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W. FELLNER

TENSIONS AT FULL UTILIZATION

A COMPARATIVE-ECONOMIC VIEW REJECTING THE PHILLIPS-CURVE APPROACH

In the author's opinion monetary and fiscal policies keeping an economy at a level involving acute shortages in major specific labor-categories lead to accelerating inflation; or if inflation is suppressed by comprehensive controls the result shows increasing difficulties in keeping the pressures down and in the unavailability of many types of goods at regulated prices. In either case productivity trends are affected adversely.

The author's analysis leads him to the conclusion that this phenomenon is a consequence of the fact that in all contemporary economies various institutional factors set limits to the wage-differentials that are politically acceptable. Therefore, as compared to the wages of the types of labor that are in lesser demand, the wages of the scarce labor-categories do not rise to the point where the excess-demand for the scarce types of labor would cease. This excess-demand creates the symptoms of increasingly severe inflation — open or suppressed — unless a more restrained long-run monetary policy is adopted or the economy is subjected to stop-and-go policies.

The author favors not raising effective demand to a level where acute shortages develop in major specific labor-categories. However, in this case it will be necessary to use special government policies for preventing appreciable unemployment in the relatively low-priority labor-categories that are in excess-supply when demand and supply are in equilibrium for the high-priority labor. In the author's appraisal employment should be offered in specific subsectors of the public sector to more workers belonging in these low-priority categories. A more restrained monetary policy should be adopted that takes account of the fact that these specific workers will produce relatively little saleable output and will buy with their money incomes mostly the goods produced by other workers.

Manifestations of the problem in differing economic systems

My reason for welcoming a discussion of my subject matter "across the borders" remains the same as motivated me to select this topic for a public lecture in Budapest:* I have found it exceedingly instructive to observe the basic similarities between the problems that acquire different forms of appearance in different types of economy and tend to become resolved in different ways depending on an economy's type of organization.

Economists of many countries have become concerned with the tensions observable when the resources of an economy become utilized beyond some critical level. How far below "full" use this level is located depends on the special circumstances in which an economy operates, since the dilemma devel-

* This article has developed from a public lecture given in Budapest in June, 1971, when I had the privilege to exchange ideas with Hungarian colleagues as a guest of the Institute of Economics of the Hungarian Academy of Sciences. Since that time I have engaged in some amount of additional work on the materials I had put before my audience, and the results of this work are included in the present article. On the other hand, I will not attempt to make room here for all themes on which I touched in my lecture.

ops mainly because of discrepancies between the demand for and the supply of specific resource-categories. To put it crudely: by the time all categories of resources are fully used, some are in short supply, and very much so. The dilemma itself is ubiquitous in modern economies. It is generally observable also that once an economy has moved beyond its critical range of utilization the methods that can be applied for eliminating the resulting stresses are burdensome and rather slow to take effect.

Reduced rates of increase of productivity seem to belong among the consequences of these stresses in practically all countries in which they are encountered. On the other hand, it depends very much on the institutions of a country whether the stresses show *in a rising price level or in the unavailability of various types of commodity and service at regulated prices.* This article will examine mainly the American manifestations of the problem, here showing in the emergence of inflationary processes whenever the unemployment rate, as measured by American methods, is reduced below some critical level. Moreover, these inflationary movements sometimes carry over into periods in which the level of unemployment has already increased considerably. In other types of economy in which wage and price regulation plays a large and permanent role, essentially the same dilemma manifests itself in limitations of the range of goods offered for sale.

Those responsible for the policies of a country usually have *some* leeway in making decisions about the degree of "underutilization" they are willing to accept in order to avoid acute stresses but in the long run this leeway is smaller than is often believed. At least as concerns the United States, considerable scepticism is justified as to the possibility of preventing the acceleration of the inflationary movements showing at very high rates of utilization, except by stop-and-go policies which would interrupt the periods of high utilization in frequent intervals. This is a controversial matter among American economists, but the data and estimates to be surveyed in this article raise serious doubts about the possibility of "settling" for a *steady* rate of inflation and of allowing the main economic variables to adjust to such an inflationary equilibrium; to *accelerating* inflation coupled with increasingly inflationary price-expectations it is, of course, impossible to adjust. The problem takes on a different form in countries in which the stresses developing at very ambitious rates of utilization show not in a combination of lowered productivity increases with price inflation but in a combination of lowered productivity increases with a reduction of the range of goods offered for sale, yet one would expect that large stresses need to be reduced here too. This is because only within limits as to size and time-span can suppressed inflation be prevented from translating itself into inflationary price movements.

I will now turn to more detailed analysis with reliance on American data. The hope will be expressed that in the United States as well as in other

countries methods will gradually develop for securing a *decent* livelihood, and also an option for something better than idleness, for that small fraction of the labor force which is unable to find a job by the *conventional* employment procedure whenever the stresses associated with "full utilization" are avoided. There should exist less harmful ways of taking care of the interests of those concerned than by methods leading to significant inflationary instability — or, alternatively, leading to acute commodity shortages — and at the same time also to weak productivity trends for the economy as a whole.

Causes of the American inflation in the nineteen-sixties

Even the naked eye of any observer looking at Table I will suggest that in the United States an accelerating inflationary movement started gathering force about 1965. The same set of data suggests also that the moderate reces-

Table I

Time-series reflecting recent inflation and changes in the unemployment rate
(year-to-year changes)

Years	Increase of private non-farm GNP deflator (%)	Increase of consumer prices (%)	Increase of compensation per man-hour, private non-farm (%)	Increase of "real compensation" (4 corrected for 3) (%)	Current increase of output per man-hour (productivity), private non-farm (%)	Changes of rate of unemployment (%)
1	2	3	4	5	6	7
1952—53	1.7	0.8	5.6	4.8	3.0	3.0 to 2.9
1953—54	1.7	0.5	3.1	2.6	2.3	2.9 to 5.5
1954—55	1.3	—0.4	3.5	3.9	4.4	5.5 to 4.4
1955—56	3.5	1.5	5.8	4.2	—0.5	4.4 to 4.1
1956—57	3.7	3.6	5.7	2.0	2.2	4.1 to 4.3
1957—58	1.8	2.7	4.0	1.3	2.6	4.3 to 6.8
1958—59	1.7	0.8	4.3	3.5	3.4	6.8 to 5.5
1959—60	1.5	1.6	4.1	2.5	1.3	5.5 to 5.5
1960—61	0.9	1.0	3.3	2.3	3.0	5.5 to 6.7
1961—62	0.9	1.1	3.9	2.8	4.5	6.7 to 5.5
1962—63	1.2	1.2	3.7	2.5	3.1	5.5 to 5.7
1963—64	1.2	1.3	4.8	3.5	3.7	5.7 to 5.2
1964—65	1.5	1.7	3.6	1.9	2.9	5.2 to 4.5
1965—66	2.1	2.9	6.1	3.1	3.5	4.5 to 3.8
1966—67	3.3	2.9	5.7	2.7	1.6	3.8 to 3.8
1967—68	3.6	4.2	7.3	3.0	2.9	3.8 to 3.6
1968—69	4.3	5.4	6.7	1.2	0.3	3.6 to 3.5
1969—70	4.8	5.7	6.8	1.0	0.6	3.5 to 4.9

sion of 1969—70, which had resulted from anti-inflationary monetary-fiscal restraints of the policy agencies, did not have a *prompt* effect on the movements of the price indices.

Note that the picture would not be altered by the inclusion of wholesale prices into the table, and that even up to the present writing (Summer of 1971) we have had only mild indications of a weakening of inflationary forces. This is true in spite of the fact that the recovery starting toward the end of 1970, which was brought about by the use of monetary-fiscal stimuli, has so far been slow. We still find ourselves in a considerably lower range of utilization rates than any reasonable person would consider normal for the longer run.* The inflationary movements have carried over not only into the recession but also into the subsequent recovery period, though of late at a slowly diminishing rate. At the time of the completion of this paper, the government put into effect a temporary wage-and-price freeze *just because* policy makers had become impatient with the low speed at which inflation was becoming reduced in the course of a recovery that was progressing slowly.**

The country had unmistakably become faced with accelerating inflation at a time (1965—66) when the unemployment rate, as it is measured in the United States, was declining from 4.5% to 3.8% and when the industrial capacity utilization rates were also becoming unusually high.*** These are the facts deserving our primary attention. They point to the crucial role of market forces in generating inflation given the economic policies of the sixties.

It is true that, even aside from market forces, the groups on the two sides of wage-bargaining have some degree of ability to manipulate wages in relation to prices to their own advantage but as concerns the period beginning in 1965 the data presented in Table II do not support an explanation of the facts in these terms. Aside from short-run oscillations, compensation per man-hour — i.e., money wage including fringe benefits — has been moving in proportion to the sum of price-increase and properly weighted productivity-increase. This is the normal relationship between price and wage movements in the American economy. Alternatively expressed, the price increases have tended to move in proportion to the difference between compensation per man-hour and weighted productivity increase, as has been usual. For each year the weighted productivity increase, as here defined, is made up of the average

* During the summer months of 1971 the seasonally adjusted unemployment rate was still *close* to 6%. In the recession year 1970 the worst seasonally adjusted monthly figure was 6.2%. The average unemployment rate of 1970 was 4.9%.

** A ninety-day freeze was proclaimed on August 15, 1971. Administrative regulations limiting the rate of wage and price increases will presumably remain in effect for some time after the expiration of the freeze.

*** Inflation started accelerating *already from 1964 to 1965* but in the present context it seems more reasonable not to place emphasis on the inflation rates of between 1% and 2% showing for a comparison of 1965 with 1964.

Table II

Excess of increase of compensation per man-hour over sum of increase of GNP price deflator and of weighed productivity increase

(Private non-farm sector)

Years	Increase of compensation per man-hour	Weighed productivity increase	Increase of price deflator	"Excess" 2—(3+4)
1	2	3	4	5
1952—53	5.6	3.2	1.7	+0.7
1953—54	3.1	3.1	1.7	−1.7
1954—55	3.5	3.2	1.3	−1.0
1955—56	5.8	1.9	3.5	+0.3
1956—57	5.7	2.1	3.7	0.0
1957—58	4.0	2.3	1.8	−0.1
1958—59	4.3	2.4	1.7	+0.1
1959—60	4.1	2.2	1.5	+0.4
1960—61	3.3	2.0	0.9	+0.4
1961—62	3.9	2.9	0.9	+0.1
1962—63	3.7	3.0	1.2	−0.4
1963—64	4.8	3.2	1.2	+0.4
1964—65	3.6	3.1	1.5	−1.0
1965—66	6.1	3.5	2.1	+0.5
1966—67	5.7	3.2	3.3	−0.8
1967—68	7.3	3.0	3.6	+0.7
1968—69	6.7	2.4	4.3	0.0
1969—70	6.8	1.9	4.8	0.0

increase of the past five years (with the weight 0.8) and of the current increase (with weight 0.2). By productivity we mean output per man-hour.

In the second half of the sixties both prices and wages showed a pronounced and accelerating reaction to strongly expansionary policies, but there is no evidence that would support placing the emphasis more on a wage-to-price than on a price-to-wage sequence, or vice versa. Many categories of government expenditure — both military *and* civilian — were rising rapidly and *the methods of financing were distinctly inflationary*. This is what touched off the wage and price increases.

Height of the 'critical' unemployment rate in the United States

If, then, we must turn our attention to the height of the utilization rate reached about the middle of the nineteen-sixties, we are apt to look for an explanation of how an unemployment rate somewhat in excess of 4% could

express a rate of utilization which was too high for the smooth functioning of the economy. The answer consists of two parts — (1) and (2) below — both of which must be kept in mind in the analysis of our problem.

(1) *Reasons why the American unemployment statistics need to be interpreted with reservations.* The American method of estimating the unemployment rate involves surveying each month a sample of about 50,000 households. In the name of these households a member, found at home by the Census interviewer, gives information about the number of household-members, sixteen years or older, who over a specified past period have been looking for a job but at present are without one. The number of unemployed so estimated is then related to the "civilian labor force", which is defined as the *sum* of the number of those who have a job (outside the armed forces) or are self-employed *and* of the number of the unemployed. This is the procedure by which the "unemployment rate" is obtained.

We may distinguish two *main reasons* why this procedure may lead to an overestimate of unemployment as compared to the intuitive meaning of this term, and two *main reasons* why the procedure may lead to an underestimate. In the present context the intuitive meaning of being unemployed presumably is that of being in the position of a person who is keen to find work and who is not merely "between two jobs" for a short while. Both on grounds of equity and of efficiency one would like to disregard persons insofar as the small intensity of their job-seeking effort suggests that neither their potential employer nor they themselves would derive much advantage from their employment, or insofar as the short duration of their unemployment points to mere regrouping in the mutual interest of employers and workers.

The American method may lead to an overestimate by the standards of such an intuitive concept because *low intensity of an individual's job-seeking effort* does not prevent his inclusion into the unemployment statistics. Another reason for the possibility of overestimation by these standards is that the *duration* of much of the measured unemployment is very short. For example, in 1964 when the national unemployment rate was 5.2%, about 45% of this aggregate represented unemployment of less than five weeks' duration; in 1965 when the rate was 4.5% about 50% fell in that category; in both years more than one-half of the remainder belonged in the "five to fourteen weeks" group; in 1966 when the aggregate rate was 3.8%, the "less than five weeks" category included almost 55%, and 60% of the remainder fell in the "five to fourteen weeks" category.

On the other hand, there are also reasons why the American method of measurement may in some circumstances lead to an underestimate of what one would like to call unemployment. Individuals may *give up looking for a job* when there is practically no hope for finding one, in which case this shows not in the unemployment statistics but in the labor-force participation

rate.* Also individuals may have a job, but the conditions of their employment may involve *fewer hours of work* per week than they would desire. However, while these two factors can indeed lead to underestimating "true" unemploy ment in the United States, they acquire importance in recessions, not in years of expansion such as 1965 or 1966 when inflation was gathering momentum. Moreover, it so happens that it would be unconvincing to attribute much importance either to lowered participation rates or to the shortening of the work week *even* in the recession of 1969—70, though in other recessions these factors did acquire significance.

We conclude that for the purpose of the present analysis the emphasis belongs on those characteristics of the American methods of measurement which make the unemployment rate look higher than it "essentially" is. Nevertheless, this is very unlikely to provide a *full* explanation of why the unemployment rate at which appreciable tensions started developing was so high in the United States. Some of the reasons cannot be explained away with reference to the peculiarities of the methods of measurement.

(2) *Specific labor shortages combined with excess supply.* No country has a homogeneous labor force, nor would complete homogeneity serve the interests of any country. The incompleteness of demand-supply matching for specific labor categories influences the market in all countries, but this factor does not acquire the same significance everywhere, and there is reason to believe that it has a greater bearing on the inflation problem in the United States than in many other countries. To this extent the relatively high level of unemployment at which tensions start is explained by essential characteristics of the country, not by mere appearances.

While in the United States the social cost of avoiding shortages in some labor categories consists very largely of the acceptance of unemployment in other labor categories, there exist countries in which that social cost consists mainly of a slower transfer of workers from the agricultural to the industrial sector. Further, in some countries, unlike the United States, what is at stake here is very largely the appropriate regulation of the rate of admission of foreign workers, with consequences that show not in domestic unemployment but in the unemployment statistics of various other countries. We should note also that the black-white heterogeneity of the American population has no convincing analogy in any other country of *major* economic significance. Turning to American teenagers, sixteen years of age and over, it should be remembered that in a very large number of cases they have a choice between filling a job and continuing their schooling, and this places them in a more distinguishable category in the United States than elsewhere, even if for the

* As was said above, the civilian labor force is defined as consisting of those who have a civilian job or are self-employed *and* of the unemployed (the latter defined as explained above). The labor-force participation rate is the proportion of the noninstitutional population at least sixteen years old belonging in the labor force.

time being they should decide to "look for a job." Last but not least, in spite of all the mobility existing in the United States, the sheer size of the country's area creates demand and supply categories the matching of which gives rise to a difficulty. This deserves particular emphasis for wives who must find a job in the same areas as their husbands.

When listing merely a few factors, I kept in mind the significantly super-normal proportionate representation of blacks, of teenagers and of women among the unemployed. For example, in 1965 when the acceleration of inflation may be said to have started and when the national unemployment rate was 4.5%, the unemployment rate for teenagers of both sexes was 14.8%, that for women twenty years of age and over was 4.5% as against 3.2% for men of the same broad age-group and as against 2.4% for married men, and the unemployment rate for nonwhites was 8.1%.

Unconvincing arguments for playing down the problem

It is probably true of all countries, regardless of their economic-political organization, that there exist experts in them who deny the seriousness of the problems resulting from tensions at very high levels of resource-utilization. I think they are wrong.

In the United States this type of optimism has two distinct versions.

(1) According to one of these, very close approximations to "full" employment would be compatible with a reasonably stable price level and with steep productivity trends if various *price and wage regulations* were introduced which, however, would fall *far short of a comprehensive system of controls.*

(2) According to the other version, the dilemma with which we are concerned is not particularly serious because by holding the national unemployment rate at a very low but *constant* level we would be generating a *stable* (non-accelerating) rate of inflation, and all significant economic variables, including money wage and interest rates and flexible exchange rates, would become adjusted to the requirements of such inflationary equilibrium.

The first of these two views is unconvincing because controls for suppressing major inflationary forces will not work unless they are comprehensive and are rigorously enforced across the board. In the United States not even the most explicit advocates of combining "full" employment with suppressed inflation suggest building a large apparatus suitable for administering the regulations by which the objective could be accomplished. If under changed political conditions the country did choose to establish such an apparatus, then the problem of the United States would acquire the characteristics of the problems faced by the countries in which comprehensive administrative regulations are indeed used for suppressing inflationary forces at exceedingly high rates of utilization, but while these countries are confronted with *essen-*

tially different manifestations of the difficulties I am discussing they are obviously not free from them and they too are looking for solutions. In the somewhat naive sense in which we may say that in any given period "a country has a choice" between fundamentally different economic-political systems we may also say that "it has a choice" between different manifestations of the problems with which we are here concerned, but experimenting temporarily with spotty regulations, the enforcement of which would require institutions not fitting into a system, will hardly change the character of basic difficulties.

We now turn to the second type of optimism concerning the inflationary forces developing in the United States at otherwise desirable high rates of utilization. This type of optimism is based on the "Phillips curve", a negatively sloped curve showing alternative rates of wage-increase *or* of price-inflation on the ordinate in relation to alternative national rates of unemployment on the abscissa. Or rather, this type of optimism is based on more complex varieties of *Phillips-type* models that include further variables, beyond wage or price increase and unemployment. In any such broadened Phillips-type framework the rate of inflation remains stable (non-accelerating) *in relation to the specified set of explanatory variables.* The models are constructed in such a way that if an "appropriately defined" unemployment variable (a variable expressing the degree of labor-market tightness) *is held constant*, and if the corresponding productivity trends remain unchanged, this will assure stability of the inflation rate as determined by the variables of the model.* The rate of inflation is higher at a low than at a high rate of "appropriately defined" unemployment, but the economy can adjust to the inflation rate corresponding to any chosen level of utilization. There exists a stable "Phillips trade-off" between inflation and any appropriately defined unemployment rate.**

What are the econometric methods with reliance on which some American investigators suggest this conclusion? Between 1952 and 1965 the average yearly unemployment rate varied between 2.9% and 6.7% and the inflation rate between 3.7% and practically zero; during the period of historically accelerating inflation, 1965—69, the unemployment rate changed merely from 4.5% to 3.5% and the inflation rate shot up from 1.7% to 5.4% in terms of the consumer price index and from 1.5% to 4.3% in terms of the implicit private non-farm GNP deflator.*** The bulk of the historically observed acceleration occurred from 1966 to 1969, in a three year period in which the unemployment rate changed by a mere 0.3% (from 3.8% to 3.5%). By the use of what methods have investigators arrived at the conclusion that the historically accelerating inflation of these years was not accelerating in relation to unemployment or "labor-market tightness"?

* This is true aside from lagged adjustments to past changes.
** For a terminological point see footnote on p. 15.
*** These figures are based on year-to-year comparisons.

Placing the Phillips-function controversy in perspective

The symbols used in this section stand for the following: U for the unemployment rate as measured by the conventional American methods and ΔU for first differences of this variable; $\Delta w/w$ for the proportionate rate of increase of compensation per man-hour (money wage rates plus fringe benefits); $\Delta(\Delta w/w)$ for historical wage acceleration in the sense of the difference between two successive $\Delta w/w$ terms. A calendar year will be our unit period, and $\Delta w/w$ for period t will be defined as $(w_t - w_{t-1})/w_{t-1}$; the acceleration term $\Delta(\Delta w/w)$

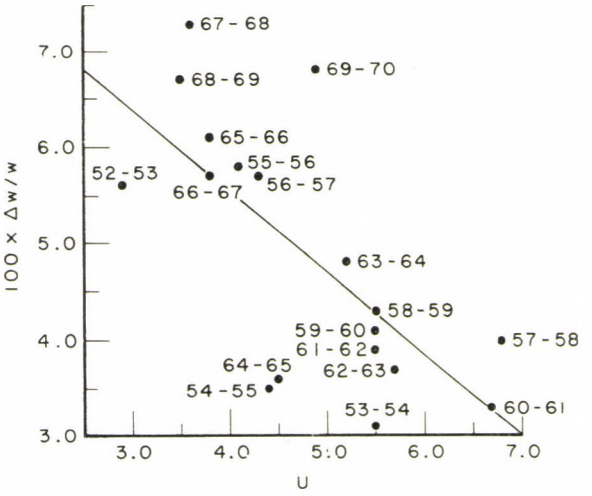

Fig. 1. Wage increases and unemployment

$100 \times \Delta w/w = 9.01 - 0.86\ U \qquad F = 15.73,\ R^2 = 0.51$
$(8.44)(-3.97)$

for period t will be defined as the difference between $(w_t - w_{t-1})/w_{t-1}$ and $(w_{t-1} - w_{t-2})/w_{t-2}$; and ΔU will be $U_t - U_{t-1}$. Analogously defined terms will be used to express the rate of increase and acceleration of the private nonfarm GNP price-deflator (P) and the consumer price index (CPI).

The reader is asked to look at Figures 1 through 4 which apply to a span beginning in the early nineteen-fifties and ending in 1970. It will be observed that these figures and the corresponding regressions for price-increase and acceleration describe an inconsistent framework *except for a specific value of* U. This specific value is approximately $U = 5\%$, an unemployment rate at which $\Delta(\Delta w/w) = \Delta(\Delta P/P) = 0$, $\Delta w/w = 0.047$, $\Delta P/P = 0.022$ (i.e., the rate of wage-increase is 4.7%, the rate of price increase 2.2% and neither accelerates). The result would be very similar if CPI rather than P were the price index used. The difference between the wage and the price increase at $U = 5\%$ is 2.5%, which is just about equal to the average compound rate of increase of

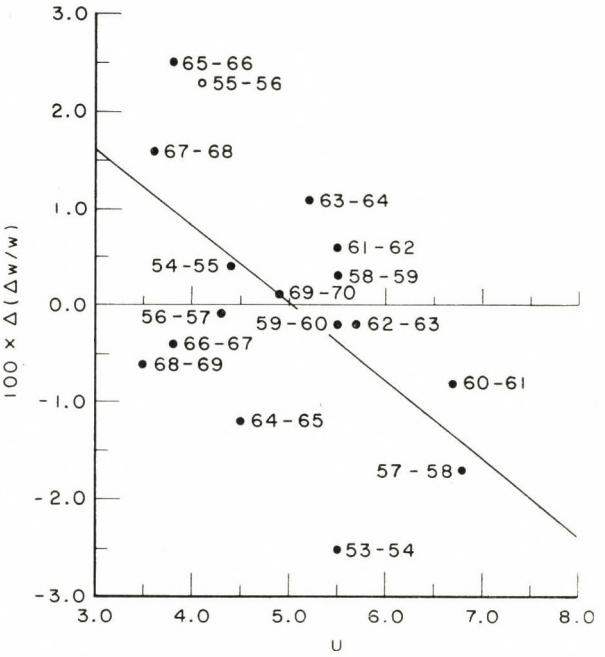

Fig. 2. Wage acceleration and unemployment

$$100 \times \Delta(\Delta w/w) = 3.23 - 0.64\ U \qquad F = 5.08,\ R^2 = 0.25$$
$$(2.26)(-2.25)$$

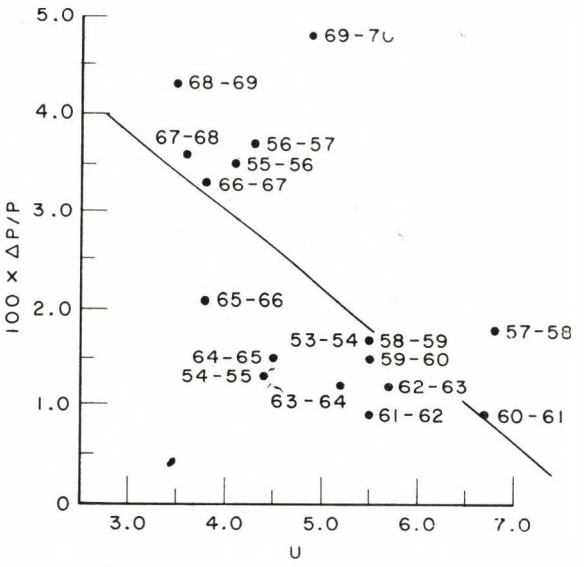

Fig. 3. Increases of the private non-farm deflator and unemployment

$$100 \times \Delta P/P = 6.18 - 0.79\ U \qquad F = 10.02,\ R^2 = 0.40$$
$$(4.93)(-3.17)$$

productivity (output per man-hour) in the private non-farm sector. This comes out with complete internal consistency for $U = 5\%$, but not for other values of U. For other values Fig. 1 and the analogous graphs for prices show some specific rate of increase which according to Fig. 2 and the analogous regressions for prices will, however, change promptly. The change (acceleration) will have a positive algebraic sign for $U < 5\%$.

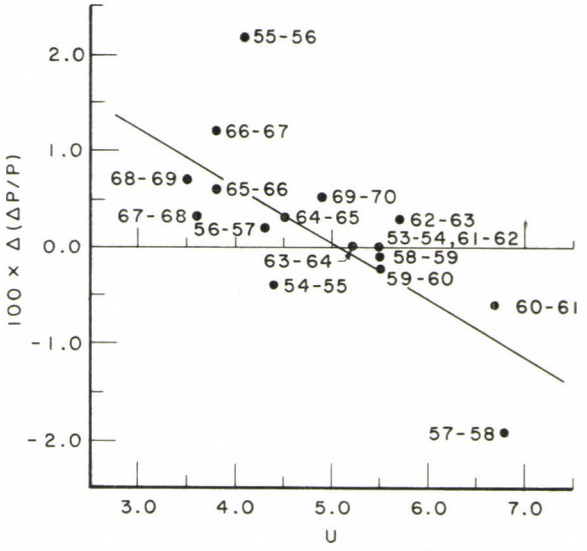

Fig. 4. Acceleration of the private non-farm deflator and unemployment

$$100 \times \Delta(\Delta P/P) = 3.04 - 0.58\,U \qquad F = 14.46,\ R^2 = 0.49$$
$$(3.97)(-3.80)$$

A problem of this sort can, of course, not be *decided* by merely examining two-variable correlations, each independently of the other. But in an area in which even the use of much more complex techniques yields highly inconclusive results, observations made on a simple level of exploration should not be disregarded.

The basic characteristic of a broadened *Phillips-type approach* is that it refines the Figure 1 relation, as well as the analogous relations for prices, by introducing further variables and/or by reconstructing some of the variables appearing in our regressions. The result of these operations is that (aside from lagged adjustments to past changes) *zero* wage and price acceleration is suggested for *any persistently maintained unemployment rate*, not just for $U = 5\%$. This is another way of saying that, according to Phillips-type models, relations such as that shown in our Figure 2 are spurious, in that $\Delta(\Delta w/w)$ *and the analogous price-acceleration terms should be related not to unemployment itself but to changes in unemployment.* However, straightforward (direct) testing of this latter proposition runs into the difficulty that there exists *high positive corre-*

lation between ΔU and U. In our yearly data the correlation coefficient between these two variables is statistically significant at about the 5% level.

In view of this, how convincing is the argument of the Phillips theorists? How convincing is it to argue that not the low value of the "explanatory variable" U was responsible for the instability (historical acceleration) but a decline of the value of that explanatory variable was?

A critique of econometric models suggesting stable inflation-unemployment trade-offs

Robert J. *Gordon* and George L. *Perry* are the two authors whose work deserves to be considered in an attempt to understand the procedures by which stable Phillips-type functions — stable trade-offs between inflation and labor-market ease or tightness — were established from American quarterly data for a period beginning in the early nineteen-fifties and ending in the late sixties. Both authors performed their research for the Brookings Institution in Washington and my critical appraisal, shortly to appear in print, was expressed in a discussion held at the same place [1], [2], [3], [4].

Both Gordon and Perry engaged in substantial reconstructions of the U variable. It is quite clear from the methods they used, as well as from their own statements about the effect of their reconstructions, that the inflationary years of the nineteen-sixties would have shown acceleration in relation to the *conventionally defined* U. The inflation of those years would *not* have been explicable in the same framework as that which applies to the nineteen-fifties: the historically observed acceleration of inflation would have expressed itself in instability (acceleration) of inflation also in relation to the explanatory variable U. To put it differently, the conventional U did not decline sufficiently in the sixties to explain the observed inflation rates in a Phillips framework characterized by stable trade-offs between inflation and unemployment.

Gordon's and Perry's reconstructions of the U variable are based on sound *general* ideas but this leaves the question wide open whether the specific quantitative allowances involved in their corrections of U did not also eliminate acceleration they should have diagnosed, that is, acceleration in relation to the "relevant" measure of unemployment (or labor-market ease).* Their reconstructions greatly sharpened the rate of decline of the unemployment variable during the sixties.

Gordon's main innovation was the introduction of an unemployment measure that takes account also of disguised unemployment — the reservoir

* As concerns Perry, the terminology needs to be watched here because, as we shall see, he obtains stable trade-offs between inflation and his "reconstructed U" only if the dispersion of unemployment between various age-sex groups remains stable. This further variable enters into what he defines as labor-market tightness or ease, but he distinguishes it from his "unemployment" variable.

of potentially available workers whose existence lends flexibility to the labor-force participation rate because in some circumstances they do and in others they do not seek a job* — and Gordon takes account also of a potentially available reservoir in hours per worker (length of the work-week). To simplify my presentation I will interpret both these corrections as allowances for hidden unemployment. During the inflationary period from 1963—65 to 1969 Gordon's hidden unemployment declines *much more* than the conventional U, sufficiently to yield a stable Phillips-type relation and hence also a stable trade-off for his entire regression period.

Perry's reconstruction of U is different from Gordon's but in the sixties his measure also declines *much more* sharply than the conventional U. One of Perry's innovations was to make allowances for the smaller tightness-reducing effect in the labor market of the availability of women and teenagers than of adult men (with some further distinctions drawn between more narrowly defined age-sex groups); thus he computes a weighed unemployment rate by taking account of the age-sex composition of the labor force, on the one hand, and of the unemployed on the other. Further, in what he calls his combined measure of labor-market tightness he makes allowances also for the inflation-raising effect of the *dispersion* of unemployment rates among his age-sex groups. All these corrections steepen the decline of the resulting measure of unemployment (labor-market ease) during the years of historically accelerating inflation. In addition Perry uses the *reciprocal* of his unemployment measure, and this leads to a greater absolute change of the measure when in an inflationary period unemployment declines from, say, 4.5% to 3.5% than when in a non-inflationary period it declines from, say, 6% to 5%. Reciprocals have this property because the absolute value of $\frac{\mathrm{d}}{\mathrm{d}x}(x^{-1}) = -x^{-2}$ rises with declining x. Perry's reconstruction of U for the fifties and the sixties results in a sufficient enlargement of the decline of labor-market ease during the sixties to keep the inflation rates stable in relation to the measure he uses (indeed, here, as in Gordon's case with some degree of overprediction of inflation for 1969).

It would be unconvincing to conclude that the technically satisfactory results obtained with these models create a presumption *against* the acceleration of inflation relative to the explanatory variables during the sixties and hence *in favor of* stable Phillips trade-offs between inflation and unemployment (or ease of labor market). In another paper [4] I argued this point in some detail, hence I will limit myself here to a few brief hints.

Whether stable Phillips trade-offs are or are not obtained for the inflation of the sixties depends very much on the size of the allowances that are made for factors such as hidden unemployment (Gordon), composition of

* For the definition of the labor-force participation rate, see footnote on p. 9.

unemployment (Perry), and possibly for other factors. The basic difficulty here is that there exist no trustworthy independent criteria for deciding what the correct size of these allowances is, and the analytical result — acceleration or nonacceleration — depends very greatly on the size of the allowances. It is clear from the outset that corrections by which the decline of the unemployment variable is progressively increased during the years of historically accelerating inflation *work toward eliminating the manifestations of acceleration in relation to the corrected variable*. In the paper to which I referred I believe to have justified my view that the size of Gordon's allowances is clearly implausible. This cannot be said of Perry's allowances for the factors he works into his model; yet in Perry's case the inconclusiveness results from the fact that in no predictable future will the data be available which would permit anyone to follow through the true logic of his argument, so that at essential junctures he is forced to fall back on the use of expedients which *as such* seem neither more nor less plausible than makeshifts that would *fail* to stabilize the Phillips trade-offs.

I suggest the conclusion that these methods are unsuitable for diagnosing the presence or absence of acceleration in the data because the procedures tend to suppress any acceleration of inflation that *may be* present in a sample. In these circumstances it would be wrong to assert that signs of acceleration relative to correctly defined explanatory variables are in fact present in the data of the sixties, but there *is* reason to conclude that if they are not present, then this is because it is conceivable (though not demonstrable) that the structural relation between *past* price increases and the public's price *expectations* changed merely with a *very* long lag. Both Gordon and Perry assume that this structural relation remained unchanged during the two decades, as indeed some such structural relation must be considered an essential component of any Phillips-type model.

Given the sharp difference between the policies of the sixties and that of the fifties, the public "should have" interpreted a recent price increase of any specific size as a very different signal for the future during the sixties than in the earlier decade. If the public reacted to the change in policy behavior without great delay, then changes in the structural relation between past and expected price increases did cause acceleration in relation to the explanatory variables, and these changes were "corrected out" by reconstructions of the unemployment variable.* But even if the public should have reacted merely with great delay — in which case acceleration in relation to the explanatory variables may truly not be present in the data of the sixties — it would be highly inadvisable to base future policy on the conception of stable Phillips

* Gordon's argument that this can be taken care of both in interest-rate models and in Phillips-type models by postulating a *constant* but appropriately lagged relation between past and expected price increases is unconvincing for technical reasons. These are explained in my Brookings paper to which I referred earlier.

trade-offs. This is because there exists a strong presumption that a policy persistently keeping the national unemployment rate at an otherwise desirable low level would indeed destabilize the relation between past and expected price changes, i.e., would destabilize the "expectations-generating structure."

Basic deficiency of policy programs based on stable Phillips trade-offs at "low" unemployment

As will be explained presently, a "low" level of U is to be interpreted in this context as one at which excess-demand for specific types of labor becomes a phenomenon of appreciable importance.* Given the American methods of measuring unemployment, the frequently mentioned target rate of $U = 4\%$ does seem to describe such a level at the present stage of economic development, *except for the qualification to be added in the last section of this paper.*

The Phillips hypothesis recognizes, of course, that inflation is more pronounced when unemployment is persistently maintained at 4% than when it is maintained at a higher level. But *why* is this so? As we have seen the reason is that the labor force consists of a very large number of categories, to be distinguished by a large variety of criteria, and by the time the aggregate U has declined to what by our present criteria is a "low" level, shortages develop in many of these specific categories. The available physical equipment too is heterogeneous and as a result of bottlenecks inflation can start even at high levels of U, but if such inflation does not remain short-lived and if plant and equipment of various sorts can be produced without much delay, U is likely to become reduced to a level at which shortages develop also in many of the large number of distinguishable *labor* categories. The fact that the rate of money-wage increase, $\Delta w/w$, increases to some extent also for the other labor categories reflects in part the institutional characteristics of the wage *structure* of enterprises; these characteristics "come through" even with respect to nonunionized labor. The whole structure is moved up by specific shortages which develop in different countries at different levels of U, depending on the relationship between demand for and supply of specific labor categories.

In no contemporary economy is the adjustability of the structure of real wage rates unlimited and excess demand for some types of labor continues to coexist with ample availability of other types.

The very great likelihood of acceleration in these circumstances derives from the inability of decision-making units to achieve their objectives by the moves in which they engage during any period, and from a strong presumption that in a permissive environment the size of the moves will therefore keep growing. What follows in this section is an elaboration on this proposition.

* The reasons for this excess demand over available supply at given money wage rates *include* institutional supply-restrictions, and the excess-demand develops in view of the expected monetary-fiscal policies.

When U is held at a level at which the excess-demand for the specific labor categories in question is greater than was the case at an earlier level, $\Delta w/w$ too will be greater, but as a result of price increases the general trend in *real* wage rates will not become steeper. Insofar as importance attaches to the efforts of unions to obtain higher *real* wages when the national labor market becomes tighter, this difference in effort obviously becomes a source of acceleration. Yet such a statement does not in itself settle the problem because, given the competitive bidding of employers for labor, the individual workers accepting the (for them) most favorable money-wage offers thereby accept also the most favorable real-wage offers, and not all economists would agree that unions are consistently trying for higher real wage rates at, say, $U = 4\%$ than at $U = 5\%$.* We should therefore ask ourselves whether acceleration should or should not be expected to originate *also* in the bidding of employers for individual workers belonging in the scarce categories.

Given the postulated commitment of monetary-fiscal policy to maintain macro-economic labor scarcities at a chosen level, the answer is in the affirmative. In each successive round of bidding those employers will prove to be the gainers of scarce labor who, led by correct judgment, bid high enough to achieve this objective, and those will be the losers of scarce labor who made the incorrect judgment of not bidding high enough or of following suit merely for a reduced number of workers.

A policy building on the conception of stable Phillips trade-offs *cannot help but be permissive* in the sense here implied. Consider the problems that would arise if policy makers, guided by Phillips-model estimates, decided to stabilize U at 4% in the belief that this corresponds to a continuous sequence of $\Delta w/w = .07$ and $\Delta P/P = .045$ without acceleration.** These would be estimates derived from data of a period in which policy makers did not act in this fashion, and in which the expectations structure was influenced by the experience that as a result of anti-inflationary policies U has in the past always increased whenever $\Delta w/w$ or $\Delta P/P$ had risen beyond some range. In view of the pressures discussed above the private sector would in these circumstances almost certainly "test" the policy makers as to whether they persist in the policy of keeping U at 4% even if (in contrast to Phillips-inspired beliefs) acceleration does develop *or* will in that event use restraints for rolling back $\Delta w/w$, $\Delta P/P$ and $\Delta CPI/CPI$.

In the former case — in the case of permissive policy — the expectations-generating structure would become very different from what it was in the period the data of which were used for making the Phillips estimates; disappointed expectations would result in continued changes of the structure and in continued acceleration as long as the policy makers persisted in $U = 4\%$.

* This point was stressed by Arthur M. *Okun* in his contribution to the debate.
** Roughly speaking, this belief would be consistent with *Perry*'s results.

In the latter case — that of the application of restraints because of acceleration at $U = 4\%$ — the policy *would cease to be Phillips-based*. It would become a policy trying to prevent $\Delta P/P > .045$ by allowing U to fluctuate to the extent required for achieving this result. Furthermore, if we have in mind the Unlited States and take at their face value the figures here used for illustration (as non-accelerationists might), the additional remark is in order that such a policy of $\Delta P/P = .045$ would be exposed to more obstinate "testing" by the pubic and hence would probably have to resort to harsher restraints than a policy that first succeeds in reducing price-inflation into the range of, say, between 2% and 3%. This is because an American policy trying from now on for $\Delta P/P = .045$ would be interpreted as having revised its conception of normalcy under pressure, and it would take time and great consistency to convince the public that further upward revisions will not follow. The stop-and-go policies needed for preventing "historical" acceleration would in these circumstances become very onerous, particularly because the United States does not belong in the group of countries for which the stop-phases of such policies mainly involves a reduced rate of resource-transfer from the agricultural to the industrial sector or reduced admission of foreign workers. Nor does the United States belong among the countries in which discrepancies between the composition of demand and that of supply in the labor market would start becoming disturbing only at exceedingly low levels of U.

Are American policy suggestions adjustable to the requirements of Eastern European economies?

I feel convinced that American policy-makers would soon find it necessary to abandon any policy effort guided by the conception of a stable inflation-unemployment trade-off at a level of unemployment involving major shortages in specific labor categories. The acceleration of inflation would have to be suppressed by stop-and-go policies which in the United States, as in many other countries, would become associated not only with a reduced rate of productivity increase but also with appreciable fluctuations of the domestic unemployment rate. The possibility of occasional administrative interferences with particular wage and price developments does not invalidate this conclusion.

It has become usual to describe a 4% or somewhat lower unemployment rate as the desirable American target.* However, a general evaluation of the

* A "target" rate in this sense is a rate by which monetary and fiscal policy is supposed to be guided in the "present circumstances", though, of course, no one suggests that his target rate could be achieved *promptly*.

experience suggests that $U = 5\%$ may be a better guess of the unemployment rate compatible with no acceleration of inflation, and with an inflation rate of about 2% which does not seem to exceed the relevant threshold value. This statement relates to unemployment measured by the conventional American procedure with no "corrections", and the statement will be qualified by the suggestions to which I now turn.

The bulk of the American population has an interest in taking care of 5% of the labor force, or of a similar fraction, by methods other than that of creating major inflationary instability and of establishing weak productivity trends. While recognizing this we should take it for granted also that it is undesirable to enlarge the welfare rolls by persons capable of doing useful work. Therefore a reasonable solution of the problem would require thoroughger exploration of the characteristics of specific labor groups that are more or less "permanently" in excess-supply in circumstances where the aggregate unemployment rate is just high enough for *barely avoiding inflationary shortages in other specific labor categories*. The public sector should be able to provide work opportunities suitable for many of the persons representing the excess-supply that develops in these circumstances (not including, of course, those persons who are merely between two jobs, on a reasonable interpretation of this term).

I would imagine that the general principle I have tried to formulate is applicable also to socialist economies. Obviously not the entire analysis which was presented in this article is equally valid for differently organized economic and social systems; yet even if we consider a country in which large enterprises are government-owned and in which administrative regulations are much more comprehensive than in any major Western economy, very high degrees of resource-utilization will create acute tensions. These are the tensions characteristic of "suppressed" or "controlled" inflation, tensions that would not develop under a more restrained monetary policy.

While in a state of open inflation price-increases limit the quantity of goods the public can buy for its money income, in a state of suppressed inflation either a smaller quantity of goods is offered for sale than the public could afford to buy or merely less preferred varieties of goods are offered. The shortages express themselves differently — in a sense *more directly* — when inflation is suppressed. Productivity trends are usually weakened also under suppressed or controlled inflation because, given the shortages, a very large part of the labor force is under no compulsion to make a strong effort. To me as an outside observer it seems that the bulk of the population would have an interest in the avoidance of significant shortages even if regulations prevent the consequences from reflecting themselves in the price level. Nor do I believe that in practice it would be possible to avoid inflationary price movements in the long run if the shortages become acute and persistent.

Yet it is true of all types of economy that avoidance of appreciable shortages in the most urgently needed labor categories requires restrained monetary policies that lead to "excess supply" in some categories. It is true also of all types of economy that if the experts can provide the policy makers with reasonably accurate information concerning the characteristics of the labor-groups that are in excess supply in such circumstances then it is possible to utilize the services of these workers in public-sector activities suitable for them, though probably not in the conventional commodity-producing sector. *The financing would have to be noninflationary in the sense that account would have to be taken of the fact that relatively little saleable output could be expected from these activities as a counterpart of the money incomes earned in them.* But it would not be necessary to keep potential workers inactive and to pay them subsistence for no service. Even free subsistence payments would be cheaper for the community than is the reduction of productivity increases amidst inflationary tensions (open *or* controlled), but the effect of such payments on the work morale of the population is notoriously adverse, and at any rate it is unnecessary to forgo the services which this part of the labor force is capable of rendering. What would be needed in *all* countries is a monetary policy that would abstain from trying to solve the problem of the relatively disadvantaged by the tempting but very crude method of creating significant excess-demand for the services of those who are most needed.

"In principle" we might even say that all this (or most of it) would reduce to a conventional problem of correct programming, provided we made ourselves aware of the fact that the labor force consists of a *very large* number of distinguishable categories with different productivities in different activities. If the resource-endowment of an economy could be spelled out in the required detail, then it would be seen immediately that the avoidance of shortages in all major labor-categories leaves an excess in some, unless we include among the activities those which this excess-labor is capable of performing. These are activities which because of the relatively low priority ranking assigned to them would not be undertaken *if* the excess-labor were a good substitute for the type of labor that is in short supply. The facts show, however, that the substitution relation between the "scarce" and the "excess" labor is a very poor one. Nowhere do conventional full-employment policies pay nearly enough attention to the implications of this for proper monetary and fiscal management.

The conclusion emerges that regardless of whether we limit our analysis to a unique type of economic and political system or decide to move across the borders we remain faced with problems that have identical roots. I have ventured the guess that even the available methods of improvement show similarities in some important respects.

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СРАВНИТЕЛЬНОЕ ЭКОНОМИЧЕСКОЕ ИССЛЕДОВАНИЕ НАПРЯЖЕНИЙ, ВЫЗЫВАЕМЫХ ПОЛНЫМ ИСПОЛЬЗОВАНИЕМ РЕСУРСОВ, ОТВЕРГАЯ ПОДХОД С ПОЗИЦИЙ КРИВОЙ ФИЛЛИПСА

В. ФЕЛЛНЕР

Полное использование ресурсов неизбежно вызывает напряжения в экономике, поскольку всегда имеются категории ресурсов, использование которых выше какого нибудь определенного уровня вызывает дефицит в других категориях ресурсов. Особенно справедливо это в отношении трудовых ресурсов. Это напряжение — в зависимости от организационного строения экономики проявляется (помимо замедления роста производительности труда) в инфляции или в нехватке отдельных предметов потребления, что в перспективе неизбежно приводит к инфляции.

Можно констатировать, что в Соединенных Штатах Америки примерно с 1965—66 годов развертывается процесс ускоряющейся инфляции, не исчезнувший даже в период относительного экономического спада. Начало инфляции совпадает с исключительно высокой занятостью рабочей силы.

В американских условиях безработица, несколько превышающая 4%, означает еще приемлемый уровень занятости.

Некоторые экономисты не считают серьезной проблемой напряжения, возникающие на почве высокого уровня занятости. Эти экономисты предполагают, что существует вполне определенная взаимосвязь между степенью безработицы и темпом инфляции (кривая Филлипса), так что авторы решений по экономической политике могут определить, какая безработица или, соответственно, какая инфляция является еще терпимой. Однако официальные американские данные о безработице и данные об инфляции не свидетельствуют о наличии такой взаимосвязи. Правда, отдельные авторы получили путем различных поправок данных о безработице статистически приемлемые данные, но эти результаты нельзя считать убедительными, поскольку эти поправки произвольны и поскольку не был принят во внимание механизм высокой занятости, вызывающий инфляцию.

Согласно мнению автора, высокий уровень занятости сам по себе, по всей вероятности, вызывает ускоряющуюся инфляцию. (Здесь «высокий уровень занятости» означает существование дефицита отдельных категорий рабочей силы.) События не принимают такого оборота только тогда, если экономика, вопреки изменившейся с середины 60-ых годов экономической политике, реагирует на рост цен таким же образом, как и прежде, или же если изменение реакции наступает со значительным опозданием. Так, если спрос на отдельные категории рабочей силы превышает предложение, происходит ускорение темпа роста номинальной заработной платы и если к этому присоединяется также и рост реальной заработной платы (к чему стремятся профсоюзы), результатом явится ускорение инфляции.

Согласно мнению автора, руководители американской экономической политики вскоре окажутся вынужденными отказаться от нынешней политики поддержания «высокого» уровня занятости, которая могла бы быть успешной только при наличии широкой возможности взаимного замещения избыточных и дефицитных категорий рабочей силы. В целях ликвидации инфляции они будут вынуждены применить политику типа «стоп-ход».

Автор предлагает, чтобы государство вместо стимуляции экономики стремилось к созданию новых рабочих мест, причем структура которых соотвествовала бы составу избыточной рабочей силы, учитывая при этом, что возникающее на почве такой занятости количество продуктов, которое можно сбыть, и масса заработной платы не пропорциональны друг другу. Согласно мнению автора этот общий принцип действителен для социалистической экономики.

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ECONOMIC REFORM, DEVELOPMENT AND STABILITY IN HUNGARY*

From the purely economic point of view the reform means that the state power exercising the rights of capital ownership implements the socio-economic plan no longer with the aid of obligatory instructions issued to the enterprises but with economic methods, by developing a suitable economic environment.

A greater part of investments than earlier is now decided by the enterprises. In the course of the fourth five-year plan (1971—1975) inclusive of bank credits about 65 per cent of investments will be implemented on the basis of enterprise decisions. Enterprises and cooperatives take autonomous decision not only on production and on the use of profits but also on questions of purchase and sale. About 30 per cent of prices are subject to free bargaining between sellers and buyers. Prices which influence living standards or which have wide secondary economic effects continue to be determined by government.

An important social and political consequence of the reform is the strengthening of socialist democracy. In a consolidated socialist society the trends of economic and political freedom assume each other's existence and strengthen each other.

Before the socialist revolution the economies of the East-European countries — as compared with the West-European ones — were in a peripheral position. The "third wave" of industrialization which started in the late 19th and continued in the early 20th centuries; compared with the previous two — in Great Britain and Germany—, had a very limited success. Considerable progress could be registered in establishing the infrastructure — from education through the regulation of waterways to the construction of railway lines — but the semi-feudal social pattern and the corresponding political power organization threw difficulties in the way of these impulses towards contemporary industries and towards agriculture. Even imported capital flowed mainly towards non-dynamic branches.

Consequently the socialist revolution had to cope not only with the tremendous task of administering historical justice and of carrying through a social transformation, a task which itself absorbs the best forces of a nation. Against a background of problems and patterns inherited from a war economy, the new society found itself facing the necessity of industrialization under grave

* Lecture delivered at the Rome Institute for Foreign Policy on June 4th, 1971.

international circumstances which made not only the import of capital and technologies impossible but also the evolution of normal foreign trade based on the principle of mutual advantages. (The embargo initiated by the USA and adopted by the countries of Western Europe affected 50 per cent of the commodities usually exchanged in international trade.)

Economic development and industrialization under such circumstances could only be carried out in the spirit of a management system based on a powerfully centralized model which exercises complete control over income distribution, disregarding the requirements of short-term economic efficiency and freely regrouping the available assets. Yet from the very outset, a social transformation makes it impossible for an "economic centre" disregarding the interests of the revolution to develop. On the other hand, the economy is a goal-rational system whose functioning is deeply affected by material interests, while the revolution — prompted originally by overwhelmingly economic motives — after its outbreak starts thinking in value-rational terms and dismisses from its ranks most of those wishing to moderate its pace by referring to interests deriving from the goal-rational system.

It should also be realized that socialism has a very strong and definite system of values. A wide-scale implementation of this system takes much time and requires large amounts of material means; and socialism invariably respect the right to work, that is, endeavours from the very beginning to maintain full employment. In a country where 50 to 80 per cent of labour is engaged in agriculture (this figure was 60 per cent for Hungary in 1938), industrialization — if full employment is considered a fundamental requirement — can only be extensive, that is, labour-intensive and capital-saving.

In such a period of development, economic management relies on directives, that is, on the method of plan instructions binding everybody.

When speaking of national-economic plans — to which we shall come back later —, we must distinguish between the economic-political conception (a coherent system of objectives and methods for a definite period) and the methods used in implementing this conception. If the prescriptions of the plan are broken down for enterprises and the methods of implementation are also prescribed in detail for the organizations (buying, selling, stockpiling, delivery dates, physical indicators for measuring plan fulfilment, etc.) then we speak about a system of *directive plan instructions*.

At the time of revolutionary transformation the system of plan instructions proved suitable for concentrating assets, for changing the proportions of labour distribution (between industry and agriculture), for ensuring full employment and for developing a new industrial structure at an advanced pace. Socialism fulfilled these tasks without using foreign capital and technology, under international circumstances which an outstanding Swedish economist refers to as "Western economic warfare".

Obviously, such an accelerated economic growth — which took place parallel with a dynamic social revolution and amidst all the heavy struggles it involves — has its drawbacks and dangers. But in history it is not always possible (or to be more precise, for the most part impossible) for a generation to have a free and wide choice among ways and possibilities when their predecessors — for whatever reason — fell behind world development. (I wish to make it very clear that I do not want to pass any moral or condemning judgement on our fathers; many were fully aware of the dangers of falling behind the times and tried to make up for it. Witnesses of their efforts are two defeated revolutions in Hungary — in 1848/49 and 1918/19. Nevertheless, there is no doubt that the intellectual curve of our "leading class", the aristocracy and the gentry, showed an incredibly rapid dive beginning from the early 19th century.)

Accelerated economic growth going parallel with a social revolution has the following disadvantages and dangers:

a) The repressive and administrative method affects every field of social life, including the economy. In such a period economic life cannot be built on interests and must therefore be controlled with administrative methods. Yet at times of intensified class struggle it is impossible to protest even against voluntaristic or irrational central decisions and instructions for it is not always possible to distinguish groups opposing social transformation from specialists (economists, engineers, agricultural experts) who try to behave in compliance with the requirements of a rational economy.

b) Under a directive system of plan instructions a powerful bureaucracy builds up which often identifies the movements and rules of economic life with the internal norms of the state apparatus and which looks upon itself as the most consistent representative and exponent of transformation. This layer — sometimes unintentionally — endeavours to consolidate and strengthen itself. Every management system has its internal logic; that of the directive system of plan instructions consists in believing that the shortcomings, difficulties and troubles are due to the failure of giving overall instructions to enterprises. (The point is that even in a most centralized system the enterprises do possess a minimum degree of freedom of action.) It is therefore evident that the directive system must be made totalitarian. The reason why ours has not become a totalitarian one is that it is more and more difficult to control with directives and all-round instructions an economy becoming increasingly more complex and interdependent, without running the risk of grave economic and political troubles.

c) Viewed purely from the economic angle, the greatest problem was that in the given atmosphere there was practically nothing that would have encouraged efficiency. The conception of the new industrial structure was born largely from theoretical-technical considerations since it is anyway impossible

to attain the international standard of economic efficiency in incipient industries; furthermore, under the conditions created by an artificial price system and by embargo calculation was again impossible. Consequently, the investments turned out more expensive than planned, they were implemented with considerable delay (involving not only rise in costs but also technical depreciation) and the volume of unfinished investments grew from year to year. This involved losses in the international balance of payments and shortages of consumer goods (since the purchasing power showed a rapid rise owing to the high investment level); that is, commodities and assets froze on the one side and current demand remained uncovered, on the other side. In addition, agriculture — for lack of incentives — developed at a slow pace and its "export dynamics" radically diminished.

This economic-political situation compelled the government to make certain alterations, but at the outset these were restricted exclusively to moderating development targets (i.e. reduction of investments), and to improving in some degree the supply of the consumer market. Under the impact of experiences, the preference given to the heavy industry — resuscitated from ruins in some countries — was gradually moderated and the light industry and agriculture were granted larger supports.

Such methods may mitigate certain troubles and may temporarily slacken tensions, but radical changes can only be born in the area of management and not in the economic-political sphere.

This was how in Hungary a radical reform of the management system had matured and came to be introduced on January 1, 1968.

Economic effects of the reform

What does the Hungarian economic reform consist of? What are the experiences, results and the difficulties involved? There are several approaches to the answers. We wish to examine the effects of the reform in a wide vector including such approaches as the national economic angle and the enterprise angle, then from the side of the state and the political organizations, and finally viewed through its impact on the political attitudes of the society. In conclusion I shall make a brief survey of the achievements, problems and conflicts deriving from the introduction of the reform.

To begin with, I want to make a little digression to certain misinterpretations and misunderstandings in this connection which cropped up mainly in the press of some capitalist states and in the opinions of some theoreticians as well as in the dogmatic views of some ultra-leftists. These interpretations emphasise one of the components of the Hungarian reform, namely that it gives wider scope to "market impulses" and tries to accomodate to market requirements more than the former management system did.

Let us remember what Lenin emphasised when introducing the NEP system, namely that in socialism one cannot adopt the "direct barter of products", that is, one cannot dispense with the market. Nor did Stalin deny the necessity of the market, although he did not qualify investment goods as commodities, and his interpretation of the economic reasons justifying the existence of the market were not foolproof. But his mistakes were later corrected by the Soviet economic literature. What the Hungarian reform is concerned with in this respect is something that nobody has ever questioned theoretically yet with which practice did not comply: that is to accomodate demand without establishing bureaucratically, and from above, a "hierarchy of needs", suggesting theoretical arguments for industry to detach production from the consumers' demand.

Some economists in capitalist countries suppose (or hope) that "concessions" made to market impulses will lead — by its inherent logic — to the following sequence of events; the market will dictate to economic management, then the economy (that is, the goal-rational system) will get the better of the entire value-rational system (e.g. equality, right to work, free education and health service, inexpensive cultural facilities and services etc.) and then we shall fall headlong into state capitalism. This is, I repeat, what some economists think. Now what I am going to expound in the following is that with wider enterprise freedom the role of the state has also gathered strength — if not in allocating plan targets, but in other economic fields — and also the impact and "pressure" of the value-rational system have become more intensive. What is more, the workers have a much wider scope for voicing their opinions on questions of production and economy (through the trade unions), and political democracy has also made progress, which means that in the economy the workers and public opinion exert a growing pressure on the government for raising the standard of living and increasing the supply on the consumers' market.

Viewed purely from the economic angle, the reform means that the owner of capital (more exactly, state power, exercising the rights deriving from the ownership of capital) no longer uses directive instructions given to enterprises and binding on everybody for the implementation of the national economic plan. Thus, the plan is no longer primarily a system of interrelated instructions regulating physical processes, but an economic-political conception defining the growth rate for a term of medium length (five years), building up dynamic equilibrium conditions under which the system of objectives is implemented and the system of assets is mobilized, prescribing the development references; ensuring the intellectual and material condition necessary for accelerating technical progress; outlining the conditions indispensable for raising the standard of living, the real wages and consumption; maintaining full employment; and formulating the export-import policy in

keeping with the domestic tasks. But the plan is implemented with economic methods, that is, by shaping an economic environment corresponding to the shifts in the major tasks.

Considering the changes in demand, in prices (including factor costs, prices of raw materials and of investment goods), manpower supply, the prospects concerning internal and foreign markets and technological development, the enterprises and co-operatives (the units of economic activities) determine the growth rate of production and the necessary transformation of their structure, with a view to attaining adequate profit. In this respect "adequate profit" means that, after paying the taxes on the means of production, on labour and on profit, the enterprises should have sufficient means left for development (investments), for improving and expanding social facilities and for ensuring the material interests of their workers. In this sense material interest should be understood to mean grants over and above the usual salaries and wages, such as sharing in profit privileged salaries, bonuses, and special grants for the "regular staff" (those who have the longest records in the enterprise) and so on. If an enterprise wishes to make larger investments it is entitled to bank credit for this purpose. In 1967, that is, the year before the launching of the reform, 14 per cent of the profit remained with the enterprises; in 1969 and 1970 this figure was about 50 per cent. During the 4th five-year plan (1971—1975), including bank credits, 65 per cent of investments will be made on the strength of enterprise decisions. The volume of enterprise savings engaged in the bank system will substantially increase and be used for development targets in the first place. (Let me note in parentheses that from Marx's social-philosophical statement of tremendous consequence, according to which every value stems from human labour in the last analysis, an incorrect economic-political conclusion was drawn, namely that capital, including fixed assets, and land should be given to enterprises free of charge. This decision was bound to lead to a prodigal treatment of capital and land, that is, of material means which were in short supply.)

The enterprises and cooperatives make autonomous decisions now not only in building up production and utilizing profit, but also in issues of buying and selling. The sources of supply — with respect to raw materials and investment goods — are chosen by the enterprise which also has the right of selecting partners in realization. The transfer of decision making on purchasing and selling to enterprises required the introduction of new rates of exchange and the rearrangement of foreign-trade competence. In order to get a clearer view of the cost relations in the domestic economy, a rate of conversion exclusively for domestic purposes has been established showing the amount of forints necessary in the Hungarian economy for earning one American dollar, respectively one rouble. The enterprise sells its products either on the socialist or on the capitalist market and obtains the equivalent in forints calculated

according to the rate of conversion. If the enterprise possesses domestic currency, it may commission a foreign-trade enterprise to import raw materials, semi-finished goods, investment goods or consumer commodities for the home trade. Many industrial enterprises and cooperatives have been granted the right to trade autonomously, while the specialized foreign trading companies are acting as commission agents for the productive enterprises in order to explore external markets better, and the enterprises engaged in foreign trade may even form pools for special tasks by jointly undertaking risks and dividing profits. This raises two problems concerning economic equilibrium: in some commodities the import elasticity is greater than export capacity; in such cases tariffs and — in particularly difficult cases — deposits are determined and required. (Great Britain has introduced more than once, such a system of deposits; latest in 1967—68.) On the other hand, we produce certain export articles that earn dollars or roubles at a rate which is inferior to the national-economic average (which is 60 forints to the dollar and 40 forints to the rouble) yet export cannot be discontinued or prohibited since for the time being we do not possess other similar exportable goods manufactured more economically. In such cases the Ministry of Finance, after deliberations and agreement with the relevant enterprises and cooperatives, established a degressive subsidy (decreasing annually) inducing the enterprises and cooperatives to cut down expenses or to replace the uneconomical product with an economic one.

The acceleration of technological progress as well as other factors require freer price formation. Thus, about 30 per cent of prices are left free, to be bargained by sellers and buyers. In the case of commodities essentially affecting the standard of living or having wide economic impacts, the prices are established by the government. The price policy has justly been criticized in two respects: new technology is comparatively expensive and labour is cheap, on the one hand, and, on the other, agricultural prices are low compared with industrial prices. The latter problem has already been solved by raising the income of the agricultural population to the level of the income of industrial workers. An overall industrial price reform would have involved too many risks, and therefore certain individual negative effects of the price system have been moderated by direct provisions (the cancellation of the average wage controlling system, reduction of tariffs on means of production, etc.).

The officially fixed prices prevent the occurrence of exaggerated prices rises (which fail to reckon undesirable consequences) or of inflation, while the sphere of free prices secures in an approximate manner, the flexibility needed for an equilibrium in the consumers' market and for the introduction of new products. The prices established by industrial enterprises rose by not more than 2.5 per cent between 1968 and 1970, and those of consumer goods by 2 per cent. In the second half of 1970 two important problems crop-

ped up which have not found solution since; one is the rise of prices of the building industry on the market of investment goods as well as in housing (owing to excess demand), the other being the substantial rise of world trade (import) prices on capitalist markets. The latter is mitigated by the fact that the contractual prices on the CMEA market are firm. Nevertheless, no really satisfactory solution can be found since the increase of budget deficit and the shift of price differences towards the consumer are equally dangerous (the latter rather for political reasons). Should the effects of rising prices by regulation offset or restrained, the enterprises would — in the case of 4 to 5 per cent increase of import prices — again find themselves in an artificial environment and would again start lavishly handling raw materials.

Finally, the changes which have taken place in regard to enterprises also include the fact that the cooperatives have obtained a legal status equal to that of state-owned enterprises.

The reform viewed by state and political organizations

In the course of the economic reform part of the power which used to be in the hands of state organizations has been transmitted to enterprises. A static approach would conclude that the state (or in other words, the group of people working in state organizations) has lost, and the enterprises have acquired power.

Such questions must, however, never be approached on a static basis, since both society and the economy are dynamic phenomena. In reality what has changed is rather the interpretation of power, the views on the tasks and function of the government. According to the earlier conception, the state not only initiated but also instructed and controlled implementation lending thereby official authority and competence to the enterprises in a certain sense. Today — in addition to the initiating role of the state — its mediating authority has come to the fore since it is necessary to bring about a compromisse (equilibrium) between the requirements of the goal-rational system and of the value-rational system, which are in many respects conflicting. The pressure and impact of public opinion, of trade unions, of telecommunication (television, radio, the press) have increased in the society. But the goal-rational system endeavours to acquire greater authority and influence and to create a social climate in which it can act according to its own laws. From plan period to plan period, from budget to budget, from problem to problem, the government must establish and re-establish equilibrium between these two systems which are embodied in various social and political institutions. The notion of equilibrium should be understood here in the broadest sense of the term, that is, political, social and economic equilibrium. As far as the gist of the problem

is concerned (that is, the relationship between intention and implementation) which state, indeed, has a greater power: a state initiating and directly instructing and thereby directly or indirectly restrainingt he actions of opposite forces, or a state initiating and practising its authority as an arbiter? Obviously, the government apparatus relieved of the pressure of drafting minutely detailed instructions, is capable of handling more initiatives of a complex nature than was the case earlier. The role of arbitrator, however, considerably improves the possibility of foresight by the government regarding the expected behaviour of parties and organizations interested in economic activity.

In addition to these two important cricumstances, I would like to mention a few factors and activities in which the state power (the government) has a greater role and influence than it had earlier.

a) The redistribution of incomes is becoming more and more important. In order to ensure an adequate and just income distribution the state must tap incomes by taxation and regroup the tapped amounts for other purposes through the budget. Taxation has acquired increased proportions and redistribution has become a qualitatively new task because an uncontrolled flow of incomes from one layer of the population to another would or could create undesirable proportions.

b) The economic (industrial and agricultural) ministries have turned into veritable information centres in the modern sense of the term. It is a widely known and historically demonstrable fact that information centres have always been power centres and are becoming more and more so. With reliable information in hand it is easier to make correct decisions than without it.

c) The executive power has remained and will remain the owner of the infrastructure. The fact that the state power is engaged to a lesser extent in day-to-day economic problems has released new forces and given new impetus to this activity which is anyway important for productivity and efficiency as well.

d) The fact that the monetary means do not follow mechanically the system of central directives any longer has brought about the necessity of a new financial policy. In other words, the monetary means play a very important role in directing and influencing economic activities, as well as in developing the economic climate. The successful application of monetary means is known to have certain limits (as shown also by the present state and problems of Western economies), yet if applied with due circumspection and in a selective manner, their importance is still significant. Their application can, naturally, not be detached either from natural processes or from policy (or more exactly, from the political and social effects exerted by the monetary means). But are there essential means, methods, of processes in the economy which can be separated from politics?

And finally, let us realize that the greatest and technologically most important investments — from irrigation projects to computer programmes — are invariably in the hands of the state.

The strengthening of socialist democracy

The strengthening of socialist democracy has been made possible by the following factors:

a) One of the most important fields of social activities (a subsystem, as cyberneticists would put it) — the economy — had been built on enterprises and individual interests, eliminating over a vast area the necessity of administrative measures. Earlier, the politically engaged layer made every effort to follow the plan instructions, but those not engaged politically — owing to the lack or even a rudimentary material interest — could not be made to adopt adequate economic attitudes without political and administrative methods. In a revolutionary period this can be tolerated (over a short period and at times of imminent dangers) and is in fact inevitable, but over a longer period the economy can only be controlled by economic means. The realization of this postulate resulted in the abolition of coercive administrative measures in wide fields of social activities under the economic reform. In this sense, the reform itself had created a sound basis for the development of political democracy.

b) At the same time the interpretation of government activity as an authority of arbitration permitted, encouraged and promoted the discussion of socialist alternatives in political, social and economic forums. According to the earlier conception, one and the same issue could only have one optimal solution within socialism. The successful establishment of the economic reform and of economic-political priorities brought into motion several alternatives and, after a certain time, the leading organizations (state and council authorities) felt a natural necessity and even a requirement that the apparatus and other advisory organizations should work out and submit several variants of solution for consideration. As a result, debates evolved on the most diverse problems within the limits set by socialism, opposite views were voiced rendering the arguments more subtle and refined.

c) The extension of the power and authority of enterprise managers made it necessary to set up democratic counterweights for protecting the interests of the workers. No workers' councils came to be formed in Hungary since both economists and statesmen were of the opinion that the professional standard of the leadership had to be ensured and strengthened. It had to be realized that enterprise managers would have to make decisions on many questions that had not been in their competence, that is, in which the professional

standard (in the economic sense of the term) left much to be desired. Thus, the role of the democratic counterweight is played by the trade unions which, while stimulating the work force in harmony with the requirements of technological progress and efficiency, also carry out the "classical functions of representative interests". Since the introduction of the economic reform the authority of trade unions has become consolidated in society and factories alike, and their opinion is taken into consideration in deciding on all essential economic, social and income-policy problems.

d) The role and influence of legislative power on executive power has been strengthened. The special committees of parliament do not only take part in the drafting of bills but regularly request the ministries to report back on major issues which the public opinion of the country is concerned with. Debates in plenary meetings are animated, opinions are countered and the right of interpellation is made wider use of.

There is a similar progress going on in the councils which — on behalf of their constituents — are more thorough and daring in controlling the work of the executive committees.

Historians and sociologists tell us that the Jacobins often "tightened" the political rights in favour of greater economic freedom. In certain historical situations it may, naturally, be conceived that politics and economy move in opposite directions for international reasons or under the impact of the domestic situation, but in a consolidated socialist society — such is our experience — the trends of greater economic and political freedom presuppose and strengthen one another. (The reason why I am using the term "trend" is that the possibility of cyclic fluctuations cannot be excluded on the basis of three to four years of experience.)

Problems, experiences and results

On analysing these phenomena we must make a distinction between problems and problems, between experience and experience. Some problems are characteristic of the development phase of socialist society: these are the ones deriving from the "new adaptation" of the economy to the sphere of social activities in order to increase efficiency and intensity. Others again may crop up in any kind of economy which powerfully intensifies material interest for the acceleration of development, that is, inflates domestic demand. The formation and course of this kind of economic-political problems have certain characteristics within socialist economy yet they cannot be qualified as processes exclusively or mainly characterizing socialism.

Let us tackle the first group of these problems. The conflict between the value-rational and the goal-rational systems has become very intensive, yet we have so far succeeded in mitigating it by mutual compromises. The goal-

rational system has been consolidated socially partly because the leadership and a large part of the masses have recognized that the economy needs new driving forces in a period of intensive development, and partly because even the freedom of decision has an ostensible nature in an accelerated world development. We are either able to keep abreast in competition or else we lag behind, the consequences of which are well known to our "national memory". The reform has also strengthened the position of economists who endeavour to consolidate the norms of rational economy and have them accepted by public opinion.

But the value-rational system is strong and obstinate, deriving its force from the specific value system of socialist society and from Hungarian historical traditions alike. As far as interests, mentality and motivations are concerned, there are, naturally, substantial differences between a writer or artist and an old trade-unionist. The writers and artists oppose the goal-rational system in all (or almost all) societies and derive the hierarchy of values from their own art. The old trade-unionist, on the other hand, defends the principle of equality, against the differentiation of incomes. The activity of the workers is on the increase since the incomes of the peasantry have risen more rapidly in the last years. Although this has resulted in equalization and in the disappearance of earlier disparities, it is well known that people are more susceptible to changing factors than to unchanged ones. This constellation — since life is full of contradictions — has helped release certain rigidities of wages economy, contributing to the material and moral recognition of stable manpower (the old guard).

Pensioners (above 60 years of age, accounting for some 15 per cent of the population) were particularly concerned with rising costs — perhaps less frequent though more substantial in the past and rarely talked about overtly — but are now granted an automatic 2 per cent rise annually.

The partisans of the value-rational system are reluctant to realizing one thing: that the material goods necessary for the functioning of the value-rational system are produced in the circulation of the goal-rational system; but the efficient operation of the goal-rational system is also determined by certain conditions. Whatever our attitude to these conditions is, whether we like them, take them for granted, or dislike them, they cannot be disregarded. It is, of course, evident — and this is perhaps what mostly disturbs the exponents of the value-rational system — that increasing amounts of material goods, in themselves, do not make mankind any happier. True enough but their lack rouses everybody to indignation . . . . !

Let me sum up the essence of economic-political problems in the following:

The substance of the problems belonging to the scope of economic policy may be summed up as follows:

1. Is it possible to accelerate and intensify economic growth and technical progress, while ensuring full employment, equilibrium conditions and a relative stability of the domestic currency?

2. Is an even growth rate conceivable or — due to the effect of individual factors causing periodicity (cyclicality) — must its temporary decline be reckoned with?

Experiences of the past years have shown that an acceleration in economic growth and technical progress induces greater demand on the markets of both investment and consumer goods. In the case of a moderately developed country which is poor in raw materials this means a sudden rise in import elasticity. In such a situation, equilibrium depends on whether the dynamics of exports can keep pace with the growth in imports at a time when domestic demand is also on the increase.

In the medium time span, problems may arise also in connection with investments. The strongly increased demand and the enterpreneurial mood of the enterprises possessing considerable funds is likely to involve a growing volume of investment. But investments imply much executing and absorptive capacity (from the production of building materials to the construction industry itself). If a contradiction emerges between these two processes, i.e. between demands on investment and the capacities capable of efficient execution, then building costs will rise, projects will deteriorate; unexpected imports will become necessary and export products will not earn the expected sales receipts. The growing import elasticity, the shortages on the investment market and the deceleration of the investment cycle (amortization) exert a growing pressure on the state budget. The burdens of the budget, however, are rising also for other reasons (infrastructure, rising building costs, the expectations of the population and the value-rational system).

In the first three years of the reform, export dynamics have exceeded import elasticity; thus, the balance of payments showed a favourable development. The problems related to the deceleration of the investment cycle have not yet appeared, the deficit of the budget was tolerable, and prices were rising slower than expected.

In 1971, however, imports grew faster than exports, the problems related to the situation on the investment market appeared more sharply, and the budget deficit was also higher than planned.*

Under such conditions the dynamic growth of investments had to be reduced by central measures. (Between 1969—71 the annual rate of growth

* The problems of the economic situation developing in 1971 strongly influenced the budget for 1972. Government measures to be taken in light of the situation were dealt with by Prime Minister Jenő Fock, at a meeting of economic executives and later by the Central Committee of the Hungarian Socialist Workers' Party as well as by Parliament in the course of the budgetary debate.

was 18—19 per cent.) For this purpose, certain restrictions had to be applied in both the state and the enterprises spheres and the price of building materials had to be raised. The latter measure, however, was aimed not only at restricting demand, but also at stimulating assumed exaggerated and economically unjustified dimensions. As a result of government resolutions, fewer major government-financed investment projects will be started in 1972 than were originally planned and credit conditions are also tightened.

As was expected, braking requires much more *direct* government intervention than does acceleration of growth. This is so, because in the case of braking the interest of the national economy and that of enterprises show a stronger conflict, since under the effect of growing demand the enterprises would like to continue their lively investment policies. On *the level of the national economy*, however, the unfavourable consequences of this process are clearly perceivable and thus the government must hinder such efforts. This policy of the government can be implemented partly in an indirect way — by changing economic conditions — and partly by direct (administrative) measures. The purpose of braking and the more deliberate government intervention is to restore equilibrium on the one hand and to create conditions for a greater rationalizing activity in the enterprise sphere on the other.

Should the periodicity (cyclicality) of the growth rate persist also in the future — which is hardly avoidable in my opinion — then two types of the same system of control and management have to be developed: one of the period of acceleration, when the stimulating and indirect methods would be preponderant, and one for the period of braking, when the measures of restrictive character and direct interference would obtain a relatively greater role. No system of control and management can be conceived of in which *only stimulating or only braking* methods are to be found. In both periods of economic policy both kinds of methods are needed; as though opposing, they are complementary factors within the same system of control and management and assume the existence of each other. Economic science is primarily the science of proportions and economic leadership or management is the art of proportions; the success or failure of a concrete economic policy or a system of controls depends primarily on the proper proportions. Sometimes it may be necessary *to put on brakes* in order to restore equilibrium, but in today's world stability and safety are to be found in dynamics. Therefore, the major purpose of the periods of braking — after equilibrium is restored — is to start a new period of acceleration on a more rational and efficient basis.

ХОЗЯЙСТВЕННАЯ РЕФОРМА, РАЗВИТИЕ И СТАБИЛЬНОСТЬ В ВЕНГЕРСКОЙ ЭКОНОМИКЕ

Й. БОГНАР

В Венгрии экономическое развитие и индустриализация, развернувшиеся с социалистической революцией, могли произойти только под знаком сильно централизованной системы управления. В этот период развития хозяйственное управление осуществлялось посредством обязательных для всех плановых директив. Со временем, однако, экономика стала настолько комплексной и взаимозависимой, что управление ею оказывалось все менее возможным на директивной и тотальной основе. Поэтому 1-го января 1968 года была произведена коренная реформа системы управления.

С чисто экономической точки зрения реформа означает, что государственная власть, располагающая правом собственника капиталов, осуществляет общественный народнохозяйственный план в дальнейшем не на основе обязательных для предприятий директив, а при помощи экономических методов, посредством создания соответствующей экономической системы.

Теперь в сфере предприятий принимаются решения о более высокой доле капиталовложений. В 1967 году, то есть до введения реформы, у предприятий оставалось 14% прибылей, а в 1969 и 1970 гг. — около 50%. В период четвертого пятилетнего плана (1971—1975 гг.), учитывая и банковские кредиты, 65% капитальных вложений будет осуществляться на основе решений, принимаемых предприятиями. Предприятиями и кооперативами принимаются самостоятельные решения не только относительно формирования производства и использования прибылей, но и в вопросах закупки и сбыта. Приблизительно 30% цен является предметом свободной договоренности между поставщиками и покупателями. На товары, важные с точки зрения жизненного уровня или же в хозяйственном отношении, цены и в дальнейшем устанавливаются правительством.

В рамках экономической реформы, таким образом, часть власти, находившаяся в руках государственных органов, перешла к предприятиям. Министерства превратились в современные информационные центры.

Одним из важных общественных и политических последствий реформы является укрепление социалистической демократии. В консолидированном социалистическом обществе тренды экономической и политической свободы взаимно обуславливают и усиливают друг друга.

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J. KOVÁCS—J. TIMÁR

METHODS OF LONG-TERM MANPOWER PLANNING AT THE NATIONAL LEVEL IN SOCIALIST ECONOMIES

This study is based on the experience of the member-countries of the Council for Mutual Economic Assistance. Its aim is to give a general outline of the long-term planning methods, both traditional and new, used in the socialist countries,* these methods being presented by subject and characteristics. The study does not set out to give an exhaustive analysis of the activities of the different socialist countries in this respect, but rather to describe their main features.**

Planning is a complex activity, consisting of a set of social and economic targets and of planning work proper, the latter being characterized by the use of specific instruments and methods for plan preparation and implementation. It is also carried out at a number of levels which, though autonomous, are interrelated and interdependent: the national economy, economic and administrative branches, enterprises and institutions, and geographical and administrative regions. Finally, planning relates to the short, the medium and the long term.

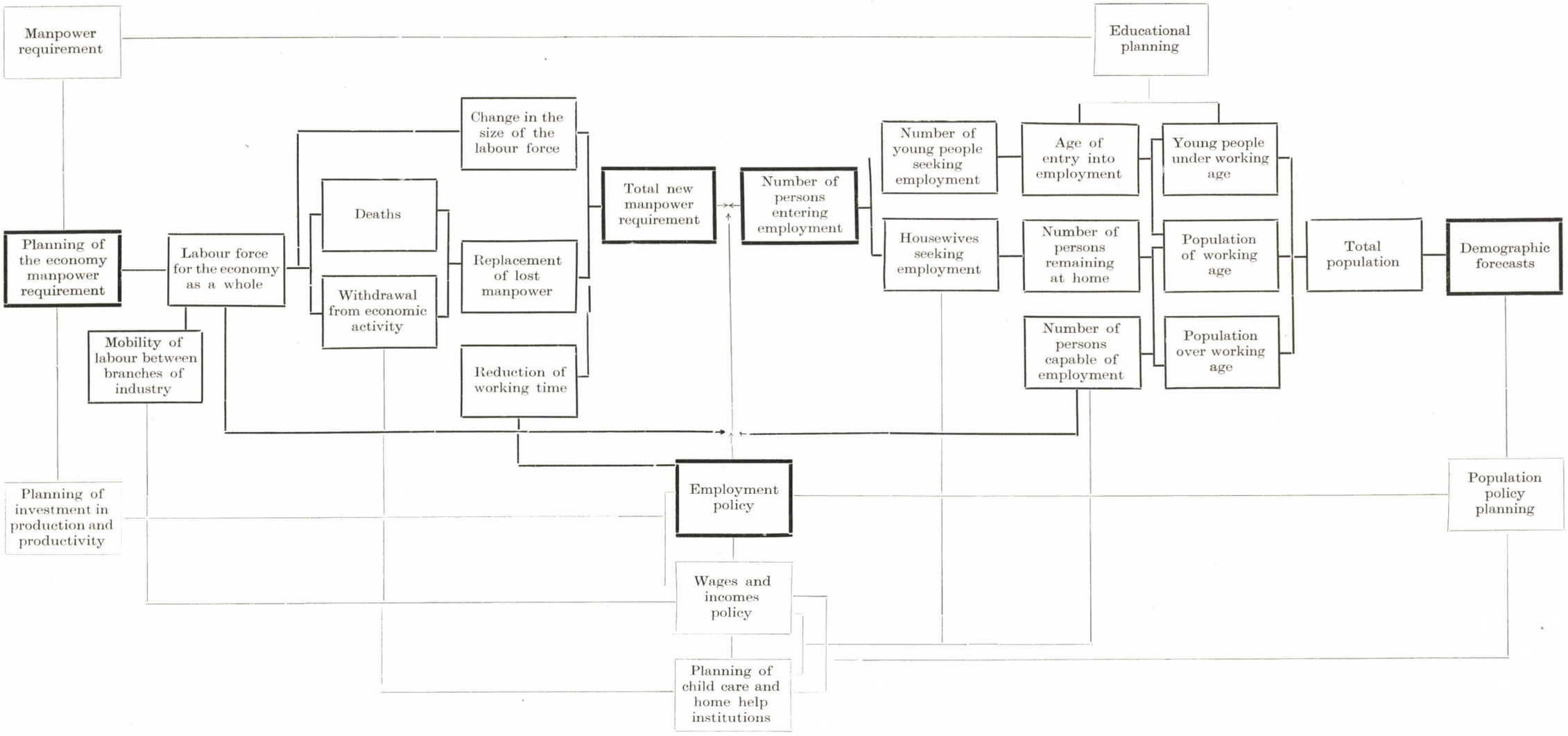
Of the various aspects of planning, this study deals only with methods of preparing long-term plans for manpower resources and education at the national level. For brevity's sake, use will be made of the term "manpower planning", which, in this context, means the planning and use of manpower resources with reference both to their volume and to their structure by sex, age, occupation and training. Planning of the occupation structure, i.e. of skilled manpower requirements, is directly connected with educational planning, which involves the planned development of the educational system and of the material and other conditions necessary for its functioning.

The following organization chart illustrates the place and function of manpower planning in economic planning, and also its basic content. The structure of the labour force is constantly changing and the rate of such structural changes has increased considerably during the present century, particularly since the Second World War. This is one reason why the need for

* Information sources and publication possibilities are restricted in the case of certain methods which are still under study or are at present being tried out in practice.

** In preparing this study, the authors drew on the available sources — a selection of which is given in the bibliography — as well as on personal communications from a number of experts, to whom they wish to express their gratitude.

Diagram of manpower planning



planning is gaining acceptance in those countries favouring a free market. In view of the speed of structural change, planning is essential so that timely preparations can be made for adjustment and the appropriate measures taken. Changes in the structure of the labour force — particularly those affecting education and skills — are felt relatively slowly, being largely dependent on the entry into employment of young people with a new type of training and education and the withdrawal of older people because of retirement or death.

Before these changes become perceptible at the national level and acquire social significance, a period of time must elapse, which generally exceeds that of short- and medium-term planning. For the past ten years, therefore, manpower and educational planning in the socialist countries has increasingly concentrated on long-term plans (fifteen to twenty years). At the same time, a planning system is being developed, which allows for the interrelationships of plans of different duration.

Unlike medium- and short-term plans, long-term plans are not mandatory. Once they have been drafted and accepted by the competent organs, they constitute a statement of economic strategy and provide directives for the preparation of the shorter-term plans which are the basis for the government's operational decisions. In this respect, long-term planning is a means of developing and refining medium- and short-term planning, which, conversely, provides a means of checking and correcting long-term planning.

Further important differences exist between long-term and short- and medium-term plans. Contrary to the general opinion such differences are scarcely apparent in planning calculation methods. One major difference lies in the fact that different phases of social and economic processes are stressed, depending on the duration of such processes.

It is not therefore a question of the degree of detail as such, but of the parts of the plan selected for more or less detailed or more or less aggregated treatment. In education, for example, it is the distribution of students between different types of schools which must be planned in detail in short-term plans, whereas long-term planning concentrates on skilled manpower needs, the planning of educational levels to satisfy these needs being based on occupational categories aggregated according to the "convertibility" principle (Part II). Similarly, the necessary changes in the "horizontal" and "vertical" educational system must be very precisely defined in long-term educational planning but are treated as given information in short-term planning.

There is also an important difference between these plans with regard to the degree of difficulty in establishing the parameters, coefficients and other indices used for plan-building, and to the margins of error in such indices. In the short-term, changes in the parameters relating to processes which have already been completed or initiated are kept within strict limits. The longer the period covered by the plan, the greater the possibility of changing these

indices. At the same time, the margins of error and the difficulties of elaboration increase. This is why scientific analysis and research is playing an increasing part in long-term planning, not only for studying the past, but also for forecasting the future trend of such processes. The long-term approach also increases the possibilities of choice between different courses and modes of development. The elaboration of variants reflecting different development possibilities is accordingly assuming major importance in the period preceding the approval of plans.

Part I

General manpower planning methods

The manpower balance system

The main tool of manpower planning in the socialist countries is the manpower balance system. These manpower balances are a means of ascertaining and comparing two elements: the manpower demand of the national economy and the able-bodied population or the manpower supply. The balance is not merely quantitative (total numbers of jobs available and of persons seeking employment); it also covers the internal structure of demand and supply. It is thus a means of checking the situation, detecting any departures from the desired equilibrium and determining appropriate action in the event of disequilibrium.

The manpower balance system consists of several closely related balances which together form an integrated whole. Its main components are:

— the consolidated manpower balance,
— the manpower demand/supply balance,
— the youth balance.

These balances are accompanied by a large number of tables and equations, some of which are themselves regarded as balances. The total number of such documents will vary from one country to another and also depends on the duration of the plan. It may be as many as several hundred for a long-term plan.

Manpower balances have been successfully used for many years. They were initially, and to some extent still are today, prepared by "traditional" methods. However, some countries have computerized the calculations, which can be written in matrix algebra and are thus ready for processing by computer. Computerization of partial calculations also makes it possible to use combined models in which the computer stops at the end of each series of calculations; these are then analyzed for inconsistencies and fed back to the computer with modified parameters. It is also possible to develop a self-correcting model which modifies the parameters without the need for manual intervention.

The consolidated balance

The consolidated manpower balance shows changes in the volume of the labour force between the beginning and end of the period covered by the plan, or, more precisely, the changes in the economy's manpower resources and requirements during that period.

The economy's manpower requirements are defined on the bases of forecasts of production growth (by branch of industry), investments, technological progress and productivity. These forecasts are usually integrated in branch production planning, though they still form part of the comprehensive system of overall planning. In this sense, they are "exogenous" data from the manpower planning standpoint. However, production and productivity calculations are also made as part of manpower planning itself, at least for the most important branches of the economy, although they may be only approximate and intended merely for checking the branch calculations. (For details of the methods used, see part II.)

The number of job-seekers is calculated from demographic forecasts, which give the estimated population and its sex and age distribution at the end of the period covered by the plan.

On the basis of these forecasts, the first phase of the manpower balance calculations proceeds as follows:

- Determination of the population of working age;
- Subtraction of the number of housewives, students and disabled persons of working age;
- Estimation of the number of job-seekers over working age.

These calculations yield the preliminary forecasts of the number of job-seekers. At this stage, however, the economy's manpower requirements and the number of job-seekers rarely match, or do so only by chance. Equilibrium is reached only through successive modifications of the parameters used. The parameters used in the initial forecasts are usually obtained by the mechanical projection of past trends or trends observable at the time of drawing up the plan. But these parameters are not immutable — some of them must alter with social and economic developments and, within certain limits, they can be corrected by suitable measures devised by the planners in taking social objectives into account. The procedure described below shows how these changes are made.

The usual method of forecasting the population and its sex and age distribution consists of projecting trends observed in the more or less recent past. In practice, demographic forecasts are not merely a projection of these trends: as far as possible, they reflect the growth rate which is both desirable and feasible, having regard to political, social and economic measures, such as family allowances, which may be conducive to higher birth rates, children's

allowance, anti-natal services, etc. Demographic and sociological research, both empirical and theoretical, can be of some assistance in estimating the quantitative effects of these measures, but experience has shown that only the general trend of these effects can be reliably determined, and that great caution must be exercised in making quantitative estimates, especially where birth rates are concerned.

In present conditions any change in the employment level of the population of working age mainly depends on the possibility of transfers between households and employment. Manpower planning takes account of the possibilities of influencing such transfers. In all the countries under review there is virtually full employment of the male population. Unemployment among men of working age is confined to students, the physically or mentally sick and the disabled. It follows that the real problem is that of female employment and the related social and economic factors. The following factors are taken into account in determining the upper and lower limits of female employment:

(a) Factors which stimulate the demand for female labour:

— The desire of women for social equality;

— The rise in educational level of women;

— Efforts to achieve equality of economic rights: application of the principle of equal pay for equal work;

— Increased wants, which are more easily met with a higher family income;

— Provision of child-care facilities, development of the commercial network and of services to lighten household work (kindergartens, creches, day-nurseries, etc.);

— Finally (although this list is not exhaustive), the growth in the number of jobs particularly suited to female labour;

(b) Factors which increase the tendency of women to remain at home:

— The general rise in the level of incomes;

— The fact that family allowances approximately cover the expenditure incurred in maintaining a child;

— The special allowances granted to mothers of small children to enable them to remain at home;

— The lack or scarcity of facilities to lighten household work;

— The relative decrease in female labour requirements.

The positive or negative effects of the factors listed above can be more easily assessed in planning if they are viewed in demographic or sociological as well as in economic terms. The possibilities of quantifying the effects of these factors various appreciably. Some of them can be determined fairly precisely (for example, an extension of the period of education or, the special allowance mentioned). Others can be evaluated only in qualitative terms (for example, the desire for social equality or the general rise in incomes). However,

the overall effect of these factors, that is to say, the rate of growth of female employment (by age-group) is quite amenable to estimation.

Where older workers are concerned, by studying the conditions affecting biological ageing and the demand for employment among these workers, it is possible to determine how far the economic activity of those over working age can be influenced, for example, by making appropriate changes in the retirement system. The relevant calculations are summarized in the "balance" of older workers. If the initial calculations reveal that the manpower plans embodying the above parameters do not ensure that the supply match the demand, the planners proceed to modify, within predetermined limits, either these parameters (in accordance with the factors capable of influencing them) or the parameters for production, productivity and technological development used in branch planning.*

* The following formulae summarize the calculations enumerated in paragraphs above:

The point of departure is the demographic forecast for the last year of the plan period (T).

Let $\mathbf{l}_x$ be the vector of the population by age group at the end of the plan period, and $\mathbf{l}_x^m$ and $\mathbf{l}_x^f$ the vectors of the male and female populations respectively, when

$$\mathbf{l}_x' = (L_0^T, L_1^T, \ldots)$$

The population of each sex is divided into three groups:

$\mathbf{l}_{x,1}' = (L_0^T, L_1^T, \ldots, L_{14}^T)$ The population under working age, by years of age;

$\mathbf{l}_{x,2}'$ = the population of working age;

$\mathbf{l}_{x,2}^m = (L_{15}^{m,T}, \ldots, L_{60}^{m,T})$ (for example, if the minimum age of employment for men is 15 years and the maximum 60 years)

$\mathbf{l}_{x,2}' = (L_{15}^{f,T}, \ldots, L_{55}^{f,T})$ (for example, if the maximum age of employment for women is 55 years)

$\mathbf{l}_{x,3}'$ = the population over working age

$\mathbf{l}_{x,3}^m = (L_{61}^{m,T}, L_{62}^{m,T}, \ldots)$ for men

$\mathbf{l}_{x,3}^f = (L_{56}^{f,T}, L_{57}^{f,T}, \ldots)$ for women

Therefore:

$$\mathbf{l}_x^m = \begin{bmatrix} \mathbf{l}_{x,1}^m \\ \mathbf{l}_{x,2}^m \\ \mathbf{l}_{x,3}^m \end{bmatrix}$$

and

$$\mathbf{l}_x^f = \begin{bmatrix} \mathbf{l}_{x,1}^f \\ \mathbf{l}_{x,2}^f \\ \mathbf{l}_{x,3}^f \end{bmatrix}$$

Let α_x^m be the proportion of men continuing their studies and thus not available for employment, and α_x^f the equivalent proportion of the female population.

$\alpha_x^{m\prime} = (\alpha_{15}^m, \alpha_{16}^m, \ldots, \alpha_{25}^m, 0, 0, \ldots, 0)$ (the proportion is practically zero after about 25 years of age).

$< \alpha_x^m >$ denotes the diagonal matrix consisting of the components of vector α_x^m. The number of persons continuing their studies is deducted from the population of working age by the following formula where E is the unit matrix.

$$\mathbf{l}_{x,2}^{m,1} = (E - < \alpha_x^m >) \quad \mathbf{l}_{x,2}^m$$

Similarly:

$$\mathbf{l}_{x,2}^{f,1} = (E - < \alpha_x^f >) \quad \mathbf{l}_{x,2}^f$$

Le β_x^m be the proportion of persons — among men of age x — who are unemployable because of incapacity or to mental or physical illness, and $< \beta_x^m >$ the diagonal matrix

In this connexion, it should be noted that the manpower plan and the balances also provide figures on the number of persons employed and not

consisting of these proportions.

$$\mathbf{l}^{m,2}_{x,2} = l^{m,1}_{x,2} - (< \beta^m_x > \mathbf{l}^{\,m}_{x,2})$$

$l^{m}_{x,2}$ defines the total number of men of working age who can and should be employed.

If $\hat{\beta}^f_x$ is the upper limit of the proportion of women aged x years remaining at home and β^f_x the lower limit, then:

$$\mathbf{l}^{f,2}_{x,2} = \mathbf{l}^{f,1}_{x,2} - (< \hat{\beta}^f_x > \mathbf{l}^{f}_{x,2})$$

defines by years of age the lower limit of the number of women of working age who can and should be employed, and

$$\hat{\mathbf{l}}^{f,2}_{x,2} = \mathbf{l}^{f,1}_{x,2} = (< \beta^f_x > \mathbf{l}^{f}_{x,2})$$

the upper limit of the number of employable women of working age. The proportion of persons over working age but still in employment can also be defined by means of an interval: Let γ^m_x and $\hat{\gamma}^m_x$ be the lower and upper limits respectively of the rate of employment of men over working age and γ^f_x and $\hat{\gamma}^f_x$ the equivalent symbols for the female population. We then get, for men:

$$\underset{\sim}{\mathbf{l}}^{m,1}_{x,3} = <\gamma^m_x> \mathbf{l}^{m}_{x,3}$$

and

$$\hat{l}^{m,1}_{x,3} = <\hat{\gamma}^m_x> l^{m}_{x,3}$$

and, for women:

$$\underset{\sim}{\mathbf{l}}^{f,1}_{x,3} = <\gamma^f_x> l^{f}_{x,3}$$

and

$$\underset{\sim}{\mathbf{l}}^{f,1}_{x,3} = <\hat{\gamma}^f_x> \mathbf{l}^{f}_{x,3}$$

If e is used to designate the summation vector, the lower limit of male employment will be:

$$\underset{\sim}{L}^m = \mathbf{e}\, \mathbf{l}^{m,2}_{x,2} + \mathbf{e}\, \underset{\sim}{\mathbf{l}}^{m,1}_{x,3}$$

The lower limit of female employment will be:

$$\underset{\sim}{L}^f = \mathbf{e}\, l^{f,2}_{x,2} + \mathbf{e}\, \underset{\sim}{\mathbf{l}}^{f,1}_{x,3}$$

The upper limit of male employment will be:

$$\hat{L}^m = \mathbf{e}\, \mathbf{l}^{m,2}_{x,2} + \mathbf{e}\, \mathbf{l}^{\hat{m},1}_{x,3}$$

The upper limit of female employment will be:

$$\hat{L}^f = \mathbf{e}\, \hat{\mathbf{l}}^{f,2}_{x,2} + \mathbf{e}\, \hat{\mathbf{l}}^{f,1}_{x,3}$$

The lower limit for the population as a whole will therefore be:

$$\underset{\sim}{L} = \underset{\sim}{L}^m + \underset{\sim}{L}^f$$

and the upper limit:

$$\hat{L} = \hat{L}^m + \hat{L}^f$$

If the production planned for the end of the plan period for the ith branch is designated by P^T_i, and the planned productivity by p^T_i, the total manpower requirement will be:

$$L = \sum_i \frac{P_i}{p_i}$$

where $\underset{\sim}{L} < L < \hat{L}$, i.e. where the manpower requirements of the branches lie between the upper and lower employment limits indicated above, the overall balance of employment is assured and it only remains to fix the parameters β and γ in such a way as to bring manpower supply into line with demand. Where $\underset{\sim}{L} > L$ or $\hat{L} < L$, the various branches must be co-ordinated with a view to modifying the parameters of production or productivity.

employed. At the same time, the "fund of working time" is calculated on the basis of the length of working hours and holidays, thus establishing a link between manpower planning, productivity and production planning, and the planning of living standards.

The consolidated balance thus shows the size of the labour force at the beginning and end of the period covered by the plan, and its distribution by branch of industry, sex and age. This balance gives only limited and indirect information on the breakdown of the labour force by occupation and level of education, and no information at all on the process occurring during the period of the plan. The consolidated manpower balance therefore gives a static view of the end of the period. Methodologically speaking, however, the balance cannot be regarded as successful unless the planning of the processes which occur during the period confirms the soundness and realistic nature of the final objectives.

The demand/supply balance

The employment situation is dynamically planned by means of the demand/supply balance. This balance shows, year by year, the demographic and economic changes occurring in the manpower resources available at the beginning of the plan period. Taking the economically active population at the beginning of the plan period, as the point of departure, the demand supply balance establishes:

— The number of deaths, and of the physically or mentally sick;

— The number of persons of working age leaving their employment for the home;

— The number of persons becoming economically inactive as a result of retirement (the details are given in the balance of older workers).

It also yields information on:

— The trends in and degree of mobility between the different branches of industry, and the resulting net balance in each of these branches.

The sum of these estimates is the decrease in the labour force. By adding this figure the increase in the labour force calculated by means of the consolidated balance, we obtain the economy's total manpower requirements for the period covered by the plan.

The following resources are available to meet these total requirements:

— Young people entering employment during the plan period;

— Persons of working age leaving the home for employment;

— Persons who are over working age but remain in employment;

— The "positive balance" of mobility in certain branches of industry.

Thus, in its final form, the demand/supply balance incorporates the results of the youth and older workers' balances and at the same time makes it

possible to complete the work on the consolidated manpower balance. The demand/supply balance is thus a synthesis of the work of manpower planning and educational planning. If it has been drawn up on the basis of thorough research and accurate partial calculations, the demand supply balance marks the end of manpower planning as a whole.

The youth balance

This balance is closely linked to the demand/supply balance. It closely records the movements of young people from the start of their education until they enter employment or the home. The youth balance gives information on the main stages of this process, and in particular on:

— Entry into the educational system

— Vertical and horizontal movements within the educational system, such as transfers from one class to another or from one type of school to another

— Withdrawal from this system into an economic activity or the home, interruption of studies and completion of studies being recorded separately.*

* The educational system capable of producing a labour force whose composition, level of qualification and training meet the requirements may be represented by a matrix $\mathbf{O} = [o_{ij}]$, the o_{ij} component of which represents the probability of student graduation from one class to the next, i.e. from the ith to the jth place in the system. The matrix **O** consists of three parts. The first part (**X**) describes movements within the educational system; the second (**Y**) covers the system's output for the job market, while the third part (**Z**) relates to movements into economical inactivity (the home).

The educational system contains m types of school offering m qualifications in n academic years.

Let us designate the number of students in the various classes of the educational system by $\mathbf{q}^t$ $[(\mathbf{q}^t)' = q_1^t, q_2^t, \ldots, q_n^t]$; and the number of pupils in the first grade of compulsory schooling in year t by q^{*t}.

We then have:

$$\mathbf{q}^t = \mathbf{X}, \ \mathbf{q}^{t-1} + q^{*t}\mathbf{e}_1$$

where $\mathbf{e}_1$ is the summation vector ($\mathbf{e}_1 = 1, 0, \ldots, 0$).

The number of school-leavers entering productive activity is therefore:

$$(b^{t'} = b_1^t, b_2^t, \ldots, b_m^t)$$

where

$$b^t = Y'q^t.$$

Let $\mathbf{r}_{ij}[(\mathbf{r}_i = r_{i1}, r_{i2}, \ldots, r_{ip})$ where p corresponds to the number of production branches] be the proportion of persons holding a qualification ($i = 1, 2, \ldots, m$) and entering branch $j(j = 1, 2, \ldots, p)$.

$$\mathbf{R} = \begin{bmatrix} \mathbf{r}_1 & 0 & \ldots & 0 \\ 0 & \mathbf{r}_2 & \ldots & 0 \\ \cdot & \cdot & & \cdot \\ \cdot & \cdot & & \cdot \\ 0 & 0 & \ldots & \mathbf{r}_m \end{bmatrix}$$

having mp lines and m columns.

The first p components of the product Rb^t indicate the number of workers belonging to the first category (for instance, the number of unskilled workers) and entering the first, second, . . ., pth branches, respectively. These figures should correspond to that part of the total requirement for new manpower which must be covered by young people.

Since this balance records the movements of young people classified by age-group throughout their attendance at the various types of school, it reveals the qualifications and training of young people leaving the educational system. It also enables young people to be guided towards the branches of industry appropriate to their training.

This balance must therefore perform two basic functions:

– The distribution of young people among the various types of school or institution;

– The distribution of young people who have completed or interrupted their studies and have obtained a given training (or remained without training) between the various branches of industry.

The first of these is the basic function of educational planning. The youth balance is thus a specific part of the educational plan. The second task represents a particular function of the youth balance and is, on first sight, simple. In practice, however, considerable efforts are needed to ensure that employment policy results in a distribution which meets the requirements of the plan.

In the final analysis, the youth balance – through the demand-supply balance – is a means of keeping a permanent check on whether the long-term skilled manpower plan and the long-term educational development plan (based on the former) can achieve a matching of jobs and skills, thus ensuring that the occupational structure of the labour force is in equilibrium. This highly complex problem is solved in the youth balance by means of a system of calculations which itself constitutes a closed system. The most important elements of this system are:

– Table of students of working age
– Table of school-dropouts and school-leavers
– Distribution table of young people continuing their studies
– Distribution table of young people completing their studies.

All these tables provide details of the level and type of schools.

Part II

Methods of planning skilled manpower requirements

Basic principles

It follows from what has been said above that the planning of skilled manpower requirements and educational planning are interdependent, since the latter is based on the national economy's demand for skilled manpower. If we propose to develop a balanced and planned educational system, we must accept the idea of a comprehensive system of planning manpower requirements which takes the level and content of training into account. This may be described as *the principle of overall integral planning of skilled manpower.*

Such a principle presupposes that planners will not confine themselves to planning for a particular industry or occupation which they consider "important" but will extend planning to cover total manpower requirements in all sectors taking all levels of education and all occupations (skills) into account.

The principle of overall and integral planning of skilled manpower inevitable raises the problem of the degree of detail required in plans and the breakdown of manpower requirements by occupations and levels of education. Occupational classifications in various countries run to several thousand titles, the number of occupations, specialized instruction, including the training of skilled workers, takes the form of several hundreds of courses of study varying in type and level. It is neither possible nor necessary to go into such detail in the long-term planning of skilled manpower requirements; it would make the task of planning too onerous and multiply possible sources of error.

It will suffice to determine the national economy's requirements of skilled manpower by aggregated occupational groups, applying the principle of occupational *convertibility*. Occupations are regarded as "convertible" where they are closely interrelated, the basic training is more or less identical and specialization occurs only in the last stage of training. In such cases, young people with a diploma or qualification can, after some practical experience but without re-training, carry out useful work in any one of the convertible occupations. To give an illustration, about a hundred types of engineers are trained at universities and advanced technical institutes. On the basis of the convertibility principle, they can be re-classified into ten or twenty categories. By using this principle, planners can comply with the requirements of overall and integral planning without having to go into too much detail.

The third basic principle of planning skilled manpower requirements is a consequence of *the direct relationship between manpower planning and educational planning*. This relationship is explained, *inter alia* by the fact that one of the objects of educational planning is to ensure a matching of jobs and skills in order to achieve a balance between labour requirements and resources. Vocational training (skills) must therefore correspond to the requirements of the available jobs not only for personal and social reasons but also for strictly economic ones.

This idea of matching is widely accepted in the case of certain occupations (for example, everyone directly associates the medical profession with medical training). The less specific the qualifications required for a trade or occupation, the looser the association in practice between jobs and training. But with scientific progress, standards are rising in all occupations and this involves an increase in the numbers trained in specialized institutes. The system of occupational classification adopted in planning skilled manpower requirements is based on a grouping of educational institutions of various types and levels in accordance with the occupational convertibility principle. For plan-

ning purposes, types of jobs are classified under one or other of the occupational groups on the basis of an analysis of the skills they require.

Owing to the direct relationship between the planning of skilled manpower requirements and educational planning, it is essential for planners to make a special study of wastage resulting from occupational mobility. A certain number of skilled workers do not remain in the occupation they originally adopted. One form of such mobility, which is socially desirable, is the upward drive. Thus in socialist countries, a considerable number of "technicians", having acquired a diploma in a technical secondary school, continue their studies either full-time or during their employment (through evening classes or correspondence courses) in order to obtain a higher qualification, such as a diploma in engineering. The other tendency, which is somewhat undesirable socially but is difficult to eradicate, is downward mobility, where the work actually done by skilled workers is at a level inferior to their qualifications. In addition to mobility upwards and downwards, there is also horizontal mobility, which affects the different occupations in varying degree. Vocational training must therefore not only meet demands for changes in total numbers but also make good wastage due to occupational mobility.

Normative methods

The method generally applied in planning skilled manpower requirements is the normative method, one form of which is the method of specific coefficients, often known as "saturation coefficients".

This method consists of calculating specific indices of manpower requirements in terms of the various indicators of production growth, norms can thus be established expressing labour requirements as a function of gross production, net production, nacional income, fixed assets, etc., in order to calculate the labour required by the increase in production.*

Specifity indices describing the internal composition of the labour force are termed "saturation coefficients". For example, requirements of engineers,

* The "normative" method may be illustrated, for example, by the following formula:

$$L^i = \lambda_i K_0 (1 + \varkappa)^T$$

where:

K_0 = the fixed assets of the base period;
λ_i = the specific requirement for fixed assets;
$\varkappa$ = the rate of growth of fixed assets;
L^i = the manpower requirements in the ith labour category.

The index of productivity may also be conceived as a norm. In this case:

$$L = \lambda P$$

where P represents production.

By substituting $\frac{1}{p}$ for λ, we get $L = \frac{P}{p}$, the manpower requirements being expressed as productivity (p).

chemists, technicians or skilled workers are usually expressed per thousand workers. By using the normative method and "saturation coefficients", manpower requirements can be calculated by occupational categories in any given branch. By aggregating the requirements of all branches, manpower requirements can be determined for the national economy as a whole.

The "saturation coefficients" method is basically a variant of the normative method. But whereas the latter method makes it possible to establish norms corresponding to changes in the material factors of economic activity, the "saturation coefficients" method is concerned with relationships governing the structural distribution of the labour force.*

Methods of projection and extrapolation

Whatever the method selected, the basic problem of planning is to establish norms or coefficients. One method used is the model enterprise method. Planners select a factory employing an advanced technology which is to be extended to the whole industrial branch by the end of the planning period. If no model factory actually exists, technical and economic experts work out the blueprint for such a factory. The structure of the theoretical factory is analysed in detail, the number of job categories is determined, together with the corresponding skills and qualifications and the number of workers needed in each category. In some countries, this method is described as the "classification procedure" or the "job classification method".

The model factory method in its pure form is applicable only to branches of industry where production and technology are relatively uniform.*

In branches where technology varies from one factory to another and where such differences are not expected to disappear during the plan period, a modified form of the model factory method is employed, the "section of

* For example, if L^M = the number of workers;
L^F = the requirement for qualified mechanical engineers;
λ^F = the specific requirement for qualified mechanical engineers
then: $L^F = \lambda^F L^M$.

* Application for the "model factory" procedure may be illustrated as follows. Let us assume that the selected factory, whose output is P_b, has number n of aggregates or technical units. The staff of type j needed to operate unit i is $L^j_{i,b}$. The model factory's requirements of type j manpower are therefore:

$$L^j_b = \sum_{i-1}^{n} L^j_{i,b}$$

If the output of the entire branch is P, then the total type j manpower requirements of the branch will be

$$L^j = \frac{P}{P_b} L^j_b$$

of, supposing that there are N factories of this type:

$$L^j = NL^j_b$$

branch" method. In this case the factories in the branch concerned are grouped according to the technology employed. A model factory for each group is established and the size and composition of the branch labour force is obtained by aggregating the group figures.

In branches with a varied profile and diversified technology, a somewhat different procedure is followed. Factories are grouped according to the level of technology employed and the composition of the labour force in each group is analysed over the base period. It is assumed that, during the plan period, the technology employed in the less advanced groups of factories will reach the standard of those at a higher level and that the same will be true of the composition of the labour force. In the case of the groups of factories at the highest level, however, it is necessary to use either the model factory method in its original form or to project trends in some other way.*

It should be added that "model enterprise" methods themselves involve an element of prediction and the application of such methods assumes the use of a series of technological and scientific forecasts or projections.

Extrapolation is the method generally used to establish norms and specific coefficients for labour. It consists in fitting a curve to indices observed in the past and extrapolating it. This operation is not, however, performed mechanically. Before the regression curve (or line) is fitted, an attempt is made to eliminate, by economic analysis of the statistical data, points which are clearly due to external factors unconnected with normal development and attributable to chance. The curve fitting is also accompanied, wherever possible, by a study designed to take account of the various factors affecting the labour force. For example, changes in the total labour force are considered separately as a function of time, production and the national income, and changes in the volume of the various categories of manpower (by level of education and occupation) are considered as a function of time, production, the national income, the total labour force and the number of manual workers, etc. The extrapolated sections of the curve are then once again subjected to economic analysis so that all the relevant conclusions can be drawn.**

* The procedure for applying this method is as follows: the factories are grouped in n categories and the specific manpower category in category j of the factories in category i is designated by λ_i^j. Let us suppose, for instance, that by the end of the plan period each group of factories will be operating at a technological level one degree higher. In this case, the total needs of production for type j manpower will be:

$$L^j = \sum_{i=1}^{n-1} \lambda_{i+1}^j P_i + L_m^j$$

where P_i is the production planned for the end of the plan period, and L_m^j the amount of type j manpower required in the factories of the last group, obtained by another method, such as the model factory method.

** The function usually applied is a linear regression in which $L^i = a + bx$, but we also find functions of another type, such as the curve:

$$L^i = ax^b$$

In working out plans, an attempt is often made to take account of the combined effect of several factors by means of a factorial analysis. The factors taken into account in macro-economic calculations (at the level of economic branches and the national economy as a whole) are generally identical with those used in regression analysis, although, in the former case, certain factors are aggregated. The evaluation of coefficients and their consequences calls for economic analyses identical with those used in regression analysis.*

One of the main problems in making extrapolation calculations is that parameters based on a relatively short period must sometimes be used to forecast trends over a fairly long period. It follows that, whatever the precautions taken, the results obtained can do no more than define the range within which values for the factor under consideration will probably lie.

Comparative international studies on the composition of the labour force provide a means of comparing the results obtained by the methods described above with the composition of the labour force in other economically more developed countries. International comparisons must be used with caution as a planning tool owing to the diversity of political and economic targets, differences arising from social systems, methods used, economic structures, and above all from the classification and content of labour statistics. International comparisons therefore entail a great deal of work. They are nevertheless used in some countries as one projection method and they are used in almost all countries at least as a check on results obtained by other methods. Where there are considerable discrepancies, further investigations and possibly corrections may be needed. It should be noted that international comparison as a long-term projection method may be regarded as a particular form of extrapolation.

Opinions of experts and enterprises

Estimates or opinions are obtained from experts on matters with a direct bearing on the above-mentioned factors or with an indirect bearing on other factors of assistance in forecasting trends in the labour situation (for example, investment, technology, expansion plans for particular products, enlarging the range of production, etc.). Being familiar with the problems in their own branches, such experts can supplement the data provided by statistical returns, which are necessarily incomplete, by information on shortages and surpluses of various types of labour.

When statements of future manpower requirements are obtained from industrial enterprises or ministries, it is known that the figures have generally

* The formula most commonly applied is:

$$L^i = a_0 + a_1 x_1 + \ldots a_n x_n$$

in which x_i is the ith base factor.

been worked out by one or other of the methods described above. Nevertheless, the estimates so obtained differ in character from those made by the central planning bodies. They are often marked by excessive caution, reflected in unrealistic demands, especially as regards requirements of highly skilled manpower. The method is principally employed in short- and medium-term manpower planning, since enterprises are not in a position to forecast their own long-term development. As one moves up the scale of units (firm enterprises to associations of enterprises, ministries responsible for branch of industry), the uncertainty progressively decreases, but is not completely eliminated, since the final targets of branch development are fixed only in the national plan. But even if the declared requirements of undertakings or ministries must be treated with caution so far as absolute numbers of workers are concerned, they still provide valuable information on the composition of the labour force.

Mathematical models

The building of mathematical models for planning manpower requirements originated with the building of production models for each branch of industry. Various optimization models, particularly linear programming and input-output models, have been used in economic planning for a considerable time. For manpower planning purposes, the manpower coefficients used in such models are "structured" i.e. instead of using a single coefficient for the labour force, for the most important categories of labour are each given a specific coefficient. The coverage of production models is usually extended by the inclusion of activities serving to reproduce the labour force, primarily education. Programming models are enlarged by introducing various objective functions, such as minimization of labour costs or maximization of its efficiency.*

* One of the characteristic forms of the mathematical model of the skilled manpower requirement is the following:

x_{ij} = volume of the jth factor ($j=1, 2, \ldots n$) applied in the ith branch ($i=1, 2, \ldots m$);
a_{ij} = efficiency of the jth factor in the ith branch;
o_{ij} = application costs of the jth factor in the ith branch;
P_i = production forecast for the ith branch.
The first k factors ($i=1, 2, \ldots k$) denote the different categories of manpower, and the last factors of the number $n-k$ ($i = k + 1, \ldots, n$) the factors of a material nature.

$$\sum_{i=1}^{m} \sum_{j=1}^{k} o_{ij}x_{ij} + \sum_{1=1}^{m} \sum_{j=k+1}^{n} o_{ij}x_{ij} \rightarrow \min \tag{1}$$

under the following conditions:

$$\sum_{j=1}^{n} a_{ij}x_{ij} > P_i \qquad (i = 1, 2, \ldots, m) \tag{2}$$

$$\sum_{i=1}^{m} \sum_{j=1}^{k} x_{ij} = L \tag{3}$$

$$x_{ij} > 0 \tag{4}$$

where L represents the number of employees.

The inclusion of manpower planning in production models provides a new tool for checking such planning through the use of "outside" information from the various branches, in particular, data relating to production forecasts. It also provides a possible further check on the structural sensitivity of the labour force. Apart from this, however, production models have a limited usefulness, as the manpower coefficients used in such models are calculated independently.

Control analysis

When the further composition of the labour force has been forecast by the methods described above, planners subject it to "sensitivity analyses". In particular, studies are made of the changes that would occur in the occupational composition of the labour force in the event of the branch structure of the national economy deviating from the structure used in planning skilled manpower requirements.

There is a similar exercise to determine the occupational composition of the national labour force on the assumption that the composition of the skilled labour force in each branch remains constant during the plan period and that only a change in the relative importance of branches would affect the composition of the labour force at the national level. By means of such studies, possible margins of error can be estimated and probable margins of error predicted with some accuracy.

Another important check is to calculate the possibility of obtaining the planned composition of the labour force, given the existing capacity and probable development of the various types of education. A variant of this method is to predict the composition of the labour force which would result from the continued use of such educational capacity beyond the period covered by the plan.

Experience shows that a reasonably accurate plan cannot be established by any one of these methods alone. Infallibility cannot be guaranteed even by applying all the methods simultaneously. Nevertheless, if several methods are used side by side, the result can be cross-checked and the possibility of error considerably reduced. It is for this reason that several of the methods described are used in all countries, even if not all methods are used at any one time. The normative method, using specific indices (saturation coefficient), and the model factory method are almost universally employed, other methods being used to supplement them in certain cases.

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МЕТОДЫ ДОЛГОСРОЧНОГО ЦЕНТРАЛИЗОВАННОГО ПЛАНИРОВАНИЯ ТРУДОВЫХ РЕСУРСОВ В СОЦИАЛИСТИЧЕСКИХ СТРАНАХ

Я. КОВАЧ–Я. ТИМАР

В вводной части статьи излагаются различные этапы планирования трудовых ресурсов и их взаимосвязи. Затем авторы сравнивают вопросы текущего, среднесрочного и долгосрочного планирования. Они указывают на то, что различия между краткосрочным и долгосрочным планированием заключаются не столько в применяемых методах, сколько в глубине разработки отдельных факторов. Отмечается также и то обстоятельство, что разрабатываемые на различные периоды планы по квалифицированной рабочей силе сопряжены с трудностями различной степени в разработке необходимых показателей и параметров. В дальнейшей части статьи излагается система трудовых балансов и подчеркивается их центральная роль в планировании трудовых ресурсов. Авторы отмечают, что проникновение математических методов и ЭВМ в планирование делает эту роль еще более наглядной и позволяет осуществлять более точную разработку отдельных частей системы балансов.

После изложения некоторых — по мнению авторов — основных принципов планирования трудовых ресурсов в статье приводятся и, соответственно, оцениваются нижеследующие конкретные методы планирования квалифицированной рабочей силы:

а) нормативные методы,
б) методы прогноза и экстраполяции,
в) экспериментные оценки и заявки предприятий,
г) математические модели,
д) контрольные методы, исследование реакций.

