AN ECONOMIC SYSTEMS THEORY APPROACH TO SOCIALIST ECONOMIES : A CASE STUDY OF HUNGARY

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C O N T E N T S

PREFACE

This study attempts to describe the functioning of a socialist economy in terms of an economic systems theory approach. The case of post reform Hungary has been taken because the post 1968 Hungarian experience presents a unique experiment in economic management and control where central planning is chiefly macro economic with the extensive use of the financial mechanism to exercise central control over enterprises.

The focus of the study consists in viewing economic decision-making at the three different levels of the centre, ministry and enterprise in terms of a multiple system of vertical and horizontal information flows. Information flows relating to the availability of real and financial resources, technology etc. determine the set of implementable decision alternatives whilst information flows relating to preferences and priorities both central and consumer determine acceptable decision alternatives. The actual decisions taken are viewed as a result of the interaction of these two sets of decision alternatives. The scope of the study is confined wholly to industry and the agricultural sector which poses a set of problems vastly different from industry, has been neglected.

In Chapter I, a cursory glance at the existant well-known views of both advocates of centralized and decentralized systems of economic planning is made. Recognizing the need for both plan and market in a socialist economy and the 1968 Reforms in Hungary, the theoretical framework of a systems

theory approach is then set out to analyze the New Economic Mechanism (NEM) of Hungary.

Chapter II deals with the problems of planning in the pre reform Hungarian system of centralized decision-making and outlines the features of the 1968 Economic Reforms.

Chapter III describes the functioning of the economic system under NEM in terms of the Economic Systems Theory Approach. For the sake of simplification the scope has been confined to the study of investment decisions.

Chapter IV includes an evaluation of NEM in terms of observed data on major economic indicators and attempts to throw up a few problems entailed in the decentralized system of planning and management in Hungary.

The analysis suffers from the limitations of any study based wholly on secondary sources. Language problems have prevented the use of primary sources. Non-availability of the relevant data in India has also posed problems. Further I write as an outsider and cannot convey as good an evaluation of the events as research workers inside Hungary could.

Finally, this study could not have been undertaken without the help of my supervisor Dr Arvind Vyas who inspired the work in the first place. I am grateful to Mr Jayashekar, Dr Prabhat Patnaik and Dr Amit Bhaduri for helpful discussions. My sincere thanks to the officials of the Hungarian Embassy for their assistance in procuring important data.

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Chapter I

ECONOMIC PLANNING: CENTRALIZATION VERSUS DECENTRALIZATION

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I

Review of Literature

The question of the functioning of a socialist economy has evoked a lively debate which dates back to the beginning of this century. The controversy began with the publication of E. Barone's famous article "The Ministry of Production in the Collectivist State" in 1908.[1] Examining the question of whether centralized decision-making can replace the free market Barone concludes that such a solution although theoretically possible would counter practical difficulties because of the enormous task of collecting data and the frequent change of technological co-efficients.

By a mathematical demonstration using simultaneous equations Barone following suggestions of Pareto was the first to demonstrate that it was possible for a socialist economy to make a rational allocation of resources. He proved that in principle the accounting prices of a socialist economy would be as economically significant as the market prices of a competitive economy. The equations of economic equilibrium were to be solved by a trial and error process. Though Barone regarded such a solution as possible he failed to indicate how it would be achieved.

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1 English Translation in F. A. Hayek, ed., Collectivist Economic Planning (London: Routledge, 1935), pp.245-90.

In a critique of socialism framed by L. Von Mises it is argued that economic calculation in a socialist economy is impossible.[2] Under state ownership of the factors of production there could be no market for the factors "because no production good will ever becomes the object of exchange it will be impossible to determine its monetary value". Mises alleged that without such a market no economic meaning could be attached to costs and this would make rational economic calculation impossible.[3] No criteria would be available for distinguishing an economic from an uneconomic method of producing a particular commodity or determining the optimum scale of production.

F. A. Hayek demonstrated that Mises's analysis revealed the practical rather than the theoretical inability of socialism to develop a rational system. The central planning body could obtain the optimum use of means of production only on the condition that it behaved consciously, ex ante and analogously to a perfect market mechanism by taking into account all the mutual interrelationships in an economy and solving a system composed of hundreds of thousands of equations with thousands of unknowns.

Oskar Lange in his well known work countered the Von Mises objection "Professor Mises seems to have confused prices in the narrower sense, i.e. the exchange ratios of commodities

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2 Ibid., pp. 87-130.

3 Ibid., p. 90.

on a market with prices in the wider sense of terms on which alternatives are offered."[4] It is only in the latter sense that prices are indispensable for the allocation of resources and on the basis of the technical possibilities of transformation of one commodity into another they are also given in a socialist economy.[5] In reply to the Von Mises challenge the main solutions offered were the competitive solution of Professor H. D. Dickinson and the quasi market or accounting price solution of Lange both advocating decentralization of the economy. In Dickinson's model a market for capital existed and the decisions were based on the competitively determined market prices. Lange's model of socialism describes an economic system where prices are regulated by a central office in accordance with the Welras "tatonnement" rules,[6] it raises prices in the case of shortages and lowers them in the case of surpluses. The central planning office fixes the rate of accumulation and the principles for the distribution of income. It aims at accumulating enough to make the marginal net productivity of capital zero and the decision regarding the rate of accumulation reflects how the Central Planning Board evalutes the optimum time shape of the income stream. The rate of interest is fixed so as to equalise the demand

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4 Oskar Lange, On the Economic Theory of Socialism (University of Minnesota, 1938), p. 61.

5 Ibid., p. 61.

6 Walras, L., Elements of Pure Economics (London: George Allen, 1954), p. 170.

and supply of capital and is used for allocating capital to different branches and enterprises. There is freedom of choice in consumption and freedom of choice of occupation so that there is a genuine market for consumers goods and for the services of labour.

The consumer goods market and labour markets are competitive ones. For allocation of factors the prices used are calculated by the central planning office. Such parametric prices form the basis of decision making at the enterprise level where managers seek to minimise average cost per unit of output through equalizing the marginal cost with the price. Equilibrium prices are obtained through a process of trial and error where production is adjusted either to a specific scale of preferences set by the central planners or to consumer preference scales.

The extreme decentralization entailed in Lange's model differs from the market only in that it prescribes the rate of accumulation and implements the principles of income distribution. In all its other functions in accordance with the rules established for managers it merely replaces the perfectly competitive market.

The competitive solution clearly reveals the baselessness of the assertions of Mises, Hayek, Robbins, etc. that rational economic calculation under socialism was impossible. However, the competitive solution has been challenged by authors as Hayek who questions the possibility of organizing quasi

competitive conditions without private ownership. Hayek identifies problems as the difficulty of separating independent productive units where there are strong central preferences and the question of incentives for lowering costs of production.

Another set of criticisms hinges on the question of how far it is possible for the central planning authority to fulfil the role of the market through speedy adjustment to changed conditions.

As opposed to the competitive solution Western Marxist economists as M. Dobb,[7] Paul Sweezy,[8] Paul Baran[9] and Charles Bettetheim based their positions on the planned socialist economy as it emerged during the inter war years in the Soviet Union.

Dobb's criticism of the competitive solution was based on the conviction that a system which he considered a mere imitation of capitalism on the basis of the social ownership of the means of production could not demonstrate the superiority of the planned socialist economy. The system would inevitably lead to a conflict between the ideal allocation of factors and transformation of the socio-economic foundations of output and distribution of national income. It would be impossible

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7 M. Dobb, On Economic Theory and Socialism (London: Routledge and Kegan Paul Ltd., 1955); see also M. Dobb, Soviet Economic Development Since 1917 (London: Routledge & Kegan Paul Ltd., 1948).

8 P. Sweezy, Socialism: Economic Handbook Series (New York, 1949).

9 P. Baran, "Planning Under Socialism", in Bernard Haley, ed., A Survey of Contemporary Economics, vol. 2 (Richard D. Irwin, Inc. Illinois, 1952), pp. 355-403.

to establish simultaneously the investment rate and use any equilibrium interest rate to reduce the demand for investment funds to desired levels and to allocate funds among users. The methods which could be used for balancing the demand and supply of investment funds are complicated and not free from error and this leads Dobb to conclude in favour of allocation of funds directly through the central authority. Dobb argues further against decentralization and stresses that individual enterprises are unable to take into account society's preferences or make an adequate allowance for the time factor considering alternative possible investment decisions. Dobb favours centralization of decision making to ensure coordinated calculations for the whole complex of investments keeping in view a long term perspective.

Dobb argues that the justification for a decentralized decision making process is based on the premise that a centrally planned economy cannot make an efficient and rational choice from amongst the vast number of alternatives available. This however rests on the assumption of a continuous function entailed in the classical theory of equilibrium. In reality discontinuities as the appearance of bottlenecks and the relative stability of technical coefficients of production often reduce the number of alternatives available to the decision makers. They thus face a small number of major problems and keeping the interest of the entire economy in view, a rational decision can be taken.

On reflection it is easy to detect flaws in the arguments of the proponents of decentralization and the competitive model (Mises and Hayek). It is difficult to conceive of practical solutions from Hayek's analysis of a competitive model. The market or quasi market process of achieving equilibrium by trial and error has limited application especially for investment. Its adoption would eliminate the possibility of determining the effectiveness of investment from a social point of view, of a high concentration of investment outlays in key sectors and of direct coordination of decisions - the central features of a planned socialist economy.

On the other hand there are a number of inherent weaknesses in Dobb's analysis. He neglects the problems of decision-making and the problems of incentives and the efficiency of enterprises from society's point of view. Such issues acquire an important role at a certain stage in the development of the economy when further growth can no longer be achieved extensively through the use of additional resources and their concentration in key industries through centralized planning. In the intensive stage of growth the emphasis is on the more efficient use of existant resources and this in turn requires some measure of decentralization. Decentralization would help the adaptation of the supply structure to the structure of demand and the choice of productive techniques used to satisfy the desired supply structure at the lowest cost.

Associated with a highly centralized model are a number

of negative features which impair the efficiency of the system.

1. A centralized economic system could help secure a rapid purely quantitative growth of production but at the expense of a lag in the qualitative and rational development of production as a whole. In the long run growth is fettered by the disproportions arising in the production structure under the system of plan indicators emphasizing maximum growth of production.

2. As the economy progresses towards higher stages of economic development it becomes increasingly complex, central decisions including material balances have to become more and more detailed and as a consequence there is a decline in efficiency of both current decisions and basic macro decisions.

3. An inherent feature of the centralized model is inelasticity of production mainly in the adaptation of the assortment output to needs in the spheres of production and consumption. The logic of the centralized model excludes possible adjustments through direct horizontal links between the supplier and the purchaser. This results in shortages of of some products and a glut of others and consequently in a waste of resources.

4. Crucial investment decisions made under excessive centralization often turn out irrational in the absence of an adequate system of prices. It is difficult to conceive of a rational price structure for the means of production if this is based wholly on a central analysis of ratios of substitution.

5. The system of handing down compulsory indices to enterprises hinders the most rational allocation of resources since the centre cannot reckon with the local endowments and requirements of the enterprises. The indices restrict the scope of decisions of enterprise management as also their sense of initiative and responsibility.

6. Excessive centralization leads to a neglect of technical progress in methods of production and in product refinement within the enterprises and branches of production. The general central indicators cannot be a substitute for creative research, developmental, constructive and technical activity. The system of efficiency standards and incentives do not favour technical innovation which adversely affect the fulfilment of current output targets.

7. Excessive centralization leads to bureaucratization of the state and economic apparatus leading to all kinds of unfavourable economic and socio-political results.

The many negative features of centralized planning have led to the evolution of a school of thought which can be summarized as follows: The market mechanism should be used for ensuring a rational allocation of resources and a rational price structure which in the past centralized economic planning has been unable to achieve. Centralized economic planning has not proved sufficiently rational and should be curtailed within limited bounds or abandoned totally. Advocates of this school of thought consider the situation substantially unaltered even with the introduction of mathematical methods which have been

unable to alter the negative features of centralized planning. The freedom of choice in consumption and freedom of choice of occupation that exists even in a centrally planned economy suggests that centralization cannot be fully achieved in its extreme form.

The development of modern computing techniques as well as mathematical tools of analysis such as linear programming have undoubtedly enriched planning methods and extended the sphere of decisions where the application of mathematical models gives rise to strictly rational exact planning. Even so it would be naively optimistic to believe that mathematical programming could sustain a highly centralized system of economic administration with the central planning of partial economic processes down to the most minute detail and central fixation of all prices. Immense efforts would be required in the mere construction and solution of an equation system enveloping only several hundred product aggregates and one or two technological variants to each. Even in a small country like Hungary price adjustment would involve fixing the prices of several hundred thousand products by the Price Control Board. The number of plan figures and indices set by the National Planning Board and the economic ministries in the course of drawing up a Five Year Plan runs to seven digits. This refers only to a mass of figures handled at one particular date. Actually the economy is in a state of continuous movement and decisions will have to be made continually as external conditions change. Thus it would be unrealistic to visualize a situation where every decision

would be 'mathematized' in the near future.

On the other hand certain basic features of a socialist economy makes it impossible to visualize a situation where the market mechanism in its pure form could replace centralized planning. The socialist economy provides for a rapid growth rate together with full employment and high capacity utilization. The application of administrative measures in moderation becomes desirable in the absence of a buyers market which serves to secure the efficient functioning of an economic system through encouraging a fuller and more rational use of resources and technical progress by enterprises.

A centralized socialist system enables the concentration of the available resources and specialization of production in line with the dictates of rationality. Scarce resources can be allocated to key industries required to form a strong base for the future development of the economy. If major structural changes in the economic structure are to be brought about, this would lead to inevitable strains such as painful bottlenecks and purely economic measures would prove ineffective under such circumstances. Here planning orders expressed in physical terms would be more effective in securing the efficient functioning of the economic system. The socialist economic system makes full use of productive capacity and is able to tap the available economic resources. The planned distribution of labour on a social scale entailed in a model of centralized planning eliminates competition between enterprises and branches of production - a typical feature of capitalism.

Overall production must develop within the structure and proportionally to the basic direction of trends in demand both on the domestic and on foreign markets, to the demand for consumer goods and for means of production. However, no individual enterprise can know all the basic prerequisites for growth in production nor can it make a survey of the possibilities of development of other branches of production, the general social possibilities for accumulation, the overall growth in income of the population, changes in the structure of demand etc. If the lower bodies were to decide entirely by themselves on the trend of production there would be anarchy because each one would produce without any previous knowledge of the overall long term trends in demand and the necessary development of production.

It is clear from the above discussion that a socialist economy cannot dispense with either planning or the market mechanism. The employment of the market mechanism in a socialist economy refers to a situation in which money commodity forms are a basic active tool of resource allocation. At the same time it is misleading to regard the ideal situation as consisting of a convex combination of the two with 50 per cent of market mechanism and 50 per cent of planning both in half developed, half disintegrated forms. It is important that both function in their fully developed forms. The Hungarian economist J. Kornai provides an analogy with the human nervous system, "In the economic organisation it is primarily the market that will perform the role of the autonomous nervous system

whereas planning performs that of the central nervous system. Neither can replace the other and it must be endeavoured to keep both intact and in working order.[10]

The aim is to achieve the advantages of decentralization especially greater efficiency and more balanced more soundly based growth while at the same time retaining central control over certain important variables. Once the market mechanism is introduced planned allocation is implemented by influencing the decisions of autonomous economic units in an indirect way by providing alternatives of choice under conditions engendered by the more general planning decisions.

In an efficiently functioning socialist economy consumer preferences will assert themselves over a wide sphere of decisions. In this sphere the market would prevail but the prevalence of consumer preferences is not unlimited nor is it desirable to be so. Economic decisions of basic importance as long term investment plans must be made centrally so that the long term interests and the future of the economy can be safeguarded. Moreover the complex of individual and isolated entrepreneurial decisions made on the basis of the momentary market situation and of momentarily valid prices cannot result in a reliable resolution. The decisions based on the survey of the national economy as a whole and on the simultaneous consideration of the development of all sectors will be much

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10 J. Kornai, Mathematical Planning of Structural Decisions (North Holland Publishing Company, Amsterdom, 1967), p. 379.

more reliable. The economic calculus on which the central decisions are based is of a macro economic nature, i.e. the alternatives are considered from the point of view of the national economy as a whole and not from the point of view of particular sectors, branches and enterprises.

In a free market economy it is the capital market that functions most imperfectly with the highest degree of friction and the greatest amount of false information. Thus while the market mechanism should be left to prevail over the daily flow of commodities the allocation of investment resources determining structural changes must be based on mathematical planning at the centre.

The choice of general and long term directions of investment must be of a direct character in a planned economy. Such decisions form the framework within which all the economic units act. They provide the essential criteria which aid in assessing the relative importance of each element in the production process. Assuming that both framework and criteria are established by direct central decisions the market mechanism can then be used as an instrument of planned management. This holds in the case of both consumer and producer goods.

The specification of the assortment plan cannot be equally detailed in all branches and in all enterprises. There exist certain spheres within which it is possible to organize independent supplies of non-basic material. Because of technical reasons and the existence of a number of alternatives some problems of detail cannot be solved independently by the

centre. Again some degree of economic autonomy must be granted to the socialist enterprise for in its absence it would be impossible to make any calculation of inputs and outputs or to analyze resource use.

The principle of free choice of consumer goods which is prevalent even in a centralized economic system, necessitates using a market mechanism to balance supply and demand. The size and structure of the supply of consumer goods is determined in detail by the plan. Consumer income size and structure is also planned except to the extent necessary to bring equilibrium in the labour market and this creates the need for a price policy to adapt the structure of demand to the structure of supply.

The central planning body can with all the indicators direct only the volume of production either in very general groups of products or a small number of selected products. Except for a small number of centrally designated features of technical development the quality indicators cannot determine the improvement, replacement and technological method of production of commodities. The development of the actual qualitative aspect of production by which the needs of society are satisfied and stimulated must be left to the enterprises who are capable of assuring this because of their direct contact with production and thereby with research and development.

In sum then whilst the central plan lays down the overall rate of growth, the proportions between consumption and accumulation, the allocation of investment resources between the

sectors, the enterprise plan would indude details about the product mix and other aspects of current planning. W. Brus concludes that to ensure the efficient functioning of a socialist economy it must be based on the rules of a decentralized model where administrative methods perform ancillary functions. "The problem is not to determine in advance the areas and scope in which administrative measures may be applied (specifically the permissible number of imperative indices) but mainly to regard economic instruments as the rule and the use of administrative measures as the exception".[11]

The main characteristic of a decentralized economic system is that economic decisions are taken at various levels. Two main groups can be clearly distinguished in the hierarchical system - the central authority on the one hand and the socialized enterprise or enterprise associations on the other. We are faced with plans independently constructed at the two different levels. The plan constructed at the centre may include many problems which are included in the plans of individual enterprises but is not a mere aggregation of enterprises' plans. It is an autonomous plan influenced by both economic and non-economic factors. At the same time enterprise plans are not just the constituent parts of the Central Plan since they are independently formulated and contain many details which are not included in the Central Plan.

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11 W. Brus, The Market In A Socialist Economy (London: Routledge and Kegan Paul Ltd., 1972), p. 189.

All economic decisions could be usefully divided into three main groups: 1) basic macro economic decisions which determine the general direction of economic development. These include decisions on the rate of growth of national income, the shares of investment and consumption in national income, the distribution of investment outlays between the different sectors and the principles of distribution of the consumption fund between different occupational groups. 2) Current decisions relate to the size and detailed structure of output of particular branches and enterprises, the source of supplies and direction of sales and the structure of personnel and the form and methods of remuneration inside a branch of an enterprise. 3) There is a category of individual decisions relating to the individual choice of occupation and place of work along with the question of the degree of accuracy in the working process, improving skills, increasing labour productivity etc. and also decisions concerning the choice of the consumer goods basket.

In a socialist planned economy under the minimum of centralization the central planner must be responsible for the first group of basic macro decisions. The minimum of decentralization on the other hand involves decentralization of the third category of individual decisions which may however be subject to the indirect influence of centrally fixed parameters as wages, prices etc. The scope of the centralization versus decentralization problem in a planned economy is thus limited to the group of current decisions which could be either centrally determined in a 'centralized model' or left to the enterprise

or industry in a decentralized model.

In a decentralized system of economic planning the central authority could concentrate on basic long term problems and undertake a more profound analysis of economic processes whilst the enormous number of detailed day-to-day problems would be left to the enterprises who enjoy some degree of autonomy. The major decisions on the main trends of expansion undertaken by the centre would lead to greater precision in their mutual coordination and synchronization thereby curtailing the need for emergency intervention and creating better conditions for plan implementation.

The principles of the decentralized model are not inconsistent with the need for the central authority to establish independently lines and rates of development on the basis of its long term preferences. The Central economic plans are macro economic plans giving direction to the basic structure and the most general proportions of branches of production, the fundamental regional allocation of production forces, the processes of distributing the national income, the basic proportion between domestic production and foreign trade etc. The decision on the overall trend of development in production is made keeping in view the forecasts of social needs for a very broad general group of products. Homogenous types of product need to be classified into broader groups of products whose production can be directed by the centralized planning body. The target can be set for a longer period so that decisions on production need not be changed so rapidly at the centre. Within

this broader group however the concrete content of each individual type of product and the range of goods in it must be determined at the level of the enterprise or unit closest to production. The Central planning agency must also lay down over all policies in accordance with the plan and with the aim of carrying it into effect, in regard to finances, prices, wages and foreign trade but leaving to local management the details in regard to all these factors.

In a decentralized system the enterprise operates within a definite framework determined by the long term plans and well organized flows of information relating to technical innovations, new production designs and planned development trends. The state economic policy enables enterprises to determine their place in the whole of the economic structure both for the present and for the future.

The primacy of the central plan and thereby of national economic interests as a whole remains indisputable. The size and structure of supply and the economy's productive capacity is determined by the choice of major investment decisions, whilst the demand pattern, its content and its structure is structured by the decisions on income distribution between accumulation and consumption. Thus a widespread number of output shifts can be decentralized without the participation of the central authority and without endangering the system of social preferences and the danger of a switchover to the uncontrolled mechanism of competitive capitalism. The primacy of the Central Plan is dependent on a number of indirect

decisions taken at the centre which are directed towards arranging economic conditions in order that an enterprise's profit guided decisions conform with the basic aims of the Plan and there by to assist society in achieving its overall social goal. Centrally formulated decisions fixing the amortization rates, depreciation allowances, interest rates on short term and investment credits, prices of the means of production and wages affect the size of an enterprise's profit through the cost structure. At the same time revenues are affected by decisions fixing enterprise obligations to the state and to local authorities and prices regulations. The differential application of policies in the spheres of taxes and credits and tariffs and exchange affect costs and incomes of industrial branches and types of output. The centre thereby influences the volume of output, the structure of output, the choice of technique, the degree of capacity utilization, the manner of dividing profit between accumulation and employees' incomes as well as broad investment trends in so far as enterprises deploy their own means. The supremacy of central planning remains unimpaired for money is not an active instrument affecting the movement of factors in the productive process and substitution of material inputs or changes in technical coefficients in response to prices are impossible. Favourable financial results are not the deciding factor in expanding an enterprise and conversely unfavourable results do not necessarily lead to curtailing economic activity. Within the limits of its total aptitude for reducing outlays over the planned

levels an enterprise may concentrate on economizing on those factors which most strongly affect costs and the overall financial result. Here the price structure of means of production plays an active role. However this economy can be effected only when their realization does not require any substantial additional investment outlays which no enterprise can make independently.

To ensure the full and effective use of investment resources it is important that the enterprises have a real material interest in making the best use of all investment means and all production funds. The enterprises must also have at their disposal their own or borrowed investment funds about which they can make their own decisions because all investment possibilities cannot be decided most effectively at the Centre. For this reason in a decentralized model, investment trends and income distribution are only partly prescribed by the Centre and it is possible for enterprise to undertake minor investments effecting modernization and replacement from its own funds formed out of profits. The situation is similar for deciding national income consumed between collective and individual consumption. It depends on the size of the relevant portion of the profit part for the distribution of outlays for social and cultural purposes and these for individual worker incomes is made autonomously at lower levels.

It is clear that the market mechanism in a planned but decentralized economic system is an instrument which serves to adjust individual enterprise activities to overall social

preferences as expressed in the Plan and in no way subordinates production and exchange proportions to spontaneous processes. Prices through their effect on suppliers and purchasers become the instrument for obtaining the equilibrium desired by planners. The drawing up of physical balances helps the planners detect bottlenecks and eliminate them through measures affecting supply or demand or both. However no complicated system of physical allocation and administrative distribution of products exists.

In a decentralized economic system prices must serve as independent parameters for the enterprises. They are instrument in making enterprise decisions conform to the Plan's objectives. For this reason prices must be an accurate reflection of the social preferences and existing economic conditions while constituting given indices for choosing among various alternatives.

The problem of securing sufficient price flexibility while preserving prices as parameters for enterprises is important in a decentralized planned economy. The planning authority has a range of instruments for controlling the price system and movements within it. The problem is not how to adjust prices to all changes in conditions but only to the essential ones which disturb equilibrium. The central authority must prevent enterprises from manoeuvering prices so as to achieve unjustified advantages especially those afforded by a monopolistic position.

