their development.

Generally speaking, there must be coordinated the development of correct proportions between:

a. industry and industry;

That means, for instance, between sector I and sector II, between heavy and light, extractive and manufacturing industries, or between metal producing and metal processing industry, between engineering industry and all those branches making machines, a.s.o.

b. industry and agriculture

so, for instance, between production of agricultural goods and all those industrial branches and enterprises working up agricultural raw materials; on the other hand, there must be a proportional development between agricultural development and production of agricultural means of production;

c. production and transport; and between

d. production and foreign trade;

no country can be developed isolatedly; more or less all the countries depend on foreign trade; and this dependence will become stronger more and more as a result of the ever growing international division of labour.

That, in brief, to the first group. The second big group is being formed by the main proportions concerning the reproduction process as a whole;



that means, proportions necessary so as to ensure not only the mere process of current production, but so as to ensure the reiteration or permanent repeat of production process. This reproduction process has always to restore - or is expected to restore - the physical conditions as well as the socio-economic conditions of production. And, therefore, this group of necessary proportions is comprising a rather large scale and touching all spheres of production, distribution, circulation, and consumption.

Let us start with dealing with the proportions concerning

### Formation and distribution of social funds

When planning social funds the following substantial proportions must be taken into consideration:

#### 1- The proportion between used fixed capital and net product or national income

By that proportion the relation between needed dead labour and living labour is expressed.

Conditioned by industrial development and especially conditioned by technical progress this relation will be changing more and more on behalf of dead labour. It is labour productivity which makes this fact true. Modern technique will be introduced into production process more and more. Thus, dead labour or embodied labour (as machines, etc.) will be an increasing one, while living labour (number of workers, working-time per worker as well as totally) simultaneously will be decreasing.

By that, the distribution of the produced gross national product will be influenced. According to our opinion that only living labour is able to produce new value and that new value is the only content of net product or national income, the dropping tendency of living labour leads to a relatively decreasing national income. This decreasing tendency must be compensated by an absolute increase of national income caused by increasing production, i.e., caused by an increasing output of goods.



Thus, that proportion can be formulated:

$$\Delta C > \Delta GNP > \Delta N$$

In the GDR's national economy, for instance; the development of this proportion has been as follows:<sup>7)</sup>

Year	Gross National Product		Net Product			Compensation Fund		
	Mrd. MDN	1950 = 100	Mrd. MDN	1950 = 100	Share in GNP	Mrd. MDN	1950 = 100	Share in GNP
1950	50.9	100	30.3	100	59.7	20.6	100	40.3
1953	77.9	153	44.4	146	57.0	33.5	162	43.0
1956	96.2	189	54.7	180	56.8	41.5	201	43.2
1959	128.0	252	70.4	233	55.0	57.6	279	45.0
1962	147.0	289	77.6	255	52.8	69.4	338	47.2
1963	151.6	297	79.7	262	52.0	71.9	348	48.0

As it can be observed, the GDR's national income, net product, increased in between 1950 and 1963 by 162%. Relatively, however, it decreased by nearly 13% within the same time. Diametrically opposed has been the development of the compensation fund. Absolutely, it increased by 248% and relatively by about 19%.<sup>8)</sup> The above mentioned condition

$$\Delta C > \Delta GNP > \Delta N$$

is, therefore, observed in the GDR's economy at every moment of time:<sup>9)</sup>

in 1953 =	62	>	53	>	46
" 1956 =	101	>	89	>	80
" 1959 =	179	>	152	>	133
" 1962 =	238	>	189	>	155
" 1963 =	248	>	197	>	162



or, related to the period respectively mentioned before:

1956	over	that	in	1953	=	23.8	>	23.4	>	23
1959	"	"	"	1956	=	39	>	33	>	29
1962	"	"	"	1959	=	21	>	15	>	10
1963	"	"	"	1962	=	3.6	>	3	>	2

When transforming these relationships on a common basis, it can be made discernible that they are no rigid ones, but that they are changing according to the efficiency of invested means of production.