Конечный вывод: только совместное применение различных методов может сократить до реальных размеров неизбежную неопределенность.

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Zs. Esze

THE MODIFIED SYSTEM OF EXPORT INCENTIVES FOR 1971—1975

In the modified system of export regulation the majority of the enterprises receive uniform export subsidies determined by sub-branches. In principle, this may have a differentiating effect on the export pattern not only within the enterprises, but also among them. Under conditions of a progressive profit taxation, effective incentives can only be achieved through tax reductions or exemptions. Export support by cancelling taxes has been applied in Hungary in a narrow scope since 1969. From 1971 to 1975 a method relying on tax exemption, which avoids earlier mistakes, will be applied in a wider scope.

The regulation of foreign trade is one of the focal points of the new economic control and management system. This is the point where Hungary is in direct relationship with foreign monetary systems. The problems of *intervention* into foreign trade have come to the fore in Hungary — as they do everywhere, including in the capitalist countries.

The two main relations of Hungary's exports, one directed to the socialist world market, and the other directed to the capitalist one, present incentive problems of partially divergent nature. In this paper the incentive problems of exports directed to the capitalist world market alone will be dealt with.

The foreign trade price-multipliers*

According to one approach the uniform foreign trade price-multipliers valid today 40 forints/rouble, 60 forints/dollar do not lag behind the average domestic input of exports, according to an other they do. My opinion is that the Hungarian foreign trade price-multipliers lag behind the domestic price of export goods.

When the new price system became valid, hardly one third of the enterprises could export without losses by means of the uniform multipliers. In general, the system of export supports had to be used to make those exports, which were obviously economic from the point of view of the national economy, profitable to the enterprises too. Export subsidies, increases in terms of a for-

* The foreign trade price-multiplier is a coefficient by which foreign exchange can be converted into forints.

eign exchange coefficient (multiplier)* exceeding the uniform multiplier by as much as 15—20 per cent were in many cases necessary, already in 1968, in order to avoid that *the support should not restrict* motivation (i.e. possibilities for increasing exports); the aim was of course that *export supports, in addition to creating an opportunity should provide also incentives for exports and for increasing exports.*

In the zone where the enterprise export multipliers** are truly worse than 15—20 per cent above the uniform multipliers, the enterprises generally received a subsidy that was reduced year by year, that is, it was *degressive.*

The enterprises with the worst indices received subsidies that were of a truly *restrictive* nature for them. The subsidy at the same time constituted, as it were, an absolute limit to increasing the worst exports.

One of the major basic principles of export support was that the enterprises received support *separately for the two major relations of exports.* If the export subsidy separately compensated for the losses of the enterprise in the exports to the dollar and to the rouble countries, the export subsidy did not have the function of providing incentives for choosing between the two major relations and for channelling the commodity fund from one to the other. The goal here was that the export subsidy should not have *such* an *effect* but simply provide the enterprises with an incentive for improving their foreign exchange "production" indices i.e. the commodity patterns of exports, separately on the two markets.

These same basic principles operate, in many respects more consistently, in the 1971—1975 modified export support system. This system does *not* provide export subsidies *by enterprise, but uniform subsidies by trades* (sub-branches).*** In general they are close to the average of the sub-branch and *all enterprises are automatically* entitled to them.

* Most likely the multipliers (coefficients of converting foreign exchange) forming the uppermost limits of the zone *in Hungary* did not attain any *marginal level* because

— in our country *just about the only means* of procuring the foreign exchange needed is commodity export, and this means that even a portion of the exports of comparatively low efficiency are indispensable,

— domestic price ratios deviate substantially from price ratios in foreign markets; hence the inclusion of the low efficiency export zone into exports would not gradually raise the multiplier but would introduce *rapidly rising* multipliers,

— other countries may be able to procure a substantial amount of foreign exchange with means other than commodity export, and thus they are not forced to export commodities with comparatively low efficiency. The domestic price ratios of other countries can also be closer to the price ratios of the external market and for this reason, inclusion of lower export zones into export does not generally cause a rapid, but only a gradual rise in the multipliers of exported commodities. In such countries it is theoretically more possible for marginal ratios to be no more than 15—20 per cent higher than the average.

** Quotients of the domestic price and the export foreign exchange price achieved by the enterprise.

*** A sub-branch is the range of enterprises producing the same or similar groups of goods.

This means that the multiplier for the sub-branch (coefficient for converting foreign exchange), which includes the export support of the branch in a uniform manner, *consistently "recognizes"* the average domestic input of exports in the sub-branch. Therefore, these are *true average multipliers:* although they contain subsidies, they nevertheless do not approach any sort of marginal multiplier, but on the contrary: they become true average multiplier precisely by the fact that they contain average export support.

The system of uniform multipliers by sub-branches is better than the 1968—1970 system of export support for other reasons too.

Here, it will be convenient to remind readers that:

Between 1968—1970 *uniform* rouble and dollar multipliers were in operation. This *was more than simply a big step forward* in comparison with the earlier method, when in the system of price equalization the "exchange rate" could in theory be different in every single foreign trade transaction. The introduction of the uniform multiplier created a completely different situation, even if *in broad practice the uniform multiplier could not operate*, because of the various export subsidies in the field of exports (while in the field of imports, different tariffs were in force). Nevertheless, the essential feature is that export multipliers, sometimes deviating by enterprise, did not change *for the individual enterprises, and meant the same "exchange rate" in each individual foreign trade transaction for three years and it deviated from the common basis to a determined degree* (more precisely to the extent of the export subsidy). In other words, *there was* a common basis: the uniform national economic multiplier. As form 1971, about three fourths of the enterprises will *not export with individually determined enterprise subsidies but with uniform subsidies for the sub-branch and only one fourth of the enterprises will continue to receive individual enterprise multipliers containing subsidies.* This ratio will gradually improve until 1975 for a part of the enterprises supported individually will have degressive individual subsidies, gradually decreasing to the level of the sub-branch subsidy.

The structure-shaping power of the system of multipliers for sub-branches is far greater than was that of the enterprises multipliers.

The enterprise multipliers made the enterprises definitely interested — if they had the possibilities and if other factors did not cause a conflict of interest — in increasing the exports of those commodities whose multiplier was more favourable in comparison to the *uniform multiplier of the enterprise*, and in holding back exports of those goods whose multiplier was comparatively poor. This is how the uniform enterprise multiplier had a differentiating effect on the lowest level, the enterprise export pattern. But the effect is very difficult to study in an exact way for several reasons. Among other things, the majority of the products exported by the enterprise are not comparable over time, over a period of several years. Furthermore, it is difficult to study the

structural effects of enterprise export multipliers because other factors also affected the changes of enterprise export patterns.

In certain branches of industry (e.g. metallurgy) favourable *foreign market* business conditions, and in other branches of industry (e.g. the textile industry), the temporarily unsatisfactory *domestic* market (e.g. in 1969) no doubt had a far greater effect on the export volume of the enterprises, and also on their export pattern, than the system of uniform enterprise export multipliers.

Nevertheless, the essential matter is that although the enterprise export multiplier as a regulator worked *per se* in the direction of improving the enterprise export pattern, it *did not affect in any way the broader pattern of exports:* it did not provide greater incentives for the stronger enterprises to increase their exports, and thereby *their share* in the total of exports, and did not make the less efficient enterprises less interested in exports. It led to what is in principle an *equalization* from the point of view of the export motivation of the enterprise. (For the moment I am neglecting what I mentioned earlier, that the system of export supports treated the enterprises in a differentiated manner, and was not aiming at providing incentives for the enterprises with high multipliers.)

However, *the uniform multiplier for branches makes exports more profitable for the good enterprises* than for the weaker ones. This means that it affects the export pattern on enterprise level in a way similar to the enterprise multiplier, since for the enterprise it continues to be a uniform multiplier, the sole "exchange rate" for years; furthermore, in theory it can have a *differentiating effect on the sub-branch level too.*

However, *the differentiating effect is not sufficient if the sub-branches have simply uniform indices.*

If, as at present we do not consider market effects (of the sort characterizing e.g. 1969) and take into account those factors of our economic management system only which affect enterprise exports, and the shares in exports of good and weak enterprises, then it would seem possible that *the differentiating effect of the sub-branch multipliers cannot operate clearly.* For example:

1. One of the major positive features of our income regulation system is that in theory the *entire net* enterprise profit (after tax) becomes the basis of motivation. Export incentive can be effective insofar as it makes exports advantageous *from the point of view of the total profits of the enterprise.* But if this is the case, then although the export interests of the better enterprises are greater than those of the less good ones, nevertheless, from the point of view of interest in total profits, *in some cases* exports *may be* less important for the better enterprises than for the weaker ones, since they are only of partial interests.

The motivation relations in the income regulation system, and the interest created by export incentives cannot be unconditionally running in the

same direction insofar as the goal of export incentives is not a national economic optimum. Furthermore, interest relations are also motivated by the monopoly positions, etc. of a part of the enterprises.

2. From the point of view of the differentiating effects inherent in theory in the system of uniform sub-branch multipliers, it is also problematic whether it is right to restrain, in *general*, the level of export multipliers. What happens is that the enterprises which continue to export with individual multipliers fall outside the differentiating scope of the uniform multipliers, while, because of the "reduced" multipliers, the incentives for enterprises exporting with the sub-branch multiplier can only be differentiated to a lesser extent. The best enterprises exporting with the sub-branch multiplier *gain comparatively small additional profits* because of the reduced level.

This means that *not even within the framework* of the sub-branch can any important change in pattern be expected — at least not from the introduction of the uniform multiplier for the sub-branch.

3. The uniform export multiplier for the sub-branch is not sufficient to improve the export pattern in itself, for other conditions of structural transformation are also needed, e.g. the existence of suitable capital investment, a certain "flow of capital" at least on sub-branch level, and stronger long-term enterprise motivation than the present one.

The system of sub-branch multipliers can differentiate on sub-branch level *only*. This means that to a certain extent, it can differentiate in principle only among identical types of products, insofar as it can differentiate at all.*

The classification by sub-branches groups the enterprises *according to their products*. This is how, in essence, the line is drawn for the scope of the effect of differentiation. To this extent the system of sub-branch multipliers *is a step not only towards the uniform index of larger aggregates, but towards the uniform index by product as well.*

Years ago the disadvantages of directive regulation going into the details of products were exposed and this method rejected. It is understandable that even today the opinion that the sub-branch multipliers to a certain extent provide deviating conditions by product for the exporting enterprises, is a derogatory one for economic thinking. However, in the case of the sub-branch multipliers, the differentiation by product *can in no respect be related* to the regulation by product of the system of directive control. If we were to use this rejected method to solve the regulation of exports by product, this would be a system in which different subsidies by product would be granted to the exporters, and individual enterprises would receive as many different kinds of export subsidies as the number of products they export. In contrast with this, the system of sub-branch multipliers retains the basic principle that the

* Among types of products which can substitute for one another in *exports*.

"recipient" of the export support is not the product but the enterprise. The subsidies contained in the multipliers reimburse the total loss of the enterprise's entire exports. The product approach only operates insofar as the sub-branch multiplier is determined as the average of the enterprise multipliers, or one near to it; this is *mostly identical with the average of the multipliers of the enterprises exporting identical types of product groups.*

The "product approach" element of the regulation introduced for 1971—1975 will have the effect that — insofar as it will be capable of differentiating among enterprises — *comparatively more shall be exported from the same larger groups of products* by the more efficient enterprises, and thus *the average efficiency of the export of the product groups* (that is, *the export pattern of the sub-branch*) *will improve.*

In the new system of economic management such division of functions between *direct* central regulation and consciously operated indirect regulation working automatically is quite general; the indirect regulators, operated automatically, only endeavour to achieve "smaller" changes in pattern. The sub-branch multipliers are also consciously operated automatic regulators: insofar as every enterprise receives the same uniform multiplier, in principle the export profitability of the comparatively better enterprises becomes *automatically higher* while that of the comparatively poorer ones becomes lower.

The structural effect on a level higher than that of the sub-branches is, in general, not entrusted to such automatism, not even to consciously operated automatism. We want to achieve this goal through direct central regulation. The export support system also contains such direct general regulation for the transformation of the "higher" pattern. Among other things, the central bodies determine *differentiated sub-branch subsidies*, some receiving a comparatively higher one than the average multiplier, while the others a lower one. Thus, in principle a "larger" improvement in pattern, and the *differentiation among the sub-branches* should be attained. The sub-branch which should receive the comparatively higher subsidy is the one whose share in exports we want to increase, and the one to receive a lower one is the one whose share in exports we want to reduce.

The system of sub-branch subsidies which has now been elaborated does assert this principle, but it also asserts *other viewpoints* to an extent that the differentiating effects among the branches cannot be clearly seen.

For instance, because of the generally reduced level of the multipliers, incentives given to the best branches are not strong enough to enable us to definitely count on a substantial increase in their exports — under the sole effect of this regulator. For the same reason, exports by the poorer, and even by the worst enterprises receiving export supports cannot be eliminated. The effect to be expected from *this* central differentiation among the branches is thus small.

Tax exemption

The general principle in the detailed elaboration of the new system of export regulation was that export supports should ensure the enterprises forint *price receipts* for their exports identical with those received on the domestic market. Many people were — and still are — prepared to *turn this principle upside down, and to identify it with* the principle that export supports must ensure the enterprise's *export profits* identical with domestic ones.

It would seem as if this substitution might be completely permissible, as though an identical price with the domestic one were the same as ensuring profits identical with domestic ones.

Research, however, has pointed out how much of a problem it is to exchange the principle of an identical price receipt for domestic and export products with the principle of ensuring identical profits for the two; for how is it possible to ensure profits for exports at least identical with domestic profits when *it cannot be clearly determined just how large domestic and export profits in fact are?*

Total profits are perhaps clearly defined: the difference between price receipts and costs (though the problem here is what we consider as costs). But to assess the different *parts* of profits is certainly not easy, for this depends on cost accounting which has developed a number of correct, economically founded methods.

In modern production there are a diminishing number of direct costs, which can be clearly related to single products. There is an increasing variety of indirect costs, to be divided in some way. This division can only take place through compromises, and the correct methods of cost distribution are different from one another insofar as they are built on different compromises — in accordance with the sober economic points of view for cost distribution. Therefore, in any given case, each of the unobjectionable cost distribution methods might be as correct as the other. *The different types of correct cost distribution methods show the details of the same total profits to be different in magnitude, and this holds for both domestic and export profits.*

If — whithin the framework of certain regulations — an enterprise can itself decide on which method of cost distribution to apply, then it will choose what is best for its own interests.

The economic means of regulations also have effects on determining which cost distribution method is the most suitable and favourable to the enterprise.

For example, if we were to state explicitely that the system of export supports ensures export *profits* identical with domestic ones, then, from this point of view, it would be in the interest of the enterprises to place — within the limits of the regulations — *as heavy costs as possible on export sales* and as little as possible on their domestic deliveries. On the basis of the domestic

profits shown in this way, they could demand large export subsidies, so that their export profits should attain the high level of domestic profits.

An opposite motivation would be created e.g. if we were to separate export profits and provide incentives to exports by granting tax reductions for separately accounted export profits. From this point of view it would be in the interest of the enterprises to *scale down domestic profits by as high costs as possible* and to show export profits as high as possible, in order to maximize tax allowances.

If regulations do not guide so markedly the interests of the enterprises in connection with cost distribution, and the relevant regulations do not tie them completely, then — within the limits of the regulations — the most likely *major guide for cost distribution is the "cost bearing capacity" of the products or of the markets:* on the same market the product which can be sold at a comparatively better price will carry more costs than the products which can be sold at a comparatively lower price only. A monopolized domestic market can provide the opportunity for a comparatively higher share of these costs to be realized in domestic sales, and for comparatively less costs in order to ease exports.

These are very primitive examples, but they throw light on the essence: *Different types of legitimate cost distribution methods are possible, and, therefore, export profits of different size can be shown, and also different domestic profits, without any change in the sum of these* (i.e. total profits), or in the *two major factors determining total profits, namely, total sales receipts and total costs.*

The problem is not what kind of cost distribution we should prescribe for the enterprises in order to separate export profits and domestic profits in a correct manner; the chief question is *whether we should separate* at all the profits stemming from exports and domestic sales, and *whether the comparison of these parts to one another should serve at all as a basis for any kind of taxation, allocation, or incentive.*

Having asked these questions, we can take the next step and raise the following point: if in principle we do not ensure for exports profits identical with domestic ones, but ensure enterprises' *sales receipts* identical with domestic ones, we still have the problem why should it be assumed that sales receipt identical with the domestic ones would provide suitable incentives for exports?

There are many cases in which an export sales return exceeding the domestic one is necessary but also cases in which a *smaller sales receipt from exports would be sufficient* to provide incentives to the enterprise to export. Such is the effect of the profit incentive system.

The enterprises' export interests are also influenced by the fact that the domestic or the socialist external market are generally "easier" and "more comfortable" for the sellers (being, on the whole, sellers' markets) than the capitalist export market (which is a buyers' market).

The new system of economic management induces the enterprises to attain the optimum of *total* enterprise profits, and this goal has been achieved. The enterprises are interested in exports insofar as this improves their total profits. From this point of view it is not an absolute necessity to have export supports ensuring that the *gross* return of exports should be *the same size* as the domestic one and that the enterprise's interest in exports should be stimulated mainly by this instrument.

In view of the progressive profit tax, the enterprise might not even wish to export in the case of *larger* gross sales receipts than the domestic ones, particularly not to the "difficult" markets, since this may not improve their total net profits. Conversely, it might even export for *smaller* gross sales returns than the domestic ones, even to "difficult" markets, if this improves their total net profits.

Export motivation is also determined by the extent to which the enterprise is dependent on exports. A strongly export-oriented enterprise exports even if gross sales returns are smaller in exports than in domestic sales. Those enterprises which can truly choose between exporting or selling on the domestic market only, might export in one case even for smaller sales receipts, while in another case they would not unconditionally export even for a larger one. Exceptionally it might also occur that the enterprise might receive incentives to exports through gross export sales returns exactly identical with the domestic ones.

The conclusion is that decision *must be made individually:* when it is sufficient to have smaller export sales return than the domestic one, when to have identical returns and when a larger one is needed to provide incentives for exports. But this would be a blind alley; it would lead to a situation where we would have to provide incentives by means of export supports differing by enterprise and by period. If we want to avoid having to make this individual judgement, we must build on the profit motive created by our system of income regulation, more precisely on the following:

1. the enterprise is interested in total profits and for this reason we should not distinguish between export profits and domestic profits, and should not compare their sizes to one another, furthermore,

2. any incentive can only be truly effective, if it eventually helps to increase net profits.

It would seem that in a type of profit motive system like ours, the effective export support is the one *which makes the forints realized in exports more valuable than the forints realized domestically from the viewpoint of total enterprise net profits.*

The most widespread method of this is tax reduction or exemption when the enterprise pays less tax on export profit forints than on the domestic ones. But we must immediately add: we should not and need not distinguish be-

tween export profits and domestic ones. This type of incentive can only rely in some way on the export share of the *sales receipts.*

a) In this way the regulations are less haphazard and cause less distortion; they are also definite in intent. With their aid we can avoid separating export profits, selecting among the suitable cost distribution methods, and can bypass contradicting enterprise interests with respect to cost distribution. We can also avoid the "temptation" to make an individual study of those cases when larger export sales receipts are necessary than the domestic ones, or when smaller sales returns than the domestic ones are sufficient for export incentive.

b) This tax exemption system is also unambiguous in the sense that it clearly provides incentives for increasing exports; moreover, it has the effect that the larger the ratio of exports in total sales, the greater the tax preferences and comparatively the smaller the taxes that will be charged against the total profits of the enterprise.*

c) The system of tax exemption is clearer than export supports by item for it is not rigid even if fixed for years in advance.

Direct export supports allocated in fixed quantities for years in advance cannot ensure e.g. that today's fundamental principles should operate throughout the entire period, in other words, that export sales returns identical with domestic ones should be guaranteed even if we allow for all expected changes. In a longer period many factors may change essentially in an unforeseeable way (e.g. export prices) and hence any rigid regulation may in five years cause an essential and undesirable change in the profit positions of the enterprises. In five years the system of tax exemptions for export regulation *will always and under all circumstances have the same result, no matter how the most different conditions develop,* no matter how domestic and export prices change absolutely and in comparison with one another, or how trends in input or the share of export sales will develop: the enterprise will distinguish from the point of view of its entire net profit between the export and domestic forints, and always consider the forint earned by exports more advantageous than the domestic one. If, nonetheless, a change appears necessary, then — in a manner similar

* The regulation providing definite incentives for exports may cause problems from the point of view of domestic supply of a limited number of commodities. But in these concrete cases the security of domestic supply can be solved *not with the export incentives themselves, but with other means:* export quotas can be set, alongside with a continuous study of domestic supply an export permit system can be used to ensure that commodities needed domestically should not be exported. The only thing which cannot be solved is that a regulator which provides *incentives* for export should still not provide "too great" an incentive in the protection of domestic supply, but should simultaneously *limit* exports. With such Janus-faced regulator neither of the two problems could be solved, just as they could not be solved in the past. A regulator of this sort, which does not operate clearly and in one direction only, would unnecessarily introduce uncertainty into the economy, deprive us of the possibility of operating regulators clearly providing export incentives, and would also obstruct the use of other regulators aiming at safeguarding domestic supply.

to the profit taxation system — at most the tax rate, or the tax exemption rates need be modified, but there will be no need to make individual corrections by items. This means the end of the apparent contradiction that on one hand the *regulators must remain unchanged for years and on the other (partly for this reason), rigidity must be avoided.*

d) Export support through tax exemption has a favourable effect on the domestic price policy of the enterprise, and thereby on the domestic price levels as well.

In 1967 and in early 1968 it was still a wide-spread concept of economic public opinion that export profits exceeding domestic ones would raise the domestic price level: the enterprises would also want the domestic buyer to pay a price containing profits identical with export profits, and the domestic price level would rise.

Research appears to support the following hypothesis in an increasingly definite form:

If the "hardness" of the market, the rigidity of price forms, the social atmosphere etc. do not prevent the export profitability of the enterprises from affecting their domestic price policy, then export profitability will have *exactly the opposite effect* on the domestic price level than was the unanimous belief of economic public opinion years ago (by no means as unanimous a belief today). Under the effects of the income regulation system the enterprises judge their profits *as a whole.* In this objective situation created by profit motivation, *it is not the threat of too good export profitability which endangers the domestic price level, but on the contrary, there might be an enterprise trend to raise the domestic price level because of poor export profitability.*

This does not contradict the fact that, at the same time, it might be a well founded demand to restrict supports and preferences in general. In the past three years tenders were asked for the distribution of certain particularly advantageous socialist export quotas. In these talks the enterprises were willing to renounce to the support given for exports to capitalist countries in exchange for the high profits attainable on the socialist export market (and for other advantages): they undertook to continue, and in some cases increase their capitalist exports even without the support, though they were disadvantageous for them.

This too, seems to be a proof of the fact that *in one of the major market relations (in this case the socialist export market) the large profits attainable do not increase, but on the contrary, diminish the profit motive of the enterprises in the other major relation* (in the present case, the capitalist export market). One of the reasons is that, because of the progressive tax, it is not worthwhile for the enterprise to increase its *total gross* profits beyond a certain limit.

It would seem that, although not more than a first attempt to prove this has been made, *there can be a reciprocal financial relationship of this sort between*

domestic relation and exports too. If nothing prevents the enterprise, they attempt to increase the domestic sales receipts until this, *together* with the export returns (otherwise insufficient by themselves), produce a satisfactory enterprise profit. This interrelationship is also true when reversed: *if export profitability is greater, then a smaller domestic price is sufficient* from the point of view of *total* enterprise profits.

In general, the export multipliers determined for 1971—1975 ensure the enterprises smaller supports than the amount they received in 1968—1970. This is true for the 1971 multipliers which decreased sharply in comparison to 1970, as well as for the multipliers of the entire five-year period, during which they will continue to decrease, for they are degressive to no small extent. In my opinion, this *per se* may lead to endeavours in order to raise domestic prices. In fields where the domestic price *should* be raised on this account from the point of view of the profits of the entire enterprise, and where it is *also possible to do so*, the enterprises will strive to raise domestic prices. The only areas where such endeavours will not take place are those in which, from the point of view of the enterprise's total profits it is *unnecessary or impossible* to raise domestic prices. But it is certain that, in contrast with earlier concepts, *the restriction of export supports itself will nowhere have the effect of reducing domestic prices.*

Quite naturally this is not the complete interrelationship between export profitability and the domestic price level but only a part of it, and even this part has been presented as *an enlarged detail of the complete picture.* Other details include at least the following:

— *Export profitability is not the sole and not even the most important* factor influencing the enterprises to want to, and to be able to, increase domestic prices.

— If a higher domestic price level makes possible a lower export price level, the enterprise will be more competitive. This is the final result, and from this point of view, it is, logically speaking, all the same whether enterprises *first* increase domestic prices in order to make exports cheaper *afterwards*, or if *first* the enterprise receives the reduced export supports, in other words, the reduced export price level, and tries to compensate it *afterwards* by domestic price increases. *Economically it may be perfectly correct for domestic price receipts to finance in part exports* (quite naturally, without carrying it too far and amounting to dumping).

— Unsatisfactory export profitability, and limited export support is not truly unsatisfactory and limited for all enterprises, since the sub-branch multiplier provides certain enterprises with more than their own input; and not only these, but all enterprises have their own built-in "reserves" when requesting export support even if a uniform export support, established as an average, becomes valid for the sub-branch. This means that the support

makes exports more profitable for all enterprises *than it would appear, at the time they are granted, from the relationship between the request and the support actually granted.*

— Last but not least, the uniform multiplier for the enterprises operates as a regulator, in all cases in the direction of *stimulating the enterprises to improve the efficiency of their exports,* and increase the profitability of their exports in comparison with the multiplier which remains unchanged for the five-year period.

The fact that only this single aspect of the interrelationship has been treated has been made permissible by the fact that in the case of the external markets operating on a dollar basis and the domestic market, the enterprises are facing two highly different outlets. From this point of view the major difference between the markets is that in the case of insufficient total enterprise profits, *profits can rarely be increased on the dollar markets through price rises, but on the domestic market they can frequently be improved in this way.* In all these cases, the interrelationship can become important since in order to improve its *total profit position* the enterprise attempts to compensate for insufficient export profitability through domestic price increases.

The tax exemption form of export support, insofar as it reduces the volume of taxes on the profits of the entire enterprise, *operates against enterprise endeavours to increase domestic prices.* Due to the tax exemption on exports, *smaller domestic price increases are needed to attain the same total enterprise profits.*

In the very first year of the new system of economic management, the eedn for tax preferences was recognized. It already showed that

1. if export supports were to *provide* genuine incentives for exports, particularly in exports directed towards "difficult" markets, in many cases *sales receipt identical with domestic sales would not be sufficient for exports* and a larger one would be needed, but

2. export supports to increase gross profits could not have a net stimulating effect if they only ensured greater export sales returns than the domestic ones: the incentives therefore had to yield *net benefits, after taxation.*

For this reason we have been applying the tax exemption in the export support system since 1969 (in the form of a tax reimbursement by the Ministry of Foreign Trade). This method has been operating on an experimental basis, and not on a broad scale, as a supplement *alongside* the gross support system valid in general.

The tax exemption export support system was also introduced for 1971—1975. The new export support by tax exemptions provides the enterprises with the same amount of the *sum determined for five years in advance* as would remain coming from the uniform sub-branch support (and only from this one !) in the form of net enterprise profits after taxes. This means that the support

included in the sub-branch multiplier is the gross benefit and the tax exemption is the *net variant* of this same benefit.

The difference is formal, but here the form may play a substantial role. *The same support may have a different effect if given in the gross or the net (tax exemption) form.*

This is so first of all because our system of profit taxes is progressive. In the case of gross support the rise in the volume of exports can increase the entire gross profits of the enterprise to an extent that it enters a higher tax zone. Net support (tax exemption) *cannot push profits into a higher tax zone* even if the volume of exports increases. On the contrary, it operates *as though the taxation of export support were linear.* Thus, if these exports — which are partly linearly taxed by means, and to the extent of the uniform sub-branch export support — increase as a consequence of the tax exemption method, the arising progressive tax is charged on the *total* profit of the enterprise. In most cases this means that the specific (per cent) tax burden of total profit is reduced.

The new system of tax exemption is different from the customary tax exemption. The essence of customary tax exemption is that, from the point of view of taxation, there is generally a distinction between the forints earned through exports and those gained domestically. The *essence of the new system of tax exemption is that, in general, it makes no distinction between the export and domestic foreign earnings, and only distinguishes between the forints of the uniform sub-branch export support and other profits.*

This means that this tax exemption method is limited in effect and *it may perhaps be too complex to become a clearly effective regulator.* Nevertheless, it bears witness to the recognition that,

a) it is not the equalization of export sales receipts and domestic ones that is needed to provide incentives for export but, on the contrary, a *differentiation* between them and,

b) not even export supports ensuring sales returns exceeding the domestic ones can provide unambiguous incentives if the support is gross, that is, if it is subject to progressive tax; exactly *from the point of view of the entire net profits of the enterprise* the export forints must be distinguished from the domestically earned ones.

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МОДИФИЦИРОВАННАЯ СИСТЕМА ПООЩРЕНИЯ ЭКСПОРТА В 1971—1975 ГГ.

Ж. ЭСЕ

Один из основных принципов регулирования экспорта в Венгрии заключается в предоставлении в рамках системы поощрения экспорта субсидий тем экспортерам, коэффициент затрат на экспортную продукцию которых не превышает в целом или незначительно превышает фактическую среднюю по народному хозяйству величину. Рассчитанная на 1971—1975 годы поправка обеспечивает еще более последовательное осуществление этого принципа, поскольку она производит группировку предприятий по отраслям специализации, устанавливает величину фактического коэффициента отрасли в истекшие годы и *автоматически* предоставляет вытекающую из этого сумму субсидий всем предприятиям данной отрасли.

Единая отраслевая субсидия в принципе может оказывать дифференцирующее воздействие не только в масштабах экспортной структуры предприятий (предприятие на протяжении ряда лет неизменным образом получает субсидию по тому же самому коэффициенту на все экспортные поставки, следовательно, оно заинтересовано в повышении доли экспортных товаров с лучшим коэффициентом по сравнению с единым коэффициентом, то есть в улучшении структуры своего экспорта), но также и в масштабах экспортной структуры данной отрасли (поскольку равная для всех предприятий экспортная субсидия обеспечивает больше средств сравнительно лучшим предприятиям, чем сравнительно худшим, и, следовательно, путем большей заинтересованности может повысить долю экспорта лучших предприятий внутри экспорта данной отрасли). Однако для развертывания этого дифференцирующего воздействия были бы необходимы и другие условия, значительная часть которых отсутствует.

Стимулирование экспорта в Венгрии основывается на принципе, что предприятия за свою экспортную продукцию должны получать такую же цену, как и на внутреннем рынке, причем нередко этот принцип подменяется тем, что предприятия должны получать от экспорта прибыль, равную прбыли от внутренней реализации. На первый взгляд эта подмена не вызывает проблем. Однако в действительности она весьма проблематична, так как предполагает разбивку единой прибыли предприятия на экспортную прибыль и прибыль от сбыта на внутреннем рынке. Возможно применение нескольких допустимых способов распределения издержек, но каждый из них делит одну и ту же прибыль на различные по величине прибыль от экспорта и, соответственно, прибыль от реализации на внутреннем рынке. Отсюда, однако, следует не тот вывод, что мы должны найти наиболее подходящий для наших целей способ распределения издержек, а то, что *нельзя обособлять части прибыли, полученные от экспорта и от сбыта на внутреннем рынке,* то есть нельзя таким образом стимулировать к увеличению экспорта. Из-за прогрессивного налогообложения прибыли невозможно достичь вообще четко действиующее поощрение экспорта путем обеспечения равного или даже более высокого уровня прибыли, по сравнению с уровнем прибыли от реализации на внутреннем рынке. В условиях существующей в Венгрии системы регулирования доходов наиболее пригодной формой поощрения экспорта является, по-видимому, какая-нибудь форма освобождения от налогов.

Освобождение от налогов более действенно, чем субвенцирование инвалютной выручки, не является жестким даже при установлении норм на несколько лет вперед, оказывает благоприятное противодействие стремлению предприятий к повышению цен на внутреннем рынке и т. д. Применяемая в 1971—1975 годы система освобождения от налогов является, с одной стороны, дальнейшим развитием применявшейся с 1969 года в узком кругу основывавшейся на освобождении от налога системы поощрения экспорта и, с другой стороны, носит более ограниченный характер, чем обычное освобождение от налогов, поскольку она, во-первых, представляет собой только установленную для отрасли свободную от налогов форму единой и определенной по величине экспортной субсидии и, во-вторых, ею могут пользоваться не только те предприятия, которые удовлетворяют определенным условиям. Все же эта форма стимулирования подтверждает вывод, что экспортная заинтересованность должна быть большей, чем заинтересованность в сбыте на внутреннем рынке, и что это можно наиболее эффективно обеспечить небольшими по размеру субсидиями, а в первую очередь сокращением налогового бремени.

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Á. SCHMIDT

DER STAATSHAUSHALT IN DER VOLKSWIRTSCHAFT

Die Abhandlung unterzieht die Auffassungen bezüglich der Charakteristiken des Staatshaushaltes (Verbrauchswirtschaftscharakter, Verteilung und Umverteilung des Nationaleinkommens, Befriedigung der gesamtgesellschaftlichen Bedürfnisse) einer kritischen Analyse und versucht, diese richtig zu interpretieren. Eine Skizze der Funktionen des Staatshaushaltes wird gegeben, und durch eine systemtheoretische Annäherung die in der Volkswirtschaft eingenommene Stellung des Staatshaushaltes und sein Verhältnis zu den übrigen Sphären geprüft.

Eine notwendige Folge der gesellschaftlichen Entwicklung besteht darin, dass die Beurteilung der verschiedenen gesellschaftlichen Institutionen im Laufe der Entwicklung eine Änderung erfährt. Daneben kommt es aber nicht selten vor, dass einzelne Beurteilungen, Bewertungen ungeachtet der Entwicklung im grossen und ganzen unverändert bleiben und sich sozusagen selbst überleben. Eine solche Erscheinung kann auch bezüglich des Budgets, richtiger des Staatshaushaltes beobachtet werden. Es erscheint deshalb als notwendig, die als allgemein gültig betrachtete Beurteilung des Staatshaushaltes einer Prüfung oder eher Überprüfung zu unterziehen. Zu dieser Überprüfung will diese Abhandlung mit einigen Gedanken beitragen.*

Die Beurteilung des Staates und des Staatshaushaltes

Ohne in langwierige Erörterungen einzugehen, können wir die summarische Feststellung wagen, dass die öffentliche Meinung den Staat — fast seit seiner Entstehung — zwar als eine gesellschaftliche Notwendigkeit erkannte,

* Im Interesse der genauen Interpretierung der Begriffe des Budgets und des Staatshaushaltes und zwecks Klarstellung der Terminologie ist zu bemerken, dass im ungarischen Sprachgebrauch unter dem Budget üblicherweise einerseits der — die aus dem gesellschaftlichen Reineinkommen stammende Einnahmen sammelnde und die Ausgaben finanzierende — staatliche *Zentralfonds*, andererseits der sich auf die Höhe und Verwendung der in den Fonds einströmenden Einkommen beziehende *Finanzplan* verstanden wird [1]. Daneben pflegt man aber — besonders in der Praxis — auch die *Gesamtheit* der im Rahmen des Budgets umfassten, im Budgetsystem wirtschaftenden *Organe*, also auch den Staatshaushalt — im Sinne einer Institution, nicht aber einer Tätigkeit — mit dem Ausdruck Budget zu bezeichnen. Die folgenden Erörterungen beziehen sich selbstverständlich nicht auf den staatlichen Finanzplan, sondern auf den Staatshaushalt als Gesamtheit bestimmter Organe. (In den folgenden verstehen wir unter Staatshaushalt die Gesamtheit aller öffentlichen Haushalte, also auch jene der Bezirke, Städte, Gemeinden, sowie der Sozialversicherung.)

aber ihm gegenüber trotzdem meistens eine gewisse Abneigung, sogar eine feindliche Gesinnung zeigte. Diese Auffassung kam nicht so sehr gegenüber dem abstrakten Begriff des Staates, sondern eher gegenüber seinen konkreten Organen, der Gesamtheit der Organe, also sozusagen gegenüber dem Staatshaushalt zur Geltung. Der kapitalistische Staat als ein Machtorgan, diente entscheidend den Interessen der herrschenden Klasse und liess die Interessen der breiten Volksmassen unbeachtet, behandelte sie nachteilig oder verletzte sie. Der Grossteil der Staatsbürger kam nicht mit dem abstrakten »Staat«, sondern mit seinen konkreten Organen in Berührung, und begegnete dem Staat als einer steuereinhebenden, rekrutierenden, die bestehende Ordnung aufrechterhaltenden und schützenden, ferner als einer unterdrückenden oder bürokratischen Organisation. Aus dem Polizeistaat entfaltete sich nur langsam der, auch die Befriedigung gewisser Bedürfnisse der Gesellschaft und der Wirtschaft anstrebende neuartige Staat, der in den entwickelten kapitalistischen Ländern die Benennung »Wohlstandsstaat« erhielt.

Mit dem Entstehen der sozialistischen Staaten erfolgte in der Rolle und Beurteilung des Staates eine einschneidende Änderung, deren ausführliche Erörterung hier nicht möglich ist. Es scheint aber notwendig zu sein, darauf hinzuweisen, dass sich gegenüber der Gesamtheit der nichtproduzierenden Organe des Staates, also dem Staatshaushalt nicht nur in der öffentlichen Meinung, sondern auch in der Wissenschaft, in der Theorie der Wirtschaftswissenschaften einige solche Ansichten erhielten, die eigentlich auf das Überleben früherer Beurteilungen hinweisen.

Die sozialistische Wirtschaftswissenschaft und Finanzwissenschaft werden bei der Beurteilung des Staatshaushaltes durch eine eigenartige Duplizität gekennzeichnet. Einerseits wird die Rolle des Staatshaushaltes auf den Gebieten der Befriedigung der gesamtgesellschaftlichen Bedürfnisse, der Entwicklung der Volkswirtschaft, des Aufbaus der sozialistischen gesellschaftlichen Ordnung betont, andererseits aber diese Rolle gegenüber der Produktionssphäre eher von sekundärer Bedeutung gehalten. Und diese Auffassung theoretischen Charakters und ideologischer Beziehung zeigte sich lange Zeit hindurch auch in der praktischen Wirtschaftspolitik, in der volkswirtschaftlichen Planung.

Diese ungünstige Beurteilung des Staatshaushaltes entsprang aus mehrerlei Quellen. Vielleicht ist es keine Übertreibung anzunehmen, dass unter den Quellen sogar die Ausstrahlung der Staatsfeindlichkeit des wirtschaftlichen Liberalismus zu finden ist, die sich notwendigerweise auch auf den Staatshaushalt erstreckte. Bei der Aufrechterhaltung der genannten Auffassung – sogar bei ihrer Verstärkung in einem gewissen Grade – spielten aber auch einige neuere und spezifische Faktoren eine Rolle. Der Vulgärmaterialismus betonte übertrieben die Bedeutung der materiellen Produktion, es war also folgerichtig, dass er die Gesamtheit der nicht-produzierenden (sondern grösstenteils Dienst-

leistungen bietenden) Budgetorgane, d. h. den Staatshaushalt in seiner Bedeutung einigermassen unterschätzte. Die Theorie des Nationaleinkommens bestimmte das Nationaleinkommen als einen in den Zweigen der materiellen Produktion zustandegebrachten neuen Wert, woraus logisch folgte, dass der Staatshaushalt an der Produktion des Nationaleinkommens nicht teilnimmt, sondern das Nationaleinkommen verbraucht. Gemäss den Lehren der Geschichte des Staatshaushaltes in Ungarn hatten die erwähnten und anderen ähnlichen Auffassungen auch nachweisbare praktische Folgen.

Die übliche Charakterisierung des Staatshaushaltes

Um die frühere Auffassung bezüglich des Staatshaushaltes analysieren zu können, ist es notwendig, in erster Reihe die sich auf den Staatshaushalt beziehenden Definitionen bzw. Charakterisierungen einer Prüfung zu unterziehen.

Die sozialistische Wirtschaftswissenschaft und Finanzwissenschaft geben — meistens durch das Budget — mehrerlei Definitionen und Charakterisierungen des Staatshaushaltes. Aus diesen Definitionen bzw. Charakterisierungen können aber jene allgemeinen Züge analysiert werden, die das Wesen des Staatshaushaltes zeigen. Diese charakteristischen Züge können — aufgrund der betreffenden Theorien — im folgenden zusammengefasst werden:

1. Der Staatshaushalt ist eine Verbrauchswirtschaft. Diese Definition bedeutet, dass im Staatshaushalt keine Produktion erfolgt, sondern die Verwendung, der Verbrauch der durch andere Wirtschaftseinheiten — Staatsunternehmen, Genossenschaften, Privatproduzenten — hergestellten Produkte realisiert wird. Ordnungshalber kann bemerkt werden, dass diese Charakterisierung eigentlich keine eigene Ansicht der sozialistischen ökonomischen Theorie ist, sondern ein aus früheren Zeiten stammendes, und im grossen und ganzen unverändert übernommenes, beibehaltenes und bewahrtes Erbe der Beurteilung des Staatshaushaltes. (Die Beurteilung und Behandlung des Staatshaushaltes als eine Verbrauchswirtschaft ist übrigens auch der Gedenkenwelt der bürgerlichen Ökonomie nicht fremd.)

2. Der Staatshaushalt ist eine die Verteilung und Umverteilung des Nationaleinkommens realisierende Organisation.* Die These drückt einerseits aus, dass im Rahmen des Staatshaushaltes keine Produktion des Nationaleinkommens erfolgt; andererseits, dass die Staatshaushaltsorgane durch Ausübung ihrer Tätigkeit das vermittels anderer Wirtschaftseinheiten produzierte

* »Das Budget ist in der sozialistischen Wirtschaft ein Mittel zur Verteilung und Umverteilung des gesellschaftlichen Produktes und des Nationaleinkommens, ein staatlicher Zentralfonds . . .« [2].

Nationaleinkommen, an dem sie teilhaben, anderen Wirtschaftseinheiten zukommen lassen. Diese These steht in einer engen Verbindung mit der Theorie des Nationaleinkommens in der sozialistischen Wirtschaftswissenschaft, mit der allgemein angenommenen Interpretierung des Begriffes Nationaleinkommen.

3. Der Staatshaushalt ist eine die Befriedigung der gesamtgesellschaftlichen Bedürfnisse versehende Organisation. Gemäss der Annahme der Feststellung sind unter den sich in der Volkswirtschaft zeigenden Bedürfnissen die Bedürfnisse gesamtgesellschaftlicher Natur gegeben, bzw. können sie ausgewählt werden, und der Staatshaushalt ist die Gesamtheit der diese Bedürfnisse befriedigenden, in einem spezifischen System wirtschaftenden Organe. Diese Funktion ist eine wesentliche Determinante des Staatshaushaltes.

Nach den obigen wird also der sozialistische Staatshaushalt durch den Verbrauchswirtschaftscharakter, die Verteilung und Umverteilung des Nationaleinkommens und das Versehen der Befriedigung der gesamtgesellschaftlichen Bedürfnisse als Funktion gekennzeichnet. Um die volkswirtschaftliche Rolle des Staatshaushaltes klarzustellen, und die sich auf den Staatshaushalt beziehenden Beurteilungen zu überprüfen, sind diese Kennzeichen einer Analyse zu unterziehen.

Der Staatshaushalt als eine Verbrauchswirtschaft

Die erste Frage, die wir uns zu stellen haben lautet: ist der Staatshaushalt wirklich eine Verbrauchswirtschaft? Die Frage ist in gewissem Sinne offenbar zu bejahen, eine jede Wirtschaftseinheit ist ja eigentlich auch eine Verbrauchswirtschaft. Ohne Verbrauch gibt es kein Bestehen, auch keine Produktionstätigkeit. Wenn man den Verbrauch ganz allgemein als eine vollständige Verwendung der Güter zu einem gewissen Zweck betrachtet, ist das Produktionsunternehmen ebenso eine Verbrauchswirtschaft, wie der Privathaushalt oder der Staatshaushalt. Bei einer solchen Interpretation wäre aber zwischen dem Staatshaushalt und den übrigen Wirtschaftseinheiten — z. B. Unternehmen — kein Unterschied.

Die genannte Charakterisierung hat aber eben die Unterscheidung zum Ziel. Im Falle des Staatshaushaltes hat der Ausdruck »Verbrauchswirtschaft« einen pejorativen Klang, weil er darauf hinweisen will, dass der Staatshaushalt *nur* ein Verbraucher ist, dem Verbrauch also nicht die Herstellung eines Produktes folgt, wie im Falle der Produktionseinheiten. Eine solche Einstellung des Staatshaushaltes als Verbrauchswirtschaft ist aber nicht mehr so eindeutig und unbestreitbar wie die Charakterisierung im vorigen Sinne, deshalb bedarf sie einer näheren Untersuchung.

Zur Untersuchung der Frage der Verbrauchswirtschaftscharakterisierung des Staatshaushaltes ist es am zweckmässigsten, wenn wir die Arten und Stufen des Verbrauches gemäss ihrer Nützlichkeit überblicken.*

Der Verbrauch, wo Güter nur vernichtet, ohne dass durch ihre Verwendung etwa Neues hergestellt würde, ist der *zerstörende Verbrauch*. Ein zerstörender Verbrauch wird z. B. bei Schadenfällen, Elementarschäden und besonders im Laufe von Kriegen realisiert. Der zerstörende Verbrauch ist eigentlich eine typisch nicht-wirtschaftliche, oder eher wirtschaftswidrige Erscheinung, deren Verhütung, Vermeidung eine wichtige Aufgabe der Volkswirtschaft ist.

Der Verbrauch, der durch Verwendung von Gütern zwar nichts Neues zustandebringt, aber zur Aufrechterhaltung eines Vorhandenen beiträgt, ist der *aufrechterhaltende Verbrauch*. Ein aufrechterhaltender Verbrauch kommt z. B. bei der Instandhaltung, Wartung von Organen, Einrichtungen, Anlagen vor. Der aufrechterhaltende Verbrauch ist aus wirtschaftlichem Gesichtspunkt bereits von Bedeutung, da er zur Gebrauchsfähigkeit der Organe, Einrichtungen, Anlagen, zur Störungsfreiheit ihres Funktionierens, zur Verlängerung ihrer Lebensdauer dient.

Ein solcher Verbrauch schliesslich, der durch die Verwendung von Gütern etwas Neues zustandebringt, ist der *produzierende Verbrauch*. Dieses »Neue« ist zur Befriedigung gewisser Bedürfnisse geeignet, und kann sich in einem Produkt verkörpern oder als eine Dienstleistung zeigen. Ein produzierender Verbrauch wird während der Herstellung von Produkten, sowie auch im Laufe von Dienstleistungen realisiert. Der produzierende Verbrauch darf also nicht beschränkt interpretiert werden: er bedeutet nicht nur eine Güterverwendung bei der Herstellung von handgreiflichen Produkten, sondern — über die Produkte hinaus — auch eine Verwendung für Dienstleistungen. Ein produzierender Verbrauch ist auch dann vorhanden, wenn der Verbrauch nicht zur Herstellung eines Fabrikates, sondern für — die Befriedigung der verschiedenen persönlichen, Zerstreuungs-, Reise-, Gesundheits-, Unterrichts- usw. Bedürfnisse bezweckenden — Dienstleistungen notwendig ist.**

* Die Wirtschaftswissenschaft unterscheidet mehrerlei Arten des Verbrauches. Solche sind z. B. der technische (produzierende) und der wirtschaftliche (im engen Sinne genommene), der intermediate und der Endverbrauch, ähnlicherweise der indirekte und direkte, der persönliche und gemeinwirtschaftliche, der geizige, sparsame, verschwenderische und luxuriöse Verbrauch usw. Aus dem Gesichtspunkt unseres Themas ist die Unterscheidung des Verbrauches nach Nützlichkeit relevant.

** Ergänzend kann erwähnt werden, dass der ausführlicher nicht behandelte verschwenderische Verbrauch keine Verbrauchsart von spezifischer Nützlichkeit ist. Der verschwenderische Verbrauch ist mit dem zerstörenden Verbrauch nicht identisch, obwohl er in gewissem Sinn zweifellos auch als schädlich, schädigend betrachtet werden kann. Eine Verschwendung kann bei jedem Verbrauch vorkommen und besteht darin, dass die Verwendung im Vergleich zum Ergebnis unverhältnismässig hoch ist. Von einem verschwenderischen Verbrauch spricht man meistens in Verbindung mit dem persönlichen Verbrauch, obwohl auch die oben angeführten Verbrauchsarten, also z. B. der aufrechterhaltende und produzierende Verbrauch einen verschwenderischen Charakter haben können.

Wenn man nach obigen den Staatshaushalt als Verbrauchswirtschaft mit den verschiedenen Arten des Verbrauches konfrontiert, so kann zweifellos festgestellt werden, dass für den Staatshaushalt nicht der zerstörende Verbrauch, sondern der aufrechterhaltende und — im Zusammenhang mit der die verschiedenen sozialen, kulturellen und wirtschaftlichen Bedürfnisse meistens durch Dienstleistungen realisierenden Befriedigung — der produzierende Verbrauch, bzw. der Verbrauch von Produktionscharakter kennzeichnend sind. Dies bedeutet aber zugleich auch, dass der Staatshaushalt durch seine Charakterisierung als »Verbrauchswirtschaft« nicht in pejorativem Sinne bezeichnet werden kann; insofern der Staatshaushalt eine Verbrauchswirtschaft ist, kann es sich nur um einen produzierenden bzw. dienstleistenden Verbrauch handeln.*

Der als »Verbrauchswirtschaft« qualifizierte — oder eher gebrandmarkte — Staatshaushalt ist also insofern zweifellos eine Verbrauchswirtschaft, wie jede andere Wirtschaftseinheit, sein Verbrauch ist aber überhaupt nicht schädlich, nutzlos, sondern er kann — dem Verbrauch der Produktionssphäre ähnlich — als produktiv bzw. produktiven Charakters betrachtet werden. All dies bedeutet selbstverständlich nicht, dass der Verbrauch des Staatshaushaltes in allen Fällen und in vollem Masse ein unbedingt begründetes Ausmass hätte. Ein verschwenderischer Verbrauch kann sich offenbar auch im Rahmen des Staatshaushaltes zeigen. Dies darf aber nicht dazu führen den Staatshaushalt — mit Rücksicht auf seinen Verbrauch — in seiner Gänze abfällig zu beurteilen.

Der Staatshaushalt als eine Umverteilungsorganisation

Die nächste Frage lautet: ist es ein grundlegendes und beinahe ausschliessliches Kennzeichen des Staatshaushaltes, dass er die Verteilung und Umverteilung des Nationaleinkommens versieht? Die Antwort auf die Frage hängt in erster Reihe von der Interpretation des Begriffes des Nationaleinkommens ab.

Insofern man unter Nationaleinkommen — aufgrund der sog. materiellen Nationaleinkommenskonzeption — den neuen Wert versteht, der in den

* Zur Ergänzung der obigen Feststellung kann noch bemerkt werden, dass in den Sphären ausserhalb des Staatshaushaltes, in der Welt des produzierenden Verbrauches eigentlich zweckwidrig, aber tatsächlich auch der zerstörende Verbrauch vorkommen kann. Die Herstellung von unnötigen, unbrauchbaren Produkten ist eigentlich nichts anderes als ein zerstörender Verbrauch von Rohmateralien und anderen Gütern. Ausserdem ist aber auch noch auf dem Gebiet des produzierenden Verbrauches und des aufrechterhaltenden Verbrauches der nicht ausgesprochen zerstörende, aber in seinen Wirkungen und Folgen ihm nahestehende verschwenderische Verbrauch nicht ganz unbekannt.

Zweigen der materiellen Produktion hergestellt wird, so ist die Frage eigentlich zu bejahen. Aufgrund dieser Interpretation besteht die Funktion des Staatshaushaltes tatsächlich darin, dass sie das Nationaleinkommen, bzw. innerhalb desselben das gesellschaftliche Reineinkommen entzieht, in Form von gesellschaftlichem Materialverbrauch verwendet, und im Laufe dessen unter verschiedene Wirtschaftseinheiten verteilt. Der Staatshaushalt versieht — den durch ihn verwendeten Anteil des Nationaleinkommens anderen Wirtschaften zukommen lassend — eine Verteilungsfunktion.

Bei genauerer Prüfung der Frage können aber Zweifel gegenüber der Richtigkeit der These auftauchen. Zuerst deshalb, weil der Staatshaushalt nicht nur aus der Produktionssphäre, sondern auch aus der Dienstleistungssphäre Einkommen entzieht, also von dort, wo — nach der gegebenen Interpretation des Nationaleinkommens — keine Produktion, sondern nur eine Verwendung des Nationaleinkommens vor sich geht. Noch wichtiger ist aber jene Überlegung, dass ein bedeutender Teil der Staatshaushaltsorgane nicht nur ein im materiellen Sinne genommenes Nationaleinkommen, Einkommensteilchen anderen zukommen lässt, sondern viel mehr. Das zu den Staatshaushaltsorganen gehörende Krankenhaus sichert nicht nur eine Ernährung, gibt aber auch nicht nur Medikamente, sondern heilt die Kranken durch ärztliche Tätigkeit; die Lehranstalt verbraucht und verteilt (theoretisch) nicht nur Lehrmittel unter den Schülern, sondern unterrichtet sie; das Staatsamt verbraucht, bzw. verteilt nicht nur Papier und Tinte unter den Staatsbürgern, sondern übt eine Organisierungs-, Verwaltungsfunktion aus usw. Bei der erwähnten Interpretation des Nationaleinkommens erscheint dieses »Mehr« nicht, und dadurch verdunkelt sich der Umstand, dass ein grosser Teil der Staatshaushaltsorgane durch Verwendung des Nationaleinkommens zur Befriedigung verschiedener Bedürfnisse eine Dienstleistungstätigkeit versieht. Diese Dienstleistung ist aber mehr, als bloss der Verbrauch oder die (Um-)Verteilung des Nationaleinkommens.

In der sozialistischen Wirtschaftswissenschaft tauchte die Notwendigkeit einer Überprüfung des Begriffes einerseits durch das Vortreten des Problems der Dienstleistungen, andererseits durch die gesteigerte Berücksichtigung der Funktionen des Staatshaushaltes auf. Mehreren sozialistischen Ländern ähnlich entfaltete sich auch in Ungarn mehrmals eine wissenschaftliche Debatte über den Begriff des Nationaleinkommens, zuletzt Mitte der 60er Jahre. Die Diskussion wurde in Ungarn zuerst darüber geführt, ob die sogenannten »gekauften« Dienstleistungen im Begriffskreis des Nationaleinkommens in Betracht zu nehmen wären. Später tauchte aber im Laufe der Debatte auch eine solche Überlegung auf, dass es nicht logisch wäre, auf diesem Punkt stehen zu bleiben, sondern der Begriff des Nationaleinkommens nicht nur auf die gekauften, sondern auch auf die unentgeltlichen, also im wesentlichen auf die durch die Staatshaushaltsorgane gebotenen Dienstleistungen erweitert werden

sollte. Bezüglich des Inhaltes der Dienstleistung als Leistung bedeutet es ja keinen Unterschied, ob man dafür zu bezahlen hat oder nicht.*

In der zwischen den Verteidigern der ursprünglichen Konzeption des Nationaleinkommens und den Befürwortern der Erweiterung des Begriffes des Nationaleinkommens geführten Debatte konnten die Partner einander von der Richtigkeit ihres Standpunktes nicht überzeugen. Die Debatte führte doch zu einem Ergebnis. Als ein Ergebnis kann nämlich die Erkenntnis betrachtet werden, dass neben dem früheren Begriff des Nationaleinkommens — nicht aber anstatt dessen — die Einführung und Anwendung eines breiteren Leistungsbegriffes notwendig ist, der sich — über die materielle Produktion hinaus — auch auf das Gebiet der Dienstleistungen erstreckt und unter den Dienstleistungen auch die durch die Staatshaushaltsorgane gebotenen Dienstleistungen beinhaltet. Dieser Begriff ist die »Nettonationalproduktion« (net national product), die bezüglich des Tätigkeitsbereiches dem Begriff des — in der bürgerlichen Wirtschaftswissenschaft und Statistik, sowie der westlichen volkswirtschaftlichen Gesamtrechnung (SNA) angewandten — Bruttoinlandsproduktes (GDP) entspricht, und davon inhaltlich darin abweicht, dass sie um die Summe der Wertverminderung der Grundmittel weniger beträgt.**

Das in Frage stehende Charakteristikum des Staatshaushaltes, d. h. die Verteilung und Umverteilung des Nationaleinkommens ist durch die Einführung des neuen Begriffes nicht überflüssig geworden, seine Bedeutung verminderte sich aber doch in gewissem Masse. Das Charakteristikum des Staatshaushaltes ist nicht nur die Verteilung und Umverteilung des Nationaleinkommens, sondern auch, dass er durch die Tätigkeit seiner Organe an der Herstellung der Nettonationalproduktion teilnimmt. Diese Funktion des Staatshaushaltes kann selbstverständlich auch mit einer gewissen Verteilungs- und Umverteilungsfunktion verbunden sein: die Dienstleistungen können zugleich auch einen Verteilungsinhalt haben. Es ist also keine Rede davon, dass wir dem Staatshaushalt die genannte Verteilungsfunktion abstreiten, wir müssen

* Aus dem Schrifttum der über den Begriff des Nationaleinkommens geführten neueren Debatte können erwähnt werden [3], [4], [5], [6], [7].

** Durch die Erweiterung des Begriffes des früheren (materiellen) Nationaleinkommens und ähnlicherweise des (materiellen) gesellschaftlichen Produktes wurden zwei neue Begriffe gebildet: die Nettonationalproduktion und die Bruttonationalproduktion. »Die *Bruttonationalproduktion* (gross output) ist der in Realisierungspreisen ausgedrückte Wert der — als Ergebnis der materiellen und nicht-materiellen Tätigkeit in einer bestimmten Periode hergestellten — Produkte und Dienstleistungen . . . Die Bruttonationalproduktion ist mit der Summe der Bruttowerte des gesellschaftlichen Produktes und der nicht-materiellen Dienstleistungen identisch . . . Die *Nettonationalproduktion* bedeutet den Wert jener — im Kreise der materiellen und nichtmateriellen Tätigkeit während einer bestimmten Periode hergestellten — Produkte, sowie jener materiellen und nichtmateriellen Dienstleistungen, die zur Befriedigung der Endbedürfnisse der Volkswirtschaft verwendet werden . . . Die Nettonationalproduktion kann von der Bruttonationalproduktion so abgeleitet werden, dass man von der Bruttonationalproduktion den Wert der laufenden produktiven Verwendung und der Wertverminderung der Grundmittel abzieht.« [8]

jedoch betonen, dass diese — teilweise — mit den in der Nettonationalproduktion in Rechnung genommenen Dienstleistungen verbunden realisiert wird.

Die Umverteilungsfunktion des Staatshaushaltes ist übrigens sowohl in den sozialistischen Ländern als auch in den kapitalistischen Staaten zu finden. In Verbindung mit den gesellschaftlichen Dienstleistungen — oder unabhängig davon — werden durch den Staatshaushalt mehrerlei Umverteilungen realisiert, so z. B. zwischen Regionen, Zweigen, Gesellschaftsklassen und Gruppen, zwischen Haushaltungen und Personen. Diese Umverteilungsfunktion erregt infolge ihrer wirtschaftspolitischen und gesellschaftspolitischen Ladung manchmal ein grösseres Interesse, als selbst die Dienstleistungstätigkeit.*

Die obigen zusammenfassend kann festgestellt werden, dass die dem Staatshaushalt zugeschriebene Funktion, nämlich die Verteilung und Umverteilung des Nationaleinkommens kein ausschliessliches Kennzeichen ist. Von wenigstens ebensolcher Bedeutung ist jenes Charakteristikum des Staatshaushaltes, dass eine gewisse Gruppe seiner Organe zur Befriedigung verschiedener Bedürfnisse eine Dienstleistungsfunktion versieht und dadurch an der Herstellung der Nationalproduktion teilnimmt. Insofern man den Verbrauch des Staatshaushaltes als einen Verbrauch Produktionscharakters betrachtet und auch seine bei der Herstellung der Nettonationalproduktion gespielte Rolle berücksichtigt, so gestaltet sich bezüglich des Staatshaushaltes offenbar eine von der früheren abweichende Beurteilung aus.

Die Befriedigung der gesamtgesellschaftlichen Bedürfnisse

Die die Charakterisierung des Staatshaushaltes bezweckende Feststellung, dass der Staatshaushalt die Befriedigung der gesamtgesellschaftlichen Bedürfnisse versieht, ist im Grunde genommen richtig. Es taucht aber doch fast unwillkürlich die Frage auf, welche wohl jene gesamtgesellschaftlichen Bedürfnisse sind. Ob man die Frage theoretisch untersucht, oder von der Praxis ausgeht, ist es ziemlich schwer zu einer eindeutigen Antwort zu gelangen.

Bezüglich des Charakters der gesamtgesellschaftlichen Bedürfnisse bietet Karl Marx einen Leitfaden durch die Anführung der Posten, die vom gesellschaftlichen Gesamtprodukt abzuziehen sind, und unter welchen die allgemeinen, nicht direkt zur Produktion gehörenden Verwaltungskosten, die Deckung der Bedürfnisse der Schulen, die Massnahmen für das öffentliche Gesundheitswesen, der Fonds für Arbeitsunfähige figurieren [10]. Diese Aufzählung umreisst die in den staatlichen Budgets auch heute noch berücksichtigten wichtigsten Bedürfnisgruppen. (Verwaltungs-, Unterrichts-, Gesundheits-, Sozialausgaben.) Davon ausgehend, aber auch die inzwischen eingetroffene

* Mit der Umverteilungsrolle des Staatshaushaltes befasst sich auch die westliche Finanzwissenschaft intensiv. Aus dem neueren Schrifttum s. z. B. [9].

Entwicklung des Budgetsystems berücksichtigend, kann man zu der Feststellung kommen, dass jene Bedürfnisse gesamtgesellschaftlich sind, welche mit der Aufrechterhaltung der ganzen Gesellschaft, der Nation, des Staates und mit der Entwicklung der Volkswirtschaft verbunden sind, und deren Befriedigung innerhalb des Warenumsatzes einerseits nicht möglich, andererseits nicht zweckmässig ist. Bei gewissen Arten von Bedürfnissen bestimmt die Unmöglichkeit ihrer Befriedigung innerhalb des Warenumsatzes eindeutig den gesamtgesellschaftlichen Charakter, bei einigen anderen Bedürfnissen hängt die Qualifizierung von Zweckmässigkeitsüberlegungen ab, was zu alternativen Lösungen führen kann. Die machtbezogenen Bedürfnisse der Verteidigung, Aufrechterhaltung der Ordnung, der Staatsverwaltung sind eindeutig gesamtgesellschaftlich; einige sich auf den Unterricht, das Kulturwesen, die Volkswirtschaftsentwicklung (Forschungen, Investitionen usw.) beziehende Bedürfnisse können wiederum mehr oder weniger auch ausserhalb des Staatshaushaltes befriedigt werden und fallen — wenn man dies berücksichtigt — aus dem Kreis der gesamtgesellschaftlichen Bedürfnisse eigentlich aus.*

Bei der Untersuchung der Praxis der Staatshaushalte verschiedener Länder, oder der Entwicklung des Staatshaushaltssystems in Ungarn, kann beobachtet werden, dass das Versehen gewisser kollektiver Aufgaben (Verteidigung, Ordnungs- und Rechtssicherheit, Staatsverwaltung, zu einem grossen Teil der Unterricht und das Gesundheitswesen, die Sozialfürsorge usw.) im allgemeinen und ständig im Rahmen des Staatshaushaltes realisiert wird. Diese können — zurückfolgernd — unbedingt als gesamtgesellschaftlich betrachtet werden. Auf dem Gebiet der Realisierung von einigen anderen Aufgaben, so in erster Reihe kulturelle, gemeinschaftliche, Forschungs-, Akkumulations- usw. Aufgaben betreffend, innerhalb des Staatshaushaltes oder ausserhalb desselben, können einerseits je Länder Abweichungen, andererseits auch in demselben Land im Laufe der Entwicklung Änderungen festgestellt werden. Das Budget, bzw. der Staatshaushalt war in den vergangenen zwanzig Jahren auch in Ungarn ein Schauplatz der wiederholten Ein- und Auswanderung verschiedenster Aufgaben.

Aus all dem kann der Schluss gezogen werden, dass zur gesamtgesellschaftlichen Qualifizierung eines Teiles der Bedürfnisse kaum ein festes, genaues und objektives Kriterium zu finden ist. Die Befriedigung der genannten

* Die westliche Finanzwissenschaft betont die Unteilbarkeit und externe Wirkung der Dienstleistungen als ein Kennzeichen der zur Befriedigung der kollektiven Bedürfnisse dienenden Tätigkeit. Aufgrund eingehender Prüfung kann festgestellt werden, dass sich diese Kennzeichen bei den verschiedenen Dienstleistungen auf ziemlich abweichende Weise und in verschiedenem Masse zeigen. Bezüglich der Dienstleistungen scheint jene Gruppierung richtig zu sein, nach welcher einige sowohl aus dem Gesichtspunkt der Produktion, als auch des Verbrauchs unteilbar sind (z. B. Verteidigung, Verwaltung, Naturschutz); andere sind bei der Produktion unteilbar, im Verbrauch mehr oder weniger teilbar (z. B. Gesundheitswesen, Unterricht, Forschung); wieder andere (z. B. Wohnungsversorgung) sind in beiden Hinsichten teilbar [11].

Bedürfnisse zur Aufgabe des Staatshaushalts zu machen, basiert auf solchen zweckmässigen, praktischen Überlegungen, die sich nicht nur räumlich und zeitlich ändern können, sondern von den verschiedensten — zuweilen subjektiven — Faktoren und Umständen abhängen. Die seinerzeit richtig scheinenden Überlegungen können sich übrigens mit der Zeit später als mehr oder weniger irrational erweisen und einer Revision bedürfen.

Ergänzend kann noch bemerkt werden, dass die Befriedigung der gesamtgesellschaftlichen Bedürfnisse durch den Staatshaushalt notwendigerweise mit einigen Folgen verbunden ist. Die eine Folge ist, dass die Dienstleistung zur Bedürfnisbefriedigung — da die Dienstleistung ausserhalb des Warenverkehrs erfolgt — keinen im üblichen Sinne genommenen Preis (Gebühr) hat. Die andere, damit zusammenhängende Folge ist, dass der Staatshaushalt für die Dienstleistung meistens keinen direkten Gegenwert, Kostenersatz beansprucht. Die Deckung der Kosten ist selbstverständlich notwendig, die Sicherung der Deckung erfolgt aber auf eine andere Weise, nämlich durch Besteuerung oder eine andersartige Einkommensentziehung auf eine indirekte Weise. Insofern der Staat für die gebotene Dienstleistung die Einhebung eines — die vollständige Deckung der Kosten bezweckenden — Gegenwertes (Gebühr) notwendig hält, so ist es richtiger, die Dienstleistung ausserhalb des Staatshaushaltes, in Unternehmensform zu organisieren.

Aufgrund der obigen Erörterungen bedarf die als Dritte erwähnte Charakterisierung des Staatshaushaltes bzw. deren Formulierung einer gewissen Modifizierung, richtiger einer präziseren Fassung. Dementsprechend kann behauptet werden, dass der Staatshaushalt eine solche Organisation ist, welche die Befriedigung der für gesamtgesellschaftlich *qualifizierten* Bedürfnisse *ausserhalb* des Warenumsatzes und im allgemeinen *ohne* einen direkten Kostenersatz versieht. Insofern man die Bedürfnisbefriedigung nicht eng (z. B. auf die persönlichen Bedürfnisse beschränkt), sondern breiter (so auch auf die volkswirtschaftlichen und besonders Entwicklungsbedürfnisse erweitert) interpretiert, so ist die obige Definition bzw. Charakterisierung für die Umfassung der ganzen Tätigkeit des Staatshaushaltes geeignet.

Die Funktionen des Staatshaushaltes

In der Volkswirtschaft tauchen verschiedene Bedürfnisse auf, und der Staatshaushalt übernimmt die Befriedigung eines Teiles derselben, bzw. ist dazu berufen. Während sich im Kreis des Warenverkehrs die Bedürfnisse entscheidend in Form einer zahlungsfähigen Nachfrage melden, werden im Falle des Staatshaushalts die als gesamtgesellschaftlich qualifizierten Bedürfnisse nicht durch die zahlungsfähige Nachfrage widerspiegelt, sondern durch den Staatshaushalt selbst bestimmt. Zur Befriedigung der in Rede stehenden Be-

dürfnisse bietet der Staatshaushalt durch den Markt überhaupt nicht, oder höchstens annähernd bewertbare Dienstleistungen. Auf dem Gebiet dieser Dienstleistungen ist der Staatshaushalt überwiegend autonom und nicht kompetitiv. Auf dem Gebiet der zur Dienstleistungstätigkeit notwendigen Produkte (und Dienstleistungen) steht aber der Staatshaushalt mit den übrigen Wirtschaftseinheiten in einem kompetitiven Verhältnis.

Die Rolle des Staatshaushaltes erschöpft sich aber nicht in Dienstleistungen, die sich zur Befriedigung autonom bestimmter Bedürfnisse richten, durch den Markt nicht, oder nur annähernd bewertbar sind und keinen Kostenersatz beanspruchen, also sogenannte gesellschaftliche Dienstleistungen sind. Neben diesen Dienstleistungen sorgt der Staatshaushalt auch für die Sicherung von gegenwärtig noch nicht verbrauchbaren, nicht verwendbaren, sondern künftigen Produkten. Und wie der Staatshaushalt durch die obigen Dienstleistungen eigentlich die *biologische und immaterielle Infrastruktur* der Gesellschaft sichert, so versieht er im Rahmen der erwähnten Vorsorge, durch die Schaffung gewisser allgemeiner materieller Fonds, Netze und Anlagen der Volkswirtschaft in bedeutendem Masse die Gestaltung der *materiellen Infrastruktur*. Zum Aufgabenkreis der Sicherung der künftigen Güter gehört übrigens auch die — auf dem Gebiet der Entwicklung der Volkswirtschaft und besonders der Finanzierung der Akkumulation ausgeübte — Funktion des Staatshaushaltes.

Der Staatshaushalt bietet übrigens nicht nur die in obigen skizzierten Dienstleistungen, sondern leistet daneben für verschiedene Zwecke und durch verschiedene Institutionen auch Geldzuweisungen ohne Gegenleistung. Unter anderen realisiert der Staatshaushalt vermittels dieser Geldzuweisungen jene Umverteilungsfunktion, auf die die übliche Charakterisierung ein so grosses Gewicht legt.

Und schliesslich gehört es zu den Funktionen des Staatshaushaltes, dass er die Deckung der durch das Versehen der obigen Aufgaben auftauchenden Ausgaben zu sichern hat. Der Staatshaushalt vermindert durch Sicherung der Einnahmen, durch Besteuerung und Einkommensentziehung die zahlungsfähige Nachfrage der übrigen Wirtschaftseinheiten, und beschränkt dadurch die Befriedigung anderer Bedürfnisse. Auf diese Weise bestimmt der Staatshaushalt nicht nur, welche — als gesamtgesellschaftlich qualifizierte — Bedürfnisse befriedigt werden sollen, sondern in gewissen Grenzen auch, welche Befriedigung von anderen Bedürfnissen global in welchem Masse nicht realisiert werden sollten[12].

Der Staatshaushalt als System

Zur zeitgemässen Beurteilung des Staatshaushaltes ist nicht nur notwendig — nach Überprüfung der früheren Definitionen und Charakterisierungen —, sein Wesen selbst klar und deutlich zu sehen, sondern auch dass man

seine in der gesamten Volkswirtschaft eingenommene Stelle und Rolle richtig beurteilt. Dazu kann man am zweckmässigsten durch die systemtheoretische Annäherung des Problems des Staatshaushaltes kommen.

Die Volkswirtschaft selbst kann als ein — aus Hunderten, Tausenden, sogar Millionen Organen verschiedener Art bestehendes — System betrachtet werden. Innerhalb der Volkswirtschaft als System kann man, von verschiedenen Gesichtspunkten ausgehend, Systemeinheiten, Subsysteme höheren Ranges als die einzelnen Organe — selbstverständlich aber niedrigeren Ranges als die ganze Volkswirtschaft — unterscheiden. Die bedeutendsten Subsysteme der Volkswirtschaft können Sphären genannt werden.*

Die wirtschaftlichen Sphären können einerseits einen *Formen-*, bzw. Kategoriecharakter, andererseits einen *Inhalts-*, bzw. Organisationscharakter haben. In die Sphäre erster Art gehören die gleichartigen Organe; die letztgenannte Sphäre besteht hinwieder aus bestimmten — durch mehr oder weniger enge oder lose Verbindungen verknüpften — Organen. Für die erstere kann die Sphäre der Haushalte, für die letztere ein wirtschaftliches Leitungsorgan mit den ihm untergeordneten — eventuell verschiedenartigen — Organen als Beispiel dienen.

Eine der bedeutendesten Sphären der Volkswirtschaft ist der Staatshaushalt, welcher auch selbst als ein System funktioniert. Der Staatshaushalt ist — in erster Annäherung — eine solche Sphäre von Organisationscharakter, innerhalb derer sich weitere Subsysteme (Subsphären) Kategoriecharakters befinden. Das eine ist das *Dienstleistungs- oder Institutionssubsystem*, das sich aus den Institutionen, mit dem üblichen Sprachgebrauch: aus den Budgetorganen (bzw. aus dem überwiegenden Teil derselben) zusammensetzt. Die Institutionen sind im wesentlichen unentgeltliche Dienstleistungen bietende und zur Ermöglichung dieser Tätigkeit aus einer Zentralquelle stammenden entsprechenden Geldzuweisungen beziehende Organe. Die Objekte ihrer Tätigkeit können die im üblichen Sinne genommenen — z. B. kulturellen, gesundheitlichen, sozialen usw. — Dienstleistungen und auch gewisse auf Macht beruhende, spezifische z. B. Justiz-, Ordnungsicherungs-, Verteidigungs- oder Verwaltungs-Dienstleistungen sein. Unter ihnen sind auch solche zu finden, welche nicht so sehr Dienstleistungen bieten, sondern eher — meistens zum Gemeingebrauch dienende — Produkte, unter diesen Grundmittel herstellen. Im Institutionssubsystem finden sich auch solche, deren Aufgabe die Erfüllung von Gelddienstleistungen, von Geldzuweisungen ist.

Von den in obigem angeführten, im engeren Sinne genommenen Institutionen sind die Leitungsorgane auch konzeptionell zu unterscheiden. Diese

* Die Sphäre ist die Gesamtheit breiteren Kreises der — aus einem bestimmten Systematisierungsgesichtspunkt als zusammengehörend qualifizierten — Organe. Obwohl diese Definition eigentlich auch für den gesellschaftlichen Sektor und die volkswirtschaftlichen Zweige verwendet werden könnte, sind der Sektor und der Zweig doch von der wirtschaftlichen Sphäre aus Zweckmässigkeitsüberlegungen zu unterscheiden.

bieten im wesentlichen besondere und hochgradige Verwaltungsdienstleistungen, die Tätigkeit der übrigen Subsysteme, Sub-Subsysteme, Organe, Einheiten mehr oder weniger bestimmende, beeinflussende oder harmonisierende Informationen. (Die Anweisungen, Anordnungen, Verfügungen der Leitungsorgane können im wesentlichen als Informationen eigenartigen Charakters betrachtet werden.) Eine Bedingung von besonders grundlegender Bedeutung zur erfolgreichen Tätigkeit der Leitungsorgane ist das entsprechende Funktionieren des sich nach ihnen richtenden und von ihnen ausstrahlenden Informationssystems.

In dem — neben den Institutionen, bzw. gegenüber diesen befindlichen — Subsystem bestehen und funktionieren Organe, die sich mit der Geldentziehung ohne Gegenleistung aus anderen Sphären beschäftigen und die Geldversorgung der Ausgaben leistenden Institutionen, d. h. des Dienstleistungs-Subsystems sichern. Diese Organe sind die im weiten Sinne genommenen »Steuerämter« und aus ihnen besteht das »*fiskalische Untersystem*« als eine grossangelegte »Gebühreneinhebungs«-Organisation. Dieses Subsystem sorgt für die Schaffung, Verwaltung und Verwendung des Zentralfonds. Der Staatshaushalt ist also — die systemtheoretische Annäherung anwendend — mit dem Zentralfonds nicht identisch, sondern er ist mehr. Der Staatshaushalt ist im wesentlichen ein Organisations-, ferner Planungs- und Finanzsystem, also keine ausschliessliche Finanzinstitution wie der Zentralgeldfonds.

Innerhalb der Staatshaushaltssphäre befinden sich aber nicht nur die vorher erwähnten zwei grossen Subsysteme: das Institutions- und das Fiskalsystem, sondern es sind auch noch andere Subsysteme, Sub-Subsysteme zu finden. Diese Subsysteme, Sub-Subsysteme können aus verschiedenen Systematisierungsgesichtspunkten ausgehend gebildet werden, und da dieselbe Einheit auch aus mehrerlei Gesichtspunkten gruppiert werden kann, kann ein und dasselbe Organ auch in den Rahmen von mehreren Subsystemen gehören. Um von den Subsystemen nur die bedeutendsten anzuführen; im Staatshaushalt sind zu finden:

— die Fachsubsysteme Kategoriecharakters (wie z. B. die Gesamtheit der Unterrichts-, Gesundheitsweseninstitutionen gleichen Typs);

— die Gebietssubsysteme Kategoriecharakters (z. B. alle auf dem Gebiet einer Gebietseinheit — Komitat, Stadt usw. — befindlichen Organe);

— die Landesverwaltungs-Subsysteme Organisationscharakters (z. B. das Fachministerium mit allen seinen untergeordneten Organen);

— die lokalen Verwaltungs-Subsysteme Organisationscharakters (z.B. die Räte höheren oder niedrigeren Niveaus mit ihren untergeordneten Organen).

Es ist zu betonen, dass die genannten Subsysteme in ihrer Mehrheit nicht nur bloss Systematisierungseinheiten, sondern auch Organisations-, Verwaltungs-, Funktionseinheiten sind. Deshalb wird das Funktionieren eines — in den Rahmen von mehreren Subsystemen gehörenden — Organs

mehr oder weniger auch durch seine sämtlichen Subsystem-Verbindungen bestimmt, bzw. beeinflusst. Eine grundlegende Bedingung des erfolgreichen Funktionierens des Staatshaushaltes ist die rationelle Regelung der Systemzugehörigkeiten und der Funktionierungsverbindungen.

Von den im obigen beispielsweise angeführten verschiedenen Staatshaushalts-Subsystemen verfügen die Landesverwaltungs-Subsysteme Organisationscharakters, sowie die lokalen Verwaltungssubsysteme Organisationscharakters über eigene Haushalte und üben ihre Tätigkeit im Rahmen derselben aus. Aus diesen öffentlichen Haushalten setzt sich der — im weiteren Sinne genommene — Staatshaushalt zusammen, als das hierarchische System der öffentlichen Haushalte verschiedener Art und Niveaus. Innerhalb des Staatshaushaltes kombinieren und kreuzen sich dann die Institutionssphäre Kategoriecharakters und die fiskalische Subsphäre mit den Subsystemen und Sub-Subsystemen Organisationscharakters der öffentlichen Haushalte verschiedenen Niveaus. Beim Funktionieren der Staatshaushaltssphäre sind diese Systemzusammenhänge von grundlegender Bedeutung und sind sowohl in den Feststellungen bezüglich der Rolle der Staatshaushaltssphäre, als auch in den — die Steigerung der Wirksamkeit des Funktionierens bezweckenden — Vorschlägen unbedingt beachtenswert.

Der Staatshaushalt und die übrigen Sphären

In der Volkswirtschaft als System befinden sich ausser dem Staatshaushalt selbstverständlich auch noch weitere Subsysteme (Sphären). Zu den Sphären der Volkswirtschaft gehören z. B. die Unternehmenssphäre, die Sphäre der Privathaushalte, die Bankorganisation usw. Der Staatshaushalt ist aber zweifellos eine der bedeutendsten Sphären der Volkswirtschaft.

Der Staatshaushalt — die Gesamtheit der öffentlichen Haushalte — dient durch seine sich auf die Befriedigungen der als gesamtgesellschaftlich qualifizierten Bedürfnisse richtende Dienstleistungstätigkeit ausübenden Institutionen eigentlich den allgemeinen Interessen der ganzen Volkswirtschaft; dabei übt der Staatshaushalt nicht nur eine Tätigkeit momentaner Relevanz aus, sondern er begründet und bereitet auch die künftige Entwicklung der Volkswirtschaft vor. Trotzdem wäre es unrichtig, den Staatshaushalt und die Volkswirtschaft — auch nur in einzelnen Hinsichten — miteinander zu identifizieren, z. B. das finanzielle Gleichgewicht (oder Ungleichgewicht) des Staatshaushaltes bedeutet nicht das monetäre Gleichgewicht (oder Ungleichgewicht) und noch weniger das reale Gleichgewicht (bzw. Ungleichgewicht) der Volkswirtschaft. Das Wachsen des Volumens des Staatshaushaltes ist nicht unbedingt identisch — oder parallel — mit dem Wachstum bzw. der Entwicklung der Volkswirtschaft. Auch systemmässig können der Staatshaushalt und die

Volkswirtschaft nicht identisch sein: die Erweiterung des Wirkungskreises, der Organisation, des Systems, der finanziellen Regelungen des Staatshaushaltes auf die ganze Volkswirtschaft wäre — obwohl sie prinzipiell möglich ist und unter aussergewöhnlichen Umständen auch in der Praxis vorkam — offenbar irrationell.

Der Staatshaushalt entzieht den übrigen Sphären, wie wir sahen, innerhalb der Volkswirtschaft einen Teil des Einkommens, der Kaufkraft ohne eine direkte Gegenleistung und bietet durch Verwendung derselben, durch Beschränkung des Anspruchs an Arbeitskräften, Produkten und Dienstleistungen der übrigen Sphären, aber ebenfalls ohne Gegenleistung spezifische Dienstleistungen, sowie — meistens künftige — Produkte. Der Staatshaushalt versieht auf diese Weise durch die Entziehung und Verwendung der Kraftquellen und Geldquellen der Volkswirtschaft von den Funktionen der übrigen Sphären qualitativ abweichende Funktionen, aber bestimmungsgemäss alldies zu Gunsten der übrigen Sphären und der ganzen Volkswirtschaft. Die Existenzberechtigung des Staatshaushaltes wird eben durch das Versehen dieser Funktion anderer Richtung und anderen Inhaltes gegeben und begründet.

Die Notwendigkeit der Funktionen des Staatshaushaltes ist unbestreitbar, es ist aber ebenso auch zweifellos, dass die Funktionen des Staatshaushaltes mit den Funktionen der übrigen Sphären in einem entsprechenden Verhältnis stehen müssen. Eine grundlegende Forderung des Verhältnisses zwischen der Volkswirtschaft und dem Staatshaushalt besteht unter anderen darin, dass

— die Funktionen des Staatshaushaltes mit den Funktionen der übrigen Sphären in einer entsprechenden Proportion stehen sollten;

— die zum Versehen der Funktionen entzogenen Kraft- und Geldquellen mit den Funktionen bzw. Leistungen proportional sein sollten;

— die Entziehung der Quellen sollte, auch die Leistungen des Staatshaushaltes berücksichtigend, die Tätigkeitsausübung der übrigen Sphären nicht verhindern.

All dies kann kurz so ausgedrückt werden, dass in der Volkswirtschaft zwischen den Zielen bzw. Funktionen des Staatshaushaltes und der übrigen Sphären; innerhalb des Staatshaushaltes zwischen den Zielen und Mitteln, den Leistungen und Aufwendungen; zwischen den Kraftquellenverwendungen der Staatshaushalts- und der übrigen Sphären eine Proportion zur Geltung kommen muss.*

* Mit den in den letzten zwei Kapiteln behandelten Fragen verbundene weitere Erörterungen enthält die Abhandlung des Autors [13].

Einige Folgerungen

Eine Aufstellung der oben erwähnten Proportionalforderungen ist selbstverständlich viel leichter, als die entsprechende Geltendmachung der Proportion bei der Verteilung der Aufgaben, der Organisierung des Staatshaushaltes, der Budgetpolitik und der Leitung des Staatshaushaltes. Nach den Erfahrungen kam die genannte Forderung in der Vergangenheit nicht vollständig zur Geltung, und während sich der Aufgabenkreis des Staatshaushaltes einerseits zeitweise allzubreit gestaltete, wurde andererseits das Versehen der ihn tatsächlich angehenden Aufgaben durch die Kraft- und Geldquellen nicht entsprechend gesichert. Das Eintreffen von solchen Lagen wurde durch verschiedene Umstände und Ursachen hervorgerufen, deren Prüfung hier jetzt nicht unsere Aufgabe ist. Die Annahme kann aber durchaus gewagt werden, dass zum Eintreffen der auf dem Gebiet des Staatshaushaltes vorgekommenen Fehler, Unzulänglichkeiten und Disproportionen einerseits die im obigen besprochenen vielerlei Unrichtigkeiten der Begriffsdefinition und Charakterisierung des Staatshaushaltes, andererseits die nicht ausreichend tiefschürfende Analyse der systemtheoretischen Stelle und des Innensystems des Staatshaushaltes wahrscheinlich beitrugen. Es kann deshalb angenommen werden, dass die Berichtigung der Beurteilung bezüglich des Staatshaushaltes, sowie die systemtheoretisch annähernde, noch fortzusetzende Untersuchung der Probleme des Staatshaushaltes uns zur Durchsetzung der obigen Forderung, bzw. zur Schaffung ihrer theoretischen Bedingungen etwas näher bringen kann.

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МЕСТО ГОСУДАРСТВЕННЫХ ФИНАНСОВ В НАРОДНОМ ХОЗЯЙСТВЕ

А. ШМИДТ

Автор рассматривает взгляды, согласно которым государственная финансовая система представляет собой сферу потребления, распределения и перераспределения национального дохода и, соответственно, организацию, обеспечивающую удовлетворение общественных потребностей. Он подчеркивает, что государственную финансовую систему не следует расценивать как сферу потребления в уничижительном смысле, потому что ее потребление не является бесполезным, а, подобно производственной сфере, может трактоваться как производственное потребление. Для государственной финансовой системы характерен не только материальный аспект распределения и перераспределения национального дохода, но также и то, что она посредством деятельности своих органов принимает участие в создании чистого национального продукта в широком смысле. Третья особенность государственных финансов состоит в том, что это — организация, обеспечивающая удовлетворение общественных потребностей вне сферы товарооборота, как правило, безвозмездно.

Государственные финансы, с одной стороны, предоставляют услуги, направленные на удовлетворение автономных потребностей, не поддающихся или только отчасти поддающихся рыночной оценке, без претензии на компенсацию; они заботятся о нематериальной и отчасти материальной инфраструктуре общества и создании некоторых будущих благ в предстоящий период, далее предоставляют различные прямые безвозмездные субсидии и, с другой стороны, обеспечивают покрытие расходов, возникающих в связи с выполнением вышеупомянутых задач.

Место и роль государственных финансов в народном хозяйстве наиболее целесообразно исследовать с помощью теории систем. Государственные финансы представляют собой одну из важнейших сфер народного хозяйства, состоящую из двух больших подсистем, а именно: из институциальной и фискальной подсистем. В рамках государственных финансов как иерархической системы хозяйств общественных органов располагаются различные по категориям, организационному характеру, территоральному характеру и прочим признакам подсистемы.

В народном хозяйстве должна существовать пропорциональность между функциями государственных финансов и прочих сфер; внутри государственных финансов между целями и средствами, результатами и затратами; наконец, также и между государственными финансами и использованием ресурсов остальных сфер. Поправка прежних оценок системы государственных финансов и изучение ее проблем с точки зрения теории систем сможет оказать содействие осуществлению этих требований.

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K. Forgács

POLARISATION UND DEPOLARISATION IN DER KAPITALISTISCHEN AGRARENTWICKLUNG

Der Differenzierungsprozess vollzieht sich in der Landwirtschaft eigenartig. Die in Polarlage befindlichen Schichten können ihren in der Produktion eingenommenen Platz nicht befestigen und so kommen die Mittelschichten — infolge des sich immer mehr verbreitenden Depolarisierungsprozesses — in Übergewicht. Die Analyse der von der industriellen Entwicklung abweichenden Eigenschaften wird zum Verständnis der gegenwärtigen Agrarprobleme immer wichtiger.

In der Landwirtschaft entfaltet sich die technische Umgestaltung — im Vergleich zur Industrie — um mehr als ein Jahrhundert später. Auch diese erfolgt in einer solchen Periode, in der die Errungenschaften einer neuen technischen Revolution auf die Entwicklung der Produktivkräfte revolutionierend wirken. In der Landwirtschaft gestalteten sich während des langsameren Fortschrittes überhaupt keine solche günstigen Bedingungen für die Aufnahme der modernsten Technik aus als in der Industrie. Was die mit feudalen Überresten belasteten Grossgrundbesitze anbetrifft, war die Lage in allgemeinen auch im XIX. Jahrhundert, zur Zeit der industriellen Revolution, ähnlich. Damals erfolgten keine grundlegenden Änderungen in der Zusammensetzung der Produktivkräfte der Landwirtschaft: gegenwärtig kam aber trotz den ungünstigen Betriebsrahmen die technische Umgestaltung des Agrarsektors auf die Tagesordnung und die Liquidierung der Rückständigkeit schreitet auf mehreren Gebieten in einem rascheren Tempo fort als selbst in der Industrie. Die Änderung der ganzen Wirtschaftsstruktur, sowie die vollständige Entfaltung der Führungsrolle der Industrie waren notwendig, um die Rückständigkeit der Landwirtschaft liquidieren zu können.

In der Landwirtschaft konnte sich das bekannte Modell der kapitalistischen Entwicklung auf der weitaus rückständigeren technischen Basis als in der Industrie nicht restlos ausgestalten. In der Industrie treffen die stärksten kapitalistischen Unternehmer im letzten Drittel des XIX. Jahrhunderts schon monopolistische Vereinbarungen, während zahllose Kleinproduzenten in der Landwirtschaft auf dem Markt miteinander wetteifern.

Gegenwärtig ist die Feststellung der gleichen Entwicklungsgesetze der Industrie und der Landwirtschaft ohne die Analyse der Unterschiede und der

abweichenden Geltungsformen zur Erkennung der tatsächlichen Prozesse nicht genügend. Ausserdem bietet sie auch keinen entsprechenden Ausgangspunkt für die Beurteilung der weiteren Perspektive der Landwirtschaft. So ist auch die Erklärung für die — zuweilen verständnislos beobachteten — »Dekapitalisierungs«-Prozesse zuletzt in den Eigenartigkeiten der Agrarentwicklung verborgen.

Differenzierungsprozess in zwei Richtungen

Der Polarisierungsprozess im Kreise der Bauernschaft bedeutet im wesentlichen, dass einzelne aus den Reihen der Mittelschichten emporkommen und durch Vergrösserung ihres Grundbesitzes bzw. Betriebes ein solch beständiges Einkommen erzielen, das auch Profit enthält. Für die Mehrheit bringt aber die Wirtschaft ein niedriges Einkommen, das auch keinen entsprechenden Arbeitslohn für sie sichert und durch Zersplitterung oder vollständigen Verlust ihres Bodens werden sie Zwergbesitzer bzw. herabgekommene Agrarproletarier. Die Ausgestaltung der zwei Pole war im XIX. Jahrhundert und auch in der ersten Hälfte des XX. Jahrhundertes ein ziemlich verfolgbarer Prozess. Lenin charakterisierte diesen Prozess wie folgt: Das unvermeidliche Ergebnis des Kampfes ist die Bildung einer Minderheit *kapitalistischer,* auf Lohnarbeit beruhender Wirtschaften und die wachsende Notwendigkeit für die Mehrheit, sich nach 'Nebenverdiensten' umzusehen, d.h. zu industriellen und landwirtschaftlichen Lohnarbeitern zu werden.« [1]. Die Belebung der kapitalistischen Entwicklung im Westeuropa des XIX. Jahrhundertes ergab, dass sich der Fortschritt der Polarisation innerhalb der Landwirtschaft beschleunigte, und die Ausgestaltung der kapitalistischen Bauernwirtschaften — die für den Markt produzieren und Lohnarbeiter beschäftigen — gut beobachtet werden konnte. Während »der Bauer des 18. Jahrhunderts mit seinen 8—10 ha Bauer und Handarbeiter war, ist der Zwergbauer des 19. Jahrhunderts mit seinen 1—2 Hektar Kopfarbeiter, Unternehmer, Kaufmann.« [2]. In dieser Periode gelangten die kapitalistischen Landwirte nicht nur zu einem Durchschnittsprofit, sondern auch zu einer — diesen übersteigenden — Grundrente. Der in der Landwirtschaft produzierte Mehrwert, der im Vergleich zum investierten Kapital grösser war als in der Industrie, fiel hauptsächlich den landwirtschaftlichen Kapitalisten zu. Neben dem »besonderen und jedem sofort erkennbaren, ausgeprägten Typus der Grossbauern« kam »eine bereits ziemlich ausgeprägte Klasse landwirtschaftlicher Lohnarbeiter« zustande [3].

Der Auflösungsprozess der Bauernschaft war am Ende des XIX. Jahrhunderts in Deutschland in einem fortgeschrittenen Stadium, in Russland aber in einer Anfangsperiode. Der Differenzierungsprozess ist aber überall — unabhängig vom wirtschaftlichen Entwicklungsgrad — von der gemeinsamen Charakteristik gekennzechnet, dass die sich ausgestalteten zwei Pole

grösstenteils innerhalb der Landwirtschaft bleiben. Die kapitalistischen Grundbesitzer verwenden den Profit nicht zum parasitären Verbrauch, wie die Gutsbesitzer es machten, sondern sie vermehren ihr Vermögen und erweitern dadurch die Produktion. Die Träger des technischen Fortschrittes in der Landwirtschaft waren im XIX. Jahrhundert und in der ersten Hälfte des XX. Jahrhunderts selbst die kapitalistischen Grundbesitzer. Zugleich suchen die herabgekommenen Bauern Arbeit zumeist ebenfalls in der Landwirtschaft, und dann später schritt auch die Abwanderung — im Vergleich zur Periode nach dem zweiten Weltkrieg — in einem relativ langsamen Tempo fort.

Die an den zwei Polen des Differenzierungsprozesses sich ausgestaltenden Schichten waren in wirtschaftlicher Hinsicht aufeinander angewiesen. Die verarmenden Bauern und die bodenlosen Agrarproletarier suchen Arbeit in den kapitalistischen Grossbetrieben. Die reich werdenden Bauern benötigen aber neuere Lohnarbeiter für die Erweiterung der Produktion. Diese gegenseitige wirtschaftliche Angewiesenheit ist desto enger, je niedriger das Niveau der Mechanisierung und des technischen Entwicklungsgrades ist, als sich die Arbeitsproduktivität hauptsächlich infolge der Enteerträge und nicht infolge der Verminderung der Zahl der Arbeitskräfte in günstiger Richtung ändert.

In den kapitalistischen Grossbetrieben kam zwar die Reihe an die Verwendung der zur Verfügung stehenden Gespannkraft, der grösste Teil der Arbeit wurde aber auch weiter mit Handarbeit durchgeführt. Die Mechanisierung der Teilarbeiten ergab keine bedeutende Ersparnis von lebendiger Arbeit, die Erweiterung der Produktionskapazität des Betriebes machte sogar die Anstellung von weiteren — mit periodischem oder ständigem Charakter beschäftigten — Arbeitskräften notwendig. In dieser Periode war die Erhöhung der Anwendung von lebendiger Arbeit eine unentbehrliche Bedingung für die Sicherung der systematisch erweiterten Reproduktion.

Die Klein- und Mittelbetriebe konnten zu Lenins Zeit keine regelmässige Reproduktion ausüben. In einer längeren Periode erhöhte sich weder das Produktionsvolumen noch das Niveau der angewandten Produktivkräfte im allgemeinen, nur in einigen Jahren konnte auf Wirkung von zahlreichen zufälligen und individuellen Faktoren eine Zunahme beobachtet werden. Die Arbeitskapazität einer Familie war im wesentlichen nicht genügend, die systematisch erweiterte Reproduktion, zugleich die Ausnützung der damaligen technischen Möglichkeiten und den Unterhalt auf einem höheren Niveau als dasselbe des armen Bauers zu sichern. Die Betriebe aber, die fremde Arbeitskräfte beschäftigen, gehören schon zum kapitalistischen Sektor. So entstand — den Tatsachen der Realität entsprechend — eine Terminologie, nach der die mit eigenen Arbeitskräften produzierenden Betriebe im voraus als Kleinbetriebe, die mit Lohnarbeitern wirtschaftenden Betriebe als Grossbetriebe betrachtet wurden.

Die Vorbedingungen für die in der Landwirtschaft sich realisierende erweiterte Reproduktion gestalteten sich im Laufe des Polarisationsprozesses aus.

Am einen Pol konzentrierten sich die Produktionsmittel, in erster Reihe der Grundbesitz mit Wirtschaftsgebäuden, Viehbestand, und am anderen Pol war die zur Betätigung notwendige Arbeitskraft zu finden. Auf der Assoziation der damaligen zwei wichtigsten Produktionsfaktoren, des Grundes und der Arbeitskraft basierte die systematisch erweiterte Reproduktion in der Landwirtschaft, die sich im kapitalistischen Rahmen, d. h. durch die ständige Erneuerung des Verhältnisses zwischen dem kapitalistischen Landbesitzer und dem Lohnarbeiter entfaltete.

Im Laufe des XIX. und zu Beginn des XX. Jahrhundertes schritt die Ausgestaltung der zwei Pole auf Wirkung der sich rasch ändernden Wirtschaftsumstände, der sich hinziehenden Agrarkrisen und der Entfaltung der — grosse Absatzmöglichkeiten bietenden — konjunkturellen Perioden, sowie neben den fast in jedem Betrieb abweichenden Natur- und Betriebsbedingungen in einem raschen Tempo und augenscheinlich fort. *Die Haupttendenz des Differenzierungsprozesses war die Polarisation,* wobei die Entwicklung und das Produktionsverhältnis der Bauernschichten an den zwei Polen, zu Lasten der Mittelschichten verstärkt wurden. Neben der zahlenmässigen Entwicklung ihrer Ergebnisse, spielt die Polarisation eine noch viel bedeutendere Rolle bei dem Prozess, *im Laufe dessen eine in dieser Richtung liegende Differenzierung die Entwicklung der auf kapitalistischen Grundlagen beruhenden Produktivkräfte der gesamten Landwirtschaft wesentlich vorantrieb.*

Neben der Polarisation kommt aber auch eine andere Tendenz zur Geltung: das ist die Depolarisation, die man natürlich auch schon im XIX. Jahrhundert gut wahrnehmen konnte. In diesem Prozess von gegensätzlicher Richtungen sinken, bzw. erheben sich die an den zwei Polen befindlichen Schichten zufolge der Wirkung verschiedener Wirtschaftsumstände, auf das Niveau der Mittelklasse. So unterliegen z. B. die schwächeren kapitalistischen Betriebe im Wettkampf und werden zu Mittelbauerbetriebe, die grösstenteils auf eigener Arbeitskraft basieren. Zugleich konnten einige Zwergbesitzer und Kleinbauer durch die Entwicklung der Urbanisation und des Verkehrs unter vorteilhafte Bedingungen gelangen und ihre Lage stabilisieren. Solche Beispiele wurden auch von Lenin erwähnt: er analysierte die Umstände, auf deren Wirkung die über einige Hektar verfügenden Besitzer zu Unternehmern werden konnten [1].

Im Laufe der Depolarisation nahm das relative Gewicht, sogar die Zahl der Besitzer zu, die über ein bedeutendes Privateigentum verfügten, das sie aber meistens nur als Produktionsmittel und nicht als Kapital funktionieren lassen konnten. So konnten sie sich ausser ihrem Einkommen überhaupt nicht, oder nur unregelmässig Profit verschaffen. In diesen Mittelwirtschaften bestanden keine materiellen Bedingungen für die sich ständig erweiternde Reproduktion. Obwohl die Besitzer das Produktionsergebnis im Falle des Zusammenspiels von günstigen Umständen durch Beschäftigung von mehreren ständigen

Arbeitskräften Jahre hindurch vermehren konnten, war doch die Quelle der Mehrproduktion entscheidend die eigene Kraftanstrengung und die hochgradige Ersparnis der Bauernfamilie oder der Besitz einer monopolisierbaren Naturgegebenheit. In den Mittelbauernwirtschaften gestaltete sich die Reproduktion — auf Wirkung von zahllosen individuellen, weniger generalisierbaren Faktoren – in einer verengten oder erweiterten Form. So hätte sich die ständige Erhöhung der landwirtschaftlichen Produktion zur Deckung des immer grösseren Bedarfs der Industrieländer an Lebensmitteln auf der Basis der Mittelbauernwirtschaften nicht ausgestalten können.

Die Mittelbauernbetriebe bilden — wegen ihrer labilen Lage — die relativ mobilste Schichte des Differenzierungsprozesses. Aus den Reihen der Mittelbauern gelang es einigen in die Klasse der kapitalistischen Unternehmer zu kommen, während die breitere Schichte in Schulden geriet oder ihr Vermögen zersplitterte und so das Privateigentum auch als Produktionsmittel nicht behalten konnte. Gleichzeitig gelang es anderen, sich in die Reihe der Mittelbauern emporzuarbeiten, oder in anderen Fällen sind die Bedingungen für die systematisch erweiterte Reproduktion einzelner kapitalistischer Grossbetriebe enger geworden. Seit der Ausgestaltung der kapitalistischen Produktionsweise vollzieht sich die Differenzierung der Bauernschaft in der Landwirtschaft ständig, und zwar sowohl in Form der Polarisation, als auch in derselben der Depolarisation. Im Mittelpunkt dieser Prozesse von gegensätzlichen Richtungen, aber im wesentlichen mit gleichem Inhalt, stehen die noch oder schon über ein bedeutendes Privateigentum verfügenden, aber bisher oder später grösstenteils mit eigener Arbeit produzierenden Landwirte.

Obwohl die zur Mittelschicht der Gesellschaft Gehörenden sich ständig änderten, verschwanden aber die Mittelschichten in der Landwirtschaft vom Schauplatz weder im Kapitalismus mit freiem Wettbewerb, noch im Imperialismus. Obwohl die Polarisation in einem raschen Tempo fortschritt, und das kapitalistische Produktionsverhältnis zwischen den zwei — in Polarlage befindlichen — Schichten ständig wiederhergestellt wurde, ferner diese die günstige Form für die Entwicklung der Produktionskräfte damals bedeutete, bestand die relativ grosse Rolle der Mittelbauernbetriebe in der landwirtschaftlichen Produktion, in der Beschäftigung der Bevölkerung, im Besitz der Produktionsmittel trotz allem fort. Im Laufe des Depolarisationsprozesses gestalten sich neuere Mittelbauernwirtschaften aus, wo die bedeutenden und im Privateigentum befindlichen Produktionsmittel überwiegend mit eigener Arbeit betätigt wurden. Das relative Gewicht der Mittelbauernwirtschaften konnte besonders in den Perioden der raschen technischen Entwicklung zunehmen, als grössere Möglichkeiten für die Anwendung der arbeitsparenden Mittel vorhanden sind und die Arbeitskapazität der Bauernfamilie mit Hilfe von einigen Stand- und Saisonarbeitern — in der späteren Periode sogar ohne Beschäftigung von fremden Arbeitskräften — für die Ausübung der Produktion genü-

gend geworden ist. So verstärkt in der Landwirtschaft der — lebendige Arbeit ersparende — technische Fortschritt, d. h. die hochgradige Mechanisierung nicht immer die kapitalistischen Produktionsverhältnisse, sondern, unter gewissen Umständen, die auf einer Doppelbasis existierenden, schwankenden kleinbürgerlichen Schichten.

Die technischen Errungenschaften der industriellen Revolution zu Beginn des XIX. Jahrhunderts erstreckten sich nicht auf die Landwirtschaft, d. h., die Anwendung von grössere lebendige Arbeit ersparenden Mitteln und Verfahren erfolgte fast bis zum zweiten Weltkrieg in den westeuropäischen Ländern nicht. Die stufenweise Umgestaltung der technischen Basis der Produktion und die langsame Erhöhung der Arbeitsproduktivität begünstigten die Polarisationsprozesse und hinderten das stärkere Vordringen der grösstenteils mit eigener Arbeit produzierenden Landwirte. Die Entfaltung der kapitalistischen Produktionsverhältnisse förderte die Wiederholung der landwirtschaftlichen Produktion auf einem immer höheren Niveau.

Die Labilität der Polarlage

Der Differenzierungsprozess musste — wie in der Industrie — auch in der Landwirtschaft zur Befestigung der Lage der kapitalistischen Landwirte führen. Zur Zeit der langsamen technischen Änderungen nämlich, als die Erhöhung der Anwendung von lebendiger Arbeit eine unentbehrliche Bedingung für die Realisierung der erweiterten Reproduktion war, gestalteten sich in den Polarisationsprozessen jene Schichten aus, deren — im Laufe der Produktion entwickelte — Beziehungen den günstigen Rahmen für die Entwicklung der Produktivkräfte bilden. Das Produktionsverhältnis der beiden in Polarlage befindlichen Schichten wird ständig neugeschaffen, was die weitere Stärkung der kapitalistischen Wirtschaft ergibt.

In der Industrie wurde das gesellschaftliche Verhältnis und die in der Produktion eingenommene Stelle der auf zwei Polen der aus der Kleinproduzentenwirtschaft wachsenden kapitalistischen Warenwirtschaft liegenden Klasse derart konsolidiert, dass die Möglichkeiten für das Herabsinken bzw. für das Emporkommen in die Reihen der Mittelschichten ausserordentlich beschränkt waren. In den Perioden der Krise gingen zwar die schwächeren kapitalistischen Unternehmen massenhaft zugrunde, zugleich konnten aber stärkere Unternehmer eben auch durch Einverleibung dieser labilen Betriebe ihre wirtschaftliche Überlegenheit erhöhen. Die Klein- und Mittelindustrie haben eine bestimmte Funktion und eine beschränkte Erweiterungsmöglichkeit in der Nachbarschaft der befestigten kapitalistischen Fabrikindustrie, dies gefährdet aber die Grundlage der kapitalistischen Wirtschaft nicht. Der Differenzierungsprozess, in der Industrie, den man mit demselben der Landwirtschaft vergleichen kann, spielte sich eigentlich zur Zeit der ursprünglichen Akkumula-

tion und mit dieser in engem Zusammenhang ab. Die Akkumulation der grossen Geldvermögen, das Verjagen der Bauern von ihrem Grund, hängen mit der Polarisation der Kleinproduzenten zusammen. Im Laufe der ursprünglichen Akkumulation und Differenzierung gestalteten sich solche festen Pole aus, deren Existenz durch die weitere Schichtung nicht gefährdet wird. Auf diese Weise können die Differenzierungsprozesse zwischen den Arbeitern, den Kleinproduzenten und den kapitalistischen Unternehmern gesellschaftliche und wirtschaftliche Bewegungen gewisser Richtung hervorrufen, die zwar wichtig sein können, sie berühren aber die Gründe der kapitalistischen Produktionsverhältnisse nicht. Von weit grösserer Bedeutung sind die Schichtungen innerhalb der Kapitalistenklasse, die in Form der freien Konkurrenz, später des — durch die monopolistischen Vereinbarungen zustandegebrachten — grösseren Konkurrenzkampfes zur Geltung kommen. Interessant sind aus gewissen gesellschaftlichen Gesichtspunkten auch die Schichtungsprozesse innerhalb der Reihen der Arbeiterklasse und der Mittelschicht.

In der Landwirtschaft umfasst der sog. ursprüngliche Differenzierungsprozess eine ganz lange historische Epoche. Die Differenzierung zwischen den Schichten führt nicht nur in der Periode zwischen den zwei technischen Revolutionen, sondern auch gegenwärtig zu wesentlichen gesellschaftlichen und wirtschaftlichen Änderungen in der Landwirtschaft und ist von weitaus grösserer Bedeutung, als die sich innerhalb der einzelnen Schichten abspielenden Prozesse. Als Ergebnis der Differenzierung gestalten sich die Lohnarbeiter beschäftigenden kapitalistischen Grossbetriebe aus, zugleich wird aber auch die Zunahme der — grösstenteils mit eigener Arbeit produzierenden — Klein- und Mittelbauernwirtschaften gesichert.

In der Landwirtschaft hat die Depolarisation eine weitaus grössere Rolle als in der Industrie, wo die realen Wirtschaftsbedingungen nicht vorhanden sind, dass sich die kapitalistischen Unternehmer massenhaft zu Kleinwarenproduzenten degradieren und die Arbeiter zu Eigentümern eines bedeutenden Produktionsmittels werden sollen. In der Landwirtschaft nimmt aber — neben der Ausgestaltung der Pole — die Bewegung in die Richtung der Mittellage viel grössere Dimensionen an, und so bildet sich im Laufe der Depolarisation eine neuere labile Basis für die weiteren Polarisationsprozesse.

Die relativ grosse Bedeutung der Depolarisation in der Landwirtschaft folgt daraus, dass auch selbst die in Polarlage befindlichen Schichten labil sind und ihre in der Produktion eingenommene Stelle dauernd nicht beibehalten werden kann. Die Erscheinung, bzw. die Ursache dieser Labilität ist im Falle des Agrarproletariates bzw. des kapitalistischen Unternehmers verschieden, sie kann aber auf eine gleiche Basis, d. h. auf die Eigenartigkeiten der landwirtschaftlichen Produktion zurückgeführt werden.

Ein Teil der am unteren Pol befindlichen landwirtschaftlichen Arbeiter verfügt über ein Kleineigentum, wovon er sich zwar nicht erhalten kann und

so gezwungen ist, seine Arbeitskraft zu verkaufen, die Kleinparzelle kann aber den Grund für die Ausgestaltung der Privatwirtschaft bilden. Auf Wirkung von günstigen Umständen kann ein blühender Betrieb auch auf 1—2 Hektaren — meistens durch die aufopfernde Arbeit der Bauernfamilie und um den Preis einer hochgradigen individuellen Entsagung — zustandegebracht werden. Die wirtschaftliche Möglichkeit des Emporkommens auf das Niveau der Mittelschichten ergibt sich aus dem Grundeigentum, dem der Bauer durch Erben oder Kauf eher beikommt, als der Arbeiter z. B. einer Tischlerwerkstatt. Noch wichtiger als der Erwerb des Eigentumes ist der Umstand, dass der Eigentümer eines industriellen Kleinbetriebes der Konkurrenz der umgebenden Fabriksindustrie gegenübersteht und seinen Betrieb nur auf speziellen Gebieten, durch eine besonders gute Qualität oder durch die Befriedigung der lokalen Ansprüche aufrechterhält. Der Eigentümer der Kleinparzelle hat aber mit den — auf eine ebensolche Handarbeit basierten — Grosswirtschaften Schritt zu halten. Die aus den Kleinbetriebsdimensionen folgenden Nachteile kann er durch eine grössere Ersparnis, härtere Arbeit, durch Ausnützung der Vorteile der — in der Arbeitskooperation der Bauernfamilie verborgenen — Organisationsformen teilweise ausgleichen. Obwohl die Kleinbauernwirtschaft die Produktionsergebnisse des kapitalistischen Grossbetriebes — besonders aber die Wirksamkeit desselben — letztlich nicht überflügeln kann, soviel kann sie doch erreichen, dass sie ihre Arbeitskraft nicht regelmässig feilbieten muss.

Andere landwirtschaftliche Arbeiter bleiben bodenlose Proletarier und suchen entweder in den landwirtschaftlichen Betrieben oder — in einer günstigen Konjunkturperiode — in den Städten Arbeit. Die dauernd ohne Boden bzw. Arbeit gebliebenen Landarbeiter erwarten die Gelegenheit, die Landwirtschaft endgültig zu verlassen und sich in der Nähe der Industriezentren niederzulassen, um dort ein Fach zu erlernen und eine relativ ständige Arbeitsgelegenheit zu bekommen. Die ersten Gruppen der aus der Landwirtschaft Abwandernden waren die mittellosen Erdarbeiter. D. h. die — sich als Ergebnis der Polarisation schon ausgestaltete — Schicht verliess in erster Reihe die Landwirtschaft, während die — im Mittelstreifen der Differenzierung befindlichen — Kleineigentümer auch weiter auf dem Land bleiben wollten.

Am — zufolge der Schichtung entstandenen — oberen Pol, d. h. in den kapitalistischen Grossbetrieben konzentrieren sich der Boden und die anderen Produktionsmittel, dazu kommen die beschäftigten fremden Arbeitskräfte. Der — in der erweiterten Reproduktion zustandegekommene — Mehrwert wird gänzlich — bei Pachtung teilweise — von den kapitalistischen Unternehmen angeeignet, und dies bildet den materiellen Grund für die weitere extensive und intensive Erweiterung der Produktion. Über die — im XIX. Jahrhundert wahrnehmbare — Polarisation teilt Lenin mit einer wissenschaftlichen Gründlichkeit ausgearbeitete zahlenmässige Daten mit.

Zur Zeit der Ausgestaltung der kapitalistischen Verhältnisse im vergangenen Jahrhundert, sogar auch zu Beginn des XX. Jahrhundertes beschäftigte die Landwirtschaft den grösseren Anteil der Bevölkerung, und so hatte sie eine wichtige Rolle in der Erzeugung des gesellschaftlichen Mehrproduktes. Die Landwirtschaft gehörte bis zur — nach dem zweiten Weltkrieg beginnenden — technischen Revolution zu den Zweigen mit niedriger organischer Zusammensetzung, wo — im Vergleich zum angelegten konstanten und variablen Kapital — ein höherer Mehrwert als der Durchschnittsprofit entstand, der für jeden kapitalistischen Landbesitzer eine absolute Grundrente und ausserdem noch für die Eigentümer der nicht ganz minderwertigen und frequentierter liegenden Gründe auch eine Differentialrente enthielt. Die Kapitalisten der Industriezweige ebenfalls niedriger organischer Zusammensetzung konnten sich den in ihrem Betrieb erzeugten grösseren Mehrwert nicht expropriieren, da sie denselben in den Preisen dauernd nicht anerkennen lassen konnten. Die Kapitalien strömten nämlich immer auf die — einen grösseren Profit versprechenden — Investitionsgebiete, dadurch nahm dort die Produktionskapazität zu und das — die Nachfrage übersteigende — Angebot zwang die Kapitalisten zur Verminderung der Preise. Auf Wirkung der freien Kapitalströmung und der Marktpreisbewegung kam eine solche Tendenz im klassischen Kapitalismus zur Geltung, dass die an den Industriezweigen niedriger organischer Zusammensetzung interessierten Kapitalisten dem erzeugten grösseren Mehrwert nicht beikamen, weil sie die Waren nur zum Produktionspreis und nicht zu einem höheren Wert verkaufen konnten. Der landwirtschaftliche Kapitalist konnte hinwiederum den erzeugten Mehrwert sich enteignen, als er seine Waren zu dem — neben dem Durchschnittsprofit auch die Grundrente enthaltenden — sog. falschen gesellschaftlichen Wert auf dem Markt verkaufte. Das Monopol des Grundes als des Gegenstandes der Wirtschaft und des Grundprivateigentumes gab die Berechtigung und zugleich Möglichkeit zu grösseren Mehreinkommen als der Durchschnittsprofit, da es die freie Ein- und Ausströmung der Kapitalien hinderte, in Ermangelung derselben diente aber die Marktpreisbewegung nicht zur Ausgleichung gesellschaftlichen Niveaus der industriellen und landwirtschaftlichen Profite, sondern zur raschen Bereicherung bzw. Zugrunderichtung einiger Produzenten.

Die Akkumulation des erzeugten hohen Mehrwertes bedeutete eine günstige Basis für die Ausgestaltung der kapitalistischen Produktionsverhältnisse in der Landwirtschaft. Eine Zeitlang beförderte sie tatsächlich die Ausgestaltung der reichen landwirtschaftlichen Kapitalistenschicht, sie erwies sich aber auf einer höheren Stufe der wirtschaftlichen Entwicklung zur Beförderung der kapitalistischen Entwicklung als keine genügende Bedingung. Das relativ geringe Mass der Kapitalströmung zwischen der Industrie und der Landwirtschaft ist letztlich ein Hemmschuch für die Entwicklung der ganzen Landwirtschaft geworden, da nicht nur der in der Landwirtschaft zustandegekom-

mene Mehrwert aus dem Profitausgleichungsmechanismus gesellschaftlichen Niveaus sondern auch die Agrarproduktion aus den Investitionsgebieten des Aktivkapitals verdrängt wurde. Im vergangenen Jahrhundert lohnte es sich für einen Geschäftsmann ebenso nicht wie heute, zwecks Landwirtschaftsführung bzw. Profiterwerbung, einen Grundbesitz zu kaufen. Auch in Amerika galt z. B. der Eisenbahnbau als ein besseres Geschäft als die Bebauung der relativ billig anschaffbaren Äcker.

In den westeuropäischen Ländern, wo sich keine — um einen günstigen Preis bebaubaren, freien — Gründe fanden, war ein bedeutendes Anfangskapital zum Ankauf des Grundes notwendig. Dies allein hätte die landwirtschaftlichen Investitionen noch nicht ungünstig gemacht, wenn der Unternehmer wenigstens den Durchschnittsprofit nach dem Gesamtkapital erreicht hätte. Der Grundkauf bedeutete aber keine wirkliche Produktionskapitalinvestition, — so war das Grundeigentum praktisch kein Teil des Produktionskapitals, — da der Unternehmer auf keinen Durchschnittsprofit nach dem Grundeigentum rechnen konnte, wie beim Aktivkapital auf allen Gebieten der Wirtschaft, sondern er hoffte nur, die Zinsen des vorher investierten Kapitals und die Grundrente zu bekommen.