In a decentralized system adaptation of the supply

structure to the demand structure is aided through direct relationships between the supplier and the buyer. No detailed formulations or constant approval by the central authority hinder the flexibility of the system. Assuming that the price structure corresponds to economic conditions and social preferences are taken into account the application of the market mechanism would result in the production of the more saleable and profitable items and thereby the more effective use of resources. The more an enterprise adapts itself to consumer needs the better the chances of expansion, of increasing its productive capacity, and of improving its technique and the use properties of its product.

Under a situation of a normal buyers' market and a well structured incentive system based on profits the enterprise within a decentralized economic system seeks to strengthen its competitive position vis-a-vis other enterprises by adopting a wider time horizon in its strategy and operations. When an enterprise seeks profit maximization there is a continual tendency to lower production costs through a more rational utilization of inputs by lowering physical labour inputs per unit of output, improving the internal organization of its production process and adopting a more efficient technology. Freedom to determine the structure of inputs, to select the supply sources and finance projects partially allow an enterprise to seek the most economical combination of productive factors.

The idea of achieving social goals through enterprise

self-interest and not in spite of it and the idea of influencing enterprise progress by appropriately moulding economic conditions is the aim of the decentralized model of economic planning operating through economic regulations and incentives. This has a distinct advantage over a system based on administrative orders. If there is no change in price relationships an order to produce at a less advantageous price would lead to a conflict of enterprise self-interest with the social interest as expressed in the central authority's decision and this in turn would encourage the enterprise to resist such orders effectively.

In a decentralized model adjustments can be made directly without waiting for high level decisions and suppliers react directly to consumer demand. The system of profits and incentives encourages higher efficiency standards and dependence on the market which in turn ensures supply sensitivity to demand. Together with greater speed and accuracy the system relieves the central authority of the burden of petty details.

A decentralized economic system is more conducive to technical and organizational progress. The enterprise enjoys greater freedom in determining the aims and methods of production and horizontal inter-enterprise links are important. The existence of a correlation between the achieved results and the possibilities of expansion, the standards of efficiency evaluation and the resulting form of incentives encourage technical progress. Compared to a centralized model a decentralized economic system helps attain balanced growth to a greater extent.

Inevitably some negative features may arise from the operation of a decentralized model. The relative autonomy at the lower level of enterprises may lead to deviations from the plan in the income distribution and hence disturb general equilibrium. The danger lies in the tendency towards excessive increases in consumption at the expense of accumulation as also in the distinct tendency to increase the decentralized investment. An increase in non-productive investment by excessive absorption of labour and supplies may threaten the entire planned investment.

It is maintained by the critics of the decentralized model that the adaptation of supply to demand would require permanent adjustments in the profitability of individual products through alternations in prices. This argument rests on the premise that the relationship between changes in the output structure and the price system on the one hand and profitability on the other, is a totally mechanical one. However if the price structure is accurate and has a proper influence on demand then adjustments can largely be accomplished without price changes corresponding to the demand situation. Changes in the supply structure in response to market conditions do not necessarily require price changes in order to equalize profit margins. This is not to counteract the obvious fact that the decentralized system requires a much more flexible system of prices than the system of directives. However limited adjustments can take place without corresponding price changes and the concomitant central intervention, for example, by the

equalization of prices with costs. In case definite social preferences exist changes in the price structure may prove necessary to make it particularly profitable to produce a certain group of commodities and the price structure must be changed to bring about major structural shifts in the output pattern.

Economic measures must not be discarded if they prove inadequate and need to be supplemented by administrative measures. Scarcity of a particular factor must be reflected in prices even if central allocation of the factor in physical units is required. Similarly a planning order to produce a particular assortment of goods must be based on an appropriate arrangement of economic incentives. Neglect of this factor would lead to a conflict between the interest of the enterprises, the personal interest of their employees and the interest of the national economy. Failure to adjust the economic circumstances to these needs in turn raises the importance of administrative measures in the economic system. In a decentralized economic system where economic instruments are used for influencing operative decisions the output proportions based on central preferences will generally be achieved more accurately and more efficiently than in the centralized model.

II

The Analytic Framework For a Model of Decentralized Economic Planning

Having discussed the theoretical basis for a decentralized economic system we now turn to the concrete Hungarian

experience in this context.

Decentralization was introduced in Hungary through a major Reform of the system of economic administration and management in 1968. The system of economic planning, enterprise control, material incentives, prices and incomes underwent a thorough transformation. A number of economic processes which were formerly the subject of strict central control were to a large extent decentralized and the role of the material incentives was considerably increased.

It would be useful to set up a theoretical framework within which one could analyze the economic system in its totality as it emerged consequent to the 1968 Reform. One approach would be to adopt the conceptual framework based on the General Equilibrium Theory[12] reflected in the multi-level planning models of Kornai-Liptak;[13] T. Marschak[14] and Kornai.[15] These models could be interpreted as descriptions of a multi-level economic system consisting of units ordered into subordinate and superordinate units,[16] and the solution algorithms

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12 The Arrow-Debreu models of the 1950s are for purposes of this analysis regarded as the most representative of the General Equilibrium school, for an exposition see G. Debreu, Theory of Value (New York: Wiley, 1959).

13 Kornai Liptak, "Two Level Planning", Econometrica, vol. 33, 1965, pp. 141-69.

14 T. Marschak, "Centralization and Decentralization in Economic Organization", Econometrica, vol. 27, 1959, pp. 399-430.

15 Kornai, Mathematical Planning of Structural Decisions (Amsterdam: North Holland Publishing Co., 1967), Ch. 25.

16 For a precise definition of these concepts see J. Kornai, Anti-Equilibrium (Amsterdam: North Holland Publishing Co., 1971).

as descriptions of the decision preparation processes. By taking the multi-level character of actual economic systems into account such models come closer to approximating the actual information structure. At the same time the models generally employ the basic assumptions of the General Equilibrium Theory such as convexity, absence of increasing returns and uncertainty and optimization. It is assumed that the economic organizations optimize whether they are atomistic small units under prefect competition or oligopolies or monopolies. The information structure lacks the complexity characteristic of the real world because the models are deterministic in character and assume away the presence of uncertainty. Though overall information flows appear in these models horizontal information flows are missing.

The models describe the behaviour of the socialist firm starting from the assumption that the firm makes its decisions on the basis of complete preference ordering. Under conditions of directive regulation and strong centralization it is assumed that the socialist firm maximizes its output. In the Kornai Liptak model[17] it is assumed that consequent to the introduction of profit sharing firms would maximize either profits or profits per income unit. Ward characterizes the special system of incentives of firms in Yugoslavia by the maximization of personal

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17 J. Kornai and T. Liptak, "A Mathematical Investigation of Some Economic Effects of Profit Sharing in Socialist Firms", Econometrica, vol. 33, 1965, pp. 141-69.

income per worker.[18]

It is clear that the behaviour of a government controlling an entire economy cannot be described with the aid of a fixed preference ordering. In the case of major investments during the time which typically elapses between two major investment decisions the set of actually offered technological alternatives changes radically in most fields particularly in rapidly technically developing areas. Due to the increased flow of new products and processes the decision-maker rarely faces the same problem of choice twice. Moreover the really basic decisions affecting the entire economic system though recurring are non-comparable and cannot be adequately described by a model of preference ordering e.g. in the formulation of a Five Year Plan the government is compelled to choose from completely different sets of alternatives every five years.

Most decision-makers have no definite unequivocal preferences especially if their desires are contradictory and conflicting. It is likely that a whole set of alternatives is equally acceptable to them and the actual decision is selected at random according to same probability distribution. For this reason a model based on deterministic strictly convex preference ordering that is constant over time contradicts reality.

The econometric description does not prove nor disprove that the firm carries out some kind of maximization or optimization. It just serves to illustrate that the firm is reacting

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18 B.N. Ward, The Socialist Economy (New York: The Random House, 1957).

to definite information both of price and non-price character and relating it to past experience as well as future expectations i.e. it merely indicates the existence of a stochastic relation between the decision as an information output and the various information inputs.

Industrial units of the economy behave according to response functions rather than equations derived from optimizing behaviour. This is less transparent and elegant than the mathematical models but definitely more realistic and perhaps more useful. Further the models are based on the unrealistic assumption of the existence of just one type of firm acting on the impulse of a single motive;all firms are assumed to set prices on the basis of the same single rule and the decision algorithm is identical and uniform for every organization. When formalizing the type of information influencing the organization only a single type of information is considered. It is assumed that price is the exclusive type of information taken into account by economic units.

Using a single maximand by calculating a weighted average or other mathematical form in describing a decision-making process with the apparatus of a utility function is an unrealistic formulism. It attempts to state how the decision-maker weighs his different motives, objectives and interests. The main objective of a firm may be one of maximizing short term profits, a second to maximize long term profits, the third objective may be to attain a leading position with respect to technical development and so on. Thus this approach fails to

describe adequately the psychology of decision-making. The decision-makers usually think in terms of absolute targets and not of relative preference weights and the use of indicator vectors of many components is more realistic. Often in the real operation of economic systems the simultaneous attainment of the aspiration levels[19] attached to the individual types of indicators is generally impossible. The decision-maker moves from an unrealistic aspiration level to an implementable decision in the course of the decision process.

Any decision is not likely to be based on a single type of information or even a small group of information types received over a single channel. Multiplicity of information is more likely and it is not realistic to consider just one uniform aggregate function for the economy as a whole. If one considers say an investment decision then it would appear expedient to use a few function types where in the first type investment would depend more on production and less on expected profits or on the rate of interest, in the second one more on the rate of interest, on production and so on.

Such models fail to take into account the complexity of institutions within which separate functional organizations perform particular information and control activities. This leads to an over simplified description of the motivations

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19 This is a terminology coined by J. Kornai in his book Anti-Equilibrium and refers to the first ideas of the decision-maker about the decision to be taken at the end of the process and takes into account his wishes and internal expectations.

underlying behaviour when the 'producing unit' is treated as a single undivided whole. It takes into account only that which relates to current production and the corresponding purchases and sales. Other functions relating to technical development and research and finance are neglected.

In such planning models the system of constraints determines all objectively necessary relationships such as technological connections, the restrictions imposed by natural resources, the limits of activities deriving from constant old capacities, etc. The objective function expresses the preferences of the economic administration. In practice it would not be possible to construct a model of economy wide planning in this way. There is no self-evident and natural criteria for separating the relationships which are to be enforced within the system of constraints from those coming under the objective function. Further it is difficult to construct a function through measurement of the contribution of an individual activity towards an aim of economic policy and determination of the relative weight of the various parallel aims of economic policy, e.g. what is the value of one unit improvement in the country's foreign trade position as expressed in units of defence development.

Mathematical models based on optimization should be used to ensure rationality of government decisions. The series of calculations performed with the aid of models help the government to obtain a better survey of alternative actions and clarify its own intensions and desires as also the possibility

of their realization. The mathematical programming 'optimizing' models in Hungary aid and contribute to the Cognition process involved in preparing government decisions and fundamental questions involving the economic system. However they are quite ineffective in providing a realistic description of the functioning of a socialist economy. In the following study of the Hungarian economic mechanism the framework of a Systems Theory Approach as enunciated by Kornai is adopted.[20]

The economy is visualized as a system composed of various elements: firms, households, government offices, social institutions etc. and the behaviour of these elements is characterized by definite regularties. Elements on three different levels can be distinguished - the institutions (such as a ministry), the organizations (e.g. the planning section within a ministry) and the units within the individual organizations. The organizations and the units comprising them are connected through product and information flows. The operation of the unit can be described by means of a response function and consists in receiving in every period an input (e.g. raw material to be processed or an instruction) and releasing an output (a product) whilst changing its internal state in the process. Every output becomes the input of some addressee unit and conversely every input is the output of some addresser unit.

Within the economic system a Real Sphere and a Control

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20 J. Kornai, Anti-Equilibrium (Amsterdam: North Holland Publishing Co., 1971).

sphere can be envisaged. The real sphere includes material physical processes as production, consumption and trade. The control processes are intellectual processes and include observation, information transmission, information processing, decision preparation and decision-making. The operation of any economic system can be characterized by a definite information structure. Modern economic systems are controlled by a complex control sphere and the market is only one regulator of it. It is unrealistic to arrive at an optimal price system regulating an unrealistic 'Walrasian' world and it is important to explain and improve the complex control system of the real economy. The complexity of decision making problems, uncertainty, the comparative unreliability of information and the increasing risks involved in important decisions made under uncertain conditions lead to multi-channel information gathering. The firm will be affected by different types of information such as indirect information concerning the intentions of other firms, business prospects, market abroad, technical achievements and so on. The organizations specialized in performing control processes e.g. the planning offices and government economic departments transmit a large amount of information to the firms. Further the firms' productive and sales activities are accompanied by a long flow of reflecting information e.g. long before the real activity is carried out long term plans are drawn up and prognosis is made.

Information flows of various control sub-systems can be distinguished viz. information flows relating to the market, the

monetary and credit sub-system, the sphere of national economic planning, technical progress and science and the sub-system of labour allocation. Information can be classified into Money flows, price type information and non-price type information. Within the whole information structure the price system itself has a complex structure. There may be different types of prices as contract prices, actual prices, prescribed prices etc. and the decision-maker is influenced not only by the prices prevailing at the moment but by the whole series of past and anticipated future prices. Further two information groups of direct reflection and indirect reflection can be envisaged. Direct reflection describes some event or process of the Real sphere whilst indirect reflection relates to the Control sphere.

The Socialist economic system is envisaged as a multi-level system. Units comprising the system can be ordered into subordinate and superordinate units and directive relationships play a considerable role in the operation of the system.

The complexity of the information structure is reflected in the complexity of institutions within which separate functional organizations perform particular information and control activities. It is possible to identify a group in charge of production and another engaged in technical development, product development, investment and research, a group responsible for sales and these responsible for financial arrangements of the firm. Each of these functional organizations act on the basis of a different set of motivations giving rise to internal conflicts within the complex institution. The interest of the firm

is thus composed of many motives and emerges out of compromises among conflicting desires.

The decision-making process takes place over time and involves two kinds of cognition processes. The first is the formulation of a set of implementable decision alternatives reflecting the physical material bound on activities in the real sphere. In the national economic planning process this is performed by planning specialists employed in the Planning office and other economic institutions. The second process is the formulation of a set of acceptable decision alternatives in the next stage and represents the intellectual bounds established by the interests, motives and expectations of the decision-maker. The two processes are linked by a continual exchange of information. The planners obtain new information about the possibilities and work out new variants of the Plan from time to time. These are communicated to the political bodies who likewise reconsider their wishes and expectations on receiving new information and thereby modify the set of acceptable decisions. The interaction of the two sets determines the set of eligible decision alternatives which are both acceptable and implementable. The actual decision is eventually selected by the decision-maker from this narrow set of eligible decision alternatives in a largely random manner.

The decision process can be conceptualized as an algorithm. Throughout the course of the decision process new and old information interact and from definite data (initial transformation taken from the memory and the information received in the course

of preparing the decision) the result in the form of a decision, is calculated and transmitted as outgoing information.

At the beginning of the decision process that takes place over a period of time there arises the aspiration level expressing the initial ideas of the decision-maker about the decision to be taken and reflects his wishes and internal expectations which in turn are based on his estimate of the firms' internal endowments as well as external endowments i.e. on the real possibilities. This sense is different from the concept of 'utility function' or 'objective function' and is reflected in concrete empirical evidence. In the course of decision-making the aspiration level plays the role of a norm and the decision-maker makes efforts to attain the aspiration level. However if the aspiration level turns out impossible to achieve the decision would deviate from it. The framework proposed here also comprehends the possibility that the decision-maker may not be 'consistent' over time. In the light of previous experience or as a result of a change in external circumstances the decision-maker may change the aspiration levels and the decisions from one period to another.

In the market there occurs an agreement between the 'seller and buyer' in the form of a contract which is preceded by an elementary decision process. In the sphere of inter-firm purchase and sale relations the elementary contracting process which eventually leads to the concluding of a contract between two firms, may begin with the seller firms' decision of what to offer and to whom to offer on the basis of earlier

experience. Once the offers are sent out and the answers received the original list of addressees is revised and the content of the offers such as the technical properties of the product, the terms of delivery and price is modified. The process continues till the final decision about the contract is made. The buyer's decision algorithm can be expressed in an analogous manner. There is a multi-channel flow of information with every buyer entering into contact with several sellers and every seller with several buyers before a contract is concluded.

This brief exposition of a Systems Theory Approach to Socialist Economies serves as a theoretical framework for the analysis of the Hungarian economic system as it has emerged consequent to the Economic Reform which forms the major part of this work. In the following chapter the 1968 Reform will be outlined in detail, followed in chapter III by a description of the functioning of the post-Reform Hungarian economy in terms of the Systems Theory Approach as outlined above.

Chapter II

THE HUNGARIAN EXPERIENCE

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I

Problems of Current Planning in the Pre-Reform Period

From the late 1940s until the end of 1967 the Hungarian economy was operated according to the Soviet type centralized model[1] characterized by a system of detailed plan instructions handed down to enterprises by the Centre. The system of planning aspired to regulate each main aspect of every activity of every single enterprises by means of binding instructions. Though a detailed study of the pre-reform economic system of planning falls outside the perview of this study a brief description of the mechanism would help us comprehend the necessity for decentralization and the 1968 Reforms in the context of the concrete Hungarian situation.

The organizations in the planning process could be represented heirarchically by the following[2]

Planning Office, — general departments
Planning Office, — industrial departments
Ministries, — general departments
Ministries, — directorates
Trusts
Enterprises
Plants

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1 — See A. Nove, The Soviet Economy, 3rd end. (London, 1968) for a standard account of this system.

2 B. Balassa, The Hungarian Experience in Economic Planning (Yale University Press, 1959), p. 57.

Plans for the entire economy were drawn up by the general departments of the Planning Office. Economic, financial, labour, technical development, material allocation and investment plans for particular economic sectors as those of agriculture, construction, light industry are formulated by the industrial departments which in turn were in close contact with the general departments of the corresponding ministries. The organization of the general departments in the ministries was identical to those of the planning office. The directorates in the ministries besides their function in planning directed and supervised the work of the trusts and enterprises. The plans of enterprises were subdivided among plants.

In the process of planning distinction could be made between long term plans, yearly plans and quarterly and monthly plans. Long term plans laid down the general objectives to be achieved by the economy as the rate of development in various industries, directives for investment activity and investment planning. Enterprises were provided with yearly, quarterly and monthly plans. The yearly plans served as a guide for economic activity for the economy as a whole and the main decisions on production and allocation were made within their framework. The managers of enterprises based their activity largely on the quarterly plans.

The structure of the plans was identical for the entire economy, ministries and enterprises. Broadly it was comprised of the following:

1) The production plan which laid down production in

value terms and in quantity terms for selected commodities and commodity groups;

2) The plan for technical development which encompassed capacity norms, mechanization and input output ratios;

3) The material supply plan laying down material requirements for production and inventories at the beginning of the planning period (actual) and at the end of the period (planned);

4) The labour plan which sets out the labour requirements for production, labour productivity, labour supply and wages;

5) The cost plan which included planned costs for select commodities and commodity groups and costs and value of production for the whole enterprise;

6) The investment plan which set out the investments to be implemented during the planning period;

7) The renewal plan laying out replacements and major repairs; and

8) The financial plan which covered the balance of receipts and payments and credits.

The authorities hoped to force enterprises to exercise economy in the use of materials by means of a number of prescriptions concerning their use. There were norms for materials and each enterprise was provided with a planned bill of supply of materials. Further there were a number of indices relating to the utilization of detailed types of materials among the techno-economic indicators. The exact time, method and conditions

under which enterprises were to order materials were all regulated by means of decrees from the centre. In some branches a large part of the orders were aggregated, modified and then placed with the supplier by industrial directorates rather than by user enterprises and they were solely in charge of negotiating on matters of substance with importing enterprises. The industrial directorates disposed off all basic raw materials and semi-finished products and were in sole charge of allocating these. The planning of raw material allocation was carried out at the centre in closest possible connexion with the elaboration of detailed quarterly production programmes.

The preparation of the yearly plans consisted of three broad stages. The first stage involved the drawing up of the preliminary draft which included just the main targets for the planning period and a small number of economic balances. The draft was prepared by the Planning Office in cooperation with the ministries on the basis of directives from the central committee of the Socialist Worker Party (which was thus the initiator of the planning process) using statistical data on previous periods, average coefficients indicating input requirements for various types of industrial activity and economic balances of industrial activity and economic balances.

On the basis of the preliminary draft approved by the Council of Ministers, in the second stage the final plan was prepared. This was done through a process of parallel planning where the planning office and the different ministries, drew up the plan separately and the Planning Office then coordinated

the two plans. Statistical data in greater detail, coefficients on material, labour and machine needs of certain commodity groups and industrial activity and economic balances were employed in the second stage.

After the final plan had been approved by the Council of Ministers the plans of the different ministries were fixed and broken down to the enterprise level and further within the enterprise to the level of plants and workshops.

The directorate communicated the planned targets to the enterprise which in turn then prepared its counterplan. There was an overwhelming tendency here for the firm to modify the targets downwards so as to achieve a higher degree of plan fulfilment. The counterplans spelt out the dictated targets in greater detail and were further revised by the ministry though any modification of the prescribed targets for the enterprise could be made only within the framework of the ministry's plan. Modification of the Ministry Plan was rare for it involved a long bureaucratic process of approval by the Council of Ministers.

The above brief account of the process of plan formulation gives an indication of its long protracted nature - the breakdown of the final plan approved by the Council of Ministers proceeded through six stages before it reached the enterprise level. The counterplan prepared by the enterprise travelled along the same route. If a revision of the ministry's plan was made necessary then the newly approved version of the plan descended by the same stages back to the enterprise.

Plan Formulation

It was difficult to draw up a detailed exhaustive national economic plan at the centre that would be consistent in the twofold sense that for each enterprise the planned outputs be feasible with the planned inputs and for the economy as a whole the planned requirements for each commodity be no greater than the availability of that commodity. The plans for production, labour, finance and supply were often inconsistent so that some enterprises were unable to fulfil their plans. This further disrupted the plans of enterprises which were to use the good which was not produced, as an input, or resulted in a failure to meet the final demand of consumers.

The chief difficulties, in compiling a consistent and detailed national economic plan under the pre-reform centralized system were: 1) there were problems in collecting the data necessary for formulating the national plan. The data on requirements, available to the central planners were based on indents of the enterprises adjusted and aggregated in an arbitrary manner. However it proved impossible to base the determination of real requirements for material resources on the indents based entirely on preliminary targets of output which were altered substantially in the process of working out the plan. Fear of underfulfilment of the plan and anticipation of arbitrary adjustments in the indents sent up to the Centre led enterprises to present an exaggerated picture of their requirements.

The process of aggregating requirements and subsequently

disaggregating the production and distribution plans at the enterprise level tended to distort the information on the time, place, and quantities in which particular commodities and materials were required.

In the pre-reform era of planning the system of economic balances was used to check the consistency of planning decisions and to allocate materials and products among alternative uses. Physical balances compared the production possibilities or availabilities of one factor or product with the requirements for the factor in physical terms whilst synthetic balances compared availabilities and use of aggregates in value terms.

A number of definite economic interrelations existed between the targets for the value of production and those of costs, the detailed manufacturing programme, the plans of material supply, the specified wages fund and of manpower requirements.

Material balances were drawn up for basic materials subsidiary materials, fuels, construction materials, tools, prefabricated parts, agricultural products and consumer goods. The balances were drawn up on the basis of statistical data for previous periods or by using average coefficients indicating input requirements for the production of various commodity groups or for industrial activities.

Synthetic balances were designed to avoid disproportionality in aggregate relations mainly 1) the production and use of national income; 2) personal income of the population and its expenditure on different uses; 3) money receipts and payments

of the population; 4) receipts and payments of the state; 5) the aggregate receipts and payments of the state enterprises; 6) the allocation of investment funds among the sectors of the economy; and 7) the balance of payments i.e. the receipts and payments of the state in its relations with other countries.

The compilers of material balances were concerned with balancing output and requirements for individual commodities. When during the course of the material balance calculations the output of one product was altered consistency required that the output of all the products directly or indirectly used in the production of that commodity was altered as well, e.g. an increase in the production of cars entailed an increase in the production of steel which in turn required an increased production of electricity and so on. However this process of the calculation of changes in the material balances involved intensive labour and in practice this time consuming process was cut short by just considering those balances linked by first order relationships.[3]

Where consistency required the evaluation of the convergent series $X = (I+A+A^2+A^3...)\ Y$ the usual practice was to approximate X by considering the first two terms only. The result was the formulation of inconsistent plans.