Transforming  $\Delta C$  always at 1, we will receive, according to our example, mentioned above, the following relationships:

1956	over	that	in	1953	=	1	:	0,98	:	0,96
1959	"	"	"	1956	=	1	:	0.88	:	0.74
1962	"	"	"	1959	=	1	:	0.66	:	0.47
1963	"	"	"	1962	=	1	:	0.66	:	0.55

It is interesting, in this case, to look at the development of the relationship between  $\Delta C$  and  $\Delta GNP$ . Pointed out in words, it must be stated that the efficiency of fixed capital is a relatively decreasing one; that means, the rate of fixed capital (or fixed assets<sup>10)</sup>), showing how many goods can be produced by using fixed capital of one currency unit, or how many fixed capital is needed so as to produce goods of one currency unit, is a relatively decreasing one. We have steadily to spend more fixed capital for producing one unit of goods. That is the common trend in all national economies and can, for instance, in a way be proved by the following figures concerning the dependence between costs of research work and new investment in the United States' industry<sup>11)</sup>:



Year	New Investment	Costs of Research work	Relation between Investment and Research
	in Mill. \$	in Mill. \$	in %
1947	20.612	1.315	6.3
1948	22.059	1.475	6.6
1949	19.485	1.370	7.1
1950	20.605	1.600	7.8
1951	25.644	1.900	7.4
1952	26.493	2.035	7.6
1953	28.322	2.370	8.4
1954	26.827	2.400	8.9
1955	28.701	2.400	8.3
1956	35.081	3.418	9.7
1957	36.962	3.500	9.4
1958	32.074	3.600	11.2

That is, commonly said, the general trend which holds true regarding the relation between investment and research work as well as regarding the application of research work in production (in form of new investments) and its effects on production.

Of course, we have to take pains so as to reduce these relatively bad effects, but never will we be able to remove them completely.

What are, in brief, the possibilities for reducing these relatively negative effects? - We would like to mention, first of all, two main possibilities or two main efforts:

- 1- we have to construct and to apply so-called multi-purpose machines; and to apply them, above all, according to the logical and technological process; that means, the organization of the production process has to be carried through



corresponding to technology and not, as in former times and partly at present, too, corresponding to separate products.

- 2- we have to take pains so as to improve the using of machines by trying to reach maximum utilization.

This can be done, again, in a twofold way:

- 1- by applying the multi-shifts system wherever it is adoptable, and
- 2- by using production and process steering.

That means, improvements of utilization of equipment can be realized by extensive and intensive measures as well; and both the measures must be implemented simultaneously; in as much as it is possible, of course and corresponding with the proportional development of national economy.

#### 2- The proportion between accumulation and consumption

By the accumulation that part of national income is formed ready for expanding social production. Consumption, on the other hand, represents that part which is finally used for the sake of individual and social consumption.

The relation between these two ingredients of national income depends on the speed of economic development; and that from a twofold point of view:

- 1- from the point of view of general economic development; that means, from the speed of development of production; and
- 2- from the point of view of the development of people's standard of living; development of production is no end in itself, it serves so as to increase consumption (directly as well as indirectly) and, therewith, people's standard of living. But



this cannot be done anyhow. For increasing consumption, and standard of living in general, certain preconditions must be shaped. These preconditions are mainly formed by means of production. And, as I mentioned before, there is a certain trend towards prior rank development of sector I, production of means of production, caused by technical progress and the intention to replace living labour by dead labour.

Furthermore, increasing production means expanding reproduction. Expanding reproduction however, means steadily increasing expenditures of fixed and working capital as well. These increasing expenditures must be covered, apart from foreign credits or foreign economic aid, by the national income and here, again, by means (physically and financially considered) available for the sake of accumulation. That means, for the sake of covering increasing requirements resulting from increasing production the amount of accumulation has to be a steadily and rapidly increasing one. Or, in other words, the rapidity of economic growth is mainly determined by the rate of accumulation.

