PROPERTY RIGHTS AND THE LABOUR MANAGED FIRM IN THE LONG RUN

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> In a recent paper Eirik Furubotn states that
> »... the ultimate conclusion on the labour-managed firm is clear. Whatever its contribution to industrial democracy, it is not an inherently efficient economic organisation.« Furubotn (1976) p. 122.

The main analytical justification for this conclusion is in the sections of the paper dealing with savings deposits and allocative efficiency which parallel the theme of a number of earlier papers (Furubotn, 1971, Furubotn, 1974, Furubotn & Pejovich, 1970a, Furubotn & Pejovich, 1970b, Furubotn & Pejovich, 1973, Pejovich, 1969, Pejovich, 1973). This theme is that under a system of labour management in which workers can only derive returns from physical assets whilst they are members of an enterprise and so long as the depreciation of assets is a legal necessity the return from investing in productive assets must be greater than the rate available on deposits in the banking system. Although this phenomenon has also been pointed out by Vanek (1971 1973) it may be styled the »Furubotn-Pejovich Effect«. For a work collective with a given planning horizon of n years this has the effect of making the required rate of return (r*) on physical investment equal to

$$\frac{i(1+i)^n}{(1+i)^n - 1}$$

where i is the rate of interest earned on funds deposited in the banking system. Whilst this effect undoubtedly exists and can be measured to some extent in aggregate for an economy such as Yugoslavia (see Stephen, 1978a) it is not sufficient to justify the extremely strong conclusion of Furubotn (1976). This point will be argued at two levels:

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(i) Labour-management may take forms other than that implicit in Furubotn (1976)

(ii) Even where it takes that form, explicitly, the distortions may be removed or at least ameliorated to a substantial extent by compensating adjustments elsewhere in the legal and economic systems.

I. THE FORM OF LABOUR-MANAGEMENT

Although the title of Furubotn's (1976) paper is »The Long-Run Analysis of the Labour-Managed Firm . . .« the assumptions underlying it are essentially a stylised version of Yugoslav »Self-Management«: the property rights structure and financing opportunities are those in Yugoslavia which may not be unique to all systems of labour-management.

However, systems of labour-management with different characteristics may be developed. At least two such systems will produce Pareto optimal results. One is the wholly externally financed system outlined in Vanek (1970). In this model there is no self-financed investment and no requirement to depreciate since funds are provided at a market clearing rate by a National Labour-Management Agency with a guarantee of refinancing. This system is an exact analogy (under labour management) of the method of financing of the entrepreneurial firm so fundamental to neoclassical micro-economics — i.e., all capital is hired by the entrepreneurial factor. Vanek has produced an »idealised« labour-managed system which may be compared validly to the idealised system of conventional economic theory. Both systems are Pareto optimal in the long run although the paths by which such a position is reached differ. [See Vanek (1970), Meade (1972)]. Vanek's model is a »socialist« model in that the members of the collective have no individual claim on the assets of the enterprise which may be thought of as belonging to society as a whole.

A second group of systems may be developed in which workers retain individual rights to any income which they forego for any internally financed investment [see Berman and Berman (1978)] or in which membership of the collective is subject to a market transaction [see Sertel (1978)]. In contrast to Vanek's model such systems may be termed »individualistic« systems of labour-management. They are also Pareto optimal.

It is, however, not legitimate to compare (as Furubotn (1976) does implicitly) a model of labour-management with a built-in distortion to an idealised model of a different system and to conclude that all variants of the distorted model are inferior to the idealised model. The converse of Furubotn's (1976) conclusion could be obtained by comparing a private property system with a profits tax to Vanek's (1970) model of labour management. In that case the conclusion that »private ownership is not an inherently efficient economic system« would, of course, be invalid since removal of the distorting tax would render the private ownership system Pareto optimal. In order to reach this strong conclusion for the case of labour management Furubotn must demonstrate

the immutability of his assumed property rights structure. It would, however, seem that others have demonstrated that the contrary is true.

The analogy with a tax under a private property rights system is more than superficial. The distorting effects of the »Yugoslav« property rights system has all the analytical properties of a progressive tax on investment (and thus on the surplus of the collective over the long run). This tax is progressive in terms of the collective's planning horizon in that the *shorter* the planning horizon the *higher* the implicit rate of the »tax«.

Considering the property rights structure as a tax provides some useful insights. Firstly it may be argued that this »tax« is used to finance a public-good called »socialism.« (Furubotn is implicitly considering a »socialist« form of labour-management). It would seem that concepts such as »socialism«, »democracy« and »human rights« etc have all the analytical characteristics required by the general definition of a public-good as used in economics. In particular they imply joint consumption and nonexcludability. Thus it might be argued that a simplistic appeal to Pareto optimality has limited validity when such a public good is present. The only tax system compatible with Pareto optimality is that of lump-sum transfers (Nath, 1969). Thus it would seem that all Public Goods should be financed by such lump-sum taxes. However in the case of this Public Good, »socialism«, lump-sum taxation would reduce the »output« of the Public Good since its existence requires unequal *monetary* sacrifice. It may not be fruitful to push this line of argument too far but it would seem to confirm the limited applicability of Pareto optimality in comparing situations which imply different value judgments (as has been argued elsewhere e.g. Nath (1969) p. 86). Under these circumstances the efficiency of any system can only be judged when a Social Welfare Function is fully specified.[1])