Further the method of material balances assumed that the production process could be represented by a matrix of

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3 Michael Ellman, The Optionally Functioning Socialist Economy: A Study in Soviet Mathematical Economics, 1960-1971, Unpublished, pp. 31-32.

fixed coefficients (the norms). For a commodity, requirements were assumed to be represented by the relation

$$X_i = \sum_{j=1}^{n} a_{ij} x_j + y_i \qquad i = 1 \ldots n$$

Where x_i is the output of the ith product

a_{ij} is the norm of requirements of the ith product per unit of output of the jth product

y_i is the requirement of the ith product for final demand

This is a very strong assumption ruling out substitutability nonproportional inputs and nonconstant returns to scale. Material planning from above suffered from inaccuracies further because of unreliability of the input coefficients. These were mainly statistical norms sometimes corrected by technological calculations. Even if technological norms were used they were frequently averages for the whole industry and failed to take account of the differences in equipment and technology of particular plants. Because of changes in technology, equipment and quality a large proportion of the norms used were outdated. Further the norms were based on commodity groups and any change in the composition of production and the resultant change in input requirements were not reflected in the material norms. Again in the absence of norms for a fairly large number of commodities, material requirements for them were estimated on the basis of the average input coefficient for production in the value of one million forints.

The norms used in the calculations were generally averages weighted in favour of the more efficient producers. As a consequence the norms proved too soft for efficient producers and provided no incentive for efficiency. Conversely for inefficient producers they often proved impossible. Further when during the process of plan calculations the relative output of plants with different input output relationship was altered this altered the actual mean input output relationship and the continued use of the given norm by the planners resulted in inconsistencies in the plan.

The enterprise material supply plan also suffered from other deficiencies as the neglect of the time lag between the purchase and the actual use of materials and disregard of material requirements arising from a change in the stock of unfinished production. The preparation of the enterprise's material supply plan was also hindered by a lack of sufficient knowledge of production targets at the time when the plan is worked out. Government orders, requirements of other enterprises and output possibilities were largely unspecified at that time. Material plans were thus rather unrealistic and often deviations from such plans amounted to between 40 and 50 per cent.[4] In addition the material supply plan of the enterprise was fairly rigid and constrained by the breakdown of plans from above.

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4 SSZ, No. 4 (1955), p. 355 in B. Balassa, The Hungarian Experience in Economic Planning (Yale University Press, 1959), p. 73.

The exchange of materials among state enterprise took place on the basis of procurement contracts either between the supplier and buyer ministry or between enterprises. The procurement contracts were based on the breakdown of the national material supply plan and the enterprise could order only quantities corresponding to its material plan. If the breakdown of the plan had not been completed by the time the orders were to be sent out the enterprise was forced to base the orders on its own estimates and these had to be altered subsequently as they failed to conform to the ministry's allocations.

Materials for which material balances were not worked out were also procured on the basis of supply contracts. Such procurement contracts had to be concluded simultaneously by all enterprises so that no enterprise was able to draw up a material plan in conformity with the material requirements of the products ordered from him. Often an enterprise did not know its production plan but had to order the materials anyway. The system of material allocation thereby resulted in considerable disproportions - there existed a divergence between the actual material requirements of production and the material supplies allocated on the basis of procurement contracts. Production failed to be based on actual material requirements of the enterprises.

In the face of the general lack of excess capacity in the economy the producing enterprises attempted to build up inventories of their own which aided the fulfilment of their production plans. This led to decentralized inventories, stock

piling of materials which partly proved to be unneeded later and to shortages of materials for the enterprises which neglected to stockpile. The economic system as a consequence suffered from disturbances in production, waste in the use of materials, lack of improvement or even deterioration of quality, drabness of assortment of commodities and a sluggish development of technology.

The objective of bonus maximization demanded the fulfilment and overfulfilment of the plan and thus a steady supply of materials in the required quantity, assortment and quality. As mentioned before because of the shortcomings of the material allocation system enterprises often could not obtain the needed material in time either the supplies were insufficient or diverged from the assortment needed for production and were frequently of poor quality. The manager of the enterprise spent more time not on the solution of problems on production but on material allocation. There developed an informal system of material procurement where the enterprise guided by the need for fulfilment of the production plan broke through the rigid framework of the system of material allocation. There came into being a system of barter, of the purchase and sale of material stocks within enterprises to a degree where it ran parallel to the official system of material allocation. Material expediters procured materials for enterprises from outside official channels and in addition also used their influence on officials of the ministry to increase material allotments of the enterprise by attempting to obtain a favourable

allocation for the enterprise of wagon capacity, trucks etc. He also maintained good relations with suppliers so as to obtain materials in excess of the allocated quota and to ensure that the allotted materials arrived on time.

In the absence of scarcity prices the allocation of resources by the Centre were greatly influenced by the bargaining force of the ministries and enterprises. Every ministry attempted to receive an increased allocation of materials, labour and investment funds. The bargaining power of the ministries and the authority of the Planning office was largely determined by the ability and political influence of those directing them. Enterprises bargained to reduce their output targets, to ensure the procurement of more materials and more labour, to get better contracts and new investment funds. The considerable role of bargaining hindered the efficient choice of investment alternatives and other targets by the Centre.

Centralized decision-making involved the cost of collecting information on available resources, production capacities, input output coefficients and consumer demand. It also entailed the cost of time lags involved in the process of centralized decision-making (1) the lag between the need for action and recognition of this need; (2) the lag between the recognition of the need for action and the taking of action; and (3) the lag between the action and its effects.

Instructions from the Centre even when they were extremely detailed could not be as finely differentiated and unambiguous

as direct orders of customers. Further they required an enormous administrative apparatus. The more minutely detailed instructions were, the more the attention of central authorities was diverted by the work involved in preparing them from the more important task of long term planning and formulating the main outlines to be assumed by the national economy.

The function of the production plan by commodities was to ensure that enterprises really did make available the commodities required by the economy through fulfilling the plan. However the detailed production programmes fettered the enterprises and forced them to turn out articles for the production of which they were ill-suited and in place of which they could substitute others in regard to which they were well placed and which were at the same time equally acceptable to the customers. This was because in constructing the programmes directorates had neither the time nor the opportunity to make an analysis by individual articles of the costs of each factory in producing them and of what the most economic distribution of the product mix would be. The allocation of products to enterprises was decided in the light of their established pattern of specialization and though technical characteristics were considered, other economically relevant considerations were not examined comprehensively. This was inherent in the methods of planning used (material balances approach) whereby the central elaboration of detailed programme for a whole industry became such an enormous and time consuming task that matters of details were inevitably neglected.

Efficiency considerations were largely neglected in the formulation of the investment plan. The arbitrary nature of prices created arbitrariness in calculations on the efficiency of investment alternatives as well. In the absence of economic incentives restricting the demand for capital goods and in the absence of calculations on investment efficiency the decisions on the allocation of machines and other equipment did not have a sufficient economic basis. Frequently non-economic considerations predominated in the making of investment decisions. Insufficient attention was paid to the interrelationships of the different investment projects and to the changes in capacity ensuing from investments. Often no provisions were made for procurement of materials to be used in many of the newly installed capacities. Under centralized decision-making investment decisions by and large turned out to be inconsistent.

The planning of investment projects consisted of three steps - the framing of the investment programme, the project outline and the technological plan documentation. The investment programme contained informative data on the objective of the investment and the expected capacity and location of the project. The project outline and the technological plan documentation were drawn up by a design bureau. In preparing the technological plan the bureau had no incentive to consider and compare technological variants since the employees of the bureau received bonuses for the speedy completion of the plans and the time consuming procedure involving the comparison of

alternative technical variants would reduce their chances for receiving bonuses. The managers' chances for higher bonuses were reduced if they employed more people for formulating a plan. Further their remuneration was calculated as a percentage of the cost of the project so that the bureau was materially interested in high investment costs for the project.

The practice was for the supervising ministry, generally the Ministry for Construction, to designate a design bureau to prepare the technological plans of a particular investment project as also the particular enterprise which were to implement the project. As a consequence there was no scope of exercising a choice among design bureaus or construction enterprises or of a comparison of alternative cost estimates since the enterprise designated by the Ministry had to be engaged. Competition for contracts could not operate as a force leading to a reduction of investment costs. In the course of planning the models and designs there was no opportunity to take account of the specific characteristics of individual factories, their equipment, the habitual ways of operation of their specialist staff and workmen, their raw materials supply position and other factors. This hampered the rational utilization of raw materials, as designs could not be adapted to the prevailing raw material position in a flexible manner.

The process of planning and determination of costs in the plan sent down to enterprises was very unreliable. This was reflected in the considerable divergences that appeared

regularly between planned and actual figures of cost at the enterprise level as also between the two main indices - the plan of cost reduction of standard articles and the cost quotient of production. Precision in planning at the Centre could not be achieved for various reasons:

1. Data calculated was imprecise and it was this imprecise data which was used for determining planned costs of standard products.

2. Cost targets proposed by enterprises were unrealistic and geared towards their own advantage.

3. The proposals made by enterprises were merely added together by the directorate and in case of divergence from the target prescribed for the branch as a whole by the Centre, it merely resorted to tightening up of the figure. The arbitrary adjustment resulted in unrealistic targets for individual enterprises.

4. It was difficult for the Centre to take account, in advance of all the effects or changes in production volumes, in product mixes and in other factors influencing costs, with sufficient accuracy. This factor was specially important in instances where new products were to be introduced.

Instability of plans became a characteristic feature of the centralized decision-making process. As inconsistencies came to light during the planned period it was necessary to alter the plan to allow the economy to function. Frequent recasting of plans followed from lack of realism of the administration in assessing the resources of the economy and often

insufficient account was taken of the possibilities for expanding output that existed when drawing up the plan. In Hungary the high dependency on raw material imports resulted in fluctuating and insufficiently planned arrivals of materials. The spasmodic character of the supply of materials and the tight position in regard to stocks made it difficult to plan in detail and in a binding manner for a full year ahead: (2) Changes in requirements and in demand gave rise to an element of uncertainty. The annual plans of enterprises had no firm foundation of the kind which would result from detailed attention to demand and to the requirement of commerce. (3) A certain degree of instability in the national economic plans was unavoidable because of the influence over the economy of factors over which central organs had little or no control such as (i) the effects of the international situation and the world market through exports and imports; (ii) Harvests partially dependent on the exigencies of the weather also influenced production and demand in industries making seasonal products.

The uncertainties of national economic planning gave rise to a feeling at the enterprise level that it was not worth taking the annual plan seriously as the government would be changing the plan in the course of the year. Inaccuracies in planning leading to the deviations in the fulfilment of the plans handed down to enterprises would not have caused any grave problems if the objective of planning had been merely to secure the development of the main structural features in accordance

with the plan. In the Hungarian context however planning aspired to regulate each main aspect of every activity of every single enterprise through the all embracing system of detailed plan instructions. Thus it became necessary to consider the extent to which the plan directives issued at the enterprise level were precise and realistic. Even if the degree of adherence to plans was fairly high at the economy or the global branch level this was invariably accompanied by wide departures from the annual targeted figures at the level of the enterprise.

Incentives

Premiums paid out by the Centre consisted of two parts the receipt of one part being conditional on the fulfilment or overfulfilment of the production plan and that of the other on the fulfilment of the plans of cost reduction. The latter could be earned even when the production plan was not realized and it rose proportionately with results achieved by way of cost reduction.

The importance attached to the cost indices in making premium payments to enterprises gave rise to a number of harmful tendencies in the system 1) Changes in the indices of cost reductions were unaffected by the extent to which the articles produced corresponded to the demand for them. This encouraged enterprises to turn out articles at lowered costs which were less in demand - such cost reductions served no useful purpose. 2) Costs were often reduced at the expense of quality mainly through the use of cheaper material.

The degree of independence enjoyed by enterprises and their directors in the matter of premium payments was very limited and excessive centralization prevented the directors of enterprises from making allowances for special characteristics of their organizations or in the responsibilities of individual members of their staffs. As a consequence very often premiums of enterprise employees were based on factors totally incapable of being influenced by their own work.

The premiums of different categories of workers were related to different sets of plan indicators. Directors and top management of enterprises earned premiums on the basis of enterprise performance as reflected in the fulfilment of the target of value of production laid down for the enterprise. The fulfilment of techno-economic indices was promoted by making them a premium determining task of personnel as plant managers, foremen, etc. employed in the constituent units of enterprises. If the material interests of top management came into conflict with those of subordinate personnel then it was the interests of the former group that would prevail.

In addition there existed a system of penalties including compensation payments, storage charges payable on omitting to load at the railhead and penal interest charges levied in the event of failure to observe prescribed conditions in regard to credits. However management remained largely unaffected by penalties in the face of availability of premiums on cost reductions. If enterprises reduced their costs in the process of

deviating from consumer requirements through quality deterioration than the premium earned on this cost reduction would more than make up for the cost raising effects of the penalties they incurred. Thus the system actually encouraged quality deterioration.

Special premiums and bonuses were offered to top managements by higher industrial authorities as the Ministry or the industrial directorate or a body outside the industry say an organization engaged in foreign trade and these were tied to the fulfilment of special targets. This implied that by offering a large enough pecuniary reward an outside organization could distort the production programme of the enterprise as prescribed by the plan. If the special premium exceeded the ordinary premium attached to fulfilling the plan indices the enterprise could leave the plan unfulfilled. As delivery dates and other terms of fulfilling orders were made dependent on the magnitude of these special premiums, whoever offered the highest premiums could count on having his order fulfilled.

Bonuses were paid for reduction of inventories and in the construction industry bonuses were paid by investor firms for the completion of some construction projects of exceptional importance. Although this method contributed to the observance of the planners' priority scale it also reinforced the detrimental effects on efficiency of using fulfilment of the production plan as a primary premium condition. Further it was not just a question of priorities set by the planning authorities, for various ministries tried to overbid one another to achieve

their own objectives and a form of bargaining was noticeable.

The director's fund was an important part of the system of bonuses. A part of this fund was used for social and cultural purposes and another part for rewarding individual employees of the firm. Thus the director's fund was comprised of 1) the cultural and sports funds - the amount available for this fund was fixed at 0.6 per cent of planned outlays on wages and salaries in the budget of enterprises. This part was therefore unrelated to the results achieved by enterprises, (2) The greater part of the directors' fund did not vary with the achievements of enterprises, the amount depended on the number of personnel employed (since the quota was fixed on a per capita basis) and also on fulfilment of certain conditions viz., fulfilment of the production plan, the plan of cost reductions and the plan for surrendering profits.[5] 55 per cent of the entire sum was devoted to staff welfare purposes and the remaining 45 per cent to bonus payments; 3) A payment was made into the director's fund and this was related to the savings of circulating capital brought about and used wholly for bonus payments; 4) Further a part of the proceeds from sales of idle fixed equipment and a part of profits on articles of mass consumption produced from waste materials went into the director's funds. The budget too provided for a fund for making payments to outstanding workers which was included in

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5 This is a part of the financial plan prescribed for enterprises. The proceeds form part of the state revenue.

the director's funds. A part of the directors' fund was comprised of bonus payments to leading enterprises and bonuses received together with the pennants of the Ministerial Council. 60 per cent of this sum was to be paid out as bonuses and 40 per cent devoted to welfare purposes.

The system of basic pay was characterized by a number of shortcomings: 1) The difference in pay as between higher posts involving greater responsibilities and simpler jobs of lower grades was too narrow. The additional worry and disproportionately greater amount of responsibility associated with higher positions was not matched by increased pay. This puts a brake on people's desire to achieve promotions and correspondingly higher financial rewards by doing outstanding work and by perfecting their knowledge of their trade. 2) No consideration of experience in trade or the length of service of the employee was taken into account when fixing this exact basic pay. 3) The limits within which it was possible for the pay of personnel engaged in performing identical functions, to vary were very narrow.

Not only did the basic pay of technicians and administrative personnel in responsible positions show a harmful pattern of equality and levelling but the premiums too failed to reflect differences in standards of performance adequately. Further premiums were based on a few basic indices fixed rigidly by the Centre. In the first place the work of most technologists and administrative and managerial employees in responsible positions was of such a composite nature that it

could not be gauged by means of two or three indices and needed to be evaluated in a many sided complex manner. Under the system the earnings of technicians depended not merely on their diligence, capability and hard work but on extraneous factors as whether they were lucky enough to have got a loose plan or not, whether they were good at bargaining for lower plan index numbers, whether they were willing to neglect important interests of the national economy in pursuit of current premiums. In sum the indices which formed the basis of premiums were insufficiently indicative of work done and failed to provide unambiguous indications of the national economic interest.

In the pre-reform system of centralized decision-making each enterprise had a Development Fund which could be used for the following purposes: i) Investment outlays in excess of the amount provided for in the plan could be financed from the source. Expenditures below 50,000 forints did not require authorization by the Ministry; ii) Sums upto 25 per cent of the value of the fund could be devoted to welfare expenditures without the official sanction of the Ministry but expenditure beyond this required specific authorization; iii) The fund could be used for financing renewals in excess of planned amounts, reorganizations especially those promoting specialization, outlays on research and experimental work and for investments on renewals serving to safeguard social property.

The system of Director's and enterprise funds suffered from a number of shortcomings: 1) The conditions which

determined whether or not the directors and others engaged in top management would receive this premiums differed from the conditions which governed the receipt of quotas for directors funds and development funds. As a consequence the top management had no direct or personal financial interest in enlarging these two funds, i.e. the interests of individuals and their enterprises were not sufficiently in harmony. 2) The sums available in director's funds for bonus payments to the enterprise employees were very small so that the workers did not really have a personal stake in their collective achievements and in the profits earned by their enterprise. 3) The development of enterprises was not dependent on the initiative of its management or workers, the decisions and planned investment outlays were sent down by higher authorities. An enterprise could use 5 per cent of its profits in excess of the planned amount during the year for decentralized investment but this was made available to the enterprise after its accounts for the year had been closed. By this time it would miss the opportunity of placing an order for any capital equipment, which was required to be placed during the previous autumn when annual plans were being formulated. The import of equipment was even more difficult. Since foreign exchange resources were largely absorbed by investments made within the framework of the plan and no foreign exchange was available for investments outside the plan. 4) The system of directors funds and development funds was very complicated and the separate incentives provided by the plan to secure fulfilment of different tasks became

blurred and ineffective in practice. 5) The main source of both funds was the profits in excess of their planned amounts. Thus the size of these funds depended not only on enterprise efficiency but also on the level of planned profits. If these were set at a high level the size of the funds acquired by enterprises would be unjustly small and conversely unmerited advantages would flow from plans drawn loosely. The main problem stemmed from the fact that the planning of profit was completely unreliable and the degree of fulfilment often varied between 87 and 400 per cent.[6] As a consequence industrial directorates and the Ministry effected regular transfers between the development funds of various enterprises on the one hand and of industrial directorates on the other hand - siphoning off funds from where they were abundant and supplementing them where they were insufficient. This procedure undermined the original purpose of the development funds which was to make the size of these funds and through these the growth of enterprises dependent on their own profitability.

The system of plan index numbers and of premiums exerted a powerful stimulus in the direction of raising output. The planning system issued instructions to enterprises with respect to six different criteria on which production was to be based: 1) current and embodied labour inputs should be as small as possible as also the use of fixed and circulating capital;

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6 This figure relates to the enterprises in the Ministry of Light Industry and is quoted from J. Kornai, Overcentralization in Economic Administration (Oxford, 1959), p. 104.

2) articles produced should be of the highest possible quality; 3) in as large quantities as possible; 4) should fulfil requirements of society; and 5) current production must not be at the cost of future production but rather must serve to promote it. Instructions particularly plan index numbers were used to spell out both requirements and the means of fulfilling them. However the degree to which the system of incentives supported the different instructions was not uniform. According to the consequences that followed some instructions acquired greater authority and weight and proved more effective than others which merely existed on paper. There was no economic justification for the order of importance of tasks which arose in the production process on consequence. This diverted top managements from attempting to accomplish each of the basis desiderata simultaneously, for this required constant efforts to find optimum solutions to the problem of reconciling opposed and conflicting requirements in a flexible manner in the face of changing circumstances. Management merely concentrated on fulfilling 2-3 basic plan index numbers to which premium payments were attached even at the cost of neglect of other important tasks.

Premiums were not paid to enterprises until the degree of fulfilment of the relevant plan index numbers reached 100 per cent and this turned the 100 per cent into a fetish. The psychology of losing hope was a necessary corollary. If despite the best efforts 100 per cent fulfilment appeared impossible then it became a matter of indifference to management whether

the degree to which the indices were fulfilled was 98 per cent or 91 per cent. In fact very often management resorted to putting aside part of the finished or semi-finished product so that these resources would ensure 100 per cent fulfilment of the plan in the period subsequent to one where this would prove impossible anyway. Planning Officers knew how to lower as well as to raise results by two to three per cent within the framework of existant rules. Output was branded as finished only after being checked by the relevant department (MEO) when it was deposited in the warehouse for finished products. It was always possible to slow up the process of passing products through the MEO so that the finished output of the present quarter was counted as part of the total production of the subsequent planning period.

Plan Indices

Many plan indices in use did not offer any opportunity for fully assessing the operation of enterprises nor did they ensure enterprise interest in more efficient use of capital investments and fixed assets, production of goods in the necessary assortment, reduction of their cost, rise of labour productivity and improvement of quality. The main plan index gross output did not adequately reflect the true economic situation and made it disadvantageous for an enterprise to put out cheap or more intricate articles and to fulfil the plan for the entire nomenclature.

The index of production value, on the fulfilment of

which, enterprise premium payments were based, undoubtedly stimulated enterprises to raise the volume of production as well as labour productivity and better utilization of capacity. However, the index numbers comprising the production plan were ambiguous and not sufficiently comprehensive. This gave rise to speculation within the framework of the plan where experienced economic administrators could easily juggle around with index numbers and exploit the economic ambiguities and contradictions contained in the system of indices to which premium payments were attached. Enterprises found it easier to raise the index through other means. 1) The magnitude of the value of production was greatly influenced by the product mix. According to what product mix was adopted production values of enterprises could fluctuate to a sizeable extent even if productivity and the degree of utilization of capacity remained constant. The plans prescribed certain forint sums that must be attained by enterprises in the course of production. These targets were obtained by multiplying the prescribed quantity of the good to be produced by an average price based on the average price of the actual product mix of the previous year. The tendency for enterprises was thus to secure fulfilment or overfulfilment of the targeted figure of production by seeking to raise the average price. This could be raised by devoting more labour to production which would raise wage costs. This however would result in a deterioration in the indices of the labour plan (production value per hour worked; production value per 100 forints of wages, etc.). Further the permitted wages

funds and man power establishments were strictly limited and controlled from the Centre and so enterprises had an important financial stake in observing economy in their use. Enterprises thus sought to overfulfil their targets of production value by as much as possible (their premiums grew correspondingly) by transforming the planned product mix in the direction of goods of higher value having a higher raw material content. The more highly priced and valuable the articles manufactured by an enterprise and the higher their raw material content, then given the size of the labour force and wage bill the better the indices of the labour plan would look. In addition the more expensive types of raw material were generally easier to work with (e.g. the use of better cotton resulted in fewer thread breakages) so that indices improved further with their use. Consumers frequently could not obtain shoes and clothing of the right size because enterprises favoured those of larger sizes, factories manufactured steel pipes of greater weight than necessary for the sake of fulfilling the production plan. Enterprises refrained from producing labour intensive commodities and manufacturing spare parts for machines produced by themselves for the sake of higher production results. Changes in assortment were also effected by producing commodities with a higher profit rate. The modification of the assortment in line with profitability and labour productivity considerations led to the piling up of unneeded consumer goods.

The enterprise also used deterioration of quality as a means for higher plan fulfilment. Quality deterioration meant

reduction of the working time expended on the commodity, less careful handiwork or using material of lower quality. Reduction of quality was also achieved through disguised price increases as designing a new product with negligible alternations but with a higher price. Under the system of plan indices 'production value' would go up if division of labour between firms was increased artificially i.e. an enterprise could raise the value of production by purchasing semi-finished products previously produced by itself. The idea of production value operated so as to promote a superfluous volume of interdependent production among firms. It was possible to raise production value and fulfil or overfulfil the plan by simply manipulating stocks of semi-finished products and work in progress. Though net value added was practically nil actions of this kind did yield a two to three per cent increase which was generally the amount by which production was short of its planned amount. Under the system of detailed plan indices then 'Productivity' could be improved without the least change having occurred in the performance of enterprises.

Another easy way of raising production value was by producing unnecessary products. Trade organizations were compelled to accept commodities even if they had not ordered them. Ministries forced stock piling companies under their supervision to take unneeded commodities from the producer belonging to the same ministry because these companies paid only 0.5 per cent for their credits whereas the producers had to pay 3 per cent.

It was irrational to employ a planning and premium system

under which production could be raised by two or more percentage points by a number of methods and ways which did not connote a real improvement in the work of enterprises but sometimes even caused damage to the national enemy.

Techno-economic indices were included in the national economic plan and indicated either the level of technique or that of productivity to be attained in production or some techno-economic aspects of the product mix. These indices carried littled weight as the financial incentives held out to top management were generally not bound up with techno-economic indices. Further they were not well founded on facts. Production plans and programmes were drawn up without any reference to technical indices.

The index of adherence to plans was designed to provide incentives for enterprises to adhere to their prescribed product mixes. However the index was generally calculated with respect to broad commodity groups and the production plans had little effective binding force since enterprises were able to make up any short falls in their production of particular articles by overfulfilling their output of other articles within the same commodity group. Further since the premium payments were based on this index it encouraged adherence to the plans at all costs even if this led to a rise in costs, idle capacity and increased wastage. The index of adherence to plans also provide enterprises with an incentive to narrow their range of production as much as possible even if it was detrimental to the interests of consumers because in most branches of industry

the degree of adherence to plans prescribed by the Centre depended on the number of distinct articles the enterprise had to produce.