Der über eigenes Grundeigentum verfügende landwirtschaftliche Kapitalist hatte eine andere Erwartung in Verbindung mit dem Grund und dem Einkommen der zur Bewirtschaftung notwendigen Anlage- und Betriebskapitalinvestition. Nach der letzteren, d. h. nach der tatsächlich als Aktivkapital geltenden Investition gebührte ihm ein Durchschnittsprofit, das Einkommen nach dem Grund war aber die weitaus kleinere Grundrente. Insofern der kapitalistische Landwirt den erreichten Gesamtmehrwert mit dem — zur Produktion notwendigen — Gesamtkapital verglich, erwies sich die Kapitalverwertung auf einem etwas niedrigeren Niveau, als der auf einem anderen Gebiet des Wirtschaftslebens erreichbare Durchschnittsprofit.

Die Realisierung der Grundrente — besonders der absoluten Grundrente — kam nicht in allen Ländern und nicht unter allen Umständen an die Reihe. Die in der landwirtschaftlichen Produktion gespielte Rolle der kapitalistischen Pacht war ein entscheidender Faktor der Preisgestaltung. Wenn diese Form der kapitalistischen Agrarverhältnisse in Übergewicht kam, erzwang sie den Verkauf um einen falschen gesellschaftlichen Wert. Für die Kapitalistenklasse bedeutete die im Preis enthaltene Grundrente Produktionskosten, deshalb konnte die Forderung zu einem Schlagwort der bürgerlichen Revolution werden, dass die grossen Grundbesitze aufgehoben und der Grund unter den Bauern verteilt werden sollen. Bei Eigentümerwirtschaft bieten sich weitaus mehr Möglichkeiten für die Verminderung der Preise und dadurch der realisierbaren Grundrente, sogar des Durchschnittprofits, da die Produzenten auf den Preissturz nicht mit dem Aufgeben der Wirtschaft, sondern mit der weiteren Erhöhung der Produktion reagieren. Auf diese Weise enteigneten die nicht-

landwirtschaftlichen Kapitalisten — auch neben der Erhaltung des monopolistischen Privateigentums an Boden und neben dem Mangel an freier Kapitalströmung — einen Teil des in der Landwirtschaft erzeugten und den Durchschnittsprofit übersteigenden Mehrwertes mit Hilfe der kleineren Lebensunterhaltungskosten bzw Arbeitslöhne.

Auf Wirkung von günstigen Umständen hätte die Kapitalkonzentration dazu führen müssen, dass die kapitalistischen Landwirte — der in der Industrie sich vollzogenen Entwicklung ähnlich — mit Hilfe von monopolistischen Vereinbarungen ihre Isolation aufheben und auf dem Markt die — auch die Grundrente enthaltenden — höheren Preise sichern. Die bisherige Entwicklung aller kapitalistischen Länder beweist zugleich, dass in der Landwirtschaft monopolistische Vereinbarungen nicht einmal in den einfachsten Formen zustandekamen. In der Industrie entstehen aber in dem letzten Drittel des XIX. Jahrhundertes schon nacheinander zuerst die inländischen, dann die internationalen Kartelle, Syndikate und monopolistische Abkommen anderer Form. In der Landwirtschaft konnte aber die am oberen Pol liegende kapitalistische Schicht ihre wirtschaftliche Position nicht befestigen und dadurch auf lange Sicht auch nicht behalten.

Die Schwäche und Entwicklungsunfähigkeit der landwirtschaftlichen Kapitalisten hängen letztlich mit der Rückständigkeit der Produktivkräfte zusammen. Wegen der dominierenden Rolle der Handarbeit schritt auch selbst die Kapitalkonzentration in einem relativ langsamen Tempo fort und den Hauptbestandteil des akkumulierten Kapitals bildete ein eigenartiges Produktionsmittel: der Grund, was zwar eine unentbehrliche Bedingung für die Agrarproduktion war, trotzdem nicht als ein freies Kapitalgut galt. Je stärker die industrielle Kapitalistenklasse geworden ist, desto eher wurde die aus dem monopolistischen Grundprivateigentum folgende Möglichkeit für die Realisierung des erzeugten Mehrwertes formell. *Im Laufe der kapitalistischen Entwicklung ist die Landwirtschaft zu einem solchen Zweig geworden, wo es sich nicht lohnte, weder das dort sich bildende, noch das auf anderen Gebieten akkumulierte Kapital zu investieren. Das aus der Landwirtschaft stammende Einkommen entsprach immer mehr nur den Kalkulationen der kleineren Kapitalisten, sogar der nicht-kapitalistischen Klein- und Mittelbauern.*

Der verschiedene Entwicklungsgrad der Produktivkräfte der Industrie und der Landwirtschaft im XIX. Jahrhundert hatte nachteilige Folgen für die ganze kapitalistische Entwicklung der Landwirtschaft. *Wegen der langsamen Änderung der Produktivkräfte dauerte die Ausgestaltung der Pole auch im Differenzierungsprozess längere Zeit und bevor noch die landwirtschaftlichen Kapitalisten ihre wirtschaftlichen Positionen befestigt hätten, wurden sie mit den gegensätzlichen Interessen des weitaus stärkeren Monopolkapitals konfrontriert.*

Die labile wirtschaftliche Lage der sich unvollständig ausgestalteten und schwachen landwirtschaftlichen Kapitalisten wirkte auf den weiteren Fort-

schritt der Produktivkräfte zurück. In diesem Rahmen wurden nur mengenmässige Änderungen realisiert, ohne dass die Aufhebung der jahrhundertealten Rückständigkeit der Landwirtschaft, der dominierenden Rolle der Handarbeit erfolgen konnte.

Polenlose Polarisation

Nach dem zweiten Weltkrieg, d. h. in der Periode der technischen Umgestaltung der Landwirtschaft, wird der Differenzierungsprozess komplizierter. In der Landwirtschaft können solche Erscheinungen beobachtet werden, die den früheren Tendenzen der Schichtung scheinbar wiedersprechen. Der kennzeichnendste Typ des landwirtschaftlichen Betriebes ist nämlich gegenwärtig der Familienbetrieb, der in mehreren Relationen als ein junges Gebilde betrachtet werden kann. Selbstverständlich ist auch in den früheren Jahrzehnten die Zahl der Betriebe bedeutend, wo ohne Beschäftigung von fremden Arbeitskräften, mit der Arbeitskraft der Familie produziert wird. Diese waren die Klein- und Mittelbetriebe, auf deren Kosten oder zum Nutzen die Polarisation erfolgte. Insofern änderte sich die Lage auch heute nicht, dass in der Differenzierung innerhalb der heterogenen Gruppe der Familienbetrieb in einem raschen Tempo fortschreitet. Im Laufe derselben werden die schwächeren Kleinproduzentenwirtschaften liquidiert oder sie verlieren ihre wirtschaftliche Bedeutung, die mit der technischen Entwicklung schritthaltenden grösseren Betriebe hingegen festigen ihre wirtschaftliche Position. Dies letztere vollzieht sich aber öfters ohne dass sie zu kapitalistischen Unternehmen werden, Lohnarbeiter beschäftigen und zu einem Profit über die kleinniedrige Verzinsung des Kapitals hinauskommen. Deshalb wird oft die Frage gestellt, ob in den entwickelten kapitalistischen Ländern statt der Kapitalisierung sich eine Dekapitalisierung vollzieht.

Die Analyse der inneren Prozesse der Landwirtschaft zeigt zweifellos, dass die Zahl und die Bedeutung der Mittelbauern-Familienwirtschaften — im Vergleich zum Kleinbesitz und dem kapitalistischen Unternehmen — zunehmen. All dies würde den eigenartigen Weg der kapitalistischen Entwicklung in der Landwirtschaft bedeuten, auf einem anderen Gebiet der Wirtschaft kann ja die Verbreitung der Mittelbetriebe auf Kosten der kapitalistischen Grossbetriebe nirgends beobachtet werden.

Die gegenwärtigen Familienbetriebe können nicht als vollständig gleiche Produktionseinheiten betrachtet werden, als die früheren Mittelbauernwirtschaften. Die entscheidende Mehrheit der Familienbetriebe wird heute schon mit den modernsten Produktionsmitteln ausgerüstet. Infolge der breiten Anwendung der Maschinen und Chemikalien wird eine solche bedeutende und allgemeine Verminderung der unmittelbaren Anwendung von lebendiger Arbeit technisch möglich, dass die regelmässige erweiterte Reproduktion mit der

Arbeitskapazität der Familie realisiert werden kann. Die gegebene Möglichkeit kann selbstverständlich nicht jede Familienwirtschaft ausnützen, da sie über Mittel in genügender Menge, über eine rationale Betriebsdimension, entsprechende Fachkenntnis usw. nicht verfügt. Nach einer längeren-kürzeren Übergangsperiode nimmt aber die Zahl jener Familienwirtschaften zu, wo eine regelmässige erweiterte Reproduktion stattfindet. Dadurch kann aber die Ausgestaltung einer solchen Lage beobachtet werden, dass sich die regelmässige erweiterte Reproduktion nicht nur in den kapitalistischen Wirtschaften, sondern dabei auch in den — auf der eigenen Arbeit basierenden — Familienbetrieben realisiert.

Im gegenwärtigen Entwicklungsabschnitt besitzt ein einziger Eigentümer die drei Hauptproduktionsfaktoren der Landwirtschaft: den Grund, die übrigen Kapitalteile, die Arbeit im Rahmen der Familienwirtschaft. Zur Zeit der Existenz des Grundbesitzsystems und des Erscheinens der kapitalistischen Pacht waren alle drei Produktionsfaktoren im Eigentum verschiedener Personen: das unter ihnen sich ausgestaltende Interessensystem bedeutete einen Fortschritt gegenüber dem Produktionsverhältnis des Gutsherrn und Leibeigenen. Die Vorkämpfer der Entwicklung der Produktionskräfte waren trotzdem nicht die kapitalistischen Pächter, sondern die aus den Reihen der Bauernwirtschaften emporkommenden kapitalistischen Landwirte. Zur Zeit der langsamen technischen Änderungen bildete das — zwischen dem kapitalistischen Landwirt und dem Agrararbeiter sich ständig erneuernde — Produktionsverhältnis die Basis der erweiterten Reproduktion in der Landwirtschaft. Die gegenwärtige rasche technische Umgestaltung ermöglicht die Ersetzung eines grossen Teiles der Arbeit durch Kapital, auf diese Weise genügt die Arbeitskraft des Eigentümers des Grundes und der übrigen Produktionsmittel, sowie seiner Familienmitglieder zur Realisierung der erweiterten Reproduktion, wenn er die — in seinen Händen sich konzentrierenden — Produktionsfaktoren in einem optimalen Verhältnis vereinigen kann. Dadurch verliert das zwischen dem kapitalistischen Landwirt und dem Agrararbeiter bestehende Produktionsverhältnis seine gesellschaftliche-wirtschaftliche Bedeutung auf der modernen mechanischen technischen Basis nach und nach.

Das Absinken der kapitalistischen Grossbetriebe aufs Mittelbauernniveau kann formell als ein Depolariationsprozess betrachtet werden, die gegenwärtigen und vor der zweiten technischen Revolution wahrnehmbaren Erscheinungen solcher Richtung können doch nicht mechanisch identifiziert werden. Unter den heutigen Umständen verliert die Auffassung ihren Sinn, wonach die häufige Erscheinung, — dass die Landwirte ihre ständig beschäftigten Arbeiter entlassen und durch die produktivere Arbeit der Familie, mit zeitgemässen Mitteln mehr produzieren und rentabler wirtschaften, als früher, — als Absinken oder Verarmung qualifiziert werden soll. Nach Feststellung von Georg Blohm erhöhte sich der Arbeitslohn in den letzten Jahrzehnten rascher als

der Preis der Maschinen, Bauten und Chemikalien [4]. Die Ersetzung der Arbeit durch Kapital wird immer rentabler, und jene Landwirte können diese einkommenerhöhende Möglichkeit ausnützen, die in der Lage sind, die infolge der Zunahme der Arbeitsproduktivität rapid überflüssig werdenden Arbeitskräfte zu entlassen.

Die fast ausschliessliche Ursache der vom oberen Pol nach der Mitte erfolgenden Bewegung ist gegenwärtig der rasche Fortschritt der Produktivkräfte. Deshalb gilt die Umwandlung der Lohnarbeiter beschäftigenden kapitalistischen Betriebe in mit eigener Arbeit produzierende Familienwirtschaften als eine häufige Erscheinung. Früher kam das Absinken der kapitalistischen Grosslandwirte in die Mittelbauernschicht seltener vor, und wurde hauptsächlich durch Absatzschwierigkeiten oder persönliche Gründe verursacht.

Die rasche technische Umgestaltung der Landwirtschaft müsste nicht unbedingt zur Auflösung des oberen Pols führen. Es wäre vorstellbar, auch den Arbeitskraftbesatz des kapitalistischen Grossbetriebes — der nach Hunderten zählt — z. B. auf die Hälfte zu reduzieren. In diesen kapitalistischen Unternehmen möchte man sich sogar elastischer den Anforderungen der Entwicklung der Produktivkräfte anpassen, als in den Familienbetrieben, wo mehrere Arbeitskräfte der Produktion schon nicht überall entzogen werden können. Die Pole — besonders der obere Pol — gestalteten sich aber im Laufe der kapitalistischen Entwicklung unvollständig aus. Als Ergebnis des auf der rückständigen produktions-technischen Basis sich vollziehenden, relativ langsamen Differenzierungsprozesses kamen solche Kleinunternehmer empor, die ihre wirtschaftliche Position nicht befestigen und weitererhöhen konnten. Die kapitalistischen Landwirte erweisen sich gegenüber den Industrie- und Handelsmonopolen schwach, um die für sie vorteilhafte Umverteilung des Gesamtmehrwertes zu erzwingen. Dadurch verengen sich die für die kapitalistische Wirtschaft notwendigen Bedingungen in der tatsächlichen landwirtschaftlichen Produktion.

Die Differenzierung schreitet in der Landwirtschaft auch heute ununterbrochen fort, in den 50-er und den 60-er Jahren sogar in einem rascheren Tempo als in der Periode zwischen den zwei technischen Revolutionen. Die wichtigsten Kennzeichen der gegenwärtigen Entwicklung, wie die technische Revolution, die Entfaltung des umfassenden staatlichen Monopolkapitalismus, die allmähliche Liquidierung der Isolation der Landwirtschaft modifizieren bis zu einem gewissen Masse die Differenzierungstendenzen, welche sich im Laufe der ganzen kapitalistischen Entwicklung der Landwirtschaft ausgestalten.

Auch in der gegenwärtigen Periode vollzieht sich die Polarisation innerhalb der heterogenen Gruppe der Familienbetriebe. Im Laufe derselben sondern sich die stärkeren, über günstigere Gegebenheiten verfügenden Betriebe ab, wo die Landwirtschaft auch weiter als eine Hauptbeschäftigung betrachtet wird, da sie neben dem entsprechenden Arbeitseinkommen zu den Zinsen des

gebundenen Kapitals kommen. Gleichzeitig kann in der anderen Gruppe der Familienwirtschaften die Arbeitskraft der Entwicklung der Produktivkräfte entsprechend nicht reduziert werden, und so bedeutet die Landwirtschaft nur eine Nebenbeschäftigung, zugleich ein Nebeneinkommen für die dort Verbliebenen.

Gegenüber der früheren Periode führt die Polarisation heute schon weniger zum Zustandekommen des Produktionsverhältnisses der zwei gegensätzlichen Pole innerhalb der Landwirtschaft. Einerseits verlässt am unteren Pol ein Grossteil der Lohnarbeiter in einem weitaus rascheren Tempo als früher die Landwirtschaft. Auch die ihren Betrieb vollständig liquidierenden Eigentümer suchen in der Stadt Anstellungsmöglichkeit. Andererseits geben die am oberen Pol noch vorhandenen und das Kapital zu investieren wünschenden Unternehmer die tatsächliche, mit dem Grund verbundene landwirtschaftliche Produktion endgültig auf, bzw. die Kapitalisten anderer Zweige betrachten dieselbe nicht als ein profitierendes Investitionsgebiet für das Aktivkapital.

Unter solchen Umständen *bleiben die eigentlich unvollendeten Mittelschichten der Differenzierung in der Landwirtschaft. Innerhalb der Gruppe der Familienbetriebe vollzieht sich die Polarisation ständig, ohne dass diese zur Ausgestaltung der — im alten Sinne genommenen — Pole führen würde.* Auch die mit der landwirtschaftlichen Tätigkeit aufhörenden Grundbesitzer können nicht als vermögenslose Agrarproletarier betrachtet werden und auch die rentablen, eventuell Lohnarbeiter beschäftigenden Betriebe gelten als Kleinunternehmen, wo die Bedingungen für die kapitalistische Wirtschaft weitaus beschränkter sind als auf einem anderen Wirtschaftsgebiet.

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ПОЛЯРИЗАЦИЯ И ДЕПОЛЯРИЗАЦИЯ В КАПИТАЛИСТИЧЕСКОМ АГРАРНОМ РАЗВИТИИ

К. ФОРГАЧ

Застой сельского хозяйства на «мануфактурной стадии» развития, в тени машинной индустрии, породил такое капиталистическое развитие, которое наряду с тождественными чертами имеет важные специфические черты, отличные от формирования производственных отношений промышленного производства. Без разработки своеобразной в определенных отношениях модели капиталистического аграрного развития невозможно в полной мере понять ни «декапитализацию», наблюдаемую в капиталистическом сельском хозяйстве, ни диспаритет доходов работников промышленности и сельского хозяйства.

Находящиеся в положении поляризации слои не смогли упрочить своей позиции в сельскохозяйственном производстве до укрепления промышленности и торгового капитала. Вследствие усиливающегося деполяризационного процесса перевес оказывается на стороне средних слоев, недостаточно сильных, однако, для того, чтобы вынудить у капиталистических предпринимателей, установливающих с ними все более тесные производственные связи, перераспределение прибавочного продукта, создающегося во всей экономике. Воспроизводство отношений между капиталистами и наемными рабочими оказывается все менее благоприятным для сельскохозяйственного производства, так как ни те, ни другие не получают того дохода, которого они могли бы достигнуть в других сферах экономики. Сельскохозяйственное производство остается или делом мелких предпринимателей, довольствующихся доходом, равным ссудному проценту, или же мелких производителей, работающих на своих участках за низкие доходы во имя сохранения видимости самостоятельного хозяйствования.

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REVIEWS

Z. Román

INTERNATIONAL CONFERENCE ON TOPICAL QUESTIONS OF RAISING PRODUCTIVITY

(The Fifth Anniversary Meeting of the European Association of National Productivity Centres at Balatonfüred, September 7–9, 1971)

At present, there are productivity centres operating in all Western European countries, with one or two exceptions.* The major tasks of the centres is to aid enterprises in increasing their competitiveness and productivity (conceived in the broadest sense of the term, that is, as efficiency) and to harmonize productivity growth and social welfare. To ensure exchange of information and experiences, as well as analysis and research of factors influencing productivity are in the forefront of their activities. They are working mostly on a bi- or tripartite basis in order to foster cooperation between the trade-unions and the employer's organizations. In recent times interest has grown in the macro-economic aspects of raising productivity.

For a long time the work of the European productivity centres was coordinated by the European Productivity Agency of the OEEC. In 1966 an autonomous, completely open organization, the European Association of National Productivity Centres was established. The Association stipulated its goals as to aid and increase the exchange of information and experience, furthermore, to organize cooperation among the participating institutions, particularly in the field of scientific research.

At present 16 countries are represented in the Association: Belgium, Czechoslovakia, Denmark, France, Greece, Holland, Hungary, Ireland, Iceland, Luxembourg, Norway, the Federal Republic of Germany, Italy, Spain, Turkey, and Yugoslavia.

The fifth anniversary meeting of the Association held in Balatonfüred between September 7–9, 1971 was attended by 14 of the 16 member countries (Iceland and Spain were absent) and by a number of invited guests from Bulgaria, Canada, the German Democratic Republic, Poland, Romania, the Soviet Union, Sweden, and the United States. International organizations, including the United Nations Economic Commission for Europe were also represented. With these invitations the Association, on the one hand, wished to call the attention of further countries to its activities and, on the other hand, this broader participation should enable the meeting to outline a more efficient programme for cooperation in the coming five years.

The meeting was opened on behalf of the presidium of the Hungarian Academy of Sciences by Academician István *Friss*. In his opening address he

* These centres were established in the early 1950's with Marshall-Plan aid, and have existed ever since though today they rely for the most part on budgetary funds. Productivity centres operate in the African, Asian and Latin American countries, too.

emphasized the responsibility of economists in our era, since the achievements of the technical-scientific revolution must be used for the benefit of humanity. Helping to increase productivity, he said, is considered an important task in all countries, and cooperation in this field can be fruitful even between countries with different social systems. The exchange and discussion of the experience and knowledge about ways and means of raising productivity of the different countries can be reciprocally useful, and if we wish to approach the task of increasing productivity with scientific methods, they cannot be dispensed with. An increasing number of ties connect the national economies with the world market and the world economy, and this, too, reinforces cooperation. The European Association of National Productivity Centres may substantially contribute to developing this cooperation in the field of aiding the rise in productivity, too.

Four lectures were delivered on the first day of the meeting, and all were followed by questions and comments. The first lecture by Professor *E. F. Denison* (The Brookings Institution, Washington) dealt with the role of education and advances in knowledge in raising productivity.

With reference to the role of these two factors, he first quoted several data from his last book (Why growth rates differ, 1967) which compares the sources of economic growth in the United States and 8 countries of North-Western Europe, and then reported on his present research being in progress. His new study analyzes the sources of economic growth in the United States between 1929 and 1969, retaining the basic features of the methods he has used so far, but introducing at the same time many refinements. He continues to classify the sources of growth in two major groups: inputs (labor, capital, land), and contribution of output per unit of input. The most important of the latter seem to be education and advances in knowledge.

He continues to approach the contribution of education to increasing productivity under the assumption that this is reflected in relative earnings. However, his earlier method has been refined by identification of the role of other factors influencing relative earning, in a total of 32 groups including four age groups, whites and blacks, 2 geographical units, and a division according to agricultural and non-agricultural earners. In this way he obtained standardized data on the earning ratios by 9 categories of qualifications, which compared to the previous findings are closer to one another in the first categories and more distant from one another in the upper ones.

According to his new calculations, the qualification level grew by 0.6 per cent annually in the 40-year period under review, and contributed to the rise in productivity by 0.4—0.5 per cent annually. Research has not yet given a reply to the role of the contents of education, that is, of studying in different types of schools.

His new study identifies the role of advances in knowledge again with the residual method, in other words, he considers this factor to be responsible for what neither the growth of inputs, nor that of other identified factors of output per unit of input can explain. In his earlier study, comparing the economic growth of the United States and 8 European countries, he received the rather coincident reply that advances in knowledge result in an annual growth of 0.8—1 per cent. (Dorothy Walters obtained 0.7 per cent for Canada.) According to the preliminary data of his new study, over a longer range (40 years) the role of this factor is 1 per cent.

Here Professor Denison recalled the latest findings by Zvi Griliches on the contribution of research and development. These studies showed a high rate of return (according to one method, about 30 per cent) of R & D expenditures, but a comparatively small total effect, no more than 0.13 p. a. This, however, does not contradict the fact that the contribution of advances in knowledge can be 1 per cent annually, for this includes the application of international achievements, the advance of managerial and organizational knowledge, and the broader application of methods already known, etc. In conclusion, the paper drew several conclusions with respect to accelerating the growth in productivity of the European countries.

Professor *S. Fabricant* (National Bureau of Economic Research, New York) lectured on problems of productivity in the tertiary sector. First of all, he called attention to several fundamental factors and interrelations. The weight of the tertiary sector is rapidly increasing, in the United States today over 50 per cent of the working population are engaged in these branches. In the tertiary sector the rise in productivity is slower than on average, although the problems of measuring productivity (primarily on the side of output, in qualitative respect) are a warning to be careful in making such statement. He emphasized that by evaluating productivity in the tertiary sector, on the one hand, and the social environment and the role it plays in the whole of the economy must be taken into consideration, while, on the other hand, it must not be forgotten that branches sharply deviating from one another in many respects are listed here. A common feature, alongside their service nature, is that plant sizes are here generally substantially smaller than e.g. in industry, and the weight of government and non-profit units is much higher. At the same time, e.g. they strongly differ from one another as regards capital intensity.

Nor is it valid for every servicing branch that technical development, and the rate of productivity rise are slower than on average. For example, the rate of technical progress in computer services is unmatched anywhere else and much the same can be said for many activities of the banking business. Aside from this, changes in historical trends must also be taken into account. In the agriculture of the United States, for example, the law of diminishing returns turned into its opposite in the mid 1930's.

The lecturer used a number of examples to illustrate the very great opportunities which still exist for raising productivity in the tertiary branches. The satisfactory forms of material and moral incentives have by no means been developed as yet. Frequently outdated administrative regulations prevent rationality from breaking through.

In the tertiary branches, complex problems are raised not only by the measurement of productivity, but also by its rational increase. The reason is that the majority of the achievements of work completed here appears in an indirect manner and/or elsewhere. For example, education not only increases the efficiency of labour in production, but it also has an influence on acceptance of services (including health), and on their more successful application. For this reason to work out rational directives for the development of the services is a particularly complex task, requiring the weighing of many factors and effects.

In conclusion, Professor Fabricant reported on recent research of the National Bureau of Economic Research in this field, and the latest endeavours of the United States to stimulate productivity growth by the help of a National Productivity Committee and local (regional) committees.

Professor *I. L. Manievitch*, of the Institute of Economics, Soviet Academy of Sciences delivered a lecture on "The Effects of Material and Moral Incentives on the Productivity of Labour". In the first part of his lecture he briefly discussed productivity trends in the Soviet Union, and the role of material and moral incentives among factors influencing productivity. He emphasized that all of the important factors determining productivity, including technical progress, the advance in management and work organization, the increase in labour qualifications, etc., are closely interrelated with material and moral incentives.

In the next part of his lecture he analyzed the forms of material incentives applied in the Soviet industry. He quoted the following percentage data on the extent of different wage forms applied:

	Piece-wage workers			Time-wage workers			Total
	Total	straight	bonus	Total	straight	bonus	
		piece-rates			time-rates		
1938	74.6	43.1	31.5	25.4	15.4	10.0	100.0
1962	60.5	26.9	33.2	39.5	5.5	34.0	100.0
1965	57.6	23.2	34.1	42.4	4.6	37.8	100.0
1969	56.6	15.8	40.5	43.4	2.3	41.0	100.0

As the main reasons for the very essential changes in these ratios he mentioned the consequences of technical progress and automation. At the same time he indicated that in certain branches the picture deviates sharply from the average, e.g. in the wood processing, shoe, clothing and building industries, where the ratio of piece-wage workers is over 80 per cent.

Speaking about the different wage forms, he stated that in bonus piece-wage work progression is rarely applied and that rather quality and savings materials are the basis for bonuses. Lump-sum wages are paid for the most part in jobs with a fixed deadline (loading and transport tasks, in mining, and the building industry). Indirect piece-wages are spreading (primarily among workers completing supplementary and servicing activities), together with group piece-wages (in the chemical industry, the paper industry, and in the assembly operations of machine building). Straight time-wages are very rare. Today 90 per cent of those paid time-wages receive bonuses too, and here group bonuses are frequent.

The new measures introduced in the course of developing economic management referred the choice among wage forms completely to the scope of authority of the enterprises, and sharply increased their possibilities for material incentive. The enterprises form development, material incentive, socio-cultural, and housing funds from their profits and other resources. The speaker quoted concrete enterprise examples on the degree and use of material incentive funds, and calculations regarding their effects. He discussed the so-called Shchekino experiment, which was expanded in early 1971 to cover 121 enterprises and 700 thousand workers. In this form of incentive the enterprise can make use of about-two thirds of the wage savings gained from reducing staffs. In the Shchekino factory, by releasing 1,000 workers for other employment, productivity was increased by 80 per cent with a 24 per cent rise in wages.

There are other, similar experiments taking place simultaneously in the Soviet Union, and the speaker mentioned several of these.

In the concluding part of his paper, he discussed the forms and development possibilities of moral incentives, of coupling material and moral incentives, and the problems related to making them more efficient.

The fourth lecture was delivered by *R. Talpaert*, managing director of the Belgian productivity centre, on the major results of projects analysing the relationship between innovation, technical progress and methods and style of management. The large-scale research work (with costs amounting to 1 million dollars) was primarily directed towards determining the changes caused in enterprises and institutions by innovation, with respect to

products,
organization and
methods applied,

on the one hand, insofar as material means are concerned, and on the other hand, insofar as people are concerned.

The research was based on a number of highly detailed case studies. Its major method was to follow backwards the histories of innovations introduced and to study the places where and the reasons why introduction was delayed, the chain reaction caused by the innovation in enterprise product and input patterns, how the relationship between the individual collectives and groups influenced innovative and creative capacities etc.

The research was not limited to productive enterprises, but was extended to other type of institutions as well. Activities of offices fulfilling similar tasks and operating in different cities were also compared. For instance, it was discovered that in many places the introduction of computers was unnecessary, for simple business machines could be used more efficiently in the work phases in question. There were also examples of cases where bureaucracy and staffs increased following the application of the computer, nor did administration speed up.

The studies concluded that in many cases changes in products led to essential changes in organization, too; the birth or realization of many highly important innovations was in very loose relationship with the earlier general strategy of the enterprise; there are sharp differences in the creative ability of the different organizations. Among the institutions studied, the state-owned organizations were more creative than the privately owned enterprises.

An important conclusion drawn by the research was that the output of the organization as a whole is not identical with the sum of the partial activities. An unsatisfactory degree of efficiency on the part of a single partial activity (e.g. marketing) can sharply reduce the output value of the *entire* organization. According to a further conclusion, the style of enterprise management had only a slight influence on the efficiency of operation. The effects stemming from this were stronger in the short run, and weaker on the long-term. The lack of management prestige proved to be an important problem, together with the fact that many decisions are taken "far" from the people who are responsible for implementation, where in other cases no decisions are made (although they would be necessary). A systematic summing up of the conclusions of the research project is now under way.

On the second day of the meeting the participants received information on the Hungarian system of economic guidance and planning, and discussed

the report on the activities of the Research Institute of Industrial Economics of the Hungarian Academy of Sciences. It is a general practice of the Association to discuss the activities of the productivity centre of the country where the meeting is taking place, as a form of exchanging experience. Since this was the first time a meeting was held in a socialist country, it was connected with giving more detailed information on the Hungarian system of planning and economic guidance. The participants received a number of documents in writing, and *O. Gadó*, vice president of the National Planning Office read a paper, and held consultations.

In the first part of his paper Dr. Ottó Gadó summarized the fundamental features of the new system of economic control and management introduced on January 1, 1968, and the major experience gained in the period gone by since. He first of all, emphasized the following:

— the system of economic control and management — and this includes its reform — is only a means to implement the economic policy (plan) objectives of the national economy;

— there is central planning in the Hungarian economy, the fundamental principles and the main measures of economic regulation are determined in the framework of the national economic plan, and in reciprocal relationship with it;

— the goal of the reform is to link up the central plan and the operation of the socialist market regulated in the framework of the plan, to allow market effects to operate directly on the producers, while, at the same time, the major directions and proportions of development are determined directly by the plan;

— the fundamental questions of reproduction are determined by the central guiding bodies, and this means that the state takes decisions on major questions regarding the basic proportions of the national economy, the rate and pattern of development;

— within the sphere of economic regulators determined by the state, and to the extent allowed by the regulators, the enterprises have the right to decide on the volume, direction and composition of production and sales, as well as on the use of production factors and the enterprises' own resources (for development purposes and to increase personal incomes).

Therefore, he stated, the essence of the socialist planned economy is the national economic plan, which includes the major economic policy goals, direct state decisions and the major directions of regulation, together with the system of regulators which orientate enterprise decision towards the national economic goals.

In his opinion, decentralization of spheres of authority increased the efficiency of central control. It was possible to complete the transition to the new management system without disturbance, but the regulations aimed at avoiding tension and at greater security (the broad-scale application of limits and other ties) also involved incentives of insufficient intensity for a dynamic development. However, with the passing of a certain time, these limits must be gradually eliminated in the interests of promoting faster development, or they must be rationally reduced, lest they should become sources of newer contradictions and tensions. In the further development of regulation — within the framework of the 1971—1975 plan — the fundamental principle invariably prevails that even growth and avoidance of disturbances in the development of the national economy should be aimed at.

The lecture then went on to provide a detailed analysis of the development of the national economy since 1968, with particular attention devoted

to those elements (and effects) of the system of regulators which did not fully come up to expectations. The second part of the lecture reviewed the Hungarian system of planning, together with the economic policy concepts of the fourth five-year plan, its major goals, and the ideas about improving the system of regulators.

Following the consultation after the lecture, *Z. Román* reported on Hungarian productivity efforts and on the activities of the Research Institute of Industrial Economics of the Hungarian Academy of Sciences. He stated that in Hungary economic policy considered the ensurance of a faster productivity growth as one of its major goals, and that it intended to realize this objective by national economic planning, the coordinated operation of the regulators and direct guidance. Speaking about the institutional background, he reviewed the functional and sectoral administrative bodies and their roles, together with those of other institutions which can help the work of the enterprises and the higher management in individual special fields (scientific research institutes, organizational and consulting services, management training centres, information and documentation network, professional associations, etc.). In Hungary a broad and well equipped apparatus can serve the increase in productivity, he stated, but we cannot be fully satisfied with its results (reflected in an annual productivity rise of about 4 per cent). When a certain role in aiding the growth of productivity, was given to the Institute taking into consideration this organizational framework, it defined as major tasks research in fundamental problems related to productivity, through aiding the flow of information and stimulating cooperation among the institutions involved, further by relaying international experience and through formulating a perspective view.

The report then went on to review the status, organization and research programme of the Institute, including its achievements and the major directions of its other activities (international relations, conferences, publications, aiding the work of academy committees, and professional bodies, etc.). Following this, *T. Kéri*, *Z. Komónyi* and *B. Végső*, team-leaders of the Institute's staff, supplied more detailed information on major research projects on corporate planning, enterprise behaviour, surveys on factors of productivity. The representatives of the productivity centres present and other guests raised many questions, while cooperation and other proposals were also made following the report.

On the third day of the meeting the debate on the past five years' activity of the Association and the programme for the following five years was the subject of the agenda, based on the reports of the President of the Association, *R. Talpaert* and the Secretary General, A. C. Hubert.*

The Secreatary General reported on four major directions of the Associations activity. These are:

— support to the centres in formulating their policy and programmes,

— supply of information to the centres on major important changes in their environments,

— supply of information, incentives and aid to definite actions on the part of the centres,

— representation of the centres to third parties.

* The Managing Board of the Association elected as its new President Z. Román, director of the Research Institute for Industrial Economics.

The Association operated with many methods in these directions: at the Board-meetings the experiences in the activities of individual centres were regularly presented and discussed, the annual reports provided broader information on the operation of every centre; the Association holds bi-annually seminars on specific topical spheres of problems for the senior staff members of the centres (1967: multi-disciplinary approach to productivity problems, 1969: forecasting the future and tasks of the productivity centres, 1971: system-analysis); a number of topics were included in scientific sessions, and in meetings to exchange experience; there are some working groups in operation (with comparatively modest results); the secretariat has prepared several major studies and a large number of brief information bulletins; the visits of the Secretary General to the individual centres ensure a supply of live information; a large number of bi-lateral ties, and cooperation over shorter or longer periods was established among the individual centres.

Both the President and the Secretary General emphasized that the efficiency of the Association's activities can be substantially increased, on the one hand, with a more purposeful application of the methods mentioned, and on the other, through the introduction of newer methods and forms of cooperation. The programme proposed for the coming five years counts on a more active participation of the individual centres, and also calls for the exchange of research workers, joint research, and the advance of consultative activities. Thematically speaking, in the centre of the programme are the problems of rapid structural and other changes related to technical progress, and the human factors of productivity. The President emphasized that amidst the extremely rapid technical, economic and social changes of today, the activities of the centres and the association should be flexible and adaptive, for their major task is precisely to forecast these changes, and to aid in that their influence shall be harmonic. He also emphasized the relaying and integrating role of the centres, which should help to unite efforts in the interests of the common goal: the raising of productivity and welfare.

The two reports were followed by lively debate, many comments and proposals. The new programme to be drawn up by taking these into consideration will be approved by the Association's Managing Board at its next meeting to be held at the end of 1971.

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OBITUARIES

FERENC ERDEI

The death of *Ferenc Erdei* in 1971 at the age of 61 was an irreplacable loss to our discipline, to Hungarian agricultural economics.

Ferenc Erdei started from very far to reach the heights of science. He first became acquainted with the work of the peasantry, with intensive agricultural production, and with peasant life fighting on two fronts against social backwardness and the forces of nature as the child of a family of onion growers in the region of Makó. He joined the progressive movements of the working class and the peasantry as a young student, committing himself to the struggle for the economic, cultural, and social rise of the working people. He learned the lessons, resoluteness and moderation from the rich experience of success and failure in the struggles of the workers and the pesantry, enabling him to use these qualities in his own scientific work. No matter how strongly economically oriented his research was with respect to its contents and goals, he never neglected the human being, the human communities, the masses of producers and consumers, of the great social groups.

After completing his studies at the Faculty of Law, University of Szeged, he became more closely acquainted with the practice of capitalist farming, with the problems of acquiring and keeping markets for capitalist agricultural production, in the service of the Onion Production and Sales Cooperative of Makó. He was sent by this cooperative on a study tour to Western Europe at the very beginning of his career.

Ferenc Erdei held many positions, and his life path led almost uninterruptedly into the intensive study of the discipline of agricultural economics. As an agrarian economist he enriched his discipline with important creative discoveries, he founded the Research Institute for Agricultural Economics and developed it into the centre for Hungarian agricultural economic research. He also worked indefatigably for the practical realization of scientific achievements. He had a tremendous share in the scientific foundation of the Hungarian agricultural policy in the past decade, in the practical solution to the questions of the large-scale socialist farms, first of all, the cooperatives. To us, agricultural economists, his work has set a lasting example: how to complete research, how to embody the economic laws of agriculture into solidly founded creations, how to develop and perfect the discipline of agricultural economics, and how to transplant the achievements of scientific research into the reality of agricultural production. The exceptional talent and love of work Ferenc Erdei possessed were needed to achieve this.

Of the great, scientific concepts of Ferenc Erdei, agricultural economics can, above all, call those in reference to the cooperative farms to be its own. In his book "Agriculture and the cooperative"* he condenses the historical experience of the world's cooperatives in an analysis of the development of the Hungarian cooperative movement. In this analysis he arrives at cooperative policy proposals, particularly those regarding the special relationship between the cooperative farm and the household plot, which later became indisputable sources of the rapid development and success of the socialist cooperative farms.

I believe the fact that in Hungary the socialist reorganization of agriculture was completed simultaneously with a substantial expansion of agricultural output proves the arguments and scientific theses of Ferenc Erdei, the scientist and cooperative theoretician, and testifies to his lasting merit.

Ferenc Erdei saw the sole authentic yardstick of proving theoretical assumptions in practice itself. The socialist reorganization of agriculture had not yet been completed when, in 1960, he undertook, with his comparatively small research staff, the writing of a practical handbook for cooperative farm organization. This book provided the cooperatives, which in the beginning struggled against difficulties so great as to seem inconceivable today, with scientifically founded guidelines for their everyday work.

Ferenc Erdei always saw the essential sources of his scientific work in the socialist large-scale farms, as the major carriers of agricultural economic phenomena. At the same time, he believed with conviction that their endeavours could only be fruitful in a healthy macro-economic environment. This concept is reflected in works — written with co-authors — like Termelési körzetek és a specializáció (Production zones and specialization) and Mezőgazdaság belterjessége (Intensive agriculture) (the latter was published in Russian too). The topics of both books contain a body of knowledge on socialist agricultural economics still held in high international esteem. The regional problems and those of intensity — long debated economic questions of agriculture — were systematized and further developed by him, by relying on large historical material, and on an almost full-scale processing of all domestic and international literature on the subject. As regards these two fields, no work in agricultural economics has ever since appeared with contents more comprehensive than that of Ferenc Erdei.

Cooperative organization and the tasks of cooperative management played a particularly important role in the period of the consolidation of cooperative farming, Ferenc Erdei not only provided a theoretical basis for a solution to these tasks, together with an extensive processing and evaluation of international experience, but he gave useful practical guidelines as well in his book Az üzemi szervezet és üzemvezetés a szocialista mezőgazdaságban (The organization and management in socialist agriculture). An entire series of further publications, destined explicitly for practical work, are linked with the name of Ferenc Erdei. These include A mezőgazdasági üzemszervezés néhány elméleti és gyakorlati kérdése (Some theoretical and practical questions of agricultural farm organization) (printed in German too), Nagykőrös

* Erdei, Ferenc: Mezőgazdaság és szövetkezet. (Agriculture and the cooperative.) Budapest, 1959. Akadémiai Kiadó.

város mezőgazdasági fejlesztése — a távlati mezőgazdasági termelés módszere (The agricultural development of the town of Nagykőrös — a method of perspective agricultural production planning), A távlati üzemi tervezés a mezőgazdaságban — Solt község és a solti "Szikra" Termelőszövetkezet mezőgazdaságának fejlesztése (Perspective farm organization in agriculture — development of the village of Solt, and of the agriculture of the "Szikra" cooperative farm in Solt).*

Ferenc Erdei also initiated a Marxist study of economic categories as important and as highly debated as the enterprise nature of the cooperative farms, the concept and contents of production costs and profitability in socialist agriculture, etc. In a work written with co-authors and entitled Önköltség a szocialista mezőgazdaságban (Production costs in socialist agriculture) he studies the deepest interrelations of the agrarian aspects of socialist macro- and micro-economics. With this he provided the theoretical preparation for the agricultural policy details in the reform of economic control and management and contributed to the formulation of the economic regulators applied in agriculture. His scientific activity in the field of the economics of the agricultural branches (first of all, with respect to the branches of gardening) was of outstanding value in the same sense, since it created a stable theoretical basis for raising the level of government economic policy, for developing centrally planned economy, and directly, for the planned application of the commodity and money relationships.

Ferenc Erdei's work stands the test of time also, in the organization of the study of agricultural economics. He collected a research group of young agricultural economists and, with his own personal example, he established a modern order of research, its discipline, requirements and methods. His professional calling, his unbroken commitment to the working people, his conscious acceptance of the unceasing struggle of those in the vanguard of social progress also characterized his agricultural economic research. It was this attitude which he transplanted into his co-workers, students, and into the activities of the institute he led.

Particularly the consistent operation of two methodological factors can be recognized in his scientific organization and institute management work: one is the raising to the highest rank of the study of reality, of practice, while the other is the unconditional assertion of the historical approach.

He did not have much respect for speculative research as a goal in itself. He contrasted with it the Marxist requirement of becoming acquainted with reality, and the difficult, tiring research activity, requiring much work and tremendous diligence aimed at this goal. In his own research, just as in the scientific tasks of all essential sections in the Institute he led, he collected the data and features of reality from hundreds of socialist large-scale farms. He looked upon "deep drilling" right to the very essence of reality, as an essential element in research into all topics. He was eternally rich in ideas, in ability to raise questions which hit on the essence of matters, and in the formation of new methods of exposure, whenever the problem was to prepare research, or to compile basic data and factual material.

* Erdei, F.: Socialist agriculture. Hungarian Survey. 1, pp. 32—48. 1966. Erdei, F.: Theoretical problems of the cooperative movement. Acta Oeconomica, Vol. 3. 1968. pp. 383—401.

He considered the historical roots of society and of economic phenomena as important as their present manifestations. He viewed all present phenomena in their future development, thinking in terms of the unity of past, present and future. He knew the past, analyzed it critically, respected its true value, and this respect was a constant characteristic feature of his research. He knew the activities of the great figures in our discipline, just as he did the historical development of the object of our discipline, of the technical, organizational, and social relations of agriculture. By this truly scientific approach, Ferenc Erdei was able to clearly show the phenomena of the recent or more distant past in a new way, and to draw from these lessons showing the way to the future. This historical perspective protected him from exaggerating failure, from overvaluating success, and from losing his restrained judgement of events in the eternally moving, changing world of economics.

Nothing was more distant from Ferenc Erdei than the dry as dust attitude. He generally put down the results of his research at his desk in the early hours of dawn. But the truths included in these scientific conclusions were frequently born on the cooperative lands, at cooperative manager meetings, at debates with workers in state farms, often lasting till dawn, in old and modern stables, in the small family gardens or large-scale plantations of vineyards and orchards, or even in the wine cellars tasting well known wines.

To him this was as natural as studying the general international personalities in the profession, reading the works of his contemporaries, or the competent analysis of many-sided statistics. This is why his scientific work reflects the living practice of economic life, the life-giving tension of production and the constant rhythm of renewal.

The cooperative peasants were his personal acquaintances and readily received visitors, together with hundreds of heads of cooperatives and state farms, and the workers of food industry plants, cooperative farms, and sales organizations. It took him but moments to establish close human contacts, and to exchange creative ideas with them, just as with Nobel Prize winner scientists, with world-famous students of agricultural economics.

He always avoided extremes. But there is perhaps a single field where his scientific nature approached an extreme in conduct: his respect and love for methodic work. For us, his students and for the Hungarian economists in general, it is perhaps this attitude what makes Ferenc Erdei, academician, two times Kossuth Prize Winner, and internationally known and recognized agricultural economist worthy of remembering and following.

J. MÁRTON

IN MEMORIAM GYÖRGY CUKOR

After a long and serious illness, Dr. György Cukor, Associate Director at the Institute of Economics, Hungarian Academy of Sciences, died on January 4, 1972.

György Cukor was born in 1917. He began his higher studies in Brno, graduated as a mechanical engineer, and attained a degree in natural sciences at Nantes. He received the title of Candidate in Economics in 1957 with a major thesis on labour productivity. Recognizing the significance of his dissertation dealing with the industrialization of developing countries, the Hungarian Academy of Sciences bestowed upon him the Doctor of Economics degree in 1970.

Between 1939 and 1945 he lived in France, returning to Hungary in 1945. At home, he first worked in industrial enterprises as a plant engineer and as a design engineer; later, he became head of the Business Management Department at the Ministry of Industry. Between 1949 and 1952 he worked for the Secretariat of the National Economic Council and later became chief engineer in a large industrial organization. In late 1955 he joined the Institute of Economics, Hungarian Academy of Sciences becoming head of the Industrial Section at the Institute. For over a decade and a half he was one of the most outstanding research workers at the Institute of Economics and from 1958 on he filled the post of Assistant Director.

György Cukor did not intend to become an economist. It was the burning economic problems of post-war Hungary, taking its first steps in a planned economy that turned his attention towards this field. His studies and his practical experience as an engineer were of determining importance for his work in economics. He was not a theoretical economist in the strict sense of the term; he analyzed the day-to-day as well as the long-range economic issues with the endeavour for exactness of a person trained in the natural sciences and in engineering. He brought to his work the pragmatism of one experienced in industrial administration and a broad outlook stemming from both his training and his personality. Using a constructively critical approach, he always worked with an exactingness towards himself.

In the beginning, he dealt primarily with the questions of technical progress in industry. Later, the *productivity of labour* became the focal point for his research. Already at this time, one of the main features of his work — and this remained so throughout his life — was the coupling of research activities with a constant attempt to refine the tools of analysis. He dealt with the demand of the national economy for engineers and technicians; starting in 1957—1958 *long range industrial planning* became the focus of his studies. His technical and natural science training directed his attention quite readily to quantitative methods in economics. He was among the first to deal with the use of *input-output tables* in structural studies of the national economy and the section he led had an outstanding role in the research of mathematical methods of economics in Hungary. Several studies of his also dealt with questions of the economics of energy production and utilization.

An important stage of his professional career was his stay in the United States. He worked at the United Nations Secretariat in New York from 1963 to 1965. Although his interest in the subjects he had examined earlier did

not lapse, from this time on his activities have become enriched with a new feature. He began to study the problems of planning at an international level and, finally, he concentrated his attention on the problems of *industrialization in the developing countries*. The significant work he wrote on this subject was published in 1970. This work will shortly appear in English, to be brought out by a London publishing house. He received much acclaim for his contributions to the elaboration of the national economic long-range plan, reflected by his work "Long-term planning in industry" just published in Hungarian.

György Cukor's scientific activity was well known beyond the frontiers of Hungary. His book "Questions de la planification économique en Hongrie" appeared in 1961 and was one of the first major foreign language publications by a Hungarian economist. His studies were also printed in several other languages, including Russian, English, German, Czech and Italian. His diversified activities went well beyond the walls of the Institute of Economics. For many long years he was active in the Hungarian Economic Association. His help and advice was frequently requested by leading economic organizations. Foreign countries also made use of his wide knowledge: he spent several months as a lecturer and visiting scholar at the University of Michigan; he participated actively in the in the work of UNIDO; and he visited Iran as an economic adviser.

His career was broken at the height of his creative power. Although he had been seriously ill for years, he paid no attention to either the dangers or to warnings. He worked with unflinching will and untiring energy, espanding his sphere of studies as he searched the road for further progress.

It is painful to take leave of György Cukor, the man, the scientist, and an exceptionally active personality in Hungarian economic life. With his death, the Committee of Economics of the Hungarian Academy of Sciences lost one of its leading members and we lost one of the most devoted and helpful member of our Editioral Board. We do not forget that many years before the publication of this periodical began, György Cukor was the first to propose the publication of a foreign language Hungarian periodical in economics. Although this could not be realized at once, when his long-cherished plan did become a reality, he was among the first to assist in publishing this journal. We are especially grateful to him for voluntarily undertaking a leading role in bridging a difficult transitional phase, when our editorial board lost its chairman, the late Professor Imre Vajda. György Cukor was one of the most responsible members of the new editorial board as well.

His memory will be preserved by his works, including the articles appearing in the columns of this journal whose development he so greatly helped from the very first day. His spirit lives on among his colleagues, friends, and admirers at home and abroad.

BOOK REVIEWS

DUNLOP, J. T.—FEDORENKO, N. P. (eds.): *Planning and markets: Modern trends in various economic systems.* New York, 1969. McGraw-Hill. 418 p.

No doubt the 1960's will go down in the history of economic thinking as the decade of establishing contacts and of an increasingly deep-reaching exchange of ideas among economists working in different social systems, as a decade when professional and informed interest in one another's achievements gradually took the place of confrontation of views and opinions, of simply stating viewpoints, or politely listening to them. Of the many conferences and round table discussions which mark the stations along this road, the International Economic Association's conference in Nice in 1966 was not the first, but it was one of the most important. Here exactly twenty economists from socialist and twenty from capitalist countries, led by such representatives of the scientists from the two worlds, as Nikolay Fedorenko of the Soviet Union, and Wassily Leontief of the United States met around the same table. The forty economists, most of whom travelled to Nice from the most outstanding state planning bodies, university departments and research institutes, presented 28 papers on a parity basis, in accordance with the agreement reached at an earlier conference to coordinate programmes. The thick volume published by the Wertheim Committee contains the texts of these 28 papers.

The subjects of the papers had been chosen completely freely, and accordingly, they were most diverse, extending from government planning, the price system, branch patterns, and economic policy problems of investment efficiency to detailed reviews of individual mathematic models, and even the editors were able to group the papers into five chapters only approximately. Despite the fact that the collection can by no means be considered to represent a unified point of view, and that not even the preface mentions debate, contributions or comments, the 28 papers uncover such an interesting document of the age that the editors and publishers can justly count on readers' interest even with the passing of several years.

According to the grouping of the editors, only the first part contains papers on the goals and methods in the comprehensive planning of the national economy. In fact, the majority of the papers dealt with this subject and the review of the most comprehensive planning system of the United States of America can only be found at the end of the book, in the part entitled "Modern Mathematical Methods".

Three different "philosophies" and a picture of three different forms of practice come to light from the reviews of national economic planning systems. One is that of the Soviet Union and the socialist countries, where the historical starting point for the organization and operation of the economy was central state planning, which

endeavoured to grasp and regulate all important processes of the economy. The second is the Western European planning system based on econometrics, which was aided by the post-war anti-cyclic and welfare policies of the governments — an unavoidable world-wide fashion — to develop its own practice, which today is of quite a high standard. The third is the planning methodology developed in the United States, which never truly went beyond the computer centres of government offices to appear in public, or at least, attempts have never been made to transplant it into practice, and not even a start has been made to transform it into an autonomous economic plan, instead of ancilliary calculations to atomic strategy.

Thus, the paper by the distinguished Clopper Almon, whose book "Matrix Methods in Economics" has since become quite popular in economic circles, was rather of a thriller. He reviewed the PARM model, which was originally an abbreviation for Post-Attack Recovery and Mobilization, while today it endeavours to meet the demands of the government and large scale enterprises as Program Analysis for Resource Management.

Certainly the mathematics of war or peace are not different from one another, and it is also doubtless that it was the needs of World War II and the war economy that raised the first demands in the United States for the preparation of large-scale economic models covering the entire economy, and for calculations to be completed with them: the first to place orders and finance them were military organizations. Even the studies in the collection entitled Economic Activity Analysis, edited by Oskar Morgenstern — which today is considered almost a classic — were prepared on orders from the Office of Naval Research. The PARM differs from these studies in that it originates from strategic operation research in the strict sense of the term, and not from mathematical economics.

The PARM model was constructed by Thomas Wood. Its main features are multiple iteration, and several kinds of feed-back. It takes into consideration the most important lags in the economy. It is more intended for finding good feasible variants for development than some super-optimum. It not only fixes the conditions of certain partial periods within a development period conceived, but it also searches for the means through which these conditions can be attained. It tolerates human intervention, modifications, supplementation, even during calculation without difficulty whenever partial results indicate that the planner neglected some important circumstance.

In other words, the PARM is quite similar — with respect to its goals — to the approved methods of the 5th French five-year plan, which was reviewed at the conference by Bernard Cazes (although these goals were expressed far more plastically in the Modèle Physio-Financier (FIFI 1 for short) used much later, only in the 6th five-year plan). However, even on the basis of the extremely sketchy review, the structure of the PARM appears to be quite different from those of its European counterparts, which all derived from multi-sectoral forecasting models. To be precise, from the first, the 1936 model of the pioneer Jan Tinbergen, who, shortly after the end of World War II reached a degree of perfection that the legislature approved by the Dutch parliament in 1947 speaks of it in these terms: The plan is "a balanced system of forecasts and directives in relation to the economy of the Netherlands" (Quoted from the paper presented to the conference by Pieter de Wolff).

In the years prior to the conference, and in fact, even today, economists were most interested in whether — with the spread of electronic computers — countries with centrally planned economies, and in particular, the Soviet Union, wanted to direct all economic decisions and technological processes with a unified computer

system (perhaps through the creation of a "continuous self-regulating" system operating as a single electronic brain). The other possible application was if they wanted to use this new technical device for solving large-scale problems in such a way that the decision opportunities for those active in the economy should become extended, that the continuously changing demand of users and consumers should be taken more into consideration, that technical innovations and scientific discoveries which always require unforeseen circumstances and means, should be transferred into practice more rapidly. The alternatives of computer and society, the national economic optimum and decentralized decisions, unified computer planning and mechanism reforms appeared far more sharply in the Soviet Union than anywhere else, in the economic debates of the first half of the 1960's.

After preliminaries of this nature, the comment by Fedorenko that the economy is far too complex a system to be able to give an exhausting description of it and, therefore, the direct administrative control of all processes would be ineffective, and thus such endeavours would not even be economic — no doubt served as one of the true sensations of the conference. In accordance with this, Fedorenko rejected the concept of a fully automated planning and management system and, instead, considered the search for flexible methods capable of coordinating central optimum planning with decentralized management necessary. In his opinion, economic efficiency, as a major requirement of economic activity, is suitable for accelerating the development of such methods. In this paper academician Fedorenko denoted return as the universal measure of efficiency, assuming it possible to devise and implement a price system which would guide the allocation of resources in accordance with the most important goals of Soviet society, and ensure economic equilibrium.

The papers by the representatives of the socialist countries published in the second and third parts (on branch and enterprise planning, prices, wages, investments) were written under the sign of the reforms in economic management under preparation, or simply desired: extremely careful descriptions mix with highly optimistic theorems. Today this is almost history. But the paper by the American Robert Weinberg can either be considered an intelligent marketing activity, or IBM propaganda. Whatever the case, it is interesting reading. The paper by the Swedish Tord Ekstrom should be emphasized from part four, which deals with wages, not only because he was the sole representatives of the trade-unions (it is well known that the Swedish trade-unions maintain the most research institutes and employ the most scientific researchers), but also because he introduced the elements of debate and comparison into the atmosphere of the conference, which, despite its respectable scientific level, maintained for the time being its character of making parallel statements with no connection to each other.

The fifth part of the volume contains the papers which the editors considered methodological in nature. Aside from the American PARM model, among other ones the paper by Graham Pyatt, reviewing several of the mathematical models used in British planning, also found a place here. The majority of the paper was of course, devoted to the Cambridge Growth Project developed by Richard Stone, and within this, to the review of the RAS method. At that time the last volume in the series of publications issued by Stone and his co-workers was quite fresh. It should be observed that the study using the most complicated mathematical apparatus of the volume was that of G. C. Harcourt of Cambridge, which dealt with analysis of various criteria applied in investment economic calculations. It appeared in the third part of the volume. Since the studies in the fifth part were not uniform as regards their subjects and ranged from the first careful steps in the use of mathematical

tools (e.g. the paper by Eugene Mateev of Bulgaria entitled "Mathematics and National Economy") to developed models requiring rather large apparatus (see the MODIS II introduced by Per Sevaldson, which at that time was Norway's latest short-term planning model), we would limit ourselves to reviewing a single paper.

The models of Mária Augustinovics of Hungary, searching for the interrelations between the volume of foreign trade and national income, have been, since the paper was presented, partly tried out with true statistical data, and the calculations produced several interesting results, though they have been challenged by many. Augustinovics endeavours to establish, by using the input-output tables of the different countries, the effects of foreign trade on gross output, the reciprocal relationship among gross output, final product and primary inputs, and their volumes. For this purpose she compared a so-called actual system (an essential element of which is the distribution of imported resources among the branches of production in accordance with their role in creating the final product) and a "would be" system, that is, what would happen if the same domestic final product had to be produced as in the former case, but without imports.

The model equates the foreign trade balance with the balance of payments and assumes balanced foreign trade. It does not distinguish between competitive and non-competitive imports, and silently assumes that the only role of exports is to cover imports.

In this interpretation, the real final product of the system described by the product balance is only the domestic part of net output, in other words the part which remains of the products after subtraction of the imported resources needed for their production. Various "allocation matrices" can be constructed from the technological coefficients of the imported resources used in the process of production, which can be interpreted as giving the technological coefficients of imports from a given market, which are then used in the production for exports to a given market. Augustinovics called the analyses inexhaustible which can be performed with the aid of the matrices attained in this way. If we pre-multiply with them the vector of net output a specially interpreted "domestic part" is obtained as a result. The remaining "imported part" is in fact nothing else than the redistribution of the export-import balance of the branch in such a way that we receive the value added by domestic productive activities.

These transformations of the "actual system" are used to receive those input coefficients which are needed for the domestic production of imported resources.

Comparison of the two systems yields the so-called foreign trade effect, by comparing the theoretical input necessary for producing imported resources with the actual input in the export production of the given country, and the vector of gross output of the "actual system" with the vector of gross output in the "would be" system. Through this, the foreign trade effect becomes measurable not only with respect to the entire economy, but — at the cost of slightly complicating the calculations — by branches and by markets as well. The author proposes, for measuring comparative advantages, the comparison of hypothetic domestic input required for production of imported resources with the actual input of the exporting countries.

K. LÁNYI

HERZOG, PH.: *Politique économique et planification en régime capitaliste*. Paris, 1971. Editions Sociales. 280 pp.

La *forme* et le *mode de fonctionnement* du capitalisme changent, et ces changements se sont particulièrement accélérés depuis la deuxième guerre mondiale. La forme la plus récente du capitalisme est le capitalisme monopoliste d'Etat. Dans son

nouvel ouvrage, Philippe Herzog examine deux traits importants de cette forme du capitalisme: sa politique économique et la planification qu'elle met en œuvre.

Son diagnostic de départ quant au capitalisme monopoliste d'Etat se résume ainsi: l'Etat se trouve partout présent dans l'économie capitaliste de nos jours. Mais quels genres de rapports existent donc entre l'Etat et les propriétaires des moyens de production: les capitalistes et leurs divers groupements? La politique économique est définie par l'Etat capitaliste, et c'est également lui qui élabore les plans. Mais dans l'intérêt de qui? Et ces intérêts, comment s'affirment-ils, par quel mécanisme économique, politique et social, et suivant quelles lignes de forces?

L'analyse de M. Herzog s'ouvre sur de larges horizons: il ne se contente pas de révéler les liens existant entre l'économie et la politique capitalistes; il examine également le problème de la «nouvelle gauche», ce produit socio-politique si caractéristique du capitalisme monopoliste d'Etat, qui accompagne la forme nouvelle du capitalisme, tout comme l'omniprésence de l'Etat et l'application des méthodes de la planification.

La planification appliquée dans les pays capitalistes représente par elle-même un domaine important des recherches économiques de notre époque. Certains y voient un signe, et même la preuve, de la «convergence» des pays capitalistes et socialistes. D'autres en nient a priori la possibilité même (et mieux encore, l'efficacité), et ne consentent à parler que de «tentatives» en vue d'opérer une certaine planification de l'économie.

L'auteur cherche à analyser sur la base des réalités la planification pratiquée par les pays capitalistes lorsqu'il souligne la nécessité de ne pas sous-estimer, ni de surestimer l'efficacité de la politique économique et de la planification mises en œuvre par le capitalisme monopoliste d'Etat. La question centrale est de savoir si les plans élaborés dans les pays capitalistes servent les besoins des masses laborieuses, ou bien les intérêts du capital. Au lieu de nier catégoriquement le caractère rationnel de ces plans, il vaut mieux examiner cette rationalité elle-même, et surtout voir de près, de la rationalité de quel groupe social s'agit-il en fait?

L'auteur qualifie son livre d'essai, il le considère comme un ensemble ordonné de conclusions et d'hypothèses se référant à quelques aspects seulement, jugés importants, de la réalité. Le *premier chapitre* relie le problème de la planification au matérialisme historique, à la tendance décroissante du taux du profit, aux étapes du développement du mode de production, ainsi qu'à la dialectique de la base et de la superstructure. Résumant son analyse, l'auteur constate que l'influence sur l'Etat des groupes monopolistes financiers s'exerce par l'intermédiaire de divers éléments politiques et administratifs. Bien que les structures de l'Etat, la conception de la politique économique et de la planification tendent a refléter les intérêts communs de la fraction monopoliste dans son ensemble, pratiquement chacune de ses interventions sert tel monopole particulier, et aggrave par conséquent la concurrence entre les monopoles. Il n'existe pas de démarcation rigide entre les fonctions politiques et économiques. L'Etat sert de son mieux (dans les limites de ses possibilités) les intérêts de la fraction dominante.

Le *deuxième chapitre* traite de la planification française d'après la deuxième guerre mondiale, développant en quelque sorte dans la pratique les conclusions théoriques du chapitre I. L'auteur donne un aperçu de l'évolution de l'accumulation, de la politique économique, des rapports entre l'idéologie et la technique de la planification. Cette analyse constitue déjà par elle-même une monographie d'histoire économique de valeur, qui ne se contente pas d'exposer le contenu des plans et le développement des méthodes de la planification, mais donne également un jugement de valeur très réaliste du rôle particulier joué par l'Etat capitaliste dans l'évolution de la planification française, et des

divers canaux par lesquels les intérêts des groupes monopolistes sont introduits dans le processus de la planification. Là aussi, nous trouvons au centre de l'étude de Herzog la démonstration du fait que la planification appliquée par un Etat capitaliste donné ne doit pas être jugée et qualifiée sur la base de la technique mise en œuvre, mais selon les intérêts desservis par la planification en question.

Ainsi, les fonds financiers et les sources de crédit réunis par l'intermédiaire des institutions financières et de l'Etat sont utilisés, dans les conditions actuelles du capitalisme, de façon à accroître la rentabilité du capital monopoliste, et à offrir, aux monopoles des moyens leur permettant de poursuivre leur concentration. Dans ces conditions, dans la sphère de la production et du crédit, la seule tâche du secteur étatique est de soutenir le capital monopoliste.

La critique formulée dans ce chapitre par Herzog à l'adresse de l'anarchisme pettibourgeois mérite que l'on s'y attarde. Dans la phase du capitalisme monopoliste d'Etat, l'Etat devient un élément organique du processus de la production sociale. Dans ces conditions, la revendication anarchique de la destruction immédiate de l'Etat signifierait l'arrêt du fonctionnement des forces productives.

L'ouvrage distingue ici entre la planification démocratique et la planification opérée par le pouvoir des monopoles. Les économistes des pays socialistes liront probablement avec un intérêt particulier (et aussi avec approbation, conscients de ce qu'ils sont de la réalité historique, et aussi d'une expérience chèrement recueillie) les conclusions de l'auteur données en fin de chapitre sur les tâches de la planification démocratique à réaliser dans les pays capitalistes. La planification démocratique devra établir — souligne-t-il — des rapports de type nouveau entre le secteur nationalisé et le secteur privé; on ne peut procéder aux nationalisations, ni élaborer les textes législatifs relatifs au secteur privé en partant de principes dogmatiques, sous la forme — ce sont ses mots — de mesures brutales et non différenciées.

Poursuivant le raisonnement engagé par les premières parties de l'ouvrage, le *troisième chapitre* nous introduit dans l'analyse des techniques de la planification, et donne la critique des fondements théoriques de la planification capitaliste, entre autres, des concepts de base de la théorie néoclassique ou keynesienne, tels que ceux du cycle économique, du profit, de l'excédent, de la croissance, etc. Ce chapitre, ainsi que ses conclusions, éclairent le rôle réellement joué par l'Etat capitaliste dans la planification. Cette élucidation est également aidée par la critique donnée par l'auteur des conceptions droitières et gauchistes relatives à ce problème. Comme le souligne M. Herzog, la droite voit en l'Etat un intermédiaire entre les diverses classes sociales; le gauchisme par contre y voit l'instrument d'un bloc capitaliste homogène absolument conscient de ses objectifs et capable d'agir dans l'unité. En réalité, ces conceptions ne prennent toutes deux en considération qu'un seul des aspects de l'évolution historique de l'intervention de l'Etat: les efforts déployés en vue de réduire les contradictions de la société. Elles n'aperçoivent cependant pas l'autre aspect de cette évolution: le fait qu'avec la planification capitaliste apparaissent et se renforcent les formes dans lesquelles se réalise la socialisation des forces productives, alors que, parallèlement, s'approfondit la contradiction entre ces formes et le mode de production du capitalisme monopoliste.

Dans le *quatrième chapitre* de son ouvrage, M. Herzog examine la nature de la technique de planification et sa place dans le processus de la planification monopoliste, pour aboutir au problème tant discuté de l'efficacité et du caractère scientifique de ces techniques. Leur «efficacité» se trouve dans le fait qu'elles sont des éléments nécessaires de la reproduction du pouvoir des monopoles. Leur rôle «régulateur» intéresse le profit des monopoles. Et pourtant, on ne peut juger de façon purement néga-

tive de la technique de la planification monopoliste. Elle comprend en effet également certains éléments progressistes, tels le développement important réalisé dans le système des informations statistiques, et la reconnaissance du caractère social de la production. Ces éléments (et en particulier la comptabilité à l'échelle de l'économie nationale) deviendront, avec certaines modifications, les instruments nécessaires et importants de la planification sociale à l'étape de la démocratie avancée également. Il est certain qu'avec la transformation des rapports de production (et seulement après cette transformation), la nature et l'idéologie de la planification se transformeront aussi. On ne peut cependant pas rejeter sans distinction les techniques appliquées à l'heure actuelle. Ainsi, par exemple, le système français de comptabilisation à l'échelle de l'économie nationale éclaire effectivement, dans une certaine mesure du moins, les rapports d'échange et n'obscurcit pas complètement la notion de l'entreprise, ni les formes de l'intervention économique de l'Etat.

L'auteur est un spécialiste connu des techniques de la planification, son ouvrage montre également qu'il sait analyser et juger avec rigueur et clarté les rapports existant entre les sphères économique et politique. Le livre de M. Herzog éveillera sans doute l'intérêt de tous les économistes et spécialistes désireux de saisir et de comprendre, derrière la superficie des phénomènes économiques, l'ensemble, la totalité des rapports sociaux qui forment la communauté humaine. Le pouvoir des monopoles et la technocratie ne représentent certainement pas les étapes définitives de la société occidentale (l'expérience historique ne confirme aucunement pareille thèse). Les chemins de l'avenir conduisent vers un pouvoir antimonopoliste et une démocratie réelle. Le livre de M. Herzog nous présente la réalité d'aujourd'hui en y faisant apparaître les articulations auxquelles pourra s'accrocher la réalité de demain.

E. KEMENES

LEHMANN, H.: *Grenznutzentheorie*. Berlin, 1968. Dietz Verlag. 427 S.

Warum ist es wohl aktuell ein sich mit der Grenznutzentheorie umfassend und kritisch befassendes marxistisches theoriegeschichtliches Werk herauszugeben? Auch der ungarische Leser stellt sich diese Frage, und der Autor beantwortet sie im Vorwort.

Erstens: die bürgerliche Ökonomie beginnt mit dem Grenznutzensystem ihren Übergang zu den modernen Problemen des Monopolkapitalismus, und deshalb sind auch im heutigen bürgerlichen Schrifttum immer wieder solche Begriffe und Erklärungen anzutreffen, die entweder mit der Grenznutzentheorie entstanden sind, oder deren Weiterentwicklung zu grenznutzentheoretischen Konzeptionen führte. Deshalb ist eine marxistische Kritik dieser Theorie noch immer aktuell.

Zweitens: die Entwicklung der Aufgaben der sozialistischen Wirtschaft lässt eine Analyse der Grenznutzentheorie als zeitgemäss erscheinen. Dies behauptet der Autor mit Hinweis auf die Aufgaben des wirtschaftlichen Aufbaus der DDR, ist aber auch *im allgemeinen* gültig, weil für die sozialistische Wirtschaftsführung und Leitung die Wissenschaft der wirtschaftlichen Rationalität, die Formalisierung, die Mathematik und innerhalb dieser die Anwendung der Grenzwertrechnung unentbehrlich sind. Es ist ebenfalls wahr und allgemein gültig, dass die Analyse des Nutzwertes in der Planungstheorie eine andere Rolle spielt, als in der Werttheorie; das Gebiet der Wirtschaftswissenschaft hat sich auch sonst erweitert und ist heute mit der Werttheorie nicht mehr identisch, sondern hat ein grösseres Ausmass. Deshalb sind bei der Kritik der Grenznutzentheorie jene nützlichen Fragestellungen, Initiativen und Anreize zu erforschen und nach ihrem Wert zu würdigen, die durch die Theorie zur Ausweitung des Problemenkreises Wirtschaftswissenschaft gegeben wurden. Die nützlichen, wahren, wissenschaftlichen Elemente sind von den irrtümlichen, falschen und apologetischen sorgfältig zu trennen. Das grösste Verdienst

des Autors ist, dass er sich richtigerweise die Kritik zur Aufgabe stellt und dies anspruchsvoll, auf einem hohen Niveau realisiert.

Bei der allgemeinen Charakterisierung der Grenznutzentheorie beweist er, dass diese an der Schwelle der Ausgestaltung des Monopolkapitalismus noch einen spontanen Konkurrenzmechanismus untersucht, in welchem die Monopole weder als störende Faktoren, noch als wesentliche Bedingungen eine Rolle spielen. Obwohl ihre theoriegeschichtliche Aufgabe die Schaffung des Überganges zur Untersuchung der Probleme des Monopolkapitalismus ist, verhindert sie doch durch ihr reines Konkurrenzmodell eine Ausarbeitung der monopolistischen Markt- und Preistheorie.

Lehmann gibt eine marxistische Kritik der Grenznutzentheorie, aber nicht so, dass er sie den volkswirtschaftlichen Lehren von Marx gegenüberstellt. Bei der Darstellung des Kapitalismus der freien Konkurrenz ist die Grenznutzentheorie nicht nur im Vergleich zu Marx, aber auch im Vergleich zu den bürgerlichen Klassikern viel geringartiger, um sie mit diesen vergleichen zu können. Die Grenznutzentheorie bemerkt aber einige solche Probleme, die durch die Ausgestaltung des Monopolkapitalismus wesentlich werden. Lehmann wertet die einzelnen Autoren danach, inwieweit sie diese Fragen bemerken und inwieweit sie ihre Lösung fördern. Er kritisiert ihre Theorie nicht im Vergleich zu Marx, sondern zur Wirklichkeit des Monopolkapitalismus. Und er verurteilt auch ihren Antimarxismus hauptsächlich deshalb, weil die Unwissenschaftlichkeit ihrer Apologetik sie daran hinderte, den durch den Monopolkapitalismus gestellten theoretischen Bedürfnissen gerecht zu werden.

Die Grenznutzentheorie wird durch ihre Polemik gegen die bürgerlichen Klassiker und den Marxismus dazu gezwungen eine Werttheorie zu schaffen, ihre unwissenschaftliche Wertauffassung verhindert aber eine Schaffung der modernen Markt- und Preistheorie. Deswegen wird das rationale Wirtschaften mit *jedem* Wirtschaften gleichgesetzt, also auch mit dem traditionalen Wirtschaften, in dem die Erscheinungen der Warenproduktion nicht vorkommen. »So ergibt sich das Absurde: eine hohe Rationalitätsstufe kapitalistischen Wirtschaftens wird aus einer Wirtschaftsform ohne Rationalität erklärt. Dieses logisch sinnlose Vorgehen wird mit einer ermüdenden und umständlichen Akribie strapaziert und überdeckt in beträchtlichem Masse die wirkliche Problemlage« (S. 53.).

Lehmann scheut keine Mühe — und er verfährt auch darin einem Marxisten geziemend — wenn es nötig ist auch die bescheidenste vorwärtsweisende Initiative aus der Masse der Irrtümer herauszuschälen. Bei der Behandlung des Subjektivismus der Grenznutzentheorie macht er darauf aufmerksam, dass die Wirtschaftstätigkeit »im staatsmonopolistischen Kapitalismus und erst recht unter den Bedingungen vergesellschafteter Produktionsmittel im Sozialismus einen derartigen Grad der Kompliziertheit und gegenseitigen Verflechtung annimmt, dass der Bereich zwischen der Erkenntnis der objektiven Gesetze und ihrer subjektiven Verwirklichung in den Gegenstand der politischen Ökonomie einbezogen werden muss« (S. 32). Seiner Ansicht nach ist es falsch die komplizierten Wirtschaftsgesetze aus den Regeln der individuellen Wirtschaft abzuleiten; dass aber die Grenznutzentheorie die individuelle Tätigkeit in die Wirtschaftstheorie einbezieht, ist »nicht grundlegend falsch«.

Auch die Nutzenauffassung der Grenznutzentheorie kritisiert Lehmann von den wirtschaftlichen Bedürfnissen des Monopolkapitalismus ausgehend. Er weist darauf hin, dass die Nutzentheorie — da sie sich nur auf die individuelle Nutzenrechnung beschränkt — das Wesen solcher Nutzeffektsrechnung erst recht nicht erklären kann, die vom volkswirtschaftlichen Nutzen ausgehen und den Beitrag einzelner Faktoren der Produktion zum technischen Fortschritt, zum volkswirtschaftlichen Wachstum ermitteln. Dasselbe gilt auch

für die heutige Nachfragetheorie: »In der modernen Wirtschaft nimmt der einzelne Mensch Nutzenschätzungen vor; und die Erforschung der Gesetze, nach denen sich die Gebrauchswertentwicklung der Güter vollzieht, ist für eine prognostische volkswirtschaftliche Planung von grosser Bedeutung. Aber mehr als eine Anregung zu diesem Problem vermag die Grenznutzentheorie nicht zu geben. Ihre Untersuchung beruht auf einseitigen Beobachtungen der Nachfrage, die sie aus der Rationalität des menschlichen Wirtschaftens schlechthin erklärt« (S. 60.).

Der Autor weist auf drei theoretische Vorbedingungen zur Entstehung der Grenztheorie hin: auf die Entwicklung der Nutzentheorie, der selbständigen Preistheorie und der marginalen Analyse. Bei der Ausgestaltung der selbständigen Preistheorie bewertet er besonders die Rolle von Cournot sehr positiv, und gibt eine wertvolle Besprechung über seine Forschungen. Von der Nutzentheorie, die vor der Grenznutzentheorie bestand, beweist er, dass diese in ihrer Entwicklung schon vor Menger so weit vorgeschritten war, dass nur der Optimalisierungsgedanke zur Grenznutzentheorie von Menger fehlte.

Bei der Erörterung der theoretischen Vorbedingungen ist die Darstellung der Entwicklung der Marginalanalyse am interessantesten. Die marginale Anschauung entfaltete sich in der Wirtschaftslehre parallel mit der Entwicklung der wirtschaftlichen Rationalität, ihre Anfänge führt der Autor bis James Anderson und Ricardo zurück. Lehmann schätzt besonders die Rolle von Thünen und Depuit bei der Entwicklung des marginalen Gedankens hoch ein. Er polemisiert mit Erich Schneider, demgemäss Depuit und Gossen die wirklichen Gründer der Grenznutzenlehre sind, indem sie die Zentralbegriffe und Argumente der Österreicher antizipierten. Er beweist, dass nicht der Gedanke des Grenznutzens, sondern nur seine anthropologische Fundamentierung auf Gossen zurückgeführt werden könne. Seiner Ansicht nach ist das System von Gossen nur ein Ergebnis von nebensächlicher Bedeutung in der Geschichte der Wirtschaftstheorien. »Gossen wird nur deswegen neben dem Ingenieur Depuit als der 'wahre Begründer der Grenznutzentheorie' gefeiert, weil die bürgerliche Theoriegeschichtsschreibung die Legitimität des Marginalgedankens *in seiner anthropologischen Form* nachweisen will. Die Marginalanalyse selbst ergibt sich mit Notwendigkeit aus der höheren Rationalitätsstufe und dem grösseren Kompliziertheitsgrad des kapitalistischen Wirtschaftsmechanismus. Aus ihnen ergibt sich allerdings nicht deren anthropologische Form, die aus der apologetischen 'Not des Denkens' entspringt. Gossens System gehört daher nicht zu den Voraussetzungen der ökonomischen Marginalanalyse; aber es ist ein treffendes Beispiel für den irrationalistischen Missbrauch der Marginalanalyse« (S. 109—110.).

In den weiteren vier Kapiteln befasst sich Lehmann mit der Begründung, dem Ausbau, Abschluss und Verfall der Grenznutzentheorie. Er legt auf hohem Niveau, ein reiches Kenntnismaterial bietend, die Tätigkeit der drei Begründer: Menger, Jevons und Walras dar. Der Autor weist richtig darauf hin, dass sich unter den drei Begründern Jevons und noch mehr Walras der Gegenwart stärker anschliessen. Im Vergleich zu ihnen ist Menger veraltet, obwohl er zu seiner Zeit eine grössere Wirkung hatte. Seine Theorie arbeiteten Wieser und Böhm-Bawerk zu einer »Schule«, einem System aus. Der Aufbau des Buches aber scheint diese sehr stichhaltige Feststellung weniger zu widerspiegeln, da den sich der Gegenwart besser anschliessenden Jevons und Walras nur 30, bzw. 28 Seiten, der veralteteren, langweiligen, aber zum »System« gewordenen österreichischen Schule aber 70 Seiten gewidmet werden.

Eben wegen ihres Nahestehens zur Gegenwart sind die letzten zwei Kapitel besonders interessant. Das Kapitel »Abschluss der Grenznutzentheorie« befasst sich mit Clark, Marshall und Pareto. Zur allgemeinen Charakterisierung der Periode stellt Lehmann dar, dass sich die Mono-

pole bis zu den 90-er Jahren derart entwickelten, dass das theoretische Lehrsystem des Kapitalismus der freien Konkurrenz der Realität nicht mehr entspricht. Die Grenznutzentheorie wird jetzt in erster Reihe wegen ihrer marginalen Anschauung akzeptiert. Der im Grenznutzensystem ausgearbeitete Marginalismus stellt nämlich das Prinzip der Rationalität in den Vordergrund, worauf auch der monopolistische Wirtschaftsprozess die Aufmerksamkeit lenkt. Da für die Ökonomen jetzt nicht die Darstellung der antimarxistischen Funktion, sondern der Rationalität wichtig ist, fühlen sie den zur antimarxistischen Funktion gehörenden Psychologismus als Bürde und sind bestrebt davon loszukommen.

Von den Nationalökonomen des »Schlussabschnittes« schätzt Lehmann den amerikanischen John Bates Clark deshalb, weil dieser den Marginalismus auch auf andere Wirtschaftsgebiete ausweitete, während die österreichischen Theoretiker und Walras bei der marginalen Erklärung des Marktes stehenblieben. Clark behauptet, dass die Güter in der Produktion durch das Zusammenwirken von Arbeit, Kapital und Unternehmerfunktion geschaffen werden. Jeder dieser beteiligten Faktoren erhalte ein spezifisches Produkt, dessen physische Grösse sich aus der Produktivität des jeweiligen Faktors ergebe. Somit könnten Produktion und Distribution ohne eine Werttheorie erklärt werden, wenn nicht Angebot und Nachfrage auf dem Markt den Wert der Produkte in Geld ausdrücken und damit die Einkommen erst endgültig bestimmen würden. Das Wirken von Angebot und Nachfrage unterliege dem Grenznutzengesetz. So verliert in Clarks Darstellung das Wertgesetz seine zentrale Bedeutung für die Erklärung der kapitalistischen Wirtschaft, es wird zu einem untergeordneten, wenn auch unerlässlichen Bestimmungsgrund für die Distribution. Aber auch in dieser untergeordneten Stellung bleibt es nicht mehr in der alten, wenn auch um ein geringes korrigierten Fassung erhalten. Aus dem Grenz*nutzen* wird »Grenz*nachteil*« und damit kehrt die Grenznutzenlehre auf die alte vertraute Produktionskostenlehre zurück, sie benutzt allerdings aus apologetischen Gründen einen euphemistischen, verschwommenen Begriffsapparat. Auch Clark vermag die Psychologisierung der Ökonomie nicht zu überwinden, aber in seiner Fassung wird der euphemistische Charakter der psychologisierenden Begriffe deutlicher, weil die kapitalistische Realität stärker durchschaut« (S. 280—281.).

Im Gegensatz zu Clark bleibt Marshall auf dem Gebiet der Marktanalyse, er konzentriert seine Untersuchungen ganz auf den Funktionsmechanismus der Nachfrage und des Angebotes. Auch Marshall stellt einen Kapitalismus der freien Konkurrenz dar wie die Österreicher, sein System widerspiegelt aber bereits den Verfall des Kapitalismus der freien Konkurrenz. Im Vergleich zu den österreichischen Theoretikern gehört Marshall nicht mehr zu den »grossen« Gelehrten der Grenznutzentheorie, aber im Vergleich zu den modernen bürgerlichen Nationalökonomen gehört er noch zu den letzten Vertretern der Grenznutzentheorie. Die ökonomische Tätigkeit von Marshall wird auf zweierlei Arten durch die *Vermittlerrolle* charakterisiert. Einerseits vermittelt er zwischen den bereits als Postklassiker geltenden Mill und Jevons, indem er die bestimmende Rolle der Produktionskosten bei der Gestaltung des Angebotes anerkennt, andererseits vermittelt er zwischen dem theoretischen System des Grenznutzens und der Wirklichkeit, und in dieser Hinsicht sind seine Anstrengungen zur Anwendung der statistischen Analyse von besonderer Bedeutung. »Es geht ihm nicht um eine akademische Bedürfnislehre als Grundlage für eine möglichst geschlossene subjektive Werttheorie, sondern um eine brauchbare, statistisch belegbare Analyse der Gleichgewichtsbedingungen, um in der Klassenauseinandersetzung um die Aufteilung der Einkommen mit messbaren Fakten aufwarten zu können« (S. 321.).

Unter den Theoretikern, die die Entwicklung der Grenznutzentheorie abschlies-

sen, betrachtet Lehmann Pareto als den bedeutendsten. Pareto führt vor allem die funktionelle Preistheorie und die Theorie des wirtschaftlichen Gleichgewichtes fort, die bereits über die Grenznutzentheorie hinausweisen und für die Herausbildung der bürgerlichen Ökonomie des Monopolkapitalismus wichtig sind. Da Pareto keine wissenschaftliche Kritik der Grenznutzentheorie liefern kann, überwindet er diese Lehre auch nicht; er lenkt die bürgerliche Ökonomie jedoch in neue Bahnen. »Der falsche Anspruch der Grenznutzentheorie, aus dem individuellen Verhalten die gesamte Wirtschaft zu erklären, formuliert er in anderer Weise und legt damit den Grundstein für die praxeologische Ökonomie und die praxeologisch-anthropologische Konzeption der modernen bürgerlichen Ökonomie. Indem die Spieltheorie Paretos Präferenzauffassung aufgreift und die Methode der Indifferenzkurven überwindet, kann sie den Begriff der Rationalität präzisieren, seine bisherige Verschwommenheit vermeiden und auf den einseitigen Anspruch der Allgemeingültigkeit verzichten« (S. 335—336.).

Durch die Entwicklung der Monopole wird die Kluft zwischen der Grenznutzentheorie und der Wirklichkeit immer unüberbrückbarer. Schliesslich verschwindet nach dem Erscheinen des Werkes von Keynes in 1936 die offene Anerkennung der Grenznutzentheorie beinahe gänzlich, und es beginnt die letzte Phase des Verfalls der Grenznutzentheorie. Damit befasst sich das letzte Kapitel des Buches.

Der Autor erörtert jene Versuche, die vom Boden der Grenznutzentheorie ausgehend bestrebt waren die bürgerliche Nationalökonomie zu reformieren. Diese gingen in zwei Richtungen. Die eine Tendenz lehnt — in Anbetracht der Kluft zwischen Theorie und Wirklichkeit — die Wirklichkeit ab und wendet sich der »reinen Theorie« zu. Der bedeutendste Vertreter dieser Richtung ist Schumpeter. Die andere Richtung wählt die Elemente der Grenznutzentheorie aus, die der Praxis näher stehen und entwickelt sie weiter. Unter diesen findet Lehmann für Mises die meiste Anerkennung, er hält seinen Versuch für den bedeutendsten. Seiner Ansicht nach erörterte Mises viele wichtige Gedanken über die nationalökonomischen Probleme der Praxeologie. Sein Hauptfehler hinwieder ist, dass er zwischen Ökonomie und Praxeologie beinahe ein Gleichheitszeichen setzt und — von einer liberalen Konzeption ausgehend — nur die Möglichkeit des Bestehens der entwickelten kapitalistischen Wirtschaft annimmt.

Mises sieht, dass es bei der Analyse des wirtschaftlichen Handelns keinen weiteren Fortschritt geben kann, wenn die psychologische Darlegung nicht abgelehnt und durch eine logische Erörterung ersetzt wird. So beseitigt Mises das theoriegeschichtliche Hindernis aus dem Weg der praxeologischen Analyse. Er weist darauf hin, dass »der ärgste Fehler der Nationalökonomie, den sie begehen konnte, der Umstand war, dass sie diesen prinzipiellen Unterschied zwischen dem erdachten isoliert wirtschaftenden Individuum und der Marktwirtschaft verkannte«. (Ludwig von Mises: Nationalökonomie. 1940. Genf, S. 194.)

Auf dem praxeologischen Gebiet der Nationalökonomie können keine gesellschaftlichen Interessen erklärt werden, Mises ist aber nicht imstande auf die Aufgabe der Apologetik zu verzichten. Mit seiner Vorstellung, dass nur der Kapitalismus der freien Konkurrenz die Rationalität des Handelns und des Wirtschaftens sichern kann, schwingt sich Mises in einen antikommunistischen Angriff. Richtig weist der Autor darauf hin, dass Mises mit einer solchen utopistischen sozialistischen Wirtschaft polemisiert, in der kein Geld existiert, oder ein für allemal gegebene, unabänderliche Preise bestehen.

Nach den Versuchen zur Rettung der Grenznutzentheorie geht Lehmann auf die Besprechung der Gegner der Grenznutzentheorie über. Bei der Erörterung der bürgerlichen Gegner hält er unter den früheren die Kritik von Stolzmann, unter den späteren die Kritik von Mayer für tiefgehend.

Er unterscheidet bei der marxistischen Kritik der Grenznutzentheorie drei Phasen. In der ersten Phase werden grössere Versuche unternommen, um die gesellschaftlichen Wurzeln der Grenznutzentheorie aus den Wirtschaftsverhältnissen zu erklären. Diese Phase beginnt mit der hervorragenden kritischen Analyse von Hilferding, dann setzt sie sich mit den Abhandlungen von Bucharin und Bljumin fort, die aber den Fehler begehen, dass sie die Grenznutzentheorie als typische Theorie des Monopolkapitalismus bewerten. Die Ökonomen der zweiten Phase bessern diesen Fehler aus, indem sie die Grenznutzentheorie als eine Theorie des Kapitalismus der freien Wirtschaft betrachten. Selbst Bljumin widerruft in der zweiten Phase seine frühere Feststellung, aber — leider — damit auch seine richtige Behauptung, dass die Marxismusgegnerschaft kein genügendes Kriterium der Grenznutzentheorie ist. In der zweiten Phase beschränkt sich die Kritik hauptsächlich auf den Nachweis des antimarxistischen Charakters. Lehmann zählt auch die sich auf diesen Sachkreis beziehende literarische Tätigkeit von Behrens und Kuczynski zur zweiten Phase.

»In dem Masse, wie in der Diskussion unter den marxistischen Ökonomen die Bedeutung der Mathematik hervorgehoben wird, verstärkt sich der Eindruck, dass die bisherige Einschätzung der Grenznutzentheorie unzulänglich sein müsse. Es wird nun notwendig, eine Theorie und Methodik der optimalen Planung auf marxistischer Grundlage zu schaffen und in diesem Zusammenhang die Fehler der Grenznutzentheorie zu untersuchen. Damit beginnt die dritte Phase in der Kritik der Grenznutzentheorie« (S. 409.). In dieser Phase gab die Tätigkeit von Oskar Lange den Ansatz, um den ökonomischen Marginalismus von der wirtschaftlichen Problematik aus zu erklären. Unter den in der dritten Phase verfassten Werken erwähnt Lehmann die in 1965 verfasste Abhandlung von Alter, ich aber möchte das Buch von Lehmann als hervorragende Schöpfung dieser dritten Phase, der Aufmerksamkeit des Lesers empfehlen.

É. RADNÓTI

SZANYI, J.: *Gazdasági növekedés és külkereskedelem.* (Economic growth and foreign trade.) Budapest, 1971. Közgazdasági és Jogi Könyvkiadó. 316 p.

Jenő Szanyi's book does not approach the topic from a theoretical point of view as might be expected from the title, but instead, he endeavours to give a comprehensive summary of Hungary's economic development since the country's liberation from fascism in 1945, and within this, first of all, of trends in foreign trade.

The book is divided into six chapters. They are entitled: "Foreign Trade and National Economy", "Economic Policy Concept, Foreign Trade", "Interactions between Growth and Foreign Trade", "Changes in the Commodity Pattern of Hungarian Foreign Trade", "The Market Pattern of the Hungarian Foreign Trade", and "The Control System of Foreign Trade". This listing is enough to indicate that the structural set-up of the work, and its division carries the danger of repetition. In fact, several concepts and conclusions recur under different headings.

In the first chapter the author states that Hungary, as a national economy with a "small capacity" is strongly dependent on the international division of labour, and is, therefore, open in nature. Harmony between the production and consumption patterns is ensured by exchange through foreign trade. The import sensitivity and the dependence of the country on exports is great, although their extent depends on whether it is a matter of importing means of production or consumer goods, and in the productive branches, on the ratio of export sales. Alongside a listing of several development alternatives (autarky, import substitution, technological development), he correctly concludes that the unfavourable effects of import sensitivity can be counterbalanced by a marked development of the exporting economic branches.

The first part also includes a theoretical proof of the comparative advantage stemming from foreign trade, based on a fictitious numerical example. Then the author argues in favour of the need to develop a community of interest between foreign trade and production. He also dwells on the problem that technological development is, on the one hand, the result of and, on the other, the impetus to foreign trade turnover, and both exports and imports are closely related to it.

In the second chapter he discusses the interrelations between the economic policy concept and foreign trade. He deals separately with the major problems of economic policy. He concludes that economic policy is the sum of the systems of objectives and means. The economic policy concept thus includes the systematization of economic goals and the methods of approaching goals as well as the system of economic policy means which can be put into operation. Alongside a survey of domestic resources the economic policy concept must necessarily include the hows of joining in the international division of labour. Foreign trade policy is an organic part of economic policy, and it replies to the question about the extent and the pattern of our joining in the international division of labour. This, in fact, requires directives to influence the production of export commodity funds and to survey and influence import requirements.

We must observe: alongside foreign trade policy which includes the relationship between the production and reproduction process and foreign trade, in speaking about external relations, we may also discuss commercial policy in the narrower sense of the term. In this interpretation commercial policy means to guide external market realization and procurement with regard to countries, and to shape intergovernmental relations so that the country's foreign trade policy should become optimally realizable from the turnover aspect. The author does not make this conceptual distinction. By foreign trade policy, he means that part of government economic policy the goal of which is to settle and control external economic relations putting it at the service of economic growth. He distinguishes between two major goals of foreign trade policy. One is protection of the domestic economy (protectionism under capitalist conditions), and the other is to ensure export sales.

Jenő Szanyi classifies the tools of foreign trade policy into several groups.He lists the trade contracts, commodity turnover and payment agreements, the national economic plan and the foreign exchange regulations among the general means. The special means of foreign trade policy are the tariff system, tariff policy, subsidies, and the regulation of domestic price formation. Administrative measures are the macro-economic decisions, compulsory quotas and administrative permits. This grouping, however, does not sufficiently show in my opinion, the economic relationship among these means, nor their separate functions. In listing the administrative means, the author interprets the quotas incorrectly, because he does not mean by these the compulsory commodity turnover prescriptions, which include export and import quotas, but the socialist inter-state agreements in general. However, under the conditions of the new system of economic management the enterprises do not meet the socialist inter-state agreements either in exports or imports because of administrative prescriptions, but prompted by their own economic interests.

This chapter also deals in detail with Hungarian foreign policy towards the three major groups of countries (socialist, developed capitalist, developing). He shows the outstanding importance of trade with the socialist countries from the point of view of our national independence, economic equilibrium and economic growth. He also touches on the bilateral and multilateral ties. He concludes »One of the endeavours aimed at providing the foundations for multi-lateral foreign economic equilibrium is the creation of a commodity fund which

can be realized on a multilateral basis.« (p. 137.) Foreign trade with the developed capitalist countries is also important to us, for we import basic raw materials, and agricultural products. Our major trade policy goal is to overcome possible discriminatory measures. We must endeavour, the author emphasizes, to transform trade relations into permanent production cooperation also with capitalist countries. Hungary's foreign trade policy towards the developing countries requires a slightly different approach. The importance of these relations is rather given by political factors and the long-range perspectives than by the present dimensions of turnover. The key problem of increasing turnover is a rapid development rate for our imports, since at present the ability of the developing countries to absorb exports is far greater than what they can counterbalance by domestic production. According to the author, imports of both basic materials and semi-finished and finished products can be increased. Our policy of granting export credit is closely related to the lasting division of labour established, with the developing countries. In crediting we must pay particular attention, he writes, to see that the credit should be used to create a productive capacity, which will later ensure the possibility of repayment.

In the third chapter of the book Jenő Szanyi deals more closely with the subject indicated in the title, the interaction between economic growth and foreign trade. Unfortunately, the interrelations are not made sufficiently clear, since he discusses the individual elements of economic growth independently from one another.

First he separately shows the trends and pattern of the national income, and its relationship with gross investment. While he calls attention to the need for coordinating investment and foreign trade policies, he by no means devotes sufficient attention to the topic, which is of key importance from the point of view of economic growth. He also devotes some space to outlining trends in the growth and pattern of industrial and agricultural production, within the general framework of development. Following the discussion of the production background comes the presentation of increasing foreign trade turnover, and then the author devotes a comparatively large space to trends in the foreign trade balance. Alongside the descriptive parts, we also get an explanation for the fluctuation in the foreign trade balance, with respect to both the capitalist and the socialist countries.

The best part of the book is the fourth chapter, where the author studies changes in the commodity pattern of foreign trade. He concludes that the export and import commodity patterns are determined primarily by trends in the production pattern. He considers it unfavourable that the export of basic materials has increased in parallel with the rise in the country's production of basic materials. This is not supported by either the country's natural conditions or by the requirement for efficiency. Trends in the foreign trade commodity pattern are compared with trends in international trade, and the conclusion is drawn that it is possible to efficiently join in the international division of labour in those branches of production where world trade is expanding dynamically.

The fifth chapter of the work deals with the market pattern of Hungarian foreign trade. The author analyzes the turnover by types of trading partner, but within this relationship (socialist, capitalist, developing countries) he does not provide a break-down of foreign trade by countries analyzing instead again the commodity pattern. Therefore, in the final analysis this part summarizes the differences of the structural patterns in the trade with these three major types of country groups.

Finally, in the sixth part of the book, the author summarizes, most likely for the sake of completeness, the Hungarian system of foreign trade management (in 24 pages). This description can, by necessity, only provide a partial picture, as regards both principles and factual information.

By way of summary it might be said that Jenő Szanyi's book provides a circumspect view of the major questions in Hungarian foreign trade trends, and in general, he provides sound explanations enabling their understanding. The author does not reveal new interrelations, he rather endeavours to systematize the information available. Unfortunately, the book does not give a clear-cut reply to the basic question stemming from the title, that is, the extent to which foreign trade has contributed to Hungary's economic development, and the points at which foreign trade limits became obstacles to faster economic growth. Nevertheless, it is a useful reading matter for all who would like to become acquainted with Hungary's foreign economic relations in detail.

F. BARTHA

LEVITT, K.*: Silent surrender — The multinational corporation in Canada. Toronto, 1970. Macmillan of Canada. 185 p.

In her introduction the author proposes to present a sketch of Canada's slide into a position of economic, political and cultural dependence on the United States, and seeks to explain the process whereby national entrepreneurship and political unity have been eroded to a point beyond which lies the disintegration of the nation state.

This proposition anticipates the reply to a relevant question which is raised again and again, viz. whether the preservation of the sovereignty of the nation state or at least that of the smaller nation states is compatible with the operations of the subsidiaries of multinational corporations.

Although the position of Canada is rather unique (97 per cent of its automotive industry, 97 per cent of its rubber industry, 78 per cent of its chemical industry, 78 per cent of its aircraft industry, and 77 per cent of electrical products is foreign-controlled) the ways of taming the multinational corporation and of finding a pattern of peaceful coexistence between the latter and the nation state concerns not only Canada but also many other countries including some large and developed ones.

The size of the corporations — particularly and primarily that of US-based firms — has grown in the capitalist world as the United States became a great power and then a superpower. They expanded into the world economy, became transformed into business empires operating across frontiers, geographic boundaries. In connection with this phenomenon Professor Levitt speaks of *neomercantilism* since in order to protect their foreign investments these business empires rely on the military strength of the metropolitan governments and avail themselves of the economic power of the latter in order to obtain from the governments of the periphery the conclusion of preferential bilateral trading agreements and the granting of fiscal concessions which, in some ways, resemble the exclusivist privileges of the old mercantile system.

The principal difference between the old mercantilism and neomercantilism lies in the fact that the new international ventures have added large-scale on-site manufacturing in foreign countries to the older activity of extracting agricultural and mineral materials for use in the home country.

The American business empires have conquered particularly strong positions in Canada, and from time to time their spe-

* Kari Levitt (of Hungarian parentage — the daughter of Professor Károly Polányi and Ilona Duczynska) is Associate Professor of Economics at McGill University. She is co-author of the work "Canada — West Indies Economic Relations" published in 1967. For a number of years she has been working on a book on Caribbean Plantation Economy and on input-output studies of the Atlantic Provinces of Canada. In 1970 she served as national income adviser to the government of Trinidad and Tobago, under the auspices of the International Monetary Fund.

cial status within the host country becomes painfully conspicuous. The participation of the major American automobile companies as formal signatories to the agreement between the governments of Canada and the United States setting out the conditions of trade in the continental automobile industry is seen by Professor Levitt as being perhaps the most dramatic evidence of the fact that trade talks nominally conducted between the two countries were in effect joint negotiations between representatives of the two governments and of the three international corporations.

About 60 per cent of Canada's foreign trade is being transacted with the United States. It is therefore customary to speak of the "special relationship" between the two countries, which consists of a set of preferential and bilateral trading arrangements like the ones mentioned above. Deliberately or not, the latter in fact decrease Canada's autonomy. For this "special relationship" there is a price to be paid. Canada is prevented from exporting crude oil to Japan and Canadian subsidiaries are prohibited by US legislation from filling orders from countries blacklisted by the government of the United States. Because of the US Trading with the Enemy Act, some flour milling companies were not permitted to fill orders from Cuba, Canadian drug companies were debarred from selling medical supplies for use in Vietnam etc. The only sectors of the economy and industry with significantly more freedom of movement are those where American control is not predominant.

When in January 1968 the guidelines issued by the US Government concerning capital exports became mandatory and American corporations called on their foreign subsidiaries to step up remittances to the United States in order to reduce the chronic deficit of the balance of payments, the outflow of funds from Canada was so considerable that it caused actual panic in Ottawa. Canada's finance minister was dispatched to Washington to plead Canada's special status and ask for help.

Exemption was once again granted. The United States Secretary of the Treasury directed the Canadian subsidiaries of US corporations to slow down a bit their dollar transfers. Thus the Canadian government was unable to directly influence the foreign exchange policies of the American subsidiaries operating in the country effectively, and could only communicate with them via Washington. In return for the "exceptional treatment" Ottawa agreed to convert one billion dollars of her exchange reserves (over one-half of current holdings) into US securities. Furthermore, it undertook to place its own guideline-restrictions on Canadian banks and corporations making it known to them that it did not wish overall foreign investment by Canadian corporations to increase to such an extent that Washington could claim that American companies were evading US regulations by channeling foreign investments through Canadian corporations.

As Professor Levitt concludes: "This is the classical position of a colonial economy . . . The cost of special status has been very high. Deal by deal, beginning in 1963, Canada moved towards a colonial monetary system whereby *surplus foreign exchange earnings are automatically lent to the metropolis.*" In other words, *the branch-plant economy is incompatible with sovereignty.*

The author argues with those Canadian economists (and they are legion) according to whom foreign direct investments contribute substantially to economic growth and do not create problems which could not be handled easily through legislation. In view of Professor Levitt, however, the multinational corporation, when implementing direct investments, is not responsible to nobody but itself. It pursues its own interests and is not concerned with those of any group outside itself. Its "internationalism" is as false as its appeal to *laissez faire* and the "invisible hand" of the market. By its worldwide planning and global business strategy it does everything in its power (frequently with success) to monopolize the achievements of technical

progress and their diffusion as well as to squeeze out a quasi-rent from them for itself.

Under these new conditions of world trade the loans and aids of governments and international organizations are largely substituted for private portfolio investments and the bulk of what today is termed "international private investment" consists of equity ownership ensuring management control. In this way the economies of the host countries are becoming involved into a new type of mercantilist dependency vis-à-vis the world corporations and the governments of their home countries, the metropoles.

Professor Levitt makes in this context two essential points:

1. "Some international corporations are so powerful that they do not have any special relationship with any one metropole". It is to be regretted that the author does not expand on this important subject. In our opinion this sort of business empires belong to the most problematic formations of contemporary capitalism, and a thorough study and description of their operations would be all the more relevant as some of the most dynamic world corporations are aspiring to precisely such a status.

2. The bulk of world corporations is based, however, in their country of origin, i.e. *mainly in the United States*. Despite some conflicts of interest of minor import *they are distinctly integrated into the industrial-political complex of their country of birth*. Therefore the threat to Canada's sovereignty takes the form of the danger of being absorbed into the American Empire. Professor Levitt argues convincingly that Canada's dependence on the investments of US-based corporations is far from being an inescapable necessity. (Their expansion is to a large extent financed by the re-investment of profit, by depreciation and depletion allowances and by borrowing from Canadian financial institutions etc.)

The author provides a comprehensive picture of the patterns of operation of world corporations, in their overwhelming majority US-based, and of the negative concomitants of their massive presence in the hinterland.

Today it is almost considered an axiom that development is tantamount to richness and high income, and underdevelopment to poverty and low income. Therefore the size of the per capita gross national income is usually held as being a reliable test of development. On this basis, however, Canada is more highly developed than Great Britain, France or the German Federal Republic, and Venezuela than Japan. From what has been already said about the manipulation of consumption the imposition of a consumption pattern, reflecting the requirement of the large corporations etc. ensues, however, that the total value of goods and services consumed cannot be considered the adequate measure of economic welfare. *GNP-centeredness should be seen rather as being the projection from the national unto the international scene of the corporations' need for permanently expanding markets and sales volume.*

In this world economic model success is assured to the enterprise which can keep its resources effectively employed. Of these resources trained personnel, with manufacturing, engineering, scientific and managerial skill often becomes more important than warehouses, plants, offices and other physical facilities. This might also be expressed in that *the emphasis is increasingly switching from hardware to know-how (software)*. Competitive advantage accrues to enterprises whose resources of men and equipment are transferable in the sense they are *geared to handle a range of technology rather than a specific set of end products or of raw materials*, reference here being made to *Chandler** who points out that in the chemical, electrical, electronic and

* CHANDLER, A. D. Jr.: Strategy and structure. The M.I.T. Press, 1962. quoted by Kari Levitt.

power machinery industries the same personnel using much the same raw materials were able to develop synthetic fibres, new films and plastics, new electrical and electronic devices and new machines and household articles. These companies are characterized by the investment of large amounts of total resources in R and D and become *less and less tied to any specific product line.*

Because economies of scale in research, design and technology are realized by spreading costs over total output the global profitability of the international corporation is assisted by every influence which *eliminates cultural resistance to the consumption pattern of the metropolis. The corporation thus has a vested interest in the destruction of cultural differences and in a homogenized way of life the world over.* For the corporation, there is no shortage of capital, only a shortage of homogenized consumers. It has institutionalized capital accumulation within the framework of its organization. The process is self-sustaining and self-financing as long as new products can be devised and new markets created.

The competitive techniques perfected in the domestic environment have now been transferred to the world scene, and, of course, also to Canada, where the variety of products produced and assembled can only be explained in terms of the economics of the large international manufacturing corporation. Because there exists a market for each of these products created by the spill-over of the taste-pattern of the American consumer, it pays the multinational corporation to produce a great variety of products in Canadian subsidiaries, even if it is done on a low level of efficiency.

It is widely believed that countries benefit from metropolitan direct investment because they thereby acquire entrepreneurship as well as funds; the necessary "know-how" of modern industrial techniques will be introduced into the hinterland economy, thus imparting managerial and technical skills to the population and stimulating local entrepreneurship.

In the "branch-plant economy", however, the scope of operations for local entrepreneurs is rather constricted. Local firms are either purchased outright and their owners become the salaried employees of the multinational corporation or tend to be marginal (they are small or inefficient). Exceptions to this pattern include publicly owned or controlled enterprises or firms which managed to establish an early technological lead over the metropolitan concerns.

In the mineral resource industries, independent enterprises face a situation where the large and established corporations control the terms of sale of raw materials. For independents, markets are uncertain, prices too low to cover costs, their capacity to borrow funds is limited. Their activities tend, therefore, to be of a riskier kind — drilling, prospecting operation of marginal mines in abnormal market conditions, and sub-contracting for work where large companies enjoy the stronger bargaining position. If a venture happens to reach the threshold beyond which it could become really profitable, it discovers that the doors to entry are opened only by coming to terms with those already inside.

Branch-plant economy destroys the mobilizational basis of indigenous entrepreneurship and threatens it with atrophy. A branch-plant economy dependent on imported technology is also assured of a perpetual technological backwardness vis-à-vis the metropolis. This becomes more pronounced to the degree that product and technological innovation play an increasingly important role in international competition. A factor contributing to this development is that by means of the "brain drain" the brightest and ablest people — not only the scientists, engineers, technicians and skilled workers, but the best company managers too — swell the human resources of private international business empires.

The total savings generated by the activities of branch-plants are consider-

able, but the access to these savings by local enterprise is limited. The major part of the contribution which the branch-plant sector makes to national income comes in the form of wages and salaries and government revenue. The overwhelming part of profit income accrues to shareholders of the parent corporation and makes no direct contribution to national income. *The domestic savings of the hinterland country are really part of the national income of the metropolitan country.*

The author draws the following conclusions as to this "harvest of lengthening dependence": 20 years of unprecedented intake of American capital, technology, know-how and marketing connections have probably resulted in increased income and employment. Direct American investment has not, however, secured the basis of continued growth. According to a survey of recent trends and patterns of Canadian trade *Canada's position resembles more closely that of a less developed nation than that of other developed countries.* This is warranted inter alia by the following figures: Canada's share in the foreign trade of industrial countries dropped from 9,6 per cent in 1953 to 7.2 per cent in 1965, and her commodity terms of trade declined from 101 to 97 between 1954 and 1965. In a study of thirteen industrialized countries of the western world it was found that end-products accounted for 60 per cent of exports. For Canada the comparable ratio was only 19 per cent. The share of consumer goods in imports rose from 29 per cent in the mid-fifties to 34 per cent in the mid-sixties, and that of end products from 50 to 54 per cent. The heavy inflow of direct investments to Canada's manufacturing industries has coincided with a rise in manufactured imports relative to domestic production.

In Kari Levitt's excellently documented work, the thoroughness of the scholar is matched by the passion of commitment. Her book is rich in ideas. She has the faculty to drive home even abstract theses by illustrating them in a plastic and suggestive way. The operative mechanism of contemporary capitalism is presented in a comprehensive panel rendering possible an easy survey of the new pattern of international economy created by world corporations. She "processed" an enormous material and is in full control of it. Her work unravels the tangle of the modern form of dependency. She succeeded to throw light on a general trend by analysing masterfully its concrete manifestations.

A fully clear and unmistakable reply is given to the question of whether the massive presence of world corporations may be compatible with economic-political sovereignty, providing thereby a useful weapon to those in the developed countries (as e.g. in Western Europe) who have to come to grips with problems similar to those of Canada.

No doubt it is due to objective circumstances and the prevailing relationship of forces as regards alternative solutions and the elaboration of counter-strategy, that her book is permeated with a certain tinge of pessimism. We would like to believe that this pessimism is not fully justified. Insofar as we can judge from the distance, in the past 1—2 years the awareness of the danger of integration into the American empire increased in Canada and the intellectual vanguard of the movement fighting against this threat sees the issue no longer in an appeal to the self-preservation instincts of the national bourgeoisie, but in an "independent socialist Canada".*

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GY. ÁDÁM

* GODFREY, D.—WATKINS, M. (Eds): Gordon to Watkins to you: A documentary: The battle for control of our economy. Toronto, 1970. New Press. See particularly the draft resolution of the left wing of the New Democratic Party (the so-called Waffle Resolution). Ibid. p. 103—108.

KÁLLAI, P.: *Nemzetközi ipari kooperáció.* (International industrial cooperation.) Budapest, 1971. Közgazdasági és Jogi Könyvkiadó. 313 p.

With this work, a gap has been filled on the book market, and it is the first volume, even on an international scale, which endeavours to summarize the problems related to international industrial cooperation. The merit of the book is that it covers both the theoretical and practical aspects of the question, and for this reason it might be used as a handbook for enterprises participating in international cooperation.

International cooperation activities have a distinguished role, both in the process of integration among the socialist countries, and in shaping the division of labour with the capitalist countries. Nor is it by mere coincidence that the issue has been placed so sharply on the agenda in most recent years, since the economic development of the socialist countries, and assertion of the effects of the technical-scientific revolution have objectively demanded a final break with autarkic endeavours, and prescribe the establishment of international production ties as an absolute necessity. The forms of production cooperation are different by necessity and bear the marks of the economic structures and economic management of the individual countries. It can be established as a fact, as pointed out by the author in the introductory part of the book, that there is cooperation not only among the socialist countries, and between the socialist countries and capitalist enterprises, but mainly among the firms of the individual capitalist countries. In the latter case, this frequently takes the form of capital relations, and it increasingly aims at strengthening the striking power of the small and medium sized firms as well. Cooperation activities are also growing with the developing countries, since for these, the form of international cooperation means the procurement of progressive technologies while maintaining the possibility for their economic independence.

In the first part of the book the author points out the general interrelations of international cooperation activities. He provides a plastic picture of the role played by the technical-scientific revolution in accelerating the international division of labour. He analyzes the effects of geographical and economic conditions on industrial cooperation, and summarizes the effects of international cooperation on the foreign trade turnover among individual countries, and the position of their payments balances. A chapter deserving special attention in this part of the work is the one which points out that socialist planned economy highly favours the creation of international cooperation agreements. It provides incentives for them, and enables the socialist countries to deliberately utilize the advantages of the international division of labour. This chapter includes a detailed elaboration of the justification for the dominating and determining role played by the productive enterprises in international cooperation relations. Therefore, the success of cooperation activities is based primarily on the incentives for the productive sector. The turnover sphere plays only a mediatory role in the creation of cooperation. However, it can only fulfil this role if it is capable of understanding and mediating the problems of the producer enterprises in an active and purposeful way in its traditional foreign trade business ventures.

The second part of the book surveys the definition of the concept of production cooperation, correctly explaining that the conceptual definitions are not ends in themselves, but serve to enable dealing with this necessary and progressive form of foreign economic relations in an emphatic way. Reviewing the concrete forms of appearance of international economic cooperation he introduces the types of agreement deserving attention for their cooperation natures. In the context of reviewing the views of the individual socialist and capitalist countries, as well as those of the international organizations in relation with

the forms and types of cooperation he also provides a practical guideline to Hungarian enterprises wishing to engage in cooperation, showing the conditions they must reckon with in the individual countries in connection with the cooperation to be established. Finally, the author reviews and analyzes the conceptual definition accepted in Hungary, giving guidelines regarding the elements foreign economic relations should contain within the framework of a given international production agreement in order to become cooperative in nature.

The third chapter of the book should be considered the most interesting and most useful from the enterprise point of view, for it deals with the fundamental questions and conditions of industrial cooperation. In this chapter the author provides a detailed analysis showing that economic conditions in the broad sense of the term constitute the starting conditions. These include direct economic conditions (market, profitable production, competitive commodities) together with satisfactory production conditions (productive equipment, labour force, material supply) and technical standards. The author also correctly points out that suitable economic policy conditions are needed to create the atmosphere for international cooperation. These economic policy conditions include the interestedness of the given state in international cooperation and determine the extent to which the state is willing to provide incentives for the establishment of agreements of this nature. In studying the problems of enterprise interest, the book provides almost a methodology showing the factors to be taken into consideration in establishing cooperation agreements. It should be mentioned in this place that the list of examples and the case study in the appendix of the work as well as the thoroughly elaborated typical contracts attached make it suited for use as a handbook. A detailed review of the regulations affecting cooperation activities and of the system of permits serves to orientate Hungarian enterprises whishing to undertake cooperation.

The fourth part of the work deals with the methods of building up international industrial cooperation. The author correctly points out the extreme importance of the process of preparation, and the need for a rich supply of information, which enable preparation of possible decisions. He provides a method for the internal preparation of cooperation agreements on enterprise level, including how the interest of the foreign partner should be taken into consideration. An essential feature is that the signing of contracts on industrial cooperation must rely on stronger and more organized enterprise activities than simple production tasks, for the effects of these agreements affect the internal life of the enterprise far more deeply than do simple commodity transactions.

The methodical part is supplemented with raising certain problems which make cooperation more difficult from the enterprise point of view, or make it more risky than traditional trade ventures. If these viewpoints are taken into consideration, the enterprise may enjoy some security in the course of its planning, in a rational evaluation of the risks which undoubtedly do emerge.

Hungary's economic conditions, and the comparatively limited absorptive capacity of the Hungarian market necessarily orientate the Hungarian enterprises towards international industrial cooperation, if they wish to remain in competition on the international markets. Nor can there be any doubt that the majority of enterprise managers have already become conscious of this fact, and they would like to draw suitable conclusions. However, in view of the fact that international cooperation is a new type of activity, it has not always been possible to summarize information regarding this field. This is the reason why Mr. Kállai's book fills a gap, and why the attention of all specialists interested in problems of this nature should be called to it.

R. GEIST

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И. ФРИШШ

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О сущности венгерской хозяйственной реформы

Хозяйственная реформа стала в последние годы повседневной практикой в странах Совета Экономической Взаимопомощи. Это — независимые друг от друга реформы, начаты были они в различное время, содержание их также неодинаковое. Все же они имеют *ряд общих*, по крайней мере, сходных черт. Это и естественно, ибо каждая страна строит социализм. Каковы их общие черты? Во всех реформах общим является повышение значения товарно-денежных отношений, в нескольких — повышение роли рынка, трактовка прибыли в качестве основного показателя деятельности предприятия, введение платы за фонды, расширение самостоятельности предприятий. Все эти черты присущи и венгерской хозяйственной реформе. В некоторых странах сама хозяйственная реформа может характеризоваться как раз или в основном тем, какими методами, каким образом, в какой мере осуществляются те или иные или все перечисленные черты. В отношении Венгрии обстановка другая.

Указанные выше черты все без исключения могут быть найдены и у нас, однако, метод и средства их осуществления мы не считаем неотъемлемой частью нашей реформы. Например, один из заместителей министров недавно предлагал полностью отменить 5-процентную плату за фонды и 8-процентный налог с заработной платы и вместо них установить соответствующий налог со стоимости, прибавленной обработкой (разницы между чистой выручкой предприятия и связанными с ней материальными затратами). [1] А наш министр финансов в недавно опубликованной статье в определенном смысле идет еще дальше. Он говорит о том, что «существенная поправка финансово-ценовых отношений, преобразование роли и принципов системы цен, валютно-

го курса (т. е. пересчетного коэффициента внешнеторговых цен) и процента позволят создать основывающуюся на новых началах, правильно отражающую общественно-экономические и политические цели, в корне новую и лучшую систему предпочтений». [2] Этих двух примеров, вероятно, достаточно для подтверждения того, что финансово-ценовые отношения, условия кредитования, регулирование доходов предприятий, пересчетные коэффициенты и т. п. в целом *могут рассматриваться только как средства*. Это — экономические регуляторы, рычаги, служащие осуществлению наших планов, но *не представляющие сущность нашей реформы*.

