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Savez republičkih i pokrajinskih samoupravnih interesnih zajednica za naučni rad u SFRJ učestvuje u troškovima izdavanja ovog časopisa.

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WORKER PARTICIPATION IN THE MANAGEMENT OF ENTERPRISES AND THE OWNERSHIP AND FINANCING OF THE MEANS OF PRODUCTION: A TRANSITION STRATEGY*

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I. INTRODUCTION

Over the last few decades there has been an increasing search in most developing countries for economic alternatives to the traditional private enterprise system in order to achieve growth, employment and development. Although these alternative economic experiences have encountered obstacles and even setbacks, they exhibit a characteristic and common pattern in their tendency to democratize both the political and the economic systems by increasing the participation and control of the workers over management, planning and other forms of economic interrelation within the society.

Actual experiences which include some form of worker participation have emerged under very different settings and conditions. For instance, experiences can be found today in different countries in the form of: an isolated firm; a group of enterprises comprising a sort of critical mass and a minimum system of mutual support within the prevailing economic system; or, on a national scale, most of the enterprises of a country. At the same time, these experiences may be the result of different forms of the transfer of power depending on the magnitude and extension of the transformation. These forms may range from a peaceful negotiation of the leftovers of a bankrupted firm, which is the most frequent departure point of numerous isolated experiences of workers' enterprises in our countries, to a violent revolution with generalized takeovers throughout most of a country.

The actual setting within which the experience is inserted, will certainly condition its chances of successful survival and development. Yet on the other hand, lessons from past experiences indicate that

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there are some forms of organizing activities which maximize the possibilties of survival and development of the newly created organization.[1]

Furthermore, although some forms of organizing activity may be more efficient in supporting the new experience, looking at the ideas and values of the new system, some forms seem to be ideologically more compatible with the new vision of the enterprise and society.

In this paper, we will concentrate in one of the most crucial problems that has to be dealt with when a transition is attempted towards any form of worker participation, namely: the type of ownership to be adopted and the concrete forms of financing the investments and working capital of the enterprises.

The form of ownership and way of financing the investments of the enterprises is clearly only one of the many problems that have to be resolved when a new experience is attempted. However, lessons learned in practice indicate that partial or unsuitable solutions are among the most frequent causes of failure or dissolution of the new experience. From the results observed in failed experiences in several places, it can be said that most of the traditional forms of ownership usually proposed for new experiences, such as collective or group ownership or different forms of distribution of shares among workers, are not conducive either to the ideals of cooperation or to a more efficient use of the scanty capital available.

Therefore, it is of paramount importance to identify a new form of handling the problem of ownership and financing the enterprises' investments in the initial stages or during the transition period. Our analysis will concentrate on identifying and comparing these transitional mechanisms, both legal and financial, which are philosophically compatible with the new form of enterprise. Such mechanisms must be institutionalized and able both to facilitate the efficient management and administration of the means of production in each plant and provide the necessary investment and production funding for the system as a whole.

Identification of the proper mechanisms is an important issue for both practical and pedagogical reasons. Generally, society does not posess a clearly defined concept of the new system it hopes to develop at the beginning of the change process. The establishment of certain types of state ownership or the maintenance of the traditional credit system can easily be confused with state capitalism or a simple reorientation of the credit system with new beneficiaries. Thus, inappropriate instruments can distort objectives and reduce the absolute need to become aware of the real meaning of this new system which would include more rights as well as more responsibilities for everyone. Tactically, there is also the need to identify such instruments of change as will not provoke adverse reactions from opposition groups-reactions which can be extreme.

[1] For a more detailed review of the different settings in which worker — managed enterprises exist, their advantages and limitations, and possible strategies to be followed, see: J. G. Espinosa, »Economics, Self-Management and Alternative Transitions«, paper presented to the 3rd. Conference of the International Association for the Economics of Self-Management, Mexico, August 1982.

Therefore, the form of ownership and financing which these enterprises adopt during the transition period will determine whether the structures, ideas and values of the traditional system they hope to replace will in fact be perpetuated or, whether a broader and more humanistic conception of both the enterprise and the economy will be created; a conception in which the primary factor in the direction and control of the productive process is not ownership or money, but human labor.

Finally, it must be said that in this paper we will not enter into abstract debate on the nature and philosophical meaning of different forms of ownership. Instead, the focus of our analysis will be on actual obstacles and problems encountered in the real world and the most feasible and practical forms of overcoming them.

In Section II which follows, we will first identify the different types of ownership and then concentrate on those two types which permit some form of participation. The analysis will focus on the objective causes which tend to limit participation, causes often rooted in the traditional concept of ownership. In Section III, we will propose the notion of social property as a solution to the problem of linking the concept of participation with that of proprietary ownership of the means of production. We will also offer a theoretical description of social ownership, the reasons which justify it, and a practical and detailed description of its principal components. Lastly, in Section IV, some final consideration of related problems are posed together with a few additional distinctions about the model within which this prototype can be incorporated.

II. TRADITIONAL FORMS OF OWNERSHIP AND WORKER PARTICIPATION

a. *Types of Ownership*

The best known types of ownership of the means of production are private ownership, state ownership, cooperative ownership and social ownership.

The system of private ownership of the means of production, as we all know, is the prevailing system in most countries of the Western world. The system of state ownership, too, has been widely applied in underdeveloped Western countries due to its identification with the predominant and traditional concept of property, which those countries have adopted from developed or colonial countries. In both private and state ownership the owner of the capital of an enterprise has possession of its productive means and — consequently — its direction and administration.[2]

[2] Most countries of the Western world do not give a legal definition of an 'enterprise'. Legislation generally concerns itself with different forms of possessing the capital of a productive unit without establishing a firm concept of what an enterprise is. In the simplest terms it should be defined as any stable organization in which human labor is designed to produce goods and services for society.

Another form is cooperative ownership in which ownership of the means of production resides in the collective body of the workers who are members of the cooperative. To be a member each worker should possess at least one share in the corporation — a share which is usually of reduced nominal value in order to facilitate the entrance of anyone who wishes to join the cooperative. In synthesis, in the cooperative formula of ownership, the direction and administration of the enterprise is carried out by those workers who are members of the cooperative and who work in a specific productive unit or plant.

Finally, there is social ownership of the means of production. According to this formulation — which some identify with cooperative or state ownership — ownership of the means of production resides in the national community as represented by a communal or regional institution or corporation with a national character. The administration and direction of the enterprise is shared equally by all the workers of the productive unit.

In state and private ownership there is no participation by the workers in the management of the enterprise. However, if it should by chance occur, it is only the result of a concession from the owner. In some cases, nevertheless, state ownership can supercede some of these traditional attributes through a limitation of prerogatives so that it does not interfere with the productive process within the enterprise. When this occurs, as we shall see later, there is a real possibility of convergence between state and social ownership producing different degrees of worker participation, depending on whether the enterprise is a monopoly or of strategic inportance to the national economy.

Thus, the analysis which follows will concentrate on the last two types of ownership, cooperative and social, since it may be supposed that they will produce in some form the kind of worker participation which interests us.

b. *Problems of Collective and Group Ownership*

Two issues immediately surface whenever a society or a geographical region initiates a gradual transformation of the economy in an attempt to progressively develop new types of enterprises which include worker participation. The first issue revolves around the organization's choice between the cooperative or the social form of ownership as a legal construct. The second issue refers to the source of credit and capital to finance production and investments. Not only can it be argued that the existing legal framework in most situations restricts the forms of ownership and financing to very few alternatives, but we can also argue that these alternatives are inappropriate, ultimately do not work, and can be identified as the cause of later problems. In the initial stages at least, experience shows that such traditional forms of ownership and credit are not adequate and present serious

problems to the new enterprise from the very beginning of its development.[3]

A familiar problem is the lack of collateral or the non availability of guarantees required to secure initial credit for the purchase of machinery or plant sites (Vanek, 1970, 1971).

As we all know, lending institutions generally seek maximum guarantees for the long-term credit they grant, insisting, for example, that their loans be repaid within a minimal time span, or that they be used in the most commercial or income-producing manner possible. In order to insure this, additional demands can be made on the cooperative to raise an equivalent or greater sum of money than the credit involved in the new investment. Particularly in countries where cooperative enterprises do not have securities, development banks usually demand — apart from the first mortagage — personal guarantees from cooperative members or the board of directors for a sum at least equivalent to the loan, or in other cases, place a lien on outstanding claims and sometimes also on saleable properties.[4]

When credit is very large, that is, when it covers the major part of the new cooperative's assets and when the lending institution is obliged by law to work with cooperative groups or low-income sectors, they are usually permitted to place restrictions on the composition of the board of directors as a way of maintaining some supervision over its operations and influence internal policy decisions. Even though a majority of development or lending institutions profess reticence about interfering in the management of enterprises which are their credit beneficiaries, sooner or later they will admit the necessity of protecting their interests; and when those interests equal a high

[3] For a more detailed and systematic presentation of the problems of cooperative ownership or self-financing (financed from within or by retained earnings), see Jaroslav Vanek, article on »Some Fundamental Considerations on Financing and the Form of Ownership under Labor Management«, Cornell Department of Economics Working Papers № 16, June 1971; and first appeared in *Economic Structure and Development: Essays in Honor of Jan Tinbergen, Amsterdam:* North Holland Publishing Company, 1973.

[4] There are innumerable ways a bank or funding institution can protect the credit it grants a cooperative institution lacking adequate guarantees. Here we mentioned only the most well-known and important in order to avoid becoming sidetracked from the central point, which is the inadequate or unadjusted character of a new system based on a combination of traditional credit and cooperative ownership.

Nevertheless, for those particularly interested in the methods of protection which lending institutions adopt, we might mention the following: often the lien not only covers the assets at the time the credit was granted but also the assets which are added later. Sometimes they demand that members of the cooperative contribute additional capital and that they receive approval from the bank each time they want to modify membership in the cooperative — meaning each time a member leaves or enters the cooperative. Further, the lending institution can reduce or prohibit the payment of dividends to members, can require that it be consulted over any change in the administration or management of the enterprise and impose limits on remunerations at the directive level of the cooperative. As a norm, the previous consent of the lending institution is required for any new line of credit, new mortgage, attachment or significant commitment.

proportion of the assets of a firm, it is almost impossible to avoid involvement.

Without doubt, the different types of controls mentioned earlier generally seem reasonable for their defined purposes. However, this practice by banking or lending institutions is frequently translated into the elimination or abrupt curtailment of the organization's autonomy. The result is an increasing dependency of the enterprise on the financial institution for an indefinite period and a weakening of the possibilities of worker self-determination and participation--essential elements in the development of responsible and autonomous social participation.

But despite the obstacles of guarantees and the restrictions of the credit system, it is still possible to succeed in establishing a cooperative enterprise and making it work. Unfortunately, there are a considerable number of other problems which arise later as a direct result of the ownership and credit system chosen.[5]

A primary problem is related to the formation of different categories of workers within the enterprise after it has been in operation for some time. That is, the founders of the enterprise will feel that their contribution has been greater than that of the late-comers, particularly when most of the initial loan has been repaid. Operating under that mentality, any new worker coming into the cooperative would not really be granted the same rights as the original members. Thus, in an almost imperceptible way, the basic principle of the capitalist system of private property would be reinstated.

The situation we have just described is a familiar one in collective or cooperative enterprises subject to the traditional credit system. This situation becomes more acute the greater the privation and sacrifice

[5] The possibility for a cooperative enterprise to establish itself and function in a relatively normal fashion can be the result of very different circumstances. At one extreme is the case in most countries in which the cooperative is formed from an existing, traditional-style enterprise which is close to bankruptcy and at the point of closing, or where the owner decides to take his capital out of one venture in order to make more profit in another. In situations such as these it is often the owner himself who helps the workers secure credit (or grants them credit himself). These cooperatives are formed principally in order to preserve the jobs of the workers and are often paid for by the salaries or social benefits owed them by the owner. At the other extreme of possible situations is the less frequent case in which the cooperative is financed through institutions specially created to assist non-traditional enterprises. Even in this most favorable case our argument is validated since the problems derived from this type of ownership and credit continue to arise; they appear with different intensity depending on the favorable or unfavorable conditions at the beginning.

In the next lines of this section we will only briefly summarize the main problems a cooperative or a self-financed firm may present. We address the interested reader to Vanek (1971), where some of these problems are described more extensively.

demanded of the founding workers during this initial period.[6] This common practice certainly suffocates or completely destroys any sense of solidarity in or outside the enterprise and leads to internal situations in which human relations are not really any different from those in a capitalist enterprise.

If for some reason this situation does not develop, either because the enterprise does not need additional help or because it obtained advantageous terms on its initial credit negotitation, there still exist difficulties which are no more than a different expression of the same basic problem — the system of financing and ownership. Specifically, the new manifestations of this problem are found in the two crucial variables in any economy: investment and employment.

In a traditional producer cooperative its capital is collective property and, therefore, the process of accumulation — that is, investment in replacing or augmenting existing equipment — takes place through collective savings or non-distributed profits. This means that the enterprise makes its investments by withholding part of its income retained expressly for this purpose. This procedure is of overriding importance and is the origin of: the formation of special rights for one group of workers over another, the establishment of an adherence or attachment of workers to the enterprise for the protection of acquired rights and, rigidity in the hiring of new workers. Furthermore, it has been extensively argued that the failure to pay a scarcity-reflecting remuneration for the use of collectively-owned capital is responsible for the frequently short life of producer cooperatives.[7]

Vanek (ed., 1975) suggests some different types of dynamic forces which bring about the collapse of a self-financed participatory firm. There are: the drive to reduce the number of workers of the given capital stock in order to increase per worker income[8]; the desire to reduce the capital stook; a tendency to under-investment; and a tendency to never-employ, i. e., under no circumstances will the firm admit new members into the collective, because such action would reduce the capital-labor ratio and consequently the per worker income. Also, it has been suggested (Espinosa, 1973)) that another force which also results in the disappearence of the self-financed cooperative or participary firm, is the extreme 'success', in some cases, of the enter-

[6] It is also important to realize that when the initial line of credit represents a high proportion of the new installations during the first four or five years, workers must pay back an equivalent of twice the value of the capital at their disposal. This is so because according to normal financial policy, besides repaying the loan, they must accumulate a separate fund for machinery depreciation, that is, funds to replace present machinery once it becomes too expensive to repair or is no longer functional. This supposes, of course, that the duration of the credit corresponds to the life of the equipment which is between four and six years.

[7] This thesis is well developed in Vanek, ed. (1975). For some earlier analyses within a framework of property rights see Furubotn (1971) and Pejovich (1969). Also, for an excellent empirical testing of this thesis see D. C. Jones and Bakus, D. K. (1977).

[8] Obviously, the work collective will try to avoid this procedure, prohibiting the firing of members, but through attrition, retirement or withdrawal, it will always be possible to reduce the members of workers in the long run.

prise. In most collectively-owned enterprises, once the initial mortgage is paid off, and if market and financial conditions are favorable there is a marked tendency to reinvest and overcapitalize the plant. The primary consideration among the workers is the assurance of a better and more stable future and this criterion carries over even to the immediate disposition of liquid assets.[9] Moreover, this tendency is reinforced in time since the workers quickly grasp the fact that the greater the density of per worker capital maintaining a constant level of employment, the greater the productivity and, therefore, the greater the per capita income. As time passes, this over-investment will transform the enterprise into a capitalist firm or reduce solidarity among the workers.

Most of the problems cited have not attracted the attention of the interested parties because, if this self-financing system were to be applied as a general rule to a whole economy or a region, their effects or consequences, are almost impossible to foresee from present-day experience in most Western countries which are isolated species in a different world struggling to survive. Furthermore, it is always thought that the emergence of any of these problems is the result of some peculiarity in the particular enterprise.

Therefore, if the financial and ownership system to be applied in a transition period were to be a system in which the capital is collectively owned by the workers and the investment process is achieved through retained earnings, it is possible to anticipate a number of problems and the coexistence of very uneven situations. For example, there may be a few fully automated enterprises with a few highly paid workers — given their levels of productive output — existing along side a pool of unemployed workers together with a scarcity of capital and machinery necessary to bring the labor force up to the full employment level.

Then, the form in which the capital stock is financed in a worker-administered and directed enterprise is a fundamental and basic issue in planning the development or transition to a new economic system. Although up to now this article has referred to cooperative ownership as the only type operating on an internal investment financing basis, it should be pointed out that in many places the same mechanism defines social ownership. In the specific case of Yugoslavia, for example, each enterprise must produce a growing capital fund as an integral part of its productive process: that is by withholding funds. To produce this effect, it does not matter whether the law states that the means of production are socially owned or not, since from the point of view of the workers' assembly, capital stock is considered collectively-owned property from collective savings or withheld funds and controlled by the collective body.

According to most of the previous considerations, in the financial system of internal funding of investment each enterprise functions

[9] An exception to this argument is posed by Prof. Pejovich who points out that when the average age of workers in a plant is high, together with a high average of working years, this tendency will be reversed. See S. Pejovich (1969).

as an island in relation to the rest of the region or the economy, and this is not precisely a social approach to the property concept.

The problem, then, consists in having a definition of an adequate concept of social ownership and of differentiating it from the system of cooperative ownership which is identified with internal financing.[10] This definition and concept of social ownership should in fact be a model in which capital stock and the process of accumulation is financed from outside the enterprise (Vanek, 1970). This cannot be the traditional system of credit and should not contain the concept of withheld funding for equipment purchases since this is no more than the old concept of capitalist private ownership.

III. A POSSIBLE SOLUTION: SOCIAL OWNERSHIP

a. *Characteristics of social ownership*

The concept of social ownership that we seek should be compatible with the principles of worker solidarity and participation, not only within the enterprise but also with other workers in the region and in the general economy.

The first basic concept is that now it is society that supplies the operating capital to the enterprise. The enterprise must restore to society the capital consumed in the production of goods, and society later on uses these funds to replace deteriorated equipment or designates them to other production activities which it considers more important.

The second fundamental concept is that in a developing society, capital is a scare commodity which must be used to the utmost. The enterprise, therefore, must make repayment in such a way that it guarantees two things: first, the full use and profitability of the capital it controls; and second, a contribution to increased capital stock in the whole regional or national economy for the purpose of providing employment for other workers who may not yet have benefited, and to produce goods which society needs or lacks.

The general operating scheme of a system of social ownership of the means of production includes the following characteristics: if the productive units are under social ownership, they belong to society as a whole, whose representative is the State or a regional or local corporation representing the community. The basic responsibility of the corporation or institution representing society is to provide adequate initial financing, and to maintain the continuity and integrity of the productive units. Its principal right is that of reserving a certain value or income from social capital, which permits it to

[10] In order to focus attention on the central issue, no mention has been made of a great number of other problems characteristic of this system of internal financing. But for the sake of illustration, we might mention the subjective factor in calculations of the profitability of investments, the generation of growing differentials between productive levels and remuneration among workers in different enterprises, the diminishing rate of medium-range investments, etc.

In this way, albeit somewhat theoretically and superficially, it is possible to visualize the size of the resources and the definitive growth potential offered by a system of social ownership applied to all productive capital throughout the economy.

c. *An operative system for transition to social ownership*

Now, after having mentioned in concrete terms some of the component elements of a system of social ownership and its estimated accumulative potential for replacement and new investments, it is still possible to give a more specific operative expression, which would be especially appropriate for a period of transition in which new ideas or concepts are at first hard to assimilate, and when in addition there may easily be resistance to any change in established procedures.

This operative expression of social ownership in a transitional period could be a system of industrial leasing, which also fulfills the basic need to make the means of production independent, separating the role and attributes of ownership of the means of production from the management and direction of the productive process. Concretely, for example, an enterprise administered by its workers which might take the juridical form of a labor cooperative, would rent capital goods, installations and buildings from a regional or national development institution.[15]

There are many possible ways of establishing a system of leasing; here we want to discuss briefly the advantages of this specific form of financing over the traditional methods of credit or capital investment.

A system of leasing capital, which would establish an initial, intermediate form of social ownership, presents some clear advantages which can be summarized as follows: first, a leasing system would permit the enterprises to manage a much larger volume of fixed capital than that available to them on long-term credit. In the second place, and from the viewpoint of the development institution, a system of leasing fixed capital in the long term would be equivalent to a mortgage on the total capital of the enterprise. Another very important advantage is that it would permit the full utilization of all the capabilities of the enterprise, and especially the new forms of management utilized by companies which do not normally have access, or have limited access, to credit financing.

A system of capital leasing would give relative assurance to the management of the business of a larger volume of assets with much less interference from the development institution than would be imposed on it under long-term loans of capital investment. This is true

[15] It can be clearly seen that the components of a rental charge are similar to the previously mentioned components of a payment by the enterprise to a development institution. That is, an industrial leasing institution would take into account, in setting a rental charge: first, a charge for the use of capital, i. e. depreciation; second, an interest rate on unused capital. In addition, some charge would probably be included as insurance against fires or unintentional destruction of equipment or buildings. It can also be shown that the rental charge thus determined will always be less than a credit charge for an equivalent amount of capital.

because the very nature of the contract ensures the lessor compliance by the lessee with his obligations, with fewer complications and controls. A leasing contract, for example, does not require the supervision of all the activities of the leasing company, nor does it make the presence of representatives of the Development Bank on the firm's directorate necessary, a situation which as we said earlier, invites interference and restricts the power of the enterprise's management.

Moreover, a leasing system for productive capital is a highly flexible mechanism. For example, the leasing charge can be reduced after a given period of time, taking into account the increased cost of maintaining equipment in the last years of its useful life. Similarly, in a leasing contract it is possible to anticipate and incorporate most of the problems that may arise later on, avoiding any disruption in the normal operation of the enterprise.

This flexibility is also important when the prevailing conditions on present-day markets are considered. In this competitive economic environment it is usually argued that enterprises need continual reinvestment, expansion and modification of output capacity in order to match the everchanging conditions of the domestic and international markets.

In this regard a leasing system is a highly adjustable instrument. If a distinction is made between equipment and buildings, i. e. between capital goods that need to be rapidly depreciated and other installations and buildings that have a longer life span, a leasing system may be even superior to a system of private property, group ownership or state ownership. In fact, a leasing system allows fast readjustments of lay-outs and equipment that need to be rapidly depreciated, fast decisions with respect to new investments and easy reprograming of lease payments.

However, where worker participation and employment are the main objectives, continual reinvestment and expansion of output capacity may be subject to some restrictions like job creation, income distribution or some other positive effects for the rest of society. Therefore, regardless of the fact that the leasing system may be a suitable mechanism for rapid decisions, in a self-managed society new investments most of the time will have to first pass a sort of »social test« before they receive the necessary financial support.

A leasing system for productive capital also reduces the risk of deviating borrowed funds into inappropriate activities, such as the presentation of altered bills for imported machinery, the acquisition of obsolete goods or equipment, or the use of funds for activities considered low-priority from the viewpoint of economic development.

Finally, the capital leasing procedure simplifies the relocation of existing enterprises and the creation of new plants in zones specifically designated as poles of industrial growth or depressed zones in need of support. Moreover, industrial leasing as an initial stage of social ownership would especially stimulate the establishment of new enterprises which the national or regional planning authorities consider especially important, without the need to resort to the institutional form of state or public management.

In addition to all the advantages mentioned here, and others omitted for the sake of brevity, industrial leasing would permit development institutions to move out of the traditional operating framework, which is appropriate only for a system of private ownership of the means of production. In synthesis, the possibilities offered by a form of social ownership which begins with a system of industrial leasing, placing previously inaccessible means of production at the disposal of new people, represent a potential for economic take-off and important increases in investment, particulary in the social sectors which have traditionally been marginalized and excluded from economic activity precisely for lack of resources.

IV. SOME FINAL CONSIDERATIONS

Before concluding this paper, we want to mention specifically two or three fundamental aspects of this theme. The first has to do with the timing of the selection of a form of ownership and financing for the system under development. The second is related to the model into which the proposed system of ownership and financing is inserted.

With regard to the first, we began with the assumption that the type of ownership and financing to be used by enterprises in a stage of transition towards democratization of the economy, is only one of many problems to be confronted in a process of change. Nevertheless, the experience of many different places indicates that it is one of the most important problems to define and identify at the beginning of the process. In those places and situations where it has been intentionally or unintentionally postponed, the problems which developed with other systems of ownership besides social ownership, began as underlying problems, and when they emerged into the open later on, their scope was so great that solutions were often hard or impossible to achieve. Consequently, a timely definition in the early stage of the process will contribute significantly to the avoidance of regression and other problems.

Regarding the second aspect, perhaps the most important of these final considerations, it is necessary to give concrete consideration to the context and objectives within which the system of ownership and financing described here is developed. In this document we began with the understanding that transformation and change in society are not produced at the level of the business enterprise, and cannot be carried out without a political vision and action involving the whole economy. Nevertheless, in order to achieve this, the transformation must begin and become effective at grassroots level, i. e. production level. A process of democratization that does not involve the workers is not democratization; it is merely technical reform.

Thus the specific mechanisms of ownership and financing which have been suggested here, are insented into a broader movement of reflection and experimentation with new forms of social change and democratization, which are developing extensively on the periphery of the capitalist world among groups and movements which are still perhaps relatively new, but which are more effectively targeting the special problems of these societies. Their general tendency is to build centers of direct democracy which permit a high degree of local and regional autonomy, self-management by workers in the cities and countryside of their own production and marketing, as against the authoritarian and centralizing tendencies of the dominant economic system's and external manipulation of culture and democracy.

The system of social ownership is definitely inserted into this broader model, which seeks to go beyond traditional, monopolistic forms of development by means of a transformation oriented towards an intensive, decentralized and solidary form of democracy, founded on local communities, cooperatives, factories, and regions, with their horizontal and vertical link-ups. The mechanisms proposed here are one attempt to promote this transformation in places where individuals work and live together, where they can have some direct influence on their situation, where their needs and conflicts with existing society originate, where they live constantly with the need for liberation and collective empowerment.

In the final analysis, the crucial element in this nascent transformation of society is human labor, and not the individual or collective ownership of the means of production.

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APPENDIX I[1]

As was shown in Section II, of the total resources which may be destined for Gross Investment (I_G) in a given year, those which may be destined for new investments, or Net Investment (I_N), are not only those obtained from rent or interest rates on existing capital (iK_{t-1}), but also the positive margin obtained from the difference between Depreciation Costs ($D \cdot K_t$) and Replacement Investments (I_R).

The object of this Appendix is to determine in a more precise manner the proportion in which resources are generated between Depreciation Charges and Interest on capital, the only elements which make up Gross Investment resources. At the same time, we also want to determine in what proportion the resources are distributed between Replacement Investments and Net Investments. To do this, we will use as parameters the average life span of equipment and installations (A), and the economy's growth rate (r).

Our basic assumptions are as follows:

1. The economy grows constantly and for an indefinite period,[2] that is, according to Von Neumann, the economy grows indefinitely along a line, with a constant capital/product ratio.

2. All Capital Goods in the economy last A years.

3. For different economies the constant growth rate r can vary and be different.

[1] The analytical derivations included in this Appendix can be shortened if some references are considered. See for instance B. Horvat, »Real Fixed Capital Costs Under Steady Growth« and »Fixed Capital Cost, Depreciation Multipler and the Rate of Interest«, *European Economic Review*, 1973, pp. 85—103, 163—80. See also by the same author »The Rule of Accumulation in a Planned Economy«, *Kyklos*, 2/1968, pp. 239—68. However, as some of these journals are not always available in Third World countries, the complete analytical derivation is presented.

[2] The economy is in the Golden Age, i. e. the economy has entered a stage of harmonious and orderly growth, in which all the principal indicators grow proportionally to the global growth rate (that of global income), which is CONSTANT.

I. DISTRIBUTION OF GROSS INVESTMENT

From the above assumptions, we will first determine the proportion in which the sum total of I_G is distributed between I_N and I_R.

We know that:

$$2.\quad I^t_G = I^t_N + I^t_R \qquad t = 1, 2, 3 \ldots n \text{ years}$$

Thus, if the capital goods last A years, the replacements in year t will be equal to Gross Investment A years ago, that is

$$I^t_R = I_G^{t-A}$$

We also know that, given r, the constant growth rate, the relation between I_G A years ago and today's I_G is:

$$3.\quad I_G^{t-A} = \frac{I^t_G}{(1+r)^A}$$

Thus, plugging relationship (3) into identity (2), we have:

$$I^t_G = I^t_N + \frac{I^t_G}{(1+r)^A}$$

And extracting I_G:

$$I^t_G = \frac{I^t_N}{1 - \dfrac{1}{(1+r)^A}}$$

In this relationship, we can call the following expresion λ:

$$\lambda = \frac{1}{1 - \dfrac{1}{(1+r)^A}}$$

Thus the relationship between I_G and I_N can be expressed simply as:

$$4.\quad I^t_G = \lambda \cdot I^t_N$$

in which λ is a function of only A and r.

Plugging equation (4) into identity (2) we obtain a relationship between I_G and I_R. That is:

$$5.\quad I^t_G = \left(\frac{\lambda}{\lambda - 1}\right) \cdot I^t_R$$

Thus, the proportion in which I_G is distributed between I_N and I_R will be $1/\lambda$ and $\lambda - 1/\lambda$ respectively.

II. THE ORIGIN OF GROSS INVESTMENT

As was shown in equation (1) in section II, the origin of the resources would be:

$$D\cdot K_t + i\cdot K_{t-1} = I_G \tag{1}$$

First, we will look at the fraction of I_G which comes from annual depreciation charges on existing capital, that is the first addendum of equation (1).

Assuming that equipment depreciates linearly, and using relation (4) for I_G, the proportion we are interested in is:

$$\frac{D\cdot K_t}{I'_G} = \frac{\frac{1}{A}\cdot K_t}{\lambda\cdot I'_N}$$

As:

$$I'_N = K_t - K_{t-1} \tag{6}$$

and

$$\frac{K_t}{Kt-1} = 1 + r \tag{7}$$

The fraction $D\cdot K_t/I_G$, plugging in expressions (6) and (7), becomes:

$$\frac{DK_t}{I'_G} = \frac{1}{\lambda\cdot A}\cdot\frac{1+r}{r} \tag{8}$$

That is, the fraction $(1 + r) / (\lambda\cdot A\cdot r)$ out of I_G comes from annual depreciation costs on all stocks of existing capital in the economy.

Having obtained this value, we now need only to determine the interest rate to be applied on non-consumed capital during a given period.

We can extract interest charges on capital from equation # 1, again using expression # 4 for I_G. Thus equation # 1 becomes:

$$i\cdot K_{t-1} = \cdot I'_N - \frac{1}{A} K_t$$

Here, we can again use the identities # 6 and # 7, and divide the whole equation by K_{t-1}, in order to isolate i. Thus we are left with:

$$i = \lambda\left(\frac{K_t}{K_{t-1}} - \frac{K_{t-1}}{K_{t-1}}\right) - \frac{1}{A}\cdot\frac{K_t}{K_{t-1}}$$

This equation, after cancelling and simplifying, finally becomes:

$$i = \lambda\cdot r - \frac{1+r}{A} \tag{9}$$

Expression # 9 shows that, given the type of economy we have assumed, when A tends towards infinity, i becomes equal to the economy's growth rate, r. This expression gives us the value of that interest rate which, applied to non-consumed capital and added on to depreciation charges, would give the exact value of Gross Investment (I_G) compatible with and necesary for maintaining constant and proportional growth of the economy.

The expressions obtained in this appendix are sufficient to work out a small experimental model. Combining A and r in different manners, we can vary the proportion in which Gross Investment resources are created and distributed.

As a mere example and means of illustrating more clearly the values attained by the variables we are interested in, we include in Table I two alternative and relatively usual values for the growth rate r. These two values for r are combined with four possible equipment life spans, A.

TABLE I

A in years	r in %	i in %	Resources' Origin DK_t/I_G	iK_{t-1}/I_G	Resources' Destination I_R/I_G	I_N/I_G	Creation of I_N iK_{t-1}/I_G	$(DK_t - I_R)/I_G$
(Figures in % of I_G)								
5	3.00	1.23	94.32	5.68	86.26	13.74	5.68	8.06
10	3.00	1.42	87.88	12.12	74.41	25.59	12.12	13.47
15	3.00	1.51	82.01	17.99	64.18	35.82	17.99	17.83
20	3.00	1.57	76.58	23.42	55.38	44.62	23.42	21.20
5	5.00	2.10	90.91	9.09	78.35	21.65	9.09	12.56
10	5.00	2.45	81.08	18.92	61.39	38.61	18.92	19.70
15	5.00	2.64	72.66	27.34	48.11	51.89	27.34	24.55
20	5.00	2.78	65.40	34.60	37.70	62.30	34.60	27.71

As can be observed from the values obtained in Table I, which are only a sample of the infinite possible combinations of A and r, we can identify some clear tendencies, which were to be expected from the previous relationships shown in this appendix.

In very general terms, we can observe that when life span A is extended, the excess of depreciation charges over replacement investments ($DK_t - I_R$) grows. This tendency is reinforced when the growth rate r also grows. Briefly, this occurs because when A and r grow, Net Investment I_N becomes a larger portion of total investment I_G, reducing proportionally the relative importance of replacement investments I_R. In any case, it must also be emphasized that as A and r grow, interest charges on existing capital also grow. This growth is larger, relatively, than that of ($DK_t - I_R$) so that resources for I_N, when A and r are high, come more from iK_{t-1}. On the other hand, when the life span is short and equipment renewal more frequent, the largest source of resources for I_N comes from ($DK - I_R$).

Observing the values obtained for the interest rate i, it could be argued that these are only results which could be obtained since we have set an artificially low interest rate, which, when applied to existing capital stock, is not enough to produce sufficient resources to finance Net Investment I_N for that year. Nevertheless, it must be recalled that the interest rate was set as the indispensable minimum to maintain the economy's growth rate constant.

Therefore, a higher interest rate would signify either a higher economic growth rate, if this increased charge on current capital is only applied to new investments, or higher private profits for the owner of capital stock if these resources do not go into new investments. With this second alternative, the economy's growth rate will remain constant without increasing, and the remuneration of other factors, for example labor, will be reduced in the same proportion in which the remuneration of capital is increased.

These comments might lead some to think that by merely progressively raising the interest rate as high a growth rate as is desired may automatically be achieved. Obviously this is not the case, since above a certain level »decreasing returns« on capital are produced, along with objective problems in the economy's organization, which must be able to mobilize and distribute a National Product expanding at an extraordinarily high velocity.[3]

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[3] For example, an economy growing at a real 10% annual rhythm, will double its Total Production in 6 or 7 years.

UČEŠĆE RADNIKA U UPRAVLJANJU PREDUZEĆIMA, VLASNIŠTVO I FINANSIRANJE SREDSTAVA ZA PROIZVODNJU: STRATEGIJA ZA PRELAZNI PERIOD

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Od mnogih pitanja koja moramo razmotriti kada se oprobava novi oblik participacije radnika, suštinski problem predstavlja vlasništvo nad sredstvima za proizvodnju i način finansiranja investicija.

Saznanja do kojih se došlo nakon mnogih neuspelih pokušaja sudelovanja radnika u upravljanju preduzećima — upućuju na zaključak da većina tradicionalnih formi vlasništva najčešće predlaganih za novi oblik participacije radnika (kao što su kolektivi grupnog vlasništva ili različiti oblici podele akcija među radnicima) ne doprinose ni ostvarenju ideala kooperacije ni efikasnijoj upotrebi raspoloživog kapitala kao ograničenog resursa. Naprotiv, ovi oblici vlasništva spadaju među najčešće uzročnike neuspeha ili propasti novoorganizovanih sudioničkih preduzeća.

U ovom članku pokušali smo da analiziramo ovo značajno, neregulisano pitanje i da — nakon proučavanja tradicionalnih formi vlasništva, posebno kooperativa proizvođača i državnog vlasništva — damo podrobniju definiciju društvenog vlasništva.

Kako glavnu svrhu članka čini razrada novih konkretnih i pragmatičkih oblika vlasništva koji bi odgovarali realnim svetskim problemima, za prelazni period predložen je intermedijarni praktični oblik društvenog vlasništva. Ovaj oblik vlasništva predstavlja neku vrstu generalizovanog »prilagođenog sistema najma« sa radničkim upravljanjem ne samo u preduzećima nego i u administrativnom savetu institucije koja bi preduzećima iznajmljivala kapital.

Na kraju, date su napomene o opštijem okviru ili modelu društva u kome ovaj poseban oblik vlasništva treba razmotriti.