Let us look, for instance, at the GDR's example



Distribution of National Income  
and Economic Growth<sup>12)</sup>

Year	Gross National Pro.			National Income								
	in Millia- rds	1950= 100	yearly rate of growth	total	thereof							
					Accumulation				Consumption			
					in Mrds.	1950= 100	yearly growth	% of N.Inc.	in Mrds.	1950= 100	yearly growth	% of N.Inc.
1955	91.1	178.8	-	52.5	6.5	246.8	-	12.3	46.0	160.8	-	87.3
1958	115.4	226.5	-	64.9	13.0	522.2	-	20.1	51.9	191.0	-	79.9
1959	128.0	251.3	10.9	70.4	14.1	563.8	+ 8.4	20.0	56.3	206.8	+ 8.4	80.0
1960	135.8	266.7	6.1	73.6	14.1	563.8	+ 0	19.1	59.5	217.4	+ 5.6	80.9
1961	141.5	277.8	4.1	76.0	13.7	549.9	- 2.9	18.1	62.3	227.8	+ 4.7	81.9
1962	147.0	288.6	3.9	77.6	16.2	650.4	+18.0	20.8	61.4	227.8	- 1.5	79.2
1963	151.6	297.5	3.1	79.7	15.6	611.5	- 3.7	19.6	64.1	230.4	+ 4.4	80.4



As it can be seen out of the figures, mentioned in the last table, the share of accumulation in the GDR'S National Income is a relatively low one. It moves in between 12.3% and 20.8%. Regarding other socialist countries, so for instance regarding the ČSSR and the Soviet-union, we will find a share of 25% and more since years.

And we should not let ourselves be deceived. The following problem is implied. - First of all, we have to state that, in our opinion, it must be the very aim of all countries with planned economies to reach a subdivision like 20:80. Of course, that cannot be a dogmatic axiom. The crucial point is to reach an optimum development of production and standard of living, too. So, we have to increase accumulation without neglecting consumption.

But, and that is, in my opinion, the point in question, is it sufficient to observe the valuable subdivision of national income only? Means of accumulation serve so as to become realized as physical means of production. Financial means available for the sake of consumption are to become realized as physical goods of consumption. In other words, the valuable subdivision of national income is nothing but the reflection of its physical subdivision. But now we have to take into consideration a different movement of prices regarding means of production and means of consumption. While on producer goods market a certain increase of prices can be observed, on consumer goods market prices usually are dropping (more or less).<sup>13)</sup>

By this different development of prices deviations are coming into being regarding the valuable and the physical subdivision.

May that be explained by an example. Let us take for granted, for that purpose, the following assumption. From 1955 up to 1963 the prices of consumer goods might be dropped by 9.42%. That means, purchasing power of money regarding consumer goods had been increased by 10.45%.



The purchasing power of money on the market of investment goods, however, might be decreased, during the same time, by 43%, caused by increasing prices from 100 to 175.6.

Proceeding from this assumed facts there are some differences between physical distribution of national income and its distribution in value terms.

According to the GDR'S figurative example, for instance, the effects would be as follows:

the distribution in value terms is like 19.6 to 80.4 (accumulation to consumption),  
when looking at the physical distribution, however,  
we have to state a relation like 11.2% to 88.8%.

That means, under the assumed conditions of decreasing prices on consumer goods market (9.4%) and increasing ones on investment goods market (75.6%) only 11.2% of the physical goods of national income can be invested and a percentage of 88.8% is determined to be consumed.

I believe me being full in right, when saying that this fact is essentially to be considered when planning the relative distribution of national income. For, in my opinion, it is the relation of the physical distribution which is bound to be brought to a level like 20:80 (or even 25:75). Otherwise, we would let us be deceived regarding the pace of technical development and technical progress.

### 3- The proportion between accumulation and reserves

Every national economy is more or less forced to form reserves. This is, of course, particularly so if the national economy is a planned one. All the kept reserves are necessary for encountering any unplanned events or disturbances happening during the planned period; for instance, resulting from:



- a. natural disasters,
- b. disproportions resulting from overfulfilments or non-fulfilments of plans,
- c. disturbances in international relations,
- d. any other disturbances.

Production and reserves, physically and financially considered, are mutually reinforcing. That means, increasing reserves are conditioned by increasing production and vice versa.

The economic source of supply for these reserves can only be formed by national income. In other words, the economic source for reserves is finally represented by the accumulation itself.