The tendency was reinforced by the emphasis on cost reduction which provided enterprises with an incentive to narrow the range of their products and to avoid the production of new products. The larger the number of products turned out by any one enterprise the smaller the quantities and correspondingly the higher the cost at which it could produce any one of them. The introduction of new articles also led to additional expenses on new models and patterns and on the purchase of new equipment and installations. Further since enterprises were experienced in the production of old products, with the introduction of new products the old production flows would be interrupted and the enterprise would have to get accustomed to the performance of new operations.

Efficiency required that quarterly plans should be adjusted to demand in a flexible manner but generally the requests of commerce came up against resistance on the part of industry. This happened when modifications gave rise to raw material supply problems or to technical difficulties but even in cases where modification caused no trouble in actual production but hindered the fulfilment of some compulsory plan index figure it was rejected e.g., the modification of the product mix envisaged in the programme may prevent enterprises from fulfilling the planned production values. Again commerce may

call for the production of more labour intensive articles but the permitted wages fund available to enterprises may not suffice to meet this. In cases where the requests of commerce could not be met within the limits set by the approved plan index numbers sent down and enterprises wished to introduce modifications because of problems as lack of materials, the enterprise approached its directorate with a request that its plan be modified. This request would meet with approval only if the desired changes lay within the scope of the directorate's given set of figures and did not jeopardize fulfilment of its own plan indices. Plan modifications within a quarter were either explicitly prohibited or else limited and thus the system of plan index numbers became primary and superseded its true objective of the satisfaction of needs. The producer had no interest in catering to the users' needs. The price an industrial enterprise obtained from commerce would be the same irrespective of whether the order had been placed in good time or whether it had requested an exceptional rush consignment so the enterprise had no incentive to fulfil the latter request. Given equal costs it was common that the same price was fixed for an article which was easy and technically straightforward to produce as for an article which posed numerous production problems and raised the risk of being rejected. Enterprises thus had no incentive to produce the latter type of articles. Often light industry was reluctant to produce a number of articles on the ground that they required too much labour thus worsening the indices of labour productivity and 'not bringing

enough forints'. The result was a shortage of such goods because they were programmed in insufficient quantities by the industry from the very outset or else enterprises were reluctant to enter into contracts involving these items.

In the absence of direct links between the producer and the consumer enterprise it was commonly found that the goods produced had no market or application. The system of formulating all programmes at the Centre and channelling the contracts with the distributive trades through the central authorities had the effect of divorcing the management of enterprises from contacts with the distributive trades and from a knowledge of the requirements of consumers. Not being sufficiently familiar with consumer requirements enterprises were less prone to take any initiative. Centralization in the placing of orders entailed dullness and lack of ideas in the assortment of goods produced and the tendency was towards the imposition of uniformity in the production of goods.

It was a matter of indifference whether the buyers were satisfied with the assortment, quantity and quality of the commodities. The producer's energy was directed towards abstract production results and towards obtaining bonuses through the fulfilment of the production and profit plan.

For the sake of plan fulfilment ministries encouraged enterprises to produce commodities not needed in the national economy. Because of difficulties in material procurement and shortages in many commodities buyers were in a disadvantageous position in relation to sellers. The enterprise encountered

no problem in marketing but was hampered in procuring materials and intermediate products by the rigidity of the plan, lack of reserves and the producers' lack of interest in catering to users' needs.

Several factors operated in the pre-reform economic system which encouraged enterprises to lower quality. These included pressures to increase production value, Omissions of necessary operations so as to effect savings in wages bills, the unbalanced aspects of piece work payments, the lack of stocks, etc. There existed a conflict at different levels - cost with quality - quantity with quality and that of labour intensive careful workmanship with the desire to economize on wage bills.

The insufficient differentiation of prices also encouraged quality reduction. Products of different quality were listed under the same price and did not adequately reflect differences in costs and this induced the enterprise to manufacture commodities of poorer quality. Further since the quality control department was part of the enterprise and the controller obtained bonuses from the director he found it advantageous to relax the discipline in inspection to ensure plan fulfilment and bonuses.

In the case of intermediate products the user enterprise was interested in high quality to the extent that this helped its own plan fulfilment. On the other hand the enterprise could include the higher price and the cost of raw materials in the price charged for its own products. Further

by shifting the blame on defective materials he could conceal deficiencies in his own production. A situation arose where producers blamed one another for every shortcoming in production and these shortcomings became cumulative in the economy.

A characteristic feature of enterprise operations was 'storming' that is a tremendous burst of effort towards the end of the planned period in order to fulfil the plan and this too had adverse effects on quality. In March 1955 it was decided that within the quarterly plans of enterprises binding monthly rates of production should be prescribed by ministries so as to secure an even flow of production and avoid 'storming of the plan'. However, this was dependent more on even conditions in the technological aspects of performance (e.g. in picks per machine day) and the measure merely hampered enterprises and their directors in making dispositions of their own and also interfered with the rhythm of production and the fulfilment on time of customers orders.

A notorious feature of the centralized system of decision-making was the tendency by enterprises to strive for a slack plan. As premium payments were based on fulfilment and over-fulfilment of the targets laid down in the plan it was in the interest of the enterprise to obtain low targets which could be fulfilled easily. Further slack plans were an insurance against undesirable consequences of administrative uncertainty. There was uncertainty about the value of the plan for the following year, resulting from the absence of firm plans for a number of years ahead and the practice of planning from the

achieved level. The adoption of a taut plan would merely result in the receipt of a more difficult plan in the follow- [redacted]ear. In addition there was uncertainty about the final value of the plan for the planned period resulting from the instability of the plans. There was uncertainty about the timely arrival of inputs resulting from the way that the supply system operated and a slack plan provided the enterprise with a buffer to absorb any increase in the plan or breakdown in supply during the planned period. The planning and incentive systems thus evoked a spontaneous tendency in managements of enterprises to strive for loose plans to hide production potentials and hold back outstanding production achievements. During the process of plan formulation management protested against excessive tightness of indices and withheld information concerning the potentialities and reserves of their enterprises from the authorities. This tendency evoked a corresponding reaction from the authorities who assumed from the outset that such enterprises were merely striving to loosen their plans. Hence, even legitimate objections were often dismissed and authorities resorted to dictating their plans to enterprises.

The practice of translating past results into plans put a strong brake on the efforts of top management to reduce costs since any result once attained was immediately converted into a target demanded by the subsequent plan. Good performance of an enterprise during a certain period may have been a result of exceptional exertions on its part or due to temporary and

accidental factors. In its absence in the subsequent period the basic premium itself would be lost with failure to attain 100 per cent fulfilment of the higher target. The fear of being burdened with a tighter plan in the coming period deterred enterprises from striving to overfulfil the plan by a large margin.

Under the system enterprises operated so as to maximise current production but this was often at the expense of future production. An even development of enterprises demanded the following: 1) development of production techniques through the adoption of new manufacturing processes and the application of inventories and innovations; 2) the adoption of upto date forms of organization of the labour force; 3) improvements in the quality of products and the introduction of new products; and 4) training of personnel and the development of technical expertise.

Attention to these factors however had no beneficial effects on current production but on the contrary drew resources away from the performance of everyday tasks, e.g. the design of product improvements absorbs technological manpower and work on maintenance may require the stopping of machines the continued working of which was required for the fulfilment of the monthly plan. As neglect of the future was not penalized in any way nor associated with any marked disadvantage enterprises found it expedient to devote all their efforts in the direction of promoting current production thereby securing the premium.

The system of material incentives too impelled enterprise

management to neglect work yielding results only in the future whilst involving sacrifices of the present. Besides material premiums the recognition or criticism accorded to management by higher authorities, Party and social organizations was based primarily on fulfilment of the current quarterly plan.

If levels of production rose gradually in response to technical development or better maintenance of equipment this was taken account of from the outset in formulating plans for the subsequent period and management failed to obtain any financial rewards in respect of the slowly emerging results of their efforts.

The centralized system of economic planning contained insufficient incentives designed to encourage the efficient and economic use of material supplies. 1) The plans of cost reduction caused enterprises to be economical. However the rigid limitations imposed upon them in the form of restrictions and regulations of the wage and salary bills induced enterprises to be very strict in the matter of expenditure on wages even at the cost of waste in raw material utilization.

2) The index of production value encouraged industry to turn out articles with a heavy raw material content.

3) The composition of stocks was not determined in a regulated manner so that while unnecessary holdings of stocks of some materials had the effect of raising costs through their interest charges, stocks of other materials were reduced to unduly low levels by the excessive zeal to effect saving of circulating capital.

Inventories were financed from two sources: i) the circulating fund and ii) credits. The circulating fund was allotted by the ministry on the basis of inventory/output coefficients so as to cover the financing of the firm's average inventory needs. Since there was no interest charge on this the cost of holding the major part of the inventories was nil except the cost of storage. The interest charge on credits was low. In 1958 it was on the average yearly 2.3 per cent amounting to 0.4 per cent of the enterprises' cost. The low cost of holding inventories encouraged enterprises to hoard materials.

Though target bonuses were paid for the reduction of stocks against a base period there existed a clash of interests within the firm between different groups of employees. Employees of the financial department found it advantageous to effect a reduction of inventories and thereby earn substantial bonuses. On the other hand it was the class of technical employees who experienced the adverse effects of a lack of inventories and so resisted any more effecting a reduction of stocks. The hoarding of materials thus remained an integral part of the system where the enterprises were motivated by bonus maximization.

4) Materials were often worked up for the sake of augmenting production value irrespective of what the actual composition of demand may be.

5) No charge was levied on enterprises for the use of fixed capital, only a nominal rate of depreciation had to be

paid amounting to about one to two per cent for building; seven to eight per cent for machines and twenty to twenty-five per cent for means of transportation in most industries.[7] No charge for obsolescence was included in the depreciation rates.

The absence of an interest rate and low depreciation charges encouraged enterprises to obtain as many capital goods as possible. There was no incentive to ensure the efficient use of equipment or its proper maintenance. Because of the low cost of possessing capital goods the enterprise was inclined to stock as many machines as possible for the sake of future needs that might never materialize. Maintenance was neglected because if a machine became unserviceable the planning authorities provided another one.

In sum the pre-reform system of centralized decision-making emphasized the achievement of quantitative increases in the different industries and neglected the consideration of the efficient use of the produced quantities. As a result national income did not rise sufficiently along with the quantitative increase in production. In a conducted study A. Brody prepared input output tables for seven sectors of the Hungarian economy (coal mining, metallurgy, electrical energy, machine industry, railway transportation, labour as input and external production as output) for 1952, 1953 and 1959. The results showed a decrease in the share of external production (i.e. production for use outside of the five sectors of heavy

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7 B. Balassa, n. 2, p. 162.

industry). The proportion of external production in the industries in question is as follows:

	1952	1953	1954
Coal Mining	45.8	45.1	45.5
Metallurgy	33.1	28.9	29.5
Electrical energy	55.4	53.4	51.7
Machine industry	87.5	88.0	86.1
Railway transportation	66.4	62.3	57.8

Source: Year Book, p. 148, in B. Balassa, The Hungarian Experience in Economic Planning (Yale University Press, 1959), p. 90.

There was a deterioration in input output coefficients during the same period. Among the coefficients 16 show considerable increase, six show some increase, five some decline and one shows considerable fall in input requirements per unit of output.[8]

The changes are mostly continuous from 1952 to 1953 and 1953 to 1954. Calculating the 1954 external production with the coefficients of the year 1952 the following percentage increases in input requirements are revealed: coal mining 5.5, metallurgy 1.2, electrical energy 5.2, machine industry 2.7, railway transportation 11.5 and labour 1.4.[9]

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8 Yearbook, p. 144. Among the six coefficients indicating an improvement 4 are said to be highly unreliable (these of the machine industry).

9 Yearbook, p. 144, in B. Balassa, n. 2, p. 98.

On the basis of practical experience Brody extrapolates these changes for the entire period of the Five Year Plan and reached the following conclusion: "If we say that the average deterioration of the coefficients was 15-20 per cent we are likely to underestimate it".[10]

II

The New Economic Mechanism

Long before the introduction of the New Economic Mechanism (NEM) in 1968, it was widely recognized in Hungary that economic reforms were needed to remedy the inherent defects of the 'Centralist' model of a planned economy. To eliminate them several minor reforms were introduced before 1968. The first of these came in 1957 and consisted of a number of policy changes affecting both agriculture and industry. In industry upper and lower limits on wages were introduced for certain categories of work replacing the earlier system of fixed wages. The complex system of plan indicators, the main indicator being gross output was replaced by profits as the main indicator. However within a few years many of the old indicators were back in planning practice.

By the early 1960s much of the earlier system of compulsory plan indicators had been restored and again the need was felt for reform. The primary concern was with the inefficiency with which enterprises used capital equipment since they did not have to pay any charge for a such equipment.

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10 B. Balassa, n. 2, p. 90.

In 1964 Hungary became the first socialist country to introduce charges for the use of capital assets. An annual payment equalling five per cent of the gross value of the firms assets had to be made into the state budget from enterprise profits.

When the New Economic Mechanism was being prepared a decision had to be taken as to how deep and fundamental a reform it should be. For example should all compulsory plan indicators be abolished or should their number merely be reduced? Experience with earlier reforms suggested that the latter would not permanently change the system of centralized planning and economic management for the response to problems which would inevitably arise from time to time would be rapid restoration of the old controls. The internal logic of such a centralized and hierarchial system made this inevitable.

A piecemeal reform would have been self-defeating in purpose and a deep and through going reform was introduced in 1968 with the object of creating a more flexible and efficient economic system not subject to the creeping recentralization which had stifled previous reforms in a short while. The reformed system of economic control in Hungary is essentially characterized by an organic combination of centrally planned control and the influences of market relations in the context of socialist ownership of the means of production. The market has become a regulator but this in turn is centrally regulated and thereby it helps the realization of the national economic plan.

The most outstanding change introduced by the 1968

Reform is the abolition of the earlier system of detailed plan instructions wherein the Centre directed each individual enterprise to carry out some specified part of the plan and its replacement by a system of indirect economic regulations and incentives.[11] The national economic plan is broken down only by branches. It does not contain targets for any individual organization and has considerably fewer details than before. The main function of the economic regulators and of the rules relating to their application is to create favourable conditions for a harmonious coordination of enterprise with social and national interests and to give a correct orientation for enterprise decisions. Under adequate pressure and stimulating effects exerted by the economic regulators the enterprise will act in such a way as is favourable not only to their own interests but also to those of society as a whole. A considerable part of the economic decisions are now passed to the competence of the enterprise with the discontinuation of the 'breaking down' of plans and thus the scope of decentralized decisions has greatly increased.

National economic planning includes an analysis of the development and position of the economy, a forecast of the objective requirements and processes, an assessment of the

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11 The following account of the Reforms introduced in Hungary between 1968 and 1976 is almost entirely based on the following three works: i) I. Friss, ed., Reform of the Economic Mechanism in Hungary (Akademiai Kiado, Budapest, 1969); ii) Otto Gado, ed., Reform of the Economic Mechanism in Hungary Development 1968-71 (Akademiai Kiado, Budapest, 1972); and O. Gado, The Economic Mechanism in Hungary: How it Works in 1976 (Akademiai Kiado, Budapest, 1976).

possible development trends of the economy and further the elaboration of proposals as to the economic policy to be followed and the determination of economic objectives and tasks. The effects of the system of economic regulators are considered and economic analysis and technical economic conceptions elaborated by the planning organs.

The national economic plans determine for a definite period (a) the main objectives of economic development; (b) the extent and proportions of economic development; (c) the basic socio-economic tasks; and (d) the means of their implementation above all the main directions of applying the economic regulators.

The economic units are informed by the economy wide plan about the main directions and objectives of economic policy. It determines for them the main requirements deriving from economic policy and the economic tasks of national importance they have to keep in view in the course of their activities. Besides, the impact of the regulators the activities of the economic organizations are determined also by the orders of the economic control agencies based on the economy wide plans.

The highest authority in the context of planning now rests with the National Assembly. The Council of Ministers submits the guidelines of the long term national economic plan and the Bill relating to the medium term national economic plan to Parliament. It also determines the annual operational plans of the national economy and takes proper measures for the

implementation of the national economic plans and checks on the implementation of the plans.

National economic planning is the joint task of the National Planning Office, the ministries and other organs with a national scope of authority under the control of the Council of Ministers. The President of the National Planning Office organizes and directs the drawing up of the plans, submits the plan proposals to the Council of Ministers and checks on the realization of the national economic plan. If the development of the economy or the realization of the plan objective requires measures not considered in the plan itself the President must take the initiative by including other organs participating in economy wide planning in taking the necessary measures.

The role and tasks of the ministers and other national authorities have been modified by the reform. Formerly their function consisted mainly in giving concrete instructions to the branches and enterprises under their supervision. Now they are concerned (within the scope of the particular branch) in the preparation of decisions of the central economic policy, of the national economic plan and of the means necessary for its implementation in addition to supervising the enterprises belonging to their sphere of competence, e.g. the minister of Home Trade takes part in the preparation of decisions regarding the price system and the consumer prices and maintains the unity of home trade policy extending to both the state-owned and the cooperative trading units. The Minister of Labour

elaborates among other things the wage rates, the propositions concerning wage policy aimed at raising the standard of living and directs and helps the activity of local councils in the field of labour supply and employment. The Minister of Finance prepares the propositions regarding the state budget and the system of financial regulators helping the achievement of the objectives of the economic policy. In the course of national economic planning the trade unions, the National Council of Trade Unions and the national councils of the cooperatives are consulted and their proposals heard. The law requires the councils of the capital and the counties to supply data and perform computations and analyses if requested by the national planning agencies and the information and proposals submitted by the Councils serve to found the economy wide plan. The planning organs also consult the state and social organs performing scientific functions in connection with development proposals affecting their particular field of activity.

At present there exists the long term (15-20 years) the medium term (5 years) and the short term (viz. annual) plans. Though the annual plan was preponderant as a means of economic control and management in the earlier system, now it is the five year plan which is the decisive tool of central economic control.

The long term plan denotes the ideas about the most important future economic and social processes, the main strategic aims to be attained in the prospective period and the

related tasks. The long term plan decides on problems which cannot be changed by each medium term plan period. The long term plan deals with and coordinates the following groups of issues: 1) the general growth rate and major proportions of the national economy and the main ideas concerning the development of production relations; 2) the long term concepts regarding the country's international economic relations; 3) the growth rate of certain branches decisive for the growth and structural transformation of the economy and the targets of some important aspects of development; 4) the planned improvement of the living conditions of the population and of its supply with social, cultural and housing facilities; and 5) the main development conceptions regarding the various economic regions of the country. The guidelines of the long term plan must be discussed and approved by the National Assembly so that the highest organ of state power can take a stand on the most important economic and social problems. The decision may be an approval of the guidelines in the form of a resolution taken by the National Assembly or alternately a resolution authorizing the Council of Ministers to establish on the basis of the stand taken by the National Assembly, the long term plan or its guidelines.

The medium term economy wide plan comprises in concrete terms the objectives of economic policy to be implemented in the plan period, the government decisions on the implementation of economic tasks as well as on the harmonized application of

the economic regulations. The contents of the medium term five year plan may be defined as follows: (a) i) description and quantitative determination of the main development targets, the rates of growth of national income and product, and the proportions between consumption and accumulation; ii) description of the planned development by the main branches of the economy, structural changes and technological progress within each branch and the total investment and its distribution by branches; iii) structural changes in foreign trade and the equilibrium requirements of the balance of trade; iv) the expected development of employment and living standards and forecasts relating to consumption, housing, education and health facilities; v) targets concerning the regional development of productive forces and the principles of location policy. (b) the means securing the realization of the stated objectives and the major economic regulators. Those would include: i) the list of major investment projects and their approved indicators; ii) investment allocations for specified purposes; iii) the list of approved central development programmes together with the means of their implementation; iv) the principles of price policy and pricing; v) regulations controlling foreign trade as export subsidies and trade and customs policies; vi) the principles of financial policy as the state budget and the rules regulating enterprise incomes and enterprise funds; vii) credit policy enunciating the sphere of credit preference and restrictions; and viii) principles relating to the utilization of the labour force, wage policy, raising of living standards and income distribution. It is the medium term economy wide plan which has the greatest importance from the point of view of economic

control. It is formulated by the National Assembly in the form of a law.

The main task of the short term annual plans is to survey in a comprehensive manner the short term tasks and measures necessary for the realization of the medium term plan and to draw up an operational programme of such measures. The annual plan of the economy provides for the growth of output of the main branches of the economy, of the real income and consumption of the population and of investments, determines the main conditions of equilibrium and decides on the application of the short term economic regulators. In addition the annual plan also comprises central government decisions on individual major investment projects, on the lump sum and other state investments and on the government support to investments. The annual plan determines tasks related to production, sales, procurement, technological development, management of fixed assets and inventories, labour and wage problems as well as the means necessary to fulfil these tasks. The annual plan provides for the coordinated measures necessary to meet the equilibrium requirements for that year and there are measures aimed at the regulation of the annual supply and demand. These include: i) principles of establishing the main items of revenue and expenditure in the state budget; ii) adaptation of the credit policy to the specific tasks of the year; iii) price policy measures operating with the framework of the prevailing price system; iv) determination of concrete annual measures regarding the labour force, wage policy and other

aspects of the standard of living; and v) the setting of quotas and determination of other administrative controls regulating the trade in certain products. The annual plan is determined by the Council of Ministers on the basis of the authorization obtained in the law on the medium term national economic plan. The National Assembly surveys the provisions of the annual plan whilst discussing the budget and supervises the implementation of the annual plans.

Consequent to the 1968 Reform there no longer exists a universal system of interrelated plans and the plan construction is now limited to macro planning at the Centre which is being implemented by a complex set of tools of economic policy rather than by obligatory plan directives. In this context the responsibility of long term planning has grown, for the economic processes have to be regulated for a longer period ahead.

When drawing up the national economic plan the planners set out from the political objectives of the socialist state, to be implemented during the plan period and from the plans already approved for the longer term (in the case of medium term plans from the long term plan) relying on the analyses of economic development, economic possibilities and technico-economic and regional development conceptions.

Determination of the distribution of national income between investment and consumption is still a central target, so too are the total amounts of investments to be realized in a few key sectors with the objective being that of promoting structural changes in the economy. A desired distribution of disposable

income among major occupational and income groups remains a policy target and both total export and balance of payments targets remain centrally determined decisions.

The decision-making authority of enterprises (all enterprises have the same rights regardless of their size or this importance for the economy) has been considerably expanded particularly in matters of current production.[12]

The former system of allocations based on the breakdown of the 'plan of supply with materials and technological equipment' to the enterprise level has been replaced by a system of trade in production goods relying on the direct market relations between enterprises. The official regulations and procedures of giving and accepting orders by enterprises has been abolished. The multi-channel system of trade is a characteristic feature of the new mechanism. There is autonomy of the enterprise in respect of both production and sales. The enterprises are free to choose between the various sources of purchase i.e. between buying from producing enterprises or specialized trading enterprises or through imports within the foreign trade regulations. The enterprises are free to sell their products either directly to the user enterprises or the specialized trading enterprises, to home trade organizations or directly to private consumers, to budgetary institutions or to foreign markets through exports. Compulsory contracting in respect of delivery as well as the centrally prescribed standard conditions have been abolished.

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12 This is discussed in greater detail in ch. 3.

Thus the buyer and seller can freely agree on the terms of purchase and sale often inclusive of the price. The abolition of compulsory channels and administrative limitations stimulates users to weigh up the economic advantages and disadvantages connected with the various sources. The change has replaced the earlier shortage psychosis by an almost complete normalization of supply on such vast markets as those of ferrous metals, of timber products, etc. It has helped to eliminate superfluous links in trade that unnecessarily lengthened the way to be covered by the goods. Enterprises are in a position to take such economic decisions as will secure the maximum profits.

However, some restrictions on the trade in production goods have been retained. Complete central allocation among the users is applied only in the cases of a single product: meat. Quotas are established in about 80 cases so as to balance the demand and supply of products available in limited quantities thereby narrowing down tensions and securing the even supply for a large number of small scattered users. Several kinds of quotas are used. Under purchase quotas the maximum annual quantity purchaseable from the given product are established for a few important raw and basic materials as well as for primary energy. The prescriptions affect some major users and in certain cases ministries. Purchase quotas are established for the home trade covering 9 products at present.

Outstandingly big users are obliged to observe a minimum limit of stocks mainly in the productive use of primary energy so as to secure normal supply in the course of the season.

Exclusive appointment of purchasers and sellers is necessary where the same product is imported both from socialist and non-socialist countries and is in addition produced domestically and where the same price must be charged to the users. Limitation of the choice of supplier is implemented where the harmonization of demand with supply requires stricter control as in the case of rolled steel goods. Compulsory conclusion of agreements is prescribed for suppliers in order to secure the material supply of major investment projects, the health service, state reserves and other state needs. In connection with the quotas the supplier is automatically obliged to conclude the delivery agreement but buyers are forced by central prescriptions to take over the goods only in exceptional cases - they conclude agreements otherwise only according to their actual needs.