The second insight which can be gained via the tax analogy comes from the literature on the efficiency costs of discriminatory taxes (e.g. Harberger, 1966). Given that the »tax« discriminates against those collectives with short planning horizons investment funds will flow to those with longer planning horizons. This may compensate to some extent for the reduction in the level of investment in the other sector depending on the relative slopes of the Marginal Efficiency of Investment schedules of the various sectors. If all collectives have the same planning horizon the »tax« will be non-discriminatory and given that in a totally labour-managed economy all income derives from the coporate sector, the tax will be fully shifted. However the full effect of shifting might take a long time to work its way through the system (see Krzyzaniak, 1966).

Seeing the Furubotn-Pejovich effect as a tax suggests that it might be compensated for elsewhere in the system. Indeed Furubotn and Pejovich (1970bs) have themselves suggested that the Yugoslav authorities after 1965 altered the levels of taxation on »retained« and »distributed profits« in order to compensate for the property rights structure. Sub-

[1]) A similar logic is implied by Williamson's (1977) notion of an »essential idealogical attribute« of an economic system and the notion of »*a priori* restriction« on a system as developed by Neuberger and Duffy (1976).

sequently it would seem that all taxation of »retained earnings« has been removed completely (see Lamers, 1976). The extent to which such action compensates for the Furubotn-Pejovich effect is, of course, a matter for empirical estimation.

II. THE EXISTENCE OF CREDIT

Furubotn (1976) discussed labour-management in terms of a financial system in which there was no opportunity for enterprises to borrow investment funds from the banking system or a fixed interest market. The possibility of such credit financing is only dealt with in a short footnote stating that:

> »the problems of allocative efficiency remain to plague the firm whether or not the firm is able to draw upon bank credit or other external capital funds« Furubotn (1976) p. 122.

For a substantiation of this assertion Furubotn refers the reader to Furubotn & Pejovich (1973) and Furubotn (1974). The former paper, in fact, relies on Furubotn (1971) for its conclusions in this area. The incompleteness of the arguments in that paper have been demonstrated by Stephen & Smith (1975). It will be argued below that the decision rule used to evaluate alternative sources of finance in Furubotn (1974) is not a rational rule for any economic agent (including the worker-manager) and that as a consequence Furubotn's overall conclusion must be modified.

Furubotn (1974) essentially reaches two findings: (i) that the existence of credit reduces the level of self-financing; and (ii) that under »realistic« conditions the incentive will exist to finance all investment from credit.

The first of these results relies on the enterprise always borrowing first and only using self-finance if there are still profitable investments left when credit is exhausted. Furubotn states that this »rigid sequence is made provided certain assumptions are accepted«. (Furubotn, 1974, p. 269). These assumptions are: (a) the Marginal Product of Capital falls monotonically (b) the supply of bank credit is infinitely elastic at the going rate (c) the rate of interest is low enough relative to the return on capital to permit some positive borrowing (d) the rate of time substitution of consumption increases steadily as current consumption is diminished (e) the collective is concerned exclusively with maximising a utility function whose only arguments are individual consumption in each period of the planing horizon. It can be simply demonstrated using diagram 1, which is taken from Furubotn (1974), that the conclusion regarding this »rigid sequence« is wrong.

In this diagram the horizontal axis measures levels of savings and investment undertaken by a collective with a specified planning horizon. It is assumed that all members of the collective have identical preferences and any distribution of income is egalitarian. The vertical