We will deal with this problem of subdividing gross national product or national income respectively later on, when talking about planning of these two economic categories directly.

#### 4- Other important proportions

Besides all these mentioned proportions there are some others, not less important for planning national economy.

In this connection especially the following proportions should be termed being of highest importance for the realization of the total process of expanding reproduction:

- a. proportion between prime cost of production and net income of society,
- b. proportion between increasing labour productivity and development of average wages,
- c. proportion between supply and demand,
- d. proportions connected with reproducing manpower



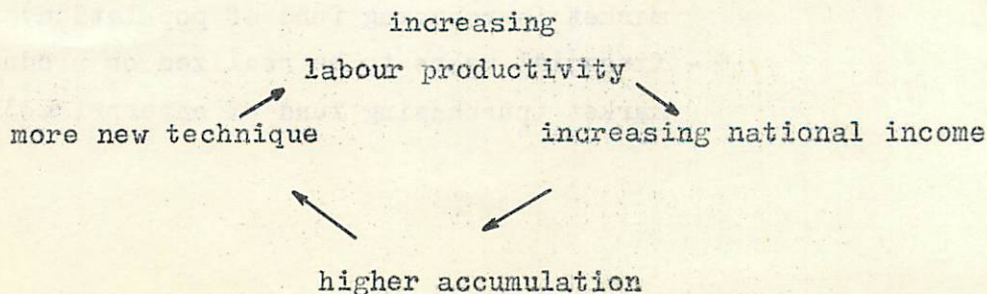
By the proportion between prime cost and net income of society the most important tasks in the field of finance is set.

By increasing production both are swelling, too, prime cost of production and net income of society. For making possible dropping prices, there must be a different increase in production and prime cost; the increase in production must be quicker than the increase in prime cost. This proportion is being determined by the possibility of reducing prices and, secondly, by the necessity of increasing accumulation. When setting this proportion they have to start with ascertaining the total of prime cost and the needed amount for accumulation and social consumption.

Thus, this proportion is mainly determined by the proportion between increasing labour productivity and developing average wages.

By increasing labour productivity an increasing social product and a reduction of living labour per produced unit is effected. The reduction of living labour must be accompanied by dropping costs of wages per produced unit. On the other hand, however, and conditioned by the purpose to increase standard of living, wages must be increasing ones, too. By this fact dropping wages are affected diametrically.

That is to say, therefore, for ensuring social progress labour productivity must be increasing more quickly than average wages. But both of them must be swelling ones. That can simply be explained. The mutually reinforcing relations between labour productivity, national income, accumulation, and new technique can be made visible by means of a circle:





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The mentioned circle, of course, cannot be an uniform one. According to the fact that social reproduction is always expanding reproduction the rotation has always to be happening on a higher level. Therefore, the mutual relations between the four components and their development should better be compared with a spiral spring, going circularly, and becoming broader and higher more and more. For ensuring that spiral development, for separating more and more means for the sake of accumulation (out of national income!) labour productivity must be developing more quickly than average wages. Otherwise, consumption must be expanded at the expense of accumulation; development and application of new technique would be embarrassed, and the development of labour productivity would be happening less quickly than necessary. The result would be a delayed development of standard of life.

Now let us look at another proportion, at that between supply and demand.

At first, we have to state: supply is embodied by physical goods, demand by monetary means;

Secondly: between physical goods and available monetary (financial) means there must be a certain equilibrium in general;

Thirdly: the total of physical goods must be subdivided, according to their use, into

- consumer goods and
- producer goods.

Accordingly, available financial means have to be subdivided into:

- monetary means coming to the fore on consumer goods market (purchasing fund of population) and
- financial means to be realized on producer goods market (purchasing fund of enterprises).



Fourthly: equilibrium must be existing between:

- purchasing fund of enterprises  
and available producer goods,
- between purchasing fund of population  
and available fund of consumer goods.

Fifthly : This named equilibrium has to be observed in a twofold way:

- 1- from the point of view of coincidence between the total of prices (of the fund of commodities concerned) and the total amount of the concerned purchasing fund.
- 2- from the point of view of the structure of the available fund of commodities which must be in conformity with the structure of the so-called solvent demand.

