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ČLANCI — ARTICLES

LABOUR ALLOCATION AND THE LABOUR-MANAGED FIRM

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Apparently, economics turn very little things to the advantage of self-management, and the detractors of this system do not go without declaring that loudly.

However, there is no lack of attempts, but they do limit themselves to a short-run analysis of the labour-managed firm. With a few exceptions (1), and if Horvat's proposal is excluded (2), they are divided into two Schools.

The first one tries to understand the behaviour of the firm in a market socialist economy, released from all bureaucratic constraints. Its Master is Ward (3), but his pioneer work has attracted more attention since the publication of Vanek's "General theory of labor-managed market economies" (4).

The second school attempts to show how the special structure of property rights in a socialist state influences the behaviour of the firm. Furubotn and Pejovich are its file leaders (5). More precisely, they are induced to study the "social short-run" dynamics of the labour-managed firm.

The adjective "social" (6) is used to indicate that labour is constant, during the period, as opposed to the Marshallian short-run in which the capital stock is given. The conclusions of property rights theory affect, essentially, capital allocation. Therefore we do not refer to them (7).

On the other hand, the influence of self-management on labour allocation is tackled by the economists taking inspiration from Ward's ideas. The results are unfavourable to self-management, in spite of flattering comments expressed by some of its advocates.

A third research method has not been fully explored (8). Meanwhile, it allows us to understand that the failings of the other Schools arise from a lack of coherence between their implicit assumptions.

The demonstration consists of three stages. The first part points out the main failings of Ward's Illyrian firm. The second part explains why the model leads to paradoxical results. It is based on an enormous mistake: solidarity, the foundation of the self-management claim, is at the same time asserted and denied. The third part proves that

an optimal labour allocation can be reached, if solidarity is taken into account, whereas it is impossible in the opposite case.

In order to do this, the neoclassical formal reasoning will be used. To be on this ground does not signify that we adhere to the neoclassical paradigm. It simply means that we agree to fight against the adversary using his own weapons.

I — THE FAILINGS OF SELF-MANAGEMENT

Ward's model, usually quoted as a theoretical reference, reveals that self-management leads to unexpected inferences.

The author proposes to describe the short-run behaviour of an "Illyrian firm". This firm works on purely competitive markets. Its "well-behaved" production function exhibits positive but diminishing marginal products. The other assumptions are:

a) The capacity of the firm is fixed. The state has endowed it with means of production. Capital investment and depreciation allowance are ignored. Nevertheless, an interest is levied by the state on the resources committed to the firm.

b) The number of workers employed can vary without any constraint so as to attain the objective of the firm. The labour supply is perfectly elastic, even if the result is to create unemployment.

c) A reference wage is fixed by the state. It is supposed to be equal to the market wage rate in the "capitalist twin" (9), a profit-maximizing firm facing the same conditions.

d) All revenue above costs is distributed equally to the workers as a bonus. So, their earnings consist of the reference wage plus a bonus payment out of profits. The latter are the difference between the total revenue from product sales (at a parametrically-given price) and the costs. Two costs are incurred in production: labour cost, which is valued at the reference wage, and a fixed charge for the use of capital.

e) The objective of the firm is to maximize income per worker.

On these foundations, a very simple model is built (one output — one variable input case).

Let X be the output and p its selling price, L the number of workers employed and w the reference wage, S the total profit and Z the fixed charge.

The production function is given (10) by:

$$X = X(L) \text{ with } X_L > 0, X_{LL} < 0 \quad (i)$$

The firm attempts to maximize s , the income per worker, defined by:

$$s = w + \frac{S}{L} \quad (ii)$$

where the profit S , is equal to:

$$S = pX - Z - wL \quad (iii)$$

From (ii) and (iii) we obtain:

$$s = \frac{pX - Z}{L} \quad (iv)$$

The first-order equilibrium condition ($\frac{ds}{dL} = 0$) readily follows:

$$pX_L = \frac{pX - Z}{L} \quad (v)$$

Hence, the labour-managed firm produces up to the point at which the average income is equal to the marginal value product of labour.

The second-order equilibrium condition is always satisfied, if the first-order one holds, because it results in:

$$\frac{d^2s}{dL^2} = (p/L) \cdot X_{LL} < 0 \quad (\text{since } X_{LL} < 0) \quad (vi)$$

The profit-maximizing firm takes on workers and enlarges production until the marginal value product of labour is equal to the wage rate. Consequently, when profits are positive ($S > 0$), the Illyrian firm produces a lower output and uses a more capital-intensive technique of production (it uses less labour input with the same stock of capital) than its capitalist twin.

This restrictive behaviour persists when equilibrium is disturbed. In particular, labour employment in the Illyrian firm is reduced when the product selling price is increased.