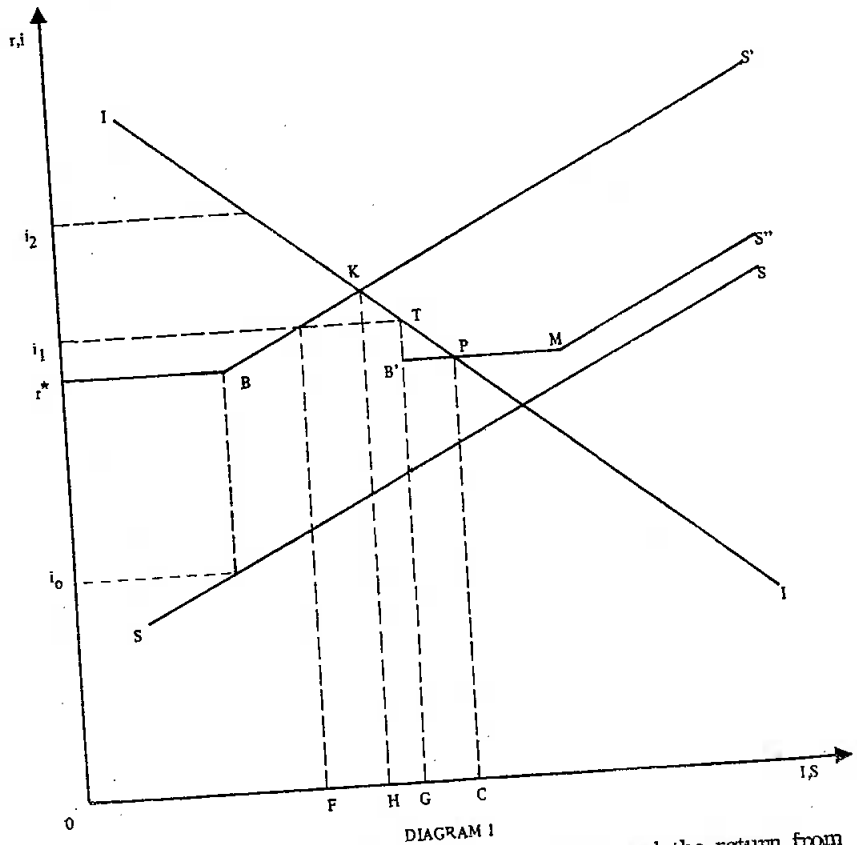

DIAGRAM 1

axis measures the rate of interest paid on savings and the return from investment in physical assets.[2])

The II schedule represents the Marginal Efficiency of Investment schedule for the enterprise. SS is the savings function of the members of the collective. At a given rate of interest (i_0) paid on bank deposits the required rate of return on investment within the enterprise is r*. This is, in terms of interest, the Furubotn-Pejovich Effect. Thus with a bank deposit rate of i_0 the supply of »corporate« savings to finance investment in physical assets is given by r*BS'. The savings schedule of the collective shifts because the property rights structure drives a wedge between the return from an asset to the firm and the return to the

[2] Variations in the size of the collective may be incorporated in this model by defining both axes in relation to existing members.

members of the firm. This difference is the »tax« referred to earlier and is an inverse function of the collective's planning horizon.

If i_1 is the rate at which the collective may borrow funds the optimum level of investment is OG with OF being self-financed and FG borrowed. The application of Furubotn's »rigid sequence« would lead to investment of OC with OG being borrowed and GC self-financed. These two possible solutions imply almost inverse rates of self-finance. Intuitively Furubotn's sequence seems illogical since it implies utilising the resources with the higher opportunity cost (i_1) in preference to those with the lower (r^*). Analytically, in terms of Marshallian surpluses, Furubotn's rule implies sacrificing r^*BLi_1 in order to obtain B'PJ. The latter cannot, under the assumptions made by Furubotn, be greater than the former. Thus the availability of credit will not substantially reduce the volume of self-finance — in the absence of credit the level of investment would have been OH. It would seem that Furubotn is led into this error by his concern with maximising the level of investment.

The configuration of schedules in diagram 1 does of course indicate that the level of investment is reduced by the property rights structure whether or not credit is available. However other configurations can result in different conclusions e.g. if SS intersects II to the left of J and i_1 is the price of credit under both systems the level of investment would be identical (=OG), the only difference being that the labour-managed firm would have a higher demand for credit. It would be a mere coincidence if free credit markets would equilibrate at the same credit rate (i_1) but government (or monetary authority) manipulation of the market might produce it.

The second, and *technically* valid, result obtained by Furubotn (1974) and also propounded in a stronger form in Pejovich (1973) is that when $i_1 < r^*$ the labour-managed firm will wish to finance its investment wholly from borrowing. This is *technically* correct in that if such a situation arises the behaviour described will be rational. The question is, however, whether or not it is a *realistic* situation. Both Furubotn and Pejovich would seem to argue that it is since for reasonable planning horizons r^* will be much greater than i_0. Two sets of circumstances will determine this — one clearcut and one rather less so. The clearcut case is if the enterprise is not required to depreciate assets purchased with borrowed funds. The other relates to the relationship between the planning horizon and the loan period.

In the first case it is clearly a matter of public policy, given the initial property rights structure. Should the same rules apply to all assets regardless of the manner of their financing? It would seem reasonable, particularly given the consequences of doing otherwise, to treat all assets in the same manner. If this is not done yet another distortion is introduced into the system.

Furubotn (1974) and Pejovich (1973) clearly imply that this is the case in Yugoslavia (i.e. assets are treated differently), however there seems no reason to assume it to be the case in a generalized model of labour-management.[3]) If assets purchased with borrowed funds must be

[3]) The case of Yugoslavia has been dealt with more fully in Stephen (1978b).

depreciated as well as having the capital repaid then the borrowing rate must be adjusted (as was the deposit rate) to take account of the property rights structure since the opportunity cost of borrowing to the labour-manager is not merely the interest rate but, in addition, the depreciation rate. If the borrowing rate (say i_1) is greater than the deposit rate (i_0) then it is likely that, ceteris paribus, the opportunity cost of borrowing (say i_1^*) will be greater than the required return (i.e. r^*). This will be so as long as the period of the loan is less than or equal to the collective's planning horizon.