Income Regulation

The enterprise can raise bank credits to finance investments but the main financial source of enterprise investment is the development fund which is formed out of enterprise profits. With the 1968 Reforms each enterprise forms three funds - the reserve fund, the sharing fund and the development fund.

Enterprise profits were divided into two parts due to the development fund and the sharing fund. The division took place according to the proportion existing between the annual wage bill and the actual value of the fixed and circulating assets. Before calculating this proportion the wage bill was multiplied

by a factor so as to emphasize the incentives emanating from the sharing fund. Generally the multiplier was two but higher factors were used in branches where the proportion between fixed assets and the wage bill deviated from the average. After this division both parts were taxed. The part flowing into the sharing fund was taxed progressively depending on its proportion to the annual wage bills and ten per cent of profits remaining after taxation were transferred to the reserve fund of the enterprise. The remainder was transferred to the sharing fund and was utilized (a) for complementing the individual money incomes of the enterprises' employees; (b) for benefits in kind granted to workers and employees; and (c) as a reserve for the next year. The first part ensures in addition to profit sharing the payment of premia reward, innovation fees, housing contributions, scholarships and emergency aids. The second part covers enterprise spending aimed at reducing the prices of catering, kindergarden fees, recreation costs as well as enterprise contributions to the costs of social, cultural and sports facilities. Any additional wage expenditure caused by a rise in the level of average wages had to be met out of the sharing fund. Thus any rise in the average wage level reduced the possibility of using the sharing fund for raising personal incomes.

From the development fund the enterprise may replace scrapped equipment and carry out investments serving modernization or extension of its productive capacity including any increase in circulating assets this may involve. The part of profits due to the development fund was taxed at the linear rate

of sixty per cent but the rate differed in some branches. In addition the part of depreciation allowance to be left with the enterprise (generally sixty per cent of the total of depreciation allowances) was also transferred to the development fund. The reserve fund is available: (a) for covering actual losses; (b) for complementing the development fund when the latter is unable to meet its liabilities; and (c) for complementing the sharing fund when the amount of the latter is less than it was in the preceding year. After taxation ten per cent of profits due both to the development fund and sharing fund were transferred into the reserve fund until the latter amounted to eight per cent of the annual wage bill plus one and a half per cent of the actual gross value of fixed and circulating assets. Amounts withdrawn from the reserve fund were to be repaid in three equal annual instalments out of profits retained by the enterprise after taxation.

This system of profit taxation in force upto 1975 was too rigid owing to the compulsory division of profits, the separate taxation of the divided parts and to the fact that high taxes had taken the edge off stimulation. The system was created to control the demand in money terms for consumer and investment goods and the financing of working assets. However by its rigidity the compulsory division created a disadvantageous situation for enterprises where as a result of technological development or labour saving investment the ratio of assets to wages was considerably increased. Because of a rise of capital intensity enterprises got into a situation where according to

the regulations they could use only a small part of their profits for sharing purposes and there was no incentive left to raise profit through capital intensive investment. In many cases the requirement of maintaining profits proportionate to assets proved to be unrealistic.

Till 1976 the decisions of enterprises were basically determined by the following indicator:

$$\frac{P}{C \times W + A}$$

Where P = annual profit, C = wage multiplier, W = annual wage bill, A = value of fixed and working assets engaged. The taxation system in force from 1976 has abolished this indicator. The summation of the fixed assets and current inputs i.e. wages, in the indicator did not make it suitable as an indicator of efficiency to guide enterprises in their decisions. The use of the wage multiplier as weight improved the situation but the current inputs remained undervalued.

The system of profit taxation has from 1976 onwards become more flexible, the compulsory division of profits being discontinued. In the new system profit is taxed at a relatively lower general flat rate of 36 per cent. The profit after tax constitutes the undivided incentive fund.

After the general profit tax has been paid fifteen per cent of the undivided fund is put into the reserve fund annually. The obligatory level of the reserve fund equals either the highest amount of the profits after taxation in 1976 or in any of the

following years. If this amount falls short of the combined sum of two per cent of the gross value of assets and eight per cent of the wage bill the latter becomes the obligatory level up to which the reserve fund is to be formed by yearly instalments. The new rules governing the creation and utilization of the reserve fund enable the enterprise to counterbalance the fluctuations in annual profits.

After the creation and replenishment of the reserve fund the creation of the development fund follows. The enterprise is obliged to create a fund large enough to meet its obligations towards the banks, the state and the suppliers of investment goods. Only the profit remaining after these obligations have been met can be used for the creation of a sharing fund and for the payment of the progressive tax on this fund or for further development purposes. It is used to finance the following items in this order of rank: i) obligations towards the state, banks, and other enterprises related to investments and credits on working assets; ii) replenishment of the fund of working capital following an increase in working assets; iii) own resources of the enterprise necessary for raising an investment credit (usually thirty per cent of the total cost); and iv) other development outlays of the enterprise. A ten per cent tax on construction costs is levied and must be paid from the development fund. This stimulates enterprises to implement investments involving relatively less construction and fitting activity. Enterprises have an incentive to utilise the development resources for intensive machinery, investments of a reconstruction

character which can be implemented and recovered in a shorter period than the construction intensive investments.

Creation of the development fund may be followed by the creation of the sharing fund on which a highly progressive tax is levied. The uppermost bracket involves a tax of 800 per cent and the sharp progressiveness of taxation effectively blocks the formation of a sharing fund that would allow the payment of more than forty days profit shares. The progressive tax aims at preventing sharp income differentiation and curbing tendency of enterprises to increase personal payments at any price. The decree rules that the enterprise benefits serving direct financial stimulation (premia, and year shares) must not be higher than twenty per cent of the wage costs in the year concerned. The part of the sharing fund formed above this level may be reserved for next year's payments. The containment of income differentiation still preserves the incentive effect of the sharing fund because what is important for the worker is that he should be able to reckon each year with premia, end year shares amounting to 3-4 weeks' wages on the basis of the steady progress of his enterprise. This while making differences in results palpable extreme differences will be curbed. The new system also provides for sharing funds in the case of enterprises where despite profits, payment obligations entirely consume the undivided fund and where only a sharing fund amounting to less than six days wages could be paid. In such cases a sharing fund of six days wages can be formed even at the

expense of obligations towards the state, banks and other enterprises. From this six days sharing fund the premia during the year, the taxes on wage increases and the end year payments must be paid. This measure stimulates enterprises, to take responsible decisions. Enterprises, deliberately undertaking burdens exceeding their solvency or whose profits are lagging behind the level forecast at the time of undertaking the obligations should not be able to pay the same shares at the end of the year as the more efficient enterprises. The burden on the sharing fund also changes; there are changes in the levy on wage rises and loss contribution had to be provided from the sharing fund to welfare outlays.

From 1976 on, a welfare fund may be created at the expenses of profits before taxation of the amount of 750 forints per employee on the basis of the employment considered in the wage regulation. This amount grows by an amount determined in the national economic annual plan according to the rise in average wages.

Thus the new system of profits taxation secures centralization of an adequate part of profits and proper orientation of the enterprises towards a rational proportion between sharing and development. The lower level of the general profit tax strengthens the profit motive and the stimulation for development. To prevent the tendency of raising profits through an unjustified price rise unearned profit is confiscated through a fine and prices are checked carefully. Profit is influenced both by changes in the production pattern and by improvements in directing

sales and in marketing. For this reason profit is suited for linking national economic interests with those of the enterprises.

As mentioned already under the new system of control decision rights have been decentralized and obligatory plan targets for enterprises have been abolished. However, by properly operating financial and other regulators as well as through direct measures the state creates such economic conditions as will secure that the decisions of the enterprises oriented by profit maximization should ensure the realization of the plan objectives. The system of income regulation as described above was used to secure the revenues of the state budget and thereby the central funds for financing the common social objectives as also make available to the enterprises the financial mean necessary to fulfil the tasks relegated to the scope of their own decisions.// Other economic regulators whose direction of application is determined by the national economic plan include wage regulation, price policy and price control, credit policy, foreign exchange management and the financial measures regulating foreign trade and the state budgetary policy. Each of these is now examined in turn.

Wage Policy

Several forms of wage regulation exist side by side in different branches of the economy. In the majority of the material production branches the increase in wages should depend on improvement in efficiency, contribution to national income and the rational use of labour. In these branches relative wage

level or wage bill regulation linked to enterprise performance is applied. The rise in average wage depends on the value of the wage rise indicator: $\frac{P + W}{L}$ Where P = annual profits, W = annual wage fund, L = employment expressed in a number of employees calculated for wage regulation purposes.

A one per cent increase of the indicator allows a quarter per cent rise in average wages.

Under the system of wage regulation from 1968 to 1975 a tax was levied on the wage rise allowed by the above indicator but from 1976 a linear levy has to be paid on the increase of average wages exceeding six per cent. A progressive levy is charged beyond this only if wage rises exceed the guaranteed increase combined with that allowed by the indicator. Progressive payment is made according to the rate referring to the zone above the wage rise allowed by the indicator. Assuming a 1.5 per cent guaranteed rise this implies that if the indicator allows a rise of 4.5 per cent after an additional rise of 1 per cent, 550 per cent levy must be paid (total wage rise is 7 per cent)but if the indicator allows only a rise of 2.5 per cent after an additional rise of 1 per cent only 300 per cent levy is to be paid (total wage rise is 5 per cent). Thus the sum of the levy will diminish considerably in the new system. The relative wage level regulation is applied to the major part of the metal working industries; chemical industry, about half of the branches of the light industry the group of "other industries" and to the majority of domestic and foreign trade enterprises.

b) Relative wage bill regulation is applied to a part of the metal working industries, the bulk of the building materials industry, half of the light industry, large part of the food industry, entire construction, state-owned agriculture and forestry and to a part of transportation.

The relative wage bill regulation regulates i) the total amount of wages and ii) the level of wages. The permissible amount of wages depends on the development of the production indicator taken for basis (generally the value added). A charge of one per cent generally leads to a quarter per cent rise in wages. In 1976 the extent of the guaranteed rise in wages is one and a half per cent. A progressive levy is charged on the raising of average wages beyond six per cent (the average wage break) that is payable from the sharing fund. This regulation provides a strong incentive towards rational management of labour. It allows the enterprise to raise the wage bill in conformity with the rise in its production indicator while at the same time, preventing distortions in the relative wages of the different enterprises. An increase in employment under this system is possible only if the sources for the additional wage fund are created by an adequate increase of the production indicator applied.

c) In branches where economic conditions do not make it possible that the wage rise be linked to enterprise performance central regulation of the wage level and the wage bill is applied. Here conditions of economic activity are exogenously determined and the enterprise cannot be expected to raise profits to such

an extent that the increase in wages could be reasonably linked to it. If such linking occurred the desirable rise in wages could not be attained. The wage level is centrally regulated in coal mining, power generation, water control, batteries, dairies, some branches of transportation and trade, certain public services and in enterprises providing cultural services.

The wage bill is regulated centrally in all technical designing and investment enterprises and in research and business organizations. Under this form of wage regulation the annual increase of wage is not linked to any enterprise indicator but the extent of the increase is centrally determined in the annual plan as a percentage of the wage level or wage bill respectively. If the wage rise goes beyond the level determined in the annual plan, a payment must be made into the state budget from the sharing fund.

The new forms of wage regulation diminish the possibility of an extreme rise in wage by means of progressive taxation and put a regular brake on the increase of average wages exceeding six per cent, whilst securing the possibility of a minimum unconditional rise in wages. Through regulating the reserve fund they allow for the neutralization of changes due to profit fluctuation. Further by abolishing the division of profits before taxation they make the growth in personal incomes more even.

Price Mechanism

Under the pricing system operating in Hungary before 1968

almost all prices were set directly by some state organ above enterprise level and could be changed only with the agreement of these organs. This implied that producer prices were effectively fixed for long periods of time and generally failed to reflect the real relative costs in the economy. 1968 marked the transition from the system of officially set prices to a more flexible price mechanism indicating the economic processes taking place on the market. In the new system with wider scope for the operation of market forces and profit incentives, flexibility was required in the price system. On the other hand it was still important to maintain some degree of price stability in the economy and setting certain prices reflecting state preferences. A compromise between the two objective was sought to be achieved by the 1968 Reform.

The new price system is a mixed one where officially fixed prices and maximum prices coexist with prices that are permitted to fluctuate between lower and upper limits fixed by the Centre and free prices agreed upon by the seller and purchaser enterprise. Officially fixed prices are not permitted to move in either direction, maximum prices must not exceed an officially established level, in the case of limited prices a starting level is determined and a margin (usually five or ten per cent and sometimes fifteen per cent of the starting level) is set for eventual subsequent rises. Free prices are not subject to direct official influence.

The extent of application of these four categories of prices differ according to the various commodity groups. For

home produced raw materials and intermediary products fixed or maximum producer prices prevail for about seventy per cent of the total production, for two per cent prices are limited and for twenty-eight per cent prices are free. In the case of the processing industries nineteen per cent of the output has fixed or maximum producer prices, there are limited prices for three per cent and free prices for seventy-eight per cent of the output. In agriculture most producer prices are officially fixed or regulated for each crop year and these prices are backed up by unlimited purchases by competent state agencies. From among consumer prices those of articles representing about fifty per cent of all retail turnover are fixed or maximum, those covering another twenty-seven per cent are limited and the prices of twenty-three per cent are free. Prices in case of housing rents, expenditure on passenger transport and postal services are officially fixed on maximum. The application of different price types may occur within the same group of consumer articles so that the prices of certain qualities serving mass consumption are officially regulated whilst prices of higher quality luxury goods belong to the free category. There are however some limitations in respect of consumer goods having free prices which affect the corresponding producer prices. In the first place the producer prices of most raw materials and intermediate goods are fixed or maximum. Secondly even in the case of the free producer prices of the processing industries there exist exceptions in cases where a rise could have a severe effect on the consumer price level and here the enterprises have to give prior notice

to the price authority about their intention of raising the price. The price authority may veto the rise but an agreement with the enterprise must take place within a definite time period.

The Price Reform of 1968 involved a rise in the level of producer prices relative to that of consumer prices and substantial changes in the system of turnover tax have been introduced. There has been a reduction in the average rate of turnover tax, a shifting of most of the tax collection from production to trading bodies and a simplification of the set of tax rates: these were reduced from over 2,500 different rates to about 1000 rates. In the pre-reform price system that existed prior to 1968 producer and consumer prices could vary quite independently of one another. The general price revisions were restricted as a rule only to producer prices; they affected consumer prices only exceptionally and to an extent were determined in advance. This was possible because the producer prices of industrial products affected almost exclusively the state-owned enterprises. Under the old mechanism of obligatory plan directives prices did not regulate production and since most of the enterprises incomes had to be paid into the state budget, in principle all price changes were finally levelled out by the latter. Consumer prices on the other hand regulate the consumption of commodities. Thus revisions of producer prices took place when input relations changed and only when equilibrium requirements made it unavoidable. Consequently the turnover tax rates separating the two price systems were widely differentiated by products. Under the

New Economic Mechanism the measures are aimed at closely linking consumer and producer prices so that they move together and changes in demand conditions directly stimulate the appropriate production response instead of being mediated through the planning system. Consumers would no longer be isolated from changes in production conditions.

In the new price system efforts were made to ensure a more complete accounting of production costs. Earlier the depreciation allowances of fixed assets consisted of two parts: quotas of 'general renewal' which was retained and used by the enterprise and 'investment' which was largely paid into the state budget. In the new system of price calculations the costs of general renewal are classified under the head of general overhead costs so that amortization is identified with the former 'investment quota'. The fixed assets were globally revalued. New depreciation rates have been established accounting for physical wear and tear, the factual possibilities of replacement and for obsolescence.

In the earlier system of pricing users of capital and land did not pay for their use. No taxes were charged on production assets and investment allocations granted by the state were not repaid by the enterprices benefitting from them. In the new price system all resources used have to be taken into account among costs. Use of labour is taxed by a twenty-five per cent charge on the bill of wages. A five per cent charge on productive fixed and circulating assets is levied. From 1968 a ground rent for the use of industrial sites has been

introduced amounting to about five per cent of the value of the site but not exceeding 0.2 per cent of the value of all fixed assets in 1968. The charge for water has been doubled. In forestry the differentiation of the producer prices serves to collect land rent and in oil extraction the same purpose is served by a differentiation of production tax.

Prices include a rate of profit determined in relation to the productive assets engaged. It amounted to six and a half per cent on the average but within this average the extent of profit contained by the new prices varies according to branches. The modification of prices and financial rules have been designed to ensure that the ratio of profits realized in prices should better reflect the real differences in the efficiency of production.

In the interest of rational enterprise management the role of producer prices had to be increased by eliminating the gap between price proportions on the world market and on the domestic one, to ensure that domestic prices follow the long term price changes on foreign markets. In the case of free prices, changes in import prices would have an immediate effect. However in the case of the officially fixed prices the changes in foreign trade prices (or in the case of maximum prices their increase) is asserted only through periodical adjustments. In the period between two adjustments the price changes not asserted domestically are settled through various equalization funds or directly by the budget. At the same time exchange rates would be continually adjusted to follow not only the changes in

the relative exchange rates of foreign currencies but they would also reflect the differences between the domestic and foreign price changes prevailing in the competitive sphere. Pricing with the aid of the foreign trade price multiplier is designed to improve the commodity pattern of exports in the sense of higher efficiency. Importers and the final users of foreign goods pay the actual prices at which these goods were purchased abroad converted to forints with the aid of a uniform price multiplier whilst exporters receive the prices actually attained abroad converted to forints in the same way. The multiplier expresses the average forint input needed for obtaining by way of exports a unit of foreign exchange. It depends on the commodity pattern and efficiency of exports.

From 1 January 1976 the prices have been modified, the levies on assets and taxes on wages have been adjusted to become more proportionate. Analysis of the data in the 1970s showed that the five per cent charge on assets and the twenty-five per cent tax on wages were disproportionate - they rendered assets too expensive for the enterprise and the use of live labour relatively cheap. This is evident from the fact that the five per cent charge on assets prior to 1975 when it was based on the original gross value of the fixed assets was about as high as the magnitude of the depreciation allowance. This meant that while the use of fixed assets carried a burden of depreciation allowance complemented by a 100 per cent surcharge, at the same time wages were taxed only by twenty-five per cent.

which enterprises operate.

Credit Policy

The credit policy is an important economic regulator which the Centre uses by rearranging the often daily changing credits on circulating enterprises assets and investments by altering the credit conditions from time to time (rates of interest and terms of expiration). The main feature of the new credit system is that instead of the hitherto essentially automatic granting of credits (up to limits established by the plan) it will be selective, flexibly following the market relations in conformity with the requirements of profit maximization. According to the criterion of profitability the Bank grants preference to the allocation of credit, to the economic activities most important and efficient for the economy. To promote the assertation of this selective credit policy differential rates of interest have been established for different activities and there are variations in the general terms on which credit facilities are offered. These terms would include total value of credit extended, dates of expiration and the extent of the required contribution from enterprise resources in the project. When granting investment credits the banks set minimum requirements for the enterprises in respect of the profits to be yielded by the assets engaged. The terms for granting credits are set so as to ensure implementation of such activities as are efficient and promote national interest as well as partly reflect state priorities. Exceptionally favourable conditions

in the form of longer terms and lower interest rates are set for agricultural credits, for the development of services and for the production of certain building materials.

To promote equilibrium on both consumers' and producers' markets and in foreign exchange, control banks concentrate credits on the production of readily saleable commodities and on the expansion of capacities producing them whereas the accumulation of unsaleable stocks and the implementation of inefficient investments or those requiring excessive foreign exchange are impeded by credit restrictions. In some cases credit can be refused outright.

The claims on investment credit invariably exceed the volume of financial resources available. Consequently quotas are set for each branch of the economy and enterprises have to compete with each other in the context of the minimum efficiency requirements of credit utilization and applications for credit are scrutinized according to the prospects of utilization.

Regulation of Foreign Trade

The former system of economic control based on detailed plan instructions eliminated the effect of foreign markets on the domestic market. The producer enterprises bought from and sold to foreign trade enterprises at domestic prices independently of the world market prices. They remained isolated from the effects of foreign markets and any differences stemming from deviations between domestic and foreign prices and to the scarcity of foreign currency were settled between the foreign

trade enterprises and the state.

The 1968 Reform aimed at promoting the development of an efficient and rational structure of exports and imports by creating a link between external market impulses and domestic production, marketing and consumption. In the new system of economic control foreign trade transactions can take place in three basic forms. A small number of productive enterprises accounting for five to ten per cent of total foreign trade have been given the right directly to export and import. Foreign trade transactions made on the account of foreign trade enterprises are confined generally to the products of the local and the cooperative industries and account for merely five per cent of the total trade. Eighty-five to ninety per cent of foreign trade is transacted by the specialized foreign trading companies on account of the producers. The foreign trading enterprise is thus a commission agent of the producer and is interested in achieving a surplus above the price limited by the producer. The producer and the foreign trade enterprise can share in the profit by drawing such contracts. The producers are thus directly interested in achieving the most favourable export and import prices and conditions.

With the introduction of the foreign trade price multiplier the various foreign currencies and claims expressed in them are converted to forints with the aid of this uniform coefficient. Two foreign trade multipliers were introduced one for the socialist and one for the non-socialist trade relations taking into account the different patterns of trade prevailing.

However the coefficient does not distinguish according to the kinds of goods sold or bought with foreign exchange. The multiplier helps in maintaining equilibrium between the demand for foreign exchange and the supply made possible by the returns earned. By conveying the subjective preferences of foreign markets to domestic producers it helps in the formulation of rational economic decisions. With the introduction of the foreign trade multiplier and the changes in the organization of foreign trade the producing enterprises can now earn considerable profits in the case of efficient exports which in turn stimulates efficient production and improvements in the pattern of production.

At present the Hungarian exchange rate and price system cannot secure automatically the desired export activity by themselves since any enterprise that earned foreign exchange at a cost exceeding the accepted multiplier would have to abandon exports and reduce or stop the production of output before even attempting to reduce costs or to change the pattern of production on exports, or to raise the export price. Consequently a system of state refund has been worked out which provides a possibility and incentive to enterprises for developing a more favourable export pattern through means temporarily secured by the state budget. The state subsidy is not intended to cover export losses arising on account of certain commodities or groups of them but is paid to the enterprise as a whole taking into account its entire export activity. In order that the state refund should have a selective effect it is fixed in principle

and is applicable uniformly for homogenous groups of enterprises. With this the enterprise producing more profitably obtains an advantage and the one that is less profitable within the group is in a disadvantageous position. This directs the enterprise towards achieving a more favourable production pattern. When granting refunds the socialist and non-socialist markets are distinguished. When determining the rate of the refund a profit corresponding to or even exceeding the profits available on domestic sale is calculated to make the export price competitive with the prices on the domestic market. Its amount is either proportionate to the return of foreign exchange or its maximum is limited.

One of the main shortcomings of the system of state refunds is that the refunds established on the enterprise level to ensure, in principle, profits identical with domestic realization, though guaranteeing the necessary export volume do not comply with the long term objective of granting possibilities of quicker development to enterprises undertaking economic and efficient exports. The profits earned through exports reflect the position of the refund supported enterprise on the home market rather than their position related to international economic efficiency. Often the export profit of an enterprise supported with substantial state refunds was higher than that of an unsupported exporting enterprise earning foreign currency at a cost close to the price multiplier. Since in the long run successful enterprises do not obtain more development funds there is no incentive to increase efficiency.

Other financial means are also used to promote export activities of enterprises. There is a special provision for investment credits on export development projects which are expected to pay off quickly and exert a favourable influence on the balance of payments. Further a committee formed judges the proposals of enterprises related to expanding the export commodity funds and if adequate commitments are made the enterprise can obtain temporary tax exemptions (thereby securing an increase of their development funds and circulating assets), production subsidies and wage preferences. In the event of failure to meet obligations the central financial aid must be repaid.

Economic regulators are used to influence imports so that the users feel the actual costs of the imported products and the changes therein and the effects of cyclical price fluctuations are moderated on the domestic market.

The import price subsidy is granted from the budget on products which have an officially fixed or maximum price in the domestic market and the actual cost of imports exceeds the domestic price in the long run; as also when the prices of products manufactured from imported goods are officially fixed or maximized and the increased cost of imports would result in a loss.

The import turnover tax is imposed mainly on products imported from socialist countries and is aimed at achieving a better conformity of the domestic price of the imported product with other domestic prices in the case of limited import

possibilities.

The system of tariffs is an important means of regulating imports providing at the same time protection from the effects of external competition. In 1975 the level of tariffs and their relative proportions have become lower. The relative tariffs enforce the principle of verticality - a low duty is imposed on raw and basic materials and a moderate one on intermediate products. The higher zone has become lower and restricted to a smaller scope. Under the system of the three column customs tariff the first is autonomous the second based on the clause of the most favoured nation and the third preferential. The second column is applied to all capitalist countries and the preferential tariff applies mainly to the developing countries.