If equilibrium is to be maintained when p changes, there must be an offsetting change in L which allows the equilibrium equation

to continue to be satisfied. Differentiating $\frac{ds}{dL}$ with respect to p

and L , we have:

$$\frac{\partial^2s}{\partial L^2} dL + \frac{\partial^2s}{\partial L \partial p} dp = 0 \quad (vii)$$

and then:

$$dL = \frac{Z}{p^2 L X_{LL}} dp \quad (viii)$$

Since $X_{LL} < 0$ (diminishing returns), a change in product selling price leads to a change in labour employment (and hence output) in the opposite direction.

This negatively sloping supply expresses a paradoxical behaviour because a rise in price generally marks a shortage of quantities supplied. On the contrary, a profit-maximizing firm, in the same situation, behaves correctly: additional workers are engaged and the production is increased.

With a generalized production function (several outputs — several variable inputs case) the adverse results of the Illyrian firm are mitigated, and may even disappear (11). But those obtained in the simplest case are in no way called in question again.

On the other hand, a relaxation of the assumption concerning the labour supply permits the paradoxical results of the basic model to be reversed. However, in these circumstances, a discrimination between the firm cannot be avoided (12). We get out of a fix, but another immediately arises.

Thus, the labour-managed firm seems to be under a curse. Such conclusions are a godsend for the enemies of self-management. The mixture of the theory of an Illyrian firm with self-management, which is far from being naive, allows them to condemn irremediably the latter.

What are the reasons for these peculiar results?

II — MAY WATER AND FIRE BE COMBINED?

A first explanation of the failings of the Illyrian firm can be found in Dubravčić's analysis (13).

This author thinks they are the consequence of two very distinct factors, which are mingled in the "maximand" of the Illyrian firm (its decision-making criterion):

- On the one hand, this firm maximizes an average surplus (instead of a total surplus). That reflects its co-operative character.

- On the other hand, labour input plays a special part.

Then, it appears appropriate to separate the properties of the Illyrian firm that are the consequence of its cooperative character from the properties imposed by the choice of labour as "entrepreneurial input" (the entrepreneurial input is the one from which the suppliers are chosen to perform the function of entrepreneurial control).

For that reason, Dubravčić compares two types of co-operative depending on whether labour or capital is collectively used as entrepreneurial input:

- The "producer co-operative",

- The "capitalist co-operative".

Suppose that production is a function of two inputs, labour L and capital K , from which the unit prices are respectively w and i , when they are "neutral inputs" (a neutral input is the one that does not serve as a vehicle for the function of entrepreneurial control).

Each type of co-operative maximizes the net revenue (after payments for the use of neutral inputs) per contributor of entrepreneurial input; that is to say:

$$\bullet s^l = \frac{pX - iK}{L}, \text{ in the producer co-operative,} \tag{ix}$$

$$\bullet s^k = \frac{pX - wL}{K}, \text{ in the capitalist co-operative.} \tag{x}$$

Suppose, finally, the profit-maximizing twin, in which both labour and capital are neutral inputs, realizes a positive profit.

A few simple calculations, from which the main outcomes are summed up in Table I, easily show that:

a) The suppliers of entrepreneurial input (whether capital or labour) will receive a higher income than if they were assigned the role of suppliers of neutral input. This being so, the optimum level

TABLE I:

PRODUCER CO-OPERATIVE AND CAPITALIST COOPERATIVE

	Producer Co-operative	Capitalist Co-operative
Enterpr. input	L	K
Neutral input	K	L
Maximand	$s^l = \frac{pX - iK}{L}$	$s^k = \frac{pX - wL}{K}$
Equilibrium Condition	$\frac{ds^l}{dL} = 0 \Rightarrow pX_L = s^l$	$\frac{ds^k}{dK} = 0 \quad pX_K = s^k$
Comparison with the profit-maximizing firm	if $s^l > w^o$: $L < L^o$ $\frac{K}{L} > (\frac{K}{L})^o$	if $s^k > i^o$: $K < K^o$ $\frac{K}{L} < (\frac{K}{L})^o$
Effects of a change in the price of:	$X \quad \frac{\partial X}{\partial L} = \frac{iK}{pL}$	$X \quad \frac{\partial X}{\partial K} = \frac{wL}{pK}$
● neutral input	+	+
● output	-	-

The "o" sign refers to the profit-maximizing firm

of employment of entrepreneurial input in a producer or capitalist co-operative will be below the level that is optimum from the standpoint of the profit-maximizing firm. Consequently, a producer or capitalist cooperative will be smaller than a profit-maximizing firm.