When the repayment period extends beyond the planning horizon it is possible that i_1^* may be less than r^* but this will not necessarily be the case. It will depend on a number of factors but it should be obvious that the further the repayment period extends beyond the planning horizon the more likely it is that $i_1^* < r^*$. If planning horizons are very short this result seems plausible but no evidence has yet been produced as to the typical lenght of planning horizons under, for example, the Yugoslav system. Clearly regulating the loan period becomes a policy parameter in a labour-managed economy under the »Yugoslav« property rights system.

Pejovich (1973) suggests that this situation $i_1^* < r^*$, will lead to an insatiable demand for credit. In most *realistic* cases however this will not arise since i_1^* will be relatively close to r^* e.g. if $i_0 = 0.06$, $i_1 = 0.1$, and the planning horizon is six years and the loan period eight years

$$r^* = 0.203$$
$$i_1^* = 0.187$$

i.e. i_1^* is much closer to r^* than to i_0. Diagram 2 illustrates the possible effect of such a situation. Even allowing for this case Furubotn and Pejovich overestimate its impact. The import of Pejovich (1973) and Furubotn (1974) is that when the credit rate is i_1^* the enterprise will stop all internal financing and seek to borrow OC. What both authors neglect is the fact that although there would be no corporate saving by this firm individual savings by its members would take place at a level OB when the bank deposit rate is i_0. The situation of the »owners« of a firm both borrowing and lending is somewhat incongruous and seems to run against the analysis of the optimal investment decision (see Hirshleifer, 1958). However, the property rights structure accounts for this by giving rise to a situation analogous to one in which the investor can lend at a rate of interest above that at which he could borrow. This is implicitly the case in diagram 2 since if all interest rates are standardised so they include recuperation of capital the deposit rate becomes $r^* > i_1^*$ (the borrowing rate). Thus the *net* demand for credit by this collective is BC and not OC as both Pejovich (1973) and Furubotn (1974) imply. The ability of the financial system to provide this amount will depend on a number of factors (e.g. the savings and investment decisions of their collectives and any government participation in the financial system), but the problem is unlikely to be as acute as that suggested by Furubotn and Pejovich.

Indeed manipulation of the loan repayment period could lead in principle to the members of the collective generating enough savings pri-

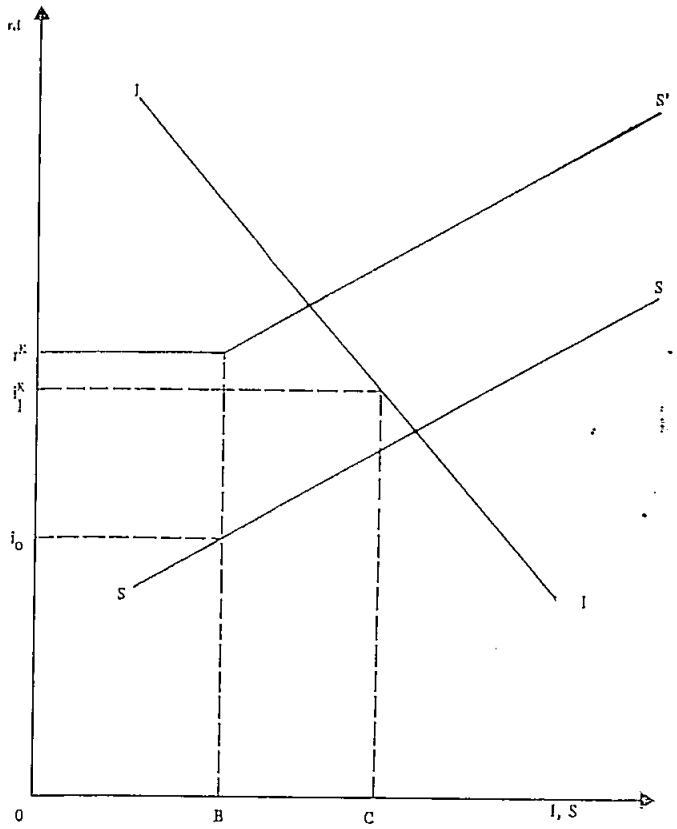

DIAGRAM 2

vately to finance the project i.e. the members of the collective would lend money to the bank which would relend it to the collective. A fairly long repayment period could produce a situation in which $i_1^* \cong i_0$ e.g. with a planning horizon of six years and $i_0 = 0.1$, a loan period of 30 years yields $i_1^* = 0.106$. Obviously there are dangers in banks using short term funds to provide very lengthy loans. It is however indicative of one of many possible policy options neglected in Furubotn's analysis.

The foregoing has been an attempt to demonstrate that the existence of credit in the system of investment finance helps to reduce the consequences of the Furubotn-Pejovich effect much more than is allowed for in Furubotn (1976). However it is clear that the mere existence of a credit market will not be sufficient to produce the level of investment which would be generated in an otherwise similar private property economy. In the aggregate the situation may be characterised by diagram 3.