And that, in both the cases.

Concerning producer goods the available assortment is determined by the past production. But planning is a continuous process, carried through in such a way that by planning and production the preconditions are being formed for ensuring current and coming production as well. Thus, the fund of producer goods must be in conformity with the forthcoming program of production by which the solvent demand of enterprises is being determined, too.

One can state, therefore, conformity between the structure of available producer goods and the structure of solvent demand is in that field determined and ensured, as well, by programmes of production being adjusted and homogeneous ones, and shaping, therefore, the necessary preconditions for carrying production on.

Concerning consumer goods, the structure of supply, that means, its composition according to foodstuffs, luxury goods, clothes, household



utensils, sundry industrial goods, etc., has to be in congruence with the population's structure of requirements, and, of course, with the population's possibilities to materialize these requirements according to the purchasing power being in the population's hand.

Of course, it is by far more difficult to plan and to achieve conformity between purchasing fund of population and fund of available consumer goods than to plan and to reach congruence between purchasing fund of enterprises and fund of producer goods.

Because of these difficulties the congruence between purchasing fund of population and fund of consumer goods can only be an approximate one. In other words, the fund of commodities must be a bigger one than the available purchasing fund of the population; on the whole and in detail as well.

Let us cease talking about proportions by dealing with proportions connected with reproducing manpower.

In this connection we have to look at two main groups:

- 1- proportions related to numbers of manpower and their distribution among the different branches of national economy,
- 2- proportions expressing the level of qualification.

To the first group there are belonging proportions expressing the relation between aggregate population (capable of work) and working people.

By the second group the level of skilfulness is shown, and the proportions are being expressed existing between technical personnel and productive workers, for instance, or between skilled, semi-skilled, or unskilled workers, etc.



Survey on Main Proportions

A

Proportions between  
separate branches  
and spheres

- a. between sector I and  
sector II
- b. industry and industry
- c. industry and agri-  
culture
- d. production and trans-  
port
- e. production and foreign  
trade

B

Proportions concerning for-  
mation and distribution of  
social funds

- a. proportion between fixed  
capital and national in-  
come ( $v = c + w + p$ )
- b. between accumulation and  
consumption ( $N = ac + Co$ )
- c. between accumulation and  
reserves ( $ac = i + r$ )

C

Sundry proportions

- a. prime cost and net  
income of society
- b. labour productivity  
and average wages
- c. Supply and demand
- d. manpower



Footnotes

- 1) Prof. Dr. Z. Fedorowicz, The System of Planning in a Socialist Economy, Memo No. 505, page 1.
- 2) ibid
- 3) Dr. E.E. Watkin, British Planning Policy, Memo No. 526, page 3-4.
- 4) Gunnar Myrdal, Economic Theory and Under-developed Regions, London 1957, pages 80 and 81.
- 5) ibid page 81.
- 6) c.f. Prof. Dr. I. Rudolph and Dr. G. Friedrich, Outline of National Economic Planning, Berlin 1957, German, page 19
- 7) Statistisches Taschen-jahrbuch der DDR, page 19.
- 8) That means, the share of net product in gross national product dropped by about 13%, the share of compensation fund, however increased by 19%
- 9) Always over that in 1950.
- 10) c.f. Prof. Dr. Linsel, Prof. Dr. Sack, Special Conceptions of Socialist Economy, Memo No. 519, page 46.
- 11) Statistische Praxis, Berlin 1964, Heft 10, p. 278, quoted from: G. Tsch.owski (L. Schimtschak) J.Bator, The Problem of Scientific Research Work in Chemical Industry, Institute for Universal Chemistry, Warsaw, Polish.
- 12) Calculated according to: Statistisches Jahrbuch der Deutschen Demokratischen Republik, 1964, p. 32 and 36.
- 13) This problem is coming into being because of the fact as namely actual prices are used (in GDR's statistical reports) for showing the yearly subdivision of national income. Conditioned by this fact and taking into consideration the before mentioned statements (page 26) the appearance of subdivision of national income is a deceptive one.