Однако наша реформа имеет черту, отсутствующую в реформе других стран СЭВ, но являющуюся неотъемлемой частью, а значит, сущностью нашей реформы. С 1 января 1968 года народнохозяйственный план не разбивается по предприятиям, последние *не получают обязательных плановых показателей, предписаний*. Это настолько новая черта в практике планирования стран-членов СЭВ, что встречались даже экономисты-марксисты, особенно, за рубежом, которым приходилось доказывать, что мы ни в коем случае не намереваемся отказаться от планирования народного хозяйства как основного средства осуществления нашей экономической политики. А тому уже и не приходилось удивляться, что в капиталистических странах наша реформа нередко трактовалась — особенно, поначалу — так, будто отменив плановые директивы, мы, мол, распростились с марксизмом, дабы перейти к некоему капиталистическому хозяйствованию нового типа. Между тем, по недвусмысленному свидетельству истории, принципиальное требование того, чтобы »сотни миллионов людей руководствовались одним планом», В. И. Ленин [4] выдвинул тогда, когда еще не могло идти и речи о разбивке плана по предприятиям. Содержание принципиального требования заключалось прежде всего в том, что *все виды хозяйственной деятельности должны быть подчинены плану, выражающему наиболее важные интересы общества*. Десятилетняя практика показала нам как положительные, так и отрицательные стороны разбивки плана по предприятиям. Из числа отрицательных я здесь остановлюсь лишь на одной, потому что, как мне кажется, уже эта одна сторона объясняет выбор нами иного решения. Наш опыт побудил нас осознать — и этот опыт лишь позднее был подтвержден теорией, — что разбивка, хотя и действительно осуществляется исходя из народнохозяйственного плана, однако, между народнохозяйственным планом и планами предприятий все же не может быть полного совпадения, полного соответствия. На практике везде положение таково, — и другое положение едва ли вообразимо, — что планы предприятий формируют отраслевые органы, функционирующие более или менее независимо друг от друга. Чем более детализированные планы получает предприятие, тем менее могут быть они согласованы с планами и указаниями, разработанными другими отраслевыми органами по смежным видам деятельности. Предприятие обязано выполнять полученный

план не потому, что он вытекает из народнохозяйственного плана, а потому, что оно получило предписание выполнить именно этот план. При этом вовсе не может идти речи о том, что оно выполняет план потому, что считает его целесообразным, полезным и служащим интересам народного хозяйства. Предприятие и не может судить об этом, по крайней мере, из полученного плана оно не может сделать никаких выводов. Мы же желаем добиться того, чтобы *руководители предприятий с привлечением своих коллективов сами определяли всю деятельность предприятия.* Пусть ломают они голову, стремясь к рациональному хозяйствованию, над тем, что и как производить и реализовывать; осуществлять ли капитальные вложения, сколько и с какой целью; какую применять систему оплаты труда; где и по каким ценам продавать; где покупать; какие применять организационные формы; как развивать предприятие. Пусть экспериментируют, пусть ищут наилучшее решение! Пусть делают то, что на основе зрелого суждения и демократической дискуссии они сочтут полезным, целесообразным, идущим на благо предприятия и общества. Общество имеет в своем распоряжении много различных средств для подчинения хозяйственной деятельности предприятий, учреждений и отдельных лиц наиболее важным хозяйственным целям. Этими средствами в исключительных случаях могут быть даже и конкретные предписания отдельным предприятиям. Однако, как правило, более целесообразным является не предписание конкретных заданий отдельным предприятиям, а обеспечение достижения наиболее важных желаемых целей *путем установления соответствующих им цен, регулирования доходов предприятий, капитальных вложений, внешней торговли, кредита и т. п.* В рамках такого регулирования необходимо предоставить руководителям и коллективам предприятий все возможности для проявления личной инициативы и развертывания своих способностей.

Когда я говорю о практическом опыте нашей реформы, я делаю различие между тем, как оправдалась сама реформа в целом, ее основная идея, и как оправдались экономические регуляторы, рычаги. Я должен заранее отметить — о чем в дальнейшем будет сказано более подробно, — что *реформа, т. е. основная идея оказалась правильной.* В ходе экономических дискуссий в нашей стране теперь уже никто и не ставит вопроса о возвращении к прежней системе. В противоположность этому, *регуляторы* и рычаги оказались отчасти хорошими и отчасти плохими. Целиком они и после их повторного улучшения *еще далеко не удовлетворяют требованиям.*

В интересах правильной ориентации считаю уместным сделать еще одно предварительное замечание. Наша экономическая политика должна отражать потребности, требования общественного развития в порядке их важности. Они должны отражаться в плане, им должны служить экономические регуляторы. Определение важнейших общественных потребностей, требований и порядка их очередности, т. е. установление основных целей народно-

хозяйственного плана представляет исключительно задачу компетентных общественных органов. Их решение должно основываться на как можно более широком и глубоком научно-политическом исследовании и взвешивании. Они должны учитывать, в частности, все экономические условия, всю сложную структуру общества, отечественные и международные политические и рыночные условия, достижения и направления технического прогресса. Целей плана, однако, нельзя вывести даже из совокупности этих условий, даже применяя самые утонченные математические методы и наиболее совершенные регуляторы. Но если на основе требуемого научно-политического исследования и взвешивания цели уже установлены, то тогда следует воспользоваться самыми утонченными математическими методами и наиболее совершенными регуляторами для того, чтобы достичь данные цели наиболее рациональным образом, с наименьшими ошибками и потерями. После решения важнейших вопросов еще десяткам различных государственных и общественных органов предстоит принять важные, отчасти действующие в весьма широком кругу решения. Необходимо, в частности, принять научно обоснованное и ответственное решение о самих регуляторах. *Если хоть одно решение*, — будь оно принято высшим или средним звеном управления, — *неправильно*, недостаточно обосновано научно, не учитывает важных экономических или иных взаимосвязей, *то все усилия и хорошая работа хозяйственных руководителей и трудящихся может в лучшем случае лишь смягчить неизбежно возникающие более-менее серьезные неурядицы.*

Наша экономическая реформа, как уже было сказано, на практике оправдалась. Важнейшие показатели развития нашей экономики в первые годы реформы складывались планомерно и удовлетворительно. Чудес мы не ожидали, наоборот, подчеркивали, что введение реформы может сопровождаться трудностями и *ее положительный эффект может развернуться только в течение ряда лет*. Опыт первых лет подтвердил наши ожидания. Прирост национального дохода составил в 1968 году 5, в 1969 году — 8 и в 1970 году — 5%. Для полноты картины следует добавить, что в 1968 году прирост национального дохода на 5% произошел при уменьшении производимого в сельском хозяйстве национального дохода на 1%, прирост на 8% в следующем году — при повышении сельскохозяйственного национального дохода на 12%, а прирост в 1970 году на 5% — при снижении получаемого из сельского хозяйства национального дохода на 12% (в основном из-за наводнений и других неблагоприятных природных условий). Стоимость продукции в расчете на одного рабочего возросла в социалистической промышленности в 1968 году на 2%, в 1969 году — на 1% и в 1970 году — на 8%. В связи с этими крайне низкими, указывающими на неудовлетворительность развития цифрами необходимо учесть, что в это время в промышленности произошел переход на сокращенную рабочую неделю. Рост выработки в расчете на человекочас был более удовлетворительным и составил в эти три года 5, 6 и

7% соответственно. Рост реальных доходов на душу населения в каждом из этих трех лет составил 6%, а рост реальной заработной платы в расчете на одного занятого составил в 1968 году 2%, в 1969 году — 5% и в 1970 году — 4%. В 1966—1970 гг. в среднем ежегодно было построено 65 тыс. квартир, в частности, в 1968 году — 67 тыс., в 1969 году — 62 тыс. и в 1970 году — 80 тыс. Наша внешняя торговля имела в 1968 году при общем обороте в 42 млрд. форинтов дефицит в сумме 200 млн. форинтов, в 1969 году при обороте в 47 млрд. форинтов — актив в сумме 1,8 млрд. форинтов и в 1970 году при обороте в 57 млрд. форинтов — пассив на сумму 2,2 млрд. форинтов.

Наша статистика лишь в ограниченной мере способна уловить происходящие в производстве структурные сдвиги. Насколько нам удается установить, такие сдвиги просходили не в особенно широком кругу, а где они все же имели место, то в основном в результате принятия централизованных решений, например, в области производства транспортных средств, средств вычислительной техники и т. п. А там, где — как, например, в некоторых отраслях машиностроения — было освоено производство сравнительно многих новых изделий, продолжалось и производство выпускаемых ранее видов продукции, в результате чего и так слишком широкий ассортимент продукции продолжал растягиваться. *О повышении экономической эффективности промышленного производства* можно судить исходя из того, что рост производимого промышленностью национального дохода в каждые из прошедших трех лет превосходил прирост промышленной продукции. Промышленное производство в 1968 году превосходило уровень предыдущего года на 5%, а вклад промышленности в создание национального дохода возрос на 6%. В последующем году соответствующие цифры составили 3 и 5%, а в 1970 году — 7 и 9%. Выпуск промышленной продукции за три года возрос на 16%, а вклад промышленности в создание национального дохода — на 20%. Отчасти об улучшении структуры нашего внешнеторгового оборота и повышении уровня нашей внешнеторговой деятельности свидетельствует тот факт, что за все три следующие друг за другом года *на каждый рубль или доллар внешнеторговой выручки затрачивалась несколько снижающаяся сумма форинтов*. При этом, несомненно, известную роль сыграла и благоприятная динамика мировых цен.

Я считаю, что и сказанного достаточно для подтверждения моего предварительного заявления о том, что реформа в целом практически оправдалась.

Перейдем к некоторым вопросам, связанным с арсеналом средств реформы, с экономическими регуляторами. Кто имеет представление о почти необозримой массе экономических регуляторов, тот сочтет естественным, что из этой массы я *должен выбрать лишь несколько вопросов*, потому что в рамках одной статьи можно остановиться лишь на нескольких из них. Я выбрал три весьма важных вопроса, каждый из которых затрагивает крупные области.

Первый вопрос — *это наша система цен*, второй — *распределение доходов предприятий*, а третий — *капитальные вложения и формирование народнохозяйственной структуры*. Я считаю необходимым ограничиться этими темами, хотя вполне обосновано и такое возражение, что полное исключение таких весьма важных областей, как, например, внешняя торговля, кредит, хозяйственная деятельность местных советов, сельское хозяйство, не позволяет дать обзора системы регуляторов в целом. К полноте, однако, я не могу стремиться даже в выбранных мною трех областях. В заданных пределах я лишь бегло могу коснуться и этих вопросов. Все же, как мне думается, такое ограничение тематики лучше послужит цели ознакомления с нашей нынешней экономикой, чем любое детальное описание экономических регуляторов.

Этой цели я следую и при трактовке выбранных вопросов, уклоняясь от методов, часто применяемых авторами по этой тематике. Я буду сравнительно мало говорить о том, чего необходимо или желательно нам добиться, т. е. о том, как должно быть. Я остерегаюсь считать разрешенным какой-нибудь вопрос, даже если для решения его уже приняты и начали осуществляться какие-либо мероприятия. Мне желательнее ознакомить читателей и уяснить для них встречающиеся на каждом нашем шагу *проблемы и трудности*. Ведь они затем вызывают появление определенных тенденций, указывающих на возможные решения, или, в их свете, быть может, решительно вырисовывается, что следует нам сделать, или, по крайней мере, чего не следует делать.

Реформа ценообразования

Основной частью нашей хозяйственной реформы была реформа цен. Она, как и большинство других важных мероприятий реформы, вступила в силу с 1 января 1968 года. Ей, однако, придавалось первостепенное значение. Почему? Потому что одно из важнейших требований нашей реформы заключалось в том, чтобы прибыль стала основным мерилом эффективности деятельности предприятий. Нами было выдвинуто в качестве цели и повышение роли и значения товарно-денежных отношений, рынка и конкуренции. Однако *если соотношения цен плохи, то и прибыль предприятия, и товарно-денежные отношения, и рынок, конкуренция также могут ввести нас в заблуждение*. Плохие соотношения цен? Могут ввести в заблуждение? Что следует понимать, вернее, что мы понимали под этим до введения реформы?

В 1966 году мы писали в «Директивах реформы хозяйственного механизма», опубликованных вместе с постановлением партии о хозяйственной реформе: «Основная функция цен заключается в правильной ориентации и стимулировании производителей и потребителей при принятии ими хозяйственных решений. Этим цены должны способствовать рациональному исполь-

зованию экономических ресурсов, приспособлению производства к платежеспособным запросам, распространению передовых видов продукции, формированию экономичной структуры потребления, сбалансированию спроса и предложения. Цены свою основную функцию могут выполнять в случае, если они образуются под совместным воздействием следующих факторов:

— производственных издержек,
— рыночных оценок,
— государственных предпочтений (предпочтений с точки зрения экономической политики).

Эти факторы в совокупности и в их взаимодействии определяют цены. Из-за происходящих со временем изменений издержек производства и рыночных оценок это может осуществляться лишь при такой системе цен, когда цены устанавливаются в ведомственном порядке лишь по узкому кругу товаров и при гибкости государственного регулирования цен.»

Что ни требование, всюду справедливые — пожелания. Отнюдь не новое явление ни в нашей практике, ни в практике экономической политики других стран, что мы не способны заранее точно учесть собственные возможности и их пределы, что из поля нашего зрения выпадают противоречия между различными, самими по себе правильными требованиями. Но, пожалуй, ни в какой другой области экономики мы не включаем в формулировку наших целей столько вполне понятных, но не совсем обоснованных надежд, как в области ценообразования. А затем наступает суровая действительность. Некоторые из надежд осуществляются, а остальные — рассеиваются, как дым, обнажается их беспочвенность. Некоторые из требований выполняются, остальные же оказываются невыполненными.

Я не отношу к числу противоречий положение, что цены могут выполнять свою основную функцию в случае, если они образуются под совместным воздействием издержек производства, рыночных оценок и государственных предпочтений. Я даже утверждаю, что как бы ни выполняли цены свою функцию, совместное воздействие этих главных факторов сказывается на них. Их влияние ощутимо, даже если везде действуют государственные твердые цены, то есть, пользуясь приводимым выше словоупотреблением: государственные предпочтения осуществляются в ущерб издержкам производства и рыночным оценкам. Последние также оказывают влияние, быть может, тем, что уже при установлении цен они — по возможности — учитываются. Влияют они и тогда, если их не принимают во внимание при ценообразовании. В этом случае они вызывают такие неурядицы, — приводя к исчезновению с рынка некоторых товаров или же к затовариванию,— что или становятся источником постоянных народнохозяйственных убытков, или же заставляют изменить твердые цены.

Мы должны видеть и то, что вес упомянутых трех основных факторов неодинаковый. *Издержки производства* в определенном — сейчас увидим, каком — смысле *имеют преимущественное значение, по сравнению с рыночными оценками и государственными предпочтениями.* Если товар полезен, потому что удовлетворяет платежеспособную общественную потребность, то следует покрывать издержки его произвоства. Его рыночная цена — при отсутствии государственного вмешательства — может лишь временно быть ниже производственных издержек. При наличии конкуренции между производителями и отсутствии государственного вмешательства рыночная цена не может и значительно превышать издержек производства. Если государственная твердая цена ниже издержек производства, минус должен возмещаться производителю из какого-нибудь источника. Если твердая цена выше издержек производства, это обстоятельство ограничивает рыночный спрос, а значит, и объем производства.

Учет народнохозяйственных аспектов *выявляет веские аргументы в пользу того, что соотношения цен должны соответствовать соотношениям издержек производства, т. е. соотношениям общественных затрат.* С одной стороны, *это требование отвечает принципу распределения по труду.* Ведь трудящиеся должны не только получать равную оплату за равный труд, но и иметь возможность купить на равную оплату продукты, товары, содержащие равные общественные затраты. А с другой стороны, только *такие соотношения цен могут удовлетворять требованию, согласно которому интересы потребителя не должны противоречить интересам общества,* иначе для потребителя более дешевым будет являться то, что обществу обходится дороже, или наоборот.

Значит, дело выглядит так, что складывающееся на рынке положение и принципиально является правильным, желательным. Было бы очень хорошо, если на этом можно было успокоиться, но, к сожалению, этого сделать нельзя. Выше я отмечал, что рыночная цена без вмешательства извне и при наличии конкуренции между производителями не может продолжительно отклоняться от издержек производства. А если нет конкуреннции, но есть вмешательство извне? В этом случае отклонение может быть и продолжительное. А у нас, как известно, *существует вмешательство извне,* и на рынке *редко сказывается конкуренция между производителями.* На основе имеющегося опыта мы даже не надеемся, что в ближайшем или более отдаленном будущем удастся развернуть широкое соревнование производителей. А если это так, то не может и сложиться желаемых соотношений цен.

Обстановка еще более усложняется внешней торговлей. Для такой страны, как Венгрия, площадью менее 100 тыс. квадратных километров, сравнительно густонаселенной, стоящей на среднем уровне индустриального развития и не имеющей большинства важных видов промышленного сырья, внешняя торговля имеет чрезвычайно большое значение. Промышленное

производство в нашей стране может существовать лишь при импорте сырья, полуфабрикатов, машин и деталей к ним. Чтобы импортировать эти товары, необходимо вывозить за рубеж соответствующее количество товаров отечественного производства. Однако ни закупочная цена иностранных товаров, ни цена наших изделий, реализуемых за границей, не зависит ни от отечественных издержек производства, ни от оценок нашего внутреннего рынка, ни от наших государственных предпочтений. Знания, опыт и сноровка наших внешнеторговых организаций лишь в определенной степени могут влиять на цены приобретаемых и реализуемых в международной торговле товаров. В то же время эти *внешнеторговые закупочные и продажные цены каким-нибудь образом все без исключения включаются в нашу внутреннюю систему цен.*

Более того, с точки зрения народного хозяйства важный аргумент говорит в пользу того, чтобы *соотношения цен соответствовали соотношениям цен мирового рынка.* Под уже упомянутыми издержками производства, общественными затратами всюду подразумевались отечественные издержки и затраты. Общественные затраты, однако, могут действовать и на мировом рынке как международно необходимые издержки производства, затраты. Различные условия ограничивают конкуренцию и на мировом рынке, но конкуренция, как правило, есть, и в этой конкуренции, как правило, хотя и неравномерно и с неодинаковой эффективностью, но участвуют и постепенно сказывают свое действие новейшие достижения мировой техники, наиболее передовые методы производства и изделия, удовлетворяющие наивысшим требованиям. Мировые цены отражают результаты этой конкуренции. Если мы даем простор их действию, то *через соотношения цен мирового рынка передаются импульсы передовой техники, стимулирующие технический прогресс.*

Таким образом, уже нашлись два принципа желаемого формирования соотношений цен, которые, по нашему опыту, нередко противоречат друг другу. К сожалению, и этим еще не исчерпаны все трудности. Нам нельзя забывать о том, что 1 января 1968 года мы не преобразили нашу экономику. Было положено начало большим изменениям, но в определенных, исторически сложившихся условиях. Это относится как к структуре нашего общества, количеству, распределению и уровню развития наших производительных сил и средств производства, так и к действующим ценам, влияющим на производство и потребление. *Нам нельзя было производить коренного переворота в ценах, особенно, в потребительских ценах.* Это естественно вытекает из важной директивы нашей реформы, согласно которой «нельзя допускать снижения реальных доходов ни одного более-менее крупного слоя населения». Этот принцип, как мы увидим в дальнейшем, поставил весьма узкие пределы любым изменениям цен.

Эта сильная связанность нашей системы цен скрыта под относительной пестротой форм ценообразования, легко вводящей в заблуждение поверх-

ностного наблюдателя. У нас имеются твердые, лимитные, подвижные в пределах государственных предписаний и вольные цены. Несколько вводит в заблуждение и распределение потребления населения между отдельными формами ценообразования, рассматриваемое в процентах от общего оборота. Так, многие товары, в частности, треть или даже несколько большая доля культурных, бытовых товаров длительного пользования и строительных материалов поступает в обращение по вольным ценам. Еще выше этот процент по одежде и обуви, и кое-где достигает 80—90 процентов оборота. В целом четверть оборота розничной торговли осуществляется по вольным ценам.

Однако основная проблема заключается не в том, слишком ли много твердых цен, а в том, что *эти цены можно сохранять лишь при значительной государственной субсидии, с помощью широкой системы дотаций к ценам.* Такая дотация к ценам имеет место почти по всем основным продовольственным товарам. Так, величина дотации составляет 56% к цене говядины, 46% — к цене свинины, 59% — к цене расфасованного молока, 53% — к цене различных видов топлива, почти 50% — к плате за коммунальные услуги, свыше 40% — к цене билетов в кинотеатры, свыше 50% к тарифам прачечных, 80% — к тарифам железнодорожного пассажирского транспорта и 84% — к тарифам будапештского городского транспорта. Ясно, что повышение этих цен непосредственно повышает стоимость жизни трудящихся. Очевидно и то, что повышение цен на отдельные товары по-разному затрагивает потребителей, ибо есть, кто потребляет много мяса, и есть, кто мало, есть, кто часто ездит на трамвае, а есть, кто никогда. *Таким образом, если следовать принципу, согласно которому недопустимо снижение реальных доходов ни одного более-менее крупного слоя населения, то едва ли можно изменить эти важные цены.*

Твердыми являются не только цены на важные предметы потребления, но и цены на важнейшие виды сырья. Из этого обстоятельства также вытекают проблемы, из числа которых на важнейшей я остановлюсь позднее, в связи с движением мировых цен.

Согласно нашему опыту, если бы провели референдум среди наших трудящихся, подавляющее их большинство проголосовало бы за неизменные потребительские цены. Неизменные потребительские цены указывают на стабильность покупательной силы форинта. При неизменных ценах легче распланировать домашние расходы и определить размер повышения доходов. Этим преимуществам противостоят уже упомянутые минусы. Из двух лиц с одинаковой индивидуальной выработкой и равными денежными доходами на деле больше получает тот, кто в большей мере пользуется государственной дотацией к ценам. При действующих ныне ценах интересы общества и отдельного потребителя могут резко отличаться друг от друга, ибо отдельный потребитель заинтересован в экономии общественно необходимых затрат

лишь в отношении той части их, которая оплачивается им, и в некоторых случаях он может транжирить общественно необходимый труд.

Все это, разумеется, относится к пропорциям, а не к уровню цен. Уровень цен — вопрос особый, и он возник уже в ходе подготовки реформы. В уже упомянутых директивах говорится: «После реформы цен в будущем следует рассчитывать на небольшой рост общего уровня потребительских цен». Почему следовало ожидать этого уже с самого начала? Потому, что при системе хозяйственного расчета каждая хозяйственная единица заинтересована в повышении цен на свою продукцию. Определенное, как правило, скрытое повышение цен весьма часто имеет место и при твердах ценах. Таким образом, было обосновано рассчитывать на развертывание такого стремления после отмены фиксирования цен во многих областях. Это не означает, что мы неотвратимо подвержены стихийному бедствию роста уровня цен. Есть возможности и средства для стабилизации их уровня. Однако *рост уровня цен в принципе может иметь и благоприятный эффект, проявляющийся в смягчении диспропорции как цен, так и оплаты труда.* Поэтому казалось целесообразным рассчитывать на некоторое небольшое повышение уровня цен при соответственно большем росте доходов.

Произошел ли умеренный рост уровня потребительских цен и выправление пропорций цен и оплаты труда? Умеренный рост уровня потребительских цен произошел, согласно статистике, он составил 1—2% в год, *однако не наступило улучшения пропорций цен и, вероятно, пропорций в оплате труда.* Относительно последних у нас нет детальных сведений, а что касается соотношений цен, едва ли оспоримо, что если отдельные цены, особенно, требующие государственной дотации, т. е. и так сравнительно низкие цены, остаются неподвижными в то время, как другие цены растут, то диспропорции лишь обостряются, даже если в некоторых менее важных областях и несомненно удалось улучшить пропорции цен.

Постоянные противоречия порождаются и движением мировых цен. Эти движения происходят, как правило, не в одном направлении; имеет место как снижение, так и повышение цен. В отдельных периодах, однако, доминирует или повышение, или снижение. Трудности причиняет, в первую очередь, рост цен мирового рынка, особенно, на важнейшие виды сырья, — имеющие у нас зачастую твердые цены, — так как в конечную очередь это влечет за собой рост уровня потребительских цен. *Если государство намерено предотвратить это повышение цен, то приходится перекладывать на государственный бюджет бремя покрытия прироста мировых цен.* В этом случае, однако, повышаются расходы из бюджета, и, вероятно, возрастет его дефицит, что связано с неприятными для народного хозяйства последствиями. Если же государство не берет на себя это бремя, то становится сомнительным, удастся ли удержать рост уровня цен в пределах установленных 1—2%.

Из многих других, связанных с ценами проблем и трудностей, упомяну

еще об одной. При введении реформы мы стремились к установлению более тесной связи между ценами международных рынков и нашими внутренними ценами. Венгерские покупатели за иностранные товары в принципе платят, а поставщики за свои реализованные за границей товары получают столько же форинтов, сколько получается при перемножении внешних цен и установленного валютного курса. Но дело в том, что имеются два различных внешних рынка: общепризнанными деньгами на одном из них является доллар, а на другом — рубль. Поэтому был установлен один валютный курс для цен в долларах и один — для цен в рублях. Но беда в том, что *пропорции цен в долларах совершенно отличаются от пропорций цен в рублях. Из этого, разумеется, вытекают дальнейшие противоречия,* ибо много таких товаров, которые мы покупаем или продаем и за доллары, и за рубли, и в производстве также используются материалы и детали того и другого происхождения, а готовая продукция или потребляется внутри страны, или экспортируется за доллары или рубли, быть может, по весьма различным ценам.

Описанное выше дает лишь в общих чертах представление о несметном количестве связанных с ценами проблем, которые не были и не могли быть решены ни реформой цен, ни принятыми с тех пор мерами. Для того, чтобы найти удовлетворительное или приемлемое решение, *предстоит еще выяснить, обсудить и решить много вопросов. Работа в этом направлении уже началась.* Ее результаты, разумеется, еще неизвестны, пока что можно установить лишь то, что на основе имеющегося опыта и состоявшихся дискуссий вырисовываются два важных направления. С одной стороны, весь опыт подтверждает, что с чрезвычайными диспропорциями, вытекающими из дотаций к потребительским ценам, нельзя примириться на продолжительное время, а так как устранить их за короткое время невозможно, следует для этой цели разработать долгосрочный план. С другой стороны, по-видимому, необходимо приблизить соотношения наших цен к соотношениям мировых цен, что означает, разумеется, возможность движения в пределах довольно широкого диапазона. Но так как вопрос связан с перестройкой всей нашей хозяйственной, прежде всего производственной структуры, он также требует составления долгосрочного плана.

Я не собираюсь здесь вдаваться в детали, но, чтобы указать на далеко идущие последствия, все же упомяну, что упорядочивание нашей системы цен должно быть увязано с системой наших международных экономических связей, и, *таким образом, наша система цен тесно связана с вопросами нашей валютно-финансовой системы, в частности, с вопросами обратимости валюты.* Но эти вопросы уже нельзя обсуждать без рассмотрения основных вопросов равновесия народного хозяйства, в первую очередь, сбалансированности покупательной силы и товарного фонда, равновесия внешнеторгового и платежного балансов, равновесия рынка капитальных вложений и сбалансированности государственного бюджета.

Распределение прибыли и регулирование доходов работников предприятий

Второй рассматриваемый мною круг проблем, — как я уже отметил, — это регулирование распределения доходов предприятий. Оно решающим образом влияет на поведение предприятия и посредством этого — на формирование всех народнохозяйственных процессов. Мы говорим о том, что одной из важных характерных черт нашей системы хозяйственного управления является заинтересованность предприятий в прибыли, или, иначе говоря, основным показателем эффективности работы предприятия является прибыль. Это в принципе и в общем так и есть. Правда и то, что руководство и коллектив предприятия заинтересованы в росте прибыли, ибо он открывает возможность роста их личных заработков и расширяет возможности развития предприятия. Однако как раз *заработки растут вовсе не соответственно прибыли предприятия, а по мере возможностей, допускаемых предписаниями по регулированию доходов предприятий.* Между тем работники предприятия все же заинтересованы в первую очередь в формировании своих личных доходов.

Одним из основных элементов регулирования распределения доходов является *разделение прибыли предприятия на доли развития, участия в прибылях и на резервный фонд.* Это разделение жесткое и общее, хотя в некоторых отраслях, как, например, в горнодобывающей промышленности, энергетической промышленности, на транспорте, в госхозах или в промышленности строительных материалов и пищевой промышленности, оно несколько иное, чем в промышленности в целом, и в области регулирования были осуществлены некоторые изменения в 1970 году, а затем вновь при переходе на четвертую пятилетку (в 1971 году). Эти изменения не затронули разделения прибыли на основе централизованных предписаний на доли развития и участия в прибылях и на резервный фонд, но изменили соотношения упомянутых фондов и, отчасти, метод и размер налогообложения.

Использование доли развития имеет решающее значение в формировании структуры предприятия и техническом развитии. Но эти вопросы я рассмотрю отдельно в последующем разделе. В связи с резервным фондом особых проблем на практике не возникает, поэтому здесь я остановлюсь только на фонде участия в прибылях.

Формирование этого фонда с самого начала наиболее сильно занимало внимание коллективов предприятий, что само собой разумеется. Из этой доли прибыли складывается после уплаты налогов и других платежей фонд участия в прибыли, который служит источником материального поощрения коллектива предприятия сверх заработной платы. Ничуть не удивительно, что руководство и весь коллектив предприятия пристально следит за формированием фонда участия в прибылях и учитывают это также и при разработке политики предприятия в отношении развития, рынка, цен и оплаты труда. *Если нет прибыли, разумеется, нет и фонда участия в прибы-*

лях и нет покрытия для выплаты материального поощрения сверх заработной платы. Фонд участия в прибылях, однако, может уменьшаться не только вследствие уменьшения прибыли предприятия, но также и тогда, если повышается выплачиваемая предприятием средняя заработная плата.

До введения реформы в дискуссиях о фонде участия в прибылях на первый план выдвигалась проблема дифференциации заработков. В общем имело место единство взглядов по вопросу о том, что необходимо заинтересовать весь коллектив предприятия в эффективности работы предприятия, и в соответствии с этим весь коллектив должен участвовать в прибыли. Это, разумеется, ведет к дифференциации заработков. Работники предприятий, работающих более эффективно, достигающих большой прибыли, получат больше, чем работники предприятий, достигающих меньшей прибыли. Было согласие и в том отношении, что *разница не должна быть слишком большой:* токарь, работающий на высокорентабельном предприятии, не должен зарабатывать вдвое больше токаря, *работающего настолько же хорошо*, но на предприятии, достигшем меньшей прибыли. Обоснованными казались относительно большие различия — в зависимости от прибыли — в доходах руководителей предприятий. Ведь, как-никак, от них могут решающим образом зависеть результаты деятельности предприятия. Казалось правильным, если они будут в повышенных размерах участвовать в прибылях, то есть пусть в благоприятных случаях участие в прибылях составит значительную часть их личных доходов. Но не казалось обоснованным придавать такую большую роль прибыли в формировании заработков рабочих и служащих на невысоких должностях. А если основную часть их заработка составляет заработная плата, то следует предусмотреть преграды стремлению к безудержному повышению заработной платы на предприятиях. Соответственно этому соображению формирование и распределение фонда участия в прибылях было урегулировано таким образом, что, с одной стороны, было сделано резкое разграничение между руководителями, кадрами среднего звена и простыми работниками предприятия и, с другой стороны, было установлено, что если средняя почасовая оплата повысится по отношению к исходной, то из фонда участия в прибылях следует внести в госбюджет сумму, равную полной сумме повышения средней заработной платы по предприятию.

Надежды и соображения, придававшиеся в 1966 году планируемой новой системе регулирования, хорошо отражаются следующим отрывком из Директив: «Такое регулирование повышения уровня заработной платы . .. по-другому будет влиять и на формирование численности рабочей силы, чем нынешняя система прямого, административного регулирования средней заработной платы. Если предприятия сильно заинтересованы в прибыли, то они не будут без нужды увеличивать численность рабочей силы, ибо это привело бы к снижению прибыли и той ее части, которая остается у предприятия. При этом сократился бы и создаваемый из прибыли фонд участия, который при-

шлось бы распределять между большим числом работников, т. е. на одного работника приходилась бы более низкая сумма для повышения заработной платы и доплат. Сильная заинтересованность в прибыли, таким образом, противодействует стремлениям к увеличению численности рабочей силы». [5]

Практический результат отнюдь не соответствовал ожиданиям. *Хотя нам и удалось достичь ограничения дифференциации заработков, однако, это было достигнуто такой ценой, которая не оправдывалась этой целью.* Неучтенные побочные эффекты оказались более серьезными, чем ожидаемые основные результаты. Вскоре пришлось упразднить резкое разграничение между руководителями, кадрами среднего звена и простыми работниками, ибо оно вызвало неприязнь широких масс. Еще более неприятные последствия имело предписание, согласно которому следовало уменьшать фонд участия в прибылях на полную сумму заработной платы, выплаченной вследствие повышения средней заработной платы. Хотя прежний административный метод регулирования средней заработной платы был отменен, новый метод привел к тому, *что стремление к соблюдению среднего уровня заработной платы действовало с еще большей силой, с железной силой экономической необходимости.* Тщетной оказалась и надежда на то, что заинтересованность руководителей и коллективов предприятий в более высокой прибыли будет препятствовать стремлениям к технически необоснованному увеличению численности рабочей силы. Неудержимо сказалось стремление к предотвращению роста среднего уровня заработной платы. В то же время необходимо и неизбежно было повышение заработной платы некоторым категориям рабочих во имя сохранения должных пропорций в оплате труда на предприятии. Под общим давлением этих двух сил широко применялось такое решение, когда средний уровень заработной платы соблюдался за счет приема на работу излишних, но получающих низкую зарплату работников, так называемой «ваты». Если *раньше нехватка рабочей силы имела место лишь в некоторых отраслях, теперь она стала всеобщей.* А поскольку нехватка рабочей силы была всеобщей, усиленно действовало и требование повышения заработной платы, выполнение которого стремились компенсировать путем дальнейшего принятия на работу излишних, но получающих низкую зарплату работников. В то же время всеобщий недостаток рабочей силы способствовал ослаблению трудовой дисциплины в широких масштабах.

Такая обстановка уже в 1970 году вызвала необходимость в определенном изменении регулирования заработной платы. Были несколько смягчены материальные санкции против повышения среднего уровня зарплаты и были введены определенные материальные санкции против увеличения численности работников. В начале четвертой пятилетки были произведены дальнейшие изменения в регулировании оплаты труда. Была предоставлена возможность к повышению на льготных условиях уровня заработной платы в определенных пределах, в зависимости от совокупного роста суммы заработной

платы и прибыли в расчете на одного работника. Сверх этих пределов условия резко усугубляются, т. е. прогрессивно растет сумма отчисления в госбюджет за счет фонда участия в прибылях. Этот пересмотр окончательно не решил вопроса. Предписания стали настолько сложными, что на предприятиях даже специалисты с трудом разбираются в них. Положение улучшилось, однако не удалось достичь экономного использования рабочей силы. Предприятиям, как правило, и ныне выгодно принимать на работу «вату» с зарплатой в 1600—1800 форинтов, которая выше оплаты довольно широкого слоя работников непроизводственной сферы, например, санитарных сестер, работников торговли, младшего медицинского персонала и т. п. Росту численности работников препятствует, в основном, общая нехватка рабочей силы. Едва ли можно найти предприятие, которое стремилось бы сократить число своих работников.

Стремление к росту численности рабочей силы часто порождается и заинтересованностью в увеличении прибыли. Наиболее простым способом повышения прибыли для предприятия является, как правило, расширение производства без каких-либо нововведений в организации производства, его технике и технологии. А посему расширяют производство путем установки дополнительного, уже знакомого оборудования и найма новой рабочей силы. Нововведения, повышающие производительность труда, — дело трудное и рискованное, требующее экспериментов, нередко продолжительных, хлопотливых и дорогостоящих, причем без предварительных гарантий на успех. Если же предприятия различных производственных отраслей хотят увеличить свою прибыль путем повышения производительности труда, то они сталкиваются — наряду с прочими трудностями — с другим недостатком нашей системы регулирования заработной платы, заключающимся в том, что она мерит единой меркой там, где следовало бы применять разные мерки. Ведь в различных производственных отраслях весьма различны возможности повышения производительности труда.

Итак, вопросы регулирования доходов и заработной платы на предприятиях продолжают стоять на повестке дня. Вырисовывается направление, хотя и не совсем четкое и многими оспариваемое, к *ослаблению или прекращению нынешней тесной связи между участием в прибылях и уровнем заработной платы*, т. е. к раздельному регулированию системы участия в прибылях и динамики уровня заработной платы. Однако, пожалуй, следует идти дальше этого. Четыре-пять лет тому назад, опасаясь возможных промахов мы — в противоположность основной линии и духу реформы — чрезмерно связали руки предприятиям системой регулирования заработной платы. Думается, правомерен вопрос: не следовало бы в соответствии с духом реформы и в этом отношении предоставить предприятиям возможность — при соблюдении известных общих правил — самостоятельно устанавливать рациональную для них систему оплаты труда?

Регулирование капитальных вложений и модернизация производственной структуры

В качестве третьего и последнего вопроса я остановлюсь на взаимосвязанных вопросах развития предприятия, капитальных вложений и производственной структуры. Хозяйственная реформа сохранила за государством право принятия решений об осуществлении крупных капитальных вложений, но вместе с тем поставила целью усиление самостоятельности предприятий и повышение их роли также и в области развития. В 1970 году уже половина принимаемых решений о капитальных вложениях в промышленности и в социалистическом секторе в целом относилась к компетенции предприятий. Этим открылась возможность лучшего учета требований рынка и рентабельности также и в области капитальных вложений, расширения производства ходких товаров, постепенного преобразования и улучшения производственной структуры предприятий.

Как я уже отметил, статистически трудно уследить за структурными изменениями в производстве. По сообщению Центрального статистического управления, «единозначное и существенное изменение состава продукции можно наблюдать в тех отраслях, где это предписывается центральными решениями, утвержденными на высшем уровне и пользующимися предпочтениями программами». [5] Обследования отдельных предприятий и некоторые улучшающиеся показатели рентабельности все же указывают на то, что *многие предприятия правильно используют предоставленные им новые возможности. Они ликвидируют узкие места, модернизируют и новаторствуют и таким путем достигают положительных результатов.*

И здесь, разумеется, речь идет не о развитии, свободном от проблем и противоречий. Наша система регуляторов и в этой области породила непредвиденные побочные эффекты. Реализацию наших соображений затрудняло, тормозило, иногда и срывало непланируемое или непредусмотренное изменение как системы цен, динамики прибыли, так и рыночных условий.

Большинство исходных цен содержало значительно больше прибыли, чем предусматривалось по плану, причем это произошло независимо от рентабельности и эффективности деятельности предприятий. В результате этого *на предприятиях образовалось больше прибыли и фондов развития, чем ожидалось предварительно.* При введении реформы мы стремились с целью облегчения перехода обеспечить предприятиям, независимо от уровня их оснащенности, производительности труда, качества и ходкости выпускаемой ими продукции, по возможности, равные условия. Субсидии, применяемые для сглаживания трудностей в области производства или внешней торговли, в итоге толкали к уравниловке. Однако таким образом *для большей части предприятий были обеспечены более или менее одинаковые возможности развития.* Все это в совокупности привело, с одной стороны, к тому, что были

предъявлены требования по развитию, превышающие ожидания и возможности и, с другой стороны, к сильному рассеиванию, сравнительно равномерному и соответствующему старой структуре распределению этих запросов, то есть не только не служило, а, наоборот, препятствовало благоприятному, обеспечивающему более высокую эффективность преобразованию структуры.

Введенная в нашу систему цен масса субвенций, дотаций к ценам и возмещений чрезвычайно затрудняет оценку действительной эффективности работы предприятий. Не оправдало надежды и сложившееся на рынке положение, так как *между нашими производственными предприятиями едва встречается соревнование*. Редким исключением является случай с электроосветительной аппаратурой, когда с отечественным производством конкурировал импорт. Недавно на министерском совещании обсуждался вопрос о конкуренции в тяжелой промышленности и, согласно газетной информации, был сделан вывод, что «о настоящей конкуренции речь может идти только у предприятий, производящих синтетические моющие средства. Ее объективные условия заключаются в том, что мощности для производства синтетических моющих средств в настоящее время превышают потребности в них. Соревнование побудило предприятия к улучшению качества, внедрению новых сортов и снижению цен». Это отрадное явление является последствием, вероятно, менее отрадного факта, а именно, что в производстве моющих средств по-видимому, — этого мы конкретно не рассматривали, — были созданы излишние производственные мощности.

Конечно, не только регулирование цен, но и регулирование заработной платы имеет побочные эффекты в области капиталовложений, технического развития и преобразования производственной стуктуры. Наша система регулирования заработной платы такова, что *для предприятий нежелательны вложения в техническое развитие, если они требуют высококвалифицированной рабочей силы, имеющей высокие заработки*. Это вопрос не второстепенного значения. Носителем более высокой производительности труда является, как правило, передовая техника, более совершенное оборудование, материалы и технология. Их применение неудовлетворительно стимулируется действующими ныне у нас экономическими регуляторами не только в области оплаты труда, но и в области, например, внешней торговли, таможенных пошлин.

Однако было бы весьма ошибочно винить в *неурядицах, наблюдаемых на рынке капитальных вложений*, систему экономического регулирования. Если на основе централизованных и местных решений приступают к осуществлению капитальных вложений, объем которых превосходит возможности строительной промышленности, промышленности строительных материалов, обслуживающих строительство отраслей и имеющиеся ресурсы рабочей силы, и если в результате этого на рынке капитальных вложений на-

блюдается перенапряжение со всеми его известными пагубными последствиями, то за это *ответственность несет не хозяйственная реформа и не система регулирования, а авторы неправильных решений.*

На это надо указать не в защиту хозяйственной реформы, а ради справедливости. Хозяйственная реформа не нуждается в защите. На практике прошедших четырех лет она с успехом выдержала испытание, доказала свою жизнеспособность. Теперь уже неоспоримо, что можно и так вести плановое хозяйство, что *можно обеспечить планомерность, осуществление важных и правильных решений, последовательный прогресс в реализации намеченных целей без так называемой разбивки плана, без обязательных для предприятий плановых предписаний.* Нельзя и не следует ожидать от реформы, что она сама по себе, автоматически будет поставлять важные и правильные решения. Никогда, никто из знающих дело не утверждал и не мыслил, будто реформа призвана заменить управление народным хозяйством, научно обоснованную экономическую политику. Преимущества и пользу от реформы следует искать в другом. Раньше развертыванию способностей наших хозяйственных руководителей препятствовали — или, в лучшем случае, ставили в строгие границы — путы предписываемых им обязательных плановых показателей. Реформа открыла широкий простор их творческой деятельности. Неуклонно растет число руководителей, у которых вошло в плоть и кровь применение нового метода руководства, использование возможностей, предоставленных реформой, чтобы дать больше и достигнуть лучшего. Теперь необходимо обратить внимание компетентных органов нашего общества на то, чтобы как можно меньше высвобожденной громадной энергии не пропало даром и как можно больше энергии было поставлено на службу выполнения действительно правильных и важных решений.

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PRACTICAL EXPERIENCES OF THE HUNGARIAN ECONOMIC REFORM

I. FRISS

In the introduction the author briefly mentions the reforms of the economic mechanisms taking place in the CMEA countries. He establishes that the reforms have some common or at least similar features. Such are e.g., the growing importance of commodity and money relations, of enterprise autonomy, the changing role of profits etc. It is a particular and most essential feature of the Hungarian economic reform quite differently from the reforms in any other socialist country that since January 1st, 1968 the plans are no longer broken down to enterprises, the latter do not receive any obligatory plan indicators or instructions. Many tools are available to society — e.g. the regulation of prices, incomes, investments, foreign trade and credit — for subordinating the activities of enterprises, institutions and individuals to the most important economic objectives.

Analysing the practical experiences of the Hungarian reform, distinction must be made between the reform as a whole and the practical functioning of the economic regulators. The reform, that is, the basic idea proved to be correct. In contradistinction, the regulators are partly good, partly they are unsatisfactory. The most important indicators of economic development showed in the first years of the reform satisfactory progress according to the plan: certain — though not too wide — changes occurred in the pattern and efficiency of production. In part as a result of improvements in the pattern of foreign trade one dollar or one rouble can be procured with somewhat smaller forint inputs than earlier.

In connection with the operation of the regulators the author discusses three problems: the price system, the income distribution in enterprises and investments, as well as the structural development of the economy.

In analysing the price system, the article starts from the fact that prices have to reflect both the costs of production, and the value judgement of the markets and the state preferences as well. The author examines the grave contradictions raised in practice by the simultaneous meeting of these three requirements, and surveys the development of the price system and the price level since 1968. He establishes that in the long run we cannot put up with the disproportions due to consumer price subsidies, while, on the other hand, it seems necessary to approximate with the price proportions of the world market.

Investigating the income regulation, the author explains that the core of the system is the division of enterprise profits into development, sharing and reserve funds. From the very beginnings, the enterprise collectives have been most concerned for the development of the sharing fund, since, in the final analysis, this is what serves to cover the benefits above wages. Every worker of the enterprise has been made interested in profits. This leads to a differentiation of earnings but, simultaneously, we also wanted to forestall the coming into being of too great differences among wages. Next the author surveys the problems deriving from the concrete system of income regulation and states that, in the opinion of many people, the present close relationship between profit sharing and the wage level must be loosened in the future. The question also justly emerges whether it was not correct to give the enterprises the opportunity to work out autonomously their own wage systems, observing certain rules.

Finally, the author treats the interrelated problems of enterprise development, investments and production pattern. Investigating the deficiencies observed in the investment market he states: if, on the basis of central and local decisions, more investments are started than would be allowed by our possibilities, the blame should not be put on the economic reform or the system of regulators, but on those who took the incorrect decisions.

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R. Hoch

REAL PROCESSES AND MARKET PROCESSES

A special and essentially important field of economic management activity serving the increase of efficiency is branch-structural policy including foreign trade policy. The author suggests the index of trends in real returns as a measure of efficiency and a basis for ranking branches according to efficiency.

In the course of medium-range and long-range planning the question is being frequently raised as to whether the real processes or the commodity, value and money flows should be planned.

Planning problems

The following train of thought demonstrates the question: whilst within the earlier system of economic management based on instructions the real processes were contained in the plan, the reform of the mechanism aiming at a regulated market economy requires — *inter alia* — a *switch* to the planning of commodity flows and market processes. This reasoning, however, cannot be accepted.

In every social system the very *essence* of the economic processes are the real processes. In socialism, however — as compared with capitalism — the real processes are coming more to the fore. The advanced state and the further development of the socialist economy are expressed by such concepts as the Gross National Product, the final product, the national income, and, last but not least, by the evolution of the real income and the real consumption of the population.

Indeed, the basic economic purpose of the socialist system cannot be else than to raise the material wealth of society and the material well-being of the population.

Under commodity relations these real processes are expressed in commodity categories, by value and money flows.

Under socialism the market processes can and have to be regulated within well defined bounds. And they have to be regulated so as to promote the most advantageous development of the real processes.

It follows that in every kind of mechanism, in the first place, the development of the real processes have to be assessed by the plans of the national economy.

Relying on this, the development of the commodity and money flows should be also planned, precisely in order to ensure the reality of the planning of real processes.

Let us take for example the income and the consumption of the population. It is evident that the central indicators of either the Five-Year or the Fifteen-Year Plan are the level of real income, of real consumption and their distribution (according to categories by various criteria, e.g. per capita income), the development of incomes according to the sources and the breakdown of real consumption by commodities (or branches classified by activities). The medium-range or the long-range plans of the standard of living — as well as those of the whole national economy — would not be worth much if *instead of* the above indices the development of the national income of the population alone were assessed even if it included the structure of the expenditure of the population.

The planning of the real processes cannot be well enough founded without being *supplemented by the planning of the commodity flows*. The plans concerning the prices have special significance in this respect, especially for the planning of income and consumption: the consumer price plans. The price level, and especially the changes in relative prices, strongly affect the distribution of real income among the population and the distribution of real income according to commodity groups (and branches), as does the breakdown on the income according to sources (money-income and free benefits). The state preferences relating to the income distribution and to the pattern of consumption have to be established in the plans by decisions on price and income policy. It is impossible to plan equilibrium and balanced development without price plans. In this context, the planning of foreign trade, particularly in a country with an almost wholly open economy, is of special importance. No doubt, it is irrelevant for the planner of consumption *in the first approach* whether the goods required by the population will be produced at home or imported, and whether or not the branches distributing the consumer goods are carrying on an export activity besides meeting the domestic requirements. (It is of course not irrelevant for the efficiency of the national economy, the competition on the market of the consumer goods, the assortment of goods, the development of prices etc. which depend to a large extent on the development of foreign trade; eventually consumption too is affected by all this directly.) From the point of view of the national economic plan as a whole, however, the assessment of the price trends on the world market, the development of the terms of trade, and the expected development on the export markets etc. may have a primary importance.

Basically, the above statements also relate to the mechanism prior to the reform. It has been advocated even then that the price plan should be made part and parcel of the national economic plans. This was because in the course of the earlier medium-range (three- and five-year) plans consumer price changes were carried through that crossed the objectives of consumption and income plans, and price changes required for the implementation of the con-

sumption and income plans were *not* put into effect. However, there was no price plan consistent with and organically linked to the national economic plans. (The same refers to other fields of the national economy, e.g. the foreign trade plans as well.)

Under the regulated market mechanism it is becoming more and more important that a consistent price plan should be an integral part of the national economic plans, and that the planning of the real processes should be complemented by the plans of commodity flows. The importance of all this has considerably increased from the point of view of planning supply — including the planning of investments. The reality of these plans depends to a large extent on the development of sales revenues, prices, costs, profitability etc. of the enterprises. And looking at this problem from another angle: under these circumstances the national economic plans have also the function of providing guidance to the now much more independent companies, regarding their decisions in the field of development, for this purpose too, it is indispensable that the national economic plans should cover commodity flows as well.

Summing up: it is not characteristic of the regulated market mechanism that the planning of the real processes is replaced by *planning* at current prices. The national economic plans have to assess the development of the *real processes* in the first place. The significance of the planning of the real processes is not determined by the number of direct plan-indices. There are, however, two important features worth noting. First, the planning of the commodity flows has to be given a greater emphasis than prior to the reform. (And if the price plan was then not an integral part of the plan — though it ought to have been — we have to make it now. This making up for the earlier deficiency, however, might lead to the optical illusion as though it was only now becoming necessary.) Secondly, — and this is the decisive difference: prior to the reform the targets of the plan have been implemented by direct control, through instructions given to the companies mainly in volume terms. By contrast, the current system of control tries to achieve the objectives of the plan in the first place by economic incentives and regulators; at the same time, the plans are kept under control by the market processes.

Planning at unchanged prices—planning at current prices

The traditional method of Hungarian planning consists in the application of the so-called unchanged prices, or to be more precise, of the prices of the base period prior to the planning period. We measure and plan the volume of the aggregates handled by the national economic plan mostly by the method of the constant prices. This leads to problems and contradictions resulting from the measurement of volume at unchanged prices which are well known.

In comparing sets of goods of heterogeneous composition and of changing structure (e.g. national incomes of various countries or of different dates), generally, we cannot tell precisely how many times bigger is the one than the other. Usually, we can only arrive at approximations saying that the per capita national income in country A is considerably or only slightly higher than that of country B or may be, by and large, identical. The same is the situation when comparing data for different periods, say 1960 with 1970.

In order to avoid any misunderstandings: it does not follow from all said above that real processes cannot be quantified, or that the method of unchanged prices would be unfit for use. But this type of quantification is subject to limitations and contradictions and requires careful interpretation.

These problems do not crop up when we apply the method of current prices. In this case, the actual difficulty concerns mainly the price-changes. At current prices we can state unequivocally and without any contradiction how many times is bigger the money income in one period than in another, or what is the structure of expenditure according to commodity types in the various periods or in individual countries. These figures do not tell anything about the development and the level of the economy or about the living conditions of the population. These figures have important economic implications, they show, for example, the magnitude of supply at current prices to be set against the total money supply representing demand; they indicate, furthermore, how the market for the individual commodity groups develops. However, these indices at current prices do not give us sufficient information concerning the degree and the course of the development to be adopted for the economy. A given change in real structure — depending on the plans and assumptions regarding the prices — may appear in various price terms and structures at current prices. And the other way round: a given amount and structure at current prices may raise various requirements against the development of the real level and the changes in the real structure.

The obvious conclusion is that planning is required both at current prices and at unchanged prices. Although the relationship between them may be close, planning at unchanged prices reflecting the *real processes* cannot be replaced by planning at current prices, moreover, the former one has to be built on the latter and the two methods are complementary in the technique of the planning process.

Consumer price-planning

The price-plan is a condition for planning the real processes, and the *sine qua non* of planning at current prices.

Price-planning is an extremely complex task; a great deal of uncertain factors are involved.

The consumer price-plan would have to be developed in the following steps. (There is of course a certain amount of overlap among these and their sequence may also change.)

1. If no change in consumer price relatives is assumed, a certain demand structure would develop; this can be assessed. The first question is: does economic policy wish to divert demand from *this future pattern of consumption* and if so: in which direction and to what extent? This strategy must embrace the preferences relating to both consumption and incomes policy, and it is here where we first meet the well-known difficulties concerning the calculation of price-elasticity with respect to demand. Our data and our methods are still too deficient for enabling us to tell reliably the extent (and not only the direction) to which modifications in relative prices are necessary in order to bring about a change in the structure of demand which is desired, in conformity with current preferences.

2. What changes are likely to take place in the input relations? How will the input proportions and the cost-proportions develop in the plan period? In order to be able to give a reply we have to know — apart from the development of the technological coefficients — the price trend of the factors of production as well.

3. Prognostication of the world market prices. For both the development of consumer prices and for economic planning in general, it is decisively important to forecast, how will the world market prices of our imports develop and what prices shall we achieve for our exports in the plan period?

4. Establishing the equilibrium price-system. By confronting the preferred demand structure with the existing *supply facilities*, we try to answer the question: is it necessary to alter the structure of supply in order to satisfy planned demand? What kind of changes in the price relations are required on the supply side, and — taking into account the limitations concerning the possibilities of changes in supply — what kind of price-changes would ensure market-equilibrium? Is there a consumer price-system at all which will adapt demand to the structure of supply if the latter cannot be modified any further? To what extent can we expect the equilibrium price to develop automatically, and in which cases will central measures be required?

For establishing the equilibrium price-system the knowledge of price elasticity is indispensable, i.e. it is necesary to explore the behaviour of prices as a function of demand and supply. However, any such calculation assumes the knowledge of price elasticities with respect to demand, as well as with respect to supply. (The elasticity of prices with respect to supply means a change in supply corresponding to a one per cent actual or expected change in the price of a given commodity.)

5. Finally, on the basis of everything set out above, the development of the *general price-level* in the plan period can be assessed.

The time-horizon of the plan and the planning at current prices

On the basis of the above the price-plan and the plan at current prices can be drafted. Considerable factors of uncertainty may nevertheless remain and it might easily occur that there will be an appreciable deviation between the planned and the real indices at current prices (e.g. those covering the amounts of investments) not only at the end of the plan period but perhaps already in the initial year of the plan.

Furthermore, the longer the period we are prognosticating for, the more uncertain the price-plans become, especially towards the end of the period and, for the same reason, the plans at current prices as well.*

It has been said above, that the plans referring to the real processes ought to be complemented by the price-plans and the plans at current prices. This may now be modified as follows: depending on the length of the plan-horizon the indices at unchanged prices and those at current prices will play different parts. In the annual plans mainly the decisions on the system regulating the real market conditions, the figures of the current budget etc. have to be covered, current prices have therefore the greatest importance in the annual plans. The indices of the real processes come much more into the fore in the medium-range national economic plans. Finally, in the long-range plans the indices of the real processes predominate. This of course is not meant to say that the shorter the plan period the less the significance of regulating the real processes or indeed that of constant prices.

The long-range plans express the *strategy of the Party and the State in the area of economic policy* (as well as other aspects, such as in the field of *social policy*). This strategy refers evidently to the real processes. The medium- and short-range plans are basically tactical decisions serving the implementation of the strategic, long-term aims, although they often criticize the strategic ideas.

In the last resort, the concrete short-term regulation of the market has to serve the development of the real processes planned in perspective — adapting it to the current situation. It is here that current prices become the most important.

Of course the significance of planning at the two sets of prices is not shown by the number of plan indicators concerning directly the real processes and those calculated at current prices.

Although lengthening the plan period reduces the reliability of planning the market conditions, the conclusion does not follow that planning systems

* Among the assumptions in the systems of long-range decision of the capitalist big corporations the market categories occur (the profit to be expected, the expected trend of prices); the *decisions* refer directly to development.

alone built on sound price-plans and reliable plans at current prices should be taken seriously. Namely, in this case we would have to renounce to drawing up and implementing a strategy of economic policy. Without strategy the tactics in the field of economic policy would become independent, guideless, and the medium- and short-range plans missing their framework. Moreover the short-term, yearly plans would have to be considered as the centre of gravity in planning. (This was one of the rightly criticized deficiencies of the mechanism prior to the reform.)

Economic objective and economic efficiency

It still is a moot point as to what is the development objective of our economy. Is it the increase in the consumption of the population (including investments directly serving the population) or the raising of national income (may be the social end-product) as a mass of goods (including consumption too)? In this argument I agree with those who consider the *development of per capita real consumption* as the lasting and permanent measure of the success of the activity of the socialist economy. Apart from peculiar historical situations and periods, the working of the economic machinery cannot be sound if accumulation becomes the end, instead of remaining the means for raising the income of the population.

From the point of view of the main question under discussion, however, it is almost irrelevant which category is being taken as the objective of development. In both cases a mass of use value is to be handled, their increase belongs to the sphere of the real processes. The strategy of economic policy aims at the acceleration of their growth and at closing the gaps between our needs and our possibilities. From year to year, more and more flats, medical service, meat, motor-cars etc. are needed. The form of appearance of all these is their costs at current prices and their price-sums (if they have any price at all — cf. free benefits). Yet, the needs are real, they are not just price-sums at current prices.

The national income and directly the rate of growth of consumption depend on the degree of operative efficiency of our expanding sources of production.

The rate of growth of national income and of consumption is not yet equal to efficiency. Efficiency is expressed by the returns of the productive resources*. In other words, returns express the *mass* of national income, in the last resort, the mass of consumer goods made available by means of the resources at our disposal.

Yet, — due to the earlier mentioned peculiarities of measuring volume — this relation cannot be interpreted in a static way for an isolated period. The

* For an explanation of the principle of returns see [1].

total at current prices, referring to a definite period, of the national income or of consumption, can also be set against the costs of production of the same period. Although this relationship is economically meaningful, it is *not* an indicator of efficiency: it expresses profitability on a national level.* This is not identical with efficiency. Changes in the profitability of the national economy and changes in efficiency are not necessarily coinciding either in their extent or even in their direction. Efficiency may deteriorate, whilst the national economic profitability is rising. E.g. the consumption of the population, taken in the broad sense, develops in an adverse way, nevertheless profitability is growing. And vice versa: the efficiency, the real returns may improve while profitability on a national economic level simultaneously declines. That is to say that the economy is developing quickly, even accelerating whilst e.g. the level of live labour costs and real income increases. In this case the improvement of efficiency is the condition for the accelerating growth rate of consumption at the cost of a relative decrease in productive accumulation.

The appropriate *volume and growth* of the net incomes of the economy is one of the decisive *conditions* of the favourable development of the economy and of the desirable trend in efficiency. Yet, mixing up the *condition* with the purpose of development may cause serious confusion. The target is *not* to increase the mass of the net incomes of the economy or to raise its *relative extent* (its growth rate). The immediate target of the state's budgetary economy or of the state as an economic entity is to increase the net income. However, this is not the sole and not even the most important economic function of the socialist state. First and foremost, it has to represent the interests of the society, the population, as a whole. The very essence of socialism will be distorted by confusing these two functions of the state, if the budgetary economy does not further the interests of the whole society, but replaces it and assumes a primary role.

I have said that efficiency is equal to the real yields, but this relationship cannot be expressed in a static way. The *relative change* in the real returns of the sources of production can be measured. By using the usual methods of measuring volume, interpreting and treating it in the manner mentioned, the relative (per cent) growth of the national income or the consumption can be assessed in a given period. Likewise, the extent of the growth of the resources in the same period can be expressed either in value or in volume terms. By comparing these two indices we arrive at the trend of the returns, i.e. how many units (per cents) of the growth in the national income or consumption will be the result of a unit growth in the resources.

* $\dfrac{\text{Price-sum at current prices of the national income}}{\text{Output costs}} - 1 = \dfrac{\text{Net incomes of the economy}}{\text{Output costs}}$

$$\text{Trend of the returns}^* = \frac{\text{Growth of consumption in per cent}}{\text{Growth of resources in per cent}} =$$

$$= \frac{\text{Efficiency of the additional resources}}{\text{Average efficiency of the resources already tied up}}$$

If this index, which has the character of a specific coefficient of elasticity, has a value below unity, it expresses a deterioration in efficiency; if it is equal to unity, it expresses constant efficiency; and if its value is larger than unity it shows an improvement in efficiency.

To increase efficiency in these terms, i.e. to raise the value of this coefficient, is a basic economic task.

In the numerator of the above index of returns there is a volume-index; for this, unchanged prices are to be applied. This index of the trend of returns is not meant to express more than relations regarding orders of magnitude, and nothing more should be expected from it. Its role is to show whether the yields in the various periods compared are smaller or larger or approximately the same. Similar indices relating to the yields of branches, however, will give the ranking by yield of the individual branches (industries). In order to check whether these size relations are unequivocal, this type of calculation should be repeated in alternative ways. If, however, the course of returns on the national economic level is not unequivocal when using alternative measures (e.g. there is a growth in returns by one approach, and a decrease by another), there is presumably some trouble with the trend in efficiency.**

Real efficiency and the structure of output

The trend in total real returns of the resources of production, hence the possibility of its improvement, depends on a number of factors.*** I am going to emphasize only one of them: the allocation of resources among industries.

* In a formalized expression:

$$\frac{\Delta C}{C_0} : \frac{\Delta K}{K_0} = \frac{\Delta C}{\Delta K} : \frac{C_0}{K_0}$$

where ΔC = additional consumption
C_0 = consumption in base year
ΔK = additional resources
K_0 = resources tied up

** Calculations which are in many respects similar to the above were carried out by the Institute for Economic Research, see [2].

*** The more important factors:
— The system of economic control and management.
— The combination of the individual resources (e.g. live and embodied labour) with each other.
— The quality standard of the applied technique and of the labour.
— The volume of accumulation and, generally, the relationship between demand and supply of investment goods.
— The allocation of resources among industries.

It is evident that the trend in the allocation of the resources among industries, and the development of returns as its function, are determined by the combined effect of central decisions and regulators as well as by the operation of the market. Our question is: taking the listed (and not listed) factors as given, how will the combined efficiency, the aggregate return of the resources depend on their distribution among industries? In what way can we increase the combined return of the resources by changing their allocation? What is to be done by the socialist state in the respect?

The very essence of the principle of the returns can be summed up as follows: The indicator showing the change in real returns can be calculated separately for the individual industries (as well as for the commodity groups produced by them) and on this basis the branches can be ranked. (For this ranking the assessment of relative magnitudes alone is required.*)

The efficiency of the national economy will improve if the weight of the branches with the most advantageous trend in returns is on the increase (e.g. for one per cent growth of resource input the highest percentage in the growth of output is found), while the weight of the branches with the most disadvantageous trend in returns is declining. The relations among returns are subject to change with the passing of time, and therefore, the lists are to be re-examined from time to time.

The list of indices showing the development of returns may serve as a *system of preferences* for the economic leadership, on the basis of which it can stimulate the development of certain branches, while restraining that of others, in order to improve total efficiency. It is a matter of decision, depending among others on the type of the economic mechanism, whether the full list of returns serves as a basis of economic policy with respect to industries, or preferences are given only to the best branches while "braking" the worst ones; and, in the latter case, how broad is the zone covered by the central preferences. Stressing what is important: it belongs to the essence of a socialist planned economy that the state should conduct an industrial policy aiming at and resulting in the growth of total efficiency. Any structural policy can only be asserted within well-defined technical, economic and social limitations. In theory the limiting factors are included into the principle of returns as a structural conception intended to optimize the development of efficiency; without them it cannot be interpreted at all [7], as indeed they would affect in the same way every type of structural policy. If e.g. economic policy intended to develop an equilibrium output structure corresponding to input-proportion-

* The major limits are the following: 1. The elasticity of demand with respect to income and prices. 2. State preferences referring to consumption. 3. Incomes policy. 4. The principle of minimum profitability. 5. The limits to the allocation of the productive resources and to their reallocation. 6. Foreign trade.

ate prices, the limiting factors were — with some modest modification — the same.

Foreign trade and real efficiency

In a country with an almost totally open economy, a structural policy aiming at efficiency cannot be pursued without taking foreign trade into consideration: or rather, the pursuit of efficiency must be an integral part of foreign trade policy.

What is the basic interrelation between the trends in foreign trade and real efficiency? Let us elucidate the essence of this interrelation by an unusual abstraction. The model of a closed economy is often used by economists. Let us now take the inverse assumption and suppose that all products of a country will be exported and not consumed (the necessary raw materials are produced at home) and all end-products to be consumed are imported. The interrelation between foreign trade efficiency and that of the economy is evident: what amount of imports can be acquired by the inputs embodied in the wholly exported domestic production? The purpose of the export is clearly not the procurement of a certain amount of foreign exchange, and efficiency is not measured by the nominal magnitude of the latter. The target and the indicator of efficiency is the mass of commodities purchasable for this amount of foreign exchange on the international market.

There are two basic ways for improving efficiency in the above extreme model:

⁰A shift in the composition of the domestic production, consequently of the exports, in order to increase the foreign exchange yield of one unit of domestic input on the basis of the interrelations of the domestic input relations and the relative export prices. (Assuming, of course, that the sale abroad does not meet with restrictions.)

⁰A shift in the structure of imports so that for a one per cent increase of the disbursements in foreign exchange an increasing percentage of the volume of imports should be attained.

When loosening the model of the entirely open economy, the following have to be added to the above:

⁰A considerable part of the industries may be restricted to meeting home requirements; others may export as well. The development of the returns of a given industry, as well as the structure of total exports, and the magnitude of the domestic inputs required for procuring a unit of foreign exchange will be different, depending on the pattern of exports and the various returns of the exporting companies and/or the exported products.

⁰A great part of the home requirements (both for production and consumption) can be met by home production or by imports only, or by both

of them. (The import of finished products can render the import of raw materials unnecessary, and *vice versa*). Similarly, the efficiency of domestic production, the structure and the returns of imports and, consequently, the entire real efficiency of the national economy may eventually depend on these variations to a considerable extent.

It follows from all of this that the principle of returns is closely linked with the theory of comparative advantages.

In other words: the planning of foreign trade — which is impossible without regard to real market processes — has to serve the more favourable development of the basic real processes and the improvement of real efficiency.

Policy for prices and profitability

Transformation of the structure of the economy is limited by a number of factors. The most important ones have been listed above. These constraints, however, may be eased. The policy with regard to prices and profitability is a very important means for achieving this.

Among the limitations to the transformation of structure I have mentioned the pattern of consumers' demand. The structure of demand develops as a function of various factors. The tendencies of changes in distribution by major commodity groups are decisively determined by the income effect. The pattern of demand can be influenced — once again, within limits — by a shift in relative prices.

Should the state have a preferential system *of any kind*, a primary condition of its enforcement is that, by reducing the price and keeping it on a low level, it should assure a broad market for preferred commodity groups (assuming, of course, that demand does not exceed supply) and that it should tighten the market of the dispreferred branches by raising the price and keeping it on a high level.

In the mechanism prior to the reform the orders of the plan and the decision covering the central allocation of investments were sufficient for shaping the structure of supply according to a system of preferences. (It is another question that the systems of preferences were not consistent either, and the supply plans were often not in conformity with the preference systems.)

Within the terms of the regulated market mechanism, however, the structure of supply may develop according to the scales of preferences only if enterprise profitability, consequently *their interests* and development potentialities, are in accordance with it. We can only stimulate the growth of the industry preferred, if the profitability in that industry's enterprises is relatively high; on the other hand, the growth in the output of the dispreferred branches can be restrained only by limiting at a lower level the profitability of the enterprises belonging to it.

Consequently, the enforcement of the preferential systems assumes a price policy and profitability policy serving the same goal, but with opposite sign in the sphere of consumption and in that of the producing enterprises. The product of a preferred branch should carry low consumer price and nevertheless high profitability for the enterprise. The product of a branch dispreferred should have a high consumer price and, in spite of this, low profitability for the enterprise. The deviations should appear in the centralized net incomes of the economy.

Once again I emphasize: all of this is valid for any system of preferences serving a healthy and civilized pattern of consumption. But, by implication, this policy of prices and profitability, serving the same goal, but with opposite sign in the sphere of consumption and in that of the enterprises, may be useful also for the preferential system with respect to branches, corresponding to the principle of returns and designed to increase efficiency.

It may be asked, how can one differentiate branch profitability according to any system of preferences when the individual branches consist of enterprises operating under different conditions, or even belonging to different sectors. (Exception: the country-wide company covering one branch in a monopolistic way. This, however, is generally not desirable in a market mechanism.)

Indeed, the profitability of the branch emerges as the average of the profitability of various enterprises which deviate from each other. If the rate of profitability is of average size, within every branch, and within the branch the profitability of the enterprises shows signs of dispersion, the average enterprises will attain an average profitability, those better than the overall average a higher profitability, and those below this average a lower profitability. If, however, profitability is differentiated among branches, even an enterprise which would show a deficit as compared with the overall industrial average profitability, can be profitable within the preferred branch whose average profitability is below the overall industrial average. And the "extra-profit" of the profitable enterprises would be very high. Accordingly, development funds would be available within relatively many enterprises and in large amounts. But within the dispreferred branches even the enterprises still profitable by branch profitability could become losers and incapable of development. And the formation of the "extra-profit" would be smaller with the better enterprises as well. Consequently, the pressure may be greater and the selection stricter in the dispreferred branches. There may, of course, be in these branches, too, enterprises operating in such an excellent manner as to achieve a high profitability in spite of the pressure and capable of quick development. The trend in the branch returns may improve, provided the proportion of the output of these enterprises grows quickly within the branch. A change in the classification by returns may be caused — *inter alia* — by this

procedure and necessitate the re-examination from time to time of the preferential system with respect to efficiency.

We have to modify to some extent the above statements as well when taking foreign trade into consideration. The changes in the patterns of consumption and domestic production may considerably deviate from each other. (The importance of foreign trade for economic planning differs from that for the planning of consumption!) This deviation can point to various directions. Let us take for example the case where the import of a certain commodity group appears to be favourable as compared with both domestic production and the import of other commodity groups. In this case the domestic market should be expanded. Yet, it is not reasonable to secure a higher than average profitability for the domestic productive enterprises. Just the contrary! Or conversely: the export of the products of a certain branch appears to be advantageous (and the sales possibility, too, appears to be ensured). As a consequence, the given branch is worthy of being given a development possibility greater than average. However, it is not (or not unconditionally) reasonable to expand the domestic market. (But the opposite may also occur: the contraction of the domestic consumer market may not be reasonable.)

Summary

National economic planning has to serve the real processes, first of all, the growth of the broadly interpreted consumption of the population. This target is formulated in the strategy for the development of the economy of the Party and the State. This task requires that the plans should embrace the trends of commodity and money-flows as well and this basic necessity cannot be influenced by the difficulties stemming from the measurement of volume. (When planning at current prices we may also encounter difficulties which are of another kind, though of no smaller extent.) A special but indispensably important field of the activity, designed to increase the efficiency of economic management is structural policy with respect to industries, including foreign trade policy. The objectives of this policy must be supported by a suitable policy of prices and profitability as well.

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РЕАЛЬНЫЕ И РЫНОЧНЫЕ ПРОЦЕССЫ

Р. ХОХ

Народнохозяйственное планирование должно исходить из реальных процессов, в первую очередь, из роста потребления населения в широком смысле этого слова.

Реальность планирования реальных процессов требует, чтобы планирование в текущих ценах и планирование цен являлись органической частью народнохозяйственного плана. В условиях регулируемого рыночного механизма возрастает роль планирования в текущих ценах. Планированию рыночных процессов следует придавать особенно большое значение в текущих планах. Но и эти планы должны служить стратегическим целям долгосрочного развития народного хозяйства.

Особой, но исключительно важной областью управления народным хозяйством, деятельности по повышению эффективности является формирование межотраслевой структуры, подразумевая под этим также и внешнеторговую политику. Автор предлагает в качестве метода измерения эффективности и установления порядка отраслей по эффективности динамику показателя реального результата. Динамика реального результата — это процентный прирост объема выпуска, получаемый за счет увеличения затрат на один процент.

Государственное формирование межотраслевой структуры и реализацию т. н. принципа результативности следует проводить и с помощью соответствующей политики цен и доходов.

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THE OPTIMAL RATE OF GROWTH OF THE CAPITAL STOCK*

The share of investment in the national income is one of the most important indicators used in national development planning. The present level of consumption, the rate of economic growth, and, consequently, the future level of consumption depend highly on the value of this share: it is therefore most important to determine the best possible planned value of the rate of investment, i.e. to optimize this index. This paper deals with this problem.

The proper choice of the share of investments is made difficult by two widely held but not completely well-founded views. First, it is frequently assumed that the growth rate and thus the future level of national income and consumption are monotonous functions of the share of investments. This suggests that greater investments always lead to higher growth rates and higher future consumption levels. Secondly, this leads directly to the view that the best possible ratio of investment is the highest level that can be attained under given ethical and political constraints. This rate of investment, according to this second view, leads to the highest possible level of national income and consumption in the more distant future.

This paper, using a mathematical model, tries to point out some limitations of these ideas. Namely, it can be proved that total consumption is not a monotonously increasing function of the volume of investment, and if investment is pushed beyond a certain critical level, total consumption actually decreases. Consequently, it is possible to determine the optimal level of investment leading to maximal consumption, and this optimal level does not necessarily coincide with the highest possible level of investment. Furthermore, with the help of some numerical calculations where probable values of the critical parameters of the growth process are used it can also be shown that

* The research underlying this paper was conducted in connection with the preparation of the econometric model of price planning, under the auspices of Országos Anyag- és Árhivatal (Hungarian National Materials and Price Office), at the Econometric Department of the INFELOR Rendszertechnikai Vállalat (INFELOR Systems Engineering Institute). The computations were made on the MINSK-2 computer of the INFELOR. We are indebted to Miss Edith Czitrom for the computer programme and the electronic calculations as well as to Mr. Pál Pölöskei and Mrs. Márta Sulyok-Papp for their participation in the research.

this optimal level of investment lies in the domain of real world values and may therefore be attained.

These results may be supported by simple logical arguments as well. To this end let us consider a fully developed national economy where net investment is going on while the level of technical knowledge and the quantity of labour force remain unchanged. Output is certainly growing under such circumstances but the percentage increase of output will be smaller than that of capital. The reason for that is that the level of output depends on many other factors, first of all on labour input and the level of technical knowledge, and thus — if capital stock is increasing while the other growth factors remain unchanged — the percentage increase of output cannot attain the rate of increase of the capital stock. Capital coefficient will therefore increase or, in other words, output per unit of capital will decrease.

The increase of the capital coefficient leads, however, to a reallocation of gross production. It may be assumed as a first approximation that maintenance costs and depreciation charges are directly proportional to capital stock and a growing capital coefficient leads therefore to an increasing share of capital costs. These latter costs represent therefore an increasing share of the increments of output, while the increments of output themselves are decreasing with respect to the increments of capital. Under such circumstances the point where the increments of production is just enough to cover the increment of capital costs must sooner or later be reached and at this point the increment of net production — i.e. of production exceeding capital costs — vanishes. If investment is pushed beyond this point, the increment of net output defined here becomes negative. This means that any further increase of investment decreases the share of national income available for purposes unconnected with the extension and maintenance of capital stock. The extension of investments beyond this point cannot be considered as rational, and this point can therefore be considered as the rational maximum or, in other words, the optimum of investment.

Several mathematical models were built on these and similar reasonings, some of which have also been published in Hungarian [5], [6]. The results obtained from these models apply only to simplified theoretical cases and are therefore unsuitable for numerical analysis of real economic problems. In these models it is usually assumed that economic progress proceeds along a given equilibrium path for a longer period, although this does not hold for real growth processes. The problem how the parameters of the production function — such as the rate of returns to scale, the elasticity of substitution and the rate of technological change — influence the magnitude of the optimal investment rate is also neglected in these models, although the question of the dependence of the optimal volume of investment on the rate of increasing or decreasing returns to scale or on the various rates of technical change may be

of great importance for the analysis of real growth processes. Finally, the theoretical results obtained until now do not take into account depreciations, repair costs, and the optimal length of life of capital assets, although these factors may play a decisive role in determining the optimal rate of growth of capital stock.

In this study the problem will be approached by a somewhat *more sophisticated model*. Section 1 outlines the model, defines some basic concepts and points out the most important assumptions that restrict to a certain extent the field of application of the model. Section 2 presents the most important analytical results while Section 3 deals with some results obtained by numerical methods. The conclusions are summarized at the end of the paper.

This paper is based on a more detailed study [12] describing our results in a more exact form. Here only the most important results will be summarized.

1. The model

The model is based on the CES production function

$$q(t) = \varepsilon_2 e^{\varepsilon_1 t}\left(\varepsilon_3 k(t)^{-\varepsilon_4} + (1 - \varepsilon_3)\, l(t)^{-\varepsilon_4}\right)^{-\frac{\varepsilon_5}{\varepsilon_4}} \tag{1}$$

where $q(t)$ denotes output in the period (year) t, ε_2 is the efficiency parameter playing only a secondary role in our investigations, ε_1 is the annual rate of disembodied technological change, ε_3 is the so-called distribution parameter the concept of which is close to that of the elasticity of production with respect to capital, ε_4 stands for a transformed value of the elasticity of substitution, ε_5 is the parameter indicating the rate of returns to scale, and $k(t)$ and $l(t)$ denote capital and labour of the period t.

The above parameters were dealt with at greater length in a previous publication [11], and the theory and application of production functions were also analysed in several Hungarian publications [1], [2], [3], [7], [8], [9], [10].

We assume that the basic concepts of this theory are known and we present here only two definitions. First, the *marginal rate of substitution*

$$s = -\frac{dk}{dl}$$

shows the proportion in which capital can be substituted for labour, or, in other words, the quantity of capital input needed to compensate a given reduction of labour input so that production level may remain unchanged. Secondly, the *elasticity of substitution*

$$\sigma = \frac{d(k/l)}{k/l} \quad \frac{ds}{s} = \frac{\varepsilon_3}{1 - \varepsilon_3} s$$

describes the way how marginal rate of substitution depends on the progress of the investment process. If the value of this elasticity is large, the change in the marginal rate of substitution, i.e. in the volume of investment needed to replace a unit of labour will be small even if the change in the capital-labour ratio is relatively large. Large values of this parameter are therefore advantageous for the growth process. If, however, this parameter takes on a small value, the volume of investment needed to replace a unit of labour will increase fast if labour-saving investments are extended, what is obviously disadvantageous for the growth process.

In the model it will be assumed that

$$k(t) = k_0 e^{\gamma(K)t}. \tag{2}$$

This means that the volume of capital grows at a constant exponential rate $\gamma(K)$ from the initial volume k_0. This assumption simplifies the mathematical treatment of the problem significantly reducing it to the problem of finding a single value: the optimal value of $\gamma(K)$. At the same time, such a formulation of the problem does not seem to be excessively restrictive. Similarly, it is also supposed that

$$l(t) = l_0 e^{\gamma(L)t}, \tag{3}$$

i.e. that also labour force is increasing at some exponential rate $\gamma(L)$. This latter rate will be regarded as a given constant, in other words, we assume that the rate of growth of labour force is independent of the development of consumption and investment. The simplest possible assumptions as to the growth of capital and labour were thus introduced. The assumption that the rate of growth of capital stock is a constant (to be determined) ensures also in a very simple manner that total consumption of the period in consideration cannot be maximized by suspending the investment process before the end of the period and consuming the capital stock.

As to the value of output $q(t)$, it can be decomposed as follows:

$$q(t) = b(t) + d(t) + r(t) + c(t)\,, \tag{4}$$

i.e. we assume that added value $q(t)$ of period t equals the sum of investment $b(t)$, depreciation $d(t)$, repair cost $r(t)$ and consumption $c(t)$ of the same period t. This equation shows that a new definition of added value including also repair costs is used here. This special definition is needed because the volume of repair costs is one of the most important factors determining the optimal rate of growth of capital stock, and this element cannot therefore be omitted from the analysis.

For the different terms on the right-hand side of Eq. 4 we have

$$b(t) = \frac{dk(t)}{dt}, \tag{5}$$

i.e. investment equals the rate of growth of capital stock, furthermore,

$$r(t) = \varrho k(t), \tag{6}$$

and finally,

$$d(t) = \delta k(t). \tag{7}$$

This means that the magnitude of the repair costs and depreciation charges can be expressed as linear functions of the current capital stock where ϱ and δ are constants denoting depreciation charges and repair costs per unit of capital.

Our objective is now to maximize the volume of consumption $c(t)$ defined implicitly by Eq. 4, i.e. to determine the rate of growth of capital $x = \gamma(K)$ leading to the maximal value of the expression

$$C(x) = \int_0^T c(t)\, dt \tag{8}$$

where T is a given constant defining the length of the time horizon (the number of the time units (years) taken into consideration). In other words, we want to maximize total undiscounted consumption of the given period T.

In this connection the notion of investment or growth of capital stock must first be specified. Investment is net investment because it is assumed that replacement financed by the depreciation allowances and the use of the repair costs introduced here keep the stock of capital taken over from the previous periods on the original technical level. We disregard therefore differences in the time structure of depreciation and replacement, dependence of repair costs on the age of the capital stock, changes in capacity utilisation, and modifications in the composition of the capital stock. The inclusion of these factors would not greatly modify our results, but would make the analysis unnecessarily complicated. We also disregard stocks and their necessary increases; their inclusion would modify our results somewhat downwards. What has been told now means that investment denotes in this theoretical analysis growth of the capital stock. This terminology does not correspond fully to everyday usage, and our results cannot therefore be applied immediately to the actual planning practice.

The description shows that our model presents a simplified picture of the reality what must be taken into consideration in connection with the results. For one thing, we assume that the rate of growth of capital stock is constant,

and thus we exclude the possibility of maximizing total production by changing the rate of investments within the period studied. On the other hand, we disregard the interdependence of investment and technical progress. This means the exclusion of the so-called embodied technical progress or the very important technical innovations embodied in new elements of capital stock representing a higher level of technical knowledge. Third, we also neglect the interdependence between consumption and the quantity and efficiency of labour force, although it is obvious that the level of consumption influences both quantity and quality of labour in several ways. Finally, we maximize the undiscounted value of total consumption and so we do not distinguish between increments of production at the beginning and at the end of the time period considered, while there is every reason to consider units of consumption in a later period, when consumption per head will most probably be higher, less valuable than the same physical units of consumption in the next time period.

Two of the above simplifications restricting the applicability of the model to problems of the real world may easily be eliminated. Embodied technical progress, i.e. the continuous development of the technical level of capital assets as well as the discounting of the increments of production in the more distant future can be taken into consideration without any substantial modification of the model. Such a generalization of the model is already attempted, and the results will be published soon. The other two problems, however, present great methodological and statistical difficulties, and their solution cannot be expected, at least not in the near future.

Two further remarks concerning the contents of the model seem still appropriate here. On the one hand, what the model attempts to maximize is not consumption in a strict sense, but freely utilizable national income, obtained after deducting capital charges representing costs of maintaining and extending capital stock. This freely utilizable part of national income includes also infrastructural, and thus cultural, social and health investments, and is therefore different from the customary definition of consumption. The model cannot therefore be applied to optimize the ratio of consumption and public investment or private and public consumption, respectively. On the other hand, what the model determines is not the optimum of the productive investment, but only its rational maximum. It is clear that the level of productive investment going beyond the values obtained from this model cannot be considered as rational. It is, however, possible that — with respect to the need of infrastructural and social investments or to the discounting of values pertaining to the more distant future — the social optimum of the investments will be smaller than the rational maximum determined by the method expounded here. The results set forth here may therefore only be considered as the first, and definitely not as the final steps of this research.

Taking into consideration the restrictions discussed above, our model may lead to results in two ways: through theoretical and numerical analysis. In the next section the results of the theoretical analysis will be dealt with.

2. Theoretical analysis

Two parameters, the transformed value ε_4 of the elasticity of substitution and the rate of returns to scale ε_5 play a special role in the theoretical analysis of the problem, because of both economic and mathematical considerations.

Economic evidence shows that different numerical values of these parameters lead to greatly diverging results. High values of the elasticity of substitution mean that the investment needed to replace a worker remains practically unchanged if investments increase. In this case it is a sound policy to extend investments. In the other case, however, if the value of the elasticity of substitution is low, the quantity of capital needed to replace a worker increases heavily if investments expand. Consequently, high level of investment needed in this case increases production costs and thus inhibits the extension of investment activity and the further increase of capital stock. Economic considerations show therefore that results may be of different character if the values of the elasticity of substitution diverge.

Similar considerations apply to the rate of returns to scale. If the rate of returns to scale is increasing, i.e. the value of the parameter ε_5 is greater than unity, the percentage increase of output is greater than that of the input. This applies to most manufacturing industries, first of all to chemicals and engineering. Investments may be greatly extended under such circumstances. If, however, the rate of returns to scale is decreasing, i.e. the value of the parameter ε_5 is smaller than unity, the percentage increase of output is smaller than the percentage increase of inputs. This applies first of all to the extracting industries, e.g. to coal mining. Investment possibilities are obviously more limited in this case.

Some mathematical considerations may be added to support the above. The mathematical treatment of the problem is much more simple if the parameters ε_4 and ε_5 take on special values. If $\varepsilon_4 = 0$ and $\sigma = 1$ we have the Cobb—Douglas production function

$$q(t) = q_0(t) = \varepsilon_2 e^{\varepsilon_1 t} k(t)^{\varepsilon_3 \varepsilon_5} l(t)^{(1-\varepsilon_3)\varepsilon_5} \tag{1.a}$$

in place of the CES production function (1) where the notations are already defined in connection with the CES production function (1). An analogous particular case with similar analytical advantages is obtained if $\varepsilon_4 = -1$ i.e. $\sigma = \infty$ and $\varepsilon_5 = 1$.

The above considerations lead to the distinction of the following three cases:

(a) $\sigma = 1$ and ε_5 is arbitrary (Cobb—Douglas case);

(b) $\sigma = \infty$ and $\varepsilon_5 = 1$ (the case of unlimited possibility of substitution with constant returns to scale) and finally,

(c) the general case.

In the original paper [12] some further special cases are treated; the above three cases lead, however, to the most interesting economic conclusions. In order to save space, the results of the Cobb—Douglas case alone are given in mathematical form. Results of the other cases are described only verbally or displayed by means of graphs.

(a) The Cobb—Douglas case with increasing or decreasing returns to scale

The models dealing with the problem of optimal investment policy and using production functions are based in most cases on the Cobb—Douglas production function with constant returns to scale. This means that the special case considered here is more general than some other models. This special case is of great practical importance, because — as some empirical observations show — the value of the elasticity of substitution usually does not deviate greatly from unity. Owing to the reasons mentioned above, the strongest results could be obtained in this case; they can be summarized as follows:

In the Cobb—Douglas case the necessary and sufficient condition for the existence of the unique and finite maximum of the function $C(x)$ (i.e. of the undiscounted total consumption within the given period) is that the inequality

$$(1 - \alpha)\, q(0) = (1 - \alpha)\, \varepsilon_2\, k_0^{\varepsilon_3 \varepsilon_5}\, l_0^{(1-\varepsilon_3)\varepsilon_5} \geq \varepsilon_3 \varepsilon_5 (\varrho + \delta)\, k_0 \tag{9}$$

be fulfilled. Furthermore, also the relations

$$\lim_{x \to -\infty} C(x) = k_0\,, \tag{10}$$

$$\lim_{x \to \infty} C(x) = -\infty\,. \tag{11}$$

hold.

This means that in the Cobb—Douglas case one of the two following statements may be valid in connection of the function $C(x)$ denoting total consumption within the given period: either there exists a finite optimum [if (9) holds], or no finite optimum exists [if (9) does not hold]. In this latter case the function $C(x)$ decreases monotonously over the whole real axis. These two possibilities are shown on Figure 1; the curve drawn continuously corresponds to the graph of a function with finite optimum.

The economic contents of this result is the following. If the added value obtained in the initial period exceeds repair and depreciation costs multiplied by the elasticity of production with respect to capital, the rate of increase of capital has only one optimal value. This means that only one rate of increase of investment leading to maximal undiscounted consumption within the given horizon can be chosen. If, however, added value in the initial period is smaller than repair and depreciation costs multiplied by the elasticity of consumption with respect to capital, the case where the growth rate of the capital stock equals $-\infty$ may be considered as the maximum of consumption in a broader sense. In this case capital stock is consumed at once, production is impossible,

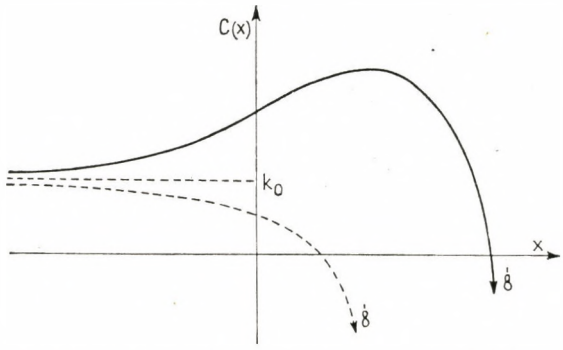

Fig. 1. The optimal rate of growth of the capital stock in the Cobb—Douglas case

and total consumption of the period in consideration is equal to the initial value of the capital stock. In this theoretical case it is unreasonable to maintain production, as added value is smaller than the maintenance cost of the capital stock. Finally, in the case where the rate of increase of capital is $+\infty$, consumption is $-\infty$, i.e. production never attains the level of investment needed. Such a case can never be optimal.

This result shows that in the Cobb—Douglas case any value of the increasing rate of returns to scale or any value of the rate of technical progress or any combination of these leads to a finite optimum of the rate of increase of capital stock. As a result, the highest possible level of investment may well be above the optimal level of the same, even if these conditions greatly favourable to investment activity coincide.

Some interesting economic conclusions can be drawn also from the shape of the curves in Figure 1. In accordance with (10) and (11) the graphs show that $C(x)$ converges to a positive limit if x tends to $-\infty$, while if x tends to $+\infty$, $C(x)$ tends to $-\infty$. Hence it is clear that along these curves the decreases of ordinates belonging to abscissae x in any neighbourhood of the optimum — provided that it exists — are greater for the values of x exceeding

the optimum than for abscissae being smaller than this critical value (assuming that the deviations considered from the right and the left of the optimum are nearly of the same absolute value). In other words, the rates of increase of the capital stock exceeding the optimum lead to greater deviations from the maximum of consumption than rates of increase falling behind the optimum.

(b) The case of infinite elasticity of substitution with constant returns to scale

In the previous section we have shown that the rate of increase of the capital stock has a uniquely determined finite maximum, i.e. the problem of optimal investment can uniquely be solved within the scope of the model if the elasticity of substitution assumes the most probable value and the value of the rate of returns to scale exceedingly favourable for the investment activity. In this section an analogous case is studied where it is assumed that the value of the elasticity of substitution is most favourable for the investment activity, i.e. the elasticity of substitution is infinite while the rate of returns to scale is constant. This case occurs frequently in theoretical models. We recall that infinite elasticity of substitution means that the investment needed to replace a worker remains unchanged even if the capital-labour ratio increases heavily.

The results obtained are parallel to those dealt with in the previous section and are not reproduced here. Total consumption has a uniquely determined finite maximum and the rate of increase of capital stock has a uniquely defined finite optimum if the returns to capital exceed repair and depreciation costs, i.e. in all practical cases. If this optimum is exceeded, total consumption of the period considered decreases, and in case of infinitely rapid increase of investments it falls to minus infinity. In contrast to the results of the previous section, in case of infinitely rapid decrease of investments total consumption is not k_0, i.e. capital stock of the initial period, but a little more. This is the result of the infinite elasticity of substitution. Production may be maintained in this theoretical case with zero capital stock. These results may therefore also be illustrated by Figure 1, but with the asymptote $y = k_0'$ for x tending to $-\infty$ of the curve $C(x)$ in place of the asymptote $y = k_0$ where k_0' is a constant somewhat higher than k_0.

These results could be verified exactly only for the case where $\sigma = \infty$. It is, however, obvious that these results remain correct also in the case $\sigma < \infty$, because the increase of the capital stock has less economic advantages in this case than in the problem previously considered.

(c) The general case

In the two previous sections it was shown that if one of the two critical parameters of the investment process, i.e. the elasticity of substitution or the rate of returns to scale assume the most probable medium value and the other an extreme value particularly advantageous from the point of view of the investment process, the rate of growth of the capital stock has a unique finite maximum provided that some conditions, which in all practical cases hold, are fulfilled. It is important to see however, what happens if both parameters assume a particularly advantageous value. The analysis of the general case discusses this problem. (It should be noted that our former publication [12] discusses the problems in a more general way.)

Let us assume that σ, the elasticity of substitution, is greater than unity, that is, $-1 < \varepsilon_4 < 0$. Let us further assume that the rate of returns to scale is constant or increasing, i.e. $\varepsilon_5 \geq 1$. In this case it can be proved that if the rate of increase of capital stock tends to $-\infty$, total consumption, just as in the special cases dealt with previously, converges to a fixed limit, while it can be shown that

$$\lim_{x \to \infty} C(x) = \infty \tag{12}$$

if $\varepsilon_5 > 1$, and that

$$\lim_{x \to \infty} C(x) = -\infty \tag{13}$$

if $\varepsilon_5 = 1$, respectively.

The economic conclusions obtained in the general case are very similar to those obtained previously but they are more important both for theory and practice. Their theoretical importance is due to the fact that the general case has not been dealt with sufficiently in the literature, while special political significance can only be attached to one possibility within the general case: to the coincidence of an increasing returns to scale and an elasticity of substitution greater than unity. In this case it can be shown that the maximum of consumption can be attained with infinitely rapid increase of the capital stock; hence in this case the highest possible rate of increase of investment may be considered as the optimum. This result is in accordance with previous conjectures, proposing that no optimal investment policy can be defined in such cases, as well as with the conclusions of the literature that exact optimization is impossible in case of increasing returns to scale.

Our results, however, have not only yielded an exact proof of the above, but have also proved that this result is only of theoretical importance. In practice even this case, the most favourable for the extension of the investment activity, is analogous to the problems dealt with previously. Namely it can be proved that also in cases characterized by high values of both the rate of returns to scale and the elasticity of substitution — apart from the purely

theoretical case of extreme values — there exists a local optimum of the rate of growth of the capital stock. The local character may be ignored in the practice. The rate of growth of the capital stock has therefore an optimum suitable to practical purposes even in this case.

This result is illustrated by Figure 2. This figure shows that in most cases there exists a local optimum so that rates of growth higher than this optimal rate of increase of the capital stock lead to smaller or perhaps even negative values of total consumption. Total consumption will again be positive and attain values surpassing those near to the local optimum at extremely high

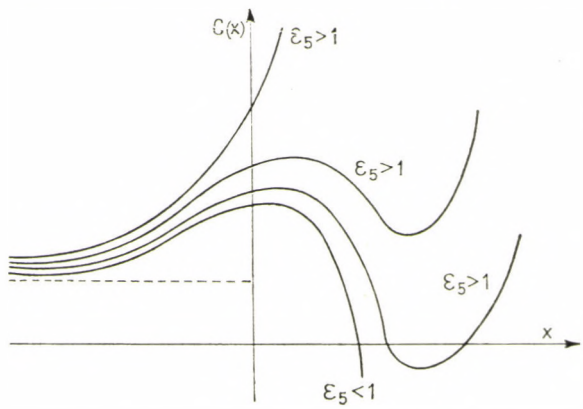

Fig. 2. The optimal rate of growth of the capital stock in general case

and supposedly unreal growth rates of the capital stock. Considering that the values of the rate of increase of capital stock leading to higher total consumption than that pertaining to the point of local optimum are clearly beyond real possibilities, we may state that the optimal rate of increase of the capital stock may be defined even in this case, and, accordingly, in all real cases.

The latter results show that this problem cannot be dealt with in a satisfactory manner using analytical tools alone. Numerical calculations are needed to determine the combinations of the parameters ε_4 and ε_5 leading to a positive local optimum or — in case of exceedingly high values of the rate of returns to scale and/or of the elasticity of substitution — to no optimum at all. Such numerical calculations are shown in the next, numerical section.

3. Numerical analysis

Owing to considerations of space only those results of the numerical analysis will be reproduced here which show the dependence of the optimal rate of growth of capital stock on the values of the different parameters appearing in the model.

This analysis was carried out in the following manner. First a basic variant was defined by giving all the parameters appearing in the model a specific value — the so-called basic value. This set of parameter values is the following:

$$\begin{aligned} \gamma(L) &= 0 \\ \varepsilon_1 &= 0 \\ \varepsilon_2 &= 1 \\ \varepsilon_3 &= 0.25 \\ \varepsilon_4 &= 0 \\ \varepsilon_5 &= 1 \\ \delta &= 0.05 \\ \varrho &= 0.05 \\ T &= 20 \end{aligned}$$

It can be seen that in the basic variant labour force is constant, there is no technical development, the rate of returns to scale is constant, the elasticity of substitution is unity, and the magnitude of the elasticity of production with respect to capital as well as the specific repair and depreciation costs are close to the values experienced in the practice.

Having defined the basic variant, the optimal rate of increase of capital stock and the total consumption pertaining to it were determined using the parameters of the basic variant, as well as the curve describing the connection between consumption level and rate of increase of the capital stock. Our aim is to determine the dependence of these values and curves on given specific values of the parameters appearing in the model. Specific values were therefore given to the different parameters appearing in the model so that the total domain of possible values of the above should be represented in these calculations. In this stage of the research only one of the parameters of the basic variant was modified and the others were kept on the level corresponding to the basic variant.

Two aspects of these numerical calculations must be mentioned here. First, these computations are still of completely theoretical character, since merely theoretical or purely hypothetical values of these different parameters have been used instead of their empirical values. Secondly, only the values of one of the parameters were modified while in reality more or even all parameters change simultaneously. Only some rather general conclusions can therefore be drawn from these results.

Figure 3 depicts the dependence of the undiscounted total consumption on the rate of increase of the capital stock introducing different assumptions as to the rate of increase of labour force.

The results indicate that in the basic variant the optimal rate of increase of the capital stock is exceedingly small with a value of about 1.5 per cent.

This means that at a constant level of technology and population and with a constant rate of returns to scale total consumption of a given time period can be increased only very slightly by extending investments. This result is completely convincing, even if the rate of growth of only 1.5 per cent seems surprising.

Two aspects must be emphasized in this context. First, the model deals here with net investment assuming that depreciation allowances and repair costs maintain capital stock on the level of their original productivity. This

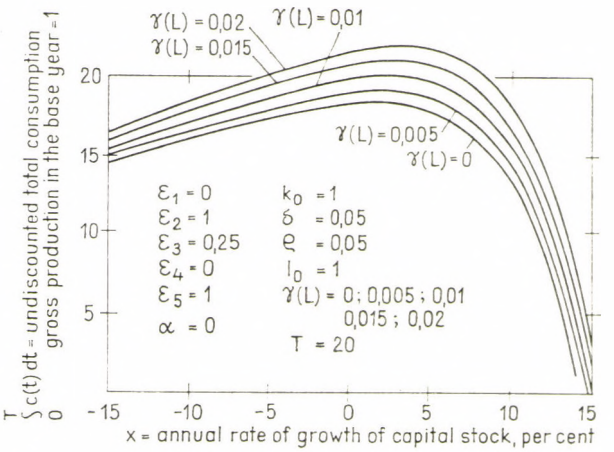

Fig. 3. The dependence of undiscounted total consumption on the rate of growth of capital stock with alternative rates of growth of labour force

means that there is no scrapping or decay of the capital stock, or — to put it in another way — elements of capital stock scrapped are at once replaced and this replacement is not considered as investment but as repair of the existing stock financed from depreciation allowances and repair costs. Investments in our model correspond therefore to net and not to gross investments of the general usage. On the other hand, it is possible that the value of parameter ε_3 was set a little too low so that — in case of a more realistic value of this parameter — a somewhat higher value for the optimal rate of increase of the capital stock would have been obtained even in the basic variant.

The second conclusion that can be gathered from the Figure is that the optimum point moves to the right and upward if the rate of growth of labour force is increasing. This means that higher rates of growth of the labour force lead to higher optimal rates of increase of capital stock and higher levels of consumption in the period considered, corresponding to the general conjecture. The curve connecting the optimal points is convex from the right showing that the interactions are of cumulative character. It must be emphasized that the

small changes in the labour force assumed here influence total consumption and optimal rate of increase of capital stock only in a secondary manner.

Figure 4 displays the influence of technical progress on the relations studied here. The results show, first of all, that undiscounted total consumption within the period chosen here is much more sensible to differences in the rate of technical progress than to those in the rate of growth of the labour force if these rates are kept within reasonable limits. At a rate of technical progress of five per cent per year, even if no other growth factor is supposed to work,

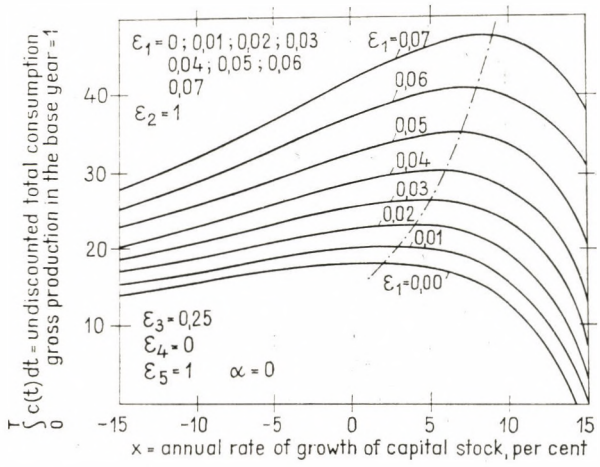

Fig. 4. The dependence of undiscounted total consumption on the rate of growth of capital stock with alternative rates of technical development

the level of production will nearly double although such a rate of technical progress — if not for a whole country but in some leading industries — is certainly possible.

More rapid rates of technical progress lead to higher optimal levels of investments. It is, however, remarkable that the optimal rate of growth of the capital stock increases much more slowly than the rate of technical progress. If the rate of technical progress increases from 1 to 7 per cent, the optimal rate of growth of capital stock increases from 2.64 to only 8.78 per cent, and even this latter value seems to be exceedingly low.

Figure 5 shows the impact on the relations of the elasticity of production with respect to capital (or, in the CES case, of the distribution parameter) on the relations. The Figure displays that total consumption within the period considered depends insignificantly on the value of this parameter, while the dependence of the optimum rate of increase of the capital stock is rather marked.

The analysis of the results presented on the Figure shows that if the value of this parameter is high, i.e. if in case of a 1 per cent increase at the capital stock production increases by 0.5 per cent, it is worth while to invest heavily, while if the value of this parameter is very low, it is preferable to decrease capital stock and to consume at least some part of it. It is, however, remarkable that if the rate of technical progress and the rate of growth of labour force is slow, total consumption can but slightly be increased with higher investments, even if the distribution parameter takes on an extremely high, unrealistic

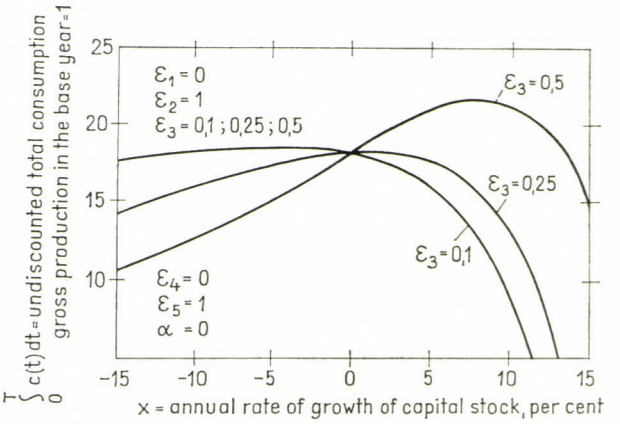

Fig. 5. The dependence of undiscounted total consumption on the rate of growth of capital stock with alternative elasticities of production with respect to capital

value. This result shows from another side that investment without technical progress, even if the elasticity of production with respect to capital is assumed to be extremely high, cannot raise the value of total consumption more than to an exceedingly small degree.

Figure 6 shows the influence of the elasticity of substitution on the relations studied. The Figure indicates that the elasticity of substitution has an even smaller impact on the level of total consumption than the elasticity of production with respect to capital. As a matter of fact, high values of the elasticity of substitution decrease and low values of the same increase the sensibility of the total consumption in relation to the growth rate of capital stock. It is obvious from the Figure that if the elasticity of substitution is high, greatly divergent levels of investment activity lead to practically the same undiscounted total consumption, while with low values of the same parameter total consumption decreases heavily even if the difference between actual and optimal rates of increase of capital stock is relatively small.

Let us now consider the decreasing and increasing rate of returns to scale that seems to be of critical importance as to the growth potential of an econ-

omy. The results are presented by Figure 7. The assumed rates of returns to scale are within the parameter values of 0.5 and 1.5; values outside this range seem to be unrealistic, at least for longer periods.

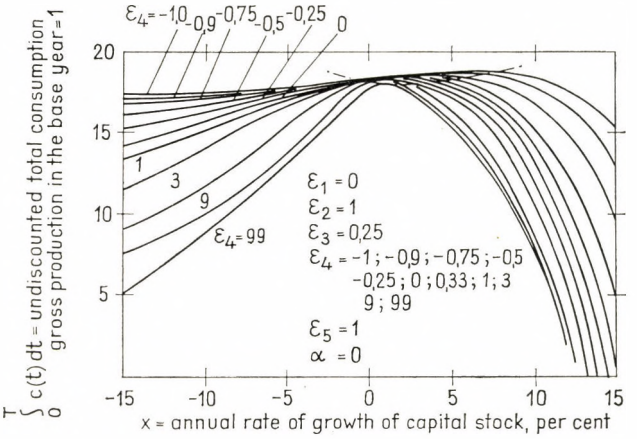

Fig. 6. The dependence of undiscounted total consumption on the rate of growth of capital stock with alternative values of the elasticity of substitution

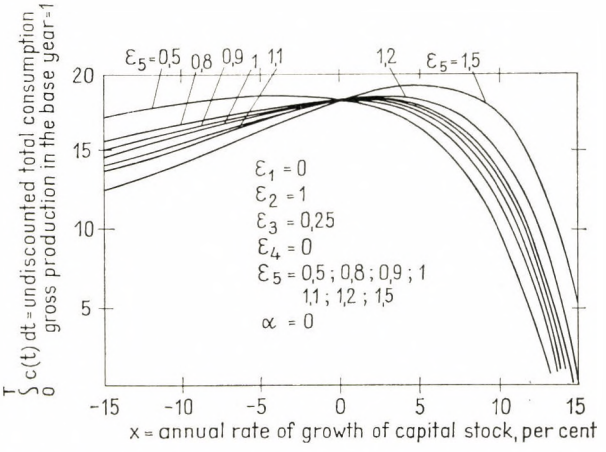

Fig. 7. The dependence of undiscounted total consumption on the rate of growth of capital stock with alternative values of the rate of returns to scale

It is remarkable that the value of the rate of returns to scale influences total consumption and the optimal rate of growth of the capital stock only to a very insignificant extent — at least within the scope of the assumptions introduced here. This result states that whatever advantageous the increasing rates of returns to scale may be, some other growth factors must be present to make these advantages effective. Shown from another side: if the population

or the labour force does not increase, the extension of the capital stock is not rational. But if neither labour force nor capital stock increases to a greater extent, the increasing rate of returns to scale cannot be effective. The increasing rate of returns to scale can therefore be effective only if the rate of increase of the labour force exceeds a certain level or if the labour force is rapidly redistributed into industries where its employment is particularly advantageous. This important question is analyzed in a separate study [4].

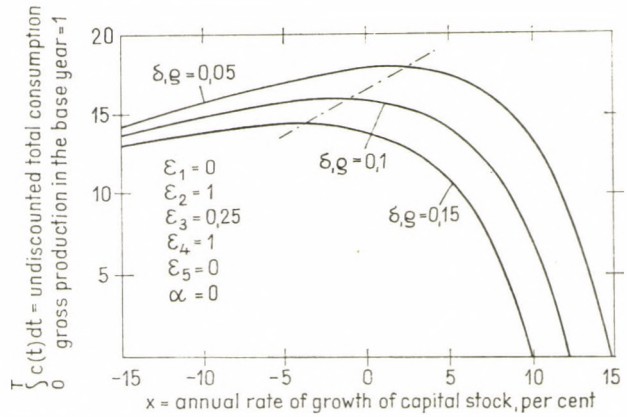

Fig. 8. The dependence of undiscounted total consumption on the rate of growth of capital stock with alternative values of repair costs and depreciation charges

Figure 8 shows the dependence of total consumption on changes in the parameters of depreciation and repair costs. The Figure shows that if these costs are increasing, the optimal level of investments is quickly decreasing, attaining even negative values, if some other factors — for instance technical progress — do not increase the optimal level of investment activity. This is easily understandable, and even the model dealt with here is built on this relationship.

In the forthcoming paragraph the effect of the length of time horizon on the optimal rate of growth of the capital stock is studied. The results are depicted in Figure 9. All the parameters were given, as previously, the values corresponding to the basic variant, apart from the length of the period studied. Total consumption depends, of course, heavily on the length of the period considered.

Two results have here great economic significance. First, the longer the period considered, the greater the sensitivity of total consumption to the rate of growth of capital stock. It means that the importance of the optimal rate of growth of capital stock increases with greater horizon of the planning, because deficiencies in the planning have greater negative effect, if the period

considered is longer. Secondly, and this perhaps is even more important: the curve connecting points of optimum is concave from the left. This shows that the increase of the horizon beyond some rather narrow limits does not increase but definitely decreases the optimal rate of growth of investments. This is contrary to generally accepted ideas, because it is generally assumed that longer perspectives lead to higher levels of investment. It must be mentioned or even emphasized, however, that these latter two results are to a

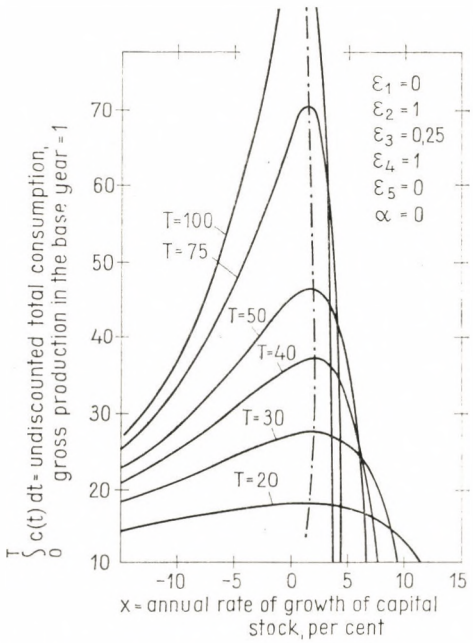

Fig. 9. The dependence of undiscounted total consumption on the rate of growth of capital stock with alternative lengths of the period considered

great extent the corollaries of the basic assumption of the model: of the assumption that the rate of growth of capital stock is constant. This assumption makes ex post modifications of the investment policy impossible.

Summary

1. In this research exercise we attempted to obtain some results concerning the optimal rate of growth of capital stock in order to assess the optimal investment policy, starting from the theory of production functions. The model used for this purpose maximized the undiscounted value of total consumption within a given finite period. This means that, in fact, not the

optimum but the rational maximum of the rate of growth of the capital stock was calculated, because in case of discounting future consumption the value obtained would be smaller. In the calculations we started from a new definition of added value including national income (consumption + "investment") as well as depreciation charges and repair costs of fixed capital. This definition was introduced here because if the capital coefficient increases, capital charges grow faster than national income and this difference is one of the most important elements determining the optimal rate of increase of the capital stock. Even this specification of the model simplifies, however, the reality in many respects, and disregards the differences in the time structure of investment, depreciation, replacement, and maintenance.

2. The above model was used both in the theoretical and the numerical analyses. The results of the theoretical analysis show that in all practical cases, there exists an optimal rate of increase of the capital stock leading to a maximal value of undiscounted total production within a given fixed time horizon, so that both smaller and larger values of the rate of increase of capital stock lead to smaller total consumption within the period in consideration. The optimal investment policy can therefore be defined in terms of purely economic variables, and it can be proved that the optimal rate of increase of the capital stock is by no means the maximal rate that can be obtained under given social and political constraints. This optimal value of the rate of increase of the capital stock is in most cases an absolute optimum, in the case most propitious to the expansion of the investments, however, (in case of the coincidence of increasing rates of returns to scale and the value of the elasticity of substitution exceeding unity) a local optimum which in all practical cases and for all practical purposes is equivalent to an absolute optimum. The proof of the existence of this local optimum and thus the extension of the possibility of optimization to the case of the increasing returns to scale is perhaps the most important theoretical and practical result of this research.

3. In the course of our numerical calculations the curves describing the dependence of total consumption on the rate of increase of capital stock were determined under alternative assumptions concerning the values of the different parameters appearing in the production function and the total model. The shape of these curves near the point of optimum indicates that if the rate of increase of the capital stock remains behind the optimal rate consumption decreases only insignificantly, while if the point of optimum is surpassed, total consumption decreases heavily, and the theoretical but analytically very interesting case of negative total consumption will soon be reached. Therefore, a smaller than optimal rate of increase of the capital stock delays the economic growth process in a relatively insignificant measure while rates of growth surpassing the optimum lead to very disadvantageous outcomes not only from political and social, but also from purely economic aspects, and jeopardize

the maintenance of the economic growth process. It is therefore very probable that past setbacks in the growth process may much more be imputed to disadvantageous economic consequences of greater than optimal investment levels than generally supposed.

4. Our numerical calculations enabled us to determine the numerical values of the optimal rates of increase of capital stock for some theoretical cases. The optimal volume of net investment not including replacement is surprisingly low even if values of the different parameters are exceedingly favourable for the growth and investment process. These results seem to confirm the former conclusion that the overstepping of the optimal rate of increase of the capital stock must be considered as a real possibility, and that the setbacks in the growth processes may be imputed to the ensuing economic problems to a much greater degree than previously supposed.

5. Our results lead to some conclusions as to the relative importance of the process of expansion and that of substitution in economic growth. The first process means here the increase of the labour force and the technical progress, and the second the extension of labour saving investment. The calculations definitely show that the role of the expansion process manifested in the growth of labour force and technical development is far more important than the role of the labour-saving substitution process. It could be proved by these numerical calculations that — even in the undiscounted case dealt with here — total consumption per head can hardly be increased by investment if there is no technical progress and the labour force remains unchanged. The situation is practically the same if the rate of technical progress and the rate of increase of the labour force is small. Our calculations seem therefore to suggest that the key to economic growth is technical development and to some extent the growth of labour force, so that technical development must be given a greater preference even at the expense of the quantitative investment process and perhaps even by greater reliance on imported technology.

6. Much attention was given in the calculations to the rate of increasing or decreasing returns to scale that played such a great role in recent discussions of problems relating to economic policy. If the rate of increasing returns to scale is not accompanied with increases in the labour force, the role of the increasing rate of returns to scale is nearly negligible. This seems to indicate the reason of the failure of the central planning authorities to put a check on the increases of the labour force. Already in the present state of our research we may draw the conclusion that in order to accelerate the rate of our economic expansion the attempt to raise the rate of population increase must be given further preference in the future. At the same time, the regulations impending the reallocation of labour force between industries must be revised, and the reallocation on behalf of industries with increasing returns to scale and greater growth potential must be facilitated.

7. Some interesting results were also obtained as to the dependence of the optimal rate of increase of capital stock on the length of the period considered. If the horizon is enlarged, the optimal rate of increase of the capital stock first increases and later decreases, but these changes are almost negligible. It seems therefore that the generally held idea that the greater perspective of planning leads to higher investment rates is unfounded. It has also been shown that in order to ensure the optimality of the growth process the optimal values once determined must be corrected from time to time, i.e. the system of continuous planning must be strengthened.

8. It must be emphasized that the conclusions of our model are based on the assumptions that a quantitative increase of the investment activity does not further technical progress, and that the optimal length of life of the capital assets is given. In other words: the model does not attempt to take into consideration that faster technical progress lowers the length of life of the capital stock and increases therefore gross investment.

9. The theoretical results presented here led us to some policy recommendations. Further practical conclusions, however, could only be obtained by further numerical calculations using empirical values of the parameters. Considering that the parameters of the sectoral production functions of Hungarian manufacturing and mining have already been determined (see [13]), such a study appears feasible. The results presented here seem to justify the extension of the research in this direction.

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ОПТИМАЛЬНЫЙ ТЕМП РОСТА ОСНОВНЫХ ФОНДОВ

Л. МИХАЙФИ – Д. САКОЛЬЦАИ

В связи с основными вопросами инвестиционной политики довольно прочно ускоренился взгляд, согласно которому не существует точно определяемой доли капиталовложений или оптимальных темпов их роста, и что в долгосрочной перспективе оптимальным следует считать тот уровень капиталовложений, который еще может выдержать та или иная страна с экономической, общественной и политической точек зрения. Авторы подвергают анализу правильность этого вывода с помощью теоретического и математического аппарата.

В теоретическом разделе сначала демонстрируют основанную на теории производственных функций простую, но, по сравнению с обычно применяемыми, несколько более сложную модель. С помощью последней они показывают, что темпу роста капиталовложений в любом реальном случае свойственен глобальный (или иногда полностью удовлетворяющий требованиям практики локальный) оптимум. В случае выхода капиталовложений за пределы этой оптимальной точки наступает не повышение, а сокращение достижимого совокупного потребления. Эта оптимальная точка является функцией переменных экономического характера, так что оптимальную инвестиционную политику в принципе можно определить и в виде функции переменных технического характера.

В эмпирическом разделе авторам удалось доказать прежде всего то, что данная величина оптимального уровня капиталовложений не ирреально высока, а находится в зоне реальных величин. Весьма вероятно, что имевшие место в прошлом некоторые трудности в процессе роста являлись последствиями превышения оптимального уровня капиталовложений. Дальнейшие расчеты были направлены на измерение числового эффекта различных параметров процесса роста и показали, что роль экспансии в техническом прогрессе и численности рабочей силы значительно превосходит роль процесса замещения живого труда основными фондами.