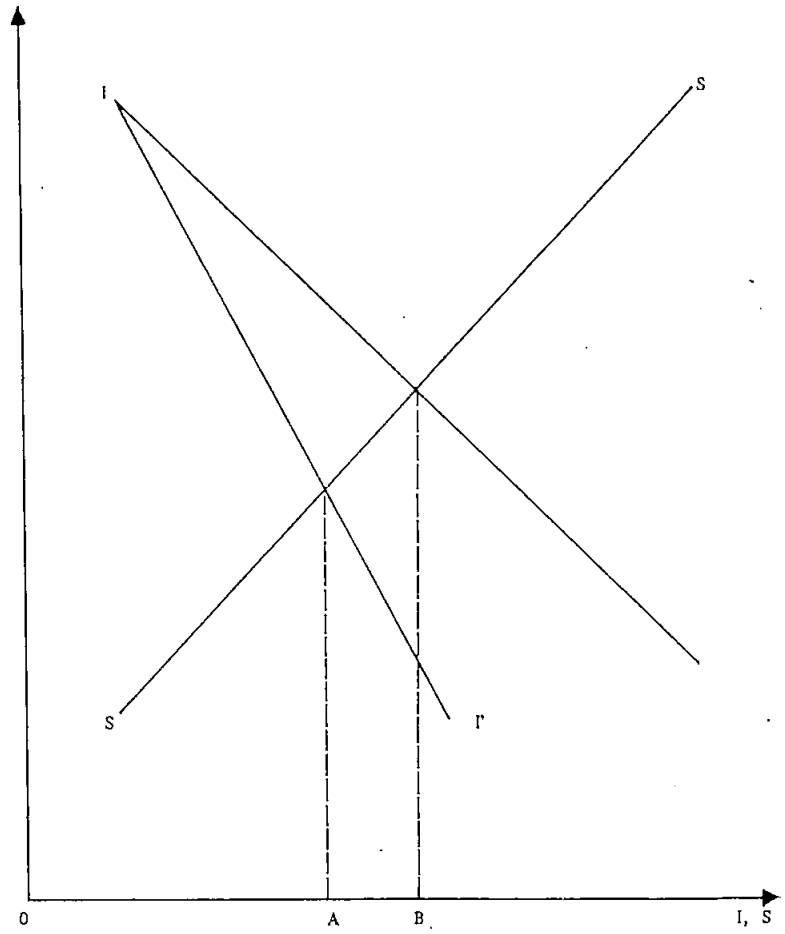

DIAGRAM 3

II is the MEI schedule for the economy, SS is the supply of savings. Under the property rights system under discussion it would be possible to construct an adjusted aggregate MEI schedule reflecting the reduced return perceived by worker-managers from the investments available in the economy. This is shown as II'. If perfect capital markets were to operate then the two systems of property rights would generate equilibrium levels of investment of OA and OB. The gap AB is essentially the Furubotn-Pejovich effect measured in terms of investment. The previous parts of this section of the current paper have sought to show that this gap need not be as large as would be suggested by the work of Furu-

both and Pejovich. The next section examines a practical situation in which the effect might disappear.

III. THE CALCULATION OF DEPRECIATION AND THE EXISTENCE OF THE FURUBOTN-PEJOVICH EFFECT

Another question which arises is whether the Furubotn-Pejovich effect will in practice make itself felt in the real world as opposed to the stylised model of, e.g., Furubotn (1976). This is a model in which assets depreciate in such a way that the reinvestment of the depreciation funds maintain a perpetual income stream. The real world may not be as straightforward as this. There is no need even to consider the dynamics introduced by changes in technology, economic growth, etc. for this to be demonstrated. The »effect« would seem to be highly sensitive to the method used to calculate depreciation. Yugoslav economists following on from Horvat's (1964) elucidation of the »depreciation multiplier« have been conscious of the impact which this can have on the growth of fixed assets in an economy. Whilst the »depreciation multiplier« was conceived in a macro framework it does provide insights into the micro situation examined by Furubotn. The basic notion of the multiplier is that if depreciation is calculated on the nominal value of assets which are written down only at the end of their productive life but the depreciation funds are immediately available for investment in real assets then the act of depreciation will lead to an increase in the real value of assets. In the limit this real value will be twice that of the original assets, Horvat (1964, p. 143).

Below, this process is examined in the context of an individual labour-managed enterprise faced with a continuous stream of projects, whose marginal product of capital declines monotonically and which is subject to the property-rights structure used by Furubotn (1976.). The enterprise is obliged to calculate depreciation on the nominal value of assets until the end of the assets' life at which its value is written down to zero. The case considered here is limited to the fixed planning horizon of the worker managers, all events beyond which are totally discounted. Calculating depreciation on the basis of the nominal value of the assets will reduce the return from the *initial* investment. If the annual cash flow from an asset *prior* to the calculation of any depreciation charges is a constant R over the life of the project (as assumed in Furubotn, 1976) and if for simplicity it is assumed that the asset depreciates linearly over an n year period, then the net income generated per period will be