This misallocation of resources from a social point of view is the consequence of the peculiar part assigned to entrepreneurial input in the maximand.

b) A change in the price of neutral input will move employment of entrepreneurial input (and hence output) in the same direction, whereas a change in the price of output will move employment of entrepreneurial input (and hence output) in the opposite direction. Compared with the reactions of the profit-maximizing firm, those of the producer or capitalist cooperative are poles apart.

The aberrant supply of output is linked with the ratioform of the maximand. Therefore, it is inherent in the co-operative system.

So, whatever the entrepreneurial input may be, a co-operative system, from which the decision-making criterion is an average quantity, will lead to a downward-sloping supply of output and a misallocation of resources. Only the direction of the latter will depend on entrepreneurial input.

Now, we understand how to answer the question. However, we must beware of a shallow analysis. It would be wrong to condemn the co-operative system for its ineffectualness because the latter is only true in the narrow limits determined by the initial assumptions.

Indeed, the neoclassical paradigm, which is the common basis of all the formal theories of labour-managed firms, is based itself on egoism. May egoism get on with a criterion bearing the stamp of the will to share? It would be a combination of water and fire!

It is often forgotten that the self-management claim appears only if individuals are conscious of being interdependent. In order to re-establish coherence, solidarity must be explicitly introduced in the analysis of labour-managed firms. This is quite possible when the reasoning is built up in utility terms.

III THE FORGOTTEN SOLIDARITY

Suppose now that each worker of the labour-managed firm tries to maximize an utility function with individual income and individual labour input as arguments.

The number of members N is fixed, but the amount of work done by everyone of them can vary. Consequently, the production function is still given by (i), but L symbolizes now the variable amount of work done by the fixed number of workers.

Labour is provided by all members of the firm:

$$L = l^a + l^b + \dots + l^n \quad (\text{xi})$$

and all total surplus is distributed among them:

$$pX - Z = s^a + s^b + \dots + s^n \quad (\text{xii})$$

The utility function possessed by worker A is written as:

$$U^a = U^a(l^a, s^a) \quad U_s > 0, U_{ss} < 0, \quad (\text{xiii})$$

$$U_l < 0, U_{ll} < 0.$$

where marginal utility from income is positive and diminishing and marginal utility from work is negative and diminishing (i. e., marginal disutility from work is positive and increasing).

With such an utility function, the work done by individual A is optimal when his marginal rate of substitution R between income and non-labour (leisure) is equal to marginal product of labour (14).

$$R = -\frac{U_{la}}{U_{sa}} = p \cdot X_L \quad (\text{xiv})$$

Then it can easily be proved that labour allocation is optimal only when solidarity is taken into account.

A) NO OPTIMAL ALLOCATION WITHOUT SOLIDARITY

In the first place, individual A is supposed to be an egoist: he ignores the utility of other members and considers their effort as constant.

a) If we continue to suppose that total surplus is divided equally between all the workers, the income of individual A is expressed by:

$$s^a = \frac{pX - Z}{N} \quad (\text{xv})$$

where X reacts only to variations of l^a .

The first-order equilibrium condition is given by:

$$\frac{dU^a}{dl^a} = U_{la} + U_{sa} \cdot s'_a = 0 \quad (\text{xvi})$$

where, using (xiv):

$$s'_a = -\frac{p}{N} \cdot X_L \quad (\text{xvii})$$

so that:

$$R = \frac{p}{N} \cdot X_L \quad (\text{xviii})$$

The optimum condition, given by (xiv) is not satisfied unless the membership of the firm restricts itself to a single individual ($N = 1$). The more N is large, the less individual A is incited to work because the results of his own effort are shared between all the members (15).

b) The situation is absolutely alike when the workers agree beforehand among themselves to allocate a given portion γ of the total surplus ($0 < \gamma < 1$) to individual A . In this case, A 's income is expressed by:

$$s^a = \gamma (pX - Z) \quad (\text{xix})$$

where X still reacts only to variations of l^a .

As above, the first-order equilibrium condition, given by (xvi), leads to:

$$R = \gamma \cdot p \cdot X_L \quad (\text{xx})$$

The optimum requirement is not satisfied unless individual A appropriates all the total surplus ($\gamma = 1$), which occurs if A is the single member of the firm. His exertion is dosed so as to set his marginal rate of substitution equal to that portion of his marginal product which he receives and not to his total marginal product (16).

c) When that portion is proportional to the amount of work done, the first-order equilibrium condition, which is still given by (xvi), leads to a more complicated expression since γ also reacts to variations of l^a . Now:

$$s'_a = \frac{l^a}{L} \cdot p \cdot X_L + (pX - Z) \left(\frac{L - l^a}{L^2} \right) \quad (\text{xxi})$$

so that:

$$R = \left[\gamma + \frac{\mu}{\varepsilon} (1 - \gamma) \right] \cdot p \cdot X_L \quad (\text{xxii})$$

where:

$$\bullet \mu = \frac{pX - Z}{pX}, \text{ the ratio of net income to total value of output,}$$

$$\bullet \varepsilon = \frac{L}{X} \cdot X_L, \text{ elasticity of output with respect to labour.}$$

Barring the possibility of a one-man firm ($\gamma = 1$), this can coincide with the optimality requirement (xvi) only if $\varepsilon = \mu$. In that special case, the production function has constant returns to scale. The latter condition ($\varepsilon = \mu$) will indeed be fulfilled if marginal income is everywhere equal to average income.