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S. Fabricant

PRODUCTIVITY IN THE TERTIARY SECTOR

The author deals with the problems of measuring productivity as well as the technical and economic possibilities of increasing productivity in the service sector. He suggests a new method for classifying the branches of the national economy: the basis of classification is the rate of growth of productivity in the single sectors.

Let me begin by noting — with approval! — the closer attention, now being given, to the service industries and to the need to increase their productivity. Not so long ago, to talk about raising productivity brought to mind mainly the manufacturing industries. The developing economies were often led to neglect their major industry, which is agriculture. And the developed economies tended to neglect their service industries. We are beginning to appreciate that manufacturing in the USA, for example, employs only about 25 per cent of the labor force and that many other industries are too important to be neglected.

The service industries in particular have been growing rapidly; they are now very large. To continue with the example of the USA, well over half its labour force — 60 per cent — is currently employed in the service industries, even excluding some marginal industries and occupations — such as communication and transport that might be included. Further, in the USA as elsewhere, the recent discussion of inflation has helped to draw attention to productivity in the service industries. Much has been made of the fact that the most rapidly rising prices in the USA are those of the service-type commodities. The inflation problem has also served, I may add, to focus attention on productivity at large. It is being widely recognized that the underlying source of higher real income is productivity, and incomes policies are grounded, first of all, on that vital fact.

The growth of the service industries

It was years ago that the United States became what we now call a "service economy". When I reviewed the production employment and productivity work of the National Bureau, over a quarter-century ago, I was

able to point to Kuznets' estimates that in the interwar period the service industries were already beginning to account for around half the national income, and to employ almost half the labor force. This is why the National Bureau thought it worthwhile, at that time, to concentrate some of its efforts on these industries. Booklength studies, as well as briefer analyses, were made of employment and productivity in government, in retail and wholesale trade, in education, and in various other service industries. All these were published in the 1950's. Most recently, Victor Fuchs' book for the National Bureau, which came out in 1968, noted the continued growth, relative as well as absolute, of the service industries, added a good deal on other information to that provided by the earlier studies, and served to popularize the term, "service economy".

Why has employment in the service industries grown? Is it the result of an increase in the demand for the services rendered by the service industries? I think it is clear that this is indeed a factor. I judge this not only from historical data but from what economists call cross-sectional data, which are comparisons among different income groups or countries at a particular point of time: as incomes rise, people want more of certain types of commodities. These include not only automobiles, but services associated with automobiles. People want more educational services, more health services. A striking result of the rise in the demand for these and other services, important in the United States and in other countries as well, has been the growth of government, as the National Bureau's studies have shown. Government is not merely, in Adam Smith's terms, the policeman, the soldier and the justice, it is also an important producer of other services, and not only by way of regulating the private part of the economy. A large part of the U. S. educational system, for example, and our health system — hospitals in particular — have for a long time been operated by the government, and government's role in these industries has increasing rapidly in recent years. The rise in employment in these and other governmental activities is the result of an increase in the demand for educational, health, and urban services.

What else? Has a relatively small rise in productivity in the service industries also helped to swell the ranks of workers in these industries? It is clear, if we start from measured output, that productivity in the service industries has not, on the average, risen as rapidly as productivity in the other sectors of the economy. The figures provided, for example, in John Kendrick's book on productivity trends in the United States, gives one the clear impression that output per manhour, or output per weighted manhour (taking account of the quality of labor), or output per unit of labor and capital combined ("total factor productivity") has not risen as rapidly in such industries as trade, banking, health and government, as they have done elsewhere. But to what extent is this a result of the fact that we are not measuring output as

accurately as we would like? And not only output, but also input? In fact, is not the apparent failure of productivity in the service industries to grow as rapidly as in other industries merely or largely a fault of our measurement?

Of particular concern, in this connection, is the matter of change in quality of product. Mr. Denison has already stressed the fact that it is very difficult to measure improvements, or worsening for that matter, in the quality of output. There is no doubt that difficulties exist. But we do measure some quality changes now, as the National Bureau's report on the U. S. price statistics has indicated. Nor do I believe it is, or will always be, impossible to measure other quality changes. Nothing is impossible: many of the quality changes though of in purely qualitative terms not many years ago — for instance, color — have since become quantified.

Whatever the outcome of work in progress by Griliches and others on this problem of measurement, failure to cover quality change adequately is particularly troublesome for assessing the service industries and for understanding the growth of their output and productivity. No one can confidently estimate what quality adjustment would do to the figures. Yet I find it difficult to believe that the output of the health industries, for example, can be adequately measured by such simple quantities as the number of hospital beds occupied, or the number of hours that doctors give us. There has been much discussion in the United States of the fact that we have a doctors' shortage, that when you see a doctor he can give you only ten minutes and a shot of penicillin. But the shot of penicillin is the important thing, and what has happened of course is that the physician's productivity has improved enormously, so that if we measure his output by the number of hours he spends or by the number of visits, we are seriously understating the output of the medical industries. What I am saying is that in some service industries, at least, productivity *has* advanced rapidly — probably more rapidly than in the economy at large.

There are similar biases, upward or downward, in other service industries. Let me use trade as an example. One of the major developments that has occurred in the United States and spread to many other countries, is the development of the supermarket, a retail food store of large size in which the customer goes to the shelves and picks out what he wants to buy. In this way the customer is contributing his labor, and this surely entails some revision of our concept and measurement of input. The rise in productivity in trade may, to that extent, be overstated. In any case, we cannot understand what is happening in the supermarkets or why they have displaced the small retail store (except where they are protected by governmental regulation) to the extent that they have, unless we take such things into account. The customer may also be getting some additional output out of his participation. There is a certain amount of pleasure that women — and men too — get in going around and looking over the display of goods, picking out what is most attractive,

and not having to wait in the queue for the clerk. On the other hand, the customer may be getting less service in the way of credit or delivery. An interesting study on all this was made for the National Bureau by David Schwartzman some years ago. His paper appears in one of our *Studies in Income and Wealth.*

It may be asked how the statement I have made, that productivity in some of the service industries may have been rising much more rapidly than the measured figures suggest, can be reconciled with the rise of prices in the service industries. There are at least two possible replies. First, the measured prices, as well as the measured outputs, are incorrect. That is, the price reflects not only relative real cost but also quality. It is quite possible for an industry to show a high rate of productivity increase *and* a rising price, even in the long run, if the improvement in quality — not allowed for in the measurement of either price or productivity — is great enough. Second, the supply situation may prevent the quick movement of factors of production into the industry in response to a rapid increase in demand. That is, the paradox may be a short-term phenomenon. An example of an industry in which a spurt of price might have arisen because of an unusually rapid increase of demand is provided by the governmentally supported health services in the United States, which I have already mentioned. The expansion of government support, as well as the spread of Blue Cross and other prepaid medical care programs has led to a big demand for hospitals, doctors, etc., which could not be met in the short run without an increase in price. An increase in price does not necessarily mean a low rate of increase in productivity.

Heterogeneity of the service industries

The diversity of productivity trends in the service industries, to which I have just alluded, deserves some special attention.

Whatever doubts one may have about the measurements, it is clear that there is very considerable diversity in the rate of increase in output per man, per man-hour or any other way of measuring productivity in the service industries. A striking illustration of that is provided by what is often thought of as a single industry: the industry of hairdressing. Though hairdressing seems like a trivial sort of industry to study, the National Bureau did make such a study, precisely in order to get at the intra-industry diversity. There are in fact really two industries here: barber shops and "beauty parlors". The two have behaved quite differently. Employment in the barber shops, in the United States, has not grown as in beauty shops, nor has barber-shop productivity grown the way it has in the beauty shops. Of course, as we all know, even barbers use mechanical devices today. In fact, one can hardly find a barber in the United States today who uses the brush and bowl for getting

pp a lather. But the use of new equipment and new technology has advanced far more rapidly in beauty parlors, as the ladies can attest.

Whether you accept the figures as they are, then, or make adjustments for quality and what not, it is clear that the service sector, viewed from the standpoint of productivity, is a highly diverse group of industries. In many of them productivity has increased even more rapidly than in material producing industries, whereas in others it has increased very slowly.

Having mentioned capital, let me emphasize that one should not generalize too readily and say that the service industries are peculiarly industries in all of which the use of capital per worker is small or rising slowly. This would be wrong; it is true for some, but it is equally true for some non-service type industries. Keynes, for instance, believed that one of the doubts about the future of capitalism stemmed from the fact that, as capitalistic economies grow, demand grows also for the output of the service industries; that these industries tend to use very little capital per worker; and that this would tend to lead to a relative decline in the demand for capital. The consequences, in his view, posed a very serious danger of stagnation. I think that he was wrong on that, as events and studies since World War II have demonstrated.

Similarly, one should not generalize too readily about rates of technological change. One of the most rapidly growing industries in terms of technological change has been a service industry, computers, which turns out figures rather than tangible goods. And this has helped push up rapidly the productivity in other service industries. For instance, the banking industry in the United States is becoming a book-keeping operation, in which the bank provides — at low costs — various book-keeping services to a widely dispersed population.

This brings me to raise a related question: does it make sense to talk about the service industries as if they constituted a homogeneous group; or to talk, as we often do, about the primary, secondary and tertiary sectors? This classification may have been reasonable at an early stage of our knowledge, when A. G. B. Fisher and Colin Clark first emphasized the differences among these industries. But at this stage of our knowledge it seems more sensible to think, not of primary, secondary, and tertiary industries, but rather of industries in which productivity has apparently not risen rapidly, and to distinguish these from industries in which productivity has risen rapidly. And then to ask ourselves, why the difference?

I think that this kind of a classification would be more useful than talking about the tertiary industry, with all its implications and connotations, and thus repeating the previously accepted notion that all these industries, by their very nature, are bound to show small technological change. This could be a serious mistake, as the story of agriculture tells us. Farming has for centuries been thought of as an industry in which diminishing returns were

bound to result in a decrease — or at most a very slight increase — in the rate of growth of output per manhour or per hectare. Relatively slow growth was in fact the experience in the United States — but only until the mid-1930's. Since then U. S. agriculture's productivity, measured in almost any way, has increased far more rapidly than in the rest of the economy. I think that this tendency to make forecasts based on implicit (or explicit) assumptions of doubtful character, to be misled by the connotations of our terminology and by fixed ideas, could lead to serious misjudgments of what may happen in the future.

My suggestion that the classification according to primary, secondary and tertiary industries be replaced by one based on the degree of productivity change can be carried a bit further, of course, and should be. Another useful type of classification could be income-elasticity of demand; indeed, I would suggest crossing these classifications.

Potential for increasing productivity in the service industries

Whether or not we take the level or rate of growth of productivity in the service industries to be understated, on the average, I believe there are great potentialities for improvement, or for further and more rapid improvement. I have already noted the application, in some service industries, of larger amounts and newer types of capital equipment and of new technologies. I see no reason to doubt the possibility, sooner or later, of their application in other service industries.

Some of the confusion on this question arises because of the difficulties, already referred to, of measuring output and productivity in service industries. How, it is sometimes asked, can productivity in government-type operations, for example, be improved if we cannot measure government output — as if measurement were absolutely necessary in order to improve efficiency? In fact, of course, while difficult, measurement is not altogether impossible in many types of government operations. For instance, in the Post Office and Treasury estimates of productivity have been made; these appear in a recent government study published by the Bureau of the Budget. The output of the postal system is measure in terms of letters carried, packages delivered, etc. The problem of measurement in this case is quite a standard one, with the only difficulty simply that of getting the information. In the Treasury, counts were made of the number of checks written.

For other industries operated by government — the courts and the military, for instance — it is indeed very difficult to think in terms of an acceptable measure of output and productivity. But, and this is my answer to the question posed, while it is very helpful to be able to measure productivity, we need

not limit ourselves to the industries or operations where measurements can be made, as I tried to indicate in my study of government activity. Useful ideas can be gained on what is impeding efficiency by careful study of the way in which the activity is carried out. While there is no measure in the United States of how our courts operate, except in terms of number of trials, convictions, etc., which are very imperfect measures, much can be learned by studying court procedures, observing the causes of delays, and comparing our courts with courts in other places.

Even in the case of the military, sensible questions can be raised: how well, for example, does the military test the instruments which it buys and uses? To give a hypothetical example: there are manuals in every army in the world, I suppose, which are handed to soldiers who operate various kinds of equipment. These manuals say that the chance of hitting a target at a certain distance falls within a certain range, given the type of gun, bullet, etc. How good are these estimates? If they are based on assumptions, they may be worth very little, in which case the efficiency of firing is going to be lower than it would otherwise be. Was a proper statistical test made, taking advantage of our knowledge of sampling? Were conditions under which tests were made carefully controlled? Was the trade-off between increased accuracy and increased cost properly calculated and taken into account? It is possible to use such approaches and tests to come up with some notion of what is impeding improvement in the productivity of any industry or activity, and how best to remove or overcome these impediments.

Certainly, we should not assume without further investigation that there is something about the service industries that precludes economies of one sort or another. Limitations on scale in the service industries, and thus on economies of scale, have been pointed to by some people. There may be severe limitations — but I rather doubt it. I believe that technological change and improvements in the control of organization have made large scale changes possible in many industries, to a scale level far above the efficient scale of earlier years. This is illustrated by the automobile industry. When Alfred P. Sloan was President of General Motors in the 1920's, he spent a great deal of time on the "Twentieth Century Limited" (train) riding between New York and Detroit, and on shipboard crossing the Atlantic, as can be seen from the pictures published in his autobiography. Today, a General Motors' executive does not have to spend all that time in travel. If it were necessary, General Motors could not be as large as it is. The executive today can travel farther and more often, in order to oversee the operations of his company, yet spend less time on it. In other respects, also, the massive scale of General Motors' operations is now possible because of technological developments not available in 1920. No one could get information on its far flung operations quickly at that time. General Motors, and Henry Ford also, almost went bankrupt in

1920, when prices collapsed, because they had inadequate and very slow information on their inventories. Today, any morning, executives can get a computer print-out in any detail they want on the stock situation right up to the close of business the preceding day.

I see no reason why scale changes would not be possible also in the service industries. In the case of medicine, one can already see that the old days of the one-doctor office is no longer the only possible or the most sensible situation. Even the average doctor now has a nurse, a clinical assistant, and all kinds of technological aids. Clinics, such as the Mayo Clinic, can now be of large size. I see no absolute limit on scale in services, except perhaps that concerned with such things as harems!

Technological change has also served to maintain and keep viable small-scale industry by increases in its productivity. The computer has come as a tremendous aid, for instance, in economic research. Some years ago, during a meeting I attended, it was said that small provincial universities were severely handicapped because they could not afford the cost of a computer. This problem is now being solved through the use of terminals, available at a modest charge; the National Bureau is working on this problem also.

So, to return to the main point, I see significant potential for raising productivity in the now so-important service industries. Using these potentialities would mean that the goods and services which are demanded by society could be increased.

The problem of incentives

If we are to come to grips with the problem of increasing productivity in the service industries, we must take account of their peculiar structure and organization. For instance, in the United States the service industries are to a disproportionate degree industries run by non-profit organizations in the private sector, and by government. And, as I have said, government, and also other non-profit organizations, are already large and growing still larger as a fraction of the economy. This raises questions about improvements in their modes of operation, particularly with regard to incentives to raise productivity. Professor Manievitch pointed to this kind of question when he talked about moral and material incentives.

In mentioning moral incentives, I am reminded of a story — by Mark Twain, I believe — in which a society was imagined in which the reward was not dollars, but medals, or honorary degrees, or the number of votes one got to cast in elections. Moral incentives are indeed important, but hardly sufficient. It seems clear from the knowledge that we have gained from the study of both market and centrally planned economies that both material and moral

incentives are necessary. In the service industries in particular there is a serious problem of incentives, for the reasons I have mentioned. How and what to do to develop a proper set of incentives?

Take the example of hospitals in the United States, which have increased their costs per patient treated enormously. One reason for this is simply that the quality of their services has been raised. Doctors and hospital boards talk of lives as priceless; they tend to ignore costs. A second reason is that the hospitals are too often reimbursed even when they are inefficient in doing what everyone would agree makes economic sense. In the United States, if not also elsewhere, this is a fault of the method by which the insurance companies reiumburse the hospitals. There is no adequate system of incentives, except in a few areas, for hospital managements to keep costs down. There is no "profit" in being economical or in curbing their desire to do their "best" for a sick patient. In many cases, this has meant that hospitals have tended to improve the quality of their services beyond the optimal point. Doing too much good, giving too good a service, means that the other things which could be done are reduced in number or cut out entirely. Some of the studies at the National Bureau and elsewhere are dealing with such matters.

A similar problem arises in reorganizing the system of incentives in government. Recently, in the City of New York, serious fiscal problems have been caused by the demand of the police, the firemen, the garbage collectors, and others, for higher wages. In the bargaining — which is now going on — efforts are being made to get from the workers some relaxation of rules governing the amount, the kind and the quality of the work they perform. There is talk, for example, of shifting more of the highway paving or repaving to nighttime hours (which would save the time of the travelling public as well as of the highway department); of closer monitoring the efforts of inspectors by computer; of turning over work to private contractors; of raising government work or productivity standards to private industry standards (as in vehicle repair work), particularly in situations where the government workers are paid wages under rates prevailing in private industry.

Incentives are affected also by legislation and regulation, and these might be improved. Reference was made above to the displacement of the small stores by the supermarkets; but in some countries there are regulations inhibiting this sort of shift. For instance, there still is in the United States the so-called "Anti-Chain Store Legislation", and other regulations which try to protect the small store at the expense of the economy at large. Overcoming these barriers to increased productivity is a problem to be solved if the potential for raising productivity is to be realized.

When I say that there is potential to be realized, I do not mean to say that it is possible to plan an increase in productivity in any very detailed form. As every economist knows, one of the difficulties of making long-term projec-

tions arises because the labor and capital requirements of the different industries change, for the ratio of capital or labor to output is affected by technological advance. But there is a very large random factor in technological change, which cannot be ascertained in advance. One can plan technological change in the large, but in detail one does not know where the pay-off will be, as Mr. Denison mentioned before. We cannot be sure that in each and every industry there will be a pay-off, but we can be pretty sure that on the average there will be one.

Concluding remarks

I should like to conclude with a few brief remarks on points that, although interesting and important, time does not permit me to develop.

First, as I have already mentioned, the problem of inflation has stimulated interest in raising productivity in the service and other industries, in which price rises have been above average. More generally, the inflation problem has helped to educate the public to the relationship between productivity and real income. It was in this context that the *National Productivity Commission* was set up in the United States in mid-1970 and expanded in August of this year. Though still an embryonic organization, the Commission has been giving thought to a possible pronouncement on U. S. national policy in an Act of Congress that would state it to be an objective of national policy to raise productivity. Productivity would thus be put on a more equal standing, in the Employment Act of 1946, with full employment. Senator Javits has offered, in the U. S. Senate, a number of bills which would set up a much enlarged and improved productivity commission. Along this line, in the most recent statement by the Joint Economic Committee (of the House of Representatives and the Senate) on the President's Economic Report, the minority position placed emphasis on the declaration of policy on productivity as a major source of economic growth, and proposed the establishment not only of a permanent national productivity commission, but also of local productivity councils which would provide an additional useful means of acquiring and disseminating relevant information and generally educating the public. In this way, we would approximate the concept of productivity centers as they appear in many European countries. Not that the United States has neglected the problem; for instance, the Department of Agriculture has had a sort of productivity agency in it for a century, but the idea has not spread across the board.

Second, I want to stress that we cannot fully understand the developments in the service industries unless we recognize that they are part of a system, that they must be viewed in the context of the whole economy. And indeed we cannot understand what happens in the whole economy except in

the context of the entire social system. We are learning that a broad view is needed. It must be broad in many ways. Labor input, especially in the service industries, includes not only the work done by paid workers, but also what comes from the family economy, as I have tried to illustrate. It is for this reason that more attention in the research of the National Bureau is being paid to the contribution of students in the educational process, to give another example. Further, what happens in the service industries is greatly influenced by developments in the non-service industries; these supply the service industries with better equipment, improved materials, and newer technology; and directly or indirectly they provide the service industries with growing markets. Productivity in the tertiary sector is a function, in mathematical parlance, of changes outside as well as inside the sector. In turn, productivity in the primary and secondary sectors is affected by developments in the tertiary sector.

The implications of the broader view are far-ranging. Consider, for example, the implications of viewing the house-wife as a member of the labor force and the work she does in shopping as truly "work". Those countries which try to keep productivity in trade high, for example, by being stingy about the number of workers employed in trade, may make serious errors by neglecting the inter-relations among industries. They will fail to see that, by trying to raise productivity in trade, and imposing an undue burden of time and energy on the shoppers, they are lowering productivity in the material-producing industries.

Mr. Denison referred earlier to another important interrelationship: between education and research and development. He referred to the *receptivity* of educated people to new ideas, methods and products. The interrelations are manifold. One of the studies at the National Bureau relates to the relation between education and health: educated people are able to decide more promptly when they need to go to a doctor; they are able to tell the doctor more precisely what the trouble is; they are able to understand his directions; and they are thus able, to a degree, to profit also in this way from their education. Education leads also to a better knowledge of what goods and services are worth, what jobs are available, etc. And this is obviously related to the emphasis that economists in recent years have begun to place on knowledge as a factor of production and productivity.

We must take the broad view in thinking also about international relations. One of the interesting books recently published by the National Bureau gives the proceedings of a conference on the transmission of technology across national borders. And under way is a large-scale study by the National Bureau, in cooperation with other research bureaus abroad, on technological change in different countries and industries. The study will, I expect, help to demonstrate that productivity in every country is influenced by developments abroad

— it is no accident that the rise of productivity is the worldwide phenomenon described by Mr. Denison — and demonstrate also, as I think the present conference does, the benefits of international cooperation and exchange of ideas.

Third, if I am right in being optimistic about the potential of productivity in the service industries, its release will save much labor. This will not, however, mean that labor must or will become redundant. It is true that one can make projections that suggest the appearance of labor redundancy if productivity in the service (or the non-service) industries should rise more rapidly than in the past. But I am optimistic about the outcome. For projections are not forecasts; they are calculations designed to indicate possible problems. They are essentially statements of the following sorts: *if* productivity in the service industries should rise at this higher rate than in the past, and *if* demand for more goods and services should, in the economy at large, not rise sufficiently, then there would be some redundancy in labor. But the projection is a purely hypothetical statement. I would say that the economic system of the sort that operates in the western world tends to function in a way that sops up labor when productivity in particular industries or in the economy at large rises at a more rapid rate than in the past. It does not necessarily follow that a serious problem of unemployment results. There will, of course, be a problem of labor shift requiring retraining and the like; but it need not lead to unemployment. It may mean, simply, more goods and services, or more leisure, or more of both. I expect the demand for goods and services will rise more rapidly than the demand for leisure, as productivity accelerates. It is one of the functions of the projections to which I am referring to pose problems of adjustment and suggest the advisability of plans for dealing with them.

Finally, let me conclude with a word of thanks. The task of raising productivity is important; it is also very difficult. It seems to me that meetings between peoples from different cultures and with different backgrounds are extremely stimulating, and helpful in understanding and carrying out this task. I greatly appreciate having had the opportunity of meeting so many persons engaged in this enterprise, people with whom I do not generally have contacts. I wish you well in your work.

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ПРОИЗВОДИТЕЛЬНОСТЬ ТРУДА В СЕКТОРЕ УСЛУГ

С. ФАБРИКАНТ

Ранее динамика производительности труда исследовалась только в отраслях обрабатывающей промышленности. Параллельно с быстрым ростом удельного веса сферы услуг — как в производстве национального дохода, так и в общем числе занятых, — и здесь все больше возрастает значение анализа производительности труда и путей ее повышения. По мнению автора, основная проблема при измерении производительности труда в сфере услуг заключается в том, что традиционные показатели чрезвычайно искажают и не дают реального представления о фактической динамике производительности труда. Далее автор отмечает, что нынешние инфляционные тенденции тоже требуют более основательного анализа производительности труда в секторе услуг, поскольку в этих отраслях имеет место наиболее быстрый рост цен. Этот ускоренный рост цен на услуги автор объясняет тем, что цены здесь содержат не только фактические затраты, но отражают также и качественные изменения и, далее, тем, что монопольное положение предложения может препятствовать быстрой перегруппировке факторов производства в соответствии со структурой спроса. Во всяком случае из роста цен не обязательно следуют низкие темпы роста производительности труда в этих отраслях. Правда, темпы роста производительности труда в сфере услуг весьма разнообразны: есть отрасли услуг, которые по темпам роста производительности труда далеко опережают сферу материального производства, в то время как в других отраслях услуг темпы роста производительности значительно отстают от средних темпов. Для стимулирования общего повышения темпов роста производительности труда следует разработать комплексную систему материального и морального стимулирования в секторе услуг. В дальнейшем автор высказывает соображение, что на нынешнем этапе экономического развития уже устарело традиционное подразделение на секторы (Колин Кларк, Фишер). Согласно его мнению, в исследованиях отраслей следовало бы применять группировку нового типа, на основании которой сектора народного хозяйства относились бы к одной из следующих двух групп: в первую группу относились бы отрасли с быстрым ростом производительности труда, а вторая группа содержала бы секторы с низкими темпами роста производительности труда. В сфере услуг, как и в других отраслях народного хозяйства, нет технических или экономических пределов роста производительности труда. Ускорение темпов роста производительности труда, — учитывая нынешние тенденции развития западного мира, — не должно обязательно приводить к росту безработицы, а в крайнем случае может более строго ставить требование большей подвижности рабочей силы. Наконец, автор отмечает, что между производительностью труда в различных секторах имеется взаимодействие. Отрасли материального производства обеспечивают сферу услуг новыми машинами, материалами и рынком, но вместе с тем производительность труда в первом и втором секторах зависит от прогресса сектора услуг.

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SERVICES — THE TERTIARY SECTOR

There is much talk nowadays about services. All over the world this is one of the most important subjects. In Hungary, however, — and in the socialist countries in general — services are particularly important, since at the present stage of development the various servicing activities do and will play an ever growing role. It is also frequently heard that in Hungary services are lagging behind other activities; in fact, their earlier rate of growth has diminished in recent years. This article is about the questions related to the concept of services, the author then gives a numerical presentation of the role and weight of services in Hungary, together with their most important interrelations.

The concept and classification of services

The concept of services is used in Hungarian economic life in many aspects. According to a Hungarian textbook of economics [1], "services are the social activities which do not produce material goods directly but satisfy various — usually important — needs of society". Services of material and non-material character are often mentioned. My own definition of the services stands near to the above. Let us first look at some examples of how the notion of services is being "expropriated".

In industry, by servicing such industrial activity is meant which does not create a new product assuming material form, but increases the value of an already existing product or reproduces its used-up value. Thus the various fitting and repair works, as well as the activities of enterprises performing some partial activities which help to create the final product, are qualified as services.

It is usual to call the activities of distributive trade a service; in practice we meet also the notion of "commercial services" including, apart from the distribution, among others the leasing and hotel services.

Gas, electricity and water are also mentioned. In this category not only the supplying but also the producing activity is sometimes included. Thus, some statistics show electric energy not as a product but as a service.

Also the notion of communal services (public utilities) is known. In this case the common criterion is not the character of the activity but the purpose

of utilization. This term includes, among other things, waterworks, gas supply, electricity, parks building and maintenance, etc.

I believe that the examples quoted suffice to prove that a uniform interpretation of the services in Hungary is needed. (Some attempts at definition have been made in the framework of the UN [10]; the individual countries, however, deviate from the recommendations to a certain extent.)

Socially organized economic activities satisfy the needs in two ways: directly and indirectly. (By needs I mean economic, social and personal needs as well.)

In the first case, that is, when the performance of the activity directly satisfies the need, the using up of the activity itself, we may speak of services. In the second case, the activity is directed at creating some concrete product in order to enable it to satisfy a need. In this latter case the result of the activity is a final product to be used according to its destination, whereas in the first case the result of the activity is direct and usually immediate consumption, meeting some economic, social or personal need.

Servicing activity may be of many kinds. In most general terms, it can be divided into material and non-material services. The notion of material services sums up the servicing activities of the branches of material production. These are parts of their regular activity. However, they do not turn out products. The branches of material production are: industry, construction, agriculture, transport and communication, as well as the distributive trades. Services within the scope of material production might be also divided into two categories. The activities of transport, communication and the distributive trades are in their entirety services. The character of the branches is given precisely by the service performed, which is typically related directly to material goods or persons. It is characteristic also of these services that the performance of the activity means simultaneously consumption.

The industrial, construction and agricultural activities also comprise servicing activities. These are characterized by the fact that they are performed in connection with material goods, by making them suited for final consumption. Here, too, it is characteristic, that the performance of the activity is consumption at the same time. However, this consumption is productive consumption, i.e. consumption in the interest of using the product according to its original function. The service activities performed in the primary and secondary sectors are not always organizationally separated from the physical production of goods. There are independent enterprises which perform service activities alone (e.g. car repair or the repair of radio and TV sets), but enterprises whose primary task is to turn out products may also provide services.

Another major group consists of non-material services. These include every socially organized activity with the purpose of satisfying the non-

material needs of persons and of the society. Many kinds of activities belong here. Their most comprehensive groups are:

Public administration and defence,
health, education, cultural services and sports,
personal and housing services.

In Hungary the classification of economic activities reflects also the servicing activities and makes possible to delimit the service branches:

1. Industry
2. Construction
3. Agriculture
4. Transport and communications
5. Distributive trades
6. Personal and business services and housing
7. Health and cultural services
8. Public administration and other-services

Of which:

Material branches: 1—5
Non-material branches: 6—8 (non-material services)
Tertiary sector: 4—8.

The term tertiary sector is used to sum up the branches which are of a servicing character by their functions. They are not identical with the total servicing activity. A deviation is caused by the fact that the primary and secondary sectors (1—2—3) also perform service activities (in contrast, the tertiary sector turns out sometimes products as well).

Role of the tertiary sector in the economy

To approach the totality of services, their proportions and changes, it will be convenient to present the most important data of the tertiary sector. With their aid we can also make international comparisons. The proportion and role of the tertiary sector in the economy can be best judged on the basis of employment and fixed assets. For Hungary, the following characteristic data can be shown:

Table 1

Employment in the tertiary sector*

	Employment (thousands)			Per cent of total employment		
	1950	1960	1969	1950	1960	1969
Transport and communication	191.0	296.9	324.0	4.5	6.3	6.4
Distributive trades	237.4	320.6	387.9	5.6	6.9	7.6
Material services, total	428.4	617.6	711.9	10.1	13.2	14.0
Personal services and housing	.	.	106.4	.	.	2.1
Health and cultural services	.	.	362.8	.	.	7.2
Administration and other services	.	.	333.7	.	.	6.5
Non-material services, total	689.4	664.8	802.9	16.2	14.3	15.8
Tertiary sector, total	1,117.8	1,282.4	1,514.8	26.3	27.5	29.8

* At the end of the year.

Source: A szolgáltatások szerepe a népgazdaságban 1960—1970. (Role of services in the national economy.) Statisztikai Kiadó. Budapest, 1971.

In the last ten years employment in the tertiary sector increased by 20 per cent, while total employment by only 5.7 per cent. Within the tertiary sector, the rise in the non-material sphere was particularly significant (23 per cent). In the last ten years the advance of the tertiary sector was more pronounced than between 1950—1960. Incidentally, in the fifties — conforming to the general principles applied in our economic development — employment increased mainly in the material branches of production, particularly in industry.

In the last ten years the pattern of employment developed in a similar way in the other socialist countries too: the tertiary sector, and the weight of the non-material branches within this has increased.

Table 2

Changes in the pattern of employment in some socialist countries

	Per cent of employees in the			
	tertiary branches		non-material branches	
	in total employment			
	1960	1969	1960	1969
German Democratic Republic	34.6	36.8	15.3	18.5
Czechoslovakia	28.5	34.8	14.2	18.6
Hungary	26.1	29.7	13.5	15.7
Poland	23.7	27.5	10.2	11.5
Romania	14.4	19.6	7.6	10.2

Source: as for Table 1. p. 11.

Table 3

Employment in the tertiary sector as percentage of total employment

	1960				1968			
	Transport	Distributive trades	Non-material branches	Tertiary sector, total	Transport	Distributive trades	Non-material branches	Tertiary sector, total
Austria	6.9	12.5	23.4	42.8	6.9	16.2	24.9	48.0
Belgium	7.1	14.7	24.1	45.9	7.2	17.2	25.0	49.4
Finland	6.6	10.9	14.5	32.0	6.8	14.8	18.8	40.0
France	5.6	13.5	19.5	38.6	6.1	15.6	22.1	43.8
Italy	4.0	12.6	14.0	30.6	5.2	.	.	36.4
Netherlands	7.4	16.1	22.2	45.7	6.9	18.4	25.1	50.4
Norway	11.5	13.7	17.6	42.8	11.3	15.8	20.8	47.9
Spain	4.7	10.6	14.3	29.6[2]	5.1	12.8	14.1	32.0
Sweden	7.1	15.9	22.4	45.4[1]	7.4	15.8	26.4	49.6
United Kingdom	7.0	11.7	24.1	42.8	6.5	11.4	28.2	46.1

[1] 1962. [2] 1964.
Source: National Statistical Yearbooks.

The data clearly prove that in the industrially more developed countries we find relatively more people working in the servicing branches. The changes are practically the same in the countries listed. The differences between countries are of the same size in 1969 as they were in 1960, only at a higher level of employment in the tertiary branches.

It is worth comparing the same proportions within the data of some non-socialist countries.

The share of the tertiary sector in total employment is generally much higher in the non-socialist countries than in Hungary, particularly higher in the distributive trades, as well as in the non-material branches. In 1968 about half of total employment in the most developed countries was to be found in the tertiary sector, while in Hungary this ratio was a mere 30 per cent in 1969. It can be also established that the ratio of employment in the tertiary sector has grown in every country considerably. In the next decade a further growth of the tertiary sector may be expected in Hungary. This is likely to raise the ratio of employment in the distributive trades to a smaller extent and that in the non-material sphere significantly.

A substantial part of labour and also of total fixed assets are engaged in the tertiary sector, which is characterized by relatively high labour intensity and a similarly high capital intensity. One of the economic problems of the developing countries is that the implementation of investments immediately serving the expansion of production requires the allocation of vast material

resources and insufficient capital is left for developing the service activities which are indispensable for a higher level of development.

The role of the servicing branches is important in Hungary also if examined on the basis of fixed assets. In the last ten years the stock of fixed assets increased in the tertiary sector by 36 per cent, while in the branches of material production (industry, construction, agriculture) the increase was 75 per cent. This implied a diminishing share of the tertiary sector within total fixed assets. The share of the tertiary sector in the fixed assets of the economy as a whole was 73 per cent in 1950, 64 in 1960 and 58 in 1969.

Within the tertiary sector the shares in total fixed assets of transport, personal services and housing have significantly diminished and the share of distribution alone has increased.

Of course this declining share means that in the past decade the tertiary sector — and especially the non-material branches — were allocated a smaller share of investments than their initial share in fixed assets. In the average of the last ten years, the material branches obtained 77 to 79 per cent of total investments and the non-material ones 21 to 23, respectively. The tertiary sector — including also transport and trade which are "material" branches — obtained a share of 37 to 39 per cent. From another angle, the productive branches invested annually about 8 to 9 per cent of the gross value of their fixed assets, the tertiary branches 3 to 4 per cent and, within that, the non-material ones 2.5 to 3.5 per cent only.

The declining share of the tertiary sector and of the non-material branches in fixed assets is a phenomenon characteristic not only of Hungary. The picture, in general, is the same in the other socialist countries.

Table 4

Fixed assets in the tertiary sector
Per cent of total fixed assets in the economy[1]

	1950	1960	1969
Transport and communication[2]	24.7	20.8	18.3
Distributive trades	1.0	1.3	2.0
Material services, total	25.7	22.1	20.3
Personal and business services[3]	.	28.6	24.9
Health and cultural services	.	8.5	8.0
Public administration and other services	.	4.8	4.7
Non-material services, total	47.2	41.9	37.6
Tertiary sector, total	72.9	64.0	57.9

[1] At the end of the year
[2] Public roads and bridges included
[3] Housing included
Source: as for Table 1. pp. 42—43

Table 5

Fixed assets in the tertiary sector in the CMEA countries
Per cent of total fixed assets in the economy

	Year	Transport and communication	Distributive trades	Non-material branches total	Tertiary branches total
Bulgaria	1960	17.3	1.8	46.2	65.3
	1969	14.0	2.3	34.8	51.1
GDR	1960	10.2	3.5	50.2	63.9
	1969	9.9	3.9	41.8	55.6
Poland	1960	11.2	3.7	48.2	63.1
	1969	11.0	4.2	42.9	58.1
Romania	1960	12.0	2.1	41.7	55.8
	1969	13.1	3.3	32.6	49.0
USSR	1960	12.8	3.3	42.8	58.9
	1969	12.6	3.8	38.4	54.8
Czechoslovakia	1960	20.5	3.4	34.6	58.5
	1969	18.1	3.4	33.0	54.5

Source: CMEA Yearbook, 1969.

The data show how general this tendency has been in the socialist countries. Only in a few cases can minor deviations be found. Accordingly, the phenomenon appears to be a general rule on the given level of economic development. The acceleration of economic growth has led to a great increase in the output of productive branches. Thus, every country has invested a great deal into these branches. It means a general recognition of the importance of distribution that the share of distributive trade within total fixed assets has increased everywhere.

The technical composition of the stock of fixed assets in the sphere of services essentially differs from that in the productive branches, but substantial differences may be found also among the individual service branches. In services a predominant part of fixed assets consists of buildings and structures (85—95 per cent), while in the productive branches the share of immovables is not more than 60 per cent.

In the tertiary branches the share of machinery and equipment has increased within all fixed assets in the last ten years: their share was 27 per cent in 1960 and 28 per cent in 1969. At the same time, the corresponding figures for the non-material branches rose from 6.4 per cent to 13.2 per cent. This change, albeit small, indicates the growing technological equipment in these branches.

Table 6

Technical composition of the stock of fixed assets, based on gross value, at end-1969, percentages (total = 100)

	Immovables	Of which: housing	Machinery and equipment	Other
Productive branches (1–3)	60.8	2.8	33.0	6.2
Transport and communication (4)	71.3	—	5.7	23.0
Distributive trades (5)	71.1	—	24.1	4.8
Material branches, total (1–5)	64.2	1.9	24.7	11.1
Personal and business services and housing (6)	99.4	98.1	0.4	0.2
Health and cultural services (7)	77.2	—	11.6	11.2
Public administration and defence (8)	93.8	27.3	3.9	2.3
Non-material branches, total (6–8)	93.8	68.3	3.9	2.3
National economy, total (1–8)	75.3	26.9	16.9	7.8
of which: Tertiary branches (4–8)	85.9	44.4	5.2	8.9

Source: as for Table 1. p. 14.

The value of performance of the services

The system of national economic balances worked out by the Central Statistical Office and applied in practice as from 1969 enables us to evaluate the role and proportions of servicing activity within the economy. In this system not only the material, but also the non-material servicing activities are evaluated, their gross performance (output) is quantified and their contribution to the net national product is also worked out.

The scope of this article does not allow us to go into the details of the theoretical and practical problems arising from the evaluation of services. Nevertheless, it is necessary to explain briefly that, from the viewpoint of the method of evaluation, services may be classified into three groups:

— The first group includes those material and non-material activities which have a sales value — and this is the basis of valuation, such as transport, communication, the activity of barbers and hairdressers, etc.

— In the case of the second group there is no sales receipt, and here prime costs serve as a basis for the valuation of performance (output). Hospitals, schools, etc. belong here.

— Finally, there are special cases where economic considerations justify special valuation methods. Cases in point are housing and the financial institutions.

General and concrete problems of valuating the services have been widely debated both internationally and at home. Those polemizing agree, however,

that the services must be valuated in some way in order to be able to observe their role and development. The argument is about the *method* of valuation and whatever the decision, it would not influence in merit the importance of the role of the services within the national economy.

Considering the data of the valuation that now follows, particularly when judging the role and proportions of the services, it must be remembered that the prices of services are relatively low in Hungary and that a valuation based on prime costs necessarily reduces the relative share of the services. However, this does not essentially influence the dynamics of the services or the relative development of their share.

The data cover not branches, but activities and hence not only the tertiary sector proper, but data covering the whole of servicing activities will be reviewed (i.e. including those performed by the productive sectors as well).

In 1969, the value of the gross output of services in Hungary was 184.5 billion forints, or 27 per cent of the total gross output (covering the result of all economic activities). The gross output of the tertiary branches was 151 billion forint, i.e. 82 per cent of all services and the remaining 18 per cent of total services were performed in the branches of material production. The gross output of non-material services was 62.8 billion Ft, 9.2 per cent of the total gross output or 34 per cent of that of all services.

Table 7

Gross national output and the value of services in 1969 at current prices

Sector	Contribution to the value of gross national output	Of which: services		Share of sector in total services
		value	percentual share	
	billion forints			
Industry	339.7	20.0	6	11
Construction	50.2	7.6	15	4
Agriculture, forestry and water management	125.7	5.9	5	3
Transport and communication	34.2	34.2	100	19
Distributive trades	54.0	54.0	100	29
Customs duties and valuation differences	15.4	—	—	—
Material branches, total	619.2	121.7	20	66
Personal services and housing	12.1	12.1	100	7
Health and cultural services	24.4	24.4	100	13
Public administration and defence	26.3	26.3	100	14
Non-material branches, total	62.8	62.8	100	34
National economy, total	682.0	184.5	27	100

Source: as for Table 1. p. 16.

The value of services performed in the branches of material production was Ft 121.7 billion, most of which was performed in transport and communication (34.2) and trade (54.0), while a smaller part in industry (20.0), in construction (7.6) and in agriculture (5.9). While 100 per cent of the contribution to the gross national output of transport, communication and distribution are made up of services, in the goods-releasing branches the share of services in gross output is smaller: 6 per cent in industry, 15 in construction and 5 per cent in agriculture.

Within the net national product, the share of tertiary branches was 27.4 per cent in 1969 and that of the non-material branches 9.6 per cent.

In the last ten years the production of the tertiary branches, and within that the production of the non-material branches (and particularly their net national product) increased more moderately than the gross output of the national economy or the net national product. In comparison to 1960, the gross output of the economy increased by 66.4 per cent while the gross output of the tertiary branches by 66 per cent and that of the non-material branches by 63 per cent. The net national product increased in ten years by 58.6 per cent, while that originating in the tertiary branches grew by 55.4 per cent and within this figure that of the non-material branches by 38.7 per cent. All that means that although within the national gross output the share of the tertiary branches did not diminish, it fell within the net national product, and this holds true to an even greater extent for the non-material branches.

About two thirds of the services are related to or based on some product, or promote their use. Thus e.g. the trading (distributing) activity is to a great extent related to the turnover of goods and the part of activities claimed by the population or the economy in the form of a service proper is — in the statistical sense — negligible. (E.g. the hotel service.) Of the total Ft 184.5 billion in 1969 only Ft 66.2 billion were consumed in the form of an activity. Such were: education, housing, maintenance, barbers' and hairdressers' services, industrial repair for the population etc. The following data give wider information on these. (See Table 8)

The role of the services has already been illustrated from several angles. I believe, the importance of their evaluation and their accounting in the system of national accounts is only underlined, if we get acquainted with their role within productive consumption (material consumption). In 1969, 17.5 per cent of the total material consumption of the national economy was used in the tertiary sector. These sectors are thus important consumers of products. The non-material branches within the tertiary sector represented 9.4 per cent of total material consumption. A growing share in material consumption is also characteristic of the non-material branches. While between 1960 and 1969 the total material consumption of the national economy increased by 68.5

Table 8

Distribution of value of gross output of services by main types in 1969 (billion forints at current prices)

	Services connected with product	Services for final consumption	Total
Industrial services	15.8	4.2	20.0
Construction services	7.5	0.1	7.6
Agricultural, forestry and water management services	5.5	0.4	5.9
Transport and communication services	28.3	5.9	34.2
Distributive trades	53.1	0.9	54.0
Material services, total	110.2	11.5	121.7
Personal services and housing	3.7	8.4	12.1
Health and cultural services	2.3	22.1	24.4
Administration and other services	2.1	24.2	26.3
Non-material services, total	8.1	54.7	62.8
All services	118.3	66.2	184.5

Source: as for Table 1. p. 17.

per cent, the non-material branches raised their material consumption by 85.2 per cent.

A few words should be added concerning the value of the output of the non-material services. This is the field which has been evaluated in the recent two or three years only as an accountable performance of the national economy. The method of calculation or its possible refinement may be open to argument; yet the present uniform system of accounting is suited for correctly judging the value of these activities, their proportions and, mainly, their development.

The gross output of the personal and business services increased by 86.8 per cent since 1960 and reached in 1969 7.5 billion forints. Within personal and business services, the volume of barbers', hairdressers', photographers' and other personal services increased by 47 per cent while that of the communal services by 24 per cent. The most dynamic part of this group are the so-called business services (mechanization of administration, business organization, advertisement, etc.) their volume increased almost two and a half-times in ten years.

The performance of housing services increased between 1960—1969 by 41 per cent. Within that figure, however, the volume of the state-owned and the privately owned services developed differently. The value of the gross output of state housing services reflects the combined sum of rents and amortization of the housing stock. The changes in these two factors are reflected by a 38 per cent increase in volume over the ten years. Of this average, 34 per

Table 9

Gross output of non-material services
by main types at 1968 prices, billion forints

	Gross output		1969 as percentage of 1960
	1960	1969	
1. Personal services and housing	8,271	13,742	166.1
Of which personal and business services	4,021	7,510	186.8
state-owned housing	1,732	2,396	138.3
privately owned housing	2,518	3,836	152.3
2. Health and cultural services	15,248	24,514	160.8
Of which: health and social services	5,434	8,823	162.4
cultural and educational services	9,546	14,590	152.8
science and scientific services[1]	268	1,101	410.8
3. Administration and other services	15,112	24,720	163.6
Non-material services, total	38,631	62,976	163.0

[1] This includes the data of the research institutes financed from the state budget only. If the expenditures on research activities in the industrial and construction research institutes, in enterprises, universities, etc. are also included, the total costs of scientific research in 1969 exceeded 6 billion forints.

Source: as for Table 1. p. 18.

cent was the change in rents, and 41 per cent in amortization. The value of performance of privately owned housing is determined as the sum of all inputs related to their maintenance. The volume of gross output thus defined increased in the period from 1960 to 1969 by 52 per cent. Within this figure, the volume of current maintenance and replacement more than doubled, and amortization of the stock increased by 37 per cent.

The volume of health and cultural services increased from 1960 to 1969 by 61 per cent. Within this group, — particularly in the period after the implementation of the economic reform — the volume of expenditure on scientific research grew conspicuously, increasing more than fourfold in ten years. However, it must be remembered that our analysis extended only to the scientific institutes financed from the state budget, and thus did not cover the research institutes operating in enterprise form, nor the experimental research activities carried on in industrial and other enterprises.

The volume of health and social services proper increased by 62 per cent in the ten years reviewed and attained in 1969 8.8 billion forints (at 1968 prices). Within the health and social services the development of individual services was rather even. In every major group of these services the volume of live and materialized labour inputs increased faster than the number of those cared for in their framework.

Between 1960 and 1969 the volume of cultural services increased on average by 53 per cent. Development was essentially faster in the sphere of training apprentices (99 per cent), in higher education (124 per cent) and in the group of other cultural services comprising also radio and television broadcasting (118 per cent). In contrast, the volume of cinema-attendance fell by 30 per cent in the ten years (which is in line with international experience).

Utilization of the services

The main fields of utilization of the individual types of services are different. The majority of services provided by the material branches serves the purpose of current productive consumption, while a substantial part of the non-material services will be consumed by the population and public bodies.

The output of the material branches for productive consumption of this kind is natural and well known. The major part of transport, distribution and the servicing activity of industry satisfy the needs of the material sphere. It should be, however, observed that 13 per cent of the gross output of the non-material branches also served productive purposes, in a value of 8.2 billion forint. Of this amount 6.7 billion were used in material production and 1.5 billion by the non-material sphere. In the last ten years it was precisely this direction of output of non-material services that has grown most dynami-

Table 10

Distribution of the gross output of all services performed in the economy by fields of utilization in 1969, percentages

	Current productive consumption	Final consumption by		Total
		population	public bodies	
Industrial, construction, agricultural and water management services	86.0	14.0	—	100.0
Transport and communication services	82.7	17.3	—	100.0
Commercial services[1]	39.8	60.2	—	100.0
Non-material services	12.9	50.6	36.5	100.0
Tertiary branches, total	38.4	46.5	15.1	100.0
Services, total	47.0	40.6	12.4	100.0

[1] Only a smaller part of commercial services is used either as productive consumption or in the form of final consumption by the population (e.g. leasing, or hotel services). The preponderant part of these services is added, in the final analysis, in the form of trade margin to the price of products and is consumed in this final form either in production or by the population.

Source: as for Table 1. p. 26.

cally, mainly in the field of business services and of the economic services performed within the scope of the state budget.

A considerable part of the output is used by the population as direct servicing performance. To satisfy these demands is nowadays one of the most important tasks, supported also by a government decree. In 1969 43 billion forints of service activities that is, 40.6 per cent of all services were used to meet the demand of the population.

Between 1960 and 1969 the total consumption of the population increased by 44.6 per cent, within that figure the consumption of products by 42.9, and that of services by 50.5 per cent. Owing to the faster growth of services, the share of services within total consumption increased from 22.7 per cent in 1960 to 23.6 per cent by 1969. The relative growth of consumption of products and services, however, was not even in the individual years. Between 1960 and 1965 the consumption of services increased faster than that of products. After 1965, however, the rate of increase of direct product consumption became faster. Accordingly, the share of services within the total private consumption increased between 1960—65 while it declined somewhat after 1965.

Within the above 50 per cent growth of all services used by the population the volume of non-material services exceeded the 1960 level by 55 per cent and that of material services by 39 per cent. Of all services used by the population three quarters are non-material, while one fourth consists of industrial repair, commercial, transport, communication, telecommunication and other material services. The share of non-material services within the total consumption by the population rose from 17 per cent in 1960 to 18 per cent in 1969.

As shown by these data, the share of services in the total consumption by the population increased in these ten years only slightly (by 1 percentage point). But a considerable change occurred in their pattern. In the range of certain types of services consumption doubled or trebled, while the consumption of others significantly diminished owing to the change in the pattern of demand. Thus, e.g., the repair of shoes and clothing, or the cinema attendance fell by 1969 below the level of 1960, while the repair of vehicles and of household equipment, and the training of apprentices, etc. greatly increased.

The development of the services, the further raising of their performance occupies an important place among the tasks of the near and the more remote future. The primary aim is to satisfy the demand of the population both in quantitative and qualitative terms. Development, the influencing and planning of the directions of use is possible only if we know more about the volume, pattern and utilization of the services. This body of knowledge is provided now by the new system of national accounts within which the services as socially organized activities are also assessed and quantified.

Table 11

Development of services used by the population

	1960	1969	1969 as percentage of 1960
	at 1968 prices, million forints		
Industrial repair services	3,212	3,529	109.9
Of which; repair of: clothing and shoes	1,709	1,188	69.5
household equipment	1,085	1,415	130.4
vehicles	200	494	247.0
cultural articles (radio, TV, etc.)	148	348	235.1
other industrial repair activities	70	84	120.0
Transport and communication services	3,834	5,605	146.2
of which: passenger and goods transport	3,299	4,990	151.3
telecommunication	535	615	115.0
Other material services	309	1,059	342.7
Material services, total	7,355	10,193	138.6
Personal and housing services	5,687	8,395	147.6
of which: personal services	1,342	2,087	155.5
state-owned flats	1,827	2,472	135.3
privately owned flats	2,518	3,836	152.3
Health and social services	5,584	9,031	161.7
of which: hospitals, clinics	2,635	4,168	158.2
out-patient service	1,027	1,621	157.8
other health and social services	1,510	2,517	166.7
recreation	412	725	176.0
Cultural and educational services	8,271	12,927	156.3
of which: kindergartens	641	1,070	166.9
primary education	2,833	3,790	133.8
secondary education	972	1,616	166.3
training of apprentices	489	974	199.2
higher education	643	1,438	223.6
other education	571	751	131.5
theatres	275	420	152.7
cinemas	550	386	70.2
sport	406	543	133.7
other cultural services (libraries, etc.)	891	1,939	217.6
Other non-material services	1,237	1,795	145.1
Non-material services, total	20,779	32,148	154.7
All services	28,134	42,341	150.5

Source: as for Table 1. p. 30.

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УСЛУГИ КАК ТРЕТИЧНЫЙ СЕКТОР

А. РАЦ

Под услугами мы понимаем такую организованную в общественном отношении хозяйственную деятельность, которая не дает материальных благ, а сама деятельность служит удовлетворению потребностей общества, экономики и отдельных лиц. Народнохозяйственные отрасли, основная деятельность которых состоит в предоставлении каких-нибудь услуг, мы относим к третичному сектору.

Сумма охватывающего все существующие в народном хозяйстве виды хозяйственной деятельности валового национального продукта в 1969 году составила 682 млрд. форинтов. 27% этой суммы, т. е. 184,5 млрд. форинтов, составила общая стоимость народнохозяйственных услуг. Валовая выработка третичных отраслей составила 151 млрд. форинтов (22%), а выработка нематериальных отраслей равнялась 63 млрд форинтов (9%). Из числа активного самодеятельного населения на 1 января 1970 года число занятых в третичных отраслях составило 30%, а число занятых в сфере нематериального обслуживания — 16%. Еще большим является участие этих отраслей в фонде основных средств. В начале 1970 года третичному сектору принадлежало 60% всех основных фондов народного хозяйства, в том числе 40% входило в состав сферы нематериального обслуживания.

В отношении продуктов и услуг в объеме производства значительных изменений не произошло.

Примерно 47% произведенных в народном хозяйстве услуг было использовано для производственных целей, 41% — использовало население, а 12% — было обращено на удовлетворение общественных нужд.

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LEISURE TIME AND DIVISION OF LABOUR

The authors analyze an ever growing phenomenon: the sale by workers of their labour power during their free time. They perceive the fundamental reason for this partly in the economic sphere (average wage regulation, the low level of the services, etc.), and partly in the lack of a true need of free time. They believe this to be related to the education system, which orientates directly to the division of labour.

In Marx's works we can distinguish the outlines of two conceptions regarding the possibility for extending human autonomy. Each has found its own group of followers, even in today's social-scientific thinking.

According to one conception, the realm of freedom can be attained — considering the limitations dictated by the existing division of labour — only *outside* the socially necessary *working time*. For this reason, the supreme goal of social development is to increase leisure time, and to make use of it in such a way that the individual may avail himself of the material and spiritual wealth of society to an ever growing extent, so that the difference between the stage of development of the individual and the development possibilities offered by the society, ever decrease.

According to the other conception, the fundamental task is the humanization of work. Therefore, fundamental changes must be made in the *sphere of socially necessary work itself*, first of all, by removing the limits created by the division of labour, and by developing forms suited to a realistic social control. In this way, the possibility must be created for each man to realize himself in the world of work.

One of the things we would like to prove in our study is that *the worlds of leisure and of work are closely interrelated and it is thus impossible to make deep-reaching changes in one sphere, while leaving the other untouched.*

Experience has shown that limiting the attainment of "the realm of freedom" to the time outside work alone is not a solution. The time left free from "official" work is not filled with activities which could serve the accomplishment of the individual and his personality, but, for various reasons, it is also used to make money. Thus the activities performed in free time are part of the productive organization in different ways and, as a result, they are

affected by the negative influences of both the division of labour and the existing work organization. Illusion-free experience and sociological research have equally proven that an increase of the "leisure time" *does not*, in itself, *change the way of life* of people but provides at most the opportunity to extend existing or to introduce new activities *which serve to satisfy the most urgent needs within the given way of life.*

The second conception outlined for the realization of human autonomy has to face no smaller obstacles. Division of labour binds people to concrete occupations or professions mostly for their whole lives. Furthermore, most frequently the choice of these professions are determined by external factors beyond the control of the worker himself (or herself), and these limitations continue to provide very little possibility for individual development, and self-accomplishment.

In order to find the way out of this situation, we should analyze the pitfalls on the two roads mentioned.

If we start from the hopes attached to leisure time, one of the most obvious, and in itself an unconditionally positive factor is that the time exempt from "official" work is growing substantially in all industrially developed countries. This could easily lead us to the conclusion that genuine free time is rising in a similar ratio. In practice, however, in almost each of these countries, *the time spent on making money outside official work time is also rising* substantially.* At present this is mainly true of men, since, due to the comparatively heavy burden of household work, women indeed have hardly any leisure time at all. We cannot expect any substantial change in this situation even if official work time continued to further diminish, for it is well known that mechanization tends rather to render the household work easier than to shorten the time required to complete it (apart from this, the rise in the general level of cultural demands is again very time consuming**). At the same time, these household duties are also activities performed under economic pressure (not always to make money, but at any rate intended as saving), and everything we have said about the forced division of labour applies to them, too, regardless of the person involved. (This, of course, is not true for those who have chosen this type of activity of their own free will.)

It is very difficult to determine precisely the magnitude of the part of time spent outside work on "making money". Various types of activities are included here, from part-time jobs and overtime, through labour in household

* In a book recently published by the Polish sociologist J. DANECKI [1] this fact is well documented with data referring to both socialist and capitalist countries. The fact has been proven in detail with respect to British workers by a research project completed by F. ZWEIG [2].

** FOURASTIE predicts that in 20 years' time the number of compulsory working hours in the West will be reduced to 30, but the time required to perform household work will require some 40—80 hours, depending on the number of children in the family [3].

plots and the household work already mentioned, to occupations in which people are motivated either by the possibility of supplementary incomes, or at least, by material savings. This situation is by no means changed by the fact that *in many cases* people are far better able to identify themselves with their money-earning activities outside their official work-times than with their basic jobs, if for no other reason, because in performing this work they generally have greater independence, since this is usually their own choice.

Even if we cannot provide summary data at this point, the results of various research projects and a good deal of detailed information indicate the probability of the fact that, simultaneously with the reduction of official working hours, there is an increase, in Hungary too, in the portion of so-called leisure time spent on making money, in the above broad sense.*

As a result, there is very little time left (particularly if we also take into consideration the growth in the wealth of society as a whole, and the corresponding widening scope of possibilities open to the individual) which, to use *Marx*'s words, "is not absorbed by direct productive work, but (remains) for enjoyment, for leisure, so that it gives scope to free activity and development", ". . .which is not determined — as labour is — through the coercion of an external goal that must be executed, the execution of which natural necessity or social duty is, as one likes" [5].

The question then arises, what forces people to spend their leisure time in money-earning activities.

First of all, we must view the procurement of the material goods needed for a "respectable standard of life" as one of these forces. On the level of development where Hungary stands today this is a problem for a comparatively broad strata of people. Of course, on dealing with this question it must also be taken into consideration that the criteria of a "respectable standard of life" have undergone substantial *transformation.*** Yet, it is a fact, that certain objects which are considered part of elementary living conditions (e.g. a flat, and some other durable consumer goods) cannot be procured from today's average basic wages.

This is only accentuated by the fact that the demand for excess leisure is overtaken by the growing demand for goods which, though industry is

* According to one of the most recent sociological surveys, concerning the way in which urban industrial wage and salary earners spend their leisure time, 17 per cent of workers in the Budapest heavy industry factories, 15 per cent of workers in towns of county status, and 24 per cent of those in towns of district status have indicated a rise in overtime. 18 per cent of male skilled workers, and 26 per cent of the professionals in leading positions have *regular* part-time jobs and, in both categories, two thirds of the workers have, *not-regularly* complementary employment. The way in which paid holidays are used, should also be part of the picture. A substantial part of the workers spend their paid holidays working, or, which is again not rare, do not take their annual leave (or part of it) at all [4].

** For more details on this process see: [6].

Table 1

Alternative preferences by groups of employment and sex

Alternatives selected	Unskilled workers		Skilled workers		Professionals	
	men	women	men	women	men	women
It is worthwhile to give up leisure time for material goods	24	37	28	30	21	18
Material wealth and leisure time are of about equal importance	66	49	63	56	70	71
Leisure time is to be preferred to material wealth	3	11	7	13	7	11

producing them in ever bigger quantities, cannot yet be acquired by great masses of workers because of the given level of the national income.*

The growth in the "desire for acquisition" is also being influenced by such ever spreading phenomena as prestige consumption, or even the simple manipulation of demand (e.g. through advertizing on an ever broader scale, based simply on profit orientation).

Both the ensurance of a "respectable standard of life" and differentiated needs, or even prestige consumption appear as particularly strong impulses among young people setting up families or becoming independent. They are faced with the necessity of creating *a material basis for an independent life* (beginning with the flat, through procuring the objects needed for everyday life, on to supporting an additional person — wife or child) *and they are also the individuals whose differentiated needs change most dynamically.***

The endeavour to meet demands of this nature generally interrupts, and may even set back, the process of cultural development and self-education which was generally started by schooling in the good sense of the term.

It is precisely in these young age groups where we can observe most frequently that they undertake extra work and overtime and, at the same time, this is where we most frequently find people working in alternating shifts, or on continuous night shift, often at their own request.

Although it is mostly in the period of becoming independent and founding families that people are forced to subordinate their lives, including their leisure time, to making money, this appears as a coercive force in other age groups as well.

* The study already mentioned by Miklós SZÁNTÓ, provides interesting data concerning the extent to which the different strata prefer acquisition of material goods to making other use of leisure time.

** For more detail on the concept of differentiated needs see our other study mentioned.

The growing material demands of various types and the difference between their magnitude and the means available for their satisfaction are not only a source of frustration but, beyond doubt, they also increase the incentive force of wages. In principle, this would provide an opportunity for starting off a more dynamic development. Realization of this possibility in the sphere of production is made difficult mainly by the fact that the enterprise cannot pay higher wages for more or better individual output except within rather narrow limits. Greater material advantage can be gained almost solely through promotion within the hierarchy. However, this road is not only a limited one (i.e. only a few workers can be promoted e.g. to foreman) but it also leads to distorted social consequences, since it does not provide incentives to maximum performance on-the-job, but develops *standardized models of success*, which do not provide opportunity for taking into consideration individual talents or skills. Some people cannot, or possibly do not want to take this road and hence their demands (whether basic or differentiated) force them to try to achieve greater earnings; the only way to meet these demands is to use leisure time in some money-earning activities.

In the above we have endeavoured to give an answer to the question: what forces people to use their leisure time to make money. Now we should look for *the mechanism through which the market is capable of absorbing the labour thus offered*, the more so since this seems to happen under conditions more favourable to the worker than those valid within "official" work time.

Increasingly broader opportunities are provided for undertaking work at the expense of leisure time by an ever larger gap appearing on the present development level of society, between the demand of the population for services and the capacity of the state-owned enterprises and cooperatives which are supposed to meet these demands. At the same time, there is a continuously growing demand for skilled workers, who, outside their official work time, are willing to perform work of this nature, although at a higher price than officially paid. This means that not only the private sector is expanding, but there is a rapidly growing number of people undertaking work outside their working hours in legal (with permits) and illegal forms.*

In order to enable society to pay for these services, wages received for "official" work are generally insufficient and, therefore, surplus earnings are needed in some or other form. In the majority of cases, these can only be obtained by sacrifying leisure. Thus a peculiar vicious circle develops, *for this is the beginning of a process which reproduces its own irrationality on an extended scale.*

* This tends to reverse the trend described by Max Weber, that ". . .The factory recruits a very large amount of the skilled labour force from the reserves of small-scale industry, in other words, it allows the latter to train the labour force, and then, when training is completed, it withdraws them from there . . ." [7].

Demand for services not met by the state-owned and cooperative enterprises pushes up the free-market price of labour. In recent years, the free-market price for labour rose more rapidly than wages in general, and today in many trades they are more than double the official wage level (e.g. official wages of masons have risen by about 25 per cent in the past 5 years, while the free-market price for workers skilled in this trade has more than doubled).

The reasons for this state of affairs — the higher price level for services on the free market, the smaller overhead costs and taxes, and the far more intensive and better organized work — are comparatively easy to survey, but to evaluate its consequences is far more difficult. One of the most important of them is their effect on labour intensity. While it is difficult to prove with quantitative data, it can be logically assumed and supported with everyday experience that *the difference between the official and free-market price of labour plays an important role in the well-known low degree of on-the-job intensity*. The often mentioned slack in work discipline is in most cases a conscious restraint on performance, since the worker who receives on the job half the money per hour he gets for the use of the same amount of his leisure time, quite naturally reacts by saving his strength. Max Weber already described this truth by saying that "low wages are not identical with cheap labour" [8]. Precisely for this reason, not all wage increases lead to labour becoming "more expensive" and to such negative consequences as the rise in the level of non-regulated prices.

However, the picture becomes even more complex: the low degree of labour intensity forces the enterprises to form a labour reserve within the enterprise itself, which enhances the chronic labour shortage. As a result, the state-owned and cooperative enterprises not only endeavour to maintain much larger staffs than justified, but *they themselves appear as purchasers of their own workers' free time*. It is only in this context that it becomes possible to understand that despite all endeavours and limiting measures neither the extent of overtime nor the ratio of part-time and complementary jobs decreases.

The situation which has developed in the area of overtime is a particularly peculiar one. With reference to the workers' interests, the trade unions are using all their strength to reduce, and even eliminate overtime. At the same time the workers, particularly in trades where there are restricted opportunities for the free-market sale of their labour, *consider their incomes as acceptable only if the earnings are complemented with overtime wages*.* In some of the enterprises the workers themselves create, in an organized manner, conditions under which overtime becomes unavoidable. For instance, they are not willing

* F. ZWEIG, in his already mentioned work, refers to an analogous phenomenon in British industry. In his opinion, overtime of a sufficient degree, and possibly, on a regular basis, is one of the permanent demands of the labour force [9].

to undertake certain tasks unless they receive a sufficient quantity of overtime in return.

This problem has become manifest with particular clarity in recent years when the cooperative farms have become centres of attraction for labour not only because they were able to pay higher hourly wages, but also because they were less affected by restrictions on overtime. This, for reasons already given, particularly affects the young workers and therefore today we may speak with greater justification of a rising average age-level in certain large metal-working enterprises than in well-operated cooperative farms.

The vicious circle described earlier includes the almost permanent high rate of labour turnover and this situation, as experience has proven, can hardly be changed by administrative measures.

To sum up: experience has shown that the reduction of official working hours, if this is not followed by a *substantial rise in real wages*, and if, in addition, *a true demand for leisure* does not develop in the concerned strata of society, *provides the illusion of increased freedom only*. In one way or another, the workers are in fact *forced to put their labour on sale in their leisure time as well*.

But it is not only the turning of leisure-time into a commodity which makes the hopes linking the self-realization of man solely to the growth and reorganization of leisure time into illusoric ones. Sociological research has proven that the nature of concrete work — in other words: the place in the division of labour — determines the entire life of man to a great extent, as well as the manner in which he spends his leisure time. The present forms of the division of labour constitute, however, a serious barrier to the realization of human autonomy in the sphere of work itself. On the one hand, the majority of workers perform detail work *lacking the teleological function from both the professional and the social points of view*. On the other hand, *people are tied to a concrete trade and frequently to a job*, for their lifetimes, almost from childhood until the time they retire and receive their pensions. This is one of the most conservative features of the present production organization.

A suitable transformation of the production organization to conform with socialist values raises two major questions: What changes are necessary in the system of the division of labour? And how can the ties mentioned be eliminated, or at least loosened?

Without underestimating the importance of the first problem — which we have dealt with from several angles in an earlier study [10] — here we would like to concentrate on the second question, partly because, for the earlier argumentation expressed here, this is of key importance.*

* This present study will not deal with the aspects of the problem customarily mentioned as the democratization process of social relations, and which appears to us rather as the creation of the social domination of the producers.

The allocation of people among the major branches of the social division of labour is today primarily performed *by the system of education.* There the process begins which results in people being tied for a lifetime to a specific work, and possibly to a job as well. The school does not prepare the students for consciously forming their lives: it merely enables them primarily to fill a narrowly defined occupation (job).

Our present school system charts in essence, already at the age of 14 *three courses of life, which not only differ from one another, but are distinctly closed off from one another, conserving the present social structure and passing it on through this system to the coming generations* as well.

The general secondary (grammar) schools supply the reserves to the leading and intelligentsia strata, and, to a certain extent — as a by-product — to the lower and medium administrative levels as well. The specialized secondary and vocational training schools are intended to serve the reproduction of the skilled worker strata in the very broad sense of the term. Their most successful students become technicians at the lower and medium level. Finally, those who do not continue their studies after completing primary school make up the majority of the unskilled and semi-skilled workers who are in our society on the lowest prestige level.

From the point of view of our study, the *system of training skilled workers* is of particular importance. Today it is perhaps precisely this stratum which is the most strongly bound by the ties of the division of labour, whether we compare them with those with higher education, or with unskilled workers.

In order to be able to analyze this problem more closely, it is first necessary to briefly outline the major trends in this field, arising from the effect of technical progress. This is all the more important since an understanding of the entire process is frequently made difficult by hasty generalizations. Frequently only one of many other aspects of this multi-directional development process is emphasized and, on the basis of technocratic illusions, the expected positive consequences of technical progress are overestimated.

If we analyze the present situation the following concrete trends may be observed:

a) The most important change, in the sense that it effects the greatest number of workers, continues to be the replacement of manual work by mechanization. The beginning of this process goes back to the period when the textile and metal-working industries emerged, but in many fields mechanization continues to be highly topical (e.g. in agriculture, loading, in materials handling, in underground and over-surface construction, etc.). In the course of development manual work is replaced not by skilled, but, in most cases, by semi-skilled labour, and this does not require the training of skilled workers in the traditional sense.

b) Simultaneously with the former process, old traditional trades continue to lose their craft character and are approaching the nature of semi-skilled work. As a result of technological progress, many jobs are narrowed down and the activities required become a routine. Today we can hardly find a traditional craft to which this process would not apply and where, precisely for this reason, the need for a radical reform in skilled worker training would not emerge.

c) Technical progress creates new jobs in comparatively great numbers (the majority of these are, irrespective of their official classification by type of employment, again of semi-skilled nature, e.g. operators of automatic or semi-automatic machines, card punchers, etc.) but it only creates a small number of new trades (e.g. television assemblers, or maintenance personnel for automated machine series). The latter trades are to some extent different from the traditional ones, first of all because they require in most cases less manual dexterity but a much greater general and specialized technical knowledge.

The technical basis for just about all trades and jobs is continually changing; often this change is far-reaching, making the know-how which was essential earlier obsolete and superfluous in a short time. Apart from the equalization process mentioned previously, this fact would itself justify the views which challenge the justification of maintaining the skilled, semi-skilled and unskilled worker categories, while suggesting for the same reasons *the elaboration of a new training system.*

In Hungary, the number of skilled worker trainees increased almost fourfold between 1953 and 1965. This can be hardly justified by the requirements of technical progress, since in Sweden this rise was only 27.6 per cent (in comparison to 1958), in Austria 44 per cent, and in Italy 46.5 per cent [11]. It can be explained much more rationally by the fact that this form of training led to an apparent drop in the number of students not continuing their studies after primary school, and helped to educate the young people to work. On the other hand, it served the endeavour of protecting the children from disillusionment by moderating aspirations which cannot be met on the present level of the division of labour, and by guiding them to suitable schools. The strongest detrimental effects of the phenomenon described could mainly be found in young people who are in disadvantageous positions at the outset.

Therefore, the present system of skilled worker training may be justly criticized, both from the point of view of efficiency (it is not suited to the requirements changed because of technical progress) and on the basis of socialist values as well (it turns man into the slave of a trade or a job for his lifetime).

One of the obvious contradictions of our skilled worker training system is that although the majority of the concrete occupations require — as a result of technical progress — a knowledge which can be acquired within a short time by

a man with a comparatively high general cultural level, due to wage policy and other reasons many occupations of a semi-skilled nature have been qualified as skilled work (particularly in the light industry, commerce and the food trades), despite the fact that the requirements concerning these occupations have not changed. (Or if they have, it has been rather in the direction of narrowing down the knowledge and skills required.) While on the surface, this process serves highly positive goals — among other things, to raise the prestige of the occupations, or rather trades concerned — in fact it has rarely achieved this effect (let us think, for example, of endowing skilled character to women's occupations in the textile industry). In general, it *reduces the value of skilled labour also in occupations truly requiring specialized knowledge*. Besides, it is not negligible from our point of view that a skilled worker's certificate, gained through greater or smaller effort, increasingly ties people to one detailed area of the job.

It has been a clear trend that in case of supply difficulties in any specific semi-skilled work, this particular field is declared a skilled trade. Furthermore, in those areas where the number of applicants for the skilled workers' training schools is insufficient, a so-called "raised level" education is introduced. For instance, training for sales personnel in the food trades is taking place on a "raised level", despite the fact that, assuming a suitable level of general education, the knowledge needed to meet the requirements of the work could be learned in a comparatively short time, and emphasis should rather be placed on supplying continuous information to the sales personnel (on the properties of new commodities, on how to use them, on new commercial methods, etc.).

A by-product of this process is the contradiction between the "unskilled" workers who are experienced in their jobs, and those who, while having certificates of skilled training, have less experience. For, in the majority of the trades and jobs mentioned, practice — linked with certain personal abilities — is often worth more than the knowledge acquired in the course of vocational training.

The trends in technical development indicated above result in the fact that, although there is a comparatively large amount of time available in the skilled worker training schools to learn the trade and acquire abilities, education cannot be sufficiently effective for it is unable to follow practice. The problem is not alleviated if in training preference is given to educating skilled workers with a broader profile instead of limited specialization, although this is clearly a positive endeavour. (In the past decade just about all countries, including Hungary, have substantially reduced the number of trades taught.) This means that in the training of skilled workers the emphasis is transferred from the acquisition of concrete skills to more general technical knowledge but, for the most part, this does not ensure a suitable standard of the educational system in either respect (and students frequently resist theoretical subjects, for they

have different expectations towards these types of schools). Thus, the goal of convertibility can only operate within narrow limits.

The skilled worker training schools, particularly those which provide a certificate of completed secondary studies as well, have been given a tremendous task in raising the general cultural level of their students. This would serve to prevent the narrowing down of their career path in life, but in practice such a deep gap exists between the general secondary schools and the vocational secondary schools in respect of the general cultural levels they actually provide, that it makes the right of students in the latter schools to continue their studies in universities and other institutes of higher education rather theoretical and this possibility remains practically open only for persons with exceptional talent. It is worth also noting that, according to a study completed by the Ministry for Labour in 1970, only 12.3 per cent of students in vocational secondary schools wanted originally to learn a skilled trade [12].

It must also be taken into consideration that our society not only requires the young person to choose an occupation at an age when his autonomy is, in most cases, completely illusoric but, in addition, it idealizes lifetime faith to the trade thus "chosen", provides incentives for it, and not unfrequently even forces people into such behaviour qualifying non-conformist conduct as an undesirable deviation.

This is related to and supported by a planning practice which considers the expected number of workers in the various trades, and even in precisely definable jobs, and works out definite enrolment plans accordingly. From this point of view "dropping out" — just as leaving an occupation — is considered as a negative phenomenon which must be fought against, using administrative, as well as psycho-technical and socio-technical methods. However, in some trades drop-out is taking place on such a broad scale that the deviational nature of the phenomenon itself becomes questionable. For instance — according to the survey by the Ministry for Labour already mentioned [13] —, the drop-out among the students of the agricultural trades is 42.4 per cent. About one third of those trained take jobs outside their trades — as is emphasised in the professional literature to the point of boredom. In addition, the rate of job changes among the young skilled workers is quite high too, and while it often does involve the abandonment of the learned trade, many regard it, relying on the above argumentation as a phenomenon to be condemned and checked through administrative measures.

The facts mentioned are well known and make the *crisis of vocational training quite obvious*. However, this recognition may lead — and indeed has partly already led — to many types of proposals for solution.

Despite the variety of proposals made to date, when looking at the substance of matters we can distinguish between two major directions, primarily

according to *the relationship, viewed as correct, between school training and the concrete division of labour.*

The followers of the first direction are fundamentally correct in their judgement of the weakest points in the present school system (when working out the new educational reform now under way) and their proposals contain a number of points worth considering; nevertheless they cannot change the present situation for they do not touch the essence of it, precisely those features which tie people to specific jobs for a lifetime.

In contrast, we feel that it is possible to develop a joint system of production organization and school training which does not fix the place of man in the division of labour for his lifetime, but allows him to continually orientate towards finding himself and his identity, creating the possibilities and even the incentives for the worker *to change occupation or trade in any stage of his life.*

But, in order to achieve this, the mechanical relationship between the present general system of school training and the world of work must first be broken.

The primary task of a school system providing general education *is to educate man as a human being* and not as a worker who will have to fit into the division of labour, in other words, *to prepare people for controlling their own social relations, and for the conscious shaping of their own destinies.*

According to this model, *general knowledge* — in quantities which can be provided to everyone within the economic possibilities of the moment and in view of the values chosen — should be given in a *uniform type school which not only declares but in reality implements a final stoppage to segregation. The system of vocational training,* in its various levels and forms, should be sharply distinguished from this. In contrast with the former, the latter *must truly provide the knowledge and the abilities necessary for participating in some concrete branch of the division of labour.*

According to this concept, special schools, made available to everyone, would be linked to the primary schools. Some of these would provide certain *basic* professional knowledge and abilities on various levels, while some other schools of this type would qualify for *certain trades,* or *certain jobs.* These special schools should be made accessible to everyone who has the general or basic professional knowledge enabling them to complete their studies. This open nature of the scheme means more than mere provision of legal possibilities; it also involves the necessity of overcoming, in the practical sense, the social barriers which now face those who are in detrimental positions.

No matter how important we consider the possibility of equal start and the openness of society in general, without deep-reaching structural changes all this will remain on the level of liberal illusions. Without structural change, the existing structure of society will be reproduced along its main lines and, in the final analysis, it will be conserved. The most important part of the

changes of this nature is the creation of social domination over professional administrative power.

However, the realization of this goal requires a substantially raised general level of education, — and many would consider even the present level of education as too pretentious.

It would be difficult to deny that, generally speaking, workers who have completed secondary studies expect more of their work, and the majority of manual occupations are not capable of meeting these expectations. However, society may benefit more from this than it can lose, because it may result in various dynamic changes within the work organization.

The natural concomitant of the system proposed is overeducating in a dual sense. On the one hand, under such a training system the majority of workers will have attained *higher levels of general education* than the one directly needed to perform the detail work they are likely to undertake. At the same time, *there will be more workers with vocational training* enabling them to fill a given occupation than the number needed. The fear of overtraining in this sense blocks social thinking and is one of the main barriers to establishing a production organization approaching socialist values.

We are thinking of developing a modern work organization which, assuming given technological level, offers the individual worker greater autonomy, responsibility and possibility for decision: the worker would not receive his task in the form of an order, but, instead, he would be *responsible for a definite function.* Better educated workers having greater demands could urge the introduction of technological changes, including such as are not *important only, or not primarily, from an economic point of view.*

It is even more important that with relatively more workers at higher cultural level, and by raising the general standard of work, *a new stratum of workers is developing. It will be capable of demanding and realizing real social control over the professional administrative apparatus. At the same time, the members of this stratum will have greater opportunity for mobility as individuals.*

There are no longer any objections in principle to overtraining people to a high level of general education; reservations, if any, are generally based on practical arguments. First of all, they feed on the fear that aspirations awakened by a higher cultural level, and then left unsatisfied, will operate as a source of discontent. Secondly, there are economic considerations, according to which educational input which cannot be used directly in social production is inexpedient.

The situation is different when speaking of the other form of overtraining, that is, if more people learn a trade than required at the moment. Misgivings mentioned above, — concerning discontent and waste — are complemented here by two political or ideological arguments which would appear to be quite important: by the fear of structural unemployment and of the

unplanned character of the phenomenon. For this is indeed the negation of a system which would try to create harmony between the production organization and the formal schooling system, precisely determining the ratio of various jobs and trades.

However, assuming a truly open society, overtraining in the individual trades and occupations is not only an essential condition for widening the scope of autonomy of the individual to find the place most suited to them within the existing division of labour, but it is also necessary for a *dynamic structural change*, and for ensuring that the people in the various jobs are the most suitable ones for performing their tasks. In other words, this is the only way to create a situation where the individual can actually choose among many trades, occupations and jobs, while, at the same time, the organization also has the opportunity to choose from among many applicants. This latter, in itself, will already increase labour intensity within official work time. All this would also help, in the final analysis, to create a situation, when the greater part of the time not spent at work could become genuine leisure time, and eliminate the situation outlined in the first part of this study. For his low wages the worker now performs his work with a low rate of intensity within his official working hours, and increases his income with wages procured outside his official working time. The above form of overtraining would provide incentives for people to choose trades or jobs more independently and to make more sensible use of their leisure for self-development and self-accomplishment.

In our opinion, it is precisely here that a sound connection can be established between the suggested and overdue changes in the production organization, and the problem of leisure, as well as between the vocational and the general system of education, in order to prepare man to be able to move more freely in both spheres of his life, to increase his own autonomy, and to realize himself as a human being.

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СВОБОДНОЕ ВРЕМЯ И РАЗДЕЛЕНИЕ ТРУДА

М. МАРКУШ – А. ХЕГЕДЮШ

Авторы настоящего очерка занимаются двумя тесно связанными явлениями. По их мнению, обращение нерабочего времени на получение дополнительного заработка мешает развертыванию описанной Марксом функции свободного времени, возрастающего в результате сокращения рабочего дня.

Со сказанным выше нераздельно связана проблема, что вся венгерская система образования в своей нынешней форме служит привязыванию трудящихся к одной профессии, или одному кругу деятельности и, следовательно, консервированию данного разделения труда, а не подготовке людей к сознательному формированию своей судьбы.

Авторы излагают такую модель системы школьного образования, которая не связана непосредственно со сложившейся системой разделения труда и, таким образом, могла бы содействовать расширению самостоятельности людей в выборе профессии и круга деятельности. Это в свою очередь побуждало бы к более разумному использованию свободного времени, развитию и самоутверждению личности.

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SOCIAL POLICY IN SOCIALISM

The objective of this study is to throw light on the characteristics of social policy operating under conditions of socialism. Following a brief historical review, it outlines those more important elements and special features of concept and contents which can be used as a basis for determining the requirements with regard to the future.

A retrospective evaluation

For a long time, that is, from about 1948 to the introduction in 1968 of the new system of economic control and management, in Hungary — just as in the other socialist countries — the *dominating concept* was that social policy, as a separate political category and system of thinking and care, had in our society lost its practical meaning and as such, was a concept which in essence could be eliminated. The argument based itself on the belief that with the rise of the working class to power, with the creation of socialist ownership relations as the ruling form, came a simultaneous cessation of those fundamental social tensions, and chronic social problems which the social policy of the capitalist states was aimed at, primarily as a result of the struggles of the working class. At the same time, the argument continued, in the national economic plans the socialist state with its planned economy, in the first place through the regular increase in the living standard, saw to it institutionally that the living conditions of the workers and the persons they supported were ensured on a truly humane level. It was seeing to a continuous improvement in living and working conditions, to the operation of social justice in the distribution of income, and to creating social harmony on a high level never before conceived, that is, to all the aspects the well-intended or less well-intended social policy-makers of the capitalist states have only been able to dream of, ever since *Adolf Wagner*.

In a peculiar manner, in precisely the same period when the ruling concept denied the need for social policy in socialism, in all the socialist countries, almost as if *by some inherent rule*, an institutional system of social policy was built up. As regards its sphere of expansion and its standards, from a number of angles this is well in advance of the comparable system in quite

a few most highly developed capitalist countries. It should be sufficient to refer to the social security system which covers 98 per cent of the population, and within this, to the advanced level of health care and insurance; the pension system; to the cost-free system of general and specialized education inclusive of secondary schooling; to the cultural and public educational network of institutions maintained primarily through public funds; to scholarships and family allowances; to the mother, child, youth, and family protection institutions in general; to the realization of full employment which is not problem-free in all aspects; to the achievements made in realizing "equal pay for equal work" in wage policy; to the many-sided care within a variety of institutions, given to the aged, the ill, and the handicapped, etc.

But recognizing our results, which are outstanding even by international standards, it should not be forgotten that in Hungary (as an obvious outcome of the denial of the need for social policy) *theoretical scientific* research regarding the concept, role, and function of social policy in socialism leaves much to be desired. There still is no uniform nor comprehensive social policy concept. This has had many drawbacks. For example, the individual social policy measures, which in general were taken with forced rapidity, did not and could not always be sufficiently considered, prepared, thoroughly founded, and as a result they were not efficient enough. Decisions on questions of economic nature were — and still are — continuously interwoven with "social policy considerations", or references to "social justifications" which were expressed but were insufficiently proven, leading thus to a mix-up of questions of economic and social character. This eventually leads to disturbances in both areas. The source of many such disturbances is that with respect to social policy there is no suitable and accepted distinction between what is to be considered a central (state) task, and what is the job of the enterprise, etc. The substantial sums intended for social policy goals are deconcentrated to a greater extent than necessary (in the phases of both planning and execution), and this means that it is impossible to precisely survey, exhibit and review the spending and the allocation of this substantial amount. In other words we do not always provide for those whom we would like to care for. More than once, results contrary to intentions appeared, because certain "social policy" institutions, which might have been correct and progressive when they were created, still continue to exist, without almost any hope of their being wound up, despite the fact that today, and particularly in the perspective, they are to be regarded as "obsolete". Our social policy considerations are not based organically on the general income situation, on the given circumstances and on current income distribution. Our institutions have become too "rigid", benefits "fixed by legal statutes" are broader in their operation than they ought to be, there is little possibility for "active" manoeuvring and following a selective social policy, and in many fields freedom of decision is minimal.

For several years there has been an ever stronger recognition of the historical fact which can be empirically proven, that with the continuous rise in living standards and personal incomes, *social tension* is created. This is qualitatively different from tensions in non-socialist societies, nevertheless it appears on a wide scale. It appears despite the rule of the working class, the formation of socialist ownership relations, and the introduction of the planned economy. In other words, such tension exists in socialism, too.

Solution to this tension requires special social action even under conditions of socialism — in fact even more so under socialist conditions. These *social actions and programmes add up to social policy*, under socialism as well.

Of course, there is more to the question in socialism.

Some questions of concept and content

Under socialism social policy is *qualitatively* different from that in capitalism. This is true even if a number of classical social policy institutions of capitalist society can be, and are being, used under socialist conditions. But *formal coincidence* in the given case does not mean that we can neglect the substantial differences in content.

If we want to look at the essential differences it would seem advisable to emphasise four from among the many, to show *the most important features in the socialist nature of our social policy.*

First of all, in socialism the *major accelerator in the formation and development* of the institutional system of *social policy* is not the struggle of opposed social classes, but the *socialist state which represents the undivided interests of the whole of society;* the state can take stock of the total income of the population and has the right to decide.

Consequently, the development level of our social policy institutions is not determined by the momentary state of the class struggle, but by the combination of general political strategy and economic possibilities, including expediency. This is the reason why some of our social policy institutions are outstandingly well developed, considering the given level of our economic development. (Of course, on a comparatively lower level of economic development the realization of both political and economic strategic goals can be ensured more efficiently through a system of social policy institutions than through other means of distribution policy.)

Secondly, in socialism social policy is not fundamentally directed towards furnishing aid of a charitable type to certain, mostly "fallen", individuals. (Of course this function will continue to exist for some time to come, and with the expansion of active possibilities for manoeuvring, it can even be expanded.) With respect to its decisive functions, our social policy fulfills a dual role:

— *on the one hand*, within the framework of "extra-market consumption" it is an element of the institutional system of distribution according to need which endeavours — apart from the level of personal incomes — to *supply equal satisfaction of needs* to all members of society. It concerns primarily services, in cases when a meeting of demand is in the *public interest, stemming from the essence of our social system* (fundamental health care, free education, price preferences for certain cultural objectives, etc.);

— *on the other hand*, it provides a social contribution to supporting persons not yet able, temporarily unable, or no longer able to work.

The social benefits with a specified purpose for the most part fulfil the former function. These do not fundamentally affect consumption arising from per capita income earned by work or its distribution among the different strata and groups. There are a few exceptions which have a modifying effect on relative incomes in a direction contrary to our goals (e.g. holiday resort subsidies, certain child care institutions, etc.).

The second task is generally realized by *cash benefits* (family allowances, pensions, sick pay, etc.), though some specific cases are solved by benefits in kind (homes for the aged, etc.). The basic function of these benefits is to cover a certain part of the costs of supporting dependants and *to reduce the dispersion of per capita family incomes which are caused by demographic factors.* In other words these benefits are meant to help to achieve *distribution according to work* done in such a way that the higher wages and earnings gained from the quantitative and qualitative differences in work done should ensure the possibility of higher individual consumption despite these adverse circumstances.

In the future this latter function ought to be substantially increased. One of the means for doing so might be the *family income-tax system*. The essence of this system is the following: a greater portion than intended should be distributed in the normal way, according to work performed, and then a part of it withdrawn in the form of taxes. This "regrouping" would serve social policy goals in such a manner that the tax, taking demographic policy requirements into consideration on the one hand, would rise progressively with the increase in family income, and on the other hand, that it would provide within certain limits increasing benefits with e.g. the rise in the number of children. Of course, the introduction of such a tax system would require very circumspect political preparatory work even if preceded by the most careful economic elaboration.

Third, social policy in socialism is not some kind of tactical solution and a series of concessions but *a fundamental strategic question, one of the methods — fundamentally in distribution policy — for realizing long term goals of a future system of objectives and requirements.*

It follows that even short-term social policy decisions can only be considered optimal if they do not fossilize the existing situation, if they are not

artificial extrapolations of the past, but are progressive, and serve strategic goals. It is therefore almost of secondary importance that political determination often prescribes for each decision in the area of social policy the acceptance of a responsibility for a long period of time since even the smallest "step backward" may have undesirable political consequences.

Fourth, as a natural consequence of the preceding, *in socialism the fundamental task* is not simply the prevention of so-called human and social risks and dangers, or, if they do take place, to ensure compensation for them, but to do everything possible for frank humanistic reasons *that all members of society should be physically and intellectually healthy, highly cultured and professionally well trained.*

If what has been stated is accepted, it is obvious that the emphasis is not on a single-sentence definition which is only able to crudely generalize.

However, the following definition may better reflect our thinking:

Social policy — under conditions of socialism — *is the sum of the measures aiming at the protection, development and safeguarding of the personality, labour, (working ability), and material security of every single member of society, and the totality of all legislative, administrative, and economic measures, covered mostly by public funds, aiming at the realization of these goals.*

The major goal of these measures is high-level *social care* of man throughout his lifetime, which, among other things, includes

caring for the *young generation* throughout their childhood years,

prevention of *illness*, reduction of pain, rehabilitation of those suffering from illness, and lengthening the life span,

creation of the most favourable possibilities for raising the *cultural and educational level* of the members of society, in order to open the gateways to knowledge and vocational training as wide as possible,

provision of *possibilities for completing work* under healthy conditions (that an ever increasing number of people shall be capable of receiving and making use of the experience of their predecessors, and passing it on to their posterity by renewing, and further advancing this experience) and ensuring *equal pay for equal work*,

catering for those *too old to work*, disabled through work, or suffering physical and mental disabilities, ensuring their problem-free life, free of financial difficulties.

However, I consider several further questions far more essential than any general definition. These are, e.g.:

1. No matter how we define it, *social policy clearly consists of an extremely heterogeneous and complex series of social actions.*

Alongside the humanitarian functions satisfying fundamental civil rights requirements (which are generally expressed in legal acts guaranteeing the personal protection and security of the members of society) in many respects

the interrelations of the many aspects of policy (general, economic, employment, prices, wages, health, education and cultural policy), their goals and tasks play important parts. *I am not stating that each of these questions and goals should be merged into social policy. What is, important, is the integration of these (and perhaps other) society-wide actions.* A social policy plan which expresses the problems of social care in great detail and synthesizes at the same time, must be linked to the comprehensive economic plans, and to the demographic policy followed. This task cannot be met by isolated measures of health, education or cultural policy, just as it cannot be met either e.g. by employment, prices and wages policy, which are also closely related to social questions, or by measures touching on demographic questions.

2. Despite their extremely heterogeneous nature, there is one thing which is common to all *tasks and functions related to social policy activities.* They are highly expensive, and as such *they are generally a direct or indirect burden on the state budget;* their introduction is generally followed by large expenses, automatically determined by the social objectives themselves.

Social care, with the exception of cases requiring simple legal regulation, is realized by two types of mechanism: cash benefits, and benefits in kind. The former — just as wages or salaries — can be used by the consumer for any purpose. The latter can only be put to use when the specific need arises, and to the degree of the need itself. Nevertheless, their income nature is obvious, since if these benefits did not exist, people would be forced to pay out of their personal incomes to meet these needs.

The *automatisms* are partly demographic in origin, and partly economic in nature. The rise in the birth rate results in higher family allowances, and the lengthening of the average life span increases the burden of pension payments. Automatisms of an economic nature stem from the rising wages of workers in social and welfare institutions; this is the outcome of the general wages policy. For the same reason money earnings generally rise and this automatically raises pensions and sick pay.

3. Social policy decisions are strongly determined by economic factors for two main reasons:

— first, economic realities cannot be ignored in taking these measures which affect masses; we have to be even more realistic in the perspective since the long-term effect of the above automatism can be particularly great,

— and secondly, decisions on questions of social care are part of the whole and cannot be detached from income distribution, or more precisely, incomes policy decisions. (The weighing of incentive and productivity effects are at least as important as keeping the welfare effect in mind.)

4. *Maximum efficiency*, both politically and economically, *and rationality are strict requirements* in the use of the substantial amounts allocated to social care.

Economic rationality does not contradict humanism, on the contrary: "human investment", the multitude of educated healthy people is a more efficient and fruitful social investment than anything else.

Therefore, the spread of social policy activity is the goal not only of social but of economic policy as well. This also justifies the creation of pure categories in order to realize the optimum goals in the individual areas and to measure the reciprocal effects of social policy activities on the population and economy (e.g. on productivity). At present our planning and economic management work takes into account — despite their importance — these reciprocal effects intuitively rather than scientifically. The significance of this point could so far only been determined "ex post". Its validity is therefore often no more than "theoretical". Nevertheless, this approach suggests that the major indicators of the use and distribution of the factors of production and the national income, the change in the composition of the income and consumption of the population can contribute substantially to the efficiency and rationality of economy, to the necessary structural transformation, and to increasing the efficiency of economic, political or even demographic policies with the same production resources (the same volume of personal incomes).

Conclusions and requirements

It is possible to draw several important conclusions from the above and to outline a number of rather urgent requirements. (Several elements in the requirements listed here were raised to the rank of a resolution at the November 3, 1971 session of the Central Committee of the Hungarian Socialist Workers' Party.)

These requirements are partly of a conceptual and planning nature and partly of an organizational character.

Of the conceptual requirements the first to be emphasised is that *the integration of income and social policy must be ensured to a greater extent than in the past.*

This demands the elaboration of a unified long-term concept of income and social policy which is comprehensive but includes the details as well; on the basis of this strategic concept of unified income and social policy plans are to be drawn up from time to time. *The concept must be elaborated in accordance with long-term general political, social and economic policy strategy.* (If this takes place, the individual elements in the institutional system of social policy must be automatically re-examined at regular intervals and this would stop the dissipation of funds and facilities.)

In the elaboration of this concept at least six circumstances should be remembered:

1. *An effort should be made in order to reduce significantly the unjustified difference in per capita incomes depending on the number of persons supported (primarily on the number of children) simultaneously with the increase in earned incomes within the possible limits; at the same time, the fundamental health, cultural and educational needs should also be provided for.*

2. Neither *the wage level to be attained* (average, maximum, or minimum) nor *the individual benefits* can be planned solely on the basis of social requirements or expectations. *They must always be viewed in their given economic and social interrelationships* (social expectation being but one single factor within this framework). Besides, social benefits must be assessed by taking into consideration the combined current income (wage) levels and the related benefits. Trué, in the existing situation, in view of strong political determination, it is difficult to make changes; nevertheless, as socio-economic development makes it necessary, and the extended time horizon of long-term planning makes it possible, a novel and more efficient income and social policy system of goals and structures must be elaborated. If, in the course of long-term planning now under way, particular problems and/or details will be given priority (as was the frequent case in the past two decades) and these will not be accommodated within a unified income and social policy concept, we would again be jumping from topic to topic, there would be solutions without a concept, newer and newer tension would result and irreversibly abortive "concepts" might be expected as frequently as in the past.

3. *In the elaboration of the concept and the strategic goals we must clearly stand on the ground of reality.* Neglect of this requirement in practical work is unfortunately a realistic danger, despite the fact that — particularly in this field where "commitments" and automatism are so great — the plans and principles to be fixed ought to take into consideration the economic prerequisites *under all circumstances.* If then economic growth is faster than planned, benefits can be raised in certain areas, but the selection of these areas and the extent of the increase should also follow predetermined principles. This is a continuous process, allocating the current material-financial means (including "surpluses"!) strictly in accordance with perspectivic requirements, in order to reach the strategic goals as soon as possible.

This needs to be emphasised because, according to theoretical considerations as well as calculations with respect to the future, *the maintenance of our present system of benefits in an unchanged form can create tensions in our income distribution which might even increase in the years ahead.* The necessary expansion of the sphere of the present benefits and the automatic rise in their level would tie down the realistically calculated total distributable income in the future to an extent which would prevent the introduction of a modern income distribution, more suited to the higher income level, and satisfying the resulting modified requirements better.

4. In elaborating the concept mentioned above, in outlining the policy with respect to benefits we have to assume that in the coming 10—15 years incomes from work will grow to an extent, which will enable on the average, i.e. at society-wide level the meeting of increasing demands; but within this average there will still be scope and need for social care. "Intervention" will continue to be justified in cases when 1) the average satisfaction of needs is influenced by factors and circumstances independent of differences in incomes deriving from work, and 2) when satisfaction of the needs is in the interest of the society as a whole.

The first category would include social care taken of the disabled and the dependent (family allowance for children, suitable pension level, sick pay), as well as transitional or permanent social care for personal reasons, and conspicuous social problems too. In these cases direct cash payment as the primary form of support is justified; this is the most certain way to correct the income effects of unfavourable circumstances and they also provide much more liberty for the coordination of needs and possibilities, and for selection among alternative solutions. *In the future social aid based on actual need must receive greater attention* and be applied more broadly. Accordingly, *it is expedient to allocate far greater sums than those available at present for this purpose.* The system of social aid based on individual considerations is the most suitable means for the state to support those in need.

The second category would include in general health service, culture and education. In these fields utilization in accordance with need is desirable for both the individual and the society. There are many other social policy goals which also justify the method of "intervention" in kind, the provision of services mainly free of charge. Practice has already been developing along this line.

5. The limits of the area in which satisfaction of demands requires community intervention and justifies the use of "public funds" must be drawn very carefully. A larger number of social, economic, historical, socio-psychological, ethical and ethnic points will have to be taken into consideration. Furthermore, and especially with regard to benefits in kind, *the justification of the present supports must be re-examined*, for instance, in cases where

a) the resources will not make it possible to satisfy everybody's needs under basically equal conditions for a long time to come,

b) the replacement of certain benefits in kind by cash would increase the efficiency of social policy,

c) at a proper level of incomes originating in work (or indeed pensions) certain benefits in kind (or even cash) may become "superfluous" because possible justified requests for support — based on individual assessment — can be solved more effectively by direct aid within the framework of an "active selective social policy".

At the time when these benefits were introduced (15—20 years ago) there was no unified concept of income and social policy, and of course the average incomes were much lower; these factors had a basic and justified influence on the approach to social policy. The present higher level, and also the considerably changed pattern of distribution of personal cash incomes make it not only possible but also necessary to end the splitting up of funds, by eliminating certain forms of benefits, or at least to sharply reduce the preferences.

6. Conceptual requirements include the demarcation of *clear, rationally determined categories* and the allocation of the tasks covered by each category to central, state, council, enterprise, etc. jurisdiction. Such a categorisation will determine the organizational and executive responsibilities as well.

Some questions of *organization* character deserve more detailed consideration.

It is the task of the state

— to formulate the concept of social policy,

— to decide on the various measures to be taken according to this concept,

— to implement these decisions,

— in other words: to control the activity aimed at and serving social policy.

It is necessary to emphasise this, for not only are at present the boundaries between the spheres of jurisdiction of the various state and social bodies blurred, but recent practice almost conserves the present unsatisfactory situation.

It follows that *a single state body, a supreme authority is needed for the management at the highest level of social policy activities.* Because of the heterogeneity and complexity of this activity it should be made the task of this body to watch the efficiency and rationality of the nation-wide implementation of social policy. Furthermore, the same authority should be *permanently surveying the development of the total incomes of the population.*

Social policy functions are at present divided among various state bodies. As long as one supreme authority performs social policy activities from the professional point of view, there is nothing wrong. The trouble begins when the delineation of authority breaks down. Then, the "momentary" (personal or official) interest of the individual state bodies, their varying practical and specific approaches to decisions prevent the operation of a concept which would appropriately consider the alternative possibilities and the perspectivic, broader aspects of long-term goals as well.

With the centralization of the direction of a unified income and social policy, *decisions must* simultaneously, and comprehensively *be made concerning the spheres of authority, the responsibility, the sources of funds, and the purposes*

to which they can be allocated, with respect to the individual decentralized bodies (the ministries, the councils, the enterprises, the various social bodies, etc.).

It is desirable that all future active social benefits which are not stipulated by law, should be decided in each individual case by one single body; among the possible candidates the one best capable of judging the demand, the need and the justification is probably the council. Resources which today flow away very diversely through the different "channels" ought also be concentrated at the councils.

Analytical research concerning the *effects and efficiency* of resolutions passed in the field of social policy should be stepped up. There are several internationally recognized methods which, if further developed, would provide the tools for selecting the most effective, optimum decision variant from both the social and economic points of view of the use of current resources.

* * *

In my opinion these are the major prerequisites of a comprehensive social policy which is integrated with income policy. Insofar as this has been realized at all, it occurred on the highest political level, and/or in the framework of minor single-case organizations (special working groups of experts, committees, etc.). A reform in this area is very much in our interest. Its prerequisites can be created on state level. It would result in socio-economic relations meeting the basic political requirements arising from our social order; it would also meet actual social needs, while ensuring the optimum political and professional efficiency of the use of all economic resources. If we cannot advance in this direction, our decisions will continue to be *ad hoc* emergency measures, stop-gap arrangements. At the given time, many of these have a positive value but they are not always suited to, and sometimes even contradict, strategic requirements. They are similar to a temporary dike constructed at the time of flood, which is more or less suitable for averting the concrete danger, but in general is not in accordance with the requirements of a comprehensive concept of water-economy.

СОЦИАЛЬНАЯ ПОЛИТИКА ПРИ СОЦИАЛИЗМЕ

Л. ЛЕНДЬЕЛ

В первой части статьи автор дает короткий обзор и оценку системы социальной политики, сложившейся после второй мировой войны. Он отмечает, что в исследованиях относительно понятия, роли и функции социальной политики при социализме существуют большие пробелы. Во второй части автор рассматривает важнейшие черты социалистического характера социальной политики, а также некоторые понятия и важнейшие вопросы содержания социальной политики и социального обеспечения. В третьей части автор подытоживает те концепциональные (впоследствии плановые) и организационные (управленические и административные) требования, которые он считает наиболее важными. Он подчеркивает, что важнейшее концепциональное требование заключается в обеспечении более эффективной, чем до сих пор, интеграции политики доходов и социальной политики.

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P. ERDŐS

SOME REFLECTIONS ON NATIONAL PRICE LEVELS — REFERRING TO TEXTS OF MARX AND RICARDO

Both Marx and Ricardo had to face the fact that the purchasing power of gold money varies by countries. The explanation by Marx of this phenomenon is too abstract, while that of Ricardo relies on the false quantity theory of money. The author attempts to explain the mechanism leading to the emergence of the phenomenon discussed, independently of the quantity theory.

Hungarian textbooks of political economy contain a theorem stating that, under capitalism, the price level of consumer goods is directly proportional to the sum of wages paid in a given period, and inversely proportional to the difference between the volume of consumer goods brought to the market and capitalists' consumption in the same period. This is strictly valid only for a very simplified model, but for this it is almost a tautology, the analogue of which may be formulated evidently also for socialist relations; it is necessarily valid also in the case of gold money, though in this case the price level also depends on the labour value of gold. This is precisely why, in the case of a gold exchange system the volume of consumer goods production, the capitalists' consumption, the levels of employment and of money wages assume such proportions as to allow to secure on the whole the equality of the value of the volumes of commodities on the one hand, and the quantities of gold to be had for them, on the other.

To secure "on the whole", all right. But *how precisely* would it be secured?

Around the beginning of our century prices started to rise quickly. This could be hardly explained by a change in the relative productivities of labour producing commodities and of labour producing gold. This fact prompted quite a few Marxist theoreticians of the time to state that, in the relation of exchanging gold for commodities, the law of value was valid at most between wide margins of error. These economists referred to the fact that a great part of the gold circulating at any time had been mined many decades earlier and, therefore, there was no apparent reason why prices should be determined particularly by the actual *reproduction* costs of gold. But the prices could have risen in the gold exchange system also if the law of value had asserted itself precisely, even in the absence of an improvement in the technology of gold production ensuring greater savings on labour in this field than in the produc-

tion of commodities. Namely, a rise in commodity prices makes the extraction of gold from the less rich known ores impossible; relatively richer fields will become the least rich ones cultivated for the moment. Therefore the value of gold will diminish, since, as is known from the theory of rent, this value — although it is a *false* social value — is determined by the production conditions of gold extracted under the least favourable conditions.

The problem of proportions — and that of possible lasting differences — between the value of gold and that of the commodities to be exchanged for gold emerged not only in Marx' times but well before him, and not only in relation to time but also in respect of the same date, but in different countries.

The problem as Marx saw it

Marx dealt with the problem and — true to his method — he raised it in terms of values, this time of *international values*. The idea of international value, however, emerges in Marx' works but very rarely. I know of two such places of major importance.

The first can be found in the third part of the *Theories on Surplus Value*. Here, Marx repeats approvingly an idea of Say, stating that: "Profits can also be earned by cheating, so that the one gains what the other loses". [1]

This fact becomes relevant in economic relations among countries, in connection with foreign trade since — as Marx puts it — within a country the gains and losses are setting off each other, but this is not so among different countries. This kind of cheating obviously amounts to infringing upon the law of value. But now Marx immediately passes to "Ricardo's theory", to the law of value, saying that "even considering the theory of Ricardo, three working days of some country can be exchanged . . . for one working day of another one. The law of value suffers here an essential distortion. Or, similarly as the skilled, complex labour compares to the unskilled, simple one within a country, the working days of the different countries may compare to each other in the same manner. In this case, the richer country may exploit the poorer one, even if the latter were to gain by the exchange . . ." [2].

Marx deals much more extensively with the notion of international value in Volume I of *Capital:* "In every country there is a certain average intensity of labour below which the labour for the production of a commodity requires more than the socially necessary time, and therefore does not reckon as labour of normal quality. Only a degree of intensity above the national average affects, in a given country, the measure of value by the mere duration of the working-time. This is not the case on the *universal market* (my italics — P. E.) whose integral parts are the individual countries. The average intensity of labour changes from country to country; here it is greater, there less. These

national averages form a scale, whose unit of measure is the average unit of universal labour. The more intense national labour, therefore, as compared with the less intense, produces in the same time more value, which expresses itself in more money.

But the law of value in its international application is yet more modified by this, that on the world-market the more productive nation labour reckons also as the more intense, so long as the more productive nation is not compelled by competition to lower the selling price of its commodities to the level of their value.

In proportion as capitalist production is developed in a country, in the same proportion do the national intensity and productivity of labour there rise above the international level. The different quantities of commodities of the same kind, produced in different countries in the same working-time, have, therefore, unequal international values, which are expressed in different prices, *i.e.*, in sums of money varying according to international values." [3].

But Marx' train of thoughts does not end here, though most frequently it is quoted only up to this point. The following sentence of Marx has caused already much — mostly fruitless — hard thinking to many of his students. The sentence runs as follows: "The relative value of money will, therefore, be less in the nation with more developed capitalist mode of production than in the nation with less developed." The next one is much less conspicuous and it does not cause particular difficulties of interpretation: "It follows, then, that the nominal wages, the equivalent of labour-power, expressed in money, will also be higher in the first national than in the second; which does not at all prove that this holds also for the real wages, *i.e.*, for the means of subsistence placed at the disposal of the labourer." [4].

The first half of the last sentence is only a logical sequel of the preceding one, while the second one is but a warning against precipitate conclusions.* But the former sentence sounds so astonishing from Marx' mouth that it is frequently attributed to a slip of the pen, to a momentary inattention of Marx and this the more so, as the first half of the Marxian text seems to state the opposite of what this perplexing sentence says. In the former we found that, on the world market, more productive national labour counts similarly as more intensive, exactly as the really more intensive labour does: "The different quantities of commodities of the same kind, produced in different countries in the same working-time, have . . . equal international values, which are expressed in different prices . . . in sums of money varying . . ." But what does this mean, where does the commodity produced with more intensive and more productive labour attain a higher price per unit of the working time

* It is a different problem that in the more developed countries real wages are, as a rule, indeed higher.

actually necessary for its production: in the country producing the commodity' or else, not there but in any other place where labour is less intensive and less productive, that is, on the "world market"? This does not emerge with sufficient exactness from the sentences under discussion while the reader brought up on Marxian texts most naturally tends to think that our second interpretation is the correct one, therefore he reads with surprise and perplexity the continuation from which it finally emerges that in a more advanced country — where labour is more intensive and more productive — prices are relatively higher, i.e. the relative value of money is lower. Indeed, the text says even more than that. According to it, the value of labour power expressed in terms of money — that is, the money wage — is higher in the more advanced country, even if the quantity of subsistence goods made available to labour is not greater in comparison to other countries. In this case, however, also the price of a *unit volume* of consumer articles must be higher than in the less developed one.

But the same — that is, the correctness of our interpretation — emerges also from the context of the quotation. Marx, namely, continues the line of reasoning as follows: "But even apart from these relative differences of the value of money in different countries, it will be found, frequently, that the daily or weekly, etc. wage in the first nation is higher than in the second, whilst the relative price of labour, *i.e.*, the price of labour as compared both with surplus-value and with the value of the product, stands higher in the second than in the first." And Marx adds here a footnote which I will quote in an abbreviated form: "James Anderson . . . remarks . . . [that] although the apparent price of labour is usually lower in poor countries, where the produce of the soil, and grain in general, is cheap; yet it is in fact for the most part really higher than in other countries. For it is not the wages that is given to the labourer per day that constitutes the real price of labour although it is its apparent price. The real price is that which a certain quantity of work performed actually costs the employer; and considered in this light, labour is in almost all cases cheaper in rich countries than in those that are poorer, although the price of grain, and other provisions, is usually much lower in the last than in the first . . ." [5].

No doubt, Marx quoted *James Anderson's* text approvingly; it is beyond discussion that, according to Marx, the relative value of money is lower (or what amounts to the same, the price level is higher) in the advanced countries than in the less developed ones (namely, in comparison to identical labour inputs). From this it follows that also money wages must be higher in the advanced countries, or else, the workers could buy here less of subsistence goods than elsewhere.

Of course, this is in harmony not only with Marx' opinion, but also with the facts. As regards the facts of that time, let us quote excerpts from a paragraph by Ricardo: ". . .the improvement of a manufacture in any country . . .

tends to increase the quantity of commodities, at the same time that it raises general prices in the country where the improvement takes place." [6]. But we may as well turn to the present. At a time, when the international money of the capitalist world is the US dollar, it is well known that its relative value is lower — not only in comparison to a domestic work-hour, but also in comparison to a unit of commodity volume — in the United States, the most advanced capitalist country, than anywhere else.

On the one hand, we have thus empirical facts. On the other hand, Marx acknowledges these facts by introducing the notion of international value. But here, his reasoning is highly abstract. It is more abstract than by what he proved the theses of the theory of value in Volume I of *Capital*. We feel it also incomplete since we do not find its continuation in Volume III, where the phenomena of competition are treated. Namely, even value itself is not a purely speculative notion, since it has to do with prices. The text in question adds to the difficulty by speaking also about prices; and no law of prices can be considered as satisfactorily proved before we do not understand exactly what mechanism brings about such prices.

Perhaps it has not escaped the readers' attention that in the place quoted from the Theories on Surplus Value Marx speaks about "Ricardo's theory". But by theory we usually do not mean simply a statement of facts. Let me add that, from the text quoted from Ricardo two paragraphs earlier, I have left out some words which, at first sight, do not impress us as being an explanation, though they really are. Now I will complete it: the improvement of a manufacture in any country ". . .tends to alter the distribution of the precious metals amongst the nations of the world . . ." [7]. And indeed, Ricardo actually described the mechanism leading, in his opinion, to the phenomena mentioned. The half-sentence last quoted relates to the quantity theory of money, which has obtained a serious role in this description, and the Ricardian theory in question — more precisely that part of it that has become common knowledge — is known as the "theory of comparative costs".

Ricardo's solution: comparative costs and the quantity theory of money

Textbooks, when reviewing the approved aspects of the Ricardian theory of comparative costs, mostly emphasise the thesis that even if a country — let us call it country A — turns out all kinds of products with more labour input, or, in more general terms, with higher costs than a country B, it can still export to its advantage part of its products to country B. For this to be true, it is only necessary that the backwardness of country A in relation to B should vary regarding the production of different products. It is generally known how Ricardo proved this on the example of Portugal (country A) and England

(country B), and how he concluded in stating that both countries will fare better if England specializes in the production of cloth and Portugal in that of wine.

It is also well known, however, that in this form Ricardo's theorem is extremely and impermissibly static since, in the final outcome, a country one-sidedly oriented to agricultural production cannot fare well in the long run. If, however, we neglect this objection, Ricardo is right, as regards the momentary situation.

But Ricardo precisely knew what most people who have but superficial, mostly second-hand information on his theory do not know. First, he knew that an exchange of this type could take place only between two different countries. More closely: from the viewpoint in question, the consumers of both countries, and also the capitalists of England would fare better if both cloth and wine were produced in Portugal and if the British labour power and capital hitherto employed in cloth production would be transferred to Portugal. In this case, says Ricardo, the relative values of both commodities would be regulated by the same principle that asserts itself when one product was turned out in Yorkshire and the other in London. If capital really flowed among countries as freely as it does within a country, there could be no greater difference in the "real prices" of commodities (that is, in their prices expressed in terms of labour), than the additional labour required to transport the goods from where they were produced to the markets where they are intended to be sold. And Ricardo also tells us, what, in his opinion, causes such imperfect features of the competition: ". . . if capital freely flowed towards those countries where it could be most profitably employed, there could be no difference in the rate of profit, and no other difference in the real or labour price of commodities, than the additional quantity of labour required to convey them to the various markets where they were to be sold.

Experience, however, shows, that the fancied or real insecurity of capital, when not under the immediate control of its owner, together with the natural disinclination which every man has to quit the country of his birth and connexions, and intrust himself with all his habits fixed, to a strange government and new laws, check the emigration of capital. These feelings, which I should be sorry to see weakened, induce most men of property to be satisfied with a low rate of profits in their own country, rather than seek a more advantageous employment for their wealth in foreign nations." [8]. And second, Ricardo knows also that, even between two different countries, the above-described mechanism could function with such ease only if international trade were transacted not in the form of sales and purchases but through direct barter.

In reality, namely, the exporter and the importer are usually not the same persons — at least in Ricardo's age they were mostly no longer identical.

The exporter bought the commodity in his own country for gold and sold it for gold in the other country. He transacted one-way business and had to gain by it. Therefore, said Ricardo: ". . .cloth cannot be imported into Portugal, unless it sells there for more gold than it cost in the country from which it was imported; and wine cannot be imported into England, unless it will sell for more there than it cost in Portugal." [9].

We might try to enter into argument with Ricardo. We could, e.g., refer to the fact that, in our days, commodities are frequently sold cheaper abroad than at home, mostly because, in this way, the manufacturer can improve the utilization of his productive machinery, without being forced to reduce domestic prices. Ricardo might answer that such behaviour presupposes a monopolistic situation at home while he, Ricardo, is talking about free competition. We could also say that it is possible also to promote exports by granting premia and by covering the costs by duties etc. levied on imports. At this point, Ricardo would most probably become angry and quote from his book that, indeed, "Bounties on exportation or importation, new taxes on commodities, sometimes by their direct, and at other times by their indirect operation, disturb the natural trade of barter", but there is no good in that. We might also indicate that not even a government interference of this type is needed when exports and imports are in the hands of the same person who is then able to build up a "compensation fund" of his own from the surplus gains of the commodity flow in one direction, in order to cover deficits suffered the other way. Ricardo would surely refute this argument by saying that the time for such "all round traders" in all kinds of commodity was long over in his age, and he could not be expected to foresee that some time in the 20^{th} century, such "linked", "triangular" and even more complicated foreign-trade transactions would come into fashion. But, evidently, all such discussion must prove little more than mental gymnastics, as we know only too well that a country where production costs increased in terms of money against an earlier situation must sooner or later devalue its currency, or else its export chances will dwindle. Regarding the given problem, in *practical* life, Ricardo is certainly right, although the possibilities of solution listed in this paragraph may eventually determine actual economic policies.

Anyhow, Ricardo was convinced that the "invisible hand" would take care of the situation and, followingly, if from all other aspects it were *really profitable* for both countries to exchange English cloth for Portuguese wine, then also the prices would develop in such a manner that cloth should be more expensive and wine cheaper in Portugal than in England.

Let us follow the train of thoughts of Ricardo, but let us do so in two steps. First, we must try to understand what kind of prices would develop, according to Ricardo's theory, in the two countries trading with each other. For this purpose, Ricardo's example is difficult to follow; it will be substituted

by our own example constructed in his spirit. Only after that, in the second step, shall we pass to the problem why, according to Ricardo, prices will develop so as to bring about the same turnover as would result from barter trade.

Let us first assume that England needs cloth produced by 120 British workers, and that the same quantity could be produced by 90 Portuguese. Let further England need wine produced by 96 British workers, but this could be produced by 72 Portuguese. I have chosen the figures in a way that they are in the same proportion: $120 : 90 = 96 : 72$. This involves that Portugal produces both cloth and wine with 2/3 as much of labour input as does England. This being so, no comparative advantage whatever can be achieved between the two countries through foreign trade. But, again, production costs are higher in England than in Portugal and, for this reason, also the prices are higher. It will then be in the interest of British traders to import from Portugal and also the Portuguese traders will be interested in exporting to England, though this would involve no real advantage whatever. Therefore, if Ricardo is right, prices will develop in a way that this should not happen.