$$r = R - \frac{1}{n} I_0$$

where I_0 is the initial investment

Under private property rights the rate of return on this perpetuity will be

$$\frac{r}{I_0}$$

Under »Yugoslav« property rights the rate of return will be r* where

$$\sum_{t=1}^{j} \frac{R - \frac{1}{n} I_0}{(1 + r^*)^t} = I_0$$

where the planning horizon is j years

r* can be obtained by inverting

$$r = \frac{r^*(1 + r^*)^j}{(1 + r^*)^j - 1}$$

However if depreciation is calculated on the basis of the nominal (i.e. nonwritten down) value of the assets the annual cash flow is further reduced to

$$\gamma = r - \frac{1}{n}\left(1 + \frac{1}{n}\right)^{t-1} I_o$$

and consequently the rate of return on the initial investment is also reduced, to γ^*, where

$$\sum_{t=1}^{j} \frac{R - \frac{1}{n} I_o - \frac{1}{n} I_o \left(1 + \frac{1}{n}\right)^{t-1}}{(1 + \gamma^*)^t} = I_o$$

i. e.
$$\sum_{t=1}^{j} \frac{R - \frac{1}{n} I_o \left[1 + \left(1 + \frac{1}{n}\right)^{t-1}\right]}{(1 + \gamma^*)^t} = I_o$$

However this implies that all depreciation is transformed into real assets at the beginning of the period subsequent to its deduction from the cash flow. Only a part of these funds is required to maintain the value of the original investment, the rest will go to purchasing and *maintaining the value* of new assets.

From Horvat (1974, p. 142) we may deduce that the nominal value of the asset in any year t during the life of the asset is given by

$$K_t = \left(1 + \frac{1}{n}\right) K_{t-1}$$

$$= (1 + \frac{1}{n})^{t-1} K_1$$

Considering therefore the impact of an investment I_o we may say that the change in the nominal value of the assets arising from an investment, I_o, coming into operation in the period $t = 1$, is

$$\Delta K_t = (1 + \frac{1}{n})^{t-1} I_o$$

the increment to depreciation required in period t is therefore

$$\Delta D_t = \frac{(1 + \frac{1}{n})^{t-1}}{n} . I_o$$

However not all of this is required to maintain the assets. That amount will be given by

(i) $\frac{I_o}{n}$: the amount required to maintain the value of the initial injection I_0

and (ii) $\frac{1}{n} \sum_{j=1}^{t-1} I_j$ the amount required to maintain any assets[4]) purchased with depreciation funds in excess of that needed to maintain the original assets. Consequently funds will be available for net investment, I_t, in period t where

$$I_t = \Delta D_t - \frac{1}{n} I_o - \frac{1}{n} \sum_{j=1}^{t-1} I_j$$

$$= [(1 + \frac{1}{n})^{t-1} - 1] \frac{I_o}{n} - \frac{1}{n} \sum_{j=1}^{t-1} I_j$$

For a project with initial cost of 1,000 and a ten-year life the net investment each year is:

[4]) Assumed also to have a life of n years.

t	I_t
1	0
2	10
3	20
4	30.1
5	40.4
6	57.1
7	71.5
8	87.7
9	105.6
10	125.2
	$\Sigma I_t = 547.6$

Such investments will generate some returns during the planning horizon, although the bulk of this new investment does not occur till near its end. Such returns will need to be added to γ to calculate the overall return. It should be noted that in calculating the rate of return to the worker-managers that it is a return

on an investment of I_o not $I_o + \sum_{t=1}^{n-1} I_t$.

At this point it might be suggested that this is unlikely to make any difference to the comparison between the privately owned and labour-managed firms (except perhaps that, since the private owner can capitalise the infinite stream of returns obtained from the secondary investment whereas the worker-manager can only obtain the returns during his planning horizon, it makes the worker, relatively speaking, worse off than under Furubotn's analysis). However there is a difference in the productivities of the projects available to these two sets of investors. If for the moment the process is analysed in two stages (i) selecting the initial level of investment and then (ii) deciding on whether »excess« depreciation should be reinvested the process may be clarified, in terms of diagram 4, thus:
II is the MEI schedule faced by the private owner (net of depreciation calculated as a proportion of actual value), II' is the schedule faced by the worker-manager under the same conditions. IB is the MEI schedule faced by the private owner when depreciation is calculated on nominal value and IB' is the corresponding schedule for worker-managers. SS is the savings schedule for both groups. The equilibrium rates of interest will differ under the two systems. Assume that given depreciation on the nominal value the equilibrium rate of interest under the private system is i_c (for both borrowing and lending) and under the L-M system is i_L.[5])

[5]) There is no loss of generality in assuming each firm to face a rate of interest which would be its equilibrium rate. It does however simplify the exposition.