The customs duly exerts its import regulating effect as a factor in price formation. The duty is based on the purchase price converted to forints at the commercial rate of exchange. By increasing the import costs for the user the duty influences decisions on imports. As a factor in efficiency computations it also affects decisions on investment and development.

To mitigate the effects of temporary and cyclical price fluctuations a reserve fund for import price equalization has been created with those enterprises which produce commodities from imported materials, with officially fixed or maximum prices. The fund is also applicable for consumer goods imported in large quantities which have a maximized retail price. A reserve fund for equalization exists for certain chemical materials, textiles

and clothing, iron and steel goods, nonferrous materials and citrus fruits. A price of reference has been established and savings attained with reference to this level must be deposited into the fund whilst price losses (again relative to the price of reference) can be covered from the fund. At the same time to stimulate enterprises towards efficient prices a definite portion of price gains can be placed into the enterprises' development and sharing funds. At the same time only a definite portion of the price losses can be covered from the equalization fund beyond which the losses cut into the profits of the enterprise.

In recent years the deep changes on the world market have necessitated budgetary support to the majority of equalizing funds as the sums formerly placed into such funds could no longer cover the effect of the price rises.

With the adjustment of producer prices in 1975 new rules had to be set for a major part of the price equalizing funds. In the new situation some of these funds continue to claim budgetary support whilst in other cases because of a reversal in price trends and the establishment of new trends it became necessary to prescribe substantial payments into the budget.

A measure has been introduced on 1 January 1975 wherein if the price of an imported material rises considerably and the domestic producer is still inclined to sell the product made from this material, for export at the low price, then the exporter must pay as tax, the difference between the import price and the

domestic price on the basis of the material content of the product. This ensures rational decisions by exporters.

A system of export import licenses has also been introduced. The import license is mainly a means to influence the directions of foreign trade. The imports of materials are usually free if the countervalue is paid in domestic currency with the exception of a few products which are still centrally allocated or fall under established quotas. In the case of consumer goods imports, the organizations of domestic trade are allocated a lump sum in foreign exchange, within this limit they can import what they deem necessary. For the imports of machinery the amount of foreign exchange required for budget financed investments is earmarked when the particular project is authorized. In case investment is financed from the enterprise funds or through bank credit a system of obligatory forint deposits has been introduced to avoid exaggerated claims on foreign machinery and to ensure maximum investment efficiency.

This then completes our discussion of the limitations characterizing the earlier Hungarian system of centralized planning and the main features of the post-reform decentralized system of economic planning.

Chapter III

THE REFORM MECHANISM IN PRACTICE: AN ECONOMIC SYSTEMS THEORY APPROACH

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THE REFORM MECHANISM IN PRACTICE: AN ECONOMIC SYSTEMS THEORY APPROACH

In the following an attempt is made to describe the Hungarian economic system as it exists in the Post Reforms period (1968 onwards) in terms of an Economic Systems Theory approach as expostulated in Chapter I. A detailed discussion of the Reforms introduced has already been given and the emphasis here will be on the formulation of a model that reflects the actual functioning of the economic system. A detailed study of every aspect of economic activity would tend to make the entire exercise unwieldly so in the following we shall confine ourselves to current production activities and the planning and implementation of investment.

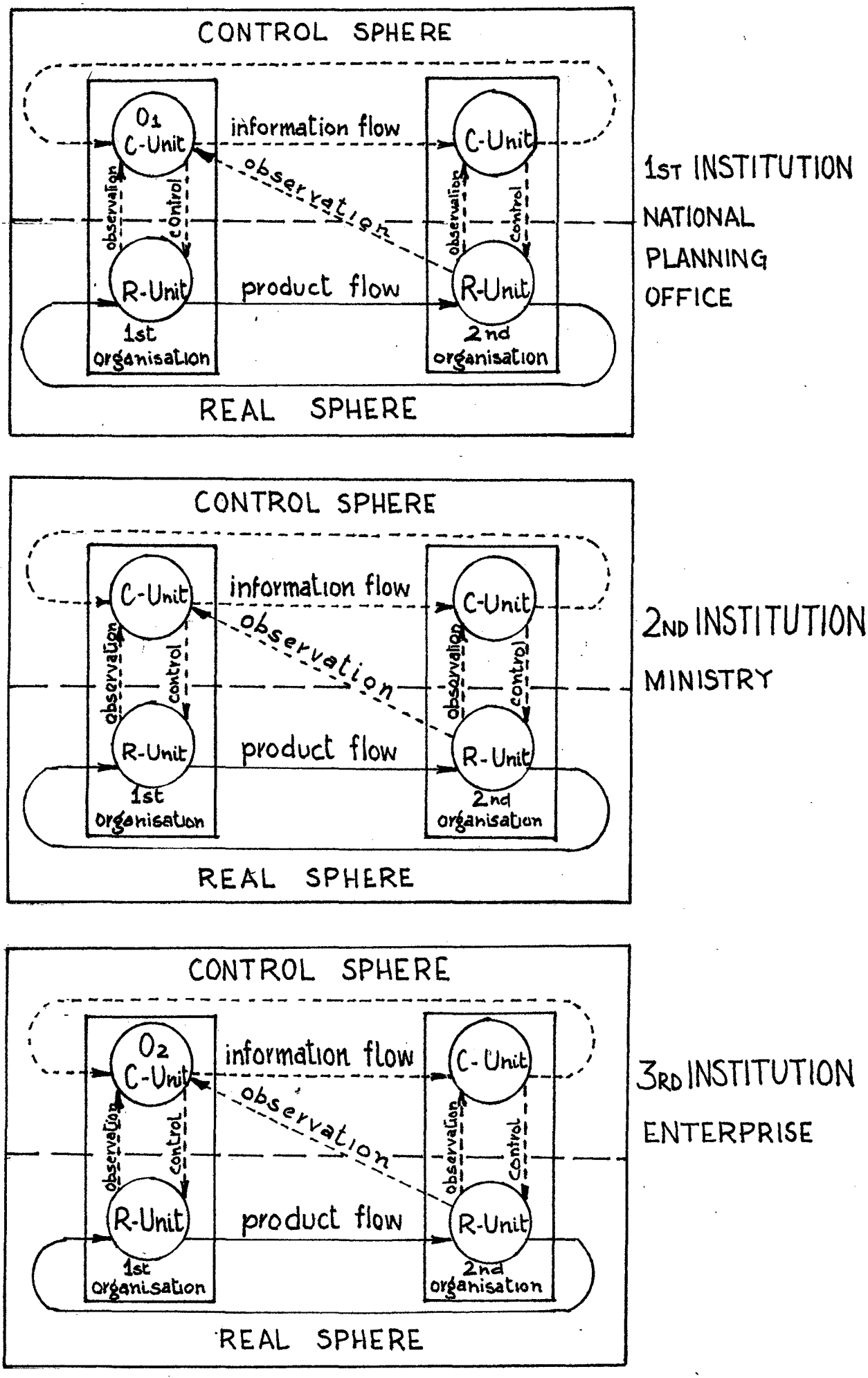
The economic system is a multi level system and is composed of different institutions, as the National Planning office, the ministries as the Ministry of Heavy Industry, of light industry of construction and urban development, of metallurgy and engineering, of transport and communication, of home trade and the Ministry of Foreign Trade and finally the enterprises falling under the supervision of the different ministries. These institutions can thus be defined as intricate and complex social and economic formations differentiated by their organizational and legal characterists. The complex institution consists of several organizations each organization performing some definite social economic function, e.g. the planning section or the technical development section within a ministry. Within the firm the following separate functional organizations can be found: organisation

which directly controls production, that concerned with research and technical development, the organization controlling and implementing investment plans, that in charge of selling the firm's products, that responsible for buying the enterprise's inputs, the organization involved in the selection of personnel and the organization responsible for the monetary and credit transactions of the enterprise.

With each organization there are two units_the real (*R*) unit and the control unit (*C*). Within the real unit internal real processes as production and consumption takes place whilst control processes as information processing, decision preparation and decision making take place within the control unit of the organization. Thus if we are considering an institution as the enterprises then within its organization of the productive plant the real unit would comprise of the production workshops, whilst management belongs to the control sphere. The subsystem of real organizations forms the lower level of the economic system and the subsystem of control organizations forms the upper level of the economic system, since control organizations exert a regulatory function. Within the subsystem of control organizations, relationships of subordination and superordination exist. The control unit of the National Planning Office (O_1) can issue directives to the control unit of an enterprise (O_2). The directive is in the nature of a command backed by legal sanction and serves to influence the activities of the enterprise. Further O_1 has the monopoly on issuing central plan information which is indispensable for

O_2 in its efforts to draw up economic plans at the enterprise level. Here O_1 would be a superordinate and O_2 a subordinate. In the multi level economic system of Hungary organisations are vertically ordered when each organisation (except the last) in the hierarchical order is superordinate to the next. Thus the control unit of National Planning Office is superordinate to the control unit of the Ministry which in turn is superordinate to the control unit of the enterprise. At the same time horizontal relationships exist between organizations at the same level such as the real units of enterprises, (the real organizations of investment and technical development would be related horizontally) or control organizations on an identical level e.g., the control units of two different enterprises under a Ministry. Fig. 1 gives a schematic representation of the economic system and its components institutions, organizations and units. The institutions have been arranged in the prevailing hierarchical order.

The essence of the functioning of the economic system lies in the operation of the control subsystem and its underlying complex information structure. All elements of the economic system are connected by a network of information flows. The information could be divided into three categories: i) money flows which imply a transfer of purchasing power, ii) price type flows indicate the price of products, services or resources. The set of price type information itself constitutes a complex structure. There are several types of prices that could be



SCHEME OF THE ECONOMIC SYSTEM

Figure 1

considered; the prescribed price issued as an instruction by the government price authority, the price offer made by the seller to the buyer or vice versa and the contract price which frequently deviates from the actual price at which the transaction took place. Further the decision maker - the control unit of the enterprise is influenced by the whole series of past and anticipated future prices and not merely by the price prevalent at the given moment. Information is often issued on both past and future prices several times with different time lags i.e. offers, prognosis and reports, iii) Information flows of nonprice character form an important link between the elements of the economic system. Economic regulations laid down at the centre, laying down the principles for the formation of enterprise funds, wage,price and credit regulations, the budgetary and taxation proposals are typical examples of such flows. Information flows as the technical description of a product or the description of a patent or a series of activities connected with some investment project have a profound influence on decision making activities of the control units both at enterprise and higher levels.

The entire set of information flows has an important regulatory role and in this context one can distinguish between information flows of various control subsystems as the market; the monetary and credit subsystem; the subsystem of national economic planning; that of labour allocation and the subsystem of information about technical progress. The regulatory role of such information flows will be discussed in greater detail

below when studying the process of investment planning and implementation.

The central organ of national economic planning is the National Planning Office, though it is the leading political body - the Party, which takes decisions on the major trends and problems of social and economic development.

The planning process is initiated in the control units of the National Planning Office. The decision-making process in the control unit of the National Planning Office can be characterized by a response function $(V_i, \vec{U}_i) = \Phi_i(V_i, \overleftarrow{U_i})$ i.e., the memory content and the information output depend on the memory content and the information input.[1] It receives a vast array of mainly nonprice type information flows relating to the resource and material endowments of the economy; the structure, development and allocation of the forces of production; the particular stage of economic, cultural and political development of the economy in the time period under consideration, and the various trends of development. The planners are constrained in drawing up a plan variant with an excessively high rate of investment. If the investment rate is fixed too high in relation to current consumption then the work effort would deteriorate leading to a decline in the rate of growth. Further in the face of a full employment situation as generally prevalent in the socialist

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1 See Kornai, Anti Equilibrium (N. Holland Publishing Company, 1971), p. 48.

economy excessive investment leads to immediate strains on labour resources. In addition to labour resources the Planner must take into consideration information flows relating to raw material endowments and equipment availability, import and export possibilities, for an excessively high rate of investment would encounter bottlenecks on these fronts which it may not be possible to overcome through imports from abroad. The above listed information inputs set the physical material bounds on production possibilities thereby delineating the set of possible and implementable decision alternative B (t). Information inputs as the expectations and preferences of political bodies; objectives relating to the development of production and productive resources, raising of social welfare and the development of individual skills of the population define the bounds of acceptance which delimits the set of acceptable decision alternative D(t). The intersection of the two sets determines the set of eligible decision alternatives to which would belong the plan variants drawn up by the control unit of the National Planning Office. This is illustrated in Fig.2 where the shaded area represents the set of eligible decision alternatives. It draws up several plan variants comprising only the major objectives and the main features and interrelations of the plan corresponding to those. These proposals and information are then submitted to the leading political body, for decision.

The raising of social and individual welfare to the

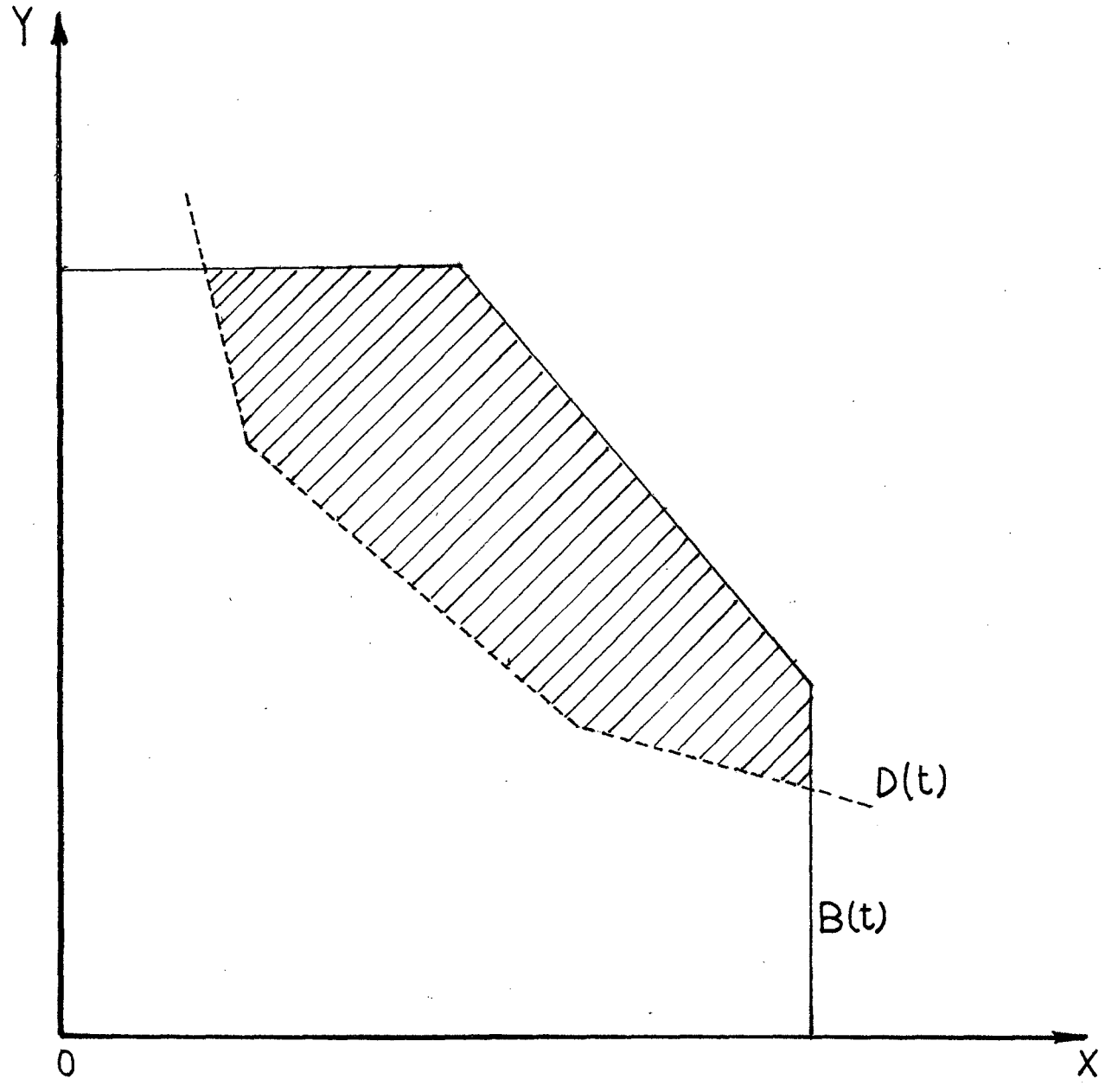

Figure 2

maximum possible extent is the fundamental requirement of the development process but the political body has to take a decision about the time horizon to which the raising of welfare should relate and this would have a direct influence on the choice of the plan variant e.g. the objective of raising the per capita volume of products evenly through five years to the maximum possible extent and then keeping it at an unchanged level for several years would imply the choice of a different plan variant than the adoption of the objective of maintaining an even development for 25 years would require. In the context of attaining the objectives in respect of welfare a certain minimum of nutrition, housing and clothings must be given precedence over other needs but in addition the political body has to decide on the objectives of the income distribution policies. A decision is taken on the proportion of the lowest earnings to the highest and between the earnings of unskilled and skilled workers. The political body also takes a decision on what part of the resources available to the country should be directed towards defence and on the allocation and mode of utilisation of this sum.

In addition the decision making political body decides on the extent to which economic development is to be accelerated with the help of foreign aid.

All such decisions taken by the political party on the objectives to be adopted, determine the magnitude and allocation of investment, and thereby the pattern of industrial and

agricultural production as well as the extent and pattern of employment, the trends of development for educational institutions, science and technology contained in the corresponding plan variant. The plan variant so comprises the main proportions and interrelations of the national economy which determine the entire development of the economy.

The decision on the plan variant to be adopted is fed back to the control unit of the National Planning Office as an important nonprice type information flow. The control unit of the National Planning Office now proceeds to draw up the plan proper which includes[2] (i) the envisaged rate of growth of national income and the ratio of its expenditure i.e. the proportions between consumption and accumulation, (ii) the rates of growth of different branches, determining the structure of production, (iii) the rate of investment and the distribution of investment funds among the branches in line with the economic objectives adopted by the political body, (iv) the main directions of the development policy of science and technology, (v) the tasks relating to the regional development of the productive forces, (vi) rate of growth of foreign trade, its structure and direction (vii) the trends of employment, consumption and real income. In addition, the control unit formulates and includes in the medium term national economic plan the regulations deemed necessary in the respect of

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2 This has already been discussed in detail in Ch. II.

the trade in the means of production and other measures relating to the use of state determined resources. The economic regulators are designed to mediate the central ideas expressed in the plan to the economic units and operate so that their combined effect results in the realization of the national plan objectives. They are designed so as to secure harmony between the targets and the financial resources necessary for their implementation. The Economic Regulators include: 1) price policy and price control including the necessary changes of the price system and the gradual modifications as regards the application of the various types of prices (prices fixed by the state, prices moving between officially established limits and free prices) as well as the planned modifications of the price level and of the basic price proportions, 2) financial policy of the state and the regulation of enterprise incomes including the principles of the formation of enterprise funds, the measures planned for maintaining financial equilibrium and the main items of the state budget connected with the plan, 3) credit policy, 4) wage regulation and the principles concerning utilisation of the labour force, raising of living standards, objectives of income development in respect of the different sections of the population, 5) regulation of regional development, 6) regulations of international trade and the tasks connected with international economic obligations, including the principles of paying export subsidies, state refunds, import price subsidies, import turnover tax, the

equalising funds and the principles of licensing, customs and tariffs. In spheres where supply shortages exist, priorities to be enforced, or balance of payments disequilibrium is to be avoided, certain restrictions on the trade in production goods are laid down. These include quotas established for the purchase or supply of certain products and the assortment, price, quality and date of delivery which are stipulated in the delivery contracts. Import and export quotas are established, the former to conserve foreign exchange resources and the latter to maintain the equilibrium of the trade balances and at the same time safeguard domestic consumption. For outstanding big users a minimum level of stocks is prescribed mainly in the productive use of primary energy. Exclusive appointment of purchasers and sellers is made where the same product is imported both from socialist and non-socialist countries and produced domestically and the same price has to be charged to the users and where turnover is to be organized rationally. Compulsory conclusion of agreements is prescribed for suppliers to secure material supplies for major investment projects.

The investment plan (which is an integral part of the medium term national economic plan) is formulated by the control unit of the organization in charge of investment planning within the institution of the National Planning Office and contains such development objectives which are decided on the upper level. It comprises besides the aggregate rate of

investment and its sectoral breakdown, 1) the individual large scale investment projects to be implemented having an important influence on the structure of production, on the trend and rate of development of the entire economy or of certain branches either productive or nonproductive, 2) the target group aggregate state financed investment projects which affect the development of several branches. Here development projects are realized by a series of homogenous investments on the basis of a uniform plan for network development on through purchases serving the same purpose. These investments do not serve to increase commodity production on only to a negligible extent. In the case of such centralized investment projects not only the objective of the project is stated but the time of its implementation, the technology to be applied, the sources of financing and the organizations that will design and implement the investment are all laid down, 3) the central development programmes including the mode of implementing them and the material and technical equipment necessary for implementing them are laid down. The mode of financing the state financed investment is also laid down, 4) the rules of forming enterprise funds are determined. The regulating system secures the implementation of the plan targets by determining the purchasing power available for investment according to the targets of the plan both on the national and branch levels, 5) the guidelines of the investment credit policy are established and these include credit quotas, credit preferences and state development supports designed to implement

certain important development objectives particularly emphasized by the plan. Preference may be given for investments favouring such objectives as the mechanization of material handling in the interest of releasing labour, development of services for the population, environmental protection, etc. the creation of export possibilities and minor developments with a short return period. The investment possibilities of individual branches are limited by the size of credit quotas set separately for different branches as industry, construction, agriculture, transport, trade, etc. and the granting of credits selectively influences the internal investment structure within each branch. The planners may prescribe preferential measures as lower interest rates or extended period of the repayability of credits. In case of indirect supports the state forgoes for a definite time after the project has been put into operation certain budgetary contributions payable by the enterprise viz. profit tax and production tax. The state may undertake to pay the interest on a bank credit granted to the enterprise in cases where there are two different development alternatives equally favourable from the enterprises point of view but the state has a preference for one of them, 5) the directions and extent of the state grants subsidizing investments and technological development projects of enterprises. Concessions are also granted in the form of wage multipliers deviating from the usual and exemptions from paying charges on assets and from wage tax. Subsidies are

used to promote transformation of economic structure, mitigation of contradictions between short term and long term interests, assertion of preferences, elimination or moderation of the unfavourable effects due to the price system and income regulation and the co-ordination of economic interests at the national and enterprise level. Subsidies may take the form of state loans on which a lower interest rate is charged and the duration of expiry is longer than with bank credits, extended for the implementation of development objectives included in the national economic plan. Non-repayable state subsidies are extended in cases when the sources of an enterprise are insufficient for implementing an investment made obligatory by the national economic plan or when the low profitability of an enterprise is due to a price situation which the state does not want to alter and for this reason the enterprise does not have any material interests in the investment it is obliged to implement.

The control unit at the National Planning Office also singles out certain activities for specific regulation as 1) unusual economic conditions and specific circumstances where certain economic factors operate whose impacts are to be mitigated or neutralized to ensure the satisfaction of centrally laid down economic objectives.

These decisions taken at the National Planning Office appear as price and nonprice type information and by determining the overall framework within which enterprises operate have

a direct influence on the decision-making process of enterprises both with regard to investment and current production. Such decisions determine the major part of the demand for investment goods. The decisions affecting the main trends of investments define the main elements of the changes ensuing in the volume and structure of the productive capacity of the economy. Information flows relating to income regulation, as the charge on assets and the wage multiplier affect the investment structure; the rate and directions of development are influenced by flows relating to regulations as the share of depreciation allowance left back with the enterprise, tax rates restricting the extent of development and preferential tax rates aimed at promoting it, state loans and nonrepayable subsidies etc. All these regulations influence the allocation of investments among the branches and enterprises. State subsidies to industrial location influence the geographical location of investments. In the formulation of such decisions as are incorporated in the medium term national economic plan the control units of the National Planning Office have to take into consideration the following information flow inputs, 1) the economic policy objectives laid down and approved by the leading political body, 2) the long term plan adopted which provided the scientific basis of the trend and rate of growth of the economy thereby furnishing scientifically well founded targets for medium term planning, 3) development resources available both material and manpower, 4) the analysis of the economic trends and economic possibilities, 5) the effects of the

different economic regulators, 6) the analysis of proposals submitted by the councils, economic organizations, other institutions and professional agencies. Branch ministries elaborate conceptions of technological and economic development dealing with the possibilities of technological progress with its directions, most practicable under given conditions and with the measures required to implement such development. Such information helps the control unit evaluate the advantages and drawbacks of the various alternative ways of technological and economic development. The ministries responsible for priority branches elaborate special proposals comprising every aspect of this development as its technological and economic parameters, the fixed and working capital requirements and inputs to be obtained from other branches as well as the expected output and its effect on the balance of payments. The value of all complementary investments are included and investment costs estimates submitted. The ministries also submit detailed propositions as regards the large individual investment projects and the utilization of the lump sums assigned for investments serving specific objectives, lying within the scope of these ministries, 7) from enterprises are sent up information flows about processes and tendencies observed, as data on the development of prices, of the stocks of orders both domestic and foreign, statistics of sales, credit transactions and money incomes and expenditures. These flows, serve as a basis of autonomous central calculations. Enterprises also send up estimates and proposals regarding the

future, yielding information about the ideas of the enterprises and aiding the central planners by working out solutions of concrete problems. These information inputs are transformed in the control unit and emerge as information outputs in the form of the different regulations and provisions of the national economic plan. These regulations define the scope of central control over production but important differences exist between different branches. In the industries producing raw materials and energy and in infrastructure the weight of central decisions is decidedly greater than in the manufacturing industries. Within the latter the scope of enterprise decisions is greatest where market influences and competition are dominant.