Let us complement our data with the Portuguese requirements. Let this be as much cloth as can be turned out by 80 English or 60 Portuguese workers, and as much wine as can be grown by 72 Englishmen or 54 Portuguese.

Thus Portugal consumes in cloth $80/120 = 2/3$ of the British consumption; and in wine $72/96 = 3/4$ of it — and this is produced by 60 and 54 Portuguese, respectively ($120 \cdot 2/3 \cdot 3/4 = 60$, and $96 \cdot 3/4 \cdot 3/4 = 54$).

Let us also assume that in England the price of the product of one worker is £ 0.5. Thus England consumes cloth produced by 120 British workers, at the price of £ 60, and wine produced by 96 British workers, at the price of £ 48. But in this case the price of the cloth produced in Portugal by 60 men must be exchanged for £ 40 and the wine produced by 54 men for £ 36, since 40 is equal to 2/3 of 60 and 36 is 2/3 of 48. (We shall soon see that, according to Ricardo, owing to the change in gold stocks, prices develop in this way.) The relative prices are correct also in Portugal, since $40 : 36 = 60 : 54$, that is, the price of the quantity of cloth compares to the price of the quantity of wine as the number of those producing cloth to those growing wine. But we should observe that, while in England the product of one worker is sold for £ 0.5, in Portugal the product of $60 + 54 = 114$ workers is sold for $40 + 36 =$ £ 76, thus the price of the product of one worker is here £ $76 : 114 =$ £ 0.667. In the country, where the productivity of labour is higher, in Portugal, the prices are higher and the ratio of the prices in England to those in Portugal equals $0.5 : 0.667$.

Now, let us change the data: let in one country, England, productivity grow in the production of one article. Let the labour input of the quantity of cloth produced earlier by 120 workers now be only 100. In respect of labour productivity, England will still be at a disadvantage against Portugal, since

there the same quantity is produced by 90 workers, but now a possibility has opened for gaining comparative advantages. If circumstances were not such that both cloth and wine could be produced in Portugal, it would be advantageous for both countries to have cloth produced only in England and wine only in Portugal.

England will now satisfy both her own demand for cloth and that of Portugal. For the first the work of 100 British workers is needed, for the second 2/3 as much, that is of 66.7 workers. This adds up to 166.7, whereas earlier $120 + 96 = 216$ British workers were working. Thus, 49.3 workers will now be released in England, and may be employed for producing something else. In Portugal, however, 54 workers have to produce wine for home consumption and 72 workers are needed to satisfy Britain's demand. Thus, 126 workers are needed, against $60 + 54 = 114$ in the former example; there is an additional demand for the work of 12 people, which is less than the labour released in England.

If now the price of the wine of unchanged quantity, consumed in England, is invariably £ 48, the price sum of the quantity of cloth demanded there will have to decrease — in conformity with the increase in labour productivity — from £ 60 to £ 50. The wine consumed in England at the price sum of £ 48 was produced, as said, by 72 Portuguese; while the wine consumed in Portugal was produced by 54. If the price of wine were as high in Portugal as in England, the price sum of the wine produced there would be $£48 \frac{52}{72} =$ $= £ 36$. But, according to Ricardo's line of reasoning, it ought to be less than that, since otherwise no wine could be exported to England. Let this difference amount to 5 per cent. This means a price sum of £ 34.27 for Portugal. Similarly: let also cloth be by 5 per cent more expensive in Portugal than in England. Then the price sum of the cloth produced by 66.7 workers in England will be sold to Portugal for $66.7 \cdot 0.5 \cdot 1.05 = £ 35$.

In Portugal 126 people are employed and the combined price sum of the commodities produced there amounts to $£ 35 + 34.27 = £ 69.27$. In the final analysis, the work of one British worker appears, through the mediation of foreign trade, in the price sum of $98/166.7 = £ 0.588$. In other words, the relative price level has risen from 0.5 to 0.588 = by 17.6 per cent. In Portugal, however, the work of one worker appears through the mediation of foreign trade, as a commodity price sum of $69.27/120 = £ 0.55$, that is, the relative price level has fallen from 0.667 to 0.55 = by 17.5 per cent.

It was an arbitrary choice of mine that in England the price of wine remained unchanged. I could have assumed anything else instead; I would have obtained different absolute prices. But even so the state of things would have remained much the same. And the essence of what happened is as follows. Originally, the proportion between the relative price levels of the two countries

(the prices pertaining to identical labour inputs) was 0.5 : 0.667. The Portuguese price level was so because the productivity of labour was there higher. When the productivity of British labour increased, the difference between the productivities of the two countries diminished. Therefore, the British price level had to increase, and indeed, it rose by 17.6 per cent. The Portuguese price level had to decline, and decline it did by 17.5 per cent. But there is still something wrong: British productivity is still lagging behind that of Portugal, and yet the British price level is higher than the Portuguese one. Indeed, would Ricardo say, this cannot be the final state. Namely, now England exports cloth £ 35 worth to Portugal while Portugal delivers wine £ 48 worth to Britain. There is thus no equilibrium, the balances of trade and payments are passive for England and active for Portugal. In other words, money, that is, gold will flow from England to Portugal. The prices just calculated could have remained stable only if the balances of payment were in equilibrium, that is, if, for instance, England were to rest satisfied with imported wine worth £ 35. In that case, however, also the relative price levels would develop differently; prices would be lower in the country with lower productivity. If, however, as in our case, England really loses gold, then — says Ricardo — prices will decline there and will grow in Portugal, where the gold is flowing to. This is required by his *quantity* theory of money.

Thus, Ricardo calls to help the quantity theory of money to understand and to explain the mechanism causing the relative price levels in different countries to bear a positive correlation with the productivity of labour. What is more, according to Ricardo's theory the prices are not simply higher in the more developed country: they are higher by exactly as much that the exchange of commodities between the countries should take place precisely in the same way as it would, if pure barter were transacted. And, behold! — through prices proportionately rising with the quantity of money, the "invisible hand" produces the optimum result!

I ask readers to forgive me that I do not prove this line of reasoning with quotations taken from Ricardo's book. I have omitted this because Ricardo connects our problem with that of the exchange rates, and therefore he could have been quoted in an understandable manner only by similarly enlarging upon these, that is, by rendering the discussion too complicated. Yet, I quote a single place, since here Ricardo does not yet complicate matters with the introduction of the exchange rate. This passage runs as follows: "(Now) suppose England to discover a process for making wine, so that it should become her interest rather to grow it than import it . . . the money price of . . . wine would fall here while cloth continued at its former price, and in Portugal no alteration would take place in the price of either commodity. Cloth would continue for some time to be exported from this country, because its price would continue to be higher in Portugal than here; but money instead

of wine would be given in exchange for it, till the accumulation of money here, and its diminution abroad, should so operate on the relative value of cloth in the two countries, that it would cease to be profitable to export it. If the improvement in making wine were of a very important description, it might become profitable for the two countries to exchange exployments; for England to make all the wine, and Portugal all the cloth consumed by them; but this could be effected only by a new distribution of the precious metals, which should raise the price of cloth in England, and lower it in Portugal. The relative price of wine would fall in England in consequence of the real advantage from the improvement of its manufacture; that is to say, its natural price would fall; the relative price of cloth would rise there from the accumulation of money." [11] As far the quotation, in other matters I would refer to Chapter VII on foreign trade in Ricardo's book.

The Marxian critique of Ricardo's theory of money

Thus Ricardo has given an ingenious, striking explanation for the fact that the relative value of money differs by countries, relying in his argument on the quantity theory of money. The "only" fault in his explanation is that the quantity theory of money is a false theory.

Let us state right at the beginning, that it is not false because — as many people believe — according to the quantity theory commodities would enter the turnover process without a price, and money without value.* To begin with: in his "Critique of Political Economy", Marx writes that "Clearly, if gold and silver have their own value, then, *apart from all the other laws of turnover*, only a definite quantity of gold and silver can circulate as the equivalent of the sum of value of commodities."**

The insertion italicized by me is very remarkable. If it were not clear otherwise, it shows Marx' knowledge of certain laws of turnover which contradict the equality of value between commodity and money, that is, of laws modifying this simple equality. Then Marx proceeds to explain the consequences of the opposite assumption: "If, therefore, the quantity of gold and silver that happens to be found in some country must get into the exchange of commodities as a means of turnover, irrespective of the sum of the value of commodities, then gold and silver will have no immanent value and, therefore, they will not be real commodities."

* E.g.: "The main methodological mistake of the quantity theory is . . .that it releases commodities without prices and money without value into turnover and here the set of money faces the set of commodities." [12]

** "Es ist klar, dass, wenn Gold und Silber einen eignen Wert besitzen, von allen andern Gesetzen des Umlaufs abgesehen, nur eine bestimmte Quantität Gold und Silber als Äquivalent für eine gegebene Wertsumme von Waren zirkulieren kann."

Then he equates this conclusion with the views of *Hume:* "This is . . . a 'necessary conclusion' of Hume."* That is, in this place Marx characterizes the theory of Hume, not the quantity theory of money in general. The idea once again returns, in Volume I of Capital: "The erroneous opinion that . . . prices that are determined by the quantity of the circulation medium, and that the latter depends on the quantity of the precious metals in a country; this opinion was based by those who first held it, on the absurd hypothesis that commodities are without price, and money without a value, when they first enter into circulation, and that, once in the circulation, an aliquot part of the medley of commodities is exchanged for an aliquot part of the heap of precious metals." [14].

Again, Marx passed his judgement on the *original* exponents of the quantity theory and not on that of Ricardo. And he could easily ridicule these theories in the following manner: ". . .the world of commodities consists of infinitely different use values, the relative values of which are by no means determined by their relative quantities. How does then Hume think of this exchange between the volume of goods and the volume of gold? He rests satisfied with the dim idea, without a concept, that every commodity is exchanged as a part of the total volume of commodities for a corresponding part of the total volume of gold."**

Of course, it was no intention of Marx to deal so high-handedly with Ricardo, according to whom money *has* a value, the commodities *have* prices and these prices depend on their value. "Ricardo — writes Marx — determines the value of gold and silver, as that of every other commodity, through the quantity of labour embodied in them. In them — he continues in Ricardo's name — is measured the value of every other commodity, as in commodities with a given value. Now, the quantity of the means of turnover within a country is determined by the value represented by a unit of money on the one hand, and the sum of the values in exchange of the commodities on the other. This quantity is modified by the efficiency of the way on payment. Since in this way the quantity in which money of a given value may circulate, is determined . . . in circulation money can be substituted by its mere tokens of value, if these are issued in a proportion determined by the value of money..." And Marx summarizes all that as follows: "Up to here . . . assuming the value

* "Muss also jede zufällig in einem Lande befindliche Quantität Gold und Silber ohne Rücksicht auf die Summe der Warenwerte als Zirkulationsmittel in den Warenaustausch eingehn, so besitzen Gold und Silber keinen immanenten Wert und sind daher in der Tat keine wirklichen Waren. Dies ist Humes . . . 'notwendige Konsequenz'." [13]

** ". . .die Warenwelt besteht aus unendlich verschiedenen Gebrauchswerten, deren relativer Wert keineswegs durch ihre relative Quantität bestimmt ist. Wie also denkt sich Hume diesen Austausch zwischen der Masse der Waren und der Masse des Goldes? Er begnügt sich mit der begriffslos dumpfen Vorstellung, dass jede Ware als aliquoter Teil der gesamten Warenmasse sich gegen einen entsprechend aliquoten Teil der Goldmasse austauscht." [15]

of money as given, Ricardo determines the quantity of the means of circulation by the price of the commodities, and money as a token of value is in his eyes a token of a definite quantity of gold, and not — as with Hume — a valueless representative of no value of the commodities."*

In Marx' discussion, the critique of Ricardo's theory follows only after the above evaluation. Ricardo introduced the elements of his quantity theory in connection with foreign trade, with the international movement of gold. Marx, however, simplifies in his first approach the Ricardian assumptions: putting himself into Ricardo's place, he gives the Ricardian theory the form in which it should be described if the gold and silver mines were in the same country where the precious metals circulate as money. He says: from the reasoning of Ricardo treated up to now it follows that, given the value of gold, its quantity in circulation is determined by the price of commodities. Let us now assume that the value-sum of the commodities changes either because fewer commodities have been produced, or the same amount but with more productive labour. Now, if the quantity of gold circulated in the country *is compelled* to remain in circulation, then it will prove to be a too great, inflated quantity in comparison to what should circulate in view of the given value of commodities. And the same happens, if the new production of the mines were to exceed the quantity required by the turnover. It is also clear that in the opposite case the quantity of gold in circulation would be insufficient. If, however, the quantity of gold is too much, — in spite of the fact that it has its own value — it will become a token for a metal-quantity having a lower value than its own; if it is insufficient, it will become a token of a metal-quantity having a higher value than its own. And accordingly, as a token, in the first case it will command less than its real value, in the second, it will command more; that is, the prices of commodities will rise and decline, respectively. If, however, the exchange value of gold rises above its own value, gold production will increase; in the other case it will be reduced. Thus, the contradiction between the values of gold as metal and as a means of turnover will disappear, the correct quantity of the gold in circulation will be restored,

* "Ricardo bestimmt zunächst den Wert des Goldes und Silbers wie den aller andern Waren, durch das Quantum der in ihnen vergegenständlichten Arbeitszeit. In ihnen, als Waren von gegebenem Wert, werden die Werte aller anderen Waren gemessen. Die Quantität der Zirkulationsmittel in einem Lande ist nun bestimmt durch den Wert der Masseinheit des Geldes auf der einen Seite, durch die Summe der Tauschwerte der Waren auf der andern Seite. Modifiziert wird diese Quantität durch die Ökonomie in der Zahlungsweise. Da so die Quantität, worin Geld von gegebenem Wert zirkulieren kann, sie bestimmt findet . . . sein Wert innerhalb der Zirkulation nur in seiner Quantität erscheint, können blosse Wertzeichen desselben, wenn ausgegeben in der durch seinen Wert bestimmten Proportion, es in der Zirkulation ersetzen . . . Bisher . . . bestimmt Ricardo, den Wert des Goldes als gegeben vorausgesetzt, die Quantität der Zirkulationsmittel durch die Preise der Waren, und das Geld als Wertzeichen bedeutet ihm Zeichen eines bestimmten Goldquantums, nicht wie bei Hume wertlosen Repräsentanten der Waren." [16]

the level of commodity prices will again correspond to the level of values. And also the purchasing power of gold bars and of banknotes — if exchangeable for gold — will fluctuate together with the value in exchange of gold money [17].

This is, then, the basic idea of Ricardo's quantity theory. Its deficiency should be clear by now: it assumes that the quantity of precious metal serving as money — whatever its proportion to its intrinsic value — must turn into means of turnover, into coin, that is, into a value token of the commodities in circulation, whatever the total value of these commodities should be. He argues in such a manner that he disregards any other function of money save its function as means of turnover, although already Sir James Steuart had explained what happens to gold and silver not needed as coins: "It is hoarded as riches or processed as material for luxury goods. If the volume of gold and silver were to fall below the level necessitated by turnover, it will be substituted by token money or other auxiliary means. If a favourable rate of exchange were to introduce surplus money into the country, and at the same time, cut the demand for money to be sent abroad, then money will be frequently put into the cupboards, where it will be as useless as if it had never been mined."*

After having criticized this simplified form of Ricardo's theorem, Marx passes to the case when gold is mined elsewhere than in the country where it is circulated. He again clearly demonstrates the erroneous salient point of Ricardo: "Just as in the former case the production of precious metals decreased or increased according to whether it was necessary to contract or to expand the currency (the means of turnover — P. E.) and to reduce or to raise the prices of commodities, the same effect is now exerted by the exports and imports to or from one country to the other . . . As in the former case the production of gold, now the imports or exports of gold and together with it the rise or fall of commodity prices would continue as long as — similarly to the correct value relation between the metal and the commodity in the former case — now the equilibrium between the international currencies was restored, . . . since, in the first case, the production of gold is only increased or reduced, and in the second it is only imported or exported because its quantity stands above or below the correct level . . . , thus commodity prices are too high or too low, and thus every movement of this kind acts as a means of correction, since, by expanding or contracting the money in circulation it again reduces

* Es wird als Schatz aufgehäuft oder als Material von Luxusartikeln verarbeitet. Fiele die Gold- und Silbermasse unter das für die Zirkulation erheischte Niveau, so ersetzt man sie durch symbolisches Geld oder andere Auskunftsmittel. Bringt ein günstiger Wechselkurs Überfluss von Geld ins Land und schneidet zugleich die Nachfrage für seine Versendung ins Ausland ab, so fällt es häufig in Koffer, wo es so nutzlos wird, als ob es in Minen läge [18]

prices to their true level . . . In other words: money circulates in the different countries only in so far as it circulates in each country as coin. Only coin is money and, therefore, the quantity of gold to be found in a country must get into circulation, and thus, as a value token of itself, it can rise above its own value or fall below it. Thus, through this roundabout way of international complications we have fortunately arrived at the simple dogma that constitutes the starting point.*

Complementing remarks and an attempt at solution

The Marxian reasoning is quite clear, and it is also obvious that it really refutes the quantity aspect of Ricardo's theory of money. Not all quantity of precious metal available in a country will necessarily circulate. But, the Marxian reasoning here reviewed was not aimed at refuting the theorem of comparative costs, only at that of the quantity theory of money. At any rate, it refuted the explanation offered by Ricardo for the differences in the values of gold in different countries, and particularly the thesis that this difference always leads to the optimum situation. But this fact must be complemented with some remarks.

First: it is clear that the quantity of gold flowing into some country need not get into circulation in its entirety. But — though Marx does not state it — under given conditions it may indeed occur that some part of this increased quantity of gold does enter circulation, even without a change in either the quantity or the value of the products brought to the market in a period — or of gold itself. These given conditions are not of the kind Ricardo spoke of. It certainly leads to a price rise if somebody brings gold into a country, exchanges it there for commodities, pays workers with it to build and install

* "Wie vorhin die Produktion der edlen Metalle sich verminderte oder vermehrte je nachdem es nötig war, die currency zu kontrahieren oder zu expandieren und die Warenpreise entsprechend zu senken oder zu erhöhen, ebenso wirken jetzt Export und Import aus einem Lande in das andre . . . Wie vorhin die Produktion von Gold, würden jetzt Import oder Export von Gold und mit ihnen Steigen oder Fallen der Warenpreise fortdauern, bis, wie vorher das richtige Wertverhältnis zwischen Metall und Ware, nun das Gleichgewicht zwischen den internationalen currencies wiederhergestellt wäre . . . da im ersten Falle die Produktion des Goldes nur vermehrt oder vermindert, im zweiten Falle Gold nur importiert oder exportiert wird, weil seine Quantität über oder unter ihrem richtigen Niveau steht, . . . also die Warenpreise zu hoch oder zu niedrig sind, so wirkt jede solche Bewegung als Korrektivmittel, indem sie durch Expansion oder Kontraktion des zirkulierenden Geldes die Preise wieder auf ihr wahres Niveau zurückführt, . . . In andern Worten: Das Geld zirkuliert in verschiedenen Ländern nur insofern es in jedem Lande als Münze zirkuliert. Das Geld ist nur Münze, und die Quantität des in einem Lande befindlichen Goldes muss daher in die Zirkulation eingehn, kann also als Wertzeichen seiner selbst über oder unter seinen Wert steigen oder fallen. Damit sind wir auf dem Umweg dieser internationalen Verwickelung wieder glücklich bei dem einfachen Dogma angelangt, das den Ausgangspunkt bildet." [19]

for him a factory. In such cases the additional gold has indeed a price-raising effect. (The change occurs not in the natural prices, but in the market prices.) But, it is not even necessary for the surplus gold to get into circulation, that wages should be paid with it. It is well known to economists somewhat acquainted with the money history that, during World War I, the countries engaged in war tapped the commodity market of the neutral and peacefully producing Sweden by purchasing against gold, so that Sweden had to restrict gold imports.*

Second: in the text quoted above in excerpts, Marx challenged not the main work of Ricardo, but an earlier pamphlet of his: The High Price of Bullion. And, in full accordance with this one, Marx stated that in Ricardo's opinion the value of money was the same *in every country*. But this earlier view of Ricardo diametrically contradicts his later, more mature thoughts quoted above. What is more, in a footnote Marx remarks that "in his Political Economy Ricardo modified this thesis"** but he adds that "not in a way that would matter".*** So much is true, indeed, that the modification in question was irrelevant from the viewpoint of the validity or invalidity of the quantity theory of money. It is, evidently, not immaterial from the viewpoint of the actually existing differences in the value of gold by countries, which Marx does not mention here and to which he referred also in other places only in the extremely sketchy form already reviewed.

So far, thanks to Ricardo, we have understood what relative price levels must be in different countries if the commodity exporters are not identical with the importers, if they do not build up price compensation funds, and the mutual advantages potentially derivable from the differences in the comparative costs of the two countries should still be exploited. Further, we could learn from the text quoted on international value, that the actual price levels develop, also according to Marx, in a similarly paradox manner. But the theory, given by Ricardo as an explanation for the phenomenon, proved to be deficient and the alleged mechanism as non-existent.

Can we then describe — by starting from correct theoretical bases — a mechanism which is responsible for the higher prices of the more developed countries? Before being able to give an answer, the question itself has to be more precisely delimited. So far, we have met two theses or requirements. Using the language of mathematics, we might say that there is a "weaker" one and a "stronger" one.

* G. A. KOZLOV, in his "Theory of money and money circulation" — a book written in the darkest era of compulsory dogmatism — wanted to pass over this fact by saying that this did not amount to gold inflation since gold crosses the frontiers of countries not as money but as a common commodity. But, according to Marx, gold is world money among other things, exactly by being an international means of purchase.

** "In seiner Politischen Ökonomie hat Ricardo diesen Satz modifiziert."

*** ". . . aber nicht in einer Weise, die hier ins Gewicht fällt." [20]

The weaker thesis is that of Marx: the price of a product comprising a domestic man-hour is higher in an advanced country than in a less developed one. The stronger thesis is that of Ricardo: in the advanced country also the price of a unit of volume of product is higher.

According to what has been said about the price level in the first paragraph of the present article, the weaker thesis will always hold, wherever the product of the money wage for a man-hour by the sum of the hours worked is relatively greater (in comparison to the total domestic *value* of consumer goods available to workers) than elsewhere. The stronger theorem, however, holds when the sum of money wages is relatively higher also in comparison to the *quantity* of consumer goods available to workers.

According to Marx the typical case consists in that the sum of real wages is not higher in the advanced country, in spite of higher money wages. In this case, which is typical according to Marx, obviously also the stronger statement is valid whenever the weaker one holds. Moreover, in this case we can give a very simple explanation of the phenomenon also on the basis of the principle of comparative advantages.

Namely, the Ricardian argument according to which, in case the potential comparative advantages are asserted, the price of the exported product must be higher in the purchaser country than where it was produced, looses its validity when a gold-producing country exports gold against the commodities of other countries. For the gold-producing country this gold is merely a commodity directly bartered for the commodities of the other countries. And thus the gold-producing country fares well even if it exchanges gold for a foreign commodity comprising less foreign man-hours than were used for the domestic extraction of gold — provided that the commodity received in exchange could be produced at home only with a greater labour input than the domestic labour input of the quantity of gold to be given in exchange for it. If, however, it is an advanced capitalist country that exchanges its commodity for the gold of the gold-extracting country, most probably it will be in a position (precisely because of being an advanced country) to extort the advantage of receiving more foreign labour in the form of the gold purchased, than the amount of domestic labour contained in the commodity offered in exchange. Namely, the number of countries capable of such policy is rather small. The competition among them for the gold to be purchased from the gold-producing countries was never a perfect one: there prevailed a silent agreement among them not to boost the price of gold as a commodity, as measured in terms of other commodities beyond the absolutely necessary extent. In this case, however, for the gold-importing country the real value of gold is substituted for the quantity of domestic labour contained in the commodities to be given in exchange for it. In other words, in such a country gold will circulate with an underestimated value.

On the other hand, according to what has been said in the first paragraph about the price level, the case in question can occur only if in the advanced country the effect of the higher productivity of labour producing consumer goods is counterbalanced by a high investment rate and/or the fact that most of the increment of consumer goods due to higher productivity is consumed by capitalists and other non wage-earning persons. This development of affairs, together with what has been said about the comparative costs of producing gold as a commodity, satisfactorily justifies the assertion of the stronger, Ricardian thesis — to wit, under the economic circumstance prevailing in the age of Ricardo and Marx, and in the case deemed typical by Marx.

It is, however, also true what the American economist Carey stated — though on the basis of not too convincing statistical data — already for the time of Marx: namely, that the different national wage levels compare as the degrees of efficiency of national labour inputs do [21].

It cannot be doubted that, in the 20th century, a highly positive correlation prevails between the national productivity levels and the levels of real wages in the capitalist countries. But it is also true that also the second, stronger condition prevails, the one of which I said a few paragraphs earlier that it is necessary and sufficient for the validity of the "stronger" thesis: namely, that even in the case considered typical in our age the money wages are growing faster than the quantity of consumer articles available to the workers, since, if they win higher wages, part of the advantages gets always lost by the price rise. The trouble is that today not in all countries does function the same thing — not even the dollar — as money, in the same way as gold did previously, nor is the rate of inflation the same everywhere. Thus, it may easily occur that precisely some less developed country will be more severely afflicted by inflation and that its domestic prices will be highest, when measured at the official exchange rate of the (possibly) convertible currency of the country in question.

But in this case this country will feel compelled officially to devalue its currency, precisely in consideration of its export interests. This also happened to the convertible currencies of several major European countries. However, at the time when the West-European currencies were made convertible, the USA were interested in the overvaluation of the dollar; perhaps because they expected a lasting surplus in their balance of payments, or perhaps because, with an overvalued dollar, it was easier to buy up the controlling stocks of foreign enterprises. And ever since, the USA could not be persuaded to devalue the dollar.* Beyond other reasons, which exceed the scope of this article, this in itself will satisfactorily explain that Ricardo's theorem holds even today for the most developed capitalist country.

* The Hungarian original was published in early December 1971. — *Ed. Note.*

A final remark: by a better knowledge of the classics those just getting acquainted with foreign trade could have been saved from being surprised on seeing that most "world market prices" represent, in reality, very different national prices.

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НЕКОТОРЫЕ СООБРАЖЕНИЯ О НАЦИОНАЛЬНЫХ УРОВНЯХ ЦЕН НА ОСНОВЕ ТЕКСТОВ МАРКСА И РИКАРДО

П. ЭРДЕШ

Из небольшого числа не совсем ясных ссылок Маркса на международную стоимость представляется, что он считал нормальным явлением, соответствующим понятию международной стоимости, расхождение в покупательной силе золотых денег в отдельных странах; а именно, что в более развитых странах за весовую единицу золота можно купить меньше — воплощенного в товарах — труда, чем в менее развитых странах. Это явление знакомо и Рикардо, делающему в связи с ним еще более общий вывод. Согласно его мало известным замечаниям о теории сравнительных издержек, в стране с более высокой производительностью труда цена единицы объема товаров выше, чем в других странах. По его мнению, это — результат регулирования «невидимой рукой» национальных уровней цен посредством перегруппировки золотых запасов стран в соответствии с количественной теорией денег, причем такие уровни цен являются необходимыми условиями реализации взаимных преимуществ, основывающихся на различии сравнительных издержек. Но количественная теория денег — ошибочная теория. Граждане же более развитых стран и сегодня, пребывая в более отсталых странах, как правило, могут многое позволить себе такого, чего дома им не позволяют их собственные доходы. Общеизвестны к тому же завышенные валютные курсы доллара, по сравнению с его внутренней покупательной способностью. Автор делает попытку объяснить механизм возникновения этих явлений независимо от количественной теории.

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Я. СИТА

ВЫРАВНИВАНИЕ УРОВНЕЙ ЭКОНОМИЧЕСКОГО РАЗВИТИЯ СТРАН-ЧЛЕНОВ СЭВ

Развитие социалистической экономической интеграции требует выяснения сущности и путей развития социалистических стран. Автор рассматривает результаты, уже достигнутые странами СЭВ в этой области и указывает на задачи, еще требующие своего решения.

Состоявшаяся в июле 1971 года в Бухаресте XXV сессия Совета Экономической Взаимопомощи приняла «Комплексную программу дальнейшего углубления и совершенствования сотрудничества и развития социалистической экономической интеграции стран-членов СЭВ».

Одобренный сессией Совета документ намечает задачи в области сотрудничества и интеграции стран-членов СЭВ, рассчитанные на длительный срок, на период продолжительностью в 15—20 лет. Программа охватывает все значительные области сотрудничества и содержит комплексный анализ целей и задач экономической политики, направленных на развитие сотрудничества.

Среди последних выдающееся значение имеет 2-ой раздел Программы, в котором рассматривается вопрос постепенного сближения и выравнивания уровней экономического развития стран-членов СЭВ. В этом разделе излагаются общие принципы, которых страны-члены СЭВ будут придерживаться в этой области в ходе дальнейшего развития интеграции. Однако требование сближения и постепенного выравнивания уровней экономического развития связано с потребностью более подробно раскрыть, каким образом следует осуществлять сформулированные в общем виде цели и задачи, каков наиболее целесообразный подход к этому исключительно сложному комплексу вопросов.

Уровни экономического развития стран, участвующих в интеграции, неодинаковы. В связи с этим возникает вопрос:

— каким образом содействует интеграция сокращению различий в уровнях экономического развития;
— не оказывают ли различия в уровнях экономического развития тормозящего воздействия на развертывание интеграции?

Эти вопросы следует учесть в ходе дальнейшей разработки программы интеграции. Отсутствие должного разъяснения этих вопросов может тормо-

зить развертывание интеграции прежде всего потому, что стремления менее развитых социалистических стран могут вступить в противоречие с основными целеустановками интеграции, с повышением *экономической эффективности* возникающего интегрированного содружества. Поэтому относительно вопроса сокращения различий в уровнях экономического развития существует необходимость в осознанном и согласованном проведении соответствующей линии, а также в теоретическом выяснении аспектов этого вопроса. Это следует подчеркнуть потому, что требование выравнивания уровней экономического развития уже неоднократно ставилось в общей форме, но мы еще не попытались определить конкретно и подробно, каким образом можно и нужно осуществить это требование в ходе процесса интеграции.

Интеграция и выравнивание уровней экономического развития

Надежным исходным пунктом в подходе к этому вопросу является положение, что основой сотрудничества между социалистическими странами является не эксплуатация экономически слабых стран со стороны более сильных государств, не господство экономически более мощных или более развитых стран над меньшими или менее развитыми странами. Как раз наоборот, экономическое сотрудничество между социалистическими странами, весь процесс интеграции направлены в частности на ускорение экономического подъема менее развитых стран и обеспечение таким образом их полного *экономического равноправия*. Целеустановка на выравнивание уровней экономического развития является неотъемлемым атрибутом системы требований социалистической экономической интеграции; прогресс интеграции является основной предпосылкой устранения различий в уровнях экономического развития.

Экономическая взаимопомощь — это такой основной принцип экономического сотрудничества социалистических стран, который до сих пор нигде, ни в одном другом международном сообществе не получил применения. Все основные документы, касающиеся сотрудничества между странами-членами СЭВ выражают вполне ясную позицию в связи с требованием выравнивания уровней. «И в дальнейшем нужно иметь в виду необходимость предоставления помощи более быстрому и эффективному развитию менее развитых в индустриальном отношении социалистических стран при максимальной мобилизации их собственных усилий и ресурсов». (Из решения XXIII сессии Совета Экономической Взаимопомощи.)

Действующая тенденция

Более чем двадцатилетний опыт сотрудничества стран-членов СЭВ показывает, что тенденция к сокращению различий в уровнях экономического развития действует в единозначном направлении. Этот факт относится к

числу наиболее значительных достижений экономического сотрудничества социалистических стран. Однако это ни в коей мере не уменьшает актуальности подробного изучения этого вопроса. Имевший место в течение последних десятилетий прогресс содержал много стихийных элементов, в результате которых более быстрое экономическое развитие менее развитых стран не всегда соответствовало требованиям возможного наиболее быстрого развития всего социалистического содружества. До тех пор, пока требование нивелирования уровней экономического развития будет ставиться только в общей форме, следует принимать во внимание, что способ его удовлетворения на практике не обязательно будет соответствовать наиболее эффективному развитию всего содружества.

Методы измерения

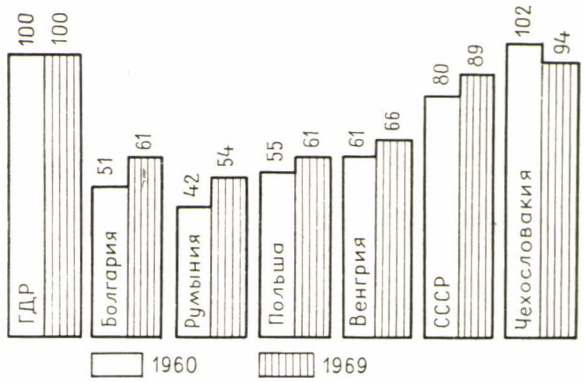
К уровню экономического развития отдельных стран, к имеющим место отклонениям и, соответственно, тенденции к сокращению различий в уровнях можно подходить с разных сторон и, следовательно, измерять их различным образом. Один из наиболее принятых подходов принимает за основу динамику показателей жизненного уровня и, соответственно, требования нивелирования жизненного уровня. Это несомненно является основным фактором в оценке данного вопроса и имеет значение особенно применительно к длительной перспективе.

Можно поставить вопрос о сравнении различий в структуре народного хозяйства. Несомненно, темп превращения аграрных стран в индустриальные является основным фактором сближения уровней экономического развития. Однако сокращение различий в структуре экономики все же нельзя считать вполне единозначным и комплексным критерием, поскольку структура народного хозяйства подвержена воздействию также и таких исторических, географических и климатических факторов, из-за которых простое сравнение структуры народного хозяйства может привести к ошибочным выводам.

Наиболее комплексный подход исходит из того, что различия в уровнях экономического развития пропорциональны *различиям в производительности общественного труда*. Действительно, всякий синтетический показатель производительности общественного труда в наиболее общей форме показывает различия в уровнях развития отдельных экономик. Поэтому в дальнейшем кажется наиболее целесообразным исходить из такого комплексного подхода к вопросу, принимая во внимание также и то обстоятельство, что если даже и не в течение длительной перспективы, но в ходе данного периода, динамика жизненного уровня может быть пропорциональна не только изменению производительности общественного труда, но может зависеть также и от воздействия других факторов (например на нее может воздействовать также и изме-

нение соотношения потребления и накопления). Путь к конечной цели, а именно, к общему повышению и заодно постепенному выравниванию жизненного уровня, ведет через увеличение производительности труда и постепенное нивелирование различий в уровне производительности общественного труда.

На протяжении истекших двух десятилетий динамика уровня экономического развития в странах-членах СЭВ характеризовалась, с одной стороны, быстрым экономическим ростом, и, с другой стороны, — некоторым сближением уровней экономического развития. Приводимые ниже данные подтверждают упомянутую выше тенденцию.



В течение минувшего десятилетия значительно сократились различия в уровнях национального дохода в расчете на душу населения. В следующей таблице приводится сопоставление средних уровней национального дохода на душу населения на базе уровня ГДР (уровень ГДР принимается за 100):

Табл. 1

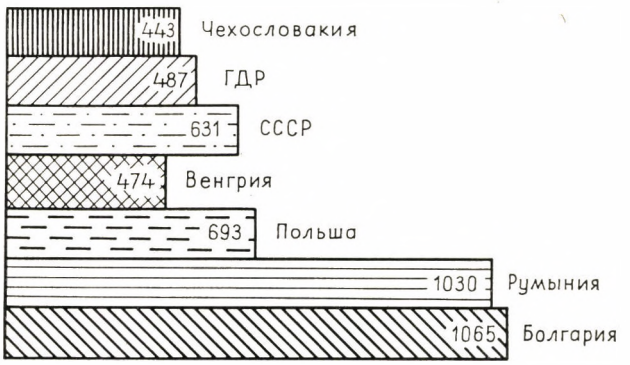
Динамика национального дохода в расчете на душу населения в 1950—1969 гг. 1950 = 100

	%
Болгария	481
Румыния	456
Польша	268
Венгрия	261
СССР	365
ГДР	405
Чехословакия	266

Источник: Статистические данные СЭВ

Источник: Источником базисных данных за 1960 год являются расчеты исследовательской группы Института экономики ВАН. Уровни за 1969 годы подсчитаны на основании индексов среднедушевого национального дохода, опубликованных в Ежегоднике СЭВ за 1969 г.

Тенденция к нивелированию особенно ясно проявляется в темпе индустриального прогресса. Темп роста промышленного производства в менее развитых странах был значительно быстрее, чем в более развитых государ-



ствах. Об этом свидетельствует индекс промышленного производства стран-членов СЭВ, который за 1950—1969 годы сложился следующим образом:

Табл. 2

Индексы роста по состоянию на 1969 год

	Машиностроительная промышленность	Химическая промышленность
Болгария	19,80	21,10
Румыния	18,50	17,10
Польша	17,90	15,40
Венгрия	10,90	15,80
СССР	19,80	13,00
ГДР	9,80	7,90
Чехословакия	12,00	12,30

Источник: Статистические данные СЭВ.

В двух самых динамичных отраслях промышленности, в машиностроительной и химической промышленности проявляется аналогичная тенденция. (Данные охватывают период с 1951 по 1969 год, 1951 = 100).

О наличии аналогичной тенденции свидетельствует потребление электроэнергии в расчете на промышленного рабочего (табл. 3.).

В сельском хозяйстве тенденция к нивелированию проявляется менее четко. Характерное для уровня развития сельского хозяйства положение в некоторой степени выражает *доля животноводства в валовой продукции сельского хозяйства* (табл. 4.).

Табл. 3

Индексы роста по состоянию на 1969 год
1960 = 100

Болгария	240
Румыния	239
Польша	147*
Венгрия	141
СССР	164
ГДР	151
Чехословакия	171

* 1968 г.

Табл. 4

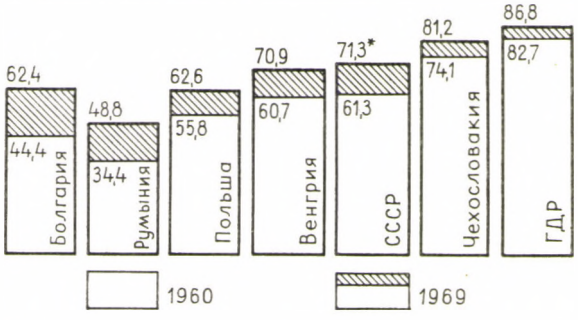
Доля животноводства в валовой продукции сельского хозяйства

	1960	1969
	%	
Болгария	32,7	34,3
Румыния	35,0	37,0
Польша	39,7	39,7
Венгрия	39,2	39,8
Чехословакия	49,4	51,9
ГДР	49,0	57,3

Источник: Статистические данные СЭВ.

Происшедшие в экономической структуре отдельных стран сдвиги тоже характерны для процесса нивелирования уровней экономического развития. О сказанном свидетельствует изменение отраслевого распределения активного населения.

Доля занятых в промышленности, строительстве и обслуживании среди активного самодеятельного населения



* Данные за 1968 год.
Источник: Статистические данные СЭВ.

Значительное, но трудно определимое в цифрах сближение произошло и в техническом уровне производства в странах-членах СЭВ: прогресс в менее развитых в индустриальном отношении странах — по сравнению с их прежним уровнем — был быстрее, чем в более развитых странах.*

Таким образом, в настоящее время различия в уровнях экономического развития между странами-членами СЭВ являются гораздо *меньшими*, чем в начальный период создания социалистической экономики и формирования сотрудничества нового типа. Существующие теперь различия в уровнях — за исключением Монголии — не настолько велики, чтобы препятствовать или тормозить экономическое сотрудничество между странами-членами СЭВ. Между странами с исключительно большими различиями в уровнях экономического развития вряд ли можно наладить такое успешное сотрудничество, какое сложилось между странами-членами СЭВ, так как такие страны едва ли были бы равноправными партнерами во взаимном сотрудничестве. Происшедшее в течение минувших двух десятилетий сближение в уровнях экономического развития стран-членов СЭВ явилось одной из предпосылок, необходимых для того, чтобы в 70-ые годы мог быть поставлен на повестку дня вопрос социалистической экономической интеграции. Можно по меньшей мере усомниться в реальности постановки этого вопроса лет 20 тому назад, когда различия в уровнях экономического развития были гораздо более значительными. Вместе с тем, различия в уровнях экономического развития еще *далеко не настолько малы*, чтобы от них было возможно отвлечься или же трактовать их как второстепенную проблему. Это необходимо подчеркнуть в особенности и потому, что при оценке различий в производительности общественного труда следует учитывать не только тенденции изменений или различия в эффективности живого труда, но следует принимать во внимание также и различия, существующие в эффективности овеществленного труда и основных фондов народного хозяйства. Особое значение имеют различия в *инфраструктуре*, например, в области транспорта и связи, урбанизации, жилищного фонда, системы просвещения. В этой области достижение качественных изменений и сближение уровней отдельных стран потребует не нескольких лет, а десятилетий. При оценке уровней экономического развития эти факторы часто упускаются из виду или же трактуются в качестве второстепенных. Такой подход в свою очередь затрудняет определение реальных сроков, необходимых для выравнивания уровней экономического развития.

* Следует отметить, что выводы, сделанные в ходе анализа приведенных выше данных и дальнейшего исследования этого вопроса не относятся к Монголии. Между Монголией и другими странами-членами СЭВ имеются такие значительные различия в уровне развития, структуре и характере экономики, что ее положение нуждается в особом рассмотрении.

Определяющая роль общности интересов

В ходе социалистической экономической интеграции недостаточно просто провозглашать постепенное сокращение различий в уровнях экономического развития или только наблюдать за прогрессом в этой области, а необходимо обеспечить такое дальнейшее развитие системы сотрудничества, которое содействовало бы развертыванию тенденции к нивелированию. Это требование приобретает особое значение в период, когда в связи с постановкой на повестку дня задачи социалистической интеграции вырабатывается комплексная и долгосрочная концепция развития сотрудничества, координируется экономическая политика стран и осуществляются взаимно согласованные мероприятия.

Между участвующими в интеграции странами имеется не только общность интересов, но по определенным вопросам встречаются также и реальные противоречия или, по крайней мере, расхождения в интересах. Это, в частности, возникает как раз на почве различий в уровнях развития. В центре экономической политики менее развитых стран находится *быстрая индустриализация*, которая связана прежде всего с экстенсивным развитием промышленности, созданием новых мощностей, заводов и отраслей промышленности. Однако эта тенденция неизбежно сталкивается с трудностями сбыта на рынках более развитых стран. Это особенно наглядно проявляется на первом этапе появления новых изделий, когда их качество, надежность — совершенно естественно — часто не достигает уровня продукции более развитых стран, располагающих индустриальными традициями.

Столкновение интересов проявляется и в том, что сравнительно развитые в промышленном отношении страны заинтересованы в поставке сырья из менее развитых стран (причисляя к сырью также сельскохозяйственное сырье и продовольствие). Между тем менее развитые, осуществляющие быструю индустриализацию страны преобладающую часть обращаемых на накопление средств (вполне понятным образом) вкладывают не в добывающую промышленность и сельское хозяйство, а в обрабатывающую промышленность и следовательно, не могут обеспечить такого темпа развития добывающей промышленности и сельского хозяйства, который соответствовал бы запросам более развитых индустриальных государств. О существовании такой тенденции свидетельствует и то обстоятельство, что — за исключением Советского Союза — во внешней торговле стран-членов СЭВ взаимный товарооборот сырья и сельскохозяйственной продукции во все большей мере выравнивается, то есть поставки сельскохозяйственных продуктов и сырья из менее развитых стран в более развитые индустриальные страны *дают постоянно сокращающееся активное сальдо*. Этим объясняется факт, что, например, в экономической литературе ГДР мы в одно время встречались с мнением, что странам, располагающим благоприятными условиями для развития добываю-

щей промышленности и сельского хозяйства, следует сосредоточить свои силы в первую очередь на развитии именно этих отраслей. Подобные взгляды, естественно, вызвали резкую реакцию в менее развитых странах и совершенно очевидно, что такая постановка вопроса, развертывание дискуссии в таком направлении тормозит развитие взаимного сотрудничества.

Сущность вопроса состоит не в том, правильно или неправильно, что менее развитые в промышленном отношении страны в интересах экономического подъема и многостороннего развития своего народного хозяйства ставят в центр своей экономической политики социалистическую индустриализацию и быстрыми темпами развивают свою обрабатывающую промышленность, так как это — единственно возможный путь их экономического прогресса. Правильная постановка вопроса заключается в том, *происходит ли индустриализация менее развитых стран*, создание новых предприятий и отраслей промышленности *в рамках более широкого, комплексного международного сотрудничества или в отрыве от него*. Более быстрое по темпу развитие содружества стран-членов СЭВ можно осуществить только путем включения индустриализации менее развитых стран в рамки такой коцепции и согласованной на международном уровне экономической политики, которая действительно направлена на достижение оптимума, то есть наиболее эффективного прогресса всего содружества. К числу требований, относящихся к комплексу условий, необходимых для наиболее эффективного прогресса относится и то, чтобы сотрудничество предоставляло не только менее развитым, но и *экономически наиболее развитым* странам оптимальные возможности для быстрого экономического роста, использования их производительных сил и производственных мощностей. Это — общие интересы как более развитых, так и менее развитых стран. Несмотря на это в настоящее время возможности развития стран-членов СЭВ пока в большей мере подвергаются влиянию стихийных элементов, чем воздействию требований оптимума планомерного сотрудничества социалистических стран. Причина этого отчасти заключается в том, что сотрудничество в целом и согласование развития национальных экономик в частности еще сильно отстают от требований оптимума. Именно поэтому руководители партий стран-членов СЭВ поставили на повестку дня решение в рамках интеграции в первую очередь этого вопроса. Стихийное и часто несогласованное развитие происходит отчасти и потому, что как раз способ конкретной реализации тенденции к нивелированию является одной из наименее разработанных частей теории и стратегии сотрудничества.

Было бы ошибочным воспринимать требование нивелирования исключительно как помощь, предоставляемую более развитыми странами странам, находящимся на менее высоком уровне экономического развития. Соблюдение *взаимных интересов* является единственным реальным исходным пунктом во всех вопросах сотрудничества, включая также и тенденцию к нивелированию. Поэтому тенденция к нивелированию должна осуществляться

таким образом, чтобы этот процесс приносил выгоды также и более развитым социалистическим странам. Эти страны точно так же заинтересованы в оптимальном развитии своей экономики, как и менее развитые страны. Цель экономически более развитых стран заключается в достижении уровня еще более развитых капиталистических стран, поскольку это обеспечивает им укрепление конкурентоспособности на мировом рынке, повышение эффективности их экономики. Нельзя упускать из виду и то, что основной целью всей социалистической мировой системы и в том числе стран-членов СЭВ, является достижение более высокого, по сравнению с капиталистической системой, темпа экономическо роста, расширение их экономических позиций в борьбе сил социализма и капитализма в мировом масштабе. А предпосылка этого заключается в том, чтобы все участвующие в интеграции страны развивали по возможности наиболее быстро свою экономику, стремились к максимальному повышению эффективности и технического уровня производства.

Часто приходится встречаться с такой ошибочной постановкой вопроса, которая уже и сама по себе ориентирует дальнейшие рассуждения в заведомо неправильном направлении, а именно: следует ли выдвигать на передний план более высокую эффективность интегрируемого содружества или же тенденцию к нивелированию? Противопоставление этих двух требований, восприятие их в качестве альтернатив заведомо ведет к искаженному ответу, потому что при таком подходе мы сможем прийти только к выводу, что выравнивание уровней экономического развития по существу тормозит развитие содружества социалистических стран. Тенденцию к нивелированию уровней экономического развития следует трактовать как аксиому, как незыблемый основной принцип сотрудничества социалистических стран, исходя из которого следует вырабатывать способы и пути сотрудничества. Однако поскольку требования выравнивания неотделимы от всей системы требований сотрудничества, возможность разработки специфических мер, служащих интересам нивелирования как такового, или вообще отсутствует, или же имеется в весьма ограниченной мере. Путь решения — это включение в цельную систему требований социалистической интеграции также и требований, возникающих на почве тенденции к нивелированию.

Реальная оценка выравнивания

В дальнейшем мы попытаемся в общих чертах изложить соображения о выравнивании и связанные с этим основные принципы, которые следует учитывать в ходе развертывания интеграции.

Выравнивание различий в уровнях экономического развития не может быть абсолютным требованием, а только тенденцией. Программа интеграции вряд ли может охватывать период более 15—20 лет. Принятие за основу

более длительного периода может привести к возникновению ряда нереальных представлений, а концепция, программа интеграции 15—20 лет спустя, наверняка, существенно изменится в соответствии с тогдашними требованиями. Между тем в рамках 15—20-летнего периода выдвинуть требование полного нивелирования было бы *нереальным*, поскольку мы имеем дело с такими сложившимися на протяжении столетий различиями в уровнях экономического развития и, особенно, в инфраструктуре отдельных стран, которые невозможно преодолеть в течение такого короткого исторического срока. Однако сама тенденция должна несомненно действовать и в течение данного периода.

Выравнивание уровней экономического развития и в исторической перспективе не может осуществляться единообразно во всех отношениях, ведь даже между двумя находящимися в целом на одинаковом уровне развития странами в отдельных сферах всегда имеются — и будут иметься — различия, возникающие из-за расхождений в структуре производства и потребления, неодинакового характера исторических, географических и экономических факторов. Поэтому и перспективной целеустановкой может являться только упразднение *существенных* различий между уровнями экономического развития отдельных стран, то есть, в отношении таких факторов, которые оказывают значительное воздействие на экономический потенциал стран, благосостояние их населения и их конкурентоспособность на мировом рынке.

Вопрос сближения уровней экономического развития можно решать только в рамках основной цели интеграции — ускорения экономического роста. Социалистическая интеграция в дополнение к существующим открывает перед странами-участницами новые источники роста. Эти источники в отношении менее развитых стран могут превышать средний уровень. Сближение уровней экономического развития является важной частью стратегии интеграции, но ее нельзя оторвать от стратегии в целом. Так, если мы станем обособленно трактовать вопрос сближения уровней экономического развития или отдавать ему предпочтение по сравнению с основной задачей интеграции, тогда требование нивелирования может оказаться в противоречии с интересами развитых стран и может замедлить процесс интеграции. Отрыв политики нивелирования от главной стратегической линии интеграции может замедлить совместный экономический рост всего содружества, поскольку это может легко привести к принятию экономически нерациональных решений (например, к созданию производственных мощностей, параллельных с уже имеющимися и, возможно, даже недоиспользуемыми в других странах). Отрыв политики выравнивания от основной линии интеграции — даже если он сможет обеспечить менее развитым странам временные выгоды или видимость таковых — *наносит ущерб содружеству в целом*, сотрудничеству стран-участниц и, таким образом, в конечном счете также и экономически менее развитым странам.

В подходе к данному вопросу можно обнаружить также и два являющихся крайностями воззрения, которые угрожают процессу развертывания интеграции. Одно воззрение переоценивает требование нивелирования и трактует его обособленно от оптимального темпа развития всего содружества. Это воззрение стремится изменить оптимальные пропорции в пользу менее развитых стран. Другое такое крайнее воззрение стремится изменить — пусть даже и не окончательно — нынешнее положение в пользу развитых стран (по крайней мере, по видимости). Согласно этому воззрению, в предстоящий период основное внимание следует уделять ускорению экономического развития индустриально развитых стран. Основа аргументации состоит в том, что ускоренное развитие этих стран в течение короткого времени способно создать техническую и экономическую базу, которая может — после некоторого переходного периода — составить основу также и для более эффективного содействия индустриализации и техническому прогрессу менее развитых стран. Этот путь, однако, неприемлем как по политическим, так и по экономическим причинам. В ходе интеграции даже временно не может быть этапа, в течение которого не осуществлялись бы последовательно основные принципы интеграции, в частности, тенденция к нивелированию. Если любой из основных принципов — пусть даже временно — окажется оттесненным на задний план, это неизбежно приведет к замедлению темпов интеграции, потому что между странами возникнут такие противоположные друг другу интересы, которые несомненно замедлят прогресс. Менее развитые страны не могут в угоду каким бы то ни было важным техническим или другим соображениям отказаться от ускорения своего экономического развития, от социалистической индустриализации. Кроме того, упомянутое воззрение не учитывает и того обстоятельства, что экономическая жизнь, а таким образом и сотрудничество социалистических стран, развиваются в определенном смысле органически, и что основные закономерности этого развития действуют не периодически, а постоянно.

Требование одновременного обеспечения оптимального развития стран-членов СЭВ и опережающих темпов роста экономического уровня менее развитых стран не может, однако, означать, что во всех отраслях это должно осуществляться одинаковым образом, как бы синхронно. Анализ положения отдельных отраслей вполне может привести к выводу, что требования оптимального развития, служащего интересам всего содружества и, следовательно, общим интересам каждой страны, будут удовлетворены наилучшим образом в случае, если выпуск изделий отдельных отраслей или товарных групп будет налажен в одной или двух странах, и только позднее на базе имеющегося производства будут распространены дальше достигнутые там результаты. Но эта стратегия может применяться только к отдельным отраслям, где это мотивируется особыми соображениями, а не к экономической жизни в целом. В отдельных отраслях основной проблемой является международное разделе-

ние труда, мощное расширение специализации и кооперирования. Специализация производства, концентрация ресурсов, увеличение серийности, создание предпосылок современного массового производства может обеспечить экономичность производства в любой стране — следовательно, и в экономически менее развитых странах — и таких изделий, выпуск которых при небольшом рынке сбыта был бы неэкономичным.

Эффективность и выравнивание

Система социалистического сотрудничества предоставляет возможность для осуществления экономической политики, направленной на сближение уровней экономического развития стран, но сам механизм сотрудничества не обеспечивает ее автоматической реализации. Ни сотрудничество в области планирования, ни система соглашений о специализации, ни создание новых международных экономических организаций и учреждений, ни более активное использование товарно-денежных отношений *сами по себе* еще не обеспечивают сближения уровней, но и не противодействуют ему. Они представляют собой организационные рамки, элементы механизма осуществления той или иной экономической концепции. Однако любой механизм, который в качестве центральной задачи интеграции выдвигает повышение эффективности, может повести также и к увеличению *различий в уровнях* экономического развития, если он не сопряжен с сознательно проводимой линией экономической политики, направленной на сближение уровней, и со включением в сам механизм проистекающих отсюда требований.

Поэтому включение задач нивелирования в стратегию интеграции заслуживает особого внимания. В каком соотношении ни увязывалась бы в механизме сотрудничества координация планов, развитие производственных связей, более интенсивное использование товарно-денежных отношений, развитие — без учета требований выравнивания — производства и, особенно, высокоэффективных отраслей, могло бы сосредоточиться в тех странах, в которых эффективность и уровень развития экономики являются более высокими и в настоящее время. Следовательно, принятие эффективности за единственный критерий может привести к искажениям в таких случаях, когда развитие, очевидно, должно подвергаться воздействию ряда факторов и соображений. Среди этих соображений должны учитываться как эффективность, так и тенденция к нивелированию.

Все это следует подчеркнуть потому, что согласно некоторым взглядам, нивелирование уровней экономического развития является закономерностью социалистического мирового хозяйства, априори проявляющейся — так сказать, автоматически — на основе самого характера производственных отношений в социалистических странах и их сотрудничества. Однако опыт

свидетельствует, что сближение уровней зависит не только от экономической политики отдельных стран, но и от соблюдаемых в сотрудничестве принципов и практики, и что здесь нельзя ожидать действия какого-то автоматизма. Однако не подлежит сомнению, что социалистические производственные отношения весьма благоприятствуют осуществлению такой политики сотрудничества, которая содействует подъему экономики менее развитых стран.

Имеются два фактора, которые могут обеспечить опережающий темп экономического роста менее развитых стран, по сравнению со средним темпом экономического роста стран-членов СЭВ а именно: рациональное использование собственных ресурсов и международное сотрудничество. В развитии экономики каждой страны первостепенная роль принадлежит рациональному использованию собственных ресурсов, а международное сотрудничество можно считать важным *дополнительным источником.*

Возникает вопрос, что следует считать первичным в международном сотрудничестве с точки зрения нивелирования: *такое формирование системы международного разделения труда, которое содействует осуществлению тенденции к выравниванию,* или временную или окончательную перекачку части национального дохода развитых стран в экономику менее развитых стран.

Из этих двух возможных решений основная роль принадлежит такому формированию международного разделения труда, которое учитывает требование сближения уровней экономического развития. Временная или окончательная перегруппировка части национального дохода в менее развитые страны — приняв широкие масштабы — тормозила бы экономическое развитие развитых стран, а при небольших размерах перелив средств не мог бы играть определяющей роли в развитии экономики стран с менее развитой индустрией. Поэтому даже временная перегруппировка ресурсов в форме кредитов не может быть основным инструментом решения этого вопроса. Наряду с этим — как об этом будет сказано ниже — данный инструмент во многих случаях может сыграть незаменимую *дополнительную* роль в содействии развитию всей интеграции.

Следовательно, решение заключается в разработке и развитии такой системы разделения труда, которая, наряду с наиболее эффективным развитием производства, принимала бы во внимание также и требования более быстрой индустриализации менее развитых стран. Это открывает менее развитым странам возможность для планомерного развития, надежный рынок и вместе с тем может обеспечить, чтобы развитие промышленности этих стран органически включалось в планомерное разделение труда, складывающееся на основании учета также и других факторов. Осуществление этих общих принципов, конечно, выдвигает целый ряд проблем. Все же это является единственным решением, принимающим во внимание не только более быстрое

развитие менее развитых стран, но также и требование согласовывать это развитие с оптимальным ростом содружества стран-членов СЭВ в целом; следовательно, индустриализация не должна приводить к созданию параллельных мощностей и излишнему отвлечению средств, а должна высвобождать в развитых странах такие ресурсы, которые они могли бы использовать для ускорения своего экономического роста. Такой подход к решению данного вопроса не сталкивается с интересами стран, находящихся на более высоком уровне экономического развития. Рекомендуемый метод вносит или, по крайней мере, может внести ясность в принцип, согласно которому обеспечение соответствующего места в разделении труда внутри СЭВ для крепнушей промышленности менее развитых стран является общим интересом.

Перегруппировка ресурсов

Сказанное выше не означает, что можно пренебрегать *международной перегруппировкой материальных ресурсов*. Этот вопрос возникает не только в связи с сокращением различий в уровнях экономического развития, но и, вообще, является актуальным вопросом интеграции. Однако очевидно, что среди факторов, которые должны учитываться при перераспределении материальных ресурсов, следует предоставить должное место также и тенденции к выравниванию уровней экономического развития.

В этом отношении было бы ошибочно говорить только о перегруппировке капитала. Вопрос перераспределения ресурсов следует трактовать в более широком плане. Может возникнуть необходимость в перегруппировке всех тех ресурсов, которые могут оказать содействие развитию той или иной отрасли производства в менее развитых странах. Поэтому наряду с капиталом, по крайней мере, такое же значение имеет и передача технических знаний, принимая при этом во внимание все многообразие возможностей, существующих в этой области (научно-техническое сотрудничество, подготовка специалистов и т. д.).

Перегруппировка ресурсов служит интересам развитых и менее развитых стран в случае, если она

— *составляет часть общей стратегии разделения* труда, то есть служит дополнительным источником для создания объектов в менее развитых странах, способствующих опережающему развитию производительных сил;
— *имеет открытый характер*, то есть осуществляется по точно учитываемым, не скрытым и бесконтрольным каналам (например, не через искажения системы цен) как с точки зрения страны-кредитора, так и страны, получающей кредит;

— *не является даровой*, то есть базируется также и на материальной заинтересованности более развитой страны, предоставляющей материальные ресурсы.

Этим критериям лучше всего удовлетворяет такой инвестиционный кредит, условия погашения и процентная ставка которого соответствуют нормальным условиям мирового рынка. Определенную роль во всем этом может сыграть и Международный инвестиционный банк СЭВ. Деятельность этого банка может содействовать сближению уровней экономического развития, если он обеспечит финансирование сооружаемых в менее развитых странах современных объектов при несколько более благоприятных условиях, по сравнению со средними. Это целесообразно обеспечить отчасти при определении условий погашения кредитов, а также путем оказания предпочтения финансированию объектов в менее развитых странах при прочих равных условиях. Кроме этого следует рассмотреть вопрос о возможной целесообразности создания в рамках банка *международного фонда*, служащего в первую очередь целям финансирования научно-технического прогресса и способствующего таким образом более быстрой передаче научно-технического опыта из более развитых стран в менее развитые страны. Этот фонд мог бы играть роль в подготовке специалистов, в финансировании многосторонних и двусторонних мероприятий. Такой международный фонд в некоторой степени походил бы на программу технической помощи ООН.

Концепция, выдвигающая на передний план с точки зрения выравнивания уровней экономического развития развертывание разделения труда, должна ответить и на вопрос, *какие отрасли* могут играть особенно важную роль в индустриализации менее развитых стран. Отвечая на него, следует исходить прежде всего из специфичного положения отдельных стран, их экономических возможностей, традиций и ряда других факторов, которые совместно могут определить способ оптимального и комплексного развития экономики той или иной страны. Однако этот вопрос нельзя считать исключительно делом отдельных стран, поскольку по мере развития сотрудничества и развертывания интеграции взаимосвязь между экономическим развитием стран-членов СЭВ становится все более разносторонней. Вопрос о предпочтительном развитии тех или иных отраслей производства в менее развитых в промышленном отношении странах затрагивает не только интересы стран, осуществляющих капитальное строительство, но и нужды стран-участниц интеграции. Обеспечение взаимных интересов требует, чтобы создаваемые новые отрасли и, соответственно, объекты сооружались на техническом уровне, позволяющем в течение длительного периода удовлетворять запросы участников интеграции.

Поэтому первостепенное значение имеет изыскание, в рамках интеграции, способа содействия ускорению *технического прогресса* менее развитых в промышленном отношении стран. Общие предпосылки сближения уровней

можно наилучшим образом обеспечить в случае, если усилия будут сосредоточены на сокращении различий в техническом уровне производства, в эффективности процесса воспроизводства. В период социалистической индустриализации и научно-технической революции это имеет первостепенное значение, поскольку речь идет отчасти не только о более быстром количественном развитии экономики стран-членов СЭВ, но и о таких качественных сдвигах, которые приводят к коренному изменению структуры народного хозяйства и массовому внедрению достижений научно-технической революции. Поэтому в настоящих условиях страны-члены СЭВ должны сосредоточить свои усилия по сближению уровней экономического развития прежде всего на повышении технического уровня производства и эффективности процесса воспроизводства, создавая в результате этого условия ускорения процесса сближения во всех областях хозяйственной и общественной жизни.

Опережающее развитие должно происходить в первую очередь в отраслях, имеющих решающее значение с точки зрения развертывания научно-технической революции. Поэтому направленная на выравнивание уровней экономического развития согласованная экономическая политика должна на данном этапе сосредотачиваться в первую очередь на прогрессивных отраслях, являющихся носителями технического прогресса, а не на различиях в уровнях народных хозяйств вообще.

Однако освоение наиболее передовой техники не может осуществляться одинаковыми темпами во всех странах. В менее развитых странах оно может охватывать в первую очередь ту сферу производства, в которой действительно можно обеспечить предпосылки внедрения наиболее современной техники и дальнейших технических мероприятий, идущих в ногу с техническим прогрессом в мировом масштабе. Эта сфера должна постепенно расширяться. В ходе этого процесса в менее развитых странах возникнет ряд развитых в техническом отношении центров, которые будут в состоянии идти в ногу с мировым техническим прогрессом, будут органически включены в программу комплексного развития данной страны и, соответственно, в разделение труда между странами-членами СЭВ. Модернизацию целесообразно начать параллельно в добывающей и обрабатывающей промышленности. Концентрация средств исключительно в обрабатывающей промышленности сопряжена с опасностью, что в добивающей промышленности темпы роста производительности труда не будут возрастать соответствующим образом, что в свою очередь может значительно замедлить развитие всей экономики данной страны. Одновременно следует в постоянно расширяющемся диапазоне обрабатывающей промышленности обеспечивать технический уровень, характерный для развитых стран. Когда мы имеем дело с отраслями или секторами, располагающими высокоразвитыми производительными силами, мы не должны обязательно иметь в виду целые отрасли промышленности или замкнутые

производственные циклы. Это могут быть специализированные заводы или предприятия, выпускающие отдельные узлы, детали или выполняющие тот или иной технологический процесс. Основное внимание следует уделять наиболее современному техническому уровню в таких отраслях, которые могут передавать средства производства и технический опыт также и другим отраслям производства.

При прогрессе такого типа следует решить проблему *органического включения* в экономическую жизнь страны современной техники, значительно опережающей средний технический уровень страны, независимо от того, получена ли данная техника путем импорта или же путем развития отечественных производительных сил и высокой концентрации материальных ресурсов. Чрезмерный отрыв от среднего технического уровня стран может быть сопряжен также и с опасностью, что передовые секторы, вместо оказания содействия развитию экономической жизни в целом, станут чрезмерно отвлекать материальные ресурсы и творческие силы от развития народного хозяйства в целом. Это может привести к образованию оторванных от экономики страны «современных островов», работающих в основном на экспорт и малопригодных для удовлетворения отечественных нужд: такие формации поглощали бы из народного хозяйства значительные ресурсы, в особенности, при необходимости идти за счет собственных сил в ногу с быстро развивающейся мировой техникой. Поэтому такая политика развития не оказывает должного содействия прогрессу всего народного хозяйства. Однако поскольку создаваемые в менее развитых странах современные отрасли промышленности не могут производить продукцию только для отечественного рынка, важное значение приобретает требование, чтобы их развитие осуществлялось согласованно с нуждами стран-членов СЭВ, с учетом складывающегося между ними разделения труда. Следовательно, и в создании наиболее передовых отраслей следует стремиться к тому, чтобы они

— были в состоянии идти в ногу с мировым техническим прогрессом,
— включались в комплексную программу развития данной страны и в разделение труда между странами-членами СЭВ,
— наряду со всем этим по возможности были способны осуществлять экспорт в другие части мира.

Эти соображения показывают, что создание современных промышленных центров задерживает не боязнь образования «современных островов». Ведь, если развитие техники и производительных сил происходит слишком мелкими шагами, если новая техника лишь незначительно превышает средний уровень, то это, хотя и обеспечивает большую стабильность экономики, но чревато такими отрицательными явлениями, как, например, *отсутствие внутреннего динамизма* народного хозяйства. Развитие такого типа

может лишь с трудом обеспечить качественный скачок в область технического прогресса и поэтому, в конечном итоге, приводит к замедлению экономического роста. Вопрос, следовательно, заключается не в том, нужно ли в менее развитых в индустриальном отношении странах создавать промышленные отрасли на наиболее современном техническом уровне: на это можно дать только положительный ответ. Вопрос, вернее, нуждающаяся в решении задача состоит в том, чтобы их создание находилось в органической связи с развитием экономики в целом и чтобы способ их подключения в разделение труда между странами-членами СЭВ обеспечивал этим новым промышленным отраслям надежный рынок и взаимные выгоды для всего содружества стран СЭВ.

Следует рассчитывать на то, что в экономике стран СЭВ еще в течение продолжительного времени будут параллельно существовать и развиваться технологические процессы и продукты, представляющие самые разнообразные технические уровни. Разделение труда между развитыми и менее развитыми странами распространяется на различную по степени развития технологию и производство. Было бы целесообразно, чтобы менее развитые страны в рамках специализации и кооперирования перенимали от более развитых в промышленном отношении стран-членов СЭВ производственные процессы, изделия или фазы обработки. Это может в значительной мере расширить возможности модернизации производства и ресурсы менее развитых стран. Это обосновывается также и тем, что при наличии дифференцированных потребностей далеко не во всех отраслях необходимо и тем более неэкономично внедрение наиболее современной техники, находящейся на вершине мирового уровня. Связанные с внедрением современной техники возрастающие издержки даже в наиболее развитых странах мира приводят к параллельному применению наиболее современной и менее современной техники, исходя из требований экономичности.

Однако эта концепция сотрудничества может послужить поводом для дискуссии. Согласно некоторым взглядам, этот принцип является нецелесообразным, поскольку тормозит освоение наиболее современной техники в менее развитых странах и вынуждает их вечно оставаться в роли второстепенных партнеров. Однако это — не реалистический взгляд. Создание наиболее развитой техники требует гигантских усилий и, очевидно, не может быть осуществлено сразу во всех отраслях производства. Между тем адаптация несколько менее современной техники, — которая существует в развитых странах-членах СЭВ, — может означать значительный шаг вперед в менее развитых странах при затрате существенно меньших средств, чем при немедленном внедрении самой современной техники. Передача существующей техники является взаимно выгодной, если она приводит в каждой стране к росту производительности труда и позволяет повысить технический уровень. Этот метод развития промышленности позволяет в менее развитых странах уско-

рить технический прогресс, а в более развитых странах произвести перевод мощностей на выпуск продукции более высокого технического уровня.*

Поскольку менее развитые в индустриальном отношении страны не способны немедленно внедрить наивысший технический уровень во всех областях народного хозяйства, реальной является целеустановка, направленная на одновременное внедрение различных технических уровней в интересах того, чтобы развитие производительных сил происходило без серьезных потрясений и диспропорций.

При разработке данного аспекта сотрудничества между странами-членами СЭВ, — исходя в первую очередь из анализа положения заинтересованной страны, — следует прежде всего рассмотреть следующие вопросы:

— в каких отраслях производства более развитые страны способны передавать в рамках интеграции технологический и производственный опыт и, соответственно, в каких областях созрели условия для такой передачи;
— в каких сферах производства менее развитые страны способны к внедрению и дальнейшему развитию наиболее современной техники и к полному или частичному удовлетворению нужд стран-членов СЭВ в данной продукции;
— каким образом можно обеспечить в экономике заинтересованной страны соответствующие источники накопления, концентрацию умственных сил, чтобы масштабы и сроки дальнейшего развития производства отвечали как требованиям данной страны, так и запросам стран, участвующих в сотрудничестве;
— какая международная помощь является необходимой — будь то в форме кредита или технической помощи — для создания упомянутой технической базы.

Передача существующей производственной техники и технологии не может быть постоянной характерной чертой сотрудничества стран-членов СЭВ. Она актуальна до тех пор, пока имеются значительные различия между производственно-техническими уровнями отдельных стран. По мере дальнейшего сближения технических уровней стран в ходе социалистического со-

* Примером этого явилось венгеро-болгарское соглашение, в рамках которого Венгрия, располагающая традициями в производстве радиоприемников, обеспечила рынок также и для определенных типов болгарских радиоприемников. Это, с одной стороны, способствовало развитию болгарской радиопромышленности, с другой стороны — позволило Венгрии перевести определенные мощности на производство многоканального микроволнового оборудования. Аналогичным примером является соглашение между Венгрией и ГДР, в рамках которого Венгрия берется за производство современных кассовых аппаратов. Это позволило ГДР перевести значительные мощности на производство электронно-вычислительных машин, а в Венгрии заложило основы нового производства. С этой целью Венгрия получила от ГДР на выгодных условиях весь технический опыт, технологию и оборудование, которые необходимы для создания указанного производства. Наряду с этим ГДР стала одним из крупных потребителей изготовляемых в Венгрии кассовых аппаратов.

трудничества и интеграции этот вид сотрудничества во всех странах-членах СЭВ отойдет на второй план и решающее значение получит создание самой передовой техники. Следовательно, если на нынешнем этапе интеграции в менее развитых странах *наряду* с внедрением наиболее передовой техники еще значительную роль играет адаптация производственной техники, имеющейся у более развитых участников интеграции, то на следующем, более высоком этапе интеграции, в перспективе 15—20 лет, подход к этому вопросу будет уже иным.

Сокращение сферы действия протекционизма

Выше мы уже упомянули, что перегруппировка ресурсов не может играть главной роли в достижении поставленной цели, но в отдельных случаях может ускорить процесс нивелирования. Основное требование в этой связи заключается в том, каким образом можно изыскать способ перегруппировки материальных ресурсов, обеспечивающий заинтересованность как развитых, так и менее развитых стран, как стран-кредиторов, так и стран, получающих кредит. Это можно осуществить в первую очередь в том случае, если кредитная политика – это часть стратегии международного разделения труда, которая на базе взаимной выгоды и учета нужд участников интеграции будет способствовать более быстрому развитию менее развитых стран.

Интеграция стран-членов СЭВ в той или иной форме приводит к сужению сферы действия протекционизма в рамках интеграции. Этот процесс может происходить различными способами, но его осуществление в значительной мере зависит от системы управления народным хозяйством в странах-участницах и от ее изменений. Основная тенденция заключается в *постепенном взаимном открытии странами СЭВ своих рынков*. Упразднение протекционизма является длительным процессом, требующим особой осмотрительности. Ведь следует принимать во внимание особое положение каждой отдельной страны и отдельных отраслей производства. Установление степени протекционизма, темпа сокращения протекционистских мер в определенной мере является суверенным правом каждой страны, но *координация* сужения сферы действия протекционизма является основной предпосылкой интеграции, ввиду чего согласование этого вопроса на регулярно проводимых странами переговорах представляет собой главную предпосылку интеграции. Этот вопрос имеет также и целый ряд других аспектов, но сейчас следует особенно подчеркнуть одно обстоятельство: при определении темпов упразднения протекционизма нужно уделять чрезвычайно большое внимание особым интересам менее развитых стран, участвующих в интеграции.

Следует отметить, что к числу менее развитых стран относятся, пожалуй, все страны, за исключенем наиболее развитых государств, поскольку и в

среднеразвитых странах имеются отрасли производства, отстающие от среднего уровня развития и нуждающиеся в течение более или менее продолжительного периода в протекционизме.

Степень протекционизма, конечно, не дана раз и навсегда. Обычно целесообразно стремиться к применению несколько более слабого протекционизма, чем это необходимо для полной безопасности отечественного производства. Только в этом случае протекционизм может оказать положительное воздействие на технический прогресс и концентрацию внутренних ресурсов в правильном направлении. При определении темпа упразднения протекционизма следует исходить из того, что в менее развитых странах этот процесс может потребовать больше времени, чем в более развитых странах, и что в рамках этого он может еще значительно различаться по отдельным отраслям производства. Поэтому в ходе процесса превращения нынешнего протекционизма отдельных стран в *коллективную преференциальную систему* стран-членов СЭВ, следует обеспечить особое место интересам менее развитых стран. Дело в том, что быстрый темп сужения сферы действия протекционизма привел бы к сильному сокращению конкурентоспособности менее развитых стран на рынках стран-членов СЭВ и, соответственно, к чрезмерному повышению относительной конкурентоспособности более развитых стран на их рынках, что в конечном итоге вызвало бы усиление различий в уровнях экономического развития.

Способ конкретного осуществления этого общего принципа в значительной мере зависит от того, какой путь изберут страны-члены СЭВ в ограничении протекционизма. Один из эффективных подходов к этому вопросу состоит в согласованном применении странами-членами СЭВ таможенной системы в торговле со странами, находящимися вне интеграции, причем в ходе согласования таможенной системы следует учесть приведенные выше соображения. Аналогичная постановка вопроса будет иметь место, когда в связи со сближением систем цен стран-членов СЭВ на повестке дня будет стоять постепенное сокращение экспортных субсидий и начислений. Конечно, создание коллективной преференциальной системы может, из-за различий в уровнях развития стран-членов СЭВ, явиться только результатом продолжительного процесса. Поэтому вопрос о способе обеспечения соответствующей защиты менее развитых стран является долгосрочной проблемой, расчитанной на несколько десятилетий. В этом отношении было бы исключительно важно, если бы страны-члены СЭВ приступили к открытому анализу существующего в настоящее время протекционизма, приданию ему надлежащей финансовой формы, потому что это очень облегчило бы также и координацию особой защиты, которую следует предоставить менее развитым социалистическим странам. Конечно и такая особая защита не будет вечной и будет отходить на второй план по мере сокращения различий в уровнях, происходящего в результате более быстрого развития этих стран.

Венгрия в отношении уровня экономического развития занимает среднее место среди стран-членов СЭВ. Поэтому можно предполагать, что для Венгрии рассмотренные в данной статье проблемы встают с меньшей остротой. Однако практический опыт показывает, что участие Венгрии в международном сотрудничестве не свободно от проблем, которые возникают на почве различий в уровнях экономического развития. Эти проблемы возникают в обоих аспектах: по отношению к одним странам Венгрия является менее развитой, а по отношению к другим — находится в положении более развитой страны. Поэтому Венгрия не меньше любой другой страны-члена СЭВ заинтересована в том, чтобы в ходе дальнейшей разработки теории и совершенствования практики интеграции решение вопросов выравнивания и сближения уровней экономического развития получило подобающее место.

EQUALIZING THE ECONOMIC LEVELS OF THE CMEA COUNTRIES

J. Szita

The system of requirements in socialist economic integration includes the target that the differences in the economic levels of the member-countries be gradually equalized. In the present period of the integration it must be determined more concretely, and in greater detail, just how this requirement can be met in the course of integration. The article reviews the methods for measuring the approach of economic levels and the results achieved in the past decade. It also treats the right way to raise this question and how the target of equalization should be approached. The study's starting point is that

equalization is not an absolute requirement, only a trend;

it can only be solved within the acceleration of economic development and not independently of it;

socialist cooperation makes equalization possible, but does not guarantee it automatically.

The next part of the article discussed in detail the ways in which the requirements of equalization must be taken into consideration in the development of the system of international cooperation.

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Gy. Ádám

SOME IMPLICATIONS AND CONCOMITANTS OF WORLDWIDE SOURCING

This article is about trends in worldwide sourcing* which — though perhaps not entirely novel — has become very marked in recent years.

In order to describe these trends, as well as some of their consequences and implications, this paper deals with the industrial structure, economic growth, and the labour market situation in the developed countries, as parent countries of international corporations.

The impact of worldwide sourcing in the United States

The full significance of a consistent implementation of worldwide sourcing by international corporations for the industrial structure of developed countries is still far from being generally realized, despite the abundance of evidence to prove that the process is well on its way. **

Let us survey some relevant indicators first in the context of the United States.

The sales of manufacturing affiliates in foreign countries of US corporations grew between 1957 and 1968 from $ 18.3 to $ 59.7 billion, thus more than trebled, while US manufacturers' domestic shipments increased in the same time from $ 344.8 to $ 603.7 billion, i.e. by only 74 per cent. The ratio of the sales of manufacturing affiliates abroad to domestic shipments nearly doubled, rising from 5.3 p.c. in 1957 to 10 p.c. in 1968 [3].

These figures represent total sales of those manufacturing affiliates in which US owners have a direct equity interest of 25 p.c. or more. According to the estimates of *Judd Polk* "output associated with US investment abroad" amounted in 1968 to well over $ 200 billion [4], while exports from the US

* According to *Business International* (a Weekly Report to Managers of Worldwide Operations with headquarters in New York) "sourcing" is a word that has many meanings; its principal definitions include: 1. The movement of components or semi-finished goods from one part of the company's operations to another, e.g. for final assembly; 2. The movement of finished goods from one's own plant to a sales point; 3. The purchase of products or services from non-company sources; 4. The selection (as a purchaser) of the appropriate plant of a major supplier; 5. The purchasing or borrowing of manpower and services, e.g. low-cost trained engineers from a subsidiary in some country to work on a major systems contract; 6. The locating (as an investment decision) of production facilities in the best place to serve regional or global marketing needs. See [1]. "Sourcing" throughout this paper is used mainly in the sense of definitions Nos 1. and 6.

** See [2].

in the same year to $ 34 billion. If these estimates are valid, US firms produce about six times as much overseas as they export from their home country.

As to the sales of US-controlled subsidiaries abroad a significant shift became apparent already during the 1965—1968 period: their exports of manufactures slated for the US amounted to $ 1.8 billion and 4% of total sales in 1965, soaring to $ 4.7 billion and 8% of total sales in 1968 [5]. True, virtually most of this shift was accounted for by increased sales of Canadian-produced automotive components to the US under the terms of the US-Canadian agreement of 1965. But as worldwide sourcing got a boost in the late '60s and early '70s, it is to be expected that post-1968 figures relating to exports of non-Canadian origin to the US have also continued to point upward.*

It is consistent with this trend that total imports under Items 807.00 and 806.30 of the US Tariff Schedule (under which duties are levied only on the value added by foreign labour and not on the full value of the returning goods) increased from $ 953 million in 1966 to $ 1,842 million in 1969, and that the share of developing countries leaped from 7 p.c. in 1966 to 22 p.c. in 1969, with a sixfold increase in absolute terms (from $ 60.5 to $ 367 million) (Quoted from: [7]). Thus within the foreign sourcing pattern of US corporations a definite shift can be observed towards the developing countries.

This development implies a substantial intensification and speedup in the implementation of a new international division of labour whose outlines could be observed already since the late '50s. Its main features were held to be [8]:

— The developed countries, "the center" will specialize in complex manufacture and high-level technology (automation, electronics, space etc.), systems design, research, finance, i.e. to an increasing extent in software (managerial, organizing and marketing ability, engineering and scientific skill), where they have the greatest competitive advantage.**

— The developing countries, "the hinterland" will specialize in labour-intensive products and also in the — sometimes quite capital-intensive — "classical" areas of the first industrial revolution, including capital goods and some branches of heavy industry (siderurgy, chemical industry), mature products with a slowing rate of growth in the "center".***

* According to a (probably not complete) list compiled by Y. S. CHANG of Boston University, the US semiconductor industry alone established 17 assembly operations in the two years ending early 1971 in the Far East and Latin America, as against some 10 in the eight year to 1968 [6].

** "Our era is that of the scientific and technical revolution. This invalidates the 'classic' ways of accumulation, characterized by the rise in the organic composition of capital. The 'residual factor' — brain power — becomes the main factor of growth. This means that the most advanced industries are marked by an 'organic composition of labour' reserving a much more important place to highly qualified labour . . ." [9].

*** "Japan and Hong Kong can compete successfully with the United States in the production of electronic consumer goods not only because their labour costs are lower, but also because these are mature products, *requiring relatively little engineering, scientific and managerial skill.*" [10].

It should be added, however, that, firstly, the transfer of US plants abroad occurs not only in traditional labour-intensive industries or "classical" heavy industries in decline but also in industries which are still very much in an expanding phase: "Television, color TV is a growth industry, and the computer industry is a growth industry. They are going out." [11]; and secondly, that products imported under Item 807 of the US Tariff Schedule include such products as motor vehicles, aircraft, gas turbine engines, electronic memories, air-conditioned machines etc.

It should be also noted that quite a number of plants in the developing countries are engaged in the production of sophisticated products and components of advanced design and technology in order to meet the parent company's unique requirements in products which are relatively new or tailored closely to his own particular needs [12]. Hal Lary too called attention to the fact that some of the developing countries excelled particularly in those more advanced items which his study found to be only "marginally labour intensive", i.e. incorporating a high proportion of those factor inputs which used to be associated with the more industrialized countries and their exports [13].

The emergence of a "global" system of vertical integration in manufacturing is seen: labour-intensive spare parts, components and processes, now subcontracted for by large firms in the industrial countries are obvious candidates for being shifted to the developing countries where wages are much lower, the latter specializing in intermediate goods and middle-stage processing [14], incorporating labour from many countries into an *integrated worldwide corporate productive structure* [15].

The general export pattern of developing countries is still dominated by the traditional commodities, but "new trade patterns are emerging here which are not dependent on factor endowment or the size of domestic markets" [16].

Through today's methods of communication and transportation, capital, management, technical achievement and skill are all readily transferable from one country to another. The rationalization and refinement of technological processes, the worldwide spread of technology, implemented by the international corporations, implies that *almost anything can be produced in any country* so long as the necessary capital, technical and managerial know-how is available:

"The unschooled girls of Taiwan can do just as well assembling complex TV components as the high school graduates of New Jersey. The untrained workers of African or Asian nations can be taught to produce complex products, ranging from tiny transistors to giant turbines, as readily as the skilled workers of Pennsylvania or the West Coast. And the depressed inhabitants of the most squalid slums of the Far East can be taught to make speciality steel products just as well as the experienced workers of Pittsburgh." [17].

This *bringing together of low-cost labour and advanced technique* at the sites of the "runaway shops", the restructuring of the metropolitan economies on the foregoing lines ("center" — "hinterland" pattern) implies, among other things, quite new proportions between economic sectors, a substantial weakening of the industrial base for economic growth, conjuring up the vision of "a nation of service workers",* the multiplication of depressed areas,** risks originating from the crisis-sensitiveness and quick rate of obsolescence of advanced industries etc.

No wonder that the impact of the international corporation on the US economy is viewed rather critically even in quarters which cannot be charged with an anti-business bias by any flight of imagination:

"Though they have injected $38 billion worth of repatriated profits into the US economy over the past decade, the multinationals' rise has probably had an adverse effect on American output and employment. Because companies have found it profitable to build plants abroad, foreign production has replaced exports. Not only has this meant fewer jobs and slower economic growth in the US, it has also generated balance-of-payments problems that are still far from being resolved." [20].

Restructuring in Western Europa and Japan

These problems are not unique to the US; they have already arisen in other countries too as e.g. in Britain.

The principles presently guiding at least a substantial sector of British investors have been spelled out in a report on the chemical industry by its Economic Development Committee. The report draws attention to the fact that the level of investment in Britain depends not only on what is happening in the British market, but also on general business conditions elsewhere. Since so many companies in the industry operate internationally, it follows that the UK is competing as a home for new investments with other countries. The same is true of many other industries, such as oil, cars, computers, aluminium and agricultural machinery [21].

* Lawrence Krause, an economist at the Brookings Institution concludes that the net balance on investment income and fees could rise to $16 billion by 1980. He believes the US is fast becoming a 'mature creditor' country, *something like Great Britain during much of the nineteenth and twentieth centuries.* Britain had no difficulty balancing its international accounts though it routinely bought more goods than it sold in foreign markets. *The country simply lived off the income from its foreign assets.* Krause suggests that *the US can and should play the same role during the late twentieth century.* [18].

** Of which there are already 900 in the US with a combined population of 55 million people [19].

According to all appearances, the investment climate in other countries was held to be rather propitious: Britain is Western Europe's Number One investor abroad: during the 1960s she invested about $8 billion overseas, as much as the six Common Market countries put together [22], despite her chronic balance-of-payments problems.

More recently prior to the entry of Britain into the Common Market, British corporations are invading the Continent. Their interest is partly attributed to the urge to jump into an area that will soon contain 260-million consumers, *partly to sluggish economic conditions that make investment less attractive at home*, and also to the fact that buying in Europe is often cheaper than it is in Britain. So far the British concentrated on setting up branches or making portfolio investments. Now they are less interested in minority ownership. They want control [23]. In addition, a number of major companies have run down or closed investments, while simultaneously expanding production in, for example, Portugal, Spain, Barbados, South Korea or Hong Kong [24].

West German Big Business tends to think about foreign investments in the same way as its American and British counterparts: the freedom of savers to invest their money where they please is considered a "basic economic right" rejecting any ideas according to which "national assets", "nationally accumulated capital" should be put primarily at the disposal of the domestic economy and be employed in foreign countries only when no adequate use can be found for it internally [25].

The thinking of much of West German industry on the evolving new pattern of the international division of labour shows a striking resemblance to the views prevailing in the management of US-based "global" corporations. One of the chief executives of Rollei Werke, an important maker of cameras, while expressing full satisfaction with the results of transfer of industrial operations to Singapore, enunciates [26]:

— Manufacturing in West Germany must be restructured; the operations which are to continue to be carried out there, are: research and development, production planning, product design, the elaboration of new technologies, the construction of machine tools and special machinery, marketing, distribution and management.

— The manufacture of all standard products must be shifted to low-wage countries.

Nor is *Japan* an exception to the rule. Although the advance by the core enterprises of the *zaibatsu* groups into the area of overseas investments is a relatively recent phenomenon, similar considerations are already making themselves felt as in other developed countries. It is held necessary for Japan to shift its present emphasis from heavy raw material using industries to their raw material conserving counterparts in order to make much better use of highly qualified manpower produced by the nations' high educational standards

and place extra-emphasis on "knowledge- and technology-intensive" industries. This implies relegating labour-intensive industries to developing nations, even at the price of changing over from net exporter to net importer of this kind of merchandise, and engage in active transactions in high-grade commodities "on an equal footing with the advanced nations of the West" [27].

The conditions under which worldwide sourcing is taking place in the United States and other developed countries are not quite identical (as regards e.g. the employment situation) nor is the extent of its progress comparable in America and in Western Europe. This may mean, of course, a time lag in the emergence of the same effects as in the US. The indications, however, are that the process is gathering momentum and the trend (the effective and planned transfer of the productive capacity of industries) is unmistakable.* The logic of competition compels the giant corporations of all developed countries to follow into the footsteps of their US-based counterparts.

The impact on wages

Among the two industries most hit by worldwide sourcing in the US are textiles and electronics.

In producing simple-weave cloth, the hourly wages of US workers in the mid-sixties were more than six times greater than those in Hong Kong and about thirteen times greater than those in Taiwan [29]. According to another report, in yarn and fabric plants US workers average $ 2.43 an hour compared to an average of 11 cents in South Korea and Taiwan, 31 cents in Hong Kong [30].

In electronics companies women employed as semiskilled assemblers get in Singapore between $35 and $45 a month for a 44 hour work, fringe benefits adding another 33 p.c. to gross pay, as compared with $350 or so a worker would earn for the same work in the US [31].

The relationship of average hourly US wages to Mexican wages in consumer electronics is 4.4, in semiconductors 4.2, in garments 4.3 [32].

However, the decisive factor is not the hourly wage, it is the total labor cost of a unit of production.

* ". . .European firms will move increasingly to Asia. Thus European firms will be producing in Japan and *exporting unemployment to Europe*, just as American capital exports goods and unemployment from Japan to the US.

Rising wages are encouraging a greater variety of the international companies *to shift production from their home countries to Asia's low-labour-cost havens*. For some years, US firms, especially electronics companies, have created production bases in Asia for exports to the US and other industrialized countries. European manufacturers are beginning to realize the advantages Asia offers as an export base, *not only for light industrial production but also for highly sophisticated goods*. Not surprisingly, West German firms are leading the way, but many other European firms can be expected to follow." [28].

In the textile industry, as a recent survey suggests, productivity e.g. in Hong Kong is a fraction of that in the US, but in producing simple-weave cloth labour costs per unit in the LDC's range from US $1.00 to 1.40 as against US $1.95 in the United States [33]. The director of the Research Department of the AFL-CIO asserts that *productivity levels* in US-owned foreign subsidiaries, in which the wages and training benefits workers are paid as little as 15 cents an hour (thus presumably in the Far Eastern sites of "runaway shops") *are close to those of American plants* [34].

Robert d'A. Shaw from the Overseas Development Council expresses the belief that the *productivity of foreign workers in US affiliates can rise rapidly with new capital and technology, while their wages are still a fraction of those in the US* [35].

It is even contended that during the past few years *the productivity of many Asian workers has been raised to the same level as that of American workers through the introduction of modern plants and technology* [36]. Without any specific data as to countries and industries this sounds rather amazing.

It may be mentioned here that West Germans are also full of praise of the work morale and skill of Asian workers as well as of the quality standards they manage to attain [37].

It may be therefore concluded that the productivity lag is certainly existing, but probably narrowing, and that it is *more than offset by a substantial gap in wages.*

There can be hardly any doubt that lower labour costs have been one of the main motives behind the move to set up "sourcing" plants in the LDC's.* US companies are seen to have started the trend for obvious reasons: since they pay the world's highest wages, they have the most to save by manufacturing abroad. This is alleged to be their primary concern even if most of their executives — in view of the hostility to "runaway" industries in the developed countries — speak of "entering new markets" [39]. Worldwide sourcing also offers an opportunity to international corporations to blackmail labour unions when negotiating about wages.**

In West Germany too the migration of industry is presented as being provoked inter alia by wage demands: the Rollei Werke, Braunschweig, is depicted as being literally "driven abroad" because of increasing wage costs at home [41]. The threat to shift whole industrial sectors to low-wage areas

* "George A. Needham, representative director of the Motorola Company's electronic component assembly plant on the outskirts of Seoul, told visitors to the bright, modern factory that total production costs in Korea were one-tenth of costs for similar production at Motorola's plant in Phoenix, Ariz." [38].

** "People tell us we are going to shut down the operation, we are going somewhere else, because you are putting yourself out of the market . . . This is something we come up every day more and more on a worldwide basis . . ." — says the President of the IUE (International Union of Electrical, Radio and Machine Workers Union, AFL-CIO) [40].

are multiplying at the annual meetings of West German corporations, at the conferences of their industrial confederations.

The impact of worldwide sourcing upon wages in developed countries may be summed up in the following terms:

— Where inflation and the strength of labour unions render impossible to resist an increase in wages, plants may be transferred to low-wage countries. American corporations are now able to repeat in a worldwide context their past performance when they fled from unionized plants in the North with a modest wage scale to unorganized, low-wage areas in the South and other parts of the US.

— The labour force of those regions which are the sites of runaway industries is about to be transformed into a labour reserve army of the developed countries.*

The impact on employment

As to the impact on employment, according to AFL-CIO estimates there has been a net loss of 400 000 jobs between 1966 and 1969 because of the fast growth of foreign operations of US-based international corporations [43]. This loss of jobs hits sometimes precisely the most handicapped the hardest. For example, the textile apparel industry is the largest employer of minority group workers in the US; much of it is concentrated in the big cities with very large Negro population, which is then suffering from unemployment as a result of competition from runaway shops abroad.

Some redundancies in Britain's electronics industry have been attributed to imports from the cheap labour factories in Asia; semi-conductors were being imported at a price which was lower than what British manufacturers had to pay for their raw materials. Warnings were uttered that unless the Government took immediate action, the trickle of lost jobs in Britain would turn into a full-scale flood as in America. Concern was expressed at the 1971 Trades Union Congress too at the effects on domestic employment of imports from low-cost countries, and the danger of "runaway companies" with particular reference to the electronics industry [44].

In this context a distinction should be made between countries with a high rate of unemployment (as e.g. the United States and Britain) and those with a shortage of manpower (West Germany, Japan). In the case of the first already the short term effect of worldwide sourcing is to contribute to the increase of unemployment by exporting jobs. In the second category it

* A telling description of the hopes attached by employers to worldwide sourcing: ". . .the trend toward offshore manufacturing is one of the few developments, short of contrived recessions, that hold some promise of slowing the wage-price spiral that (in 1969) has emerged as the industrialized world's No. 1. economic worry." [42].

is in the long run that similar effects may be observed. This has to do with the labour-saving effect of much new investment in fixed assets; the more this trend asserts itself, the bigger the possibility that employment in the advanced countries gets under crossfire from two sides: eliminating labour at home and substituting for it abroad by worldwide sourcing.*

Labour's response

Of all the developed countries, US labour is most affected by the export of jobs, as the bulk of international corporations is US-based. In order to cope with the complex issues involved, the AFL-CIO elaborated a programme whose main demands were:

— Enactment of *generalized* import quotas and tougher application of the US Antidumping and Trade Expansion Acts, including elimination of duty-free re-import rules.

— Permanent restrictions and controls on the export of capital as well as of technology, including licensing and patent agreements with foreign firms, not excepting affiliates of US corporations; heavier taxation of foreign income. The implementation of these regulations should be governed by the extent to which corporate policy is causing unemployment.

— The establishment of internationally fair labour standards.

These points were incorporated in the autumn of 1970 into the Hartke—Burke Bill thus signaling an effort to seek remedy to the export of jobs by worldwide sourcing through legislative action.

According to some strong currents in the American labour movement the US is no longer competing exclusively against foreign companies: some of the main competitors are divisions of domestic corporations as almost every major American manufacturer has opened plants abroad to take advantage of low wage rates. The question arises: is the AFL-CIO programme and the Hartke—Burke Bill an adequate tool to deal with situation? The answer can be hardly affirmative.

— As regards the main underlying cause of unemployment in the United States, there is an exaggerated emphasis on imports: due considera-

* "Investment in technological innovation, because its purpose is to substitute automatic processes for labour, ultimately lowers employment. True, the investment in capital-intensive facilities has the immediate effect of creating jobs, and hence consumer demand, during the construction phase of the project. However, once the facility goes 'on stream', and begins its intended production programme, the longer term effect is a net drop in employment due to the higher capital/labour ratio compared to the older, less capital-intensive operations it is replacing. . . . As the ratio of investment in technology to investment in capacity [T/Ca] becomes larger, this inverse effect becomes sharper. An increment of growth in capital investment produces a net decremental effect in employment. . . . if foreign plants export to the home market, the GNP can be decreased through such investment." [45].

tion should be given to inflation created by the outflow of dollars for the Vietnam war, the stationing of troops abroad, foreign aid given for political purposes and the flow of capital investments abroad. As prices and taxes pushed higher, this compelled workers to push for higher wages to offset these rises. Since labour costs are the highest component in the cost of producing many commodities, the cost of production in the United States is higher than in any other part of the world.

This induces businessmen — always seeking for the lowest unit cost in their search for profit — to shift their production plants abroad, thus hitting American workers in two ways: first, by shutting down their shops in the US (as e.g. in the electrical and garment industries), and second, by shipping back their cheaply-produced foreign-made products as imports into the United States, against which the higher-cost domestically-produced product has to compete at a disadvantage, and *must therefore go out of business or also* "run *away*" [40]. Inflation thus contributes to create a "snowball effect" by becoming an *additional* incentive to foreign sourcing. ("Additional", because the desire to be a leader in cost reduction — beside a number of other motives — suffices in itself to create a propensity for offshore manufacturing, which, after all, did not start with inflation.)

— Generalized import quotas may trigger retaliations with unforeseeable consequences both for international trade and the employment situation.

— The proposed ban on the export of American technology may imply a sort of "technological nationalism" or "technological isolationism" and raises a number of questions. To ask but some of them: Are *American* jobs to be protected by prohibiting the transfer of advanced *American* technology abroad and enforcing their use in plants to be operated exclusively in the United States? Are the employment problems of American workers to be solved at the expense of the workers of the Third World by preventing US corporations to establish plants in the LDC's?

As inflation is closely related to foreign and military policy issues, the way to cope with it efficiently appears to be not protective tariffs and import quotas but rather to fight for the earliest termination of the Vietnam war, to throw in the political weight of the American labour movement on the side of those forces which favor a thorough reappraisal and reassessment of the world role of the United States.

Restrictions on textiles and other light manufactures would heavily penalize the countries of Latin America, Asia and Africa which get 80% of their foreign exchange from exports and only 20% from capital flow. American labour (and trade unionists of other industrialized countries) must understand that workers in the new countries need and are ready to accept job opportunities even though they are at lower wage levels. The real answer to the international company is not the national solution; to think exclusively of protect-

ing members in national unions is no more adequate: a worldwide policy of securing higher wages, better living conditions and full (or at least fuller) employment must be developed [41].

One of the main avenues of approach to eliminate the yawning wage gap between developed and developing countries seems to be the implementation of fair labour standards. This would prevent the workers of the developed countries from being victimized by unfair trade competition and unfair labour standards abroad, would be also of assistance to the workers in such exporting areas as Hong Kong, Taiwan, South Korea, Singapore, as well as a brake on US corporations to go abroad solely for the reason of getting a labour cost advantage.

Indeed, some US unions are already working toward international coordination in bargaining with multinational companies, making new ties and strengthening existing ones with foreign unions, forming world company councils as in the automotive industry, practising solidarity cooperation and giving concrete assistance to unions abroad (as in Japan, Jamaica, New Caledonia, Guayana, the Dominican Republic, Liberia etc.) [42]. Similar efforts are made by the international trade secretariats, e.g. the International Metalworkers Federation based in Geneva.

The approach of the British T. U. C. [43] is of a somewhat different nature. Three main reasons are listed why workpeople in the UK may be resistant to policies to expand trade with low-cost countries: (A) In many instances goods are produced in developing countries under deplorable conditions and low wages, increased export earnings accruing to the owners of capital, and not to employees; (B) The growth of these exports is unequally distributed, owing to the erection of barriers (e.g., "voluntary" quotas) by certain advanced countries against certain products; (C) Increasing imports from low-cost countries will inevitably create hardship unless Governments pursue full employment policies, together with readjustment policies to offset declining employment in particular sectors.

Even so the T. U. C. recognizes "the undoubted benefits of export expansion", but — in its view — care must be taken that this does not produce unbalanced internal growth, i.e. should not be implemented at the expense of the improvement of agricultural efficiency and coupled with the neglect of the development of processing industries for food and other raw materials. A further suggestion of the T. U. C. may be interpreted as an attempt at the international coordination of worldwide sourcing: where exports of a particular commodity are causing disruption in a developed market (as in the case of UK textile imports), *multilateral negotiations* may be a means to achieving a fairer sharing between developed countries of the growing burden of low-cost imports. The T. U. C. also urges fair labour standards to be observed by multinational companies.

Fair international labour standards cannot, however, be achieved without the worldwide coordination of the tactics and strategy of trade unions. Indeed, the World Federation of Trade Unions (WFTU) advocates emphatically the extension of solidarity through practical action to labour unions with different international affiliations, an area in which some progress has been undoubtedly accomplished in the early 1970s.*

* * *

Summing up, and in order to avoid any misinterpretation, it should be emphasized that this criticism of worldwide sourcing from the viewpoint of developed countries does not imply the refusal to admit the necessity or desirability of any specialization in an international setting. What is being objected to is the way worldwide sourcing is being carried out: on the level of enterprises (international corporations), evolving without macroeconomic planning, without a full employment manpower policy, without previous provisions for those losing their jobs, in some cases — as e.g. in the United States — completely disregarding the prevailing rate of unemployment and the state of the economy (in an expanding phase it is easier to absorb the redundant workers).

The matter would be quite different if worldwide sourcing were to be implemented in an organized and planned manner.**

It is, however, freely admitted that the coordination and planification of worldwide sourcing appears for the time being a very remote prospect.

Drawing inferences from the only precedent so far available, where worldwide sourcing assumed sizeable proportions, i.e. from the experiences of the United States, one is rather hard put to discover other benefits for the American economy than those of repatriated profits. The claim of the corporations that the resources freed by the new international division of labour, together with the earnings from abroad be invested in American jobs with high productivity and using sophisticated technologies does not appear to be vindicated, as attest-

* Such as the meeting of engineering unions in Australia; the conference of paper and cardboard workers at Hastings (England); the meeting of five big metal-workers' unions in Italy and France; the conference of the workers of Solvay in Paris; an agreement on the need of common trade union action between the English and Italian workers of the Dunlop-Pirelli plants etc. [44].

** Some economists advocate precisely this approach.

Béla Kádár (Hungary) reached similar conclusions already in the mid-sixties. According to him the key of growth in the LDC's is the development of the export of manufactures, including the promotion of industries oriented exclusively to foreign markets without internal markets of any significance. The necessity to implement the industrial division of labour — beside the successive removal of import restrictions — by way of a *comprehensive pattern* (coordinated between developed and developing countries) was also stressed [45].

More recently Jean-Louis Malaussena de Perno (France) suggested inter alia that the "redistribution of industrial tasks" should be brought about by a system of worldwide planification via UNCTAD [46].

ed by the high rate of unemployment. There is simply no possibility to shift all the workers whose jobs may be affected into higher productivity employment. It is even a moot case whether American consumers get always a better price from the product manufactured in the runaway shops: one of the main charges of the unions raised against the corporations is that some of the goods produced in the low-wage areas are sold in the American market at the same price they would command had they been made in the US.*

Thus worldwide sourcing has every chance to become one of the most controversial issues of the 1970s.

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ПОСЛЕДСТВИЯ И СОПУТСТВУЮЩИЕ ЯВЛЕНИЯ ВСЕМИРНОЙ МОБИЛИЗАЦИИ РЕСУРСОВ

Д. АДАМ

Предмет очерка: какое воздействие оказывает всемирная мобилизация ресурсов на структуру промышленности, экономический рост и рынок рабочей силы в развитых странах.

Согласно мнению автора в качестве следствия настоящего процесса складывается новое международное разделение труда, основные черты которого состоят в следующем: «метрополии», «центр» специализируются на производстве сложных изделий, современной технике, научных исследованиях, создании систем электронных вычислительных машин, а развивающиеся страны в качестве «тыла», сосредотачивают свои усилия на изготовлении трудоемкой и, соответственно, типичной для первой промышленной революции, — нередко весьма капиталоемкой, — продукции, темпы выпуска которой в «центре» уже замедлились.

В промышленном производстве и, соответственно, экспорте развивающихся стран еще преобладают традиционные продукты. Однако имеет место и то явление, что не одна из этих стран выпускает уже только предельно трудоемкие, но также более сложные продукты. Благодаря прогрессу транспорта и связи как технические достижения, так и управленческие, научные и прочие знания могут легко переноситься из страны в страну. Таким образом имеется возможность для сочетания относительно передовой техники и дешевой рабочей силы на предприятиях, перекочевавших из метрополий в развивающиеся страны. Все это во все большей мере стимулирует мировые концерны (международные корпорации) к переводу постоянно возрастающего числа промышленных отраслей и предприятий из развитых государств в развивающиеся страны.

Согласно мнению автора наблюдающиеся в развитых странах последствия можно подытожить следующим образом: между народнохозяйственными отраслями и внутри последних — в особенности в промышленности — складываются новые пропорции; специализация на обслуживании сужает основу экономического роста; сокращается занятость; перевод производственных предприятий в развивающиеся страны заодно в некоторой степени превращает их рабочий класс в резервную армию труда развитых стран и оказывает соответствующее воздействие на уровень заработной платы в метрополиях. Это явление приняло наиболее резкую форму в Соединенных Штатах; многие признаки свидетельствуют о том, что и в Западной Европе занятость попадает под перекрестный огонь: с одной стороны, новые капиталовложения нацелены на экономию живого труда, с другой стороны, начался массовый перевод западноевропейских производственных предприятий в развивающиеся страны.

Автор подвергает критическому рассмотрению также и реакцию американских профсоюзов, отмечая, что возражать нужно не против целесообразного международного разделения труда, а против того, что оно присходит на уровне мировых концернов, без макроэкономического планирования, проведения политики полной занятости и обеспечения переквалификации рабочей силы. Наконец, он затрагивает также и вопрос координации всемирной мобилизации ресурсов, но считает это пока только отдаленной перспективой.

REVIEWS

G. Biró

THE HUNGARIAN CHAMBER COMMERCE

The first commercial and industrial chamber organization in Hungary was established in 1850. Subsequently, chamber organizations were formed in a number of cities throughout the country, where they represented the interests of the newly developing industry and commerce. This chamber organization, which was at the service of private capital, died away after the Second World War, with the formation of socialist economic relations.

However, the need for a chamber organization remained, although its tasks are different in content under socialist conditions, and this justified the formation of the Hungarian Chamber of Commerce in 1948, first of all, as a body to foster foreign trade relations. The importance of the Hungarian Chamber of Commerce lies in the fact that Hungary is a country oriented towards foreign economic relations. While the country, with its population of 10 million, contains only 0.3 per cent of the total world population, its share in world trade is 0.8 per cent. The ratio of foreign trade to the national income is close to 40 per cent, and for years now, foreign trade has been the most dynamically developing economic branch, for its growth rate essentially exceeds that of the national income.

The significant role of foreign trade was the starting point for the entire concept of the new system of economic control and management introduced on January 1, 1968. For this reason on January 1, 1968 the Hungarian Chamber of Commerce took up a role as representative of the interests of the Hungarian enterprises — which had been given increased autonomy — closely related to its traditional trade promotion activities.

At present the vast majority of the 335 enterprises which are members of the Hungarian Chamber of Commerce are no longer specialized foreign trading companies, or firms with autonomous import-export rights, but industrial companies whose managers increasingly feel the need to keep in close contact with the world market with the help of the Chamber. Since the introduction of the new system of economic control and management, enterprises are no longer interested in fulfilling production plans, for compulsory production plans have been eliminated and replaced by profit motivation and this means interest in sales on both domestic and foreign markets.

This is in full harmony with the goal of the reform in economic management to increase the effects of world market trends on the domestic production and use, and on the pattern of imports and exports. For a country like Hungary which is so strongly orientated towards foreign markets, a gradual approach of the norms of domestic economic life to the world market is naturally highly important, and in essence it means that the country should be considered an open economy.

This is one of the most important reasons why it became necessary to extend the scope of the Hungarian Chamber of Commerce so as to become a body representing the interests of the member enterprises related to their foreign economic activities. The essence of this function is that the Hungarian Chamber of Commerce collects and synthesises the experience, comments and proposals of its members, and represents them in preparing economic policy decisions. It must also be taken into consideration that the members of the Hungarian Chamber of Commerce are controlled by different industrial and commercial ministries. For this reason the Chamber performs its interest representation activities through collecting the experience gained by the enterprises regarding the phenomena of production and realization. According to scope of interest representation defined at the first General Assembly session in 1968, the Chamber plays the role of advisor, makes comments, coordinates opinion, and makes proposals regarding the spheres of commerce, industry, sales and production. This enables the economic management bodies to take enterprise opinion into consideration in taking their measures.

Trade departments, specialized committees

Representation of interests is carried on by the diverse bodies of the Chamber. The trade sections group the enterprises belonging to the same economic branch, while the specialized committees deal with various major themes in economic life.

At present the following *trade sections* operate within the Hungarian Chamber of Commerce:

building industry, textile industry, aluminium industry, agriculture and food processing machinery, agricultural and food industry, telecommunication industry, electrotechnology, chemical industry, machine-tool industry, metal mass production and precision engineering industry.

There are *specialized committees* dealing with the following topics:

standardization of international documents, cooperation, technical and intellectual products, tariffs, marketing and contracting.

Trade promotion centre, foreign sections

This interest representation activity of the Hungarian Chamber of Commerce is in interaction with its continuously expanding international activities. International trade promotion activities have also moved into a new and higher stage through interest representation. This has taken place partly through continuation of traditional general trade promotion activity and partly through the fact that helping members in achieving concrete market and business goals by receiving and sending delegations, by joint actions and undertakings, and many other methods has appeared as an important new task in interest representation.

As a result, the Hungarian Chamber of Commerce now plays the role of a *Hungarian trade promotion centre* too.

The Hungarian Chamber of Commerce maintains contacts with partner organizations in 80 countries and is endeavouring to establish further connections.

With those countries where the intensity of the contacts, or mutual interest justifies it, sections have been established on a reciprocal basis to provide an organizational framework for trade promotion activities, and to make them more regular and intensive. The responsible experts of economic life are included in the activities of these sections.

The country-sections of the Chamber participate in the preparation and conduct of interstate talks, organize reciprocal exchanges of delegations, provide one another with information, give a framework to existing ties and help to further them. The different sections comprise the managers of the member enterprises most interested in the trade with the countries in question.

At the end of 1971 country-sections were in operation with the Chambers or the institutes for trade promotion of the following countries:

The Soviet Union, Czechoslovakia, Poland, the German Democratic Republic, Yugoslavia, the United Kingdom, France, Italy, Belgium, the Netherlands, Austria, Denmark, Sweden, Finland, Japan, India and Iraq, as well as a special Arab section.

The activities of the Hungarian Chamber of Commerce are also linked to the work of several *international bodies*. These include the conferences of Chamber presidents within the framework of the CMEA, and in the International Labour Organization the Chamber represents the managers of the member enterprises as employers. Through the UNIDO it helps Hungary to contribute to the realization of the developing countries' investment programmes. It is Hungary's official link with the International Trade Center (Geneva) and in this capacity it helps organizing market research studies, collecting information, and handling the affairs of delegations. It participates in the activities of the International Chamber of Commerce (Paris) although, simi-

larly to the other socialist countries, it is not a member. In this organization it works partly to find practical solutions to world trade problems, and partly to simplify or solve the technical problems emerging in everyday commercial practice.

Special committees

At this point it should be mentioned that the task of the *Arbitration Court* which operates as an autonomous body, attached to the Chamber, attended by 37 well known lawyers and economic experts, is to handle legal disputes in accordance with international trade laws, customs and practice.

The *Corporation of Loss Assessors* handles cases of damage to goods in transport.

The *International Business Law Bureau* collects and systematizes Hungarian and foreign legal regulations related to foreign economic relations together with court practice on legal cases, and provides this information to the Chamber members. Alongside its legal advisory function, it prepares expert opinion on more complex contract affairs, and on consignment it is the legal representative of the Hungarian enterprises at home and abroad.

The sphere of operation of the *Ethical Committee* includes providing opinion regarding conduct infringement on business ethics, and making proposals on this basis, to the responsible bodies.

Within the framework of *document authentication* the Hungarian Chamber of Commerce deals with the provision and authentication of certificates of origin and other documents used in foreign trade.

At present there are *Permanent Representatives of the Chamber* operating in Moscow, Berlin, London and Paris. Their major task is to maintain contacts with the economic institutions of the countries in question, and to exchange information between these institutions and the Hungarian firms through the Chamber.

Information activities

The flow of *information activities* in the Hungarian Chamber of Commerce is double-faced. On the one hand, the Chamber informs foreign partners on Hungarian economic life, on the general trends in trade, organization, legal prescriptions, and economic cooperation possibilities in Hungary. This activity can be best described by saying that it endeavours to help the enterprises' marketing activities by supplying information and presenting Hungary as an economic partner for other countries. On the other hand, the Chamber informs its members, and beyond them, Hungarian economic circles in general, on the positions of foreign markets, and on perspective business and cooperation possibilities. This double flow in the information activities of the Hungarian Chamber of Commerce means that, as a centre of Hungarian trade promotion,

it considers its main task to ensure as lively and many-sided a relationship as possible between the world market and Hungarian economic life.

Publications

As far as *information to the members of the* Hungarian Chamber of Commerce is concerned, two publications issued jointly with the Institute for Economic and Market Research play an important role. The Hungarian newspaper "Világgazdaság" (World Economy) issued five times a week provides detailed information on events in international economic life, reports the stock exchange rates, and reviews the programmes, problems and plans of the Hungarian foreign economy and the Chamber.

It also publishes a theoretical periodical entitled "Külgazdaság" (Foreign Economic Relations) which contains studies on theoretical issues of world trade and Hungarian foreign economics.

The specialized bi-monthly magazine *Propaganda-Reklám* (Publicity-Advertising) is the forum at which those responsible for Public Relations in the member enterprises of the Chamber exchange their experiences.

The most interesting of the periodicals published in Hungarian by the Chamber — from the point of view of other countries — is the bi-monthly "*Magyar Import*" (Hungarian Imports), which provides continuous information on markets abroad and import possibilities not only to the foreign trading companies, but also to Hungarian industrial and home trade enterprises and institutions. Special issues and supplements review commodity offers by various countries for Hungarian experts who make the decisions on imports. This magazin accepts advertisements from abroad.

With regard to periodical Chamber publications in foreign languages, the illustrated monthly magazine "*Hungarian Exporter*" has been giving regular reports on Hungarian export offers for twenty years now. Its special fortnightly issues, printed alternately in French, English, Russian, Spanish and German are directed primarily towards interests of the countries in language of whose they are published, or towards certain topical events and programmes.

"*Hungarian Foreign Trade*" appears quarterly in English, French, Russian and German, and also twice a year in Spanish. It is printed in colour and illustrated; an attractive magazine which gives a perspective of a separate branch of Hungarian economics in each issues.

"*Hungarian Heavy Industries*" is a specialized quarterly for the metal-working industry, published in English, containing reviews designed for technical managers of foreign firms.

The fortnightly bulletin "*Hungaropress*" printed in English, French, Russian, Spanish, Italian and German supplies information to economic and technical journalists abroad.

The *Directory of Hungarian Foreign Trade Companies* is printed annually by the Chamber. It lists the addresses of and the articles produced by Hungarian enterprises with import-export rights, together with the addresses of Hungarian trade missions abroad. It is published in English, French, Spanish, Russian and German.

The newest magazine, entitled "*Marketing in Hungary*" and "*Marketing in Ungarn*" deserves special attention. It is issued quarterly in English and German. The aim of this publication is to improve ties between Hungarian economic life and the world market through studies written from the marketing point of view. The studies included in it, written by outstanding personalities of Hungarian economic life, review the development plans of different branches of the Hungarian economy as well as the most important enterprises providing thus concrete footing for partners abroad on the extent of possibilities for them to join in these development plans with business or cooperation offers. The magazine also gives studies on legal subjects, since in recent times, as cooperation has come to the forefront of East-West trade, interest in related legal questions has increased. The world's leading press organs reported on the premiere of this journal, and despite the short time elapsed, subscribers include the economic departments of the world's largest banks, and the marketing departments of the large international concerns.

The Hungarian Chamber of Commerce also maintains close ties with the world press. It helps economic editors visiting Hungary from abroad to select their programmes, and its news and photo service, operating under the name "Hungaropress" is available to the foreign press.

The *Hungarian supplements* organized by the Hungarian Chamber of Commerce for publication in the foreign press are playing an ever increasing role in giving partners useful information. Among the Hungarian supplements appearing recently in the foreign press under the auspices of the Hungarian Chamber of Commerce were those in the Financial Times and the Guardian in Britain, Les Echos in France, Handelsblatt and the VDI Nachrichten in the Federal Republic of Germany, the Wirtschaft in the German Democratic Republic, the Financial Post in Canada, the Echo de la Bourse in Belgium, Die Presse and Arbeiter-Zeitung in Austria, and the 24 Ore in Italy.

In addition, the *ad hoc foreign language publications* of the Chamber also help to inform partners. For example, a review of legal regulations on foreign trade was printed in 1971 in English, French and German.

A handbook of Hungarian foreign economic relations to appear in English, French and German in 1972 is now under preparation. Finally, a booklet giving businessmen useful, practical information will also be printed in 1972, for wide circulation.

The Hungarian Chamber of Commerce organizes Seminars abroad called *Hungarian Economic Days* with the aid of the partner organizations in the

country in question, and, in cooperation with the Federation of Technical and Scientific Societies, it participates in similar programmes held in Hungary by institutions from abroad. The Economic Days mean a series of lectures at the service of the most modern form of international trade, technical-scientific and economic cooperation.

The first such series of lectures were held in Britain in 1967, followed by France, Yugoslavia and Finland in 1968, Czechoslovakia and Austria in 1969, the Federal Republic of Germany and Switzerland in 1970, the German Democratic Republic, Canada, Belgium and Italy in 1971, and Hungarian Economic Days will be held in the Netherlands, Poland, Spain and Britain in 1972. The importance of these events is increased by the circumstances that they provide the opportunities for consultations among experts, and for Hungary to use the occasion to introduce herself as an economic partner, both to the official circles of the country in question and to public opinion in the broader sense of the term. In order to facilitate this, the Chamber holds press conferences prior to the Economic Days, and issues Hungarian supplements to the important press organs of the country in question.