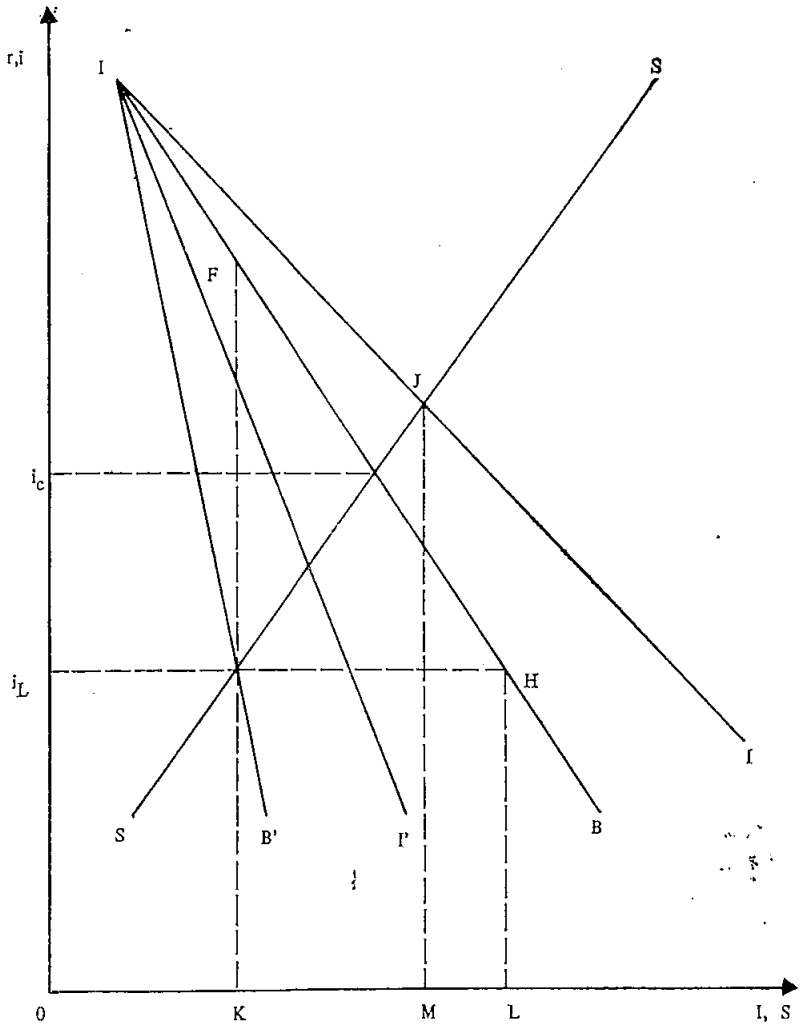

DIAGRAM 4

At a rate i_C the private firm will self-finance all its projects and no more projects exist with a rate of return greater than the market rate of interest i_C. It may be noted that the level of investment will be lower than if depreciation were calculated on real values. The private firm is left with the uninvested »excess« depreciation which has as its best use depositing it in the bank. It would clearly be more efficient under the private ownership system to calculate depreciation on the real value of

assets (i. e. use II) and obtain a higher level of investment and have *no* uninvested excess depreciation funds.

The situation however differs under labour-management. Using IB' the initial level of investment at rate of interest i_L is OK. What are the opportunities under this system for reinvesting the »excess depreciation«? It would seem that they lie along FB rather than GB' as might be expected. This is so because in the case of investing these »excess depreciation« funds the act of depreciating the assets purchased also represents the recovery of capital by the depreciation »fund« which supplies, as it were, the resources. The worker-managers can take the income from such an investment. They will obviously invest these funds if the cash flow for the rest of their planning horizon from such an investment is greater than the cash flow from investing them at the market rate of interest i_L. This will be the case for all projects lying along FH. It should be noted that H may be to the right of, to the left of, or at M, the optimal level of investment in the capitalist system, depending partly on the values of i_C and i_L. However the excess depreciation funds may or may not be as great as KL. This will depend on the relative configuration of the various schedules. It should be recognised however that the table above suggests that they will during a ten-year planning horizon amount to almost 55% of the initial investment which is likely to go a long way to filling the shortfall in investment pointed to by Furubotn.

Thus a depreciation regime based on nominal asset values can be used as a policy instrument to ameliorate and perhaps even over-compensate for the Furubotn-Pejovich effect.

Two further points should be noted: (i) The shorter the planning horizon the smaller will be the excess depreciation. This follows from Horvat's result that the smaller the life of the asset, the smaller is the depreciation multiplier; (ii) The amount of excess depreciation will continue to increase beyond the planning horizon until it reaches an equilibrium level. Whilst this has no influence on the decision taken by the individual worker-managers with a fixed planning horizon it does have implications for the long-run equilibrium rate of investment in a worker-managed economy.

It must be concluded then that, under the depreciation regime outlined above, the Furubotn-Pejovich effect may be substantially reduced and conceivably might be negative.

IV CONCLUSIONS

This paper has attempted to challenge the conclusion of Furubotn (1976) on two levels: (i) that his analysis relates to a particular, distorted form of »socialist« labour-management and cannot be generalised as a condemnation of all forms of labour-management; and (ii) that even when discussion is limited to a system where this distortion is present it may, in reality, be much smaller than is implied by Furubotn and that a possible policy instrument exists which may further reduce and perhaps totally remove the distortion.

A fairly strong criticism of Furubotn's (1976) methodology has been

advanced in the course of the first line of argument. This is basically that the standard used by him to evaluate labour-management (i. e. Pareto optimality) may not be validly applied in this case since »»socialist« labour-management violates the assumptions necessary for the application of the standard.