The control unit of the Ministry in charge of a particular branch, say light industry receives from the central unit of the National Planning Office the following main information flows relating to production and investment activities: 1) The rate of growth envisaged for this branch. 2) The economic objectives laid out in the national economic plan and state preferences. 3) The investment rate and funds available for investment in the branch. 4) State investment projects whose implementation falls within the scope of the branch including the time of its implementation, the technology to be applied and the sources of finance. 5) The credit volume assigned to the branch for investment. 6) The target group aggregate state financed investments where the centre's decision aims merely at the determination of the particular development objective.

7) Indirect regulations which include pricing and price policy, wage regulations, income regulation (taxation, rules regulating the formation of enterprise funds and state subsidies).

The control unit of the Ministry has to deal with the diverse tasks of making proposals and submitting reports to the National Planning Office and enforcement of the economic political tasks affecting the branch. It has to take decisions regarding the foundation, reorganization and dissolution of enterprises; the provision of an enterprise with starting assets; appointment and dismissal of enterprise manager and assessment of his work, overall appraisal of enterprise activity; auditing of the enterprise and revision of the economic activity of the enterprise. However, in the context of production and investment the important decision taken at the branch ministry level within the framework provided by the information flows listed above is the determination of the enterprise's scope of activity. Here the ministry does not define the actual individual products the enterprise has to produce but merely specifies what kind of social demand it should satisfy. It can also resort to a revision of the economic activity of the enterprise (rehabilitation) in the absence of the profitable operation of the enterprise. It elaborates the development conceptions and programmes for the given branch and in certain instances gives expert opinion.

We now turn to the institution at the lowest level in the hierarchical set up - the enterprise. The enterprise is

bound to draw up its own medium and annual term plans and take decisions on the following: (1) In the sphere of current production the volume of production to be undertaken, and its assortment i.e., the product mix to be adopted. In making decisions on current production there are distinctions between enterprises with nonconvertible and convertible productive capacities. In the case of nonconvertible productive capacities the enterprise can decide only on the extent of their utilisation; the decision relates to 'how much' rather than what to produce. What the enterprise has to produce is predetermined by the nature of these capacities. It is enterprises with convertible capacities that can take a decision on the pattern and the quantity of production. (2) In the sphere of investment, decisions relate to replacement of used up fixed assets, current modernization and flexible adaptation to market requirements, improvement of product quality, introduction of new products to achieve a higher technological level and the extension of output. The enterprise's scope of decision comprises mainly the maintaining of the standards of existing equipment or an even higher technological level, the replacement of expended fixed assets and minor investments to expand production. (3) The enterprise must decide on the price at which its goods are to be sold though strictly within limits set by the centre. (4) Decisions relating to the technology to be adopted and the choice of inputs as the quantities and kinds of basic and auxiliary materials, and intermediary products, fuels etc. to be used. (5) The sources of supply of material inputs and the choice of customers.

Material inputs could be purchased from other enterprises or imported from foreign sources or alternatively some could be produced within the enterprise. In making a decision whether to subcontract out to others much of the repair work and production of semi-fabricates or to carry it on within the enterprise the control unit has to consider the cost in the form of dependability of supply from an external sources against the high financial costs to the enterprise of having to do this work itself rather than rely on specialists. A choice could be made between domestic and foreign customers and amongst foreign customers between different nonsocialist countries though not at the expense of the domestic customers and absolute reduction or stagnation of total home deliveries.(6) The financial plan. The enterprise must decide what part of the enterprise's investment was to be covered from its own resources viz. from the development fund and alternately the investments to be financed from bank loans on which an interest rate would be charged and the repayment of which would be made from the development fund at a later date. (7) The enterprise takes a decision on the amount of stocks deemed necessary to implement its plan of production and sales. (8) Decision on personnel policy and the necessary employment of labour.

The enterprise in taking such decisions is guided by diverse motivations as profit maximization; maximization of income per worker,reduction in costs, increase in absolute level of production, the introduction of new products and the

achievement of technological progress. The enterprises though guided by such objectives are constrained and must operate within the framework laid down by the information flows sent down by the centre - the regulations which form an integral part of the national economic plan draw the line up to which they may act; they put certain constraints on the market and within their boundaries the enterprises are granted unlimited freedom of decision. Within the enterprise there are separate organisations involved in production, investment, technical development, marketing and purchasing and the decisions involving these activities are made by the control units on the basis of the complex information structure and the objectives motivating the enterprise's operations.

Information flows which are considered by the enterprise's control unit in the formulation of the set of acceptable decision alternatives include the following: 1) the decision of the ministry determining the enterprise's scope of activity, 2) the rates of growth prescribed for the branch in the national economic plan as well as the proportions fixed for consumption and accumulation; 3) quotas fixed centrally for certain producer goods restricting their supply to the users. Enterprises are forced to conclude delivery contracts and ensure the supply of the prescribed quota to the preferred users. 4) The state financed investments the implementation of which is compulsory. 5) The price fixation rules which determine the extent to which the enterprise can exercise autonomy in fixing the prices of its commodity. Information is transmitted on the prices of

of the inputs as capital goods, raw materials that enter the production process, which may be fixed centrally and on the trade margins permissible. All enterprises are required to use accounting schemes agreed by the ministry and consistent with the general guidelines issued by the National Price Office and in all cases including products with 'free' prices, Price formation cost calculations must be prepared in accordance with these schemes. The main categories of these standard accounting schemes as they operate in the manufacturing industries are given in the following table:

General Structure of Price Formation Cost Calculations

1. Direct material cost
2. Direct wage cost
3. Taxes on direct wages, additional payments and extra wages
4. Extra production and selling costs
5. Total direct costs (sum of items 1-4)
6. Overheads (plant, factory and enterprise)
7. Amortisation
8. Taxes on assets
9. Production prime costs (sum of items 5-8)
10. Costs of technical development
11. Guarantee repair costs
12. Other expenses
13. Total prime costs (sum of items 9-12)
14. Profit

15. Taxes

16. Subsidies

17. Price (= 13 + 14 + 15 - 16)

Source: Adapted from F. Vissi, Lecture on 'Main Principles of Calculation and Distribution of Production Costs in the Hungarian Economy', p. 6, in P. G. Hare, "Industrial Price in Hungary', Soviet Studies, vol. XXVIII, no. 3, July 1976, p. 372.

Allowances for amortization in the enterprises are based on straight line depreciation though accelerated depreciation is laid down for certain branches with large investment requirements. The ministry decides on the amount of profit which should enter into the restricted prices or issues guidelines to enable enterprises to do so themselves. The enterprise also receives information on the subsidies sanctioned by the centre for particular production activities and the taxes imposed on certain products to extract the element of rent.

6. The taxation system which directly influences the amount of production factors used by the enterprise. The enterprise must pay a five per cent charge on assets, on the net value of their fixed and circulating assets, a wage tax of thirteen per cent, a twenty two per cent contribution to social insurance, and a tax on industrial sites. Forty per cent of depreciation allowances are paid into the budget. The profit tax and production tax are aimed at withdrawing differential rent and a construction tax of ten per cent has to be paid on the building part of investment decided upon on the enterprise

level.

7) Regulations concerning the formation and utilization of the enterprise development funds and the fund for technological improvement, sharing fund and reserve fund are also sent down to the enterprise. The source of such funds except the Fund for Technological Improvement is Profits after a tax of 36 per cent has been paid to the State.

8) Credit policy including the credit quotas fixed for the branch, interest rates, terms of expiry, selectivity and the minimum quota to be financed from the enterprises' own development fund has an important effect on the rate and pattern of development.

9) Wage regulations controlling the average wage level paid out by enterprises by levying progressive taxes on rises beyond the prescribed units.

10) Rules regulating income of enterprises including the tax system and the system of economic incentives.

11) Export quotas to be fulfilled, export and import subsidies, the import licensing system, custom duties and the tariff system as laid down by the centre.

The above listed information flows are of a vertical character and being part of the national economic plan are handed down by the control units of the National Planning Office and the Ministries to the control unit of the enterprise. In addition the control unit of the enterprise receives horizontal information flows from control units of other enterprises and market research institutions, statistical offices, trade journals,

as well as from within the enterprise itself as information from the observation of the absolute volume of and changes in inventories in warehouses, and from the reports on its financial position prepared by the enterprise's finance organization. Such horizontal information flows include information concerning the market demand conditions for particular products, the intentions of other enterprises, export prospects, technical achievements, report on stocks and utilization of machinery.

Whilst the information structure as elaborated above enables the enterprise to formulate a set of acceptable decision alternatives relating to current production, investment and technical development deemed acceptable by the enterprise, given its own interests and the communicated desires, proposals and directives of other units, it operates within another system of constraints which determines the set of implementable decision alternatives. Here the first main group of the constraints limits the capital transformation activities i) from the side of the initial state, e.g., the activities to preserve the initial state are limited by the stocks existing at the beginning of the planning and production period, ii) from the side of the inputs required for the transformation - investment resources including scarce natural resources, labour availability is limited and the enterprise has to operate within the system of quotas set for imports of machinery and other raw materials. The second group of constraints include the technological equations determining the technical relations between the raw materials, semi-finished

and finished products. The set of implementable decision alternatives would thus comprise all production and investment plans for which the necessary material and technical conditions are available i.e., all outputs which can be produced with the existing machinery of the plant, with the existing knowledge of the workers and from the material available. Once the control unit of the enterprise has determined the set of implementable decision alternatives and the set of acceptable decision alternatives, the intersection of these two sets determines the set of eligible decision alternatives from which the actual decision eventually implemented is chosen.

Taking a closer look at investment decisions within the enterprise we find that within each enterprise there is an investment organization and within it there is a control unit which regulates the real investment activities. The operations of the control unit can be characterized by a response function the output of which is the investment decision and the instructions controlling the real investment processes. Whenever a decision is made about an investment project, it includes not only the final outcome of the project but also the schedule of realization and the necessity inputs. These decisions are taken by the control unit on the basis of the information inputs. The scope of enterprise activity is defined by the Ministry and state investments and proportions between consumption and accumulation set the overall demand for investment goods. Prices, subsidies, the taxation system and wage regulations for the branch determine the amount available to the

enterprise for investment and replacement e.g. in the capital intensive branches most of the product prices are officially fixed and frequently do not permit enterprises to accumulate even the financial sources needed to replace their equipment regularly. In investment activity the rights of enterprises are also limited by the credit quotas set for the various economic sectors. In its choice of an investment project the control unit would consider both the costs and returns. Costs would depend on the choice of production factors in the proposed investment activity both directly and indirectly in the form of the charge on assets and the progressive taxes levied on increases in wage level beyond the average prescribed by the national economic plan. The costs of financing would be determined by the interest rates and credit policy laid down by the Centre and the enterprise would find it advantageous to consider the investment projects for which credit preferences were available in the form of concessional interest rates, longer periods of repayment for which subsidies could be obtained, as these would directly lower the costs of the investment project thereby raising profitability. The other factors which enter the response function of the investment control unit and determine the final decision taken include the volume of production (in physical units) expected from the investment as well as the value of production based on prices (prices may be fixed centrally or determined by the enterprise according to central regulations), the expectations concerning future profits,

the price index of investment goods and the rate of replacement.

Comparative evaluation of the eligible investment decision alternatives is made by the control unit and a commonly used index for this purpose is the 'synthetic index of investment efficiency'[3] (the co-efficients embodied in the index are either constants or can be worked out from special tables prepared by the authorities.

$$sIe = \frac{\frac{I}{T} (1 - df) - Cn \cdot vc}{Vn \cdot vp}$$

sIe = the synthetic index of investment efficiency

T = the time of recoupment of the investment outlay (in years)

I = Investment outlay

d = the coefficient of discount indicating annual losses caused to the economy during the period of construction of the investment undertaking, it is fixed for the whole economy at 0.20

f = the freeze period i.e., the number of years necessary to complete the investment project

Cn = the total cost of exploitation of the project including maintenance and repair during the whole period n

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3 J. Wilczynski, Profit, Risk and Incentive Under Socialist Economic Planning (Macmillan, 1973), p. 157.

v_c = the coefficient of cost variation during the period of exploitation

V_n = the total value of production in the entire period n.

v_p = the coefficient of production variation during the period of exploitation.

The control unit of the enterprise thus selects from among the possible development alternatives applying diverse criteria as the amount of additional output which will result from the investment, the type of output which will be produced, the cost of investment, the starting and completion dates of the investment project, expected profits, the expected rise in per capita personal incomes (wages plus profit shares) of all workers employed in the enterprise, achievement of technological progress and investment efficiency. The investment project could be financed from the development funds of the enterprise or through loans from the Investment Bank in which case the enterprise must choose an investment alternative yielding a certain minimum ratio between annual profits and the value of the funds fixed and working assets engaged. The minimum is fifteen per cent for industry and construction except the food industry (ten per cent) and the production of building material (seven per cent). The selection and ranking of credit claims of enterprises is done in the Bank through the calculation of 'rank indicators' obtained as the geometric mean of two factors: i) the time (expressed in years) within which the costs of investment will be returned from the additional gain produced by it,

ii) the term of expiry of the credit (expressed in years) starting from the day when the first instalment of credit is made available to the day of full repayment.

In sum under the New Economic Mechanism macro economic decisions which need an overall economic survey on the national level remain under central authority. Micro economic decisions on the other hand are relegated to the level of enterprises. However, the enterprises when taking decisions do not rely on free market forces in the 'classical' sense of the term. The regulators which form an integral part of the national economic plan draw the line up to which they may act, they direct the activities of enterprises into centrally determined channels and enforce certain constraints on the market within which the enterprise operates.

Chapter IV

CONCLUSIONS

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What main conclusions can be drawn about the working of the economic mechanism in Hungary in the post reform era? The 1968 Reforms in Hungary are generally regarded as being the most radical in Eastern Europe as they involve the most substantial departures from the centralized model of socialist economic management as established in the early 1950s. The problems prompting the decision to undertake the Reform included rising capital output ratios, the exhaustion of labour reserves, the poor adaptation of the pattern of production to demand in the face of the increasingly selective requirements of trading partners and of consumers whose basic needs had been satisfied; the resulting accumulation of stocks of unsaleable goods and balance of trade difficulties and the low rates of technical progress and innovation.

The main object of the New Economic Mechanism was to improve economic performance both in domestic production and in foreign trade activities. Economic efficiency was sought to be improved by renouncing operational planning to the level of the enterprise and restricting the role of central authorities mainly to the setting of global goals and through an increase in the part played by prices and other financial instruments in influencing enterprise decisions. Economic regulators include credit conditions and credit priorities, price and wage controls, tax and subsidy measures, etc.

Central targets are global in nature and include the

determination of the distribution of national income between investment and consumption, the total amounts of investment to be realized in key sectors thereby effecting structural changes and the total export and balance of payments targets. The distribution of disposable income among the major occupational and income groups and the goal of containment of inflation remain centrally fixed policy targets.

Enterprises draw up their own annual plans but essentially within the framework of the national economic plan. Law requires that enterprises compile their plans in such a way as to secure the implementation of the decisions of the national economic plan affecting their field of activity and of the requirements expressed by the economic regulators, e.g. the enterprise can draw up its plan only within the limits imposed by the budgetary means allocated to them by the national economic plan and the system of economic regulators. The supervising ministry determines what types of commodities the enterprise would produce i.e. its sphere of activity. The supervising ministry's powers are limited to the fulfilment of interstate obligations; the execution of investment projects prescribed by the centre; the settling of debated questions in important and long lived inter enterprise co-operation or trading relations and the assurance of defence requirements. The enterprise enjoys fairly wide freedom within the limits of the directives promulgated by functional central bodies and subject to the supervising ministry's prerogative to issue instructions in the exceptional cases cited above.

The Director decides independently in enterprise affairs a) in determining the enterprise plan b) exercising the employers rights in accordance with the Labour Code c) in questions of technical development d) in regard to obtaining credits (e) entering into contracts f) choosing product mix and assortment g) questions of development (investment) from the enterprise's own resources h) in establishment of enterprise's own balance i) in questions of associating with other enterprises. The Director sets up the organizational structure most appropriate to carrying out the enterprise tasks.

The centre influences investment decisions through provisions in the medium term plan relating to the total volume of investment, guidelines of investment credit policy, sectoral division of credit availabilities and within this, guiding figures for priority sectors and concrete development goals. The tools of annual regulation of economic processes are the following - directives establishing receipts and expenditures of the state budget, adjustment of investment and working capital credit policy towards concretely developing tasks and conditions and quotas and other administrative regulations in regard to product distribution. The centre-the Economic Committee advised by the National Planning office and the Ministry of Finance together with other ministries still take some of the most important investment decisions and issue commands governing their financing and implementation. The command may include not merely the characteristics of the project but

also allocation of designing, machine building and construction capacities. The coverage of the special purpose groups and funds to be allotted to each are also determined at the central level. The other main instruments of central control over investment decisions in industry are now primarily monetary in nature. The industrial ministries and National Planning Office have lost many of their powers to the Investment Bank and enterprises. The enterprise decision sphere has substantially expanded and is no longer dependent on the size and distribution of decentralized funds. Every productive investment even if initiated by the state must be partially financed from enterprise funds. This means that the patterns of decision making and financing are no longer congruent. A much larger proportion of investment is financed from bank credit and retained profits. This in turn has removed the former rigid separation of fixed and working capital and the enterprise is now faced with direct substitutability between the two. Many investment goods can be bought and sold on the market at prices with some degree of flexibility with the removal of the constraint imposed on enterprise decision by the physical allocation process. Simultaneously the expansion of freedom for enterprise choice has been linked to an incentive system which strongly encourages cost minimization. Several beneficial effects of this are obvious. The enterprise tried to use mainly those development opportunities that promised considerable results quickly and at relative low costs. By doing away with earlier disproportions in capacities and by liquidating

bottlenecks efficient development projects can be carried out for which they earlier had not had either the financial means or the decision authority.

Table I shows the shares of investment decisions by the Centre and by enterprises in the post reform period. More than half of investment falls into the scope of enterprise decision. In the financing of these investments besides the enterprise's own resources built up from depreciation allowances, profits and the sale of fixed assets and scrappage, external resources have an important role i.e. credits, state support, council allocations and development loans. Almost 50% of investments initiated by enterprises is financed by external resources. (Table II) The most important external source is credit.

As a monopolistic supplier of credit the Investment Bank exercises a kind of administrative control over enterprises. Central directives applied by the Investment Bank are numerous. The total of investment credits that may be granted is determined in the annual national economic plan and is used to regulate the level of investment. Credit for certain purposes is prohibited, for others there are preferences in the form of concessions on interest rates or recoupment periods effective both in the decision process through the ranking index and in the actual credit terms offered to enterprises. Preferences could take the form of quantitative restrictions on credit allocated to particular sectors. In the absence of a securities market the centre could directly fix interest rates on credit

and enterprise time deposits with no impact on the money supply. The Centre also determines the maximum repayment and recoupment periods. The Investment Bank would have to ration credit to industry for fixed investment according to Profitability and other criteria. Credit is issued to high yielding (in terms of expected rate of profit on invested capital) projects which promise speedy repayment. Particular emphasis is given to improving the balance of convertible foreign exchange and implementing the regional policies of the state.

The division of total credits into partial quotas restricts the competition for credit (i.e. ranking by efficiency) since competition occurs only within eighteen to twenty industries but the profitability of the individual groups (industries) are not compared. In practice competition is small even within the individual partial quotas. A few major investment projects essentially decide the fate of the partial quota. With the reduction of competition the profitability of credits greatly fall and this is reflected in a considerable prolongation of repayment deadlines.

The detailed quotas, and the restriction valid from the second half of 1969 that long term credits could be claimed only for preferred objectives, meant that those who intended to implement a project not affected by preferences could not even submit applications.

The preferential treatment given to investments of a short repayment period is an imperfect substitute for the time structure of interest rates. As the repayment period is generally

shorter than the period of recoupment the rule applied by the Investment Bank favours [illegible] enterprises that can effect repayment from the investment fund they generate in excess of that derived from the new investment. The advantages of enterprises with their own resources restricts the possibilities of the Investment Bank to reallocate investment resources and to finance new activities and the rapid expansion of old ones although market conditions may warrant them. Further among enterprises of equal profitability those with a lower asset value/wages ratio are at a disadvantage.

The other important external source of financing enterprise investments is state support. In its allocation the concrete development targets of the national economic plan are even more decisive than with credits and profitability is pushed even more to the background. A considerable part of supports is granted in the interest of bridging the allocation tensions of the detailed national economic plan. The plan today prescribes support for 59 development targets. Only a quarter of the support is distributed in competition according to profitability.

The interest rate structure is peculiar with the medium term rate standing above the long. But just as enterprises prefer short to medium term in the case of working capital they may prefer medium to long term for fixed capital. Medium term credit has the advantage that it does not require detailed proposals of the project while long term credit has the disadvantage of being less attractive than the state loan. Enterprises are

motivated to push up the value limits of projects so that these qualify for state loans even though a smaller project may be more feasible. The former would involve a subsidy on initial cost to the extent of 50% and the enterprise development fund is only tapped to the extent the new project will add to it. For a long run credit the enterprise must put up its own funds over and above what may be expected to accrue from the project.

Enterprises would tend to use their own funds for projects which would not qualify for credit, resorting to credit to finance other investment fulfilling the Credit Policy Guidelines criteria. This lowers to some extent the Investment Bank's influence over enterprise investment decisions and gives enterprises leeway to try projects which would not find favour with the Investment Bank.

The enterprises are unlikely to try and accumulate large development funds to finance ambitious investment projects. They would rather depend on the state to finance these larger projects and this may lead to the scattering of investment resources characteristic of the old system. Further enterprises may tend to pressurize banks for short term credit to finance working capital requirements especially if they have earmarked development funds for fixed investment.

Though there seems little scope for clandestine investment disguised as capital maintenance the high rate of tax on profits would encourage renewals and repair of old machinery as against replacement. This tendency is counterbalanced by the

burden which the capital charge imposes on old machinery. Replacement is no longer penalized by the plan index system which made it disadvantageous to interrupt current production.

Do the investments initiated by enterprises ensure replacement and in addition minor expansions? The extent of scrapping of existing machinery together with or prior to investment indirectly indicates the extent of replacement, provided it is assumed that the enterprises replace every machine that has been scrapped. A study of the ratio of scrapping to the gross value of fixed assets in the productive branches of the economy suggests that the rate of replacement has been low since 1968 like the situation before 1968.[1] This is evident from Table III which shows the scrapping ratio hovering with minor annual fluctuations around 1.4%. This corresponds to an average replacement cycle of 27-28 years - also considering the annual increase in the stock of fixed assets at a rate of 6.0 - 6.5%. This is much larger than justified: the rates of depreciation allowance which express the rate of technical economic obsolescence only to a limited extent and may thus be said to be low are 4.9 - 5% on the average indicating an average replacement cycle of 20-21 years. For its realization about one and a half times the present volume should be scrapped and replaced by the enterprises each year.

The main reason for the low rate of replacement of fixed

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1 Andrea Deak, "On the Possibility of Enterprise Decisions on Investment", Eastern European Economics, vol. XIV, no. 2, 1975-76, pp. 14-24.

assets is that a considerable part of the development funds accumulated by the enterprise serves to implement the development targets determined in detail in the national economic plan and this is mainly the result of the influence of credit terms and supports. Further quantitative growth of output is still a general requirement in the Hungarian economy and this can be attained only by continuously expanding their stock of fixed assets. As a result the remaining resources of the enterprise are insufficient to implement the necessary replacement and exchange of equipment which are postponed. To attain a higher growth of output the enterprise may even use less modern, old machinery and this explains the fact that replacement is slower than the depreciation rates would indicate.

To solve these problems the following measures are required (1) The enterprise resources should be expanded so that the role of profits would increase in their formation and the sources built up would become more differentiated as a function of profits. The replacement of fixed assets would accelerate mainly in the high profit areas and this could become a source for further income formation. For this the financing commitments of the central resources should be reduced and a change in the ratios of the scope of central and enterprise decisions be made in favour of the latter. (2) Indirect tools should become predominant in influencing enterprise decisions; credit and state supports should be allocated mainly on the basis of profitability and their improvement assigned a greater role than the growth of output is. (3) Reconstructions involving

a large scale intensive exchange of obsolete fixed assets should be assigned a more important role among the concrete development targets of the national economic plan.