Advertisement, promotion

The Chamber plays an important role in the orientation of Hungary's advertisement and Public Relations activities and strives to operate as a *centre* of Public Relations. It does this primarily through committees. The *Educational Committee* coordinates the teaching of Public Relations. The Chamber organizes a two-year evening course, in which hundreds of students participate. After completing the two-year course the students take examinations and receive diplomas.

Coloured documentary films, introducing Hungary as an economic partner, are prepared under the auspices of the *Film Committee*. This committee also organizes an annual competition, awarding prizes to the best advertisement films produced by the enterprises.

The *Trademark and Packaging Committee* organizes series of lectures, competitions and exhibitions to operate as incentives to the enterprises to use trademarks and modern packaging methods.

The *Publication and Printed Material Committee* organizes competitions and exhibitions.

The *Press and P. R. Committee* surveys the most important advertisement markets, has studies prepared on them, and organizes competitions for reference photography to introduce Hungarian products abroad.

BOOK REVIEWS

VAJDA, I.—SIMAI, M. (eds.): *Foreign trade in a planned economy*. Cambridge, 1971. Cambridge University Press. 221 p.

The work contains studies by Hungarian economists, economic historians, and statisticians, who examine economic and social development, including such topics as the theoretical and practical aspects of foreign trade and the international division of labour. The goal of the book is a dual one. On the one hand it surveys Hungarian research in this field, while on the other, it is intended to provide a basis for lively debate and exchange of opinion among experts dealing with these questions.

In his introduction Professor *Imre Vajda*, the outstanding Hungarian economist who has since deceased, co-editor of the volume, concludes that there are two opposing directions in the world economy, irrespectively of economic system and development level. These are the directions of reciprocal dependency and monocentrism. These two opposing directions have been reflected in the theoretical debates on international trade and the division of labour in east and west alike.

The international division of labour is part of the national economic planning system, and compatible with it. The reason why it could not be so in the past was the uncritical application of the Soviet planning technique, which did not take difference in the conditions and circumstances of the two countries into consideration. The new Hungarian economic mechanism accepted the theory of a planned and regulated market economic system, which made a more flexible and dynamic foreign trade planning possible.

The introduction emphasizes that the conclusions, criticism, and proposals made by the authors are not intended to be generally valid for all socialist planned economies. In passing judgement or forming opinions, it is absolutely necessary to take geographical and national limits into consideration, as results of specific historical circumstances.

Keeping this viewpoint in mind, the editors begin the volume with history professor *Iván T. Berend's* study, "*The problem of Eastern European economic integration in a historical perspective*". The study provides a brief review of the economic development which took place in the countries of central and Eastern Europe. It emphasizes that development began within a multi-national monarchy, where strong national movements emerged to establish independent national states. The independent national states were founded following World War I and each of them pursued autarkic economic policies which were disadvantageous and uneconomic for the small countries. Parallel development, the lack of applying modern techniques and technology (there was no capital of adequate size) led to indebtedness, inability to compete, and to large-scale unemployment.

Following World War II, under changed political conditions, simultaneously

with the reconstruction of their completely destroyed economies these countries, awakening to the realization of the reciprocal dependency of their economies, and drawing the conclusions to be learned from the economic policies they had pursued in the period between the two wars, now searched for new methods of cooperation, which could serve as a basis for beginning their economic development. An entire series of bi- and multilateral agreements were signed between 1946 and 1948. These covered not only trade but production and planning cooperation as well. However, this favourable direction of development came to an end within a very short time, primarily for political reasons.

The countries participating in the CMEA organization established in 1949 accepted, under different political circumstances, the principle of autarkic economic policy. The theoretical argument was that this policy would be able to ensure a rapid rate of economic growth and structural transformation with each country by relying on its own resources and thus guarantee their independence. In practice however, this policy, despite the fact that increased demands for raw materials and investments made beyond the means of the investors did increase trade turnover, they meant greater commitments, continuous difficulties with imports, and a shortage of foreign exchange. Despite rapid industrial growth, agriculture did not develop, the efficiency of investments diminished and living standards declined, and modern techniques and technologies were only applied to a slight extent. By 1953—1954 the contradictions became clear, and all countries reduced their plan target in order to alleviate tension.

Recognition of the fact that they were dividing their forces again raised the need for closer economic cooperation. Beginning with 1955, possibilities for bi- and multilateral production cooperation (in raw materials, in energy) for specialization, for technical development and for investment cooperation were discussed on a number of occasions at CMEA sessions. The transferable rouble and the CMEA bank were established to alleviate the limits of bilateral trade. Later (in 1962), on the initiative of the Soviet Union talks were begun on establishing joint planning for a more complete realization of integration. The proposal was not approved for it went beyond what would have been needed, and it did not take national specialities and endeavours towards economic independence into consideration.

In the following study, "*Integration, economic union and the national state*" the late *Imre Vajda* examines the contents and concept of integration, the meaning of sovereignty of the national state, and whether or not economic union can be realized under different systems. In his opinion two forms of integration exist: a) *market integration* which may also include financial integration. This type of integration increases trade turnover, accelerates the rationalization of production, economic growth, the application of new techniques and mass production, and raises living standards. Its shortcoming is that it gives only a subordinate role to the integration of production development, and considers it realizable on microlevel; and b) *full integration* including production and development, which has not been achieved anywhere as yet. In distributing their national incomes the national states cannot provide it with funds, and this integration cannot operate without funds. Within the Common Market, production and development integration is realized by the American enterprises with their supranational corporations.

The sovereign role of the states has increased since the war, and economic union does not exist in practice due to the sovereign policy of the individual states. Based on his practical experience, the author draws the conclusion that economic union is at present an unrealistic concept. Economic union is not a station on the road to political union but a possible and desirable consequence of it.

With respect to the socialist international division of labour, he concludes that it makes use of the forms of market, production and development integration, but in none of these fields has it fully utilized the possibilities of socialist conditions. It is not necessary here either that the division of labour lead to full integration. At present, economic union is not a realistic goal in the case of the CMEA countries either. It is the branches which result in technical progress and a rise in productivity where better cooperation must be achieved. This must be achieved within the framework of multilateral agreements, and the funds needed must be formed by the redistribution of the national incomes.

The author's final conclusion is that integration — as a process of the international organization of production — does not necessarily have to extend to all economic activities. The liquidation of the national state is neither a necessary part nor an antithesis of integration, for the two can exist side by side.

In his study "*External equilibrium and economic reform*" *Imre Vajda* discusses the need for the Hungarian economic reform from the point of view of trends in the balance of payments and the effects of technical changes on the world market. He concludes that an autarkic economic policy placed limits on trade with its quotas. Its major goal was import substitution and the establishment of external balance, but this was not realized in trade either with the convertible currency countries, or in that with the socialist countries. Bilateralism only increased disequilibrium in the CMEA countries.

Elimination of external disequilibrium, which is a consequence of internal disequilibrium, can only become possible when the latter is done away with first. The new Hungarian economic mechanism has elaborated regulators and incentives which provide the producer enterprises and foreign trading companies with increased autonomy, and make it possible for them to better adjust to the conditions of competition and thereby achieve a suitable increase in turnover and a more favourable pattern as well.

Sándor Ausch's study "*Problems of bilateralism and multilateralism in the external trade and payments system of the CMEA countries*" provides a detailed review of the established system of CMEA cooperation and of the circumstances which led to the creation of this form. The author concludes that on the basis of the directive planning, a special form of bilateral clearing was established. Its characteristic feature is that domestic and foreign prices have been completely separated from one another and, therefore, an exchange cannot be compared on the basis of foreign exchange rates. The prices are not in harmony with supply and demand relations for these show random deviations from international value relations. The clearing rouble meets the function of "money" only in a formal manner, it is not a general measure of value, nor a means of credit, it is not wealth, and therefore, "interest" also is interest in the formal sense only.

Clearing money cannot ensure interest in profits, and it is therefore replaced by compulsory import-export quotas. Short and medium-term credits are not granted, but they are raised as the result of trends in trade turnover. Credit is due either to imports remaining below the planned level, or to exports exceeding the amount planned. Interest means an income or increased expenditure to the supreme management bodies only and is not paid in money but in commodity shipments of a fixed pattern. The commodity pattern of trade is balanced in a special way. "Hard" goods can only be exchanged for hard ones, and "soft" goods for soft ones, which limits the possibilities for expanding turnover. The transferable and "multilateral clearing system" established on the basis of such a system meets formal requirements only. The role of the CMEA Bank is limited to the central registration of the bilateral accounts.

The condition for multilaterality and transferability is that a clear relationship be established between domestic and foreign trade prices through the exchange rates, and this determines the achievements of the enterprises. Within the framework of state regulation the enterprises must be able to make their own decisions on the quantity, composition and direction of exports and imports, in accordance with their own interests. Real commodity and value relations, and market ties can only be formed in international relations if they have been first established within the various economies. In other words, the first step is that the system of directive planning must be exchanged for a qualitatively different regulated and planned market economy.

The author then goes on to study the steps which must and can be taken in order to achieve the desired goal. The compulsory export and import quotas must be replaced by a system of state permits applied in a narrow sphere only, prices must be market prices, and flexible credit and interest methods must be developed.

The study by *Béla Csikós-Nagy* is entitled "*Some theoretical problems of the price system in the trade between CMEA countries*". It points out that in the beginning the concepts related to solving problems of economic cooperation were linked to price questions. However, various interpretations of the criteria for a rational international division of labour were hidden behind the price debates. According to one view, the economic mechanism of the present international division of labour is satisfactory, and only the price problem must be solved in a manner enabling prices to reflect the value relations of the socialist world (the principle of the "own price basis"). According to the other view, the whole of economic cooperation must be subject to reform, since the price problem can only be solved within the framework of a reform of this nature.

After reviewing the financial and monetary relations operating at present among the CMEA countries, the author explains that it is highly undeveloped and serves only accounting purposes. The prices do not meet their roles, they are not regulators of commodity turnover, their effect is indirect, and only operate through administrative regulators, or despite these. The conditions of a regulated market mechanism must be established if we want prices to fulfil their functions.

In his article "*Exports and export performance*" *Mihály Simai* analyzes the changes which have taken place on the export markets of seven socialist countries, and studies the effects of their adjustment to new conditions on their exports. The analysis also replies to the question about the extent to which the medium-term plans (1961—1965) of these countries were realistic. He concludes that in the period between 1961 and 1965 the majority of the CMEA countries increased their exports. They granted greater credits to the developing countries and this had a particularly favourable effect on their machine exports, while the role of specialization and cooperation agreements among them also increased. Despite the fact that exports grew at a faster rate than imports, the deficit in the foreign trade balances of several countries grew to such an extent that it began to endanger the possibility of further increasing their foreign trade turnover. The analysis also points out that the disproportion between the production of finished products and raw materials continued to increase. With respect to quality, choice and shipment deadlines, competition became increasingly keen in turnover among one another, and the Soviet Union in particular raised increasingly strong demands for quality, in almost all groups of products. During this period the share of the West-European countries rose in the turnover of almost all of these countries.

The study goes on to examine the changes in "export performance". The author calculates the export performance

index for the most important markets of the seven countries, and for the exports of several developed capitalist countries. He compares the trends which appear in the countries and groups of countries on the basis of the calculations, analyzing and evaluating the differences. He also calculates the "export performance" indices for the most important groups of commodities, and studies trends in the export patterns of the CMEA countries, comparing them with those of the Common Market countries. He concludes that the CMEA countries must increase their production and technical cooperation. The long-term trade agreements existing among them make both exports and imports secure, but they do not aid rapid technical progress. It is definitely necessary to develop a certain competition among the producers, to help technical-technological progress. Work related to trade such as servicing, publicity, and market research, must also be improved.

Mária Augustinovics's study is entitled "*A comparative analysis of the effects of foreign trade on the Hungarian economy*". Using input-output data she examines the effects of foreign trade on production, its volume, the branch patterns, capital and labour intensity and on consumption; comparing the Hungarian economy with those of the Common Market countries, characterizing the deviations between the actual economic pattern and an assumed autarkic one. She first studies the intensity of the effects of foreign trade, which is fundamentally determined by the differences or similarities in the export and import patterns of the sectors. The results of the calculations show that the accelerating effects of exports and imports on production are, in Hungary, identical, while there are differences between the two in other countries. In Hungary international exchange does not modify the level of national output, while in other countries it does. The effect of foreign trade on the pattern of production is expressed by the relationship of the "deflected" volume to full turnover. She studies the differences between the branches in actual and autarkic situations, not only from the point of view of total production, but from that of the individual branches of industry as well. She concludes that the effect of foreign trade on the pattern of production is, in Hungary, weaker and more widely dispersed than in the other countries. The study then goes on to examine the effects of foreign trade on capital and labour intensity, and concludes that, generally speaking, foreign trade is more capital intensive than production. In the cases of Hungary, Italy and France, exports are more labour intensive than imports.

Studying the import contents of production and exports the author finds that exports are more import intensive than production in general, in other words, foreign trade is more "foreign trade intensive" than the economy itself.

It appears, after analyzing the import contents of different final uses, that in Hungary the import contents of consumption is lower than that of gross capital formation, and the latter is more capital intensive than consumption. In all other countries the picture is the reverse.

In his paper, "*The problem of the central management of foreign trade turnover*" *Márton Tardos* uses as his starting point the fact that the central management and control of foreign trade cannot be separated from the whole of economic management. There are basically two ways in which it is possible to solve problems of economic management: a) the method of central management and control must be strengthened by improving the supply of information and the introduction of "programming"; and b) the other possibility is to operate central management through economic regulators. The first solution is possible in theory only with the aid of linear programming, but not in practice.

The possible way for solving the problems is central control and management through economic regulators. According to the guidelines of the new Hungarian eco-

nomic mechanism the economic units, the enterprises, are autonomous. They themselves determine their production and sales patterns within their own system of preferences, and the central bodies are capable of establishing economic regulators which stimulate the enterprises to fulfil the national economic plan. In accordance with suitable assumptions and constraints the author would construct a linear programme for the enterprise units, in which the objective function is maximization of the profit-sharing fund. The model for the whole of the national economy would be compiled from these enterprise models and the system of central contraints. He would introduce central expectations, e.g. domestic demand, the trade balance and that of payments, personal incomes, etc. along with such regulators as price and quantitative prescriptions, which provide incentives to the enterprises to comply with central expectations.

The model described here is, with certain deviations, a special form of the *Dorfman—Samuelson—Solow* competitive balance model. The greatest deviation is in the objective function, where minimizing costs or maximizing profits is replaced by maximization of the profit sharing fund.

Károly Körér, in his study, "*Conceptual changes in the Hungarian external payments system within the new economic mechanism*" discusses that in the period between 1950 and 1967 foreign exchange was not considered a commodity, and its sales and purchases were centrally guided through the banks, in accordance with the plans. The effects of the exchange rate were neutralized through a "bumper" mechanism. This distorted the development of true interests and, as a result, the possibility for the creation of an economic structure, in that it separated the producers from information on actual market prices.

The first thing to be done to achieve a reform of foreign exchange rates is to change the price systems. Prices must supply both producers and consumers with information on the costs of the products. The domestic and foreign price structures must be linked, and a profit motivation must be created so that producers and foreign trade enterprises alike should discontinue the production and sales of uneconomic products. In determining the exchange rate, among other things, the average or the marginal exchange rate of exports must be taken into consideration. According to those advocating marginal export exchange rates, this rate determines what exports are advantageous for the economy, as well as the level of imports and import substitution, and provides information on the consequences of an increasing or decreasing use of foreign currencies. This makes it possible that comparative advantages be realized through foreign trade. Since the input ratios of export products are not different from those of the average of national product, according to the author it would be more advisable to use the average exchange rate.

"*The terms of trade in the foreign trade of Hungary, 1957—1967*" by *Ádám Marton* points out that the prices Hungary achieves on the capitalist market show, in general, a declining trend, though fluctuation is marked within certain years. The prices of industrial finished products, as well as those of raw materials and semi-finished products have all dropped. The former was unfavourable, while the latter, since the country's import needs are well above the exports of these products, was favourable for Hungary. The most dynamically changing group of products was that of foodstuffs, where, in general, prices decreased, with the exception of live animals and animal products, in the exports of which Hungary is strongly interested.

József Bognár's "*Tentative outlines of a new world economic concept*" emphasizes that the institutional changes which have taken place in the world economy in recent decades have not solved tha basic problems. They were unable to even reduce, let alone eliminate, the gap between the

developed and developing countries. The economic competition and ideological conflict stemming from the co-existence of the socialist and capitalist systems have not yet been decided. The economic polarization of the developed countries has increased. Western Europe is not capable of keeping pace with the United States, and is searching for the means of solution. As a result of the rapid increase in the number of national economies the world economic mechanism built on international competition is proving ever less suitable for ensuring the comparatively balanced development of the world economy with a rational use of productive capacities and means of production. The solution to these problems can be aided with suitable economic policy tools, that is, with a market mechanism corrected in a certain direction, or with other methods. A transitory economic policy might be if the developed countries would pass on a part of their national incomes to the developing countries. An industrial division of labour must be achieved, according to a comprehensive, suitable plan, through the coordination of the world-wide activities regarding certain fundamental economic problems, etc. The struggle for the realization of the new world economic concept must be waged not only in economic policy but on the political field as well, all the more so since economic power is in the hands of those who oppose the change.

I am of the opinion that the book fulfilled both of its tasks. It gave a detailed review of Hungarian research into the theoretical and practical questions of foreign trade and of the international division of labour. The studies raised a number of theoretical and practical concepts, causing a lively exchange of opinion. In the period elapsed since these concepts were raised, several of them have been realized, one or two questions have been clarified, and the authors themselves have changed their opinions regarding some of the problems.

E. DRAHOS

KÁDÁR, B.: *Kis országok a világgazdaságban.* (Small countries in the world economy.) Budapest, 1971. Közgazdasági és Jogi Könyvkiadó. 263 p.

Treatment of the present economic development and the future development possibilities of the small capitalist countries on high or medium development levels has been rather neglected in international economic literature, while domestic literature has, for incomprehensible reasons, for a long time completely ignored this question. If for no other reason, the study just published by Béla Kádár should be welcomed for this alone, independently of the fact that he has been essentially successful in solving the task he marked out for himself, the post-World War II development trends and specialties of the European small capitalist national economies. He convincingly shows that we can only receive a full picture of the economic processes operating in the developed capitalist countries, and the interactions among them, if, alongside the United States, the U. K., the leading countries of the Common Market and Japan, we also pay continuous attention to the development trends of the small Western European national economies.

Before going into a more detailed analysis of his topic in the narrow sense, the author outlines the major features of the capitalist world economic environment to which the small Western European national economies have been mainly related since 1945—1950. These are as follows: first, the large-scale concentration of military, economic and political power in the hands of the great powers, first of all, the United States; the superiority in commodity, then in capital exports of the United States stemming from this and leading to the rapid spread of the American giant corporations abroad on the basis of relatively liberalized world economic relations. This concentration of economic, financial and technological power on an international scale — enabling them to enjoy the advan-

tages of a well organized social (international) division of labour within their own frameworks — in the hands of giant corporations for the most part under American interest, today means that their ". . .economic potential is in many cases as great as or even greater than the magnitude of the entire national economic potential of many small and medium-sized national economies . . ." (p. 15). And since they are becoming increasingly international the participants in the world economy are no longer only the individual countries, but, with ever increasing emphasis, these giant corporations, for the most part in the hands of the great powers (the United States), whose decisions are having an ever greater influence on world economic processes.

"In most countries the technical-scientific development evolving at a violent rate rapidly outgrows the narrowing national economic frameworks and an increasing number of nations become small, indeed midget countries in the world economic sense — if only for technical-economic reasons — and find themselves facing the ever more complex existential problems of small nations" — emphasises the author (p. 23).

And if this has become an acute problem in countries comparatively strong in capital (we are speaking of the economic powers which have become second-rate, such as the Federal Republic of Germany, Japan, Britain, France, and to a smaller extent, Italy and Canada) where the annual gross national product is on a level of about 100—150 thousand million dollars, the issue emerges much more sharply in the case of the traditionally small national economies. From the point of view of the latter, even these "second-rate powers" count as economic great powers, despite their increasingly serious problems in "keeping pace".

How is it then possible to define the size of a nation, and, on this basis, how is it possible to state whether or not we are dealing with a small national economy in the case of a given country? After reviewing foreign standpoints on this topic, which are not too extensive, Béla Kádár considers, "out of the criteria for defining the size of a nation . . . the economic potential expressed in terms of the absolute magnitude of the annual national product . . ." to be the most suitable way of doing this (p. 39). But he does not ignore — quite correctly — population as an influencing factor, and adds ". . .a country can be small, (meaning a small national economy — Gy. B.) if it has a small population and a high per capita national income, or if it has a large population with a low per capita national product (national income)." (p. 40). With that he takes a stand essentially identical to those of L. Tarshis, G. Leduc and J. Weiler at the Lisbon scientific conference which dealt with this topic in 1957, and against the primarily American views (Kuznets, Chenery, Michaely) which emphasised population as the sole decisive criterion. The national income (national product) corrected for population, as a determining criterion, makes it possible in any case, to rank any national economy (developed or backward) throughout the world by size of nation. However, in the case of a group of countries considered *comparatively* homogenous, that is, the small capitalist countries belonging to OECD-Europe, studied by the author, he considers it sufficient to use for practical purposes, the absolute magnitude of GNP as the criterion determining a small nation, and he puts it between 5 and 25 thousand million dollars.

The group of countries formed in this way includes the four Scandinavian countries: Sweden, Finland, Norway, and Denmark, as well as Belgium, the Netherlands, Ireland, Switzerland, Austria, and three southern European countries on medium-development level: Spain, Portugal and Greece. This grouping is rather loose in placing borderline cases — which deviate rather sharply from a number of viewpoints — into an identical category, but let us now look a bit more closely at the

conclusions drawn by Béla Kádár after analyzing the growth of these small economies on the long term, for the past three decades.

After reviewing — relying on broad statistical material — these countries' economic growth, business cycle trends, industrial patterns, the relationship between business cycles and exports and imports, trends in the balances of payments and foreign exchange reserves and, in this connection, the import of capital as an impetus to growth, the indices of technical-scientific development, trends in the efficiency of investments, and the socio-cultural development of the individual countries, the author draws the following conclusions on their development possibilities and their performance so far in a summary way:

". . .the economic growth of the small nations is dynamic. Their joining in the international division of labour is by no means a hindering, but a development promoting factor. Despite their strong dependence on the world economy, their economic growth is no less balanced, or fluctuating than in the case of the large countries. For the most part their foreign exchange potentials are good, assumptions regarding monetary uncertainty were disproven, and their socio-cultural development was by no means less favourable than that of the great powers, and, in fact, if the degree of economic development is taken into consideration as a corrective factor, their indices of socio-cultural development can be considered comparatively more favourable."

However, the disadvantages of the small country appear undeniably in fields which are far from being indifferent for long term growth. One of these fields is, for example, technical-scientific progress, where there is a growing gap between most of the small countries and the leading great powers, and is increasingly working in the direction that reciprocal dependence realizable through the international division of labour is shifting to a more one sided technical-scientific dependence. Another problem is the circumstance that, as a result of the growing size of the rational scale of production the internal and external specialization of the smaller countries is becoming increasingly strong mainly in the service branches which are more distant from the main lines of technical progress, which might cause long-term growth problems and other problems as well. Finally, from the point of view of the economic efficiency of the growth process, it is not immaterial that, as a rule, the small countries attain identical growth performance with greater investment inputs, which may lead to disturbances in both long-term growth acceleration and in distribution policy as well.

"Despite the preceding, very definitely negative features, these disadvantages have so far not put a brake on the growth rate of development and have not led to 'cyclical disturbances'." (p. 121—122)

The small capitalist national economies, although on the basis of theoretical conclusions, are generally judged by international professional literature in a pessimistic manner with respect to their possibilities, have, in the past three decades, not only been capable of keeping themselves "on the surface" but — *compared with their former states* — they have also undergone structural transformations in favourable directions, despite the fact that *in comparison with* the structure developed with the "great powers" which is also a new and dynamic one, this new structure *also* shows many unfavourable features which can be considered as lasting ones. The detailed and differentiated analysis of the situation which has developed in this way is perhaps one of the most valuable chapters in Béla Kádár's study.

Next the author makes a closer study — again using a mass of broad statistical data — of the structural features characterizing the participation by the small national economies in the international division of labour. The picture emerging from the richly documented, truly detailed

analysis, is, in brief summary, as follows:

In the given world economic situation, the foreign economic relations of industry are in all cases the most critical field in the development of the small national economies. The vast majority of countries studied are not only small countries, but took the road to industrialization comparatively recently (in most cases only following World War II), and for this reason the combined foreign trade balance for industry-produced articles is strongly in deficit in most of them. If, for the moment, we ignore capital imports, this must be counterbalanced by the foreign trade surpluses of other economic sectors. A sector like this is, first of all, the agrarian bloc; despite a more modest growth in the exports of an agricultural nature, in seven of the countries studied it produces a foreign trade surplus, which partly counterbalances industry's foreign trade deficit. Aside from this, the dynamically developing servicing sectors of the small countries are gradually taking over the traditional foreign exchange producing functions of the agrarian sector, which — with the exception of Sweden — show a strong foreign trade surplus everywhere. In contrast, with the exception of Britain, the service balance of the great powers is generally unfavourable, and we can only agree with the conclusion by the author that since ". . .the correlation between economic potential and the foreign exchange balance by branches is quite a close one, it is difficult not to recognize or to deny that we are facing an objective economic trend, the spontaneous adjustment of the economic pattern" (p. 129). "Due to their important role in the sphere of foreign economics, the services are an organic part of the economic development concepts of the small countries." (p. 130)

The great weight of the agrarian sector and the services within the total exports of commodities and services means that international specialization is concentrated to those economic branches where the advantages of the great powers stemming from size, concentrated possibilities for accumulation and corporation dimensions can only operate in a limited manner, if at all. We can observe similar trends in the branch concentration of industrial exports. In the case of the country group studied, four branches of light industry (the textile, clothing, food, and wood and furniture industries) accounted for 38.4 per cent of manufacturing industry output in 1963, whereas in the case of the "great powers" they represented only 23.6 per cent; and it was particularly in two important branches of industry which are least sensitive to market size, the food and the furniture industries, that the degree of specialization was highest in most small countries.

Production and, to an even greater extent, export concentration on the so-called dominant product groups attained a high degree within the engineering industry too: "It is particularly interesting", emphasizes the author, "that in contrast with the industrialization experience of the previous century, the modern branches requiring large production series developed in the past decade were created with very strong export motivation . . ." and, at the same time, the ". . .strongly export intensive industrialization — as a result of small production series — objectively involves that a very large part of demand is covered through imports" (p. 142–143). Parallel with this there is a rapid development of international specialization in groups of products and even in products themselves, as well as production cooperation based on the reciprocal exchange of semi-finished products and components, generally along with an exchange of sortiments. It was precisely in the foreign economic relations of the small countries that these modern forms of industrial international division of labour have become of comparatively greatest importance, and through them the small national economies have been able, so far, always to overcome the immanent accumulation disadvantages stemming

from the natures of their economies, and keep in step with the demands of the world market. It follows that today ". . .industrial development no longer takes place in the small countries in a horizontal manner, but the international division of labour develops between certain vertical stages" (p. 146).

A special merit of the study is that in its analysis of the position of the small national economies in international competition, it does not stop with an analysis of foreign trade in commodities and services, but includes, although rather by reference, the activities of the *large international corporations* in the small countries as well. The most highly developed small capitalist countries — the Netherlands, Switzerland, Belgium, Sweden — are also net capital importers, but their international corporations founded decades ago (Shell, Unilever, Nestlé, SKF etc.) and their service ties (banks, transport) enable them to increase, together with their influence, their ability to compete internationally. It is of particularly great advantage that at the time of a sharp international concentration of economic power they are capable of using the very means of the great powers, and for the time being, of standing competition. However, it is an editorial shortcoming of the study that it discusses the activities of the international corporations of the small countries separately from the problems of foreign trade in commodities and services, and from those of the balance of payment, and capital imports and exports — despite the fact that some of these small countries truly enjoy great power advantages through these corporations and banks, etc. sometimes even at the expense of the great powers, particularly the second-rate powers.

The author's reasoning regarding the defence-economic policy of the small countries is also interesting. In our opinion he views the essence of the problem correctly: "The weight of phenomena which cannot be influenced . . . objectively lends an *adjusting* and not a *creating* nature to the economic policy of the small countries. The complexity of concept formulation is increased by the fact that decisions 'reacting' to world economic processes must be turned into creating ones for the national economy in the interests of inducing the expected national economic optimum effect. This dual nature in the economic policy of the small country — that is, *adjusting* outwards and *creative* inwards — becomes increasingly definite as the economic size of the country in question decreases. This nature is fundamentally different from the creative policy of the great powers, which can ignore world economic processes without major losses, while in their internal economies they can very strongly rely on market effects." (p. 210)

According to the lessons of modern history, the forced keeping in step of a small country in international competition makes an increased centralization of state and economic management necessary — beside the formation of the international giant corporations — and requires also an increasingly planned management of foreign economic relations, and of economic policy in general. But, emphasizes Béla Kádár, the practice of the small countries included in the study shows that ". . .a broader planning mechanism, or a plan containing rigid and detailed plan targets cannot be rationally applied in the small economies at present, since the changes which would unavoidably appear would make continuous plan modifications necessary. The quantity of so-called feed-back problems grows in geometric proportion with the number of given plan targets, and they cannot be solved, if for no other reason, because of the problems in implementation." (p. 214)

In the concluding part of his study, the author asks: can the experience of the past three decades, gained in connection with the small capitalist countries of Western Europe, be extrapolated to the future, even on medium-term? Considering the technological-economic concentration of forces

appearing in the world economy, which continues to be rapid, and the gathering strength of integration trends among the great powers, the conclusion by the author that — from the point of view of the small nations — the "reality of the 1970's" will be a turning point should not be considered an exaggeration: "They must take a stand on the direction, form, pattern, and institutional framework in which they wish to develop the field of international economic cooperation . . ." (p. 239—240) thus essentially, on the question of how to participate, in which integration organizations, so that in the meantime their national personalities should be preserved, and they should not be one-sidedly absorbed by the great powers in the course of integration. After briefly reviewing possible theoretical concepts connected to economic integration — on the basis of Perroux, Imre Vajda, etc. — the author shows the concepts, standpoints and policies so far of the various groups of small Western European countries towards integration organizations, first of all, the Common Market. This chapter of the study has been lent particular topicality by the talks, presently under way, with a view to expanding the Common Market. GY. BECSKY

NEŠVERA, V.: *Investitionen in Österreich und in der Tschechoslowakei.* Wien—New York, 1971. Springer Verlag.

Der Weg der Selbsterkenntnis führt über Andere zu uns selbst. In unserem Zeitalter, wo die bewußten Elemente der Wirtschaftsführung zu Lasten der spontanen Elemente anwachsen, erhöht sich verständlicherweise überall das Interesse für fremde Gesellschafts- und Wirtschaftssysteme, und auch die Anzahl der vergleichenden Analysen nimmt zu. In dieser neuen Welle der ökonomischen Literatur ist die Studie von *Nešvera* beachtenswert, in der innerhalb einer ausgewählten Zeitspanne von anderthalb Jahrzehnten (1950—1967), auf einem konkreten Gebiet der Wirtschaft, vermittels Investitionsdaten die wirtschaftliche Entwicklung Österreichs und der Tschechoslowakei verglichen wird.

Die Themenwahl ist glücklich, stellt doch der Verfasser die Kennziffern zweier benachbarten Länder gegenüber, die auch geschichtlich über viele gemeinsame Traditionen verfügen, deren Entwicklungsstand im grossen und ganzen auf gleichem Niveau steht, deren Wege sich aber, trotz der ähnlichen Gegebenheiten vor einem Vierteljahrhundert getrennt haben: das eine betrat den Weg der kapitalistischen, das andere den der sozialistischen Entwicklung. Uns Ungarn geht diese vergleichende Analyse besonders nahe an. Nicht nur deshalb, weil es sich um zwei unserer befreundeten Nachbarländer handelt, sondern auch deshalb, weil wir mit diesen beiden Nachbarn lange Zeit hindurch in einer politisch-wirtschaftlichen Einheit lebten und so das Tempo, die Richtung ihrer Entwicklung für uns von besonderem Interesse ist.

Diese Studie ist das erste Glied einer Schriftenreihe, die die in 1969 aufgebaute *Abteilung Internationale Wirtschaftsvergleiche* des Österreichischen Instituts für Wirtschaftsforschung unter dem Titel »Studien über Wirtschafts- und Systemvergleiche« veröffentlicht. Nešvera studierte in Wien — im Auftrag des Forschungsinstituts für Wirtschaftsplanung in Prag — die österreichische Investitionstätigkeit, und verfaßte auf dieser Grundlage seine Studie, die in demselben Band durch eine von Professor *Dubravčić*, Zagreb, verfaßte Analyse über das jugoslawische Investitionssystem ergänzt wird.

Gemäß dem Vorwort des Herausgebers beabsichtigt man in dieser Serie keine Werturteile über Schwächen und Vorzüge der verschiedenen Wirtschaftssysteme zu geben, man will nur ausschließlich Tatsachen feststellen und damit zu einem besseren Verständnis beitragen.

Die Studie verwischt aber nicht — sehr richtigerweise — die Verschiedenheiten der

Gesellschaftssysteme, sondern zeigt eindeutig auf jene Abweichungen der Entwicklungstendenzen hin, die eben diesen Verschiedenheiten entspringen. Jede ökonomische Bewertung setzt ja schon im vornhinein ein bestimmtes System von Zielen und Präferenzen voraus, und dieses Subsystem bildet ein wesentliches und charakteristisches Element des darzulegenden Wirtschaftssystems selbst.

Nach einer Darlegung der Kennziffern, die zur Beschreibung von Investitionstätigkeiten verwendet wurden, und deren Vergleichsprobleme, weist der Verfasser überzeugend auf die gemeinsamen und unterschiedlichen Züge der Wirtschaftsentwicklung in den beiden Ländern hin. Zwischen den beiden Weltkriegen entwickelte sich die tschechoslowakische Industrie rascher (die Produktion erhöhte sich um 30—40%), während die Industrie Österreichs fast stagnierte. In 1950, zur Zeit des Ausgangspunktes der Analyse, überstieg das Sozialprodukt, bzw. das Nationaleinkommen um 20% den Stand von 1937. Nachher zeigte sich in allen beiden Nationalwirtschaften eine rasche Entwicklung: zwischen 1950 und 1966 wuchs das Sozialprodukt in Österreich um 5,3, in der Tschechoslowakei aber um 6,1 Prozent. In der Wirtschaftsstruktur entfalteten sich bestimmte Entwicklungstendenzen: in allen beiden Ländern verringerte sich das Gewicht der Landwirtschaft, das der anderen Zweige erhöhte sich aber; in der Tschechoslowakei nahmen die Anteile von Industrie, Bauwesen, Energie- und Wasserversorgung rascher zu als in Österreich, hier wiederum erhöhte sich der Anteil der Dienstleistungen, des Verkehrs und des Handels. Österreich konnte aber von einem höheren Stand der Industrialisiertheit ausgehen. Zwischen 1951 und 1966 nahm in Österreich der Anteil der Beschäftigten in der Industrie von 38,5% auf 41,4%, in der Tschechoslowakei aber von 33,8% auf 42,6% zu.

In der *Industriestruktur* zeigen sich bedeutende Unterschiede. In Österreich verminderte sich das Gewicht des Bergbaus und des Hüttenwesens, das der Bekleidungs- und Nahrungsmittelindustrie stieg an. In den 60-er Jahren beschleunigte sich in Österreich die Strukturveränderung, in der Tschechoslowakei verlangsamte sie sich: das erstere Land beteiligte sich mit seinen Wirtschaftszweigen am internationalen Wettbewerb, im letzteren zeigten sich autarke Bestrebungen. Innerhalb der Verwendung des Nationaleinkommens erhöhte sich in beiden Ländern der Anteil der Akkumulation zu Lasten des Anteils des privaten Konsums.

Die bedeutende Veränderung in der österreichischen Industriestruktur wurde am besten dadurch bewiesen, daß sich in den dem Jahre 1960 vorangehenden 10 Jahren die Grundstofferzeugung — gegenüber einem 9%igen Gesamtzuwachs der Industrie — um 53% erhöhte, in den dem Jahr 1960 folgenden 7 Jahren aber hat sich die Tendenz umgekehrt: gegenüber einem Anstieg um 30% in der gesamten Industrie stagnierte die Grundstofferzeugung im wesentlichen.

Die *Investitionsquote* (Bruttoinvestition: Sozialprodukt) war in der Tschechoslowakei etwas höher, stieg aber in allen beiden Ländern bedeutend an, da die Investitionen schneller anwachsen als die Produktion.

Eine besondere Beachtung verdient der Vergleich des *Investitionsgüterangebots*. Unter den Produkten der metallverarbeitenden Industrie ist der Anteil der Investitionsgüter in der Tschechoslowakei bedeutend höher: der Anteil der in der metallverarbeitenden Industrie Beschäftigten ist in der Tschechoslowakei doppelt so hoch wie in Österreich: im ersteren Land ist nämlich der Maschinenexport, im letzteren der Maschinenimport von größerer Bedeutung. Die sich auf die materielle-technische Zusammensetzung der Investitionen beziehenden Zeitreihen sind leider nicht bewertbar. Der Grund hierfür ist die inzwischen vor sich gegangene Preiserhöhung im Bauwesen, die in der Studie nicht entsprechend analysiert wurde. Interessant sind jedoch die Erläuterungen, die in den Zweigen

der tschechoslowakischen Wirtschaft hinter den Investitionsgütern von direkter Bestimmung eine Investitionsproduktion indirekter Bestimmung von doppeltem Wert zeigen.

Bei der *Struktur der Investitionen* besteht der bedeutendste Unterschied darin, daß in der Tschechoslowakei der Anteil der Industrie aus den Investitionen um rund 14 Prozentpunkte höher (35%), und als dessen Komplement der Anteil der nicht produktiven Investitionen um rund 12 Punkte niedriger als in Österreich ist (Daten von 1964). Die für den Straßenbau verwendeten Summen erhöhten im letzteren Land die Investitionen des tertiären Sektors um ein bedeutendes.

Es ist sicher, daß hier nicht von irgendwelchen »absoluten« Charakterzügen der kapitalistischen und der sozialistischen Wirtschaft die Rede ist, sondern von Proportionen, die einen gegebenen Zeitabschnitt im Aufbau des Sozialismus charakterisieren, es ist ja bekannt, daß seither auch in den Volksdemokratien die tertiären Zweige in den Vordergrund traten. Die Frage bleibt aber offen, ob wohl die grössere Opferbereitschaft der sozialistischen Staaten auch — wie wir wünschen und hoffen — auf eine längere Frist die Grundlagen einer weiteren schnellen Entwicklung mit sich bringen werde.

Öfters wiederkehrend berührt die Studie die Investitionen im *Bauwesen*, konnte aber leider die Klippen der Gegenüberstellung nicht umgehen, und so ist die Demonstration des oberen und unteren Grenzwertes der Fluktuationen auch weiterhin ungenügend zum Vergleich dieses wichtigen Faktors.

Ein interessanter Zufall (?) ist, daß die für den Wohnungsbau verwendeten Summen im Jahre 1967 — gegenüber 1951 — in beiden Ländern auf ihr 2,6-faches stiegen, und auch das erbaute Wohnungsgebiet in der Größenordnung übereinstimmt. (Die Zahl der Wohnungen ist in der Tschechoslowakei bedeutend größer, in Österreich erhöhte sich aber die durchschnittliche Wohnfläche je Wohnung.)

Eine besonders gute Vergleichsbasis bieten die je Zweige gegliederten verschiedenen Kennziffern. Der auf je einen Beschäftigten entfallende Investitionswert (»Investitionsintensität«) ist in beiden Ländern bei der Versorgung mit öffentlichen Werken und bei der Grundstofferzeugung am höchsten, am niedrigsten aber in der Textil- und Bekleidungsindustrie. In anderen Zweigen sind die Abweichungen teils auf das abweichende Entwicklungstempo, teils auf die abweichende Kombination der Produktionsfaktoren zurückzuführen. Es ist aber eigenartig, daß in der Tschechoslowakei auf eine Einheit des Produktionszuwachses in der Schwerindustrie bedeutend mehr Investitionen entfallen, im Zweig der Leichtindustrie aber bedeutend weniger als in Österreich.

Der *Kapitalkoeffizient* (Kapital: Produktion) verminderte sich in der Tschechoslowakei in den untersuchten anderthalb Jahrzehnten, erhöhte sich aber um ein weniges in der Industrie: die tschechoslowakische Industrie ist bedeutend kapitalintensiver als die österreichische, dagegen ist aber in der österreichischen Wirtschaft innerhalb des investierten Kapitals der Anteil der Maschinen bedeutend größer.

Wertvolle, und die nahe Verbindung der beiden Nationalwirtschaften wiederholt beweisende Angaben bringen die die Studie beschließenden *internationalen Datenreihen*. Der *Investitionskoeffizient* (produktive Investition: Zuwachs des Sozialprodukts) ist unter den 17 entwickelsten kapitalistischen Ländern nur bei zweien höher als in den untersuchten beiden Staaten, was eine niedrige Effektivität der Investitionen ahnen läßt. Die Investition der Zweige der materiellen Produktion innerhalb der Gesamtinvestition zeigt bei den untersuchten Ländern in der Tschechoslowakei den höchsten Anteil, und dies ist auch für den Anteil der industriellen Investitionen gültig.

Alles zusammenfassend kann festgestellt werden, daß sich die Verminderung des Anteils der produktiven Investitionen (in den letzten Jahren: Industrieinvestitionen)

in Österreich zu einer Schranke des späteren Wachstums gestalten und Gleichgewichtsprobleme aufwerfen könnte. In Österreich spielen unter den »Investitionsfinalgütern« die Konsumgüter und die Dienstleistungen eine immer bedeutendere Rolle. In der Tschechoslowakei dagegen beansprucht die Erhöhung der Produktion Investitionen von hohem Tempo, und dies schließt die Gefahr eines gewissen »Leerlaufes« in sich, da ja höhere Investitionen höherer Investitionen wollen getätigt werden.

Für *eine kürzere Zeitspanne* findet dieses Ungleichgewicht in erster Linie in der Fluktuation der Investitionsquote seinen Ausdruck, in den verschiedenen Wirtschaftssystemen muß dies aber auf verschiedene Faktoren zurückgeleitet werden. In Österreich ist das in der Etappe der Rezession übergangsweise gestörte Gleichgewicht und die damit einhergehende Verminderung der Investitionen einem Zurückgehen der Entwicklungsfreude zuzuschreiben. In der Tschechoslowakei dagegen ist dies eine Antwort auf das Zurückhalten der ansteigenden Nachfrage, ein Streben zur Wiederherstellung des Gleichgewichts.

Auf längere Frist zeigt sich in der Tschechoslowakei eine Ungleichgewichtstendenz, weil die Verteilung der Investitionen unter den Zweigen ihre Reproduktion zu den alten Proportionen voranhilft. Auch in Österreich sind permanente Tendenzen festzustellen, die auf ein Ungleichgewicht hinweisen, hier ist dieses aber auf die Interessen der verschiedenen Machtgruppen zurückzuführen, die zu ihrer Aufrechterhaltung und dadurch zur Aufrechterhaltung der Wirtschaftsproportionen auf die Wirtschaftspolitik einen Einfluß ausüben.

Im Anhang des Buches wird der präzise Inhalt der verwendeten wirtschaftlichen Kategorien geklärt, und die Wirtschafts- und Investitionstätigkeit der beiden Länder durch ein breites Datenmaterial illustriert.

Die Studie wird durch eine kürzere *Übersicht über Jugoslawien* ergänzt, die einen Einblick auf eine neuere Politik der Wirtschaftsleitung, der Entwicklung gewährt, aber weniger Mühe zur Herstellung einer Vergleichbarkeit verwendete. Am ehesten ist es noch bei der zweiglichen Verteilung der Investitionen gelungen, Bedingungen einer vergleichenden Analyse zu schaffen.

Alles zusammengefaßt, kann das Wiener Experiment als gelungen betrachtet werden und wir erwarten die nächsten Bände der Schriftenreihe mit Spannung. Das Buch blieb — bewußt — den Beweis hierfür schuldig, auf welche Weise wohl die wirtschaftlichen Instrumentensysteme und die realisierten Ergebnisse in den verschiedenen Ländern die sozialen Ziele verwirklichen. Mit den ersten Versuchen eines Vergleichs werden aber die technischen Bedingungen dafür geschaffen, und damit die Schranken für nuanciertere und tieferschürfende Forschungen geöffnet.

G. HAVAS

GALENSON, W. (ed.): *Essays on employment*. Geneva, 1971. International Labour Office. 191 p.

Economic development in the developing countries is today less in the centre of interest than in the past two decades, — these are the sentences with which Galenson begins this book of his. It has been recognized that rapid and continuous growth is an essential, but not satisfactory condition for national development and, in fact, does not provide a guarantee for the solution of the ever more critical employment problems. The main reason for the present situation and future difficulties is the rapid population increase in these countries.

In comparison with the preceding decades, population growth in these countries accelerated extremely rapidly in the 1960's, as a result of the high birth rate, and the decreasing death rate, and these generations are seeking work in the 1970's.

The following table provides information on the extent of this:

Growth in economically active population (millions) (estimate)

	1960—1970	1970—1980
Latin America	20.5	29.4
Asia (excluding China)	75.5	107.5
Africa	25.1	32.7

According to the estimates, if we add the data on China, by about 1980 we should ensure employment for about 200 million people in order to achieve full employment.

The direction of the changes in the branch pattern of the labour force is also contributing to the "employment crisis" in these countries. Here too, similarly to the developed countries, the ratio of those employed in agriculture is decreasing, while its rate would seem to be rapid. In contrast, industry's labour requirements are increasing slowly because of its adopting new technologies. It would seem that the easiest solution would still be if the people were to be employed in agriculture, although the majority of the factors are working against this, that is, mechanization, the seasonal nature of agriculture, etc.

In industry it would be of primary importance to develop small-scale industry, and handicraft industries because of their low capital intensity and comparatively high labour input. It is very difficult to determine the ratio of those employed in the services in these countries. Increasing their numbers is quite difficult although they are admittedly branches with lower productivity. The skills required for these branches present a problem, and in some of the services, e.g. banking, insurance, productivity is rising rapidly.

The developed countries struggling with problems of a different nature, i.e. the shortage of labour, are now beginning to recognize the first signs of the increasing "employment crisis" of the developing countries, which the International Labour Office has turned into the World Employment Programme. The other eight studies in the volume endeavour to make proposals for and find solutions to the ever more serious problem from different approaches, but it would seem that, even taken together, they give no more than a partial solution and are inseparably linked with the economic backwardness of these countries.

The first study, written by P. Bairoch and J. M. Limbor, entitled "*Changes in the industrial distribution of the world labour force by region, 1880—1960*" touches on general questions of interest, also from our viewpoint. The authors spent many years of work in compiling the long time series for the different countries, with respect to changes in employment. This tremendous work gave them the opportunity to write this comparatively short, but extremely interesting study, whose major conclusions can be summarized as follows: although in the period from 1900 to the 1960's the ratio of people employed in agriculture dropped from 72.1 to 58.1 per cent in global dimensions, their absolute numbers increased as a combined result of the rapid decline in the agricultural populations of the developed countries, and the fast increase in those of the developing countries. Also the ratio of those employed in mining and raw material extraction dropped between 1950 and 1960. An interesting phenomenon in the developing countries is that between 1950 and 1967 the percentual decline in the ratio of agricultural employment was greater than in the total of the previous 60 years. The rise in the numbers and ratio of those employed in the service branches was rapid in the past 30 years but particularly so in the past 20 years.

The authors give the following average characteristic data on the employment patterns in the developing countries: in 1960 the ratio of those employed in agriculture

was still over 70 per cent (77.9 per cent in 1900), and the gap between them and the developed countries amounts to one hundred and fifty years. Commerce gives a picture of economic development levels corresponding to that of the developed countries at the turn of the century, and the ratio of those employed in transportation services shows one existing in the developed countries in 1850. At the same time, the ratio of those employed in mining and industry is lower than it was in the developed countries at around 1800. The number of men employed in agriculture in the underdeveloped countries doubled between 1900 and 1960, which means that, alongside increasing agricultural productivity, the employment problem is even more acute.

Y. Sabolo's study "*Sectoral employment growth, the outlook for 1980*" is a continuation of the previous, situation analysis work. In a paradoxical manner, the expected degree of employment indicates an increasing degree of unemployment in the developing countries. While in 1960 36 million unemployed were taken into account, in 1980 this figure is expected to be 48 million (this figure does not include the underemployed in the different branches). The reason for this is that the expected economic growth is incapable of absorbing the rapid increase in the population of working age, the qualifications of those newly entering employment are unsatisfactory, while in these countries the distribution of the national income has created a consumption pattern similar to that in the developed countries, which encourages first of all, capital-intensive production. The author makes a forecast of labour requirements by national economic branches in a detailed, territorial break-down, emphasizing that far more noticeable changes may be expected in Latin America than in Asia and Africa. He completed his study on the ability of the sectors to absorb labour on the basis of the relationship between the rise in per capita GDP and the pattern of employment by branches. Sabolo reaches the following result on the basis of his analysis: in order to increase employment industry is insufficient, for its labour absorbing capacity is limited by the capital intensive technologies and by the lack of labour skills. Modernization in agriculture must not mean the reduction in employment, on the contrary, the spontaneous growth of employment must be aided, irrespectively of its economic efficiency. Efforts at the introduction of an efficient population policy must be increased to reduce the birth rate and, finally, employment planning must become an organic part of economic planning.

I. Inukai studies and analyzes the mechanization, production and manpower utilization of agriculture under the special conditions of a concrete country, Thailand, showing that modernization can also increase the employable labour force by increasing the number of productive seasons. In all cases, detailed analyses of the country's geographical and climatic relations must be completed and the success of new technology can only be considered as proven if it has spread to many small farms within a large agricultural area. The study by *P. Mueller* and *K. H. Zevering* also deals with the example of a single country, Western Nigeria. It is entitled "*Employment promotion through rural development*". The authors give a detailed analysis of the economic position of the country, the schooling and technical levels of the population, the extent and direction of migration, the labour force situation, and it is on this basis that they make proposals to improve the situation, first of all, urging territorial planning. They make a proposal on the direction of agricultural and industrial — first of all: small scale industry and handicrafts — development, as well as for the development of the infrastructure.

The study by *K. Marsden*, entitled "*Progressive technologies for developing countries*" makes more comprehensive proposals which can be put to use by more than one country. The study starts with

the statement that the adoption of modern technology is not always most suitable for the developing countries. The reasons for this are as follows: capital is disproportionately more expensive than live labour, mass production in many developing countries is uneconomic because of markets with low absorptive capacity and the desorganization of distribution, the new technology may reduce employment and the product becomes more expensive because for the most part, only imported materials can be used. Progressive technology has a different meaning for each individual developing country, and the following points of view should be taken into consideration when choosing from among them: creation of large differences among the productivities of the various branches should be avoided, the technology should be in accordance with the social environment, the productivity of capital should be maximized while minimizing the social costs of production. The author supports his reasoning with many concrete examples from the practice of the developing countries, and he makes proposals on how, and with what help the leaders of the countries can find the most suitable roads to development.

"*Construction, productivity and employment in developing countries*" is the title of the study by *P. Strassmann*, which analyzes the relationship between the building industry and economic development, and then shows the development of the building industry using Peru as an example. *A. S. Bhalla* analyzes in his study the role of the services in increasing employment also illustrating his conclusions with examples of several countries.

The concluding study in the volume is the work by *D. Seers*, the first country study completed by the International Labour Office within the framework of the World Employment Programme, on request from Columbia, in which experts from a number of international organizations participated. The question was primarily how to eliminate chronic unemployment. This study reports only on some of the conclusions drawn in this tremendous study. At the beginning of their work, the present situation was analyzed in detail, then advice was given for the development directions of industry, agriculture and other branches.

The studies in the volume deal only with the whole of the population of working age, and with changes in the branch pattern of employment. A more detailed analysis of the sources of the labour force was not included, which means that there is no mention of the special problems in the employment of men, women and minors on the given level of economic development.

The volume of studies outlines the size and weight of those problems which not only the developing countries but the entire world must face in the 1980's. It shows that there is no comprehensive solution. Manysided measures, and carefully conceived economic policy is necessary to alleviate the employment problems in these countries. Zs. MAUSECZ

KÓRÓDI, J.—KŐSZEGFALVI, GY.: *Városfejlesztés Magyarországon.* (Urban development in Hungary.) Budapest, 1971. Kossuth Könyvkiadó. 136 p.

In this book the authors elaborate on a many-sided topic. The work entitled "Városfejlesztés Magyarországon" provides a special survey of the problems of regional development, by approaching them from the side of settlement development.

József Kóródi and György Kőszegfalvi base themselves primarily on the economic interrelations in treating the Hungarian process of urbanization, and discuss it concentrating on these. The work is made topical by the fact that in the present stage of Hungarian economic development regional development tasks, including the proportionate development of the settlement network, a higher-level technical

supply to the settlements, etc. are coming to the forefront. Solutions to these problems would help the optimum growth of the economy, and improve the living conditions of the population.

The authors deal with certain theoretical issues in the process of urbanization, and the factors affecting urbanization. They analyze the present pattern of the settlement network which developed in the process of historical evolution, pointing out the major disproportions and the reasons behind them. They deal separately with the problems of increasing the urban network, and the development of rural settlements, referring to the relationship between the two types of settlement, and emphasizing the organic unity, based on many-sided interactions, of the settlement network. They show the settlement agglomeration and the isolated homestead as two extremes within the special forms of the population's settlement, analyzing their role in the territorial structure of the Hungarian economy and society. They review the perspective concept for the development of the settlement network as approved by the government and deal with the perspective directions of urban development. Finally they survey the economic and other regulators of settlement development.

The economic interrelationships of settlement development are very widespread and varied. The limited space forced the authors to grasp only the most essential of these interrelations instead of going into details. Generally speaking, they completed the abstractions successfully.

I. BARTKE

TEMPEL, G.: *Als wär's der Liebe Gott — Die Weltmacht der Konzerne.* Gütersloh, 1971. Bertelsmann Sachbuchverlag. 237 p.

This book is different from most works dealing with world corporations. It is evidently based on much empirical research, but the author choses to expose her views throughout in an easy conversational style which certainly makes it more readable for people who are interested in the subject without being "experts", than many ponderous writings.

Dr. Tempel is fully aware of the significance of world corporations. As she sees it, our planet is being ruled by some 150 heads of state but by only some 30 chairmen of really global corporations. No government is, however, in a position to avail itself of the services of politicians or officials who have an overall grasp of the multinational's sophisticated pattern. Many books have been written about space and the hydrogen bomb, there is, however, not a single book — she observes — in which a specific world corporation would be described with all its functions, problems, the implications of its operations, in its present — not yesterday's — shape. The main reasons of this gap are the world-wide dimensions of the corporations and private property. In order to be able to examine a global corporation thoroughly, a special permit is necessary to penetrate its inner sanctum which can be obtained only from the corporation itself, and also to make a round-the-world-trip — requirements which were evidently met by the author.

In her acknowledgement of the achievements of world corporations Dr. Tempel is ready to go to quite some lengths: according to her, if there is something they can teach us, it is how quickly poverty may be transformed into wealth. They show to humanity how new centers of production may be multiplied by the most modern methods and technologies. Numerically controlled machine tools, automation, computers, the speed and ease of communication may transform Asia, Africa and South America in no time into rich continents. Were six world corporations to be given free hand, India's state of poverty would be quickly eliminated and substituted by modest but general welfare.

In this context we feel that her appreciation of the welfare-creating potential — and last but not least intention — of world corporations carries her a bit too far. The record of the big companies in developing countries in the decades — past and recent — while they had a nearly free hand does not evidence this assertion.

But we are in full agreement with her when she states that within a conventional frame of reference and of concepts global corporations can be neither thoroughly explained nor understood, because they simply do not fit any more into time-honoured political and economic patterns.

Yet she is far from being an uncritical admirer of the new industrial mastodons. She definitely dislikes how every human being is observed, analysed, dissected by world corporations which consider "every man, every woman, every child a mini-market". Nor has she any illusions about the apoliticism of big corporations: she believes that they do meddle in politics. More than that: she thinks it's they who make these days our politics, whether deliberately or being unaware of it. They are seen as having created an emotional and intellectual climate in which they are the chief actors pushing everything and everybody else into the background. (Although she means it evidently in a pejorative sense, we again cannot suppress the feeling that she is quite a bit overawed by their power and influence.)

Dr. Tempel also believes that world corporations because of their increasing immunity and the ease with which they sprawl across national boundaries become every day more sure of themselves evolving a superiority complex. Despite some local restrictions they move around more and more in a vacuum without being confronted by any global countervailing power. There are very few people around to match the experience of the corporate chieftains, and even those few belong to organizations like OECD, FAO, UNESCO, the World Bank etc. which are rarely able to make decisions of real import, being limited to submit only suggestions or recommendations.

Yet world corporations — according to Dr. Tempel — are a threat to us not because they are so powerful but because they are not "programmed" in a way to serve rationally the survival of humanity, not to speak of human happiness. They assess the life of human beings, their wishes and desires exclusively in terms of dollars, pounds and Deutsche Mark's: they are manipulators *par excellence*. Her judgement in this respect is harsh: "The mere fact that global corporations never mark time and appear always to rush somewhere proves nothing, it does not imply either vitality or progress. It may mean as well a form of madness." Nor is she enraptured by the fact that in the social structure of the West the top executives of world corporations are primarily responsible to their shareholders who rely on them to handle their capital in a dependable way.

In this context she objects strongly to the recent spread of the cult of world corporations in Western Europe, whose governments suddenly find that the former are extremely useful organizations. She has a foreboding that soon it will become a sacrilege to criticize what Volkswagenwerke, Bayer, Siemens or Hoechst is doing. Their prosperity is more and more identified with the national interest, they are looked at as fortresses defending the future of Western Europe.

Also she is all out against the assertion that Western Europe's urgent task is to catch up with America. She reasons in the following terms: American solutions are no good for Western Europe and cannot be transferred there without fully destroying her social structure. Western Europe is (relatively) tiny and overpopulated; the USA (relatively) enormously big and sparsely populated. Nor is a market of great assistance if it consists of 200 million people instead of 50 million; were all this that mattered, India would be the ideal market a businessman may dream of.

There are — in her view — a lot of things in America Europeans have plenty of reason to be intimidated by and scared off: the insanity of a growth- and sales-centered economy. The only justification of such an economy is that it stimulates productivity and raises thereby the general welfare. But the world is today already too productive and the problem consists in improving the life of all the human race, this being rather a question of better distribution than boundless production. And Europe has no more or not yet again the habit to consider economic life a war, a series of battles which must be won. Nor is Europe inclined to adopt the "hire and fire" philosophy of employment adopted and practiced by American corporations.

The author believes that one of the few chances for Western Europe to attain a position comparable to that of America would be the integration of another continent, a total integration, based upon full equality not only in the area of economics, but also in a cultural and social context. One of the main impediments is the mental habit of Europeans to consider Africans as "primitive".

She refers with scathing sarcasm to European complaints of becoming a colony of America because of the establishment of US-based corporations, as the very same Europeans do not tire to extol the benefits of their own presence in other continents, claiming the gratitude of every country for importing valuable know-how and capital as well as creating jobs for thousands of "natives". Europeans are now beginning to get an inkling of what it means when too many and too big, wealthy and efficient corporations are doing business in their own countries.

Dr. Tempel makes some statements with wide implications which deserve special emphasis.

One of them is: It would be technically quite feasible to manage even the biggest corporations from airconditioned tents in the Sahara or from any other spot of the earth. This seems very important in the coming age of multi-country, even world-wide sourcing and dedomiciling, although some qualifications may not be amiss here.

A second one: The art and the science of managing big international corporations could be acquired until quite recently only within the organizational framework of the same, requiring more often than not decades. Now, however, the modern media of communications, the sophisticated analytical and statistical tools, supplemented by the use of computers render possible even for outsiders to grasp the essentials of a world corporation's pattern.

And thirdly she perceives a radically new development which may question one day the omnipotence of world corporations, viz. the age of electronics — to which they owe largely their ascendancy — offers an amazing alternative: small, independent units are becoming every day more and more a possibility. It is to be regretted that the author did not expand on this a bit, treating this new development in a rather cryptic way.

Despite these "bright spots", Dr. Tempel's mood is rather apocalyptic: "As things are today, we are heading for the biggest disaster, because the pilots we are relying on are steering us towards a future in a way as if they were drunk."

With due allowance for the present and future negative implications of the power of world corporations we doubt that this degree of pessimism is fully justified. Global companies experienced recently some significant setbacks in Latin America, nationalizations are rampant throughout the Third World, US-based corporations and their runaway plants are subject to violent attacks in their home country — things are perhaps not as desperate as the author purports them to be.

Nor can we agree with her point that "poverty is not an economical but a psychological problem, not to be eliminated by an economic theory", or that "what prevents us to make an earthly paradise of our planet is not technological but

psychological problem" or again that "our problems lie in our thinking and sentiments". World corporations — as we see them — are the outgrowth of a specific socio-economic structure and therefore no attempt to solve the problems engendered by their proliferation can neglect the socio-economic sphere. GY. ÁDÁM

BIBLIOGRAPHY

PUBLICATIONS OF HUNGARIAN ECONOMISTS IN FOREIGN LANGUAGES. PART TWO

1. July 1969—31. December 1970

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Introduction

This bibliography is a continuation of the one published in ACTA OECONOMICA No. 4, Vol. 4, 1969 covering the period 1 January, 1968—30 June, 1969. We included in the present list the publications of another one and a half year following that date. Nevertheless, in some cases, when we found items originating from the previous period but omitted from the bibliography mentioned we supplemented them here. We find necessary to repeat the limitations of the collection* enlisted already in the previous bibliography. The following items have been omitted: 1. articles in newspapers and weeklies, 2. publications in languages other than English, French, German, Italian, Russian and Spanish, 3. studies and reviews published in Acta Oeconomica**, 4. book reviews, 5. parallel publications by the same publisher in languages other than English, resp. Russian, 6. publications on economic history of the pre-war periods, economic geography and engineering economics to a large extent, 7. publications by Hungarian economists living outside the country, even transitorily as experts, advisers or teachers, etc.

* The material had been collected by Miss *A. Tuszkau*, Librarian em. of the National Bank of Hungary and the bibliography was compiled by *T. Földi*. — Acknowledgements are due to those institutions and authors who helped the labourious work of collecting and especially to Mrs. *K. Ferenczy*, Head of the Documentation Unit, Institute of Economics, Hung. Acad. Sci., who gave a complete list of the respective publications by the Institute's staff and a significant part of information on other materials. — Remarks and references on omitted publications are kindly accepted and will be published supplementarily.

** A repertory of Acta Oeconomica for the years 1966—1970 was published separately. See item 224.

The present bibliography contains 226 items, that is, the number of publications in question in comparison to the previous period grew nearly by one third. We hope nobody will find it exaggerated, if we characterize this as a remarkable development. One reason for this is the closer contact of Hungarian economists with their colleagues abroad, thanks to which a broader field was offered for Hungarian economists in foreign publications than earlier. An other reason is the ever growing effort of Hungarian institutions, publishing houses etc. to increase the number and raise the level of foreign language economic publications.

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a

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See also: **18, 47, 48, 49, 54, 55, 60, 92, 94, 114, 156, 157, 161, 162, 197, 208.**

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* The regularity of publication is marked by the following signs: (Irreg.) = irregular, (1) = yearly, (2) = half-yearly, (4) = quarterly, (6) = bimonthly, (12) = monthly. The sign L. = language of publication.

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György Szakolczai, b. 1928. Head of Dept. at the INFELOR Institute for Systems Engineering. Author of "Increasing or decreasing returns to scale in the constant elasticity of substitution production function." in The Review of Economics and Statistics, 1969; "Erklärungen von Produktion und Produktionspotenzial mit CES Produktionsfunktionen in Ungarn und USA." in IFO-Berichte, 1967; and other studies on mathematical economics.

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András Hegedüs, b. 1922. Cand. of Econ. Sci., senior research worker at the Research Group for Industrial Economics, Hung. Acad. Sci., former director of the Research Group for Sociology, Hung. Acad. Sci. Author of "Workers' wages system in the Hungarian industry." Budapest, 1960. Közg. és Jogi K. (in Hungarian); "The structure of the socialist society." Bp., 1966. Akad. K. (in Hungarian); "Specialized management and scientific research." Proceedings of the First Italo-Hungarian Meeting of Sociology. Milan-Rome, 1967; "Un monde qui change." Études Sociologiques. Paris, 1969. Éd. Anthropos; "Changing world." Bp., 1970. Akad. K. (in Hungarian) etc.

Dr. László LENGYEL, b. 1925. Economist, Head of Dept. at the Ministry of Finance, Scientific Secretary of the Hungarian Economic Association, former Deputy Head of Dept., Central Statistical Office, Budapest. Author of "The living standard: facts and opinions." in Acta Oeconomica, Vol. I. No. 3—4; "Formation and problems of extra-market consumption." Material of the Committee on Labour Productivity, International Economic Association. Venice, 1968, and other papers on the problems of living standard and social policy.

Dr. Péter ERDŐS, b. 1910. Doctor of Econ. Sci., professor at the Univ. of Techn., Budapest, scientific adviser at the Institute of Econ., Hung. Acad. Sci. Author of "Contributions to the theory of capitalist money, business fluctuations and crises." Budapest, 1971. Akad. K.; "Über Reproduktionslehre und Konjukturtheorie." in Ziele, Faktoren, Rationalität des Ökonomischen Wachstums. Berlin, 1968. Akad. Verlag: "A contribution to the interrelation between the theory of reproduction and that of business fluctuations." in For the progress of Marxist economics. Budapest, 1967. Akad. K.; "The application of Marx's model of expanded reproduction to trade cycle theory. In Socialism, capitalism and economic growth. Cambridge, 1967. Univ. Press; "Über das Nicht-Warengeld als Mass der Werte in Kapitalismus." in Acta Oeconomica, Vol. I. No. 1—2. etc.

Dr. János SZITA, see Vol. 6. No. 3.

György ÁDÁM, see Vol. 7. No. 3—4.

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Preface by *M. Timár*

Edited by *O. Gadó*

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Acta Oeconomica Vol. 8 (4), pp. 375–406 (1972)

J. RIMLER—ZS. DÁNIEL—J. KORNAI

MACROFUNCTIONS COMPUTED ON THE BASIS OF PLAN MODELS

The National Planning Office commissioned our research group* to perform calculations to determine macroeconomic functions.

The first chapter discusses the general concept and specification of macrofunctions. The second one summarizes the basic concepts of the research. The third reviews the sample taken for basis in estimating the macrofunctions, and defines several related concepts. The fourth deals with the advantages and limitations of the method proposed.

While in the first four chapters the *general* principles and methods of research are described, the rest of the article discusses their *concrete application* to a single case. We review the calculations performed with the aid of the plan model used in drafting the 1971—1975 five-year plan. The fifth chapter reviews the analysis, while chapters 6, 7, and 8 discuss the economic and methodological lessons, and summarize the further tasks of the research.

1. The general concept and specification of the macrofunction

By *macrofunction* we mean the interrelations between aggregate variables (flows or stocks), related to the national economy as a whole, described in mathematical form. The general form is as follows:

$$u = f(v) \tag{1}$$

where u = a k component vector of the dependent (or explanatory) variables,
v = an l component vector of the independent (or explained) variables,
f = the form of correspondence.

Two attributes of the definition should be underlined. In the case of a macrofunction we always have global *economy-wide* interrelationships, in

* The estimation of macrofunction parameters computed on the basis of variants determined with the aid of mathematical plan models was raised by *J. Kornai* in his study [4], and the concept was explained in more general form in a note [5].

By further improving these methodological concepts, practical calculations were led by *Judit Rimler* who reported on the results in her study [7].

She used for her calculations the variants completed with the 1971—1975 aggregate plan model. The work related to this plan model was directed by *Zsuzsa Dániel* who also participated in the preparation and evaluation of the computations related to the macrofunctions.

Other participants were: *P. Wellisch*, who contributed to clearing up the mathematical-statistical problems and *M. Somogyi*, who worked out the computer routine, and directed the computer operations.

aggregated form. A well known special case of the macrofunction is the traditional aggregate production function: $Y = f(K, L)$. Y is here the variable of national economic output to be explained, while K — the capital stock of the national economy — and L — the national economic labour force — are the explanatory variables. However, an aggregate production function of a branch or an enterprise cannot be considered a macrofunction. Similarly, an economy-wide multi-sectoral Leontief model is not qualified as a macrofunction either. While it is true that the latter provides nation-wide interrelationships between gross and net output, it does so in a disaggregated form.

When we quantify a macrofunction, we must decide on the following four *specific* attributes:

1. We must specify the *variables*. What do we consider u, and v, i. e. variables to be explained and explanatory ones. When we decide on this problem, we have already fixed the economic content of the interrelationship to considerable extent.

On the basis of the specification of the dependent variable we may speak of production, consumption, export, import, and investment macrofunctions.

Considering the number of independent variables we can distinguish between few-variable and multi-variable macrofunctions. The latter include those with three or more explanatory variables.

2. We must specify *f, the form of correspondence*, the mathematical form of the function. To return to the previous example: the production function can be of the Cobb—Douglas type, that is, a special power function.

Giving the mathematical structure of the function is not a formal problem, but implies economic assumptions in all cases: e.g. do the explanatory variables substitute for each other, and if so to what extent, does the dependent variable change proportionally to the independent variables, or in a progressive, or degressive manner, and so on.

3. Interrelations appearing between given variables in a given mathematical form can be distinguished according to the *sample*, relying on which we estimated the parameters of the function. From this point of view we can distinguish between two major categories: *actual* data and *fictitious* data, experimental calculations and plan computations. In the case of the former, we have observed the true life of the economy in the past, and make use of the statistics prepared on the basis of these observations. However, in the latter case we have only completed speculative experiments: in some manner (with subjective estimates or formal model, assuming realistically conceivable, or deliberately unrealistic circumstances) we characterize various hypothetical conditions of the economy numerically. Each "what would happen if . . ." speculative experiment is related to a set of data, which describes the assumed situation.

We will not speak at this point of the problems of a sample taken from

actual data, the literature deals with this subject at length. The problem affecting us closely is the sample taken from fictitious data. We will deal with a special type of this in a later part of this article.

4. Finally, we must determine a fourth specific attribute: what mathematical-statistical *estimation procedure* should be used to determine the numerical value of the parameters, in other words, what is the method to be used to fit the function to the data of the sample.

2. The basic concept of research

If, hereafter, we wanted to characterize our own research, we could not speak of any unusual features with regard to specific attributes 1, 2 and 4. In these properties our macrofunctions resemble those used by other Hungarian and foreign researchers. (Although, as will become apparent in the second half of this article, in certain respects we deviate from the routines of other studies.)

The true speciality of our work, different in its essence from the traditional determinations of macrofunctions, lies in specific attribute 3, the selection of the sample. The essence of our concept is as follows:

We rely on a mathematical programming plan model. We perform a series of computations with this model. Each member of the series produces a plan variant, which can be described with a set of economic index numbers, each. These indices supply the sample to be used as a basis for estimating the parameters of several macrofunctions.

Let us look at a simple example. Using a disaggregated linear programming model we calculate the 1975 plan in 30 variants. In the first ten calculations output is Y_1, in the second ten calculations the output Y_2 is somewhat larger, while in the third ten variants the output Y_3 is even larger. We attain this deviation in output by suitably prescribing the constraint bounds. Alongside all the three output levels we assume a set of capital–labour combinations. Therefore, there are ten (K, L) pairs to each output Y_1, Y_2, Y_3. We also ensure this by a suitable prescription of the constraint bounds.

The results of the calculations can be seen in Fig. 1. We have thirty points; we have fitted three isoquant curves to them. In the final analysis we have a thirty-point sample, thirty data-triples, which serves as the basis for the estimation with the aid of regression analysis of the parameters of a $Y = f(K, L)$-type two-variable production function.

Our process deviates from the traditional construction of a production function in that the sample does not consist of a true historical data series of Y, K and L but of thirty hypothetical situations of the national economy simulated with an electronic computer, using a programming model.

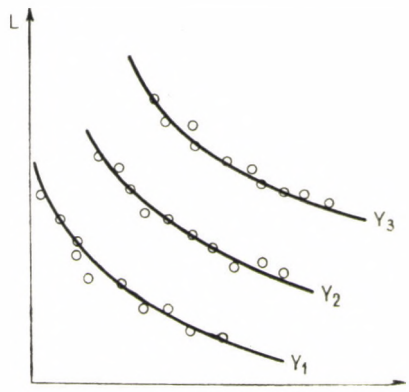

Fig. 1

3. On the sample taken as the basis for estimation

Having reviewed the basic concept of the method in general, using a simple example, we will now define several concepts more precisely.

A classification of concepts is all the more needed since "programming economists" and "production function economists" are accustomed to different interpretations of the pairs of concepts of "information input" and "information output"; "constant" and "variable"; and "data" and "result". In our own research we have had to deviate slightly from the concepts as used by either group.

Primary transformation

We have a mathematical programming model of a given pattern, in brief: an *MP model.* We perform a *computation series* with the model, and the number of calculations is S.

The s-th calculation ($s = 1, \ldots, S$) is termed the s-th *primary transformation:*

$$(A^{(s)}, b^{(s)}, c^{(s)}) \rightarrow (x^{(s)}, y^{(s)}), \tag{2}$$

where $A^{(s)}$ = the coefficient matrix,
$b^{(s)}$ = the vector of constraints,
$c^{(s)}$ = the vector of the objective function coefficients,
$x^{(s)}$ = the optimal primal program,
$y^{(s)}$ = the optimal dual program.

The information input consists of *the primary data;* the information output of the *primary results.*

Secondary transformation

There are many among the data which are not included into the information input of the primary transformation. E.g. the price indices used in repricing outputs, calculative (shadow) foreign exchange rates, etc. Let us call these data *secondary data* and denote their set with $H^{(s)}$.

The s-th primary transformation is followed by the secondary transformation:

$$(A^{(s)}, b^{(s)}, c^{(s)}, x^{(s)}, y^{(s)}, H^{(s)}) \rightarrow (Z^{(s)}). \tag{3}$$

The information input of the secondary transformation consists of the data and results of the primary transformation, and secondary data. The information output of the transformation are the *secondary results*.

The secondary transformation is described with several operational instructions. E.g. the summation of certain data of the disaggregated MP calculations and their results; computation of index numbers, average growth rates; repricings; the determination of percentage distributions, etc.

In fact, everything completed in "processing" MP calculations and compiling the reports on it belongs here.

Ordering of the data

In our subsequent analysis we distinguish between *the type of an indicator* and its *numerical realizations*. An example of the former: the total gross output value of the national economy, at 1968 prices. This is an indicator *type*, as a matter of fact, the economic definition of a variable. One hundred one thousand million forints — this might be one of the numerical realizations of the same indicator, say in calculation 7.

Each indicator type is represented by a variable; e.g. let I be the total annual investment of the national economy. The realizations of the indicator are denoted by the same symbol as the variable itself, in other words, the indicator type, but by using a superscript we refer to the ordinal number of the realization. Therefore, in the first, second, . . . , S-th calculations the total investments of the national economy will be: $I^{(1)}, I^{(2)}, \ldots I^{(S)}$. Accordingly, to each indicator type there belong S number of realizations.

The set of indicator types, that is, the ensemble of A, b, c, x, y, H, and Z are denoted by D. This includes a total of S realization sets: $D^{(1)}, D^{(2)}, \ldots$ $\ldots, D^{(S)}$.

The sets D and $D^{(s)}$ were introduced because we wanted to emphasize also with this form that, from the point of view of our calculation methods, from now on the "genesis" of the elements in these sets, the circumstances under which they were born, have become indifferent. It is all the same, what

role the various elements played formerly: whether they appeared as primary, or secondary data, or as results.

We use F to denote the set of indicator-realizations which are of identical value in all calculations:

$$F = \hat{D}^{(1)} = \hat{D}^{(2)} = \ldots = \hat{D}^{(S)} \subset D^{(s)} \quad s = 1, 2, \ldots, S. \tag{4}$$

Let us introduce the following notation:

$$G^{(s)} = D^{(S)} - F \quad s = 1, 2, \ldots, S. \tag{5}$$

Thus, the elements of set $G^{(s)}$ are indicators whose s-th realization is different from at least one other realization. The corresponding set of indicator types is denoted by G; from now on we will call the elements of G *experimental indicator types*.

In quantifying the macrofunctions, we will need solely the experimental indicator types, and their realizations.

The macrofunctions calculated on the basis of the plan model

Now we can return to the macrofunctions, given in general form in formula (1). Basing ourselves on the same MP model, we can calculate a whole series of $f_1, f_2, \ldots$, macrofunctions; each specified for different variables, in different mathematical forms. In determining the attribute No. 1, we must proceed in a manner that both the dependent and independent variables should be elements of the set G defined above, the set of experimental indicator types:

$$(u_{i1}, \ldots, u_{im_i}) = f_i(v_{i1}, \ldots, v_{in_i}) \quad , \quad \{u_{i1}, \ldots, u_{im_i}, v_{i1}, \ldots, v_{in_i}\} \subset G. \tag{6}$$

In other words, we only deal with such variables to be explained and such explanatory variables for which we receive a numerical value in the course of the primary and secondary transformations by starting from the MP model; and what is more, in at least two realizations differing from each other (but in general, in more than two when possible).

If we have specified the macrofunction taking into consideration formula (6), in the parameter estimation we use S realizations of $(m_i + n_i)$ indicators as the sample. In other words, we can view the sample M_i in the following matrix form:

$$M_i = \begin{bmatrix} u_{i1}^{(1)}, \ldots, u_{im_i}^{(1)}, v_{i1}^{(1)}, \ldots, v_{in_i}^{(1)} \\ \vdots \quad \vdots \quad \vdots \quad \vdots \quad \vdots \quad \vdots \quad \vdots \quad \vdots \quad \vdots \quad \vdots \quad \vdots \quad \vdots \\ \vdots \quad \vdots \quad \vdots \quad \vdots \quad \vdots \quad \vdots \quad \vdots \quad \vdots \quad \vdots \quad \vdots \quad \vdots \quad \vdots \\ u_{i1}^{(S)}, \ldots, u_{im_i}^{(S)}, v_{i1}^{(S)}, \ldots, v_{in_i}^{(S)} \end{bmatrix}. \tag{7}$$

On the basis of S calculations performed with the same MP model, we can compose all the $M_1, M_2 \ldots$ samples needed to quantify the $f_1, f_2 \ldots$ macrofunctions, taking into consideration formula (6).

In the following we reserve the term *macrofunction calculated on the basis of the plan model* (for short: MFP) for those macrofunctions in which, in specifying the variables, we took into consideration the condition described in formula (6), and whose parameters were estimated on the basis of the samples described in (7).

4. The advantages and limitations of the process

We shall briefly point out some advantages of the MFP methodology, and exclusively those favourable features which can be recognized with the aid of purely speculative methods. We will discuss the empirical experience later.

The proposed methodology establishes a relationship between two more or less separate branches of mathematical planning: disaggregated programming and aggregate macrofunction calculations. At the same time, it does not intend to replace, or eliminate either of them.

It cannot replace disaggregated calculations if for no other reason, because of the simple fact that it is built on them, the detailed MP model is the "mother model" for the MFP. Making direct use of the original MP model has its own advantageous side in contrast with the aggregated functions: it is precisely through the details that it can provide the planner with useful information. The complementary advantage of the MFP is that, due to its high degree of aggregation it can be easily surveyed and, therefore, it can be simply handled. By using macrofunctions, we can calculate many alternatives with a slight effort. We can provide a particularly good service in two stages of drafting medium- and long-term plans: in the beginning of the process, in determining starting concepts, and at the end of the process, by checking the consistency of the detailed plans.

Complementarity can also take place between two types of macrofunctions, functions built on actual data and on plan models. In this context we must say a few words about the difficulties of analyses based on statistical data, primarily with regard to estimations based on the mathematical-statistical analysis of time series:

a) The time series generally "behave poorly" from the mathematical-statistical point of view. We often find that auto-correlation exists between the values of some indicator of an economic process measured at different dates. Multi-collinearity occurs among the indices of several processes taking place over time parallel with one another. In the final analysis, we have to make estimates on the basis of numerical observations not independent of one another, and this can seriously damage the reliability of the estimation.

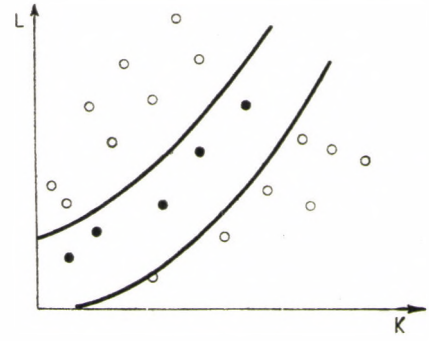

Fig. 2

b) To a certain extent, predicting the future exclusively on the basis of estimates based on past observations, and with a model relying on these types of estimates is always a bit arbitrary. Insofar as the external conditions influencing the economic phenomenon studied were to change essentially in the future, we cannot plan in a reliable manner with a model quantified on the basis of the past.

c) In the case of estimation based on actual time series, the number of elements in the sample is necessarily small. In Hungary the longest time series available for the majority of phenomena cover 15—18 years at most, and many a series of comparative data for many processes are even shorter.

We illustrate our concept with the example already mentioned, with the problem of the two-variable production function, in Fig. 2.

The large black dots in the figure denote the (K, L) pairs which can actually be observed in the process of economic growth. If the growth of the national economy is sufficiently undisturbed, these dots will be situated in a diagonal "corridor".* History does not make experiments. The actual growth of the economy does not combine production factors in extreme ratios, e.g. very

* On this subject, for more detail see Ref. [6].

much capital with very little labour, or vice versa. Instead, we usually find the case in which both output and capital stocks, as well as the labour force grow rather regularly in time, almost exponentially. We can hardly find actual data outside the "corridor" in the figure. The statistical difficulties mentioned in point a) are related precisely to this fact.

The importance of the MFP methodology described in chapters 2 and 3 consists in that, by using mathematical programming we can produce slightly "more extreme" combinations too, (Y, K, L) data-triples situated outside the "corridor". This makes the fitting of the isoquant curves, and the estimation of the parameters of the macrofunction more reliable, as can be seen in Fig. 1. True history does not make experiments, but we — with the aid of the computer — can experiment and produce hypothetic situations too.

But not only the overcoming of difficulty a) mentioned above, but also that of difficulty b) can be aided by the proposed MFP method. We cannot predict from past data, if in the future there are changes e.g. in international trade conditions, technology, etc. In contrast, our prognoses of changes in external circumstances can be expressed in the data of the plan model. And regarding difficulty c): on the basis of the proposed methodology, we can produce a sample of any desired size. The number of representations is limited exclusively by money and the time available for the calculations.

It would, of course, be incorrect to speak of the advantages only. We not only win, we also lose. While the sample obtained on the basis of the actual data is limited, it nevertheless reflects reality, while the sample generated with the plan model is only a "copy" of reality. This "copy" is simpler than reality. Its reflection of reality is not precise and, from many points of view, it idealizes reality. Let us think of the fact that each individual plan variant arrived at through the programming model is an efficient program within the world of its own model and of its primary data, while in a true economy we cannot assume strict efficiency.* Therefore, our macrofunctions contain, as inherited trouble, all the problems of the "mother model".

On the basis of the considerations listed, after weighing both the advantages and the disadvantages, we do not propose them instead of customary econometric procedures, time series analyses, but only as a complementary planning device.

* Here we would note: within the framework of the computation series consisting of S number of computations, we modify both the coefficient matrix and the constraint vector and, in accordance with this, the sets of the feasible programs may differ from one another in various calculations. The program which, say, was an extreme point of the set of feasible programmes in computation No. 1 may be an internal point, in computation No. 2 or perhaps it might be an infeasible program. *In this sense* we cannot say of the S number of optimum programs that they are efficient because each qualifies as efficient only with *its own* primary data.

On the concept of "efficiency" see *Koopmans*' study [2], and chapter 26 of the book [3].

5. Review of the numerical application

Now we shall proceed to review the concrete application related to the 1971—1975 national economic plan.

In chapter 2, we explained how we characterize a macrofunction through the description of four types of specific attributes. Now let us look at the four specifics one after the other.

Specification of variables

We have dealt with a total of 22 aggregate indicator types. They can be found listed in Table 1. It can be seen from the table that we have classified the indicators into five major groups: production, consumption, export and input indices, and structural variables. The latter are intended to express the various qualitative features of production, inputs and foreign trade, and their structural ratios in a condensed form.

We have calculated many functions among the indicators listed in Table 1. One part of these, the "workable" parts, which can be put to good use in economic analysis, can be studied in Table 2. In a later part of the article we will throw light on those criteria on the basis of which we can decide whether an estimated macrofunction should appear in Table 2 or not. This analysis will also explain the last two columns in the table.

In order to make the survey easier we have also prepared Table 3. Here we have classified our macrofunctions on the one hand, by their economic contents, while on the other hand, according to the number of independent variables.

The mathematical form

We have described all the interrelations listed in Table 2 in two mathematical forms — as linear and log-linear functions. We have not endeavoured to ensure good fitting by selecting highly refined and sophisticated function types. Instead, we have favoured the forms mentioned due to their simplicity.

The economic contents of the parameters can be easily interpreted for both types. In the linear form the coefficient expresses the size of the change in the variable to be explained caused — *ceteris paribus* — by a unit growth in the explanatory variable. In the log-linear form the coefficient gives the elasticity of the explanatory variable, in other words, how many per cent is the change in the value of the variable to be explained induced by a one per cent growth in the explanatory variable.

Table 1

Indicator types appearing in the macrofunctions

No.	Category	Unit of measurement
	Production	
1	Gross output (MPS)	million Ft.*
2	National income (MPS)	million Ft.
	Consumption	
3	Consumption	million Ft.
	Exports	
4	Total exports	million FEFt.**
5	Socialist exports	million FEFt.
6	Capitalist exports	million FEFt.
	Inputs	
7	Total imports	million FEFt.
8	Socialist imports	million FEFt.
9	Capitalist imports	million FEFt.
10	Investments	million Ft.
11	Value of fixed assets	million Ft.
12	Employment	thousands
	Structural (qualitative) indices	
13	Production in old factories	million Ft.
14	Production in reconstructed factories	million Ft.
15	Production in new factories	million Ft.
16	Modernization (the ratio of reconstructed and new factories to old ones)	per cent
17	Industrial gross output	million Ft.
18	Agricultural gross output	million Ft.
19	Building industry's gross output	million Ft.
20	Production pattern (the ratio of industrial and agricultural production)	per cent
21	Export pattern (the ratio of exports to the socialist and capitalist countries)	per cent
22	Import pattern (the ratio of capitalist and socialist imports)	per cent

* "Ft."— abbreviation of the Hungarian currency forint.
** "FEFt."— abbreviation of "foreign exchange forint" (in Hungarian language "devizaforint", a computational "shadow-currency" used in foreign trade calculations.

Characteristics of the sample: the MP model and the calculation series

The starting point in the MFP calculations was the MP model used in elaborating the fourth five-year plan concept.* With respect to its mathematical form, we used a standard linear programming model.

The program produced with the model determined the structure of *production* and *foreign trade* for the terminal year of the plan period, i.e., for

* The model, and the series of calculations performed with the model are reviewed in Refs [9] and [10] by *Zsuzsa Dániel* (whose name was formerly Zsuzsa Ujlaki).

Table 2

The economic contents of the independent variables

The MFP No.	Economic content of dependent variable	Economic contents of independent variable	Type of function	Was step-wise estimation used? If so, with how many variables have we started?
1	Gross output	Employment Value of fixed assets Total imports Import pattern Export pattern	output–input	Yes: 7
2	Gross output	Employment Investments Total imports Import pattern Export pattern	output–input	Yes: 7
3	Gross output	Employment Value of fixed assets	production	No
4	Gross output	Employment Investments	production	No
5	Gross output	Socialist exports Capitalist exports	"substitutional"	No
6	Gross output	Investments Consumption	"substitutional"	No
7	Gross output	Investments Total imports	"substitutional"	No
8	National income	Employment Total imports	output–input	Yes: 7
9	National income	Employment Investments Export pattern	output–input	Yes: 7
10	National income	Employment Value of fixed assets	production	No
11	National income	Employment Investments	production	No
12	National income	Socialist exports Capitalist exports	"substitutional"	No
13	National income	Investments Consumption	"substitutional"	No
14	National income	Production in old factories Production in reconstructed factories Production in new factories	"substitutional"	No
15	Consumption	Employment Value of fixed assets Import pattern	output–input	Yes: 7
16	Consumption	Employment Export pattern	output–input	Yes: 7
17	Consumption	Employment Value of fixed assets	production	No
18	Consumption	Production in old factories Production in reconstructed factories Production in new factories	"substitutional"	No
19	Total exports	Gross output Export pattern	output–input	Yes: 5
20	Total exports	Industrial output Agricultural output	"substitutional"	No
21	Socialist exports	Industrial output Agricultural output	"substitutional"	No

1975. The production variables were defined so that the program for the terminal year should simultaneously determine the plan of *investments* to be completed in the five-year plan period.

We have broken down the productive activities of the national economy into 23 sectors. To most sectors we assigned three alternative technologies: 1 — production in the terminal year with fixed assets already existing at the beginning of the plan period, operating in unchanged conserved form during

Table 3

Classification of the macrofunctions

The economic contents of the dependent variables / The number of independent variables	Production (gross output value or national income)	Consumption	Exports (total or socialist or capitalist exports)
	how many functions are there in this class		
Few: 1—3	12	4	3
Many: more than 3	2	—	—

the plan period, 2 — production in the terminal year with fixed assets already existing at the beginning of the plan period, but technically reconstructed during the plan period, and 3 — production in the terminal year with fixed assets newly established during the plan period.

We broke down foreign trade into two markets: foreign trade with the socialist and with the capitalist countries.

The activity variables of the model were: output in the terminal year by sectors broken down according to the three technologies mentioned, as well as exports to the socialist and capitalist countries by sectors and competitive imports by sectors in the terminal year. A total of 113 activity variables were included in the model.

The major groups of constraints were as follows:

— product balances by branches for the terminal year,

— upper bounds on investments (during the plan period),

— upper bounds on machinery imported from the socialist market or the capitalist market for the purposes of investment (during the plan period),

— upper bound on medium-term credit to be raised from the capitalist market (for the terminal year),

— bound on employment (for the terminal year),

— bounds of natural resources (for the terminal year),

— capacity constraints of the production variables of technology 1 and 2 (in the terminal year),

— upper and lower bounds on exports and imports, by markets and by sectors (for the terminal year),

— the foreign trade balance with the socialist and the capitalist countries (in the terminal year).

There are a total of 115 constraints in the model.

We have applied seven types of objective functions: the maximization of consumption, optimization of the dollar balance, maximization of the volume of foreign trade with socialist countries, maximization of the volume

Table 4

Review of plan variants

The purpose of the group of variants in planning / Characteristics	Coordination, consistency analysis	Sensitivity analysis of foreign trade	Analysis of living standards	Analysis of investments
1	2	3	4	5
Number of variants in the group	9	14	8	30
Objective function	Maximization of consumption Optimization of dollar balance	Maximization of consumption Optimization of dollar balance Maximization of the volume of socialist foreign trade Maximization of volume of capitalist foreign trade	Maximization of consumption Optimization of dollar balance Maximization of housing construction Maximization of national income	Maximization of consumption Minimization of employment
Minimum and maximum values of investments during the plan period (the level approved in the official plan conception = 100)	100	100 -113	100 – 125	96 – 127
Maximum and minimum values of upper bounds on foreign trade (level accepted in official plan conception = 100)	Rouble: 100 Dollar: 100	Rouble: 100 – 120 Dollar: 100 – 125	Rouble: 100 – 120 Dollar: 100 – 125	Rouble: 100 – 120 Dollar: 100 – 120
Is there a lower foreign trade bound?	Yes	No	No	No
Maximum and minimum values of bounds on manpower (officially approved plan conception = 100)	100	100	100	95 – 105
Number of consumption structures examined	1	1	2	1

of foreign trade with capitalist countries, maximization of housing construction, maximization of the national income, and minimization of employment.

We have worked out with our model 61 plan variants. These can be surveyed in Table 4. We classified the plan variants into four major groups according to their role in practical planning. This criterion has been given in column 1 of Table 4. From columns 3—8 of the Table it can be seen which elements of the model were modified while producing the variants: the objec-

Table 5

The sensitivity of the indicators on the basis of 61 plan variants

No. (according to the order given in Table 1)	Name of index	Coefficient of variance	Maximum deviation in percentage of minimum value
1	Gross output (MPS)	0.28	110.5
2	National income (MPS)	0.30	107.8
4	Total exports	0.68	122.4
5	Socialist exports	0.58	121.7
6	Capitalist exports	1.53	190.7
7	Total imports	0.63	129.8
8	Socialist imports	0.51	112.6
9	Capitalist imports	1.46	154.1
10	Investments	1.02	132.5
12	Employment	0.44	114.4
17	Industrial output	0.40	114.9
18	Agricultural output	0.29	108.2
19	Building industry's output	0.60	128.1

tive function, the investment constraint, the labour constraint, the foreign trade constraint or the consumption pattern taken into consideration in the product balances.

Some of the variants are "realistic": they describe a hypothetical economic situation the realization of which can easily be conceived in reality, both from the point of view of objective conditions, and from that of economic policy. However, we also calculated several more daring variants, which deviate from probable future conditions to a greater extent both with regard to economic policy assumptions, and in their forecasts of external conditions.

In Table 5 we have singled out 13 of the 22 indicators appearing in the MFP computations, and show their sensitivity to changes introduced into the framework of the computation series. We present two indices for this purpose: the coefficient of variance (in other words the quotient of the standard deviation and the average of the 61 realizations), and the quotient of the maximum and minimum values received for the 61 realizations. As we can see, the deviations between the realizations are significant, the individual indicators of the sample are rather dispersed, although there are, of course, comparatively more stable indicators too.

According to formulae (6) and (7), the only plan variants we need to take into consideration are those in which the realizations of the 22 indicators studied deviate from one another. There were ten calculations which, despite the fact that the constraints or the objective function were changed against some other calculation, led, nevertheless, to an optimum program identical with some other calculation. This means, that in the final analysis, our sample is based on 51 realizations.

Estimation of the parameters

On the basis of the sample described above, the parameters were estimated by using the least-square method.

Let us now return to interpreting column 5 of Table 2.

Regarding certain interrelations, we have assumed from the outset that the number of explanatory variables is small, no more than three. Here we completed parameter estimation in the customary manner. In these cases in column 5 of Table 2 we can read that the estimation was not step-wise.

However, with regard to other interrelations, the idea was raised whether it was worthwhile to explain the independent variable with many, with more than three variables. In cases like this, as a first step, we gave an estimate of the parameters of all explanatory variables which could be taken into consideration. Afterwards, as a second step, we dropped one of the explanatory variables, the one about which we concluded that its elimination would have the least damaging affect on the fitting of the function, in the sense that it would relatively least reduce the total correlation coefficient R. In the third step we again eliminated an explanatory variable, according to identical selection principles. We continued to drop the explanatory variables step by step, until we arrived at a single-variable function. By completing step-wise estimations we gained an *order of drop-out* and this, in itself was instructive.

In those cases in which we applied this process we indicated in column 5 of Table 2 that the estimation was *step-wise* and we also indicated the number of variables with which we started in the first phase.

With the step-wise determination of the parameters of multi-variable functions we were seeking an answer to two problems. The first was whether it was worthwhile calculating with many, say, with more than three or four explanatory variables. Was the extra work required for collecting the data and estimating the parameters a source of extra information of satisfactory quantity? The second question was, how strong was the effect of the different explanatory variables on the dependent variables. The order in which the variables drop out in a step-wise estimation also indicates the importance of the explanatory variables relative to each other.

6. Analysis of fitting — the first economic lessons

Having described the specifications of our macrofunctions in chapter 5, we will now proceed to the lessons of the study. We first analyzed the fitting of the MFPs. This served a double purpose. One of the goals was to check ourselves. The study of fitting shows whether one or another MFP can be accepted as an explanation of a dependent variable or not. In this connection we applied the following criteria: the MFP is *acceptable* if all of its parameter values are significantly different from zero, at 95 per cent probability level, if the total correlation is high and if the estimation error of the parameters (the variance of the estimate) is small. Table 2 contains solely acceptable functions. In the course of step-wise estimation, we had to rank the various MFPs explaining identical dependent variables. We qualified as "bests" the *acceptable* MFPs, whose total correlation was highest. In cases like this we listed in Table 2 only the "best" function gained within the framework of step-wise estimation.

The other goal of the analysis was economic in nature, to clear up the strength of the effects of the various explanatory variables, what was the relative ratio of these effects. In this connection, it is worthwhile studying — within the given MFP — the relative ratios of the parameters, primarily if the dimension of the variables is identical. On the other hand, as already pointed out in the preceding chapter, the drop-out order of the step-wise parameter estimation can be instructive.

In the following analysis, the MFPs will be classified into four categories according to their economic content, their "type": 1. output–input functions, 2. production functions, 3. export functions and 4. substitutional functions. The grouping is arbitrary, *ad hoc* in nature, and serves solely the purpose of the present analysis. It can be seen from column 4 in Table 2 to which group each MFP belongs according to this four-fold categorization.

Output–input functions

First let us examine those MFPs in which the dependent variable is an indicator of output (production or national income or consumption), and the independent variables are various indicators of input. Let us call these *output–input functions*. (For their complete list see Table 2).

The following functions proved to be best from the point of view of fitting:

The estimation errors of the parameter are in parentheses, under the parameter, in the description of the functions.

Production (MFP No. 2)

$$\log P = \log 7.62 + \underset{(0.03)}{0.46 \log L} + \underset{(0.01)}{0.11 \log I} + \tag{8}$$

$$+ \underset{(0.01)}{0.06 \log SE} - \underset{(0.01)}{0.06 \log SI} + \underset{(0.03)}{0.07 \log Z}$$

National income (MFP No. 9)*

$$\log N = \log 7.25 + \underset{(0.05)}{0.45 \log L} + \underset{(0.02)}{0.13 \log I} + \underset{(0.02)}{0.04 \log SE} \tag{9}$$

Consumption (MFP No. 18)

$$\log CN = \log 3.32 + \underset{(0.06)}{0.40 \log L} + \underset{(0.07)}{0.41 \log C} + \underset{(0.02)}{0.10 \log SI} \tag{10}$$

where P = production,
N = national income,
CN = consumption,
L = employment,
SE = the pattern of exports,
SI = the pattern of imports,
C = value of fixed assets,
Z = total imports.

On the relative intensity of the effects of the explanatory variables we may draw conclusions, as already mentioned, from the drop-out order in the step-wise estimation. This can be seen in Table 6. We have used a dotted line to indicate the phase beyond which the values of all parameters significantly differed from zero. This took place in the MFP of production when the number of independent variables dropped to five, and in the other two functions, when it dropped to three.

It can be concluded from the parameters of the functions and from the drop-out order of the variables, that the value of the parameters and the importance of the explanatory variables relative to one another did not change to a crucial extent as a result of changing the dependent variable. In all functions employment is the most important of the factors determining output. A one

* Regarding the three-variable function of national income, from the point of view of the total correlation coefficient, the linear form proved to be better by one hundredth of a per cent than the log-linear form. Since the deviation is negligible, and it is easier to interpret the parameters of the log-linear function, we are using this form also with regard to the national income.

per cent increase in employment involves about one half per cent growth in production, national income or consumption. Following employment, the second most important factor is investment, or the value of fixed assets. If the value of investments completed in the four years prior to the period under study rises by one per cent, production and the national income will rise by one tenth of a per cent. If the value of total fixed assets engaged rises by one

Table 6

Drop-out order in output–input type functions

No. of phase	Name of dependent variable		
	Production	National income	Consumption
1	Modernization	Production pattern	Production pattern
2	Production pattern	Modernization	Modernization
3	Total imports	Total imports	Total imports
4	Import structure	Import structure	Export structure
5	Export structure	Export structure	Import structure
6	Investments	Investments	Value of fixed assets
7	Employment	Employment	Employment

per cent, consumption will react to this with a 0.4 per cent growth. A relationship can also be found between trends in output and the pattern of exports and imports to and from the two country groups. A one per cent increase in the value of capitalist exports per unit of socialist exports results in an about one tenth of a percentage rise in output, while a change in the ratio of capitalist to socialist imports has an effect of about the same size in the opposite direction. A rise in the ratio of capitalist imports results in a decrease in output.

In studying the factors affecting trends in output, in most cases it is customary to assume that the most important two factors are labour and capital. The results of this calculation support this assumption. However, relying on the parameters of the macrofunctions we must draw the conclusion that above and beyond these two factors, it is wise to take other factors into consideration too — first of all the distribution of foreign trade by trading partner countries — if we want to draw conclusions on expected trends in production, the national income or consumption.

According to our results the modernization of production and changes in the production pattern do not influence trends in output. A growth in the ratio of new and reconstructed plants does not result in additional output. We have two hypotheses explaining the lack of dependence between output and modernization. One searches for the reason in the weaknesses of the pri-

mary data. Perhaps the coefficients describing the alternative technologies in the MP model do not deviate sufficiently from one another. The other hypothesis is that the calculation series did not include a sufficient number of variants which would deviate essentially from one another in the degree of modernization.

In a similar manner, we may attribute to the shortcomings of the sample, more closely: of the primary data that no dependence can be shown between changes in the production pattern, that is, in the ratios of industrial to agricultural production on the one hand and trends in output on the other.

Production functions

It can already be concluded from the experiences gained from the output–input functions, that the most significant effects on trends in output (measured in production functions in terms of the global social product or the national income) were exercised by employment and the value of capital engaged. For this reason, in another group of MFPs, these were the only two factors included as independent variables. Due to their close relationship with the traditional production functions, we have termed these *production functions* (Table 2). In fact, the conventional production functions are a special class of the more general "output–input functions" discussed in the previous section. The results of the computations are summarized in Table 7. In order to make it easier to compare them with the production functions based on statistical actual data, we have taken only those MFPs into consideration, in which the "capital" type production factor is represented by the value of fixed assets. In the table, according to the conventions of literature, we have marked the constant term with A, the elasticity of labour with α and that of capital with β.

We have compared the MFPs with the results of a study based on statistical actual time series which (Table 8) most closely resembled the present

Table 7

Economy-wide production functions calculated on the basis of the plan model

The dependent variables	The parameters			R
	Constant term, A	Elasticity of labour, α	Elasticity of capital, β	
Production	8.14	0.47 (0.05)	0.11 (0.06)	0.81
National income	7.99	0.45 (0.07)	0.07 (0.08)	0.70

study* from the point of view of the scope of the study, the content of the variables and the form of the function. However, even in this case the comparison can only be approximate since, although both computations refer to the Hungarian economy, in the plan functions the data covering the entire national economy are included, while in the actual functions, only industrial data were included.

Table 8

Industrial production function calculated from time series

The dependent variables	The parameters			R
	Constant term, A	Elasticity of labour, α	Elasticity of capital, β	
The contribution of industry to the national income	3.89	1.00 (0.34)	0.57 (0.20)	0.99

In a comparison of actual and plan functions, it is obvious from the first moment that although the fitting of the actual function is incomparably better than that of the plan functions, the estimation error of the most important parameter, the elasticity of labour, is much smaller in the plan functions. The estimation error for fixed asset parameters is unfavourable in both functions. However, if regarding the plan functions we do not reckon with capital engaged, but with investments, the estimation errors of the capital parameters can be reduced to a great extent, as could be observed in the more general output–input type functions.

Therefore, according to our computations we can make more precise estimations of the values of the parameters by using the plan functions than using the actual functions. The error in estimations completed with the actual functions is larger than those done with the plan functions for two reasons.

The first is that the explanatory variables of the actual function are not independent but are multicollinear. Multicollinearity is not characteristic of the explanatory variables of the plan functions. The explanatory variables of the actual function are multicollinear because the sample serving as the basis was a time series, and in that period the values of both labour and capital grew close to exponentially. In contrast, in the plan functions the values of the explanatory variables express alternative development possibilities for one and the same year. In many cases the changes in the values of the explanatory variables from one program to the other are not parallel: if the input of fixed assets increases this does not mean that labour input also increases, nor *vice versa*. Therefore, the variables are not multicollinear.

* See Ref. [6].

The other reason why the estimation errors in the plan function parameters are smaller than those of the actual functions is that the number of elements in the sample for the functions is much smaller than for the MFPs. The parameters of the actual functions were estimated on the basis of fifteen data, while in the plan functions fifty-one were used. And it is well known that the greater the number of elements in the sample, the more reliable the estimation.

It can be concluded that in this respect our empirical study verified the expectations we raised in a speculative manner in formulating the MFP methodology, reviewed in chapter 4. of this article.

The plan and the actual functions differed from one another not only with respect to fitting and errors in parameter estimation. The values of the estimated parameters also deviate sharply in the two types of function. In the actual function the values of the parameters are much higher than in the plan functions. The marginal productivity of labour with respect to the national income is 1.00 in the actual function, while in the plan function it is 0.45, the productivity of fixed assets is 0.57 and 0.07, respectively. The combined return of the two explanatory variables is increasing in the actual function (1.57) and decreasing in the plan function (0.52).

Presumably, the differences in the magnitude of the parameter values do not stem from the fact that in one calculation we use actual and in the other plan data. The reason for the deviation is that in the first case the sample is a time series, i.e. we have a dynamic sample; while in the second it refers to an identical terminal year, in other words, it is static. In a static analysis, since the data relate to one and the same year, the effects of such qualitative changes over time do not appear. In the time series based on actual data the increasing returns of inputs express the fact that the "quality" of both labour and capital improves over time.

In comparing the dynamic actual and the static plan functions we can draw the conclusion that the sum of the partial differential productivity of inputs increases dynamically and decreases statically. As the result of qualitative improvement in inputs, stemming from technical progress, greater experience, better organization, etc. the returns of inputs increase over time, and a one per cent rise in input from one period to the next results in a national income growth of about one and a half per cent. However, we cannot reckon with an increasing return within an identical period. If, in one and the same year we raise the sum of inputs by one per cent, the value of the national income will grow by barely more than one half of a per cent. Therefore, though all supplementary increases in fixed assets and growing employment produce additional results, with each further increase in input this result diminishes, and therefore deteriorates average efficiency.

Export functions

In examining the output–input type interrelations it was proven that the national performance, measured by various output indices is not independent of foreign trade activities. Considering the importance of foreign trade activities we examined the inverse interrelationship: what are the factors influencing trends in exports as a dependent variable.

Of the multi-phase estimation of *export functions* the two-variable log-linear function No. 19 proved to be the best. We have not succeeded in showing an interrelationship between trends in exports ont he one hand, and the modernization of production, the production pattern, and the import structure on the other. In the function only the variables of production and export patterns appear as explanatory variables. The production coefficient is 1.44, its estimation error is 0.20, while the coefficient of the export pattern is 0.17 and its error 0.04. Therefore, according to the study, the primary condition for increasing exports is to raise production. However, in the increment of production the ratio of exports is larger than in the whole of production and, for this reason, less than a one per cent rise in production is needed for a one per cent rise in the volume of exports. The export volume is also related to the export structure. The larger the relative share of capitalist exports, the greater the volume of total exports may be.

Substitutional functions

There is a special group of MFPs which we term *"substitutional" functions*. (See Table 2.) The feature distinguishing them from other MFP's is the following:

We may assume of some dependent variable that its changes can be explained from the economic point of view by a number of alternative factors "competing" with one another. Such substitutional competitive factor pairs and factor triples are the following:

— Socialist and capitalist imports,
— Socialist and capitalist exports,
— Investment and consumption,
— Industrial, agricultural and building industry production,
— Production in old, reconstructed and new plants.

We determined a total of 17 substitutional functions (for their list see Table 2). In eleven of the seventeen functions the value of the total correlation coefficient did not reach the 0.70 value marked as the lowest limit. A general characteristic of the results is that the value of the R indicator is low, and in the majority of the functions its value is closer to 0.7 than to 0.8. Another speciality of the results is that even alongside a low value of R, the majority

of the parameters are significantly different from zero. This is true not only of those functions where the value of R is higher than 0.7 but also of those in which it is smaller. Therefore, the estimation of the parameters is satisfactory, but in order to understand the development of the dependent variable, a knowledge of trends in the explanatory variables in question is not sufficient. Other factors also affect the dependent variables, alongside the indicators appearing in the substitutional functions.

However, it was not our major goal with the substitutional functions to include in the computations all factors which can influence trends in the dependent variables. We were simply curious about the relative weight of the alternative factors, and their ratios compared to one another. Therefore, in this function group, we treated as satisfactory all those functions in which the value of the explanatory variable was significantly different from zero, irrespectively of whether the value of R was greater or smaller than 0.7.

We will not go into a review of the parameters of the functions at this point and will only list some qualitative conclusions.

— Developments of production and national income depend both on the volume of socialist and capitalist exports. A one per cent growth in socialist export involves a greater, and a one per cent growth in capitalist export a smaller output growth.

— No relationship can be shown between consumption and the volume of exports by country groups.

— According to our results the changes in the volume of imports by country group cannot be considered dependent on either production, or on the national income, or on consumption.

— Changes in the ratio of production in old, reconstructed and in new factories do not affect national income. (Here we again come across the problem mentioned in analyzing the output–input type functions.)

— The volume of total and socialist exports is related to industrial and agricultural production. Exports react more sensitively to changes in the volume of agricultural production, and less sensitively to those in the volume of industrial production.

— Trends in production are equally related to investments, and to imports competing with investments. A one per cent rise in imports involves a 0.18 per cent rise in production, while a one per cent rise in investment involves a 0.12 per cent production rise.

7. Summary of economic conclusions

Now we shall summarize the economic conclusions stemming from the MFP calculations, and will then compare the results gained directly from the original MP calculations.

1. The national product and the national income in 1975 depend most strongly on the level of employment. In the case of a five-variable linear function (taking into consideration employment, investments, the export and import patterns, and the volume of imports), the marginal productivity of labour is 89 thousand forints per person. In 1975 the supplementary employment of one person (or a rise in productivity equivalent to it) would result — assuming all other factors remain unchanged — in an additional output of 89 thousand forints.

2. Following employment, investments have the strongest effect on the development of national product.

3. There is an interrelationship of medium strength between production and changes in the volume of imports. If we study trends in production as a function of the two factors, imports and investments, it turns out that a one per cent increase in imports gives a 0.18 per cent rise in production, and a one per cent increase in investments gives a 0.12 per cent rise in production. In the case of a function with more variables the weight of imports is less than this. It is preceded by the variables for employment, investments and the export and import patterns.

4. The volume of production depends on changes in the volume of exports both from socialist and capitalist countries. A unit increase in exports to rouble countries results in a larger, while a unit increase to dollar countries in smaller rise in production. In the increment of production the ratio of exports is larger than in total production, in other words, considering the whole of exports, a one per cent increase in exports requires less than a one per cent rise in production.

5. The volume of exports is closely related to the structure of exports by country of destination. The greater the relative share of capitalist exports, the larger the volume of total exports may be, and the greater the relative share of socialist exports, the smaller the total will be. (Numerically expressed: if there is more than one per cent capitalist export per unit of socialist exports, total exports grow by 0.17 per cent.)

6. *No* relationship can be shown between consumption and the volume of exports by the two country-groups. In other words, this means that a rise in consumption does not cause a decline in exports, or *vice versa*, the volume of exports cannot be increased by reducing the volume of consumption.

7. In comparing the relationship of investments and consumption with production it appears that the raising of consumption involves a three times greater rise in production, than that of investments.

8. Both with regard to total exports, and with regard to exports to the socialist countries, the differential yield of agriculture is greater than that of industry. One forint increase in agricultural production involves a 0.14 foreign

exchange forints growth in total exports and the same is true regarding its effect on socialist exports.

In comparing the analytical results of the macrofunction computations with the original MP calculations, we can find agreements and deviations as well. We will not go into a detailed review of the economic analysis of the

Table 9

Comparison of conclusions drawn from MP and MFP calculations

Brief description of economic lesson	MP calculation	MFP calculation	Comparison of two results
	proven or not		
The factor which most determines the volume of production is the employment (or productivity) level	yes	yes	coincides
The factor immediately following labour is investment	yes	yes	coincides
A unit growth in rouble exports results in a larger rise in production, and a unit of dollar exports in a smaller rise in production	yes	yes	coincides
The rise in the export volume depends primarily on increasing capitalist exports	yes	yes	coincides
The rise in the consumption level does not compete with exports, in other words, increasing consumption is not an allocation problem	yes	yes	coincides
The growth of consumption depends on investments	yes	no	deviates
The growth of consumption depends on the modernization of fixed assets	yes	no	deviates
In essence, increasing consumption can only be studied as a function of manpower resources	no	yes	deviates
The share of exports shows a growing trend in the increment of production	yes	yes	coincides

MP calculations for they can be found in other publications.* However, in Table 9 we have endeavoured to summarize the agreements and deviations between the conclusions of the two computations.

In the table we have only emphasized those conclusions which we received as direct results in both computations. For the most part the results proved and supported one another.

The mathematical planners, who in the past had to analyze a longer series of computations completed with an MP model, always had to face the difficulty how it was possible to draw conclusions from the *whole* of the computation series. In general, they were forced to rest satisfied with the analysis of several members of the series which supplemented one another. If we wanted

* See [9] and [10].

to reply to certain economic questions, then we completed a sensitivity test specified to reply to that question. If the question was: what is the effect of an increase in employment, then — *ceteris paribus* — we performed a number of calculations with manpower of different size, and compared their results. Now, with the MFP method, we have received a tool to jointly process the entire computation series. *Now we are in a position to draw various qualitative and quantitative conclusions on the basis of all the S number of realizations of the entire sample.* It might even be possible that this conclusion will be different from the one we drew on the basis of several computations taken out of context. For example, we receive a different reply to the question: on what factors the rise in consumption depends when we construct a consumption macrofunction, from the one we get by studying only 3—4 variants from this point of view.

Above and beyond this, the MFPs can be used for the *critical reexamination* of the "mother model" and of the primary and secondary data. An example of this is the case of the modernization indicator. In the MP and in the MFP computations we equally studied the question of how technical progress affects the development of the national product, the national income and consumption. It already appeared in the MP computations that the modernization of fixed assets, and the increased introduction of new technology does not affect the indices mentioned with the intensity assumed at the outset. The problem appeared even more sharply in the MFP calculations. In output–input functions, as already mentioned, the modernization indicator dropped out in the very first phase. The examination completed with the group of substitutional functions led to a similar result. Changes in the modernization indicator do not influence development of production or the national income. These phenomena sharply pointed out one of the shortcomings in the primary data of the MP computations: the coefficients describing the old, reconstructed and new factories' technical levels are not sufficiently different from one another.

In summing up, we can state that MFP computations make our information richer, and better founded than if we were to simply analyze the series of calculations completed with the MP model.

8. Methodological problems and lessons

Although in chapters 6 and 7 we endeavoured primarily to emphasize economic conclusions, we have also touched on methodological issues. Now, however, we shall go into several methodological problems in greater detail, in the order in which we discussed the four specifics of the macrofunctions in the earlier parts of this article. What we have to say is related to specifics 2, 3, and 4.

Comparison of the linear and log-linear forms

The results of the MFP computations show that in the majority of the functions the difference between the size of the total correlation coefficients evaluating the fitting of the linear and the log-linear form is quite small. In general, the deviations appear in the third or, at most, in the second digit of the R indices, meaning that they are thousandths or hundredths of a per cent. The small deviations in the fitting of the linear and the log-linear functions which, from the practical point of view, can be neglected in most cases, are the result of the fact that the variance of the variables in the sample was not sufficiently large. As a result, a regularity in the data is equally well (or not well) approached by a linear or a log-linear function, since short intervals of the log-linear functions can be approximated comparatively precisely with linear functions and *vice versa*.

Conscious formation of the sample

The special requirements of MFP calculations have not affected the planning of the computation series completed with the MP model, nor the forming of the sample of 51 realizations serving as the basis for the study. The computation series with the MP model was intended solely to reply to the economic problems of practical planners. The MFP study received this sample "ready-made".

In similar studies it would be wise in the future to keep in mind the special requirements of MFP estimation. It is true that we cannot arbitrarily increase the standard deviation of the sample, but we can influence it to a certain extent, in a direction facilitating the fitting of the function. In planning the computation series we must "play" more with those indicators whose interactions we are curious about. It is particularly worthwhile experimenting with "competitive" substitutional factor pairs, factor triples (e.g. technological alternatives, or foreign trade alternatives, etc.), with many, slightly more daring, deviating combinations.

We can be helped in attaining a better foundation for MFP estimations if we shift from the single-period, static MP plan models to the multi-period dynamic MP models. This work is already under way.* In this way we can produce a sample not for the same period, but "time series" with the MP model: various paths over time in the growth of production, investments and foreign trade.

The smaller difficulties to be expected from the dynamic model are illustrated — to continue the example begun in the first part of this article —

* See study [8].

with the fitting of the production function in Fig. 3. Now we are not giving three different Y_1, Y_2, and Y_3 values for a single date, but three values for four dates each. If, after this, we prescribe 10 (K, L) combinations for each of them, in the final analysis we will have 120 (Y, K, L) data-triples available. To this we can fit four isoquant curves, and in the end we will be able to estimate the parameters of the production function in a much more reliable manner.

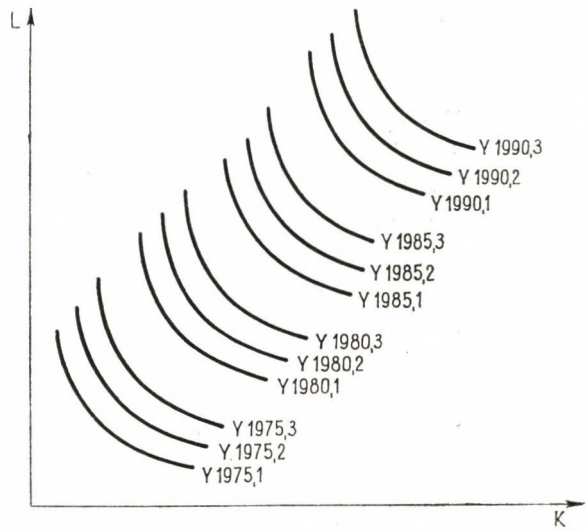

Fig. 3

In this article we have now but briefly indicated some points of view for the *conscious* formation of the sample. However, the question leads to deep-reaching problems of probability theory and epistemology. The estimation procedures applied (regression analysis, the least-squares method, etc.) had been originally worked out for estimations completed with random samples. What is the situation with their application if the sample is consciously formed? We simply wanted to indicate the question, for a reply to it would go beyond the scope of this article, and it requires further research as well.