In a system of distribution according to work, each individual can play a straightforward game if the production function offers constant returns to scale: the one who works more will receive the whole net value of his extra output.

But if the production function has increasing returns to scale, a part of the outcome (the difference between the values of average and marginal products) of an individual worker's increased exertion will be shared between his fellows. Consequently, the amount of labour offered will be smaller than the optimum ($R < p \cdot X_L$).

Conversely, if the production function has diminishing returns to scale, the one who works more appropriates a part of the outcome of his fellow workers' effort. The amount of labour offered will be greater than the optimum ($R > p \cdot X_L$).

B) SOLIDARITY LEADS TO OPTIMAL ALLOCATION

Limit the analysis to the case of a distribution according to work. Let us assume, in order to simplify (but the results could be generalized), that the firm is composed of two workers A and B . If these individuals recognize their interdependence (17) and, above all, if they display solidarity (18), they will be led to provide the optimal amount of labour.

a) If individuals recognize their interdependence, A takes B 's variation of effort into account. In other words, l^b is no longer considered as constant by A , and vice-versa.

The first-order equilibrium condition is still given by (xvi), but now:

$$L_a = l + l_a^b \text{ (instead of } L_a = l) \quad (\text{xxiii})$$

Then, we get:

$$R = \left[\gamma (1 + l_a^b) \left(1 - \frac{\mu}{\varepsilon} \right) + \frac{\mu}{\varepsilon} \right] \cdot p \cdot X_L \quad (\text{xxiv})$$

Barring the case pointed out above, in which $\varepsilon = \mu$, the optimum is reached when $\gamma (1 + l_a^b) = 1$, i.e.:

$$\frac{\partial l^b}{l^b} = \frac{\partial l^a}{l^a} \quad (\text{xxv})$$

Therefore, it is sufficient that individuals' efforts vary in the same proportion; that is to say, individuals confronted with the same situation will react in the same way.

Thus, a technical problem turns into a social problem. Constant returns to scale are not necessary if the effect of non-proportional returns to scale is neutralized by an adequate behaviour.

That is achieved if individuals are assumed to be identicals, but also if they agree among themselves to react in the same way when confronted with the same situation.

b) The result is still more convincing when, instead of taking the interdependence of work done into consideration, each individual is supposed to take the utility of others into account.

In these circumstances, A's satisfaction will be:

$$W^a = U^a + \alpha U^b \quad (\text{xxvi})$$

where:

- α is a coefficient symbolizing A's interest in B,
- U^a and U^b represent individualistic utilities:

$$U^a = U^a(l^a, s^a) \quad (\text{xxvii})$$

$$U^b = U^b(l^b, s^b) \quad (\text{xxviii})$$

each worker being rewarded according to work:

$$s^a = \frac{l^a}{L} (pX - Z) \quad (\text{xxviii})$$

$$s^b = \frac{l^b}{L} (pX - Z) \quad (\text{xxix})$$

The first-order equilibrium condition is now written as follows:

$$\frac{dW^a}{dl^a} = U_{la} + U_{sa} \cdot s'_a + \alpha \cdot U_{lb} \cdot s'_b = 0 \quad (\text{xxx})$$

were:

- we use the fact that $U_{lb} \cdot l_a^b = 0$
- s'_a is still given by (xxvi)
- $s'_b = p \cdot X_L - s'_a$, from (xxii) (xxxii)

so that:

$$R = s'_a + \alpha \cdot \frac{U_{sb}}{U_{sa}} \cdot (p \cdot X_L - s'_a)$$

or:

$$R = s'_a \cdot \left[1 - \alpha \frac{U_{sb}}{U_{sa}} \right] + \alpha \frac{U_{sb}}{U_{sa}} \cdot p \cdot X_L \quad (\text{xxxii})$$

Hence, banning the cases pointed out above ($\gamma = 1$, $\varepsilon = \mu$), appearing when (xxii) takes the place of s'_a , the optimum is reached if:

$$\alpha = \frac{U_{sa}}{U_{sb}} \quad (\text{xxxiii})$$

This condition is fulfilled when