In the past only a small fraction of the budget outlays financing major investment projects were eventually repaid. From 1976 onwards full repayment has become compulsory and the repayment scheme including interest charges must be fixed in advance independently of project results. With such large projects most enterprises would be unable to pay back a loan from the development fund alone. In such cases the enterprise would be allowed to use their entire profits before deductions of the taxes as well as all the depreciation allowance provided that enough profit is retained to form an adequate sharing fund. This measure is aimed at inducing potential investors to prepare reliable project information since they would be ultimately responsible for its execution and financing.

The absence of a true capital market raises questions about the real scope for enterprise initiative in long run decisions. In this context the role of the capital charge in substituting for a capital market can be considered. In regard to new investment the charge serves as a floor to the interest rate within the limited capital market. Even the subsidy position of financing for an individual large state project is covered by this 5% interest rate. The capital charge can now prove effective since it is no longer built into plan indices

and is built into the prices. One kind of credit is absent from the new investment system; true long term credit - the analogue of debentures issued to finance significant expansion. This kind of investment is reserved for the state, in effect it centralizes the necessary funds and lends them out at 5%. Here the capital charge is like interest on debentures, a prior charge. The analogy goes further for though the charge could be varied to affect demand which would differentiate it from payments on fixed interest securities, in practice it cannot be varied in the short run for it is calculated into the prices and must stay constant between price revisions.

Whilst concern with the problem of capital misallocation between sectors has led to a system of investment financing where state decisions on central investment finance allocation between subsectors of loans by the Investment Bank, and determine the degree to which enterprises should be compelled to employ their retained earnings to finance their working capital needs, the introduction of 'common enterprises' could radically transform the capital market. Two or more enterprises pool in their resources contributing to the necessary capital of the common enterprise, so that each enterprise holds part of the shares of the new enterprise. Capital could thus be concentrated on large projects without the intermediation of the state. Though the organizational forms have been created in practice it is unlikely that the shares of such enterprises would be freely bought and sold. However the medium of the 'common enterprise'

could allow much more expression of socialist entrepreneurship than was conceivable in the past. The major limitation on moves in this direction will be the continued powers of industrial ministries to prescribe the spheres of activity of enterprises subordinate to them. However growing realization of the need for effective competition may gradually erode this power. The common enterprise form could then remove the constraint on enterprise independence imposed by central control over the large investments which might be necessary for entry into new markets, the establishment of subsidiary operations or vertical expansion.

If profitability serves as the main criterion guiding enterprise decisions then it might be ensured that profitability to the firm does not conflict with social profitability. There would be no conflict if prices appropriately express resource scarcities and competition ensures that all firms are price takers and there are no appreciable diseconomies of scale emanating from the enterprises' activities.

Efficient resource allocation in a small economy requires conforming to world market price relations. Hungary faced different sets of prices in ruble trade and in dollar trade and generally domestic prices were not related to either. The 1976 price revision in Hungary was a response to changed relative prices in world markets - oil and gas prices were raised twenty five to thirty-five per cent, coal and electricity fifteen to twenty five per cent. Payroll tax was raised from twenty-five to thirty five per cent of enterprise

labour costs and to bring about a reduction in industrial profitability by a third, other producer prices were partly adjusted raising their level by about four per cent.

The measures entail a rise in the share of material costs in total costs of production stimulating enterprises to economize on material. By cutting the capital charge by a third in 1975 through reduction of the tax base from gross to net assets value the planners seek to encourage greater capital intensity of production techniques in the face of labour shortage by manipulating the relative factor prices faced by enterprises. The wage tax has been raised. This too makes labour more expensive for enterprises but the higher labour costs are not passed on into prices.

The producer prices are no longer divorced from consumer demand and world market conditions. Equilibrium prices are to replace physical allocation over a wide range of commodities. Since the category of fixed prices is now restricted the authorities can resort to frequent changes in prices in response to changes in production or market conditions. Changes in these can be allowed to affect other prices through the market. This category of fixed prices does not exclude price differentials for quality differences.

There is no information on how close the maximum prices are to equilibrium prices. Even if they are fixed so low as to become the operative fixed prices, eighty per cent of the output of processing industry is still covered by free prices. In

practice these should equilibrate markets but one cannot expect too much from them and these prices may be an inadequate guage to relative social costs.

Domestic prices of goods that are exported in substantial quantities should approach their export prices. Many import prices even when allowed to vary will not be set at levels corresponding to the foreign exchange prices. For a large part of exports and imports the foreign exchange prices will be those of the socialist world market subject to the many irrationalities and reciprocal price concessions characterizing CMEA trade prices.

Domestic price ratios especially in processing industries are heavily influenced by the intensely monopolistic industrial structure. The multi-channel prices are average cost prices. They include an allowance for interest on capital and this is an improvement over the past. However to the extent that the market prices are influenced by the new price calculation scheme this will mean average rather than marginal cost pricing. Some of the average cost prices e.g. for coal and iron ore include heavy subsidies.

In the sphere of foreign trade an exceedingly complicated system of direct and indirect taxes and subsidies together with the quotas, import and export permits and 'price mixing' came into being. This was in response to the objective that exporters receive and importers pay the actual foreign exchange prices converted at rates uniform for the dollar and rouble respectively. This necessitated a compensatory system to maintain equilibrium

in the balance of trade and deal with the distributional effects of making some imports very expensive and some exports very profitable. The inefficiencies that had crept in as a result of isolation of the domestic cost structure from foreign external influences had to be removed gradually not abruptly. The supply of a particular commodity from different sources at different prices also necessitated an administratively imposed uniform price for all users. Tariffs had to be devised to protect certain industries. In some cases these measures will not affect the relation between domestic and foreign prices estimated by the uniform exchange rate, in other cases though they will affect price ratios the domestic price will still vary directly with the foreign price and this alone is an important difference from the past.

Emphasis is placed on financial incentives as the major motivating force for enterprise decisions. The basic incentive is profits operating through a much revised profit sharing system. This is reflected firstly through linking the increase in disposable income paid to employees to increased post tax profits earned by the enterprise and also by attaching the expansion possibilities of the enterprise to their past and prospective profitability since the bulk of industrial investment is financed either from the enterprises profits on through bank loans granted on the basis of anticipated future profits.

Although enterprises have been free to pay whatever wages they wished since 1968 the tax system functions in a way which makes large increases extremely expensive. Any wage

increases are to be paid entirely out of the post tax sharing fund before it is distributed and so is any increase in the average wage which might result from a change in the composition of the enterprises labour force. Since managers' incomes were sensitive to the amount available in the sharing fund for distribution this provision has proved a strong deterrent to wage increases. The extreme sensitivity of managerial incomes to the size of the sharing fund has encouraged short horizons (a legacy inherited from the past) as against long run considerations. It would be difficult to undertake major rationalization measures if these threaten to cut into the years profit share or bear losses resulting from investment in research and development or take risks. Risk taking by enterprise management appears to be less than would be socially optimum. Sharp increases in enterprise profitability due to successful risk taking would tend to be negated by financial measures taken in response by one or another interministerial committee. Financial losses due to unsuccessful risk taking while not extremely serious for either enterprises or the managers have no significant counterpart in potential gain.

In 1976 the system of premiums was modified in an attempt to extend the time horizons on which managers based their decisions. Part of the premium payments are linked to indicators of enterprise results limited to at most thirty per cent of a manager's basic wage. Such indicators include profit divided by the sum of the annual wage cost and the gross capital stock and net value added per worker. Supervising ministries

exercise greater influence over the enterprises they supervise for they decide which of the indicators should be applied to particular enterprises and how and they can also elect to use other indicators in suitable cases. A second part is based on a 'complex evaluation'. This is intended to focus on longer run aspects of enterprise performance rewarding improvements in product structure and quality, export performance etc. How well this premium system will work remains to be seen. Payments are restricted to twenty per cent of the manager's basic wage in the case of nationally important [illegible] category of enterprises, 15 per cent for category B enterprises and ten per cent for enterprises in category C and below.

In sum the Hungarian Reform of 1968 can be best characterized as consisting of a shift of central controls over enterprises from an individualized physical planning base to an individualized financial planning base. It would be wrong to regard the post reform system as a system of laissez faire at the micro level. The central plan for individual sectors means more than a prognosis to which the individual enterprises can choose to be indifferent. It is difficult to conceive that an enterprise would act contrary to the plan targets for its sectors without being condemned and having sanctions applied to it.

The Hungarian economic policy wavers between market and plan. Elements of central control have been retained and the Mechanism is tending increasingly towards a system governed by economic regulators which are highly differentiated both by

commodities and by the economic agents concerned with particular circumstances of individual enterprises and enabling the central planners to exert more influence over them. From 1976 certain materials supplied by USSR to Hungary are being allocated by a new department in the National Office for Prices and Materials to ensure that available supplies reach priority users, although enterprises can still choose their own sources of supply, decide on their own production plan and product mix and make their own marketing decisions. This flexibility is likely to make profit based management incentives effective even after the recent measures to constrain income differentials between enterprises.

It is important to consider the constraints within which the Reform must operate and once this is realized it is easy to understand the persistance of central controls both direct and indirect which often conflict with the largely economic considerations of efficiency that prompted the Reforms in the first place. Firstly the basic goal of the achievement of full employment and job maintenance becomes an important policy constraint. Workers cannot be dismissed except in rare circumstances, on grounds other than those of gross incompetence or violation of factory discipline; neither can they be forced to change either their trade or place of work because of the abolition of their existing employment. This protection of workers from the consequences of enterprise inefficiency and from adjustments to changing product demands and technology lead to certain undesirable tendencies. There remains little scope for

rationalization and a cut back of superfluous labour. Further as all high cost enterprises are to be isolated from the repercussions of their own inefficiency upon their output volume and employment and the sale of their products on the market ensured, the inevitable result is the growth of subsidy system differentiated to the requirements of individual enterprises. This means that central authorities must closely supervise the subsidized enterprises and direct them on how to improve their effectiveness. Alternatively enterprises must be protected from competition by giving them monopoly rights over their own products as well as over close substitutes i.e. the state must determine prices, qualities and product mix to prevent enterprises with monopoly powers from exploiting their position or it must absorb monopoly profits into the budget. For this it would have to regulate the enterprises closely enough to determine what portion of their profits is due to their monopoly position. A third alternative is that prices be maintained at levels high enough to cover the costs of the most inefficient producers and they be ensured of the possibility of selling their products at these prices. This implies that the centre restrict investment opportunities of the more efficient enterprises to prevent them from expanding and threatening the market position of the less efficient enterprises. It also implies that the more efficient enterprises be given maximum output quotas or that markets be maintained in permanent disequilibrium so that increases in output by efficient enterprises do not adversely affect the production volumes or sale prices of

the less efficient producers. The job maintenance policy requires prices to be set below the equilibrium level but a level high enough to assure profits to the least efficient enterprises. Thus the employment constraint prevents the centre from relegating pricing decisions to the market place.

The second major constraint in the way of a switchover to a completely decentralized system of planning and management is the requirement of price stability in the economy. Rapid increases in the consumer price level are deemed politically unacceptable. This places a severe constraint since central planners must adopt an economic system which combines full employment with a very low rate of inflation under conditions where enterprises are not pressed into dismissal of workers for want of financial means. In the face of a tight labour market and a high rate of labour turnover this implies a tight state control over earnings to avoid wage inflation. A policy of permitting wage increases out of profits would have resulted in the most efficient enterprises monopolising on scarce labour skills thereby necessitating a system of government subsidies to enable the less efficient enterprises to raise wages and thereby retain labour power. Consequently wage regulations have been imposed limiting the percentage increase in average wages that can be provided by enterprises to their employees. These restrictions adversely affect workers' incentives and efficiency. Management has little motivation to change production methods in the quest for higher efficiency. Labour cannot be offered substantial additions in earnings to compensate the extra effort involved in

adopting new technology or altering work patterns while adapting to changes in market demand. Any such pressures on the labour force would inevitably lead to a rise in the quit rate and profits may actually fall consequent to managerial efforts for greater efficiency. Relations limiting wage increases and the centrally laid down system of premiums and bonuses are further designed to implement the central goal of preventing widespread disparities of income between enterprises. Thus in 1976 a wage increase of 1.5 per cent was guaranteed to all workers irrespective of enterprise performance. Wages for about one third of workers are to be centrally regulated, for the rest increases of up to six per cent can be made from the sharing fund without tax obligation further increases attracting tax at a starting rate of 150 per cent payable from the sharing fund. The system of incentives geared towards higher productivity and efficiency is seriously undermined. Though it was desired that workers income be dependent on enterprise performance a rise in wages proportionate to the rise in profits would have led to an excessive degree of enterprises income differentials or wage rounds led by the very profitable enterprises. These considerations led to the progressive taxation of the profits. to be distributed. Instead of depending on productivity high tax rates are levied on all wage rises exceeding six per cent. Further the maximum bonus for individual workers has been reduced from twenty five per cent to twenty per cent of basic wages with a minimum bonus equivalent to six

days wages. The incomes policy has kept to a minimum the incentive offered either to workers or managers for improving enterprise performance.

Various direct controls over commodity prices have been retained since in the short run it is not efficiency but equilibrium that was regarded as important and short run equilibrium in individual markets was to be achieved without inflation. The new pricing system attempts to allow many prices to change so as to equilibrate markets while simultaneously preserving the overall conformity of the price structure to the multichannel average cost patterns. State preferences are asserted to influence price formation, to promote a particular structure of final use as also to protect certain industries or enterprises on social grounds. Though the aim is towards free prices and the abolition of quotas the speed with which this can be implemented depends on the extent of inflationary pressures. With the disappearance of excess demand in a controlled market there would be no hesitation to remove the controls but the fear of inflation is large.

The renewed tendency in the late 1970s for more investment to be centrally financed or controlled than in earlier years is aimed at preventing the expansion of investment activity beyond the economy's capacity and the pressures on the economy following in its wake. Consequent to the introduction of the New Economic Mechanism pressures built up in several areas and obliged the authorities to reintroduce direct controls to prevent disequilibrium. Investment demand was very high and since

there had been no administrative regulation of the exchange of capital goods since January 1968 the consequences were serious: the rupture of traditional contractual relationships, the speculative accumulation of stocks by users rushing to buy up scarce raw materials, the abuse of monopoly power by some producers, and supply difficulties in the case of small enterprises. Labour scarcity exerted an upward pressure on wages. The freedom conferred on enterprises in the sphere of foreign trade under conditions of excess demand brought about a large increase in imports and a considerable deficit.

One of the basic features of the New Economic Mechanism lay in its attempt to promote efficiency at the micro level by abolishing the fulfilment of plan index numbers as a criteria for judging enterprise performance and its replacement by the profitability index. However the endeavour to enforce central priorities and preferences regarding structural changes and composition of the assortment and product mix, containment of inflation, maintenance of full employment and job security, balance of payments considerations and export, import targets, and prevention of widespread income differentiation has led to considerable modification of profitability conditions created by general regulators as subsidies, exemptions, production taxes, wage regulations preferential and restrictive or even prohibitive development fund, tax rates etc. This puts a brake on interest in increasing profitability inevitably

equalizing the income differences between economically efficient and inefficient enterprises. In view of the importance of subsidies and tax advantages in determining the financial results of most industrial enterprises, the profitability of individual enterprises even those within the same broad branch is an inadequate reflection of their relative efficiency. A Hungarian study undertaken during 1969 indicated that enterprises do not attempt to achieve profits which are so high as to jeopardize future subsidies or threaten repercussion on the permitted prices of their products.[2]

Profitability would not serve as a criterion if the production of particular items appeared expedient either for political reasons or were important for the domestic market. An enterprise which produced semifabricates for a major consumer industry placed great stress on profitability as the key criterion in determining product mix.[3] However it had to operate within two serious constraints. The first was that there could be no reduction in the percentage of sales on the domestic market which consisted of cheaper and less profitable products. Even new products were put into production simply in order to keep up this ratio since cheaper semifabricates were needed by cus-

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2 This conclusion was based on a study of ten enterprises (M. Tardos, "An Econometric Study of Enterprise Behaviour", in Z. Roman, ed., Progress and Planning in Industry (Akademiai Kiado Budapest, 1972), p. 380.

3 David Granick, Enterprise Guidance in Eastern Europe (Princeton University Press, 1975), pp.291-2.

tomers, to produce less expensive consumer goods. A reduction in the production and supply of these would be interpreted by final consumers as an increase in the consumer price level. This restriction was laid down by the enterprise's general director who in turn could be motivated either by social responsibility or the realization that there could be serious repercussions from channels as the branch ministry, the regional party organization and the enterprise trade union, if he were to follow an alternative policy.

The second restriction was that exports could not be permitted to run down because of the failure to offer less profitable items. The company was an important exporter and the central authorities would not permit a reduction in its earnings of foreign exchange. Since the enterprise was rapidly losing workers to higher paying industries and since it hoped to maintain production through adoption of labour saving investments, net profits might have increased by allowing production to decline at the expense of exports.

One of the major reasons behind the economic reforms was the recognition of the inefficiency with which the large volume of foreign trade was being conducted and the consequent loss of real income and balance of trade difficulties especially in convertible currency markets. It was felt that with appropriate changes foreign trade could provide a needed stumulus to innovation, technical progress and the development of a structure of production which would be viable in the long run. The Reforms in the sphere of foreign trade were designed to increase

its efficiency by designing appropriate parameters for rational choices and to create a framework within which these parameters would be directly communicated to producers and users. In this framework foreign market conditions could affect the decisions of producers and users which was previously impossible. However, the Reforms were introduced under the constraint that foreign trade should not be allowed to transmit instability or inflation in the domestic economy nor should Hungarian industry be abruptly exposed to foreign competitive forces. This led to the retention of a variety of direct controls as import and export quotas and permits, direct and indirect taxes and subsidies. Both exports and imports require licences from the Ministry of Foreign Trade and the power to refuse licences always stands in the background in discussions between the industrial enterprises and the Ministry.

The Reforms have helped remove the isolation of production from foreign trade which was characteristic of the pre reform 1968 system. The practice of Foreign Trade Enterprises buying and selling on their own account with the budget paying or picking up the balance has been abolished. However, for both exports and imports the influence of foreign price relations is still very much moderated. The new organizational forms and the new contractual relations in foreign-trade should bring a qualitative change in producers' concern for foreign market conditions even if export subsidies and other forms of intervention do in large part vitiate the uniformity of the new accounting exchange rates. The other problem in foreign

trade which lies behind the direct and indirect controls governing enterprise activities in this sphere is the rigidity of the framework imposed by interstate agreements with socialist countries. An attempt can be made to make the agreements more flexible and to involve producing enterprises more closely in the process of negotiating them.

The success of the Reform could be partly guaged in terms of the economic performance under the New Economic Mechanism. Table IV gives the main features of development from 1967 to 1976. There has been a slight acceleration in the overall growth of net material product.[4] This occurred in the face of a tight labour situation thereby signifying an impressive development of productivity. The rise in productivity is particularly marked in industry and less satisfactory in construction. The short period of stagnation in 1968-69 is largely a reflection of the shortening of the working week in many enterprises from forty eight to forty four hours. In part this initial stagnation could be regarded as a cost of transition to the New Mechanism.

The share of investment in GNP remained fairly stable with net investment around 23.7 per cent of Net National Product and gross investment around 32.7 per cent of Gross National Product in 1974.

In the sphere of foreign trade both 1974 and 1975 were

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4 Net material product is defined as the sum of all material goods and services at market prices less raw materials and intermediate products and net of depreciation.

unfavourable with the rate of growth of exports falling relative to imports. The level of foreign trade value i.e. the average of exports and imports measured in domestic currency was 54 per cent in 1974.[5]

Though producer and consumer prices were rising more rapidly by the mid 1970s, both wages and consumer prices were reasonably well controlled and real incomes rose steadily without substantial inflation.

Overall economic performance under NEM has been satisfactory while at the same time both unemployment and serious inflation have been avoided. It is likely that the Reform will improve the Hungarian economic situation and contribute in particular to a restoration of balance on the market for consumer goods and services. It should make it possible for the needs of the population to be satisfied in a more varied manner than that permitted by the command system. Though some direct controls have been retained they are based mainly on financial planning and not physical planning. Moreover they are not being used to enforce an all embracing scheme of central priorities as in the past, but are designed to deal with disequilibrium and to prevent inflation and balance of trade problems.

The eventual success of the New Economic Mechanism hinges on the question of whether with the increasing reliance on self finance and the limitations within which monetary and credit

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5 See United Nations, 1976.

policies and function under NEM, the central planners find themselves unable to control the aggregate level of investment except through varying the expenditure on the centrally fixed large investment projects. Under such conditions the planners may resort to recentralization and the reimposition of ad hoc measures to regain direct control over enterprise investment. However, it is likely that the New Economic Mechanism will survive in its present form and it remains an interesting experiment in economic management.

Table I

Shares of Investment Decisions by the Hungarian Government and by Enterprises

Year	Total Investment in the socialized sector of the economy (billion forints)	Share of Government in investment decisions	Enterprises (percentage
1968	68.0	50.5	49.5
1969	75.5	50.9	49.1
1970	89.5	45.9	54.1
1971	100.7	43.4	56.6
1972	103.1	46.8	53.2
1973	108.2	45.5	54.5
1974 (expected)	118.0	46.1	53.9
1975 (planned) draft	128.0	46.9	53.1

Source: Andrea Deak, "On the Possibility of Enterprise Decisions on Investment", Eastern European Economics, vol. XIV, no. 2, Winter 1975-76, p. 19.

Table II

External Financial Sources for Enterprise Initiated Investments
(in billion Forints)

Year	Credit	Development loan	Budgetary allocation	Council support	Total of External financial sources	Total of enterprise investments	Share extern source percen age
1971	12.6	1.3	8.8	2.3	25.0	57.0	43.9
1972	11.2	1.8	8.2	2.3	23.5	54.9	42.8
1973	12.5	1.6	9.0	2.0	25.1	59.0	22.5
1974	14.8	2.0	11.5	1.0	29.3	61.0	48.0
1975	18.0	2.0	11.7	1.2	32.9	67.5	48.7

Source: Andrea Deak, "On the Possibility of Enterprise Decisions on Investment", Eastern European Economics, vol.XIV, no. 2, Winter 1975-76, p. 19.

Table III

Scrappage of Fixed Assets

Year	Fixed Assets Scrapped as percentage of gross value
1965	1.21
1966	1.23
1967	1.61
1968	1.12
1969	1.13
1970	1.62
1971	1.54
1972	1.44

Source: Andrea Deak, "On the Possibility of Enterprise Decisions on Investment", Eastern European Economics, vol. XIV, no. 2, Winter 1975-76. p.22

Table IV

Economic Indicators - Hungary since 1967

	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976[a]
a) Output and productivity (% change over preceding year at comparable prices unless otherwise indicated)										
Net National product	-	5.1	7.8	5.0	6.6	5.1	7.5	7.1	-	-
Social industry: Gross output	9	5	3	8.6	6.8	5.4	6.9	8.4	4.7	4.1
Employment	3	4	3	0.5	-0.2	-0.8	1.3	-0.9	-0.2	-0.8
Productivity	6	1	0	8.1	7.0	6.3	5.5	7.4	4.9	4.9
Construction : Gross output	13	4	7	8	10.1	3.5	5.1	7.4	9.0	5.4
Employment	4	8	6	5	4.4	2.5[b]	1.9	0.5	1.4	-0.5
Productivity	8	-3	1	3	5.5	1.0[b]	3.1	6.9	7.4	6.1
Agriculture : Gross production	5.7	4.6	11.2	-7.1	18.2	7.2	10.1	5.9	2.4	1.1
% Charges in the investment in the socialist sector at current prices										
Central	-	-	-	-	6.5	10.2	1.9	9.8	19.1	8.2
Enterprise	-	-	-	-	21.0	-3.3	9.0	12.5	17.3	-1.2
b) Prices and incomes (% changes over preceding year)										
Industrial producer prices	-	5.9	1.8	2.3	1.6	1.9	3.0	3.3	10.6	4.6
Agricultural prices (paid by state procurement bodies and socialist industry)	2.0	9.3	0.3	7.6	2.6	2.3	7.9	1.6	0.3	9.9
Consumer prices	0.6	0.0	1.4	1.3	2.0	2.9	3.3	1.8	3.8	5.0
Average money wages in socialist industry	2.6	2.1	3.7	5.7	3.8	4.6	8.9	7.0	6.5	6.0

(contd...)

Real income per capita	6.4	6.3	5.9	7.3	4.5	3.1	5.0	6.5	-	-
Foreign Trade (% change over preceding year, trade values in domestic prices at ruling exchange rates)										
Trade with Socialist Countries										
Exports	7.1	10.2	10.3	9.4	12.5	21.3	15.4	9.8	19.7	-0.7
Imports	16.5	4.3	5.8	26.3	21.0	-4.2	4.8	23.9	38.7	-4.5
Trade with non-socialist countries:										
Exports	5.9	-5.8	32.3	15.1	-1.4	21.0	24.4	15.5	-6.1	9.6
Imports	7.7	-4.1	9.5	37.6	16.2	-0.2	18.3	58.6	-3.4	-1.3

a Most data for 1976 are provisional
b These figures are a compromise estimate: they have been revised frequently

Sources: Statisisztikai havi Kozlemenyek (1970, 1976, 1977)
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