Step-wise estimations

In speaking on the methods of estimation, we would like once again to return to the special problems of multi-phase estimation only.

Step-wise estimations of the parameters of multi-variable functions have proven useful. After calculating the parameters of all the phases, and the estimation errors, together with the total correlation coefficients, we have gained the following information on certain concrete interrelations:

We have concluded on the extent to which the total correlation coefficient which shows the fitting of the function, deteriorates owing to dropping out the different variables. In general, we have found that leaving out those variables whose value did not differ significantly from zero on 95 per cent probability level, either did not or hardly modified the value of the total correlation coefficient.

Research tasks

On the basis of the concrete study experiences, our research group has become convinced that the macrofunctions calculated from the plan data can be turned into useful tools of practical planning work, and can also be applied in the theoretical analysis of economic processes. However, they need further development as far as methodology is concerned.

First of all, the "mother model" must be improved, that is the MP calculation: both with regard to the model structure, and the quality of the primary and secondary data. From this point of view the transition to the application of multi-period, dynamic models is particularly important.

The project of computation series completed with the MP model must be further improved, taking the special requirements of MFP calculations into consideration.

The sphere of interrelations described with the MFPs must be expanded.

We must experiment with mathematical forms not applied in the present study.

Finally, we must be more systematical in our comparison of macrofunctions based on actual and plan data. In both categories we must work out functions which, with respect to the types of indicators and the forms of interrelation, can be strictly compared. Once this is ensured, we can try, as an experiment, to unite the fact and plan samples. This can yield more important points of support for a more intensive evaluation of macrofunction calculations based on plan models than the ones completed in the past.

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МАКРОФУНКЦИИ, ИСЧИСЛЕННЫЕ НА ОСНОВЕ ПЛАНОВЫХ МОДЕЛЕЙ

Ю. РИМЛЕР – Ж. ДАНИЭЛЬ – Я. КОРНАИ

При определении параметров производственных функций или других макрофункций, описывающих соотношения между агрегированными переменными народного хозяйства, решающую роль играет выборка, служащая основой оценки. Выборки можно подразделить на категории, в частности, и в зависимости от того, являются ли элементы выборки фактическими данными или фиктивными, полученными в результате экспериментальных расчетов. В статье рассматривается в общей форме особый вид выборок, взятых из фиктивных данных, которыми относительно редко занимаются в литературе, и некоторые характерные черты макрофункций, оцениваемых на основе этой выборки.

В качестве элементов фиктивной выборки служат агрегированные данные плановых вариантов, исчисляемых с помощью плановой модели математического программирования. После анализа формальных связей между плановыми вариантами и полученными из них макрофункциями в статье излагаются некоторые преимущества и недостатки макрофункций, основывающихся на фактических данных и данных моделей математического программирования. Одним из преимуществ примененной методологии является установление связи между двумя отраслями математического планирования, существовавших до сих пор более менее раздельно, обособленно, — между дезагрегированным программированием и исчислением агрегированных макрофункций.

С помощью фиктивной выборки можно повысить точность оценки, потому что по сравнению с ограниченным числом выборок из фактических данных, с помощью плановых моделей можно обобщать очень много, более-менее независимых друг от друга выборочных элементов. Наряду с преимуществами самым важным недостатком является то, что хотя выборка на основе фактических данных является скудной, но все-таки отражает действительность, а выборка, порождаемая плановой моделью, является только «отражением» действительности. А модель не только неизбежно проще действительности, но во многих случаях искаженно отображает действительность.

Методику, изложенную в первой части статьи, авторы применили и в расчетах. Для разработки пятилетнего плана на 1971—75 гг. было подготовлено много плановых вариантов с помощью модели линейного программирования. Сводные данные этих плановых вариантов использовались в качестве выборки для оценки параметров макрофункций. В расчетах фигурировали 22 агрегированных переменных, среди них индексы национального дохода, потребления, совокупного экспорта и импорта, занятости, капитальных вложений, структуры затрат и выпусков; большинство переменных одновременно

фигурировало в качестве объясняющей и объясненной переменной; форма функций была всегда линейная или логлинейная.

Из расчета, в результате которого получилось больше двадцати экономически толкуемых макрофункций, авторы выводят ряд экономических и методологических заключений. Из экономических выводов можно отметить, что, согласно исследованию, наиболее сильно на выпуск влияло изменение численности рабочей силы и только после этого следовало, и с гораздо меньшим значением, влияние капитальных вложений. Наряду с этими двумя факторами объем и структура внешней торговли тоже играли значительную роль в динамике выпуска.

Методологические выводы связаны, с одной стороны, с применением модели программирования в качестве выборки оценки, а, с другой стороны, с опытом многофазной оценки, примененной в исчислении.

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E. FRIGYES — MRS. N. SIMON

INDICATORS FOR STRUCTURAL CHANGES AND DEVIATIONS BASED ON CLASSICAL VECTOR ANALYSIS

The authors suggest that the vector approach of structures makes possible to define indicators for structural changes or deviations satisfying the requirements of metric. At the same time this approach provides information, over the intensity of these changes or deviations, about their direction, monotonicity and on the factors contributing as well.

Introduction

It is easy to see that some of the elements of classical vector analysis are not too different from traditional methods frequently used in quantitative economic or socio-economic analysis.

Let us mention the two main examples:

The correlation coefficient

$$r(x, y) = \cos(\mathbf{u}, \mathbf{v}),$$

where:

$$\mathbf{u} = \mathbf{x} - \mathbf{1}\, M(x), \qquad \mathbf{v} = \mathbf{y} - \mathbf{1} M(y),$$

and $M(x)$, $M(y)$ are the mathematical expectations for x, y resp.

$$\cos(\mathbf{u}, \mathbf{v}) = \frac{(\mathbf{u},\mathbf{v})}{|\mathbf{u}| \cdot |\mathbf{v}|}$$

for instance:

$$|\mathbf{u}| = \sqrt{\sum_{i=1}^{n} u_i^2}\,.$$

It follows that:

$$(\mathbf{u},\mathbf{v}) = \sum_{i=1}^{n} (x_i - M(x)) \cdot (y_i - M(y)) = n \cdot \operatorname{cov}(x, y),$$

$$|\mathbf{u} \cdot \mathbf{v}| = \sqrt{\sum_{i=1}^{n} (x_i - M(x))^2 \cdot \sum_{i=1}^{n} (y_i - M(y))^2} = n \cdot \sigma(x) \cdot \sigma(y)\,,$$

where $\sigma(x)$, $\sigma(y)$ are the symbols for the variance of $x(y)$ resp.

$$\cos(\mathbf{u}, \mathbf{v}) = \frac{(\mathbf{u}, \mathbf{v})}{|\mathbf{u}| \cdot |\mathbf{v}|} = \frac{\operatorname{cov}(x, y)}{\sigma(x) \cdot \sigma(y)} = r(x, y)\,.$$

The classical price-indices

As another example let us take the classical price-indices, namely the Laspeyres type one:

$$P_L = \frac{\sum_{i=1}^{n} (q_{0i} p_{1i})}{\sum_{i=1}^{n} (q_{0i}\ p_{0i})},$$

in vector terms:

$$P_L = \frac{(\mathbf{q}_0, \mathbf{p}_1)}{(\mathbf{q}_0, \mathbf{p}_0)} = \frac{\cos(\mathbf{q}_0, \mathbf{p}_1)\ |\mathbf{q}_0| \cdot |\mathbf{p}_1|}{\cos(\mathbf{q}_0, \mathbf{p}_0)\ |\mathbf{q}_0| \cdot |\mathbf{p}_0|} = \frac{\cos(\mathbf{q}_0, \mathbf{p}_1) \cdot |\mathbf{p}_1|}{\cos(\mathbf{q}_0, \mathbf{p}_0) \cdot |\mathbf{p}_0|} = \frac{\Omega(\mathbf{p}_1, \mathbf{q}_0)}{\Omega(\mathbf{p}_0, \mathbf{p}_0)},$$

where

$\Omega(a, b)$ is the length of the orthogonal projection, the vector **a** has on the vector **b**.

Terminology used in this paper

Prior to introducing the indicators (to be more exact two indicators) we must first make clear terms used in this paper.

Structural unit may be an economical, sociological, spatial, or other unit or variable in a given time characterized by a set of properties (attributes).

Structure is the interrelationship between the elements of information or observations on the different properties characterizing the structural unit.

Measurable structural units are those ones, where the elements of information on the characterizing properties are expressed in numerical terms.

Conmensurable structural units: We are faced with conmensurable structural units where two or more measurable structural units are characterized by the same kind of properties. To be more exact, the i-th property of the j-th unit must correspond to the i-th property of the k-th unit.

Additive structural units: A structural unit is additive if the sum of the values, each one property has is substantially meaningful.

Homogeneous structural units are those, where the value of the characterizing properties are expressed in the same unit of measurement, (e.g. in kilogrammes, per capita kilogrammes, etc.) however, one cannot sum these.

Heterogeneous structural units are neither additive nor homogeneous.

Describing vectors: The vector $\mathbf{a}_j = [a_{ij}]$ is a describing vector for the j-th structural unit if the values a_{ij}, $i = 1 \ldots n$ are taken as characterizing the main measurable properties which the measurable unit j has.

Structural vectors: The vector $\mathbf{s}_j$ is a normal (unit length) transformation of the describing vector $\mathbf{a}_j$.

Relative frequency vector $\mathbf{r}_j$ may be obtained from a describing vector of an additive structural unit by way of dividing each element by the sum of the elements.

The length of the vector $\mathbf{r}_j$ seems to be a more or less good indicator for the level of concentration (e.g. territorial concentration) of a given variable.

The range of the value $|\mathbf{r}_j|$ is:

$$\frac{1}{\sqrt{n}} \leq |\mathbf{r}| \leq 1 .$$

The concentration measure $|\mathbf{r}|$ may be transformed into the usual 0, 1 interval. This standardized measure C_s may be obtained by the formula:

$$C_s = \frac{\mathbf{r} - \frac{1}{\sqrt{n}}}{1 - \frac{1}{\sqrt{n}}} .$$

It seems to be, that C_s may be used as an easily computable concentration measure. To utilize better the given interval $\hat{C}_s = \sqrt[2]{C_s}$ may be used.

The measures proposed

A measure used in quantitative analysis should satisfy the requirements of metric.

In case of measurement structural deviations or structural changes these requirements of metric for the measure μ are as follows:

a) $\mu(a, b) = 0$ if, and only if $a = \alpha b$, where $\alpha > 0$ real number.
b) $\mu(a, b) = \mu(b, a)$.
c) $\mu(a, b) + \mu(b, c) \geq \mu(a, c)$.

Taking into consideration these requirements of metric two indicators may be proposed:

The angle φ *between the describing vectors* $\mathbf{a}_j$, $\mathbf{a}_k$

$$\varphi(j, k) = \arccos \frac{(\mathbf{a}_j \cdot \mathbf{a}_k)}{|\mathbf{a}_j| \cdot |\mathbf{a}_k|} .$$

In case of vectors of non-negative elements, (and while analyzing structural problems we are mostly faced with vectors of non-negative elements) the range of $\varphi(j, k)$ may be of course:

$$0 \leq \varphi(j, k) \leq \frac{\pi}{2} .$$

In case of $\varphi(j, k) = 0$, which means that $\mathbf{a}_j = \alpha \mathbf{a}_k$ and $\alpha > 0$, and therefore $\mathbf{s}_j = \mathbf{s}_k$ we are faced with *similar structures*.

The particular case, when $\alpha = 1$ is of *identical structures*. The case: $\varphi(j, k) = \pi/2$ is of *orthogonal structures*. Which is maximum structural differentiation inbetween given vectors of non-negative elements. That is, the two vectors have no corresponding non-zero elements.

The distance between the structural vectors a_j, s_k

$$d(j, k) = |\mathbf{d}_{j,k}|, \qquad \text{where: } \mathbf{d}_{j,k} = \mathbf{s}_j - \mathbf{s}_k.$$

It is easy to see the interdependence between the measures $\varphi(j, k)$ and $d(j, k)$:

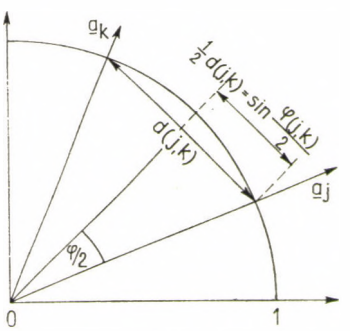

Fig. 1

The range of $d(j, k)$ is of course:

$0 \leq d(j, k) \leq \sqrt{2}$ for structural vectors of non-negative elements.

It is to be mentioned, that in the literature — without striving for giving a perfect scope — two examples have been shown for using the cosines between vectors in approaching structural problems.

In (2) Professor Linneman has investigated the foreign trade possibilities and export–import proportions with the aid of cosines between the describing vectors.

In (3) V. V. Kosoff has used cosines among the column vectors of an input–output table to investigate the best way at aggregation.

Additionally it should be also mentioned that other methods based on Information Theory have been proposed. This proposal suggests taking the

vector $\mathbf{r}_j$ as *a priori* information on the vector $\mathbf{r}_k$. This way the entropy of the information may be used as a measure of structural deviations.

Even without full knowledge of the Information Theory it is easy to see that this measure does not satisfy the metric requirement of symmetry. Therefore the entropy of the information may serve as a structural measure only in case when the vector $\mathbf{r}_j$ has some particularly distinguished role to play.

Some problems of inter-temporal investigations

The separation of the structural and inertial tendencies of multidimensional development

Let us define the vector of the multidimensional changes:

$$\mathbf{m}(t, 0) = \mathbf{a}_t - \mathbf{a}_0,$$

where

$\mathbf{m}(t, 0)$ is the vector of multidimensional changes between the base period and the investigated one, and

$\mathbf{a}_0$, $\mathbf{a}_t$ symbolize the describing vectors for the base and investigated period.

It seems to be worth while to attempt to separate the main tendencies which result in the total multidimensional changes. This separation may be carried out two ways:

A) On the basis of the theory of time series.

B) By way of the vector concept of multidimensional variables.

In the Institute of Planning of the Hungarian Planning Office there are some attempts to apply the theory of time series for multidimensional variables and computations have been started to separate the trend effects, the autoregressive effects and the random effects of multidimensional variables.

A useful characteristic of vectors describing multidimensional variables is that they have not only quantitative properties, but qualitative ones too. It means that a vector may be characterized not only with its length (absolute value), but by its direction too.

Therefore we can apply these characteristics for separating the qualitative (structural) tendencies from the nonstructural (inertial) ones. This latter tendency may be taken as acting in the same direction that the vector describing the basic period had.

Following a plain way of geometrical interpretation and therefore perhaps a very simple and trivial one the inertial tendency may be expressed by

the lengthening of the basic vector $\mathbf{a}_0$ up to the length of $\mathbf{a}_t$ the inertial tendency expressed in vector terms has the direction $\mathbf{s}_0$ and the length $|\mathbf{a}_t| - |\mathbf{a}_0|$.

This way we can express the length and the direction of the vector symbolizing the rotational or structural tendencies too;

$$m(t, 0) = \mathbf{a}_t - \mathbf{a}_0 = |\mathbf{a}_t|\,\mathbf{s}_t - |\mathbf{a}_0|\,\mathbf{s}_0 = \mathbf{v} + \mathbf{w}$$
$$v = (|\mathbf{a}_t| - |\mathbf{a}_0|)\,\mathbf{s}_0$$

$$\mathbf{w} = \mathbf{m}(t, 0) - \mathbf{v} = |\mathbf{a}_t|\,\mathbf{s}_t - |\mathbf{a}_0|\,\mathbf{s}_0 - (|\mathbf{a}_t| - |\mathbf{a}_0|)\,\mathbf{s}_0 =$$
$$= |\mathbf{a}_t|\,(\mathbf{s}_t - \mathbf{s}_0) = |\mathbf{a}_t|\,\mathbf{d}(t, 0),$$

where

$\mathbf{v}$ is the vector symbolizing the inertial tendencies and
$\mathbf{w}$ is the vector for the structural ones.

At the same time in case of additive structural units, where the sum of the elements of the describing vector has a distinct role to play, there is another way of separation.

The length of vectors describing additive structural units is of a complex character. As explained above the length of the vector $\mathbf{a}_j$ characterizing the j-th additive structural unit may be expressed as follows:

$|\mathbf{a}_j| = q_j|\mathbf{r}_j|$, where $q_j = (\mathbf{1} \cdot \mathbf{a}_j)$ is the sum of the elements, which make up $\mathbf{a}_j$,

$|\mathbf{r}_j|$ remains as a symbol of the absolute value of the vector $\mathbf{r}_j$ (relative frequencies).

It is easy to see that the changes on q_i correspond to the quantitative aspects of inter-temporal differentials. As to the absolute value $|\mathbf{r}_j|$ its changes are of qualitative character.

It is easy to see that the length of the vector $\mathbf{a}_j$, depends on its concentration and on the sum of the elements. Moreover it appears clear that the sum factor is to be considered as a quantitative moment of multidimensional changes and the concentration factor as a qualitative one showing the changes on proportions.

Under these circumstances it may be offered as a basic idea, that the direction and the concentration of the component vector expressing the quantitative changes must remain the same as the vector $\mathbf{a}_0$, the descriptive vector for the base period had.

Accepting this basic idea, it is very easy to determine the other vector expressing the qualitative tendencies.

$$\mathbf{m}(t, 0) = \mathbf{m}_q + \mathbf{m}_p,$$

where

$\mathbf{m}(t, 0) = \mathbf{a}_t - \mathbf{a}_0$ is the vector of multidimensional changes between the periods 0 and t,

$\mathbf{m}_q$ is the vector of qualitative changes and $\mathbf{m}_p$ is the vector expressing the qualitative (proportion) differentials.

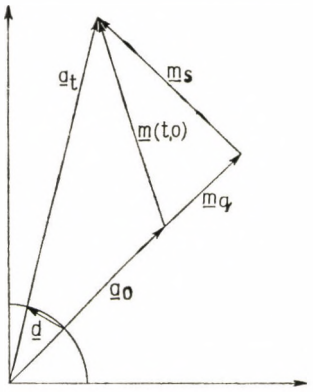

Fig. 2

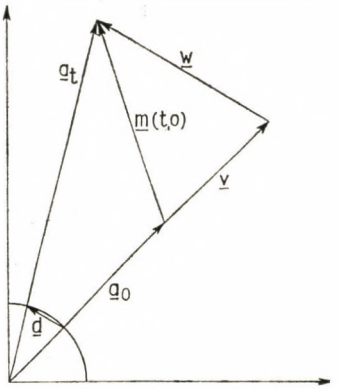

Fig. 3

In accordance with the basic idea $\mathbf{m}_q$ may be expressed in the following way:

$$\mathbf{m}_q = (q_t - q_0)\ |\mathbf{r}_0|\ \mathbf{s}_0.$$

It follows that $\mathbf{m}_p$ may be obtained as:

$$\mathbf{m}_p = \mathbf{m}(t, 0) - \mathbf{m}_q = q_t|\mathbf{r}_t|\ \mathbf{s}_t - q_0|\mathbf{r}_0|\ \mathbf{s}_0 - (q_t - q_0)\ |\mathbf{r}_0|\ \mathbf{s}_0 = q_t\ |\mathbf{r}_t|\ \mathbf{s}_t - q_t\ |\mathbf{r}_0|\ \mathbf{s}_0.$$

Consider the former separation of $\mathbf{m}(t, 0)$ into $\mathbf{v}(t, 0)$ and $\mathbf{w}(t, 0)$. A real shortcoming that although the vector $\mathbf{m}_q$ has the same direction as the vector $\mathbf{a}_0$ has, the direction of $\mathbf{m}_p$ is quite different from $\mathbf{d}(t, 0)$. Anyway it appears to be useful to give up the geometrical elegance for the sake of a more reasonable substantive meaning.

Figure 2 shows the separation of $\mathbf{m}(t, 0)$ into $\mathbf{m}_q$ and $\mathbf{m}_p$ and Figure 3 serves for illustration for that of $\mathbf{v}(t, 0)$ and $\mathbf{w}(t, 0)$.

The investigation of the monotonicity of consecutive structural changes

When having a time series of structural vectors it appears to be not without interest to investigate the monotonicity of the changes. In this respect the concept of monotonicity is not as clear as for instance in discussing a func-

tion. Therefore no attempt will be made to give a mathematically accurate definition of monotonicity for structural changes.

The measure recommended for indicating the monotonicity of structural changes is based on an easily criticized abstraction. That is the structural vectors of the first period and the last one have a distinct role to play. Therefore the problem of monotonicity is restricted to analyzing, how the structural changes "behave" within this interval.

Let us take as an example three vectors of unit length

$$\mathbf{s}_0, \mathbf{s}_k \quad \text{and} \quad \mathbf{s}_t.$$

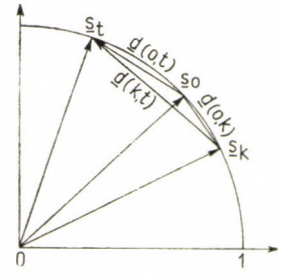

Fig. 4

As for monotonicity is not enough if $\varphi(0, k) < \varphi(k, t)$ consider Figure 4 where these inequalities hold true, the vector $\mathbf{d}(0, k)$ has a backward direction from the vector $\mathbf{d}(0, t)$ is means, that the orthogonal projection $\Omega/\mathbf{d}(0, k), \mathbf{d}(0, t)/< 0$.

If we put as a condition sine qua non the lack of backward structural movements, this concept of monotonicity might be measured by series of indicators.

$$M_k = \frac{\sum_{j=1}^{k} |\Omega/\mathbf{d}(k-1, k)\, \mathbf{d}(0, k)|}{|\mathbf{d}\,(0,k)|}, \quad k = 1, \ldots, t\,.$$

This measure seems to be not "rigorous" enough. When $M_k = 1$ this only indicates that there is no reversed tendency within the period $(0, t)$.

The other way of measuring monotonicity investigates whether or not the consecutive structural changes have the same main direction.

It means, that in case of this rigorous monotonicity all the structural vectors in case are elements of that two dimensional subspace, determined by $\mathbf{S}_0$ and $\mathbf{s}_x$.

This "rigorous" concept of monotonicity might be measured by the indicator K_k:

$$K_k = \frac{\varphi(0, k)}{\sum_{j=2}^{k} \varphi(j-1, j)}, \quad k = 1, \ldots t .$$

As an example one can refer to an investigation done at the Institute of Planning, Budapest. The research was not of an intertemporal character, but was rather cross-sectional. An investigation was made on the demographic and employment structures of families living on wages and salaries, as they belong to different income brackets.

The demographic structure was represented by vectors

$$\mathbf{f}_j, \; j = 1, 2, \ldots, m \quad \mathbf{f}_j = [f_{ij}], \; i = 1, \ldots, n,$$

where

$f_{ij} = \frac{1}{\sum_{i=1}^{n} x_{ij}} x_{ij}$ and x_{ij} is the number of persons belonging to the i-th demographic or employment category in the j-th income bracket.

This investigation dealt with 10 income brackets according to the per capita incomes, and the characterizing vectors were of 12 elements.

It is interesting to note the monotonic increase of angles between the neighbouring vectors.

The angle between the first and last characterizing vectors was more than 80° approaching the maximum 90°.

It was also astonishing to note the monotonicity the structural deviations had. For more detailed illustration see Table 1.

Table 1

The main characteristics of structural deviations on the demographical and employment structure of the families living on wages and salaries, belonging to different income brackets

k	$\varphi(1,k)$	$d_{(1,k)}$	$\varphi(k-1,k)$	$d_{(k-1,k)}$	k_k
2	9.60	0.168	9.60	0.168	1.00
3	22.80	0.396	13.70	0.236	0.98
4	35.80	0.614	13.38	0.232	0.98
5	47.75	0.810	12.90	0.234	0.96
6	55.99	0.936	8.55	0.148	0.95
7	61.00	1.016	5.47	0.096	0.96
8	69.31	1.136	10.08	0.176	0.94
9	73.55	1.196	13.70	0.236	0.84
10	80.10	1.286	9.90	0.168	0.82

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ИССЛЕДОВАНИЕ МЕРЫ И НАПРАВЛЕНИЯ СТРУКТУРНЫХ ИЗМЕНЕНИЙ

Э. ФРИДЬЕШ–Н. ШИМОН

В последние годы был опубликован ряд работ, использующих некоторые элементы классического векторного анализа для исследования структурных различий. Общая характерная черта этих работ, что они используют углы наклона векторов, характерных для исследуемых структур, в качестве показателя структурных расхождений.

а) Данная статья выясняет основные понятия, связанные с исследованием структур;

б) определяет возможные математические и экономические требования к измерению структурных расхождений или изменений;

в) показывает, что предлагаемые показатели, угол наклона и показатель «d» (расстояние между нормированными векторами единичной длины) согласуются с экономическим толкованием структурных изменений и в то же время они выполняют математические требования метрики.

г) Кроме точного и единозначного измерения, предлагаемые методы анализа исследуют и направление структурных изменений. Относительно временных рядов структурных векторов труд содержит показатели для последовательности изменений. Для динамических исследований были подготовлены методы анализа для обособления главных сил (структурных и инертных изменений), влияющих на полные многомерные изменения, и для числового выражения их интенсивности

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FORECASTING WITH ECONOMETRIC MODELS: EXPERIENCES AND PROBLEMS*

This study deals with two issues. The first part reviews the forecasting methods applied, and the results attained, in the Econometric Laboratory of the Central Statistical Office. The subject of the second part is partly related to this, and raises a few problems the econometricians of the socialist countries are facing. These problems, though probably not unique to our conditions, have special relevance to the socialist environment, and it seems increasingly timely to discuss them.

I

Before beginning the review of our actual forecasting experience, the models used as the basis for the forecasts should be briefly described. There is a whole host of economic models prepared today, and in such a variety, that it would seem expedient to determine the nature of our models within this spectrum.

Instead of attempting to define the stochastic econometric models, let us first see some of their characteristic features:

— these models express certain economic relationships in mathematical form, by means of one or several equations;

— the economic hypotheses expressed as equations form a system which in the general case is interdependent: certain variables are parts of more than one equation; at least some of them are explanatory variables in certain equations, while in others they play the role of the dependent variable;

— the coefficient matrix, expressing the relationship between the variables, is determined in a stochastic way, on the basis of the time series of a closed sample period, with the aid of different estimation methods;

— forecasting of the endogenous variables is implemented by combining the prognosticated values of the predetermined variables with the coefficient matrix.

The listing of the above features is essential since in our case the basis for forecasting is a concrete econometric model, with these given characteristics. Estimated on the basis of a period of observation, such a model enables us, first of all, to analyse the period of observation; then, through the possible correction of the structure of the model, based on internal analysis or external

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information, it turns towards forecasting. Not all forecasting procedures follow this course.

So far four econometric models have been applied in the course of our operations. The M—1 and the M—2 models were prepared in 1965 and 1970, respectively. The Czechoslovak—Hungarian comparative model, which we prepared jointly with the Computing Research Centre of Bratislava for the special and new purpose of international comparison, was completed in 1970. The fourth model to be reviewed — a stochastic model combined with input–output technique — has only reached the stage of specification.

The M—1 model

Prepared in 1965, the M—1 was a small-scale model consisting of a few equations. Its aim was to experiment with the application of econometric models in a socialist national economy. Prior to this the only socialist country where an econometric model had been prepared, to the best of our knowledge, was Poland (at the Katowice College of Economics, under the leadership of Professor Pawłowski). The M—1 model, without being particularly rich in economic information, fulfilled its role by providing methodological experience and ideas for development of specification for preparing the M—2 model.

The M—2 model

The M—2 model contains 26 stochastic equations. The system was built on the basis of annual time series running from 1950 to 1967; it consists of five types of equation, which concerned

production,
utilization-consumption,
labour force,
foreign trade, and
real income.

We placed the new value produced (value added) in the national economy in the centre of the model. This value can, if necessary, be disaggregated according to origin (i.e. production branches) and utilization. Disaggregation affects the first three of the above five types of equations. However, the degree and nature of the disaggregation differentiates sharply between the three equation types.

In the case of the production equations, we expressed the net production of eight branches as the function of the labour force and the fixed assets applied in the individual branches (together with several other factors). In the case

of the consumption equations we disaggregated consumption by its composition (food, clothing, etc.), in such a manner that the major explanatory factors were identical in the equations. The labour force equations were also disaggregated (industry and building industry, agriculture, other branches), while at the same time they formed a strongly interdependent block in themselves.

In the case of the nine independent equations of the model the application of the classical least-square method proved sufficient to estimate parameters. With regard to the other equations we also used two variants of the method of instrumental variables as well as the method of principal components. The main advantage of the method of instrumental variables is that it considers the strictly causal relations of the model, while the method of principal components ensures greater methodological correctness.

We can assess the efficiency of the estimation by means of measures obtained in the course of estimation: these are the standard error of the parameters, the Durbin—Watson statistic expressing the autocorrelation within the stochastic terms, and the multiple correlation coefficients.

About 85 per cent of the parameters had errors smaller than the parameter value and in about 70 per cent of the estimations the error was smaller than half of the parameter value.

The value of the multiple correlation coefficients (R), adjusted for degrees of freedom, in the case of 18 stochastic equations, was over 0.9.

The Durbin—Watson statistic indicated that there was a positive autocorrelation in about 30 per cent of the equations of the M—2 model.

Although the various methods require quite different volume of calculation input, the estimation results turned out to be rather similar.

The equation system of the M—2 model is given in the Annex.

The Czechoslovak—Hungarian comparative model

Under an agreement between the Computing Research Centre of Bratislava and the Econometric Laboratory of the Hungarian Central Statistical Office, the two institutions worked out in 1969—1970 a small-scale econometric model which was then estimated on the basis of the data of both countries.

The model contains twelve equations (of which eight are stochastic and four are identities) and 26 variables (12 are endogenous and 14 are predetermined). The sample period of the model extends over the 19 years between 1950 and 1968. The model can also be considered an aggregated variant of the Hungarian M—2 model, for it contains production, utilization, consumption, labour force and foreign trade equations.

The model was estimated following specification analyses completed on both sides. Parameters were estimated by a number of methods. Apart from the two-stage method of least-squares the Hungarian variant also applied the least-squares method based on first differences parallel with the generalized least squares.

The results proved to be statistically reliable. The results between the countries were compared for 14 parameters (about 70 per cent of the total number of parameters).

The econometric model linked to input-output tables

The purpose of a planned fourth model is similar to that of our model experiments completed so far: it sets out to construct an econometric model which describes the origin and use of net production value with stochastic equations. At the same time the model will be different in that it will be organically linked to the input–output tables. In fact, comprised input–output relations will become a part of the model.

The model is based on the time series of the most important variables for the period 1959—1970. The model also contains the input–output table for 1968, and its technological coefficient matrix.

The model consists of stochastic and non-stochastic blocks. The parts of the stochastic block are:

a) production functions explaining the value added in the individual sectors;

b) stochastic utilization functions explaining the major components of final use (consumption by the population, investment, etc.);

c) stochastic equations explaining exports and imports.

The non-stochastic block of the model contains the interrelations expressing the transition from value added data to gross production and the branch origin of final use, using input–output relations.

Definition equations are part of both blocks. The model has a total of 31 endogenous variables and 31 equations.

With the aid of exogenous variables we shall be able to forecast net (added) production value, as well as the intermediate demand and final demand matrices of the input–output table.

Forecasting with the M—2 model

Of the models mentioned actual forecasting in full details has so far only been done with the M—2 model. On the basis of the results of parameter estimation, forecasts were prepared for each year from 1971 to 1975. The

starting point for the forecasts was the reduced form of the equation system:

$$Y = X\Pi + V$$

where Y is the 18×26 matrix of the jointly dependent endogenous variables,
X is the 18×33 matrix of the predetermined variables,*
V is the 18×26 matrix of the stochastic terms.

As a result of the estimations, the Π matrix was available for forecasting in four variants.

The ex-post forecasting was completed for 1968 and 1969, with the aid of all four reduced coefficient matrices. We analysed the predictive ability of the model in a number of ways, using the results of the ex-post estimations. These included a test by Theil's inequality-measures and their components. We experimented by using an information theory measure ("information inaccuracy"), and with respect to one or two equations we completed interval estimation alongside the point estimation.

For ex-ante forecasting the analysis of residuals and the subsequent modification was far more important. It is obvious that the structure represented in the sample period of the model will not remain fully valid in the years following the sample period, and it can even be assumed that it may be subject to changes in the final years of the sample period too. A condition for the validity of the structure of the model is the random fluctuation of the signs of the residuals in the time series. Insofar as this characteristic does not operate in the ex-post years or in the final years of the period of observation, it becomes necessary to modify the structure. Trend components calculated on the basis of residuals are the means used to correct the pattern of the model. In order to allow for definite deviations from the original structure only, we considered residuals in those equations alone in which they showed unbroken deviation in identical direction in the past 3—7 years. On the basis of the values of these systematic residual values we formed simple linear trends for 16 equations. We also paid attention to the number of residuals with identical signs and in certain cases we applied the trends in an accordingly decreased form.

Taking auxiliary trends into consideration, the former matrix equation is modified as follows:

$$Y = X\Pi + Z + V \ .$$

where Z is the matrix of the additive correction trend values.

* One of the 33 predetermined variables was an auxiliary variable consisting solely of elements of "1" applied to the constant terms of the equations.

We formed the Z-matrix and carried out the ex-ante forecast with a single estimation method (one variant of the method of instrumental variables).

Since we have no information on the future appearance of random effects influencing the system, we treat the V-matrix as a O-matrix according to the general practice applied in forecasting.

Therefore the Π and Z matrices provide the modified structure of the model for ex-ante forecasting. Further, this ex-ante forecasting consists of producing the X-matrix, and thereby estimating the Y-matrix. It is not expected of the model to determine the ex-ante values of the predetermined variables included in the X-matrix. This can take place in a number of alternative ways based on various concepts and on external information. With the alternative values of the predetermined variables the model quite naturally gives alternative values for endogenous variables as well.

Of the 33 predetermined variables of the M—2 model, the annual data of 25 variables were extrapolated (the values of the other variables were determined in other ways in accordance with their nature). We applied various types of extrapolation methods to the individual predetermined variables including linear, parabolic, hyperbolic and exponential trends, and also the method of harmonic weights. We tried extrapolations with up to four methods for each predetermined variable. Finally, for each predetermined variable we selected two variants of the values, extrapolated by several methods:

a) the regressions giving the best fit for the period of observation,

b) the extrapolated series which best approached the target figures of the five-year plan.

Although the fourth five-year plan contains comparatively few figures which can be linked directly to the predetermined variables of the M—2 model, we selected variants closest to the plan figures from among the 1—4 extrapolated variants in the case of several predetermined variables: fixed assets, labour force, prices, real income, wage rates and the use of fertilizers.

On the basis of two alternative sets of predetermined variables we gained two variants of ex-ante forecast for the endogenous variables. In general, the second variant, which approaches more closely the figures of the five-year plan through the predetermined variables, produces higher results. This was to be expected, since the mechanical projection of the structure of the sample period does not and cannot take into account technical and organizational development — both embodied and disembodied. In this way the deviation between the two variants of forecasting, in marked oversimplification, might be considered as the effect of the rise in the technical-organizational level expressed implicitly by the plan.

II

In the first part of this paper a sketchy outline of the experiments in forecasting completed by the Econometric Laboratory of the Hungarian Central Statistical Office was given. The models applied, the estimation methods, and the alternative results of the forecasts were briefly described; however, the theoretical and practical difficulties and problems have not yet been discussed.

Two factors suggest that these problems should be raised and, indeed, even emphasized. On the one hand, in the course of our experiments with forecasting we could not avoid to face certain problems to be solved. On the other hand, international exchange of views and experiences has acquainted us with some very challenging, and sometimes intriguing methods and approaches applied by our foreign partners. It is believed that the problems emphasized cannot be neglected in building econometric models in socialist countries.

Methods of approach

Several characteristic features of our models have been deliberately emphasized in the above brief review. Forecasting need not take place solely on the basis actually used by us, but along different lines as well. Forecasts are also made without models, by means of the isolated extrapolation of individual variables. Moreover, there are many variants in forecasting models. Optimization models, different types of "planning models" might be mentioned which in some way are close to the official planning mechanism, while from another angle they are near to what we interpret as econometric models (in the strictly stochastic sense, as characterized in the introductory paragraphs of this study). There are models so strongly oriented towards forecasting, that analysis of the period of observation is not even possible because of the extremely intensive instant mathematical processing of inputs. There are also models which do not fix a set of variables as predetermined variables, but in assuming an infinite and complete interdependency they consider the generation of the process of reproduction feasible from any point within this assortment of variables. As a matter of fact, delimitation of endogenous and exogenous variables is different in socialist and in capitalist environment and it is also different before and after economic reforms within the socialist environment.

A comparative analysis of the alternative approaches to forecasting and modelling would perhaps be a worthwhile exercise, in order to compare the positive and negative features of the various methods, allowing for differences in the economic system and environment.

Plans and forecasts

Quite a number of econometricians in the socialist countries are concerned with the relationship between planning and forecasting. Literature has not yet properly answered this question, despite the fact that this situation raises certain problems in a phase of development when plans and forecasts live alongside one another in these countries. Even a complete listing of these problems is difficult, let alone solving them; hence a few references will suffice.

It is possible to compose several criteria for planning and forecasting which define them and, at the same time, distinguish them. The plan is never without an element of will, of definite objectives, which require implementation. There is no such element in forecasting. Therefore the plan may contain targets only, the fulfilment of which depends on society, or some parts of society. This is precisely the reason why the plan does not contain directives concerning e.g. indicators of meteorology or those of international market trends. Variables which cannot be influenced or cannot be significantly influenced by planners and executors of the plan belong to the sphere of forecasting.

It is possible to continue listing similar discriminatory points but this will be sufficient to make it clear that although the areas of planning and forecasting overlap, they do not coincide.

It is also easy to say that the ideal situation is one in which forecasts and plans are elements of some kind of a whole, an aggregate within which they precondition and supplement one another functionally. Again, just a few details have to be mentioned. First, the econometric model adds complex and refined indicators, i.e. actual figures on relationships, to the statistical basis of planning. Secondly, one possible use of the econometric model for planning is forecasting the endogenous variables by the model; this process limits the number of variables to be projected to the predetermined variables, and the forecasting of the endogenous variables is completed by the model.

These are just two elements of the relationship between the plan and forecasting. No doubt, the level of economic management could be substantially advanced if a functional unity of planning and forecasting could be developed.

Of course, we are far from this at present. The separation of planning and forecasting is primarily caused by historical and organizational factors. The planners are not the same persons as the forecasters. The concepts, interests and methods of those working in the two groups are generally rather different. Here, too, there is a gap between theory and practice. There are very few convincing signs of integration and the two activities are running parallel, only touching each other, or related to one another no more than in points of detail.

The relationship between the plan and forecast is most delicate if the time horizons of the two coincide (and naturally, a substantial part of the variables of a macro-economic forecasting model clearly coincide with the indicators of the plan). This was the position when the M—2 model was applied for forecasting. The first part of this paper described how we tried to cope with, and make use of, this situation.

Changes in the economic management

In recent years the economic system of the socialist countries have been substantially reformed. Endeavours to make economic management more efficient, however, create no small difficulty for the modelling econometrician. The introduction of reforms means a change in the stochastic, causal relationships established in the past within the economy, their importance shifts and their numerical values may show sharp deviations. The economic functioning of the centrally managed old system can be correctly modelled with a system of hypotheses, but these are different from those required under the new system; quite another system of equations is needed in the new economic mechanism, following the reforms. The econometric forecasts under the new conditions need comparatively long background time series but the relationships of the sample period cannot in fact be projected to the future because of the change in the system.

The stability of statistical data series

Finally, one very different problem should be mentioned. The majority of econometric models, particularly those serving for forecasting are built on time series. The success of model estimation is decisively influenced by the ratio of the number of observations to the number of variables. The greater the value of this ratio, the simpler the means needed, and the more successful the estimation will be. Unfortunately, this requirement is not fully met by statistical observation and processing. It is easy to understand the endeavour of the statistical bodies which aim at carrying out their work in harmony with the most modern concepts of definition, grouping and theory. However, the changes required by such "updating" of the methods do not always allow the formation of long data series.

We came across such problems in the course of our operations with the M—2 model. For example, parameter estimation took place on the basis of 1959 constant price data, but by the time we were ready for forecasting, new

volume series, calculated at 1968 prices, had been introduced into general use; thus, long series on the new base were not available for more than a part of the variables of our model.

Annex

The equation system and the variables of the M—2 model

I) *The equation system*

A) Production equations:

$$(1)\ N^a = \alpha_0 + \alpha_1 Mu^a + \alpha_2 \acute{A}^a + u_1$$
$$(2)\ N^g = \beta_0 + \beta_1 Mu^g + \beta_2 \acute{A}^g + u_2$$
$$(3)\ N^v = \gamma_0 + \gamma_1 Mu^v + \gamma_2 \acute{A}^v + u_3$$
$$(4)\ N^{ki} = \delta_0 + \delta_1 Mu^{ki} + \delta_2 \acute{A}^{ki} + u_4$$
$$(5)\ N^{\acute{e}l} = \varepsilon_0 + \varepsilon_1 Mu^{\acute{e}l} + \varepsilon_2 \acute{A}^{\acute{e}l} + u_5$$
$$(6)\ N^{\acute{e}p} = \zeta_0 + \zeta_1 Mu^{\acute{e}p} + \zeta_2 \acute{A}^{\acute{e}p} + u_6$$
$$(7)\ N^m = \eta_0 + \eta_1 M^m + \eta_2 M\ddot{u}^{m\ddot{u}} + \eta_3 Ij + \eta_4 M\ddot{u}^{tr} + u_7$$
$$(8)\ N^k = \vartheta_0 + \vartheta_1 Mu^k + \vartheta_2 \acute{A}^k + u_8$$

B) Consumption equations:

$$(9)\ F = i_0 + i_1 N + i_2 F^{(0,1)} + u_9$$
$$(10)\ F^{\acute{e}l} = \varkappa_0 + \varkappa_1 R^{mu} + \varkappa_2 R^p + \varkappa_3 L^v + \varkappa_4 A^{\acute{e}l} + u_{10}$$
$$(11)\ F^v = \lambda_0 + \lambda_1 R^{mu} + \lambda_2 R^p + \lambda_3 A^{\acute{e}l} + u_{11}$$
$$(12)\ F^r = \mu_0 + \mu_1 R^{mu} + \mu_2 R^p + \mu_3 A^r + u_{12}$$
$$(13)\ F^t = \nu_0 + \nu_1 R^{mu} + \nu_2 R^p + \nu_3 A^t + \nu_4 T_{t-1} + u_{13}$$
$$(14)\ F^1 = \xi_0 + \xi_1 R^{mu} + \xi_2 R^p + \xi_3 T_{t-1} + \xi_4 F^1_{t-1} + u_{14}$$

C) Equation of savings deposits:

$$(15)\ T - T_{t-1} = O_0 + O_1 R^{mu} + O_2 R^p + O_3 (F^t + F^1) + u_{15}$$

D) Equation of employment:

$$(16)\ M^i = \pi_0 + \pi_1 (Mu^a + Mu^g + Mu^v + Mu^{ki} + Mu^{\acute{e}l} + Mu^{\acute{e}p}) + u_{16}$$
$$(17)\ M^i = \varrho_0 + \varrho_1 M^m + \varrho_2 (N^a + N^g + N^v + N^{ki} + N^{\acute{e}l} + N^{\acute{e}p}) + \varrho_3 M^i_{t-1} + u_{17}$$
$$(18)\ M^m = \sigma_0 + \sigma_1 (M^i + M^e) + \sigma_2 M\ddot{u}^{tr} + u_{18}$$
$$(19)\ M^e = \tau_0 + \tau_1 M^m + \tau_2 (N^a + N^g + N^v + N^{ki} + N^{\acute{e}l} + N^{\acute{e}p} + N^k + N^r) + u_{19}$$
$$(20)\ M^{np} = \nu_0 + \nu_1 M^p + \nu_2 J + u_{20}$$

E) Equations of foreign trade:

$$(21)\quad F = \varphi_0 + \varphi_1 N + \varphi_2 K + u_{21}$$
$$(22)\quad I = \chi_0 + \chi_1 N + \chi_2 E + u_{22}$$

F) Equation of real income:

$$(23)\quad R^{mu} = \psi_0 + \psi_1 Rb + \psi_2 L^k + u_{23}$$

G) Identities:

$$(24)\quad N^a + N^g + N^v + N^{ki} + N^{l} + N^{ép} + N^m + N^k + N^r = F + F^k + F^h + (E - I)$$
$$(25)\quad M^p = M^i + M^m + M^e$$
$$(26)\quad M = M^p + M^{np}$$

(II) *Variables and notations*
Endogenous variables

1 N^a = National income originating in the basic materials and power industries, Ft billion*
2 N^g = National income originating in the engineering industry, Ft billion
3 N^v = National income originating in the chemical industry, Ft billion
4 K^{ki} = National income originating in the light industry, Ft billion
5 N^{l} = National income originating in the food industry, Ft billion
6 N^{p} = National income originating in building and construction, Ft billion
7 N^m = National income originating in agriculture, forestry and fishing, Ft billion
8 N^k = National income originating in transportation, Ft billion
9 N = National income, total, Ft billion
10 E = Volume of exports, Ft billion
11 I = Volume of imports, Ft billion
12 F = Consumption of the population, Ft billion
13 $F^{él}$ = Retail trade turnover in foodstuffs, Ft million
14 F^v = Catering trade turnover, Ft million
15 F^r = Retail trade turnover in clothing and footwear, Ft million
16 F^t = Retail trade turnover in durable consumer goods, Ft million
17 F^l = Private expenditure on residential building, Ft million

* Billion = thousand million.

18 T = Savings deposits at end of year, Ft million
19 M^i = Total manpower employed in industry and construction, thousands
20 M^m = Total manpower employed in agriculture, thousands
21 M^e = Total manpower employed in other branches of material production, thousands
22 M^p = Total manpower employed in all material production, thousands
23 M^{np} = Total manpower employed outside material production, thousands
24 M = Total manpower employed in the national economy, thousands
25 R^{mu} = Per capita annual disposable personal real income of workers and employees, Ft
26 J = Per capita national income, Ft

Predetermined variables

27 N^r = National income originating in the "residual" branches of material production (others than items 2—8), Ft billion
28 $F^{(0,1)}$ = Accumulation (dummy variable)
29 F^h = Total value of accumulation, Ft billion
30 F^k = Government expenditure, Ft billion
31 F^1_{t-1} = Private expenditure on residential building in preceding year, Ft million
32 $A^{él}$ = Relative consumer price index of food, percentage
33 A^r = Relative consumer price index of clothing and footwear, percentage
34 A^t = Relative consumer price index of durable consumer goods, percentage
35 T_{t-1} = Savings deposits at end of preceding year, Ft million
36 Mu^a = Workers employed in basic materials and power industries, thousands
37 Mu^g = Workers employed in engineering industry, thousands
38 Mu^v = Workers employed in chemical industry, thousands
39 Mu^{ki} = Workers employed in light industry, thousands
40 $Mu^{él}$ = Workers employed in food industry, thousands
41 $Mu^{ép}$ = Workers employed in building and construction, thousands
42 Mu^k = Workers in transportation, thousands
43 M^i_{t-1} = Total manpower employed in industry and construction in preceding year, thousands

44 $\acute{A}^a$ = Fixed assets in basic materials and power industries, Ft billion
45 $\acute{A}^g$ = Fixed assets in the engineering industry, Ft billion
46 $\acute{A}^v$ = Fixed assets in the chemical industry, Ft billion
47 $\acute{A}^{ki}$ = Fixed assets in the light industry, Ft billion
48 $\acute{A}^{él}$ = Fixed assets in the food industry, Ft billion
49 $\acute{A}^{ép}$ = Fixed assets in building and construction, Ft billion
50 $\acute{A}^k$ = Fixed assets in transportation, Ft billion
51 R^p = Per capita annual disposable personal real income of peasantry, Ft
52 L^k = Percentage of active earners in total population of workers and employees
53 Rb = Per capita monthly real earnings of workers and employees, Ft
54 L^v = Percentage of urban in total population
55 K = Foreign trade turnover of CMEA countries, Roubles, billion
56 $M\ddot{u}^{mü}$ = Consumption of chemical fertilizers, thousand tons
57 $M\ddot{u}^{tr}$ = Land area per tractor unit "cadastral holds"*
58 Ij = Weather index, percentage.**

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* 1 cadastral hold = 0.5754 hectare

** A complex indicator expressing the overall impact of meteorological factors on agricultural output.

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ПРОГНОЗИРОВАНИЕ С ПОМОЩЬЮ ЭКОНОМЕТРИЧЕСКИХ МОДЕЛЕЙ: ОПЫТ И ПРОБЛЕМЫ

Л. ХАЛАБУК

В эконометрической лаборатории Центрального статистического управления в последние годы был разработан целый ряд эконометрических моделей. Серию открыла модель М—I, которая являлась небольшой экспериментальной моделью и служила целям приобретения методологического опыта. Модель М-2 была составлена в 1970 году, пять лет спустя после модели М-1. Эта средняя по масштабам модель содержала 26 уравнений и 58 переменных величин, которые были заключены в 5 блоков. Оценка параметров модели на основании данных за 1950 – 1967 гг. помимо простого метода наименьших квадратов производилась с помощью двухступенчатого метода наименьших квадратов, метода главных компонентов и двух вариантов метода инструментальных переменных.

В 1969—1970 гг. Братиславский научно-исследовательский вычислительный центр и Эконометрическая лаборатория ЦСУ разработали сравнительную модель. В стадии изготовления находится дальнейшая модель, которая соединяет возможность межотраслевого баланса с преимуществами стохастической эконометрической модели и таким образом создает новые возможности для прогнозирования.

Из перечисленных моделей до сих пор подробные прогнозы производились с помощью модели М-2. Прогноз охватывает 1971—1975 гг. Прогнозу, по существу, предшествовал прогноз экс-пост (на 1968—69 гг.), после чего был осуществлен многосторонний анализ структуры модели. За осущественным на этой основе изменением структуры последовал прогноз экс-анте. Были разработаны два варианта прогноза: один исходит из наилучшей увязки в избранном периоде, а другой в экстраполяции предопределенных переменных в большей мере учитывает наметки пятилетнего плана.

Проблемы и соображения, возникшие в ходе составления моделей, можно подытожить следующим образом.

На практике одновременно используется множество моделей и методов прогнозирования, что вызывает надобность в ускорении разработки их сравнительного анализа. Такое сопоставление указало бы на положительные и отрицательные свойства отдельных способов приближения, принимая во внимание конкретные цели их использования.

Особую проблему представляет собой не выявленный до сих пор единозначным образом вопрос связи между планированием и прогнозированием. Создание функционального единства планирования и прогнозирования оказало бы положительное воздействие также и на уровень управления народным хозяйством.

Третий комплекс проблем заключается в том, что реформа системы управления народным хозяйством сопряжена с такими изменениями экономических взаимосвязей, которые меняют характер функционирования экономики, ввиду чего происходит большее или меньшее обесценивание прежних статистических наблюдений с точки зрения составления моделей.

Наконец, составители эконометрических моделей испытывают трудности, если в их распоряжении нет статистических рядов соответствующей длины. Следует отметить, что такое положение временами возникает именно в связи с развитием системы статистических наблюдений и обработки данных.

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PLAN OF AN ECONOMETRIC MODEL BASED ON INPUT-OUTPUT TABLES*

The draft model to be discussed at present is the fourth experiment of the Econometric Laboratory of the Central Statistical Office (model M—4), which is new in comparison with the earlier ones insofar as it connects the simultaneous econometric model with an aggregated input–output model. This linking contains on the one hand an entire series of new possibilities for analysis, in that the econometric model is complemented with the sphere of current productive consumption, and the input–output model is complemented with stochastic relations. At the same time, many methodological difficulties emerge as regards the linking of the two models of different type. The endeavour to take into consideration the alternative possibilities for solving the latter difficulties and the availability of statistical information justify the small size of the experimental model.

Background

For years now the Econometric Laboratory of the Hungarian Central Statistical Office has been emerged in constructing econometric models consisting of simultaneous equation systems. The first one, the model M—1 was intended to be a methodological experiment [5]. The goal of model M—2 was, first of all, economic analysis, and the larger size of this model, as well as a more circumspect application of the technique of model construction also served this goal [6, 7]. In the course of forecasts completed with the model M—2 [8] an experiment was made to utilize the information contents of the model. Simultaneously with the forecasting experiments we again worked out an aggregate model in cooperation with the Computing Research Centre U. N. D. P., Bratislava (the model M—3) whose purpose was to make use of the possibilities for comparison stemming from the quantification of existing economic relations in the Hungarian and Czechoslovak national economies [10].

The purpose of the present modelling experiment

Our models elaborated so far were systems of equations explaining the creation of the net production value, its use, exports, imports, employment, etc. — as econometric models generally are. Since the formation of the net production value and the economic phenomena related to it, as well as their circulation only provide a narrow picture of the economic sphere, it is un-

* A slightly revised version of a paper read at the Second Hungarian Input–Output Conference, Siklós, 1971. Proceedings of the Conference are under publication in English by Akadémiai Kiadó. *Ed. note.*

questionably useful if the model also studies the phenomena contained in it in an expanded manner, including the turnover among the sectors of production, and in this way, the formation of total gross output value. The large number of input–output models worked out in differing degrees of detail can provide very useful help in solving this question, on the one hand, through putting the information contents of the tables to use, and, on the other hand, by including the input–output interrelations directly into the model. If we accept the possibilities offered by the input output model (and the constraints as well, of course) in explaining the sphere of current productive consumption, there is no need for the econometric model to describe the sphere of production in a way different from the input–output model (with interrelations specified in another way). In this way our task is limited to building a suitable input–output model into the econometric model as a part (a special part) of the econometric model conforming to the breakdown of the econometric model. Therefore, our present model explains net production and total final use within the framework of a system in accordance with the practice of econometric models but as an organic part of the model it contains the interindustry production relations, and the pattern by branches of final use, taken from the input–output tables.

A number of circumstances were in favour of elaborating the model at present. On the one hand, the transition to the new type of national accounting system taken place and the new system has recently also meant the introduction of categories never applied before, whose introduction into econometric modelling is also topical. The present accounting system not only takes material production into consideration, but it also takes note of the results of non-material activities carried on in a socially organized manner. It is thus justified to include the non-material sphere also into modelling.

The variables in model M—2 were taken also into consideration at 1959 unchanged prices. In the meantime the transition to the 1968 price level has taken place (as was made necessary by the new system of economic control and management introduced in 1968). The new model calculations will be completed at 1968 unchanged price level.

Statistical possibilities and limits

According to what we have said, the starting basis from the point of view of the model are the length of the comparable time series of the variables to be studied, and the I/0 tables worked out so far. The time series of the accounting categories of the new type are available at 1968 price level for the years 1960—1970. This eleven-year period puts a sharp limit on our possibilities since the reliability of the conclusions drawn from the model and their

reality depend to a great extent on the proportions between the length of the time series (sample size) and the size of the model (number of variables and equations). We have to state well in advance that we could specify only a small-sized, strongly aggregated model, (at least small with regard to the stochastic part of the model).

Regarding the second question, the input–output tables worked out, the situation is highly favourable, for the small tables which can be taken into consideration are available for each year from 1959 on. These tables are not available, however, at unchanged 1968 prices nor in the new system (including the non-material branches). Since the model does not at present endeavour to study interindustrial relations in a stochastic way, there is no need for an entire table series, for we can begin on the basis of a single annual table. This table, which is most suited to our purposes, is the aggregate input–output table for 1968.

The structure of the model

Within the framework of a uniform system the planned model contains stochastic equations, identities (definition equations) and balance equations. Its structure can be divided into two major blocks, the stochastic and non-stochastic blocks. The former contains the stochastic equations, and the latter the balance equations, while identities are included in both blocks.

The model contains national economic (material and non-material) production in a breakdown of seven branches (by organizations). These seven branches are as follows: industry; the building industry; agriculture, forestry and water economy; transports and communications; distributing; non-material activities and residual (customs duties and value discrepancies).

This pattern can be derived by further aggregation from the aggregate I/0 table.

The *stochastic block* of the model studies the formation of value added by the branches, and the various uses of the total value added. Causal relationships are described by the stochastic equations, and the interrelations existing by definition by identities. In essence, the stochastic block is not different from the structural form of our past models, in which the interrelations between the endogenous and predetermined variables of the model are described mainly in the form of direct relation between "explanatory variables and dependent variable". For this reason the model contains the customary functional relations (production functions, consumption functions, etc.). The category of value added (the value of net production plus amortization) complemented by imports constitutes the source of total final use. Since current productive consumption is explained by the interrelations of the I/0 table, in our stochastic production functions of the branches only the creation of

the value added is examined as a function of the primary factors of production (fixed assets and labour). The model comprises six production functions (production function cannot be interpreted for the "residual" branch). The explanatory variables of these functions are employment in the branch and the gross value of fixed assets per person employed. In the agricultural function other special variables, the indicators of weather and perhaps of the use of fertilizers are also added. An identity combines the value formed in the branches into total value added. Furthermore, stochastic equations explain the development of final use according to major directions. (Final use by origin will be taken into consideration on the basis of the I/0 interrelations only.) With regard to domestic use, total consumption by the population (broken down into two parts, material and non-material consumption) and national economic investments have been considered. In this way we have written down two consumption functions relating to consumption by the population and one investment function for investments. The explanatory variables of the consumption functions are total employment, real wages and the ratio of earners to dependents. The investments have been explained with the variables of total value added and the stock of investments in process carried over from the previous year, in which the former variable would explain trends in national economic investments from the side of the source, and the latter from the side of investments brought over from the previous year which have a compelling effect. In the identity summarizing the major items of total domestic use we find two other variables which are considered exogenous, those of public consumption and changes in stocks. The identity expressing the sum of exports and total domestic use defines the final use.

The model uses stochastic equations to explain the export and import data series, the former as a function of total available resources less current productive consumption, and the latter as a function of two variables i.e. of total value added and exports.

Aside from what we have stated, the stochastic block contains two further identities, one defines the value of net production and the other expresses the agreement between the productive side and the uses, according to which total domestic use is equal to total value added and the balance of foreign trade.

Therefore, the stochastic block of the model contains a total of sixteen equations (of which 11 are stochastic and 5 are identities), with sixteen endogenous variables. This block is identified even when separated from the model, making thus parameter estimation possible.

The *non-stochastic block* contains equations derived from the 1968 aggregate I/0 table. These equations determine the gross output values of the branches from the value added data of the branches using the technological coefficient matrix, and then, define with an identity the sum of these, i.e. the total gross output. The technological coefficient matrix is also used to express

total final use by origin by starting from the gross output by branches and applying the well-known input–output interrelationships.

The question is how these interrelations, taken from the I/0 tables can form a part of an econometric and, in the final analysis, stochastic model. The estimates of the parameters of the stochastic block are arrived at by using time series and applying some method of parameter estimation, and the parameter values of the non-stochastic block (the I/0 coefficients) are brought into the model from outside, knowing that their estimation (calculation) was not made in a stochastic manner. Since according to sufficiently well-founded assumptions the important technological coefficients only change to a slight extent, in a model of this sort, which is projected for a comparatively short period of time — and whose goal is not to analyze the structure of current intermediate consumption — they can be assumed to be unchanged, and their value can be included in the model as external information.

Therefore, the balance equations appearing in the non-stochastic block of the model should be considered equations which exist only in 1968 in the form of identity from among the years of the period observed. For the other years of the observation period they are met only approximately, and the residuals are caused by the deviation of the concrete structure of the year in question from that in 1968 (they are not residuals in the customary sense of the term). The value of gross output and final use relating to the seven branches, and the total gross output according to the qualification of the variables, are another fifteen endogenous variables of the model to which the above-mentioned fifteen equations refer.

Due to the linking of the two types of blocks, the structure of the model is special in nature. The stochastic block is in itself interdependent, but the relationship between the stochastic block and the non-stochastic block is unidirectional and, therefore, the model can be treated as a block-recursive one. We can make use of this property of the model in carrying out the planned forecast or simulation experiments.

Summarizing the data of the two types of blocks, the model has thirty-one endogenous variables and thirty-one equations which are solved partly (in the stochastic equations) through the use of the values of the exogenous variables as well as with the techniques for parameter estimation, and partly on the basis of the technological coefficient matrix of the aggregate 1968 I/0 table.

The equations and variables of the model

A) *Stochastic block*

$$v^i = \alpha_0^i + \alpha_1^i \frac{a^i}{l^i} + \alpha_2^i l^i + u$$

$$v^b = \alpha_0^b + \alpha_1^b \frac{a^b}{l^b} + \alpha_2^b l^b + u$$

$$v^a = \alpha_0^a + \alpha_1^a \frac{a^a}{l^a} + \alpha_2^a l^a + \alpha_3^a w + \alpha_4^a f + u$$

$$v^t = \alpha_0^t + \alpha_1^t \frac{a^t}{l^t} + \alpha_2^t l^t + u$$

$$v^d = \alpha_0^d + \alpha_1^d \frac{a^d}{l^d} + \alpha_2^d l^d + u$$

$$v^{nm} = \alpha_0^{nm} + \alpha_1^{nm} \frac{a^{nm}}{l^{nm}} + \alpha_2^{nm} l^{nm} + u$$

$$v^i + v^b + v^a + v^t + v^d + v^{nm} + v^r = v$$

$$u^{cm} = \beta_0^{cm} + \beta_1^{cm} r + \beta_2^{cm} l + \beta_3^{cm} q + u$$

$$u^{cn} = \beta_0^{cn} + \beta_1^{cn} r + \beta_2^{cn} l + \beta_3^{cn} q + u$$

$$u^i = \gamma_0 + \gamma_1 v + \gamma_2 s^i + u$$

$$u = u^{cm} + u^{cn} + u^i + u^p + u^s$$

$$e = \delta_0 + \delta_1 (v + i) + u$$

$$i = \omega_0 + \omega_1 v + \omega_2 e + u$$

$$y = u + e$$

$$n = v - d$$

$$u = v + i - e$$

B) *Non-stochastic block*

$$x = \begin{bmatrix} x^i \\ x^b \\ x^a \\ x^t \\ x^d \\ x^{nm} \\ x^r \end{bmatrix} = \begin{bmatrix} \dfrac{v^i}{1-1^*a_1} \\ \dfrac{v^b}{1-1^*a_2} \\ \dfrac{v^a}{1-1^*a_3} \\ \dfrac{v^t}{1-1^*a_4} \\ \dfrac{v^d}{1-1^*a_5} \\ \dfrac{v^{nm}}{1-1^*a_6} \\ \dfrac{v^r}{1-1^*a_7} \end{bmatrix}$$

$$1^*x = x$$

$$y = \begin{bmatrix} y^i \\ y^b \\ y^a \\ y^t \\ y^d \\ y^{nm} \\ y^r \end{bmatrix} = (I - A_{68})\,x + i$$

where x and y are the column vectors of gross output and final use by branches, 1^*a_1, 1^*a_2, ... are the corresponding column sums of the A_{68} technological coefficient matrix, i is the vector of complementary imports by branches.

C) *Explanation of the variables*

Endogenous variables

v^i — value added in industry
v^b — value added in the building industry
v^a — value added in agriculture, forestry and water economy
v^t — value added in transport and communications

v^d — value added in distribution
v^{nm} — value added in the non-material branches
v^r — value added in the residual branches
v — total value added
u^{cm} — total material consumption by population
u^{cn} — total non-material consumption by population
u^i — investments, fixed assets
u — total domestic use
e — exports
i — complementary imports
y — final use, total
n — net national product
x^i — gross output in industry
x^b — gross output in the building industry
x^a — gross output in agriculture, forestry and water economy
x^t — gross output in transport and communications
x^d — gross output in distribution
x^{nm} — gross output in the non-material branches
x^r — gross output in the residual branches
x — total gross output
y^i — final use from industry
y^b — final use from the building industry
y^a — final use from agriculture, forestry and water economy
y^t — final use from transport and communications
y^d — final use from distribution
y^{nm} — final use from the non-material branches
y^r — final use from residual branches

Exogenous (predetermined) variables

a^i — gross value of fixed assets in industry
a^b — gross value of fixed assets in the building industry
a^a — gross value of fixed assets in agriculture, forestry and water economy
a^t — gross value of fixed assets in transport and communications
a^d — gross value of fixed assets in distribution
a^{nm} — gross value of fixed assets in the non-material branches
l^i — average employment in industry
l^b — average employment in building industry
l^a — average employment in agriculture, forestry and the water economy
l^t — average employment in transport and communications

l^t — average employment in distribution
l^{nm} — average employment in the non-material branches
w — weather variable
f — use of fertilizer
r — index of real wages
l — total employment
q — ratio of dependents to earners
s^i — stock of unfinished investments (at end of previous year)
u^p — total public consumption
w^s — changes in stocks
d — depreciation of fixed assets (total)

Application of the model

Following verification of the stochastic econometric models, in other words after estimation based on the time series, there is a possibility for analyzing the relationship between the variables on the basis of the parameters of the reduced form and for making forecasts with the model. The planned model experiment shown here is capable of giving a more complete picture in forecasting, from a certain point of view, than our models elaborated earlier.

Since through its variables and interrelations the planned model also contains the aggregate I/0 table for the period, the interindustry relations can also be forecast in the course of forecasting with the model, which is something our former models could not do. After reducing the system of equations, the course of the calculations is as follows. Starting from the assumed values of the exogenous variables (fixed assets, labour, real wages, etc.) we estimate the endogenous variables of the stochastic block: value added formed in the branches, the major directions and sums of final use (consumption by the population, total national investments), exports and imports. After this, using the estimated value added by branches on the basis of the I/0 equations we can determine the estimated gross output of the branches and based on this, also using I/0 interrelations, we can compile the estimated vector of final use, which forecasts its origin (composition) by branches (already estimated in total in the stochastic block). Therefore, we obtain a consistent system of forecast values for all endogenous variables in the model by using the assumed values of the exogenous variables and the 1968 values of the I/0 coefficients. Aside from estimating the endogenous variables or following it, we can also compile forecast internal I/0 quadrants and right-wings which, of course, are strongly dependent on the structure of 1968 used as a basis, but insofar as we assume that the structure of coming years will not change significantly, these forecasts can be useful from the point of view of making the information more complete. If the

internal matrix is denoted by AX and the right-side one Y, the estimates $\widehat{AX}$ and $\widehat{Y}$ are the following:*

$$\widehat{Ax}_t = A_{68} \begin{bmatrix} \hat{x}_t^i & 0 & \dots & 0 \\ 0 & \hat{x}_t^b & & \\ \vdots & & \ddots & \vdots \\ 0 & & \dots & \hat{x}_t^r \end{bmatrix}$$

$$\hat{Y}_t = F_{68} \begin{bmatrix} \hat{u}_t^{cm} & 0 & \dots & 0 \\ 0 & \hat{u}_t^{cn} & & \\ \vdots & & \ddots & \vdots \\ 0 & & \dots & \hat{e}_t \end{bmatrix}.$$

We must emphasize a shortcoming of the model which also appears in the block-recursive structure, in that there is no feed-back between the stochastic block and the I/0 (non-stochastic) block. The variables generated by the stochastic block are placed into the I/0 block, which prescribes a certain structure of current intermediate consumption and final use for them, but this has no reciprocal effect on the stochastic block. This phenomenon is a consequence of the fact that we are relying on a technological coefficient matrix assumed to be constant.

On the basis of a program drafted in the autumn of 1971, we plan the specification analysis and computation of preliminary estimates, and following that, the use of possibly several alternative methods of estimation, as well as an ex-post forecasting experiment covering 1971 and an ex-ante forecast for 1972—1975, all for 1972. We think that we will complete calculations also with coefficient matrices of years other than 1968 (using them as constant coefficients), and finally we will endeavour to expand the information contents of the model by forecasting technological coefficients and possibly by using forecast "A" matrices, taken over from other research, primarily as experiments in forecasting.

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* We derive the F_{68} matrix from the 1968 I/0 table in such a way that it be a matrix expressing distribution by branches and directions so that it distributes the vector of forecast final use by directions and branches in a structure similar to 68.

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ПРОЕКТ ЭКОНОМЕТРИЧЕСКОЙ МОДЕЛИ НА ОСНОВЕ СВОДНОГО МЕЖОТРАСЛЕВОГО БАЛАНСА

К. ГУЯК

Цель модели заключается в образовании такой, соответствующей проводившимся до сих пор экспериментам по эконометрическому моделированию, симультанной системы уравнений, которая изображает с помощью стохастических уравнений со стороны производства и использования создание и потребление чистой продукции. В отличие от проводившихся до сих пор работ мы намерены составить модель, которая органически увязана с межотраслевым балансом в такой мере, что сводный межотраслевой баланс составляет ее часть. Так, в ходе экспериментов, производимых с помощью модели, можно учесть как взаимную связь между производственными отраслями, так и отраслевой сектор конечного потребления.

Основу модели составляют ряды важнейших переменных таблиц межотраслевых балансов за 1959—1970 годы и временные ряды прочих эконометрических переменных. Кроме этого, в модель включена матрица технических коэффициентов сводного межотраслевого баланса нового типа за 1968 год в семисекторной агрегации.

С точки зрения своего строения модель содержит стохастический и нестохастический блоки. В стохастическом блоке помещены производственные функции шести производственных отраслей, две функции потребления, инвестиционная, экспортная и импортная функции и тождества. Нестохастический блок путем использования матрицы технических коэффициентов содержит в форме уравнений баланса затрат—выпусков переход на стоимость валовой продукции и взаимосвязи, выражающие отраслевой источник конечного потребления. Модель содержит общим счетом 31 эндогенную переменную и 31 уравнение.

В ходе использования модели после произведения оценки мы планируем осуществить экс-периментные прогнозы экс-пост и экс-анте. В ходе этих экспериментов в отношении стоимости чистой продукции мы получим такие прогнозы, которые позволяют наметить также текущее межотраслевое использование и отраслевую структуру конечного потребления. Опять-таки на основании модели можно получить внутреннюю и боковую матрицы межотраслевого баланса. Мы планируем составление прогнозов на 1971—1975 годы.

REVIEWS

Gy. Szakolczai

ACTIVITIES OF THE INFELOR SYSTEMS ENGINEERING INSTITUTE

INFELOR is an applied research institute promoting the wider use of electronic computers in Hungary. Its activity is centred on computer software and hardware application and development, as well as on data processing. Only two smaller units are working on the field of mathematical economics: the Econometric, and the Operations Research Departments. The activities of these two departments will be reviewed here, disregarding that of the other organizational units.

Econometric Department

The Econometric Department is working for government agencies dealing with national economic planning, as well as with problems of economic policy and development. Its activity is generously supported first of all by the Board for Materials and Prices and the Ministry of Foreign Trade, as well as, to a smaller extent, by the National Planning Office, the Central Statistical Office, the Ministry of Metallurgy and Machine Industry, the Ministry of Finances, the National Technical Development Council, and by other institutions. All these different duties sponsored by these various agencies may be considered, however, as parts of an attempt to build a family of related models to analyse the interconnected problems of national development planning. The different projects will therefore be arranged here by the methods employed, and not by the different agencies sponsoring the research.

(1) *Production functions* and some related analyses played always an important role in the various models. A generalized CES production function with increasing or decreasing rates of returns to scale, and a method of the estimation of its parameters was developed [34]. The procedure was used to determine the parameters of the CES production functions for 8 industries from the 1950—1963 [34], and for 28 industries from the 1950—1967 [21] [43] and 1950—1969 time series [44] [72]. The latter publications also reviewed and compared the three empirical studies, and concluded that the results — apart from the values of the marginal rates of substitution — are consistent and tend to be more reliable with longer time series. The first results of these calculations were also reported in Russian, [26], while some empirical work made on the basis of American data was published in English along with a description of the model [36]. These latter results showed that the elasticity

of substitution is smaller than unity in the American, and tend to be unity in the Hungarian case. The various similarities and dissimilarities of the results obtained from Hungarian and American data were reviewed in a German language paper [35].

Production functions were used to determine the role of capital and labour in the development of the Hungarian national economy, and of its various branches. The same question was analysed by a cross-section study based on the data for the subgroups of Hungarian manufacturing and mining [27] [29]. The results clearly pointed to some deficiencies in the allocative mechanism of investments, as well as to the overwhelming importance of the labour force in the increase of industrial production.

These production function analyses, as already mentioned, failed to produce a reliable estimate of the marginal rate of substitution when Hungarian data were used. It is now attempted to estimate this parameter directly from technological data. Only the method has so far been published [33] [55], and the statistical work is in progress. This research is closely connected with the calculations made to determine optimal machine time and replacement policy in the machine industry [56].

(2) *Input–output* tables are the second most important building blocks of the models constructed by the Econometric Department. Considering the relatively rapid rate of change of technical and interindustrial relations in Hungary, the reliability of middle-term, and particularly of long-term plans can greatly be increased by using extrapolated, i.e. probable future values of the input–output technical coefficients instead of statistically determined values pertaining to a past time period. The first set of extrapolations [37] [38] [39] was based on the series of 1959—64 input–output tables for 13 sectors, the second set [40] on the 1959—66 tables for 15 sectors. The probable development of the ratio of imports to materials used was separately studied [59]. The results of the latter calculations were compared with the extrapolations of the National Planning Office based on non-mathematical methods, (ib., Vol. III.), and the checked results are being used in the actual calculations. The extrapolations are now extended to 60 sectors, and based on the 1959—70 time series. The method used to correct for price changes and the first results of its application [50], as well as the methods employed to ensure the consistency of the extrapolations [51] [68] has already been published, while the final results will only be available later in this year.

(3) The models to be reviewed later are also based on some further, *independent extrapolations*. Relatively simple methods are used for this purpose. The development of the generalized Gompertz function [49], as well as of a new method to estimate the parameters of the logistic function [52] deserves mentioning. These methods were first employed to prepare some working materials for the development planning of the machine industry [57] [58].

(4) *Consistent extrapolations* based on some or all of the partial results reviewed until now are in the centre of the models built here. The theoretical basis of this approach is the fact that, owing to the secondary role of the price system even after the 1968 reform of the economic mechanism in Hungary, the developments in the individual sectors of the economy are in some respect more independent of each other than in the market economies. An analysis of the national economy as a whole may therefore be based on an independent analysis of its various sectors or even elements, if the consistence of these

individual results is ensured. This idea is common in most models to be reviewed now.

In the simplest case, capital, labour and output estimations or plans obtained by different methods for the individual sectors and for the same future time period are checked against each other, as well as against the independently calculated values of the capital–output, labour–output, and capital–labour ratios, and further against the calculated extensive utilization of the machine-time, and the expected average length of working time in hours per year. The parameters of the sectoral production functions are considered in these calculations as given, and a solution is sought which approximates all the individual extrapolations as closely as possible. The first results are in press [45] [58]. It could be shown that even this simple method could lead to the elimination of some inconsistencies in quantitative planning. The most important element of this method is its nonlinearity, and the role and effect of the decreasing or increasing rates of returns to scale in the individual industries could therefore be analysed by this method.

(5) In the quantitative consistency analyses mentioned above production functions were introduced but the individual sectors were considered separately. In the other model developed to ensure the consistency of quantitative plans the *consistent development of a multi-sectoral national economy* as a whole is studied. Owing to the technical problems connected with nonlinearity, production functions do not appear in these models, capital and labour coefficients, however, are determined by these functions. A simplified description of this model was published in Hungarian [17] and in Polish [18], but the work on this model was abandoned and the efforts were concentrated on a more developed version of the model dealing not only with the consistency of the quantitative, but also with the consistency of the monetary and price relationships

(6) In the first form of this model prices, i.e. the *sectoral price indices* are considered as the most important variables. Prices are determined by the well-known input–output price equations, and price changes are derived from the changes of capital and labour coefficients determined with production functions, from the expected changes of wages, as well as from the extrapolated changes of the input–output technical coefficients. The analysis is therefore of the comparative static type. The price equations are, however, supplemented with further equations ensuring the quantitative and financial consistence of the computed system of values. The first group of these additional equations consists of the system of input–output inverse equations in the static and dynamic sense, as well as of the equations specifying the capital, labour and import requirements of production. The second group of additional equations describes the balance of the incomes and outlays of the population, that of international payments, of credit transactions and of the budget. The calculated price developments pertain therefore to the balanced state of the national economy, and the model may therefore be used not only to extrapolate the change of prices, but also the development of the national economy as a whole.

Considering that not only quantities, i.e. gross and net outputs and consumption levels, but also values, i.e. prices, wages and profits are among the unknowns of this system of equations, the whole system is nonlinear, and the solution can only be sought with classical methods. The positivity of the solution is ensured by the quadratic objective function minimizing the squared differences between the independently extrapolated or planned, but not neces-

sarily consistent values obtained by different methods, and the system of consistent values calculated by the model. It is worth mentioning that this objective function provides also some solution to the problem of centralized and decentralized planning. Some targets may be set by the central planning agencies, and some others by the individual sectors, enterprises and other smaller units.

All these methodological questions are discussed in the simplified [46] and detailed [53] description of the model, as well as in the publications presenting the original [48] and final [54] variant of the algorithm of the model. Some experimental calculations were also made to clear some methodological problems connected with the application of the method [47].

Many empirical investigations are based on this method. The prospective values of sectoral price indices were first calculated for 15 sectors, and for the years 1970—75 [30] [41]. These results were used as background materials when the targets of the last five-year plan were set. The same method was used to determine the rate of increase of wages compatible with the stability resp. slow increase of the price level [67]. Some other studies estimated the price effects of some eventual changes of the exchange rates and some other financial instruments connected with foreign trade [31] [60], and the method was also used to substantiate some theoretical results relating to the system of foreign trade accounts [28] [63]. Finally the effects of rising import prices on the home price level were studied by a simplified variant of the model [32] [61] [62].

It must be emphasized that all these calculations are of a rather practical character, aimed at providing a better foundation for economic policy decisions. In some other models, however, the theoretical aspect of the problem was given precedence, for instance in the algorithm for the solution of the von Neumann model of economic growth [22].

(7) In the calculations reviewed previously prices, profits and wages were considered as the most important variables, while taxes and subsidies, or at least the system to taxation was considered as given. A more sophisticated model is now being prepared for the analysis of the much broader problem where taxes and subsidies are also dealt with as unknowns, and where an attempt is made to determine the *consistent and in some sense optimal system of taxation*. Optimality is formulated here in terms of the growth effect of the various financial variables. No publications are as yet available on this new line of research.

(8) The optimality of the financial system is closely related to the *optimal rate of investments* and the problem of calculated costs (remuneration) of the factors of production.

Excessively low or high capital charges in relation to wages may lead to over- or underinvestment, respectively, and in both cases to a growth rate falling behind the development potentialities of the economy. The problem can best be approached by investigations based on the theory of production functions. According to the results already published, the optimal rate of increase of the capital stock may be determined even if the rate of returns to scale is increasing, and the elasticity of substitution is greater than unity [19] [42]. It could also be shown that the advantages of the increasing rate of returns to scale can only be exploited if the labour force is increasing [64]. These models are now being generalized to include also embodied technical progress, and

to determine simultaneously the optimal machine time. The calculations attempting to determine the consistent and optimal tax system are largely based on the research outlined here. It should also be mentioned that the problem of optimal rate of growth of capital stock was also approached using the technique of simulation [65].

(9) Finally, an attempt was made to extrapolate the development of the size and structure of the population by the method of demographic simulation [3] [66] this project, however, had to be abandoned.

On the Budapest Meeting of the Econometric Society papers to be presented by the staff of the econometric department will review the present state of research, and some recent results in connection with production functions [72], the methods used to extrapolate the matrices of input–output technical coefficients [71] and the development of some other variables [69], the further results obtained by the model of price extrapolation [74] and with the model of the optimal rate of investments [70], and finally the solution algorithm of the von Neumann model of economic growth [73].

Operations Research Department

The Operations Research Department works on behalf of several enterprises of Hungarian manufacturing, mining, agriculture, and trade.

(1) *Transportation and similar problems* had always a certain prominence in the activity of the Department. A method was developed to solve the transportation problems by *graph representation method*, which is very effective from the computational aspect requiring only a limited storing capacity. In case of the stepping-stone algorithm of the transportation problem the greatest part of computer time is required to calculate the reduced costs and to find the improving loops. The efficiency of the method depends largely on the system employed to store the data. The so-called Dömölki–Frivaldszky method dealt with here uses a specially directed graph for the representation of the problem, and some very simple specialized functions to describe the structure of the graph [1].

The same method was used to develop a solution algorithm for the *capacitated transportation problem*. The program for the MINSZK – 2 computer can tackle problems with $m + n \leq 410$. This program has been used successfully to solve some regional planning problems of the Institute of Town Planning, and the Central Planning Office. Finally a similar method was used to solve the *generalized transportation or machine loading problem*. The upper bound of the computer program is in this case $m + n \leq 400$ [2].

A special application of these programs was the joint optimization of the flour-mills' production programme, and of the wheat and flour transportation in Hungary. 150 warehouses, 200 mills and about 250 destinations were taken into consideration and so the size of the problem was 600×600. Another application was the optimization of the coal mining and transportation in Hungary. A decomposition method was used to solve a series of transportation problems [4] [7].

(2) The problem of *optimal energy structure and of the optimal investment policy* was also studied by *simulation technique*. The model analyses the con-

sistency of the various investment policies considered. The first experimental computations are just under way.

(3) *Various network techniques* (CPM, ERALL), are also applied by this Department. Such methods have been used among others to schedule the research and development activity of a great enterprise. The model comprised several hundred research and development projects, as well as the available labour force and the capacity limits. Some *travelling salesman* and *vehicle scheduling problems* were also studied. A model and a computer program was developed to determine the time-table of trucks delivering materials between various plants of a great enterprise. Another project attempts to organize the collection and delivery of mail.

(4) Several models were built to determine the optimal allocation of resources, and to shape optimal production programmes. The problem of the allocation of water resources to meet given demands was studied, and the relationship between required water resources, the quantity of available water and the meteorological conditions were studied by statistical methods. The research was sponsored by the Hungarian Water Research Institute.

Another major research tried to determine the *optimal production programme* of a given firm. It is a large-scale linear programming problem to be solved by a decomposition method, exploiting the special characteristics of the firm's system of production. The model considers about 500 homogeneous groups of machines, and 10 000 products, each manufactured by about 3–5 different technological variants. The following basic methods were used here: Bender's decomposition method for linear programming, the algorithms for the transportation and generalized transportation problems dealt with above, and the generalized upper bounds technique [5] [9] [15] [24]. Some production scheduling problems were also solved, but the relating publications are not yet available.

(5) Finally some special *inventory models* were elaborated. A model was applied by an enterprise to control the inventory policy of about 20 000 different items stocked. Some *materials cutting problems* were also studied.

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69. ÉLTETŐ, Ö.–HUNYADI, L.: On the estimation of the parameters of the logistic function. To be presented to the Budapest Meeting of the Econometric Society.
70. KÁDAS, S.: The optimal rate of growth of fixed assets. To be presented to the Budapest Meeting of the Econometric Society.
71. MIHÁLYFFY, L.: A constrained gradient method for nonlinear programming. To be presented on the Budapest Meeting of the Econometric Society.
72. PÖLÖSKEI, P.; The estimation of sectoral CES production functions for Hungarian manufacturing and mining: Some methodological experiences. Contributed paper. To be presented to the Budapest Meeting of the Econometric Society.
73. RÉTI, J.: A game theory solution for the general equilibrium model of J. v. Neumann. To be presented to the Budapest Meeting of the Econometric Society.
74. SZAKOLCZAI, GY.: The extrapolation of the development of prices and the planning of the tax and incentive system with econometric models in Hungary. To be presented to the Budapest Meeting of the Econometric Society.

BOOK REVIEWS

J. KORNAI: *Anti-equilibrium. On the economic systems theory and the tasks of research.* Budapest – Amsterdam – New York, 1971. Közgazdasági és Jogi Könyvkiadó and North Holland/American Elsevier Publishing Co. 402 p.

This fourth work of greater importance written by János Kornai was published in Hungarian by the Közgazdasági és Jogi Könyvkiadó, and in English by the North Holland Publishing Company, Amsterdam. In each of his works the author proves his creative ability, daring thoughts and talent for synthesization. One of his noteworthy merits is his linguistic clarity, and his highly readable style which makes it easier for the reader to understand his difficult and abstract concepts.

With the *Anti-Equilibrium* János Kornai has arrived at a new peak in his activities as an economist. His past work can be characterized by a certain duality which is closely related to the changes which have taken place in Hungarian economics, and even the social sciences, in the past twenty years. The creative activities of Hungarian economists took the upswing in the mid 1950's. The majority of the creative concepts were directed at exposing the contradictions in the Hungarian planned economy, and at increasing economic achievements. During this process the economists, in searching for efficient research methods, became increasingly acquainted with the modern capitalist economy, with the fundamentals of western economies, and with their latest achievements.

If we were to be a bit superficial we might say that the first period of this process was characterized by expectation of miracles, and the second by disillusionment. By expectation of miracles we first of all mean the belief that by equipping central management with mathematical methods — amounting in practice almost exclusively to the application of linear programming — the desired standards could be attained comparatively rapidly; that it would be sufficient to put these methods to use to improve economic management. Another belief, to a certain extent in contradiction with the former one, was that with a single comprehensive measure, i.e. the elimination of plan directives, economic efficiency would undergo a sudden, sharp improvement. Therefore, nothing else need be done but eliminate management through plan directives and everything would be in order. Without going into a deeper analysis of either the one or the other train of thought, for the present, we must conclude that both ideas were illusory. János Kornai's activities were no exception to this either, although there can be no doubt that his highly valuable scientific creative activities helped the development of Hungarian economics and the community of economists in both these periods. It should also be pointed out that he always endeavoured to call attention to the danger of over-valuation of the possibilities in his earlier publications.

There can be no doubt that to determine the realistic value of these earlier concepts is still one of the most important tasks we are facing. One of the important stations in this stage of evaluation is the publication of the *Anti-equilibrium*. In this work Kornai seems to overstep present limits, and now, integrating the body of knowledge, he daringly raises the question of the common limits of bourgeois and socialist economic thinking, criticizes the most fashionable roads of research, and outlines what he considers to be the most expedient line of progress. A distinct advantage to the Hungarian reader of this book is that he receives a comprehensive and deep-reaching analysis of almost all fields of economics in his own language, formulated in a highly readable manner.

The author basically endeavours to elear up two questions. First of all, *he wishes to disprove* the economic teaching of the *general equilibrium theory*, so widely spread throughout the world, and this endeavour is indicated in the title of the book. He writes "the equilibrium theory must be discarded not because it is a 'bourgeois' theory; as a matter of fact, it is not 'bourgeois' but rather politically indifferent. It should be discarded because — owing to the weaknesses of its basic assumptions, concepts and question formulation — it is useless as a real-science theory." (p. 359)* (We will quote Kornai's distinction between the logical-mathematical and real sciences later on.)

Secondly: the author *experiments with laying the foundations for an economic systems theory, for outlining its framework.* He indicates that with the concepts introduced in the book, and with other endeavours, he is experimenting with the creation of an economic real science theory which can be "expected to answer essential questions, to work with precise concepts, and to verify its statements with empirical observations. It would have formal models and an hierarchical theoretical structure, that is one with general laws and also others narrower in scope, yet in harmony with the former". (p. 374) The standard the author sets for himself is high, and for this reason he refers to his book as a semi-finished product: he views it as the combination of a study and a schedule of work. He writes that his goal is to raise some questions he considers important, to outline the system of concepts of a systems theory in economics, to describe some statements or hypotheses, which are by no means strictly verified. He has no finished mathematical models, and does not present mathematically proven theorems. (ibid)

In the major parts of the work the two tasks are not separated. In the first part — the "Starting points" — he discusses existing requirements towards the systems theory, the real sciences. This is the only place where we find a separate chapter evaluating the general equilibrium theory (Chapter 3).

In the second part — "Concepts and Questions" — he endeavours to establish a language which promises to be "suitable for the description, comparison and analysis of economic systems". (p. 35) Clearing up the concepts continuously provides the author with newer and newer possibilities to criticize in increasing detail the unrealistic assumptions of the general equilibrium theory.

The third part is an endeavour at a concrete analysis of the concepts raised earlier. The author gives a description and explanation of the relationship between the market, buyers and the sellers. In this context he introduces the concepts of pressure and suction. It is known that the attention of the general equilibrium theory is primarily directed towards the market and, therefore, trying out the new analytical methods on the "grounds of the vival" seems to be a daring undertaking.

In the fourth part of the work the author, on the one hand, gives a theoretical

* Page numbers refer to the English edition.

evaluation of the experiments which preceded and followed the renaissance of the general equilibrium theory as represented by Arrow and Debreu, and, on the other hand, he takes account of the critical and systems creating activities of those opposed to the general equilibrium theory, calling for a more comprehensive synthesization by the creators of the various formalized and verbal models which deviate from the system of the general equilibrium theory.

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Now let us look at the main concept of the work.

"In the logical-mathematical sciences a theory is a theorem or body of theorems logically deducible from a set of mutually consistent axioms." "In the real sciences a theory is a systematic description of essential interrelations between the variables of reality. That is, only those theorems and propositions (deduced from assumptions not in conflict with reality) which describe the real world more or less accurately, may be considered acceptable." (p. 9)

It is no surprise to anyone that the general equilibrium theory does not satisfy these requirements. The 12 assumptions listed by Kornai are well known and appear in all publications dealing with the equilibrium theory, although they are often hidden, as if they were not of any great importance, and did not sharply limit the validity of the conclusions. Almost all students of economics base themselves on these strict assumptions. In their models they are able to prove equilibrium and the analysis of economic practice which incorrectly synthesises or rigidifies partial truths into dogmas, the author announces its stability as well as the Pareto-optimality of the economic system, in other words, that the equilibrium solution cannot be contrasted with another one which would satisfy at least one consumer more.

However, as the book states a number of times, the economy is not characterized by equilibrium but by disequilibrium, and it is not likely that the special case termed optimum will ever take place. We also know that the stability assumed by the models is not characteristic of the economy either. Its characteristic is change, and the most important practical demand on all economies is not simply changes in the volumes of production and consumption, but first of all, the structural transformation which runs concomitant with this. The first question is barely touched upon by the equilibrium theory, and it practically does not discuss the second one at all.

The problems of the equilibrium theory truly seem unsolvable in the way the solution is generally sought by the outstanding representatives of the theory. They endeavour to relax one or another of the twelve assumptions estranged from reality in the hope that in this way they will be successful in proving that the basic features of the model are valid even with a system of assumptions closer to reality. It is to be feared that Kornai is right in that the equilibrium theory is a mathematical "crystal" which can hardly be improved, or which can only be improved in comparatively few essential points, and that the talent of the economist-mathematicians dealing with it will show poor returns.

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In spite of all that, I am not sure whether the statement of the author is fortunate that the general equilibrium theory is no scientific theory, but only a «mental experiment". Also the author acknowledges that the school has put rational ideas into the centre of economic thought: the highly important ideas of adaptation to consumers' needs and of economy with scarce resources. (p. 49)*

* It must be noted that this rational kernel of the general equilibrium theory was pushed for a long time to the background in the socialist countries. Perhaps this explains the "renaissance" in recent years of this idea.

We may add that the equilibrium theory succeeded in disclosing the conditions, the existence of which enables the economy consisting of separate commodity producers and consumers to answer the optimality criteria formulated by the representatives of this theory.

In this sense it is not justified to challenge the rank of scientific theory as represented by the general equilibrium theory. To use against this a simile of Kornai, it would amount to challenging the scientific character of classical mechanics, stating that it explains but a very special case of movements. In fact, the situation is as if we stated this at a time when the theory valid for a wider scope of movements, the quantum-mechanics, has not yet been created. Kornai may be, of course, excused by the fact that this is a poor simile: in economics and in its most systematically expounded theory, in the general equilibrium theory, the difference between the world of assumptions and reality is no doubt greater than in mechanics, and the parameters of the difference are much less or not at all measurable. Yet, it cannot be regarded as unjustified and much less as unscientific, if the social sciences have their particular ways for getting acquainted with reality. This is unavoidable since here the possibilities of experiment, particularly of mass-scale experiment are missing. Thus, these sciences make efforts to simulate reality with the aid of literary and mathematically formalized models and then generalize the experiences. It is a particular feature of the general equilibrium theory that it promotes scientific knowledge not by examining an average or most frequent typical case, but on the basis of a highly special, individual case, indeed one which does not occur in practice. In my view, however, also such model can offer help in getting known both the general picture of reality and the special case, or even precisely by confronting the abstract model with reality.

In the final analysis: we have to rejoyce at the efforts of Kornai with which he again and again calls attention to the situation, not denied by anyone but frequently cleverly hidden, that the general equilibrium theory cannot be considered as the general model of the economy and particularly not one describing the modern commodity producing economy. Undebatably, it is also important what the author says in this context about the comparison of theory with reality and about the creation of new models serving a better knowledge of reality.

In my opinion, however, all that does not justify challenging that the general equilibrium theory is a scientific tool of getting the economy known with the aid of confronting the reality with the model. From this viewpoint also the attempts at resolving the assumptions of the general equilibrium theory which are foreign to reality may be interpreted as positive ones. Their usefulness consists in showing the effects on the economy of the concavity of production sets, of uncertainty and of other neglected factors.

A few other remarks should be made on the assumptions of the general equilibrium theory which are foreign to reality. One must agree with Kornai that not every one of the twelve assumptions cause equal problems. According to Kornai, the greatest difficulties are caused by assumptions 6, 7 and 8: the convexity of production sets (that is the exclusion of a fundamental feature of modern production, i.e., of increasing returns), profit maximization and the maximization of consumers' utilities. No doubt, increasing returns present an insolvable problem to the general equilibrium theory. But, if problems should be ranked, I would consider similarly grave and disturbing the static and stationary character of the models (Assumption 1.)

I do not challenge that also the maximization of profits and of consumers' utilities (Assumptions 7 and 8) are also inaccurate descriptions of reality, but again, it is not unjust to regard the *homo oeconomicus*, who wants to achieve more and economizes on his means to be an impor-

tant element of economic thinking. I do not argue that it is expedient and even necessary to describe the behaviour of producers and consumers also in another way, but this is not a satisfactory argument to state that this abstraction — which undoubtedly falls farther from concrete reality — should no longer obtain an important role in our researches.

The creative line in János Kornai's book is his experiment at a synthesis of a systems theory in economics. The question which must be answered is the role of the book in the creation of a new systems theory. Can we definitely state that with publication of *Anti-equilibrium* the creation of a real science economic theory consisting of a complex theoretical structure (built up hierarchically) has begun? Or would it be the analysis of economic practice which incorrectly synthetizes or rigidifies partial truths into dogmas, the author announces more correct to state only that, following a scientific movement which can be hoped to lead in its final development to the establishing of scientific truths of a higher value than we possess at present.

I feel that the first opinion would be acceptable if the book, by describing, formalizing and analysing several, or even one important economic phenomenon, were to arrive at important theses and verify them. Furthermore, if the analysis of these partial results would allow us to conclude that new types of scientific theses were about to be born. However, we cannot speak of this yet. Therefore, the second reply seems to be the correct one. We are dealing with a phase in the research of the author when – in the course of preparing for a great task – he is endeavouring to formulate the language of research, and the method of describing the phenomena studied.

Kornai's endeavour was directed at the creation of a language for the description and analysis of economic phenomena, which would be closely adjusted to the conceptual system of cybernetics, mathematical systems theory, and the theory of automation. (Part II.) According to this the economic system consists of organizations (and units forming organizations) operating in time which are related by product flows (real sphere) and information flows (regulation sphere). The operation of the economic system is determined by systems of response functions (p. 45). This means that in his concept the economic system is a special case of the system treated in mathematical systems theory. If the indivisible element of the system is the unit, whose behaviour is described in the response function this means that he treats it as an abstract automation. Therefore, the economic system which consists of a network of interrelated automata is but a compound, abstract automation.

Therefore, Kornai creates the possibility for economic analysis to use the theses elaborated and proved by cybernetics, mathematical systems theory and automation theory not only in partial fields. At the same time, this makes the spread of computer simulation easier. Meanwhile he emphasizes the response functions of the real sphere and the regulation sphere are called upon to express the general laws of the economy, and that the automation theory method of description should only be considered as one of the possible formalizations.

The build-up of the hierarchic system of those participating in economy deserve particular attention: institution, organization, unit. A detailed analysis of the economy is made possible by the clear distinction between the real sphere and the regulation sphere of the economy, by the information structure in the regulation sphere, by the vertical and horizontal spread of information and many other elements.

As regards the control sphere, it presents a problem that the author considers money flows — the whole monetary sphere — only as a special class of information. True, he acknowledges that the flow of money "is an outstandingly important kind of ceding the right of disposal", in a modern economy the real importance of the monetary sphere cannot be considered

as settled with this statement. I believe that the problem will become clear if we mention that the author considers the flow of information to be the direct and indirect reflection of the real sphere. It is, however, clear that the monetary changes are in many cases in much more complex interrelations with the real sphere of the economy. There are many monetary changes the bases of which cannot be found even in the final analysis in the real sphere.

Description of conflicts and compromises in the institutions is a very illustrative one. In describing the decision process concepts such as explored, possible, implementable acceptable and finally, the set of eligible alternatives can be well used in the description of economic processes as testified by the practical experience of all of us.

The introduction of the concept of aspiration level in determining the goals of the economic units should be emphasized as one making the qualitative and quantitative description of economic phenomena easier. The aspirations of buyer and seller, and the intensity attached to them — as the author concludes — are not completely foreign to the profit maximization preference system of the producer and the utility maximization preference system of the consumer. One unquestionable advantage of the concepts used by Kornai is that they are suitable for describing the many-sided and diversified phenomena of life. He also distinguishes the aspirations of organizations, and separates the extensive side of aspiration — which refers to level — from the intensive one, which is its subjective importance. In the meantime, he does not require consistency (freedom from contradiction) from the various aspirations. Finally, with regard to the producer enterprises — in accordance with experience — he does not consider profits to be the sole expression of aspiration.

It should be clear from the above that Kornai proposes a richer language than the general equilibrium theory for the description of the aims of economic units and of consumers. But there arise also losses. On the one hand, with the aspiration level and its intensity we describe something but tell nothing about its reasons. On the other hand, while aiming at a detailed description of enterprises' and consumers' aspirations we may loose the possibility of scientific knowledge given by higher abstraction. In addition, attention must be made to the fact that — in my opinion, which differs from that of Kornai — the essential characteristic of the general equilibrium theory is not that in this theory the entrepreneurs maximize profits and the consumers' utility. To prove the theorems, only a determined and consistent preference ordering, that is, unequivocal criteria for choice between actions are needed. Even if we meet with minor or major inconsistencies in practice, if preferences of individuals and organizations deviate from each other — in my opinion — this does not make the abstraction of consistent preference ordering unjustified, since consumers make efforts to decide on the basis of consistent preferences, it is only because of coercion due to lack of information that they "hesitate".

Of course, I do not challenge that it is necessary to analyse what are the preferences of enterprises and of individuals, to what extent they are consistent, further what effect is exerted by the concrete preferences on the results of management. But the justification of one scientific survey does not make the other one unjustified. As in many other cases, the alternative is not "yes or no" but "also". In the present state of scientific activities what should be really criticized is rather that insufficient care is taken to assess real empirical preferences and show their effects, while the abstract theoretical investigations relying on the usual maximization of consumers' utility and of profits are proliferating.

Also the problem must be raised whether it is justified to describe the efforts of the decision-makers in the form of aspiration level and discard the form of function to be maximized. True, frequently the expectation of either consumers of produc-

ers can be known in the former way, at other times however, — and this is at least as general — reality is correctly described by maximization efforts. Thus, I see no sense in pushing either form into the fore at the expense of the other. I believe, however, that there are two different economic problems looming behind the problem. There are cases when it is simply easier to describe the expectations of enterprises and individuals with the aid of concrete levels than with some vector to be maximized. In this case there is comfort behind the name of the expectation level. There are, however, cases when the expectation can be realized indeed in a discrete manner only. Thus, e.g., at least 10 million forints must be accumulated in order to be able to build a new plant, or if we need a new flat this can be attained only if we have 100 000 forints. It is not incorrect even in this case to characterize the intention with maximization, but it would be a mistake to forget that maximization takes place not over a continuous convex set.

The second part also contains useful conclusions in distinguishing between the vegetative (autonomous) and higher order functions of the economies, and in parallel with this, he separates standard and fundamental decision. Vegetative function is based on the diligence habits, routine, and identification with their professions of the people and bodies — organizations and institutions — within the system.*

Finally, adaptation should be mentioned from among the system of concepts he introduces, where the adaptive features of the organizations, the slow or sudden realization of customary environmental change, the preparation of the organizations for environmental change, their sensitivity and the degree and time of reaction to change are mentioned by the book.

In the analysis of economic processes — as already mentioned — the author is involved most deeply in the description of the market, in the third part of the book.** The systems theory description of the processes taking place on the market starts with the process of contracting. Here the author reviews the customary decision algorythms of buyers and sellers in economic management games. In the meantime, the book makes successful use of the concepts introduced in the Second Part (for example, implementable alternatives, those believed to be implementable, acceptable, and eligible alternatives as well as the concepts of aspiration and intensity). He introduces the special concept of market equilibrium with clearer and more measurable concepts than the customary "supply and demand", in that it reaches this position when the aspiration levels of buyer and seller are identical. However, this situation is not characteristic of the market. The general condition of the market is disequilibrium with either pressure or suction.

The characteristics of pressure are the following:

— sellers queue up for buyers;

— the aspiration tension of the seller is positive, the seller would like to sell more than the actual turnover;

— fulfilment of buyer's aspiration is complete, in other words, he does not want to buy more;

— market power relations are favourable for the buyer, in other words, the buyer's aspiration is smaller than the seller's.

The opposite of this phenomenon is suction. Pressure corresponds to the condition

* One type of such a vegetative system of regulation is the regulation model based on stock indications (signals) elaborated by the author and Béla Martos. (See J. Kornai — B. Martos: Gazdasági rendszerek vegetatív működése. (Vegetative operation of economic systems. Szigma. 1971. No. 1—2.)

** Cf.: J. Kornai: Pressure and suction on the market. Bloomington, 1971. Indiana University. 42 p. (International Development Research Center Working Papers, No. 7.) Mimeographed.

which literature refers to as "buyers' market" and suction is what is termed "sellers' market". If over some longer period of time pressure (or suction) is characteristic of the average of products then the author speaks of general pressure (or suction). Following this he shows what representatives of the general equilibrium theory emphasize in practice — but what they neglect in their theory, that social progress, quantitative and qualitative development is faster in the case of pressure, to use other terminology: in the case of a buyers' market.

The intention to be felt behind these ideas cannot be sufficiently approved. With his theoretical findings the author supports the economic policy aiming at the liquidation of the "shortage economy", the formation of modest surplus capacities, a policy that does not yet hinder economic organizations at intensive development and improvement of quality.

It is a considerable achievement that the apparatus presented in the chapters on pressure and suction is indeed suited to measure the parameters of the market situation which have hitherto not been satisfactorily clarified conceptually.

After this, the course of the further development of market investigations, attention should be concentrated on the two questions left without reply, namely, what are the factors which create a buyers' market or pressure which can now be characterized already with parameters and what is the pressure truly necessary for a healthy economic growth. It should be obvious that exaggerated pressure means economic loss.

In this review analyses of economic systems theory are fragmentary. This is perhaps a result of the fact that in this respect the book itself resembles a work in which a final picture has not yet emerged from the various mosaics. This, however, in my opinion, does not reduce the importance of the undertaking. The author too convinces the reader that we know very little about the practical systems of economy, and that the possibilities for a deeper understanding are open to us but, in order to exploit them, we must move along new roads of research. Kornai has challenged his colleagues in the most diverse fields of science to become acquainted with economic reality, and he outlines roads and means for becoming acquainted with reality which, in his opinion, should produce important research achievements. It is almost natural, that when someone takes his first uncertain steps in search of new roads, he cannot attain a uniform, proportionately shaded global picture.

Under circumstances like this, his succint and clear wording should be particularly recognized. Complicated questions are presented to the reader in a simple and readable form, enabling him to become acquainted with the opinions of the economists of this era on a series of issues.

We hope that Kornai's experiment to provide incentives for new research and his appeal for the synthesization of new types of research results will produce a favourable echo among both eastern and western economists. The further development and necessary synthesis of the new types of examinations reviewed in the book will have to give a reply to the question debated by many, and no doubt emerging also among the readers of the book, and that is the extent to which the social sciences are capable of attaining the exactness of the natural sciences, both as regards the general validity of their theoretical theses, and the measurement of the differences between the behaviour of the theoretical models and real processes.

M. TARDOS

НОВОЖИЛОВ В. В.: *Проблемы измерения затрат и результатов при оптимальном планировании.* (Questions of measuring input and results in optimum planning.) Москва, 1967. Экономика. 376 стр.

The recently deceased Professor Novozhilov was one of the leading personalities

of the Soviet mathematical-economic school and all of Soviet economics, as testified also by the Lenin prize awarded to him. Through his book which had been published recently also in Hungarian we can gain insight into the ideas of one of the important and fertile schools of Soviet economics.

In Novozhilov's opinion the elaboration of suitable methods for measuring inputs and yields is a decisive issue. A correct solution of this problem is the prerequisite for the optimal planning and management of the socialist economy. Starting from this basic position, the author does not rest satisfied with proposing methods for planning production and prices, for the selection of investment variants, for the determination of optimum operation time, etc. but he also endeavours to draw the consequences of his concept, for economic management and for the theory of value. The striving to couple political economy with mathematical economy is unquestionably an outstanding merit of the work, irrespectively of the extent to which his various conclusions have proved to be correct or debatable. One of the negative features of the development of economics is that, although this undertaking is not unique, nevertheless must be welcomed as a rarity, in contrast with the majority of works on similar subjects. Unfortunately, students of these two fields, for the most part, only formally take note of one another's existence if at all (apart from those who would banish the other school from economics).

Following the first two chapters which expose the problem, Novozhilov explains in detail the methods of measuring input and of minimization, applying them to all levels of economic life. He traces back the measurement of inputs, through the general law of labour savings, to the solution of certain extreme value-problem. Novozhilov introduces two basic concepts for solving the problem to select the variant ensuring minimum total input: differential input and inverse-relation input. The first expresses the fact that production inputs must be treated as marginal inputs for increasing production, and the second that — as a result of limited resources and substitution possibilities — increasing the inputs of one product withdraws resources from the production of other products (this approximately corresponds to the concept of opportunity costs). In the conditional extreme value problem we unavoidably find ourselves facing a series of limiting conditions "with regard to resources. To these correspond various norms (of the Lagrange-Khantorovich type) in other words, a multitude of different efficiency normatives". (pp. 259 - 260). The efficiency normatives must be elaborated and applied in planning and price formation in the form of differential rent to natural resources, as uniform investment efficiency to investments (in the case of credit financing as interest) and in the form of contribution for capital engaged to productive assets. Minimization of the input for a final product of given volume and composition, and selection of the optimum combination of investments and existing productive assets must be selected with the aid of these normatives. Novozhilov discusses in detail the application of efficiency normatives under the changing conditions of technical progress and he studies the interrelations between optimum accumulation and the growth rate. In connection with the efficiency normatives of productive assets, he devotes a separate chapter to determining the optimum time of use of work tools, and the questions of physical deterioration and obsolescence. In the chapter dealing with the dual problem, Novozhilov, while recognizing the importance of consumers' valuation, primarily emphasizes that the difficulties in determining the welfare function make it illusory to try to find a solution by starting from the maximization of the latter, which would at the same time contradict the primacy of production.

It is perhaps the most interesting chapter of the volume where the author describes

the mathematic model of price formation, relating it to the Marxian law of value and the optimum control and management of the socialist economy. Relying on the socially necessary labour input Novozhilov draws the conclusion that in the case of deviating conditions for performing work, the value becomes modified and prices gravitate towards the socially necessary marginal inputs. Marx studied the emergence of the modified form of value of the production price only in the capitalist economy. But he did not limit to competition the reason why it came into existence, but concluded that the production price has a material basis, and that was the increase in the relative weight of single (non-recurring) inputs intended to produce means of production. This continues to exist in socialism. The limited nature of resources is expressed in price formation by the determining role of the least efficient investments, for not only are natural resources limited, but so is accumulation. According to the author a reference to justify this concept can be found in Marx' own works, regarding the marginal nature of the general rate of profits. "The production price reflects the social labour inputs related to the value of a given product in exactly the same way as the value-proportionate price of the product; both are partial differentials of the value of the total product with respect to the given product, which, however, were formed under different (limiting) conditions (constraints). The value-proportionate price is a partial differential which is created when the limits are set by demand alone, while the production price is a partial differential ratio which is formed when not only are demands limited but so are certain resources (accumulation, natural resources)." (p. 335). Novozhilov defines the correlation in a mathematical form as the general formula of the law of value. Optimum control and management of the socialist economy is only possible if the optimization of plans is connected with the optimizations of price formation. The prices of the optimum plan express the socially necessary labour inputs and the requirements of the law of value most precisely. The control and management system of the socialist economy is built on the unity of independent accounting and the plan. The law of value is the feed-back regulator of the economy, which must be used in a planned manner. The law of value and the law of planned development are equally objective economic laws which cannot be restricted and can operate fully only if they operate together. "This means that only through a planned realization of the assertion of the law of value can it be free of accidental effects, and the most complete purposefulness and proportionality of national economic development can be attained only if the prices in the plan are in accordance with the law of value." (p. 322). According to Novozhilov this means that the law of value either helps planning and then it is a subordinate, supplementary regulator, or it works against planning, and only then does it appear as an autonomous regulator in a planned economy.

Novozhilov's book is a monography summarizing the results of articles he published earlier. This provided the author the opportunity to argue with both domestic and western critics of these articles. He deals in detail with the charges against his concepts, accusing him of reconciling Marxism with marginalism. In his opinion the charges are unfounded, for those making them only see the identity of the formal mathematical tools used in the models, but do not take note of the substantial differences in the basic assumptions. A fundamental error in the models of the general equilibrium theory is that they neglect the law of labour savings and, for this reason, they consider work only as a type of inputs. "Work is limited in a different, higher sense than investments or natural resources: people wish to reduce labour inputs to a minimum, while they endeavour to make maximum use of the conditions of performing work." (p. 209)

For this reason labour inputs are the objective function to be minimized in a correctly elaborated model while material resources are among the constraints.

One of the merits of Novozhilov's work is that many of his conclusions spur on the reader to further thinking or challenge him to debate. However, occasionally he tends to simplify complex questions in an almost naive manner. An example of this is his statement: on the basis of optimum prices " . . . it becomes comparatively easy to create an incentive system in which the interests of each individual enterprise and each individual worker coincide with the interests of society". (p. 43) In my opinion the author deals disproportionately little with the problems of result maximization. No matter how justified the criticism of the function applicable there may be, it would nevertheless, deprive planning of an important task if attention were to be one-sidedly focussed on the allocation problem, assuming the most important matter to be decided, the production pattern, to be given. Many others of Novozhilov's conclusions can be debated, but this would touch on interrelated concepts (equilibrium theory, theory of value) rather than on individual comments, and would therefore go beyond the scope of a review.

However, the source of critical comments is unquestionably one of the merits of the work: Novozhilov dares and is able to take a stand on topical, exciting and difficult questions. This theoretical valiance coupled with consistency and high-level scientific thinking makes Novozhilov's book one of the outstanding works of economic literature by international standards which may justly claim the interest of economists.*

A. MADARÁSZ

HEADY, E. O. (Ed.): *Economic models and quantitative methods for decisions and planning in agriculture*. Ames, 1971. Iowa State University Press. 518 p.

The volume contains the papers presented at an East–West Seminar held in Hungary in 1968, and the remarks made by the discussion openers.

Following the agenda of the seminar, the materials are grouped into six parts. For a short information, only the titles of the parts and the names of the authors of papers will be listed. The list of subjects and names reveals a reasonable division of labour between participants belonging to different social systems.

Part I. Foundation and background of planning models.

Authors: E. O. Heady (USA), C. B. Baker (USA), G. Tintner (USA), V. A. Edemsky—V. N. Aidin (USSR).

Part II. Problems and potantials at the micro level.

Authors: U. Renborg (Sweden), E. M. Reisch (GFR), G. Weinschenk (GFR), R. G. Kravchenko (USSR).

Part III. Regional models of planning and development.

Authors: E. R. Swanson (USA), B. Oury (France), H. H. Hall—E. O. Heady (USA), V. A. Mash—V. I. Kiselev (USSR), V. V. Miloserdov (USSR).

Part IV. Experiments and experiences with national planning models in agriculture.

Authors: J. Havlicek—S. Hrabe (Czechoslovakia), J. C. Tirel (France), W. Henrichsmeyer (GFR), J. Hoós (Hungary), E. O. Heady—H. H. Hall (USA), C. B. Baker—E. R. Swanson (USA).

Part V. Formulation of national models.

Authors: K. Kazareczki—J. Sebestyén (Hungary), W. Herer—K. Porwit (Poland), J. C. Tirel (France).

Part VI. Gaps between plans and realization and practical possibilities for improvement in performance.

* A paper on Novozhilov as scientist and teacher will be published in the next number. *Ed. note.*

Authors: G. Kovács (Hungary), F. Reisegg (Norway), V. Eremiás (Czechoslovakia), J. de Veer (Netherlands).

Most of the authors covered a number of problems, thus there was a considerable overlapping in the papers although not in the discussion. In order to eliminate overlapping in the review, a few focal points were selected for discussion by the reviewer, to demonstrate some characteristics of the rich material.

1. Theoretical problems were not in the foreground at this seminar. However. the theory of the firm in relation to planning was the starting point of Renborg's paper. The author showed that the traditional theory of the firm did not offer a suitable framework to deal with planning decisions.

Starting from a behavioural theory of the firm, the farmer as a manager-planner was seen to behave in a rational way when he specified a vector of goals with aspiration levels attached and when he appeared as a satisficer rather than a maximizer. As to this last aspect, the managers of the large-scale farms in Socialist countries were regarded to be maximizers (see Kravchenko).

In connection with planning decisions in a dynamic environment, the need for a dynamic theory of the Pareto optimum was stated by Tweeten in his opening discussion on Tintner.

2. Risk and uncertainty were treated by a number of authors. Renborg assumed the planner to make decisions over a relevant planning horizon by acting according to "bounded rationality".

Weinschenk showed that, in practice, risk and uncertainty would be treated in the same way: if the planner cannot determine objective probability distributions for risky situations, he has to rely on subjective probabilities.

Procedures to deal with risk and uncertainty were presented by Tintner, Tweeten, Tirel, Weinschenk and Reisch. The latter pointed out as a weakness of game theory in connection with planning decisions that the existence of several decision criteria raised the necessity of a rule according to which the planner could select one of them.

3. The problem of data had been touched upon by most of the authors and discussion openers. Supposing they were available, the paper by Edemsky and Aidin showed the possibilities of algorithmization by setting up systems of models starting from a given set of data.

4. A hierarchic set of farm models according to their time span had been alluded to by Kravchenko. Such a relation can be seen in the case of the two-stage model of joint development of agriculture and food processing industry as presented by Mash and Kiselev.

Inter-farm and farm — to — region relationships were discussed by Swanson in connection with his regional normative supply model.

Regional–national relations are characteristic of the planning models reported on by Hall–Heady, Miloserdov, Kazareczki – Sebestyén, Henrichsmeyer, Baker – Swanson and Tirel. Some of them are based on different decomposition procedures.

Here might be mentioned that the problem of indivisibilities had been touched upon several times (more extensively discussed by Weinschenk) but mainly in a material-technical sense. However, another form of indivisibility also appears in this book: the indivisibility of a policy or strategy (clearly treated but without using the expression by Weinschenk and explicitly emphasized by Kazareczki – Sebestyén).

5. The problems of positive and normative models of supply analysis were discussed by Oury and Tirel, specific normative types of them by Heady–Hall, Swanson, Miloserdov and Baker Swanson. Besides regression models, recursive programming was regarded as an important tool of the planner, however, it was also criticized, particularly in connection with the determination of the flexibility constraints.

6. The reports about the experience with farm, regional and national models showed to what extent new methods pene-

trated into the managerial and government decision-making procedure. However, the reports of Part VI on gaps between plans and realization may balance out eventual euphory over the achievements, particularly as far as model building in itself is concerned.

This volume contains only the papers of the main authors and of the discussion openers. Regrettably, the discussion on the floor could not be included, although it would also have been worth of reading.

Before concluding, it should be mentioned that the seminar grew out of the 1964—65 discussion about the main theme of the 1967 Conference of the International Association of Agricultural Economists. At that time, planning in agriculture had still not been considered by many people to be a topic deserving a keen interest irrespective of social system. However, a few years brought changes in views, so that planning of agriculture had been selected to be the main theme of the 1970 Conference of the IAAE held in Minsk, and this subject was discussed very seriously by participants from 59 countries representing different social systems and stages of development. The seminar reported on by this volume may also be regarded as one of the numerous triggers in the transformation process of views on agricultural planning.

J. SEBESTYÉN

ANNOUNCEMENT

The International Economic Association, with the support of the Ford Foundation, is organizing a *Workshop in Mathematical Economics*, to be held from July 8 to August 4, 1973, in Schloss Rheda (University of Bielefeld), Western Germany. Under the direction of Professor C. C. von Weizsäcker, the workshop will be exclusively in English for a maximum of 25 European scholars and lecturers, preferably under 30 years of age.

Applications, with curriculum vitae, academic training and background in spoken English and mathematics, and a note on research activities of the applicant, should be addressed to Professor C. C. von Weizsäcker, Institut für Mathematische Wirtschaftsforschung, Universität Bielefeld, 4840 Rheda-Schloss, Germany. Information may also be obtained from the IEA Secretariat, 54 Boulevard Raspail, Paris 6ème (President: Fritz Machlup; Secretary General: Luc Fauvel).

Applications should if possible be submitted before the end of 1972.

BOOKS RECEIVED*

Az építőipari árak alakulása. (Formation of prices in the building industry.) Budapest, 1972. Statisztikai Kiadó.

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* We acknowledge the receipt of the enlisted books. No obligation to review them is involved.

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Dr. György SZAKOLCZAI, see Vol. 8, No. 2—3.

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CEPAL. *México. Notas para el estudio económico de América Latina 1971.*

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Emanuel de Kadt. (Editor) *Patterns of Foreign Influence in the Caribbean.* (FTD)
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