The second line of argument has, if nothing else, demonstrated that the implications of the property rights structure analysed by Furubotn (1976) are much more complex than he suggested. In a complex inter-related system such as an economy it should be expected that introducing a distortion in one part of the system will lead to distortions elsewhere in the system which may conceivably act in the opposite direction to that of the original distortion.

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SVOJINSKA PRAVA I SAMOUPRAVNO PREDUZEĆE U DUGOM ROKU

Frank H. STEPHEN

Rezime

U ovom se članku razmatra kritika samoupravnog preduzeća koju je dao Furubotn (1976), tj. razmatra se njegovo mišljenje da je takvo preduzeće inherentno neefikasna ekonomska organizacija. Tvrdi se da Furubotnov članak ne opravdava potpuno njegove zaključke, a u ovom se članku to dokazuje na dva načina:

1) Radničko samoupravljanje može imati i druge oblike pored oblika koji proizlazi iz Furubotnovog članka.

2) Čak i tamo gde samoupravljanje ima eksplicitno takav oblik, distorzija koju navodi Furubotn može se otkloniti ili bar u znatnoj meri ublažiti kompenzacionim regulisanjem u pravnom i ekonomskom sistemu.

U članku se upoređuje oblik samoupravnog preduzeća koji je analizirao Furubotn sa drugim oblicima koji dovode do Pareto optimalne alokacije. To su »socijalistički« model Vaneka (1970) i »individualistički« modeli K. Bermana i D. Bermana (1978) i Sertela (1978). Dokazuje se da Furubotn upoređuje »distorzivni« model radničkog samoupravljanja sa »idealizovanim« modelom preduzetničke firme. To nije ispravan postupak.

Dalje se pokazuje da se distorzioni efekat sistema svojinskih prava »jugoslovenskog tipa« koji je analizarao Furubotn može da posmatra kao otelotvorenje »poreza« u obliku restrikcije nametnute raspolaganju sredstvima. Ovaj je porez neophodan za finansiranje »javnog dobra«: »socijalizma«. Ovo se ne može postići paušalnim transferima i nije, stoga, saglasno sa Paretovim kriterijumom.

U drugom delu članka ispituje se efekat uvođenja zajma u model radi finansiranja investicionih projekata. Pokazuje se da se uticaj zajma prilično razlikuje od uticaja koji je pretpostavljen u radu Furubotna i njegovog saradnika Pejovića. Ovo proističe iz njihove pretpostavke da se samofinansiranje javlja samo kada se željeni nivo investicija ne može u celosti isfinansirati iz zajma. Pokazuje se da ovaj redosled nije optimalan.

U trećem delu članka ispituje se primenljivost Furubotnovog modela kada se u obzir uzme »amortizacioni multiplikator« koji je uveo Horvat. To se čini istraživanjem amortizacione šeme zasnovane na nominalnoj vrednosti sredstava. Pokazuje se da takva šema stvara investicione fondove koji mogu biti dovoljno da sasvim otklone efekte sistema svojinskih prava koji predstavljaju osnovu Furubotnovog i Pejovićevog modela.

SELF-MANAGEMENT, EFFICIENCY AND NEOCLASSICAL ECONOMICS

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Many years ago, sometime after the First World War, Ludvig von Mises produced a »scientific proof« that a centrally-planned economy could not work, that it was economically impossible. Thus, the Soviet economy, against which the tract was oriented, would first, lag behind and it would finally break down. This proof, together with a certain number of other articles hostile to planning was republished in 1935 in a book edited by von Mises's compatriot, F. A. von Hayek.[1]) The book entered the classrooms and became required reading for unfortunate students. At the same time, the Soviet economy was growing at a rate higher than any other economy in the world. It was only after the Russians launched the Sputniks that von Mises's proof was quietly left to oblivion.

In a book just published, Henry Lepage[2]) rediscovers von Mises. Lepage does not search for any proof against central planning, however. He quotes von Mises extensively as an inspiration for another exercise which is less ambitious but more up-to-date. It needs to be shown that self-management, though possible, is less efficient than capitalism. Consequently, self-management is nothing but an illusion and it is capitalism which is bound to triumph. The proof of Lepage has three ingredients. The first consists in a neoclassical analysis intended to prove that the allocation of resources is less efficient than in capitalism. Next, theoretical conclusions are supported by what is referred to as the Jugoslav experience. Finally, the author invokes Professor Milton Friedman and his son, and engages in a sort of computopia to forecast the brilliant prospects of capitalism. This, last, exercise in futuristic speculation has some interestinng points, but is of no concern to me here. The often-used phrase »l'éxperience yougoslave montre« is rather unfortunate because the author has a poor command of facts, confuses political and economic causes and processes, and is mainly ignorant of professional literature — such as econometric and organizational studies — and par-

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[1]) F. A. von Hayek, ed. *Collectivist Economic Planing*, Routledge, London, 1935.

[2]) H. Lepage, Autogestion et capitalisme, Masson, Paris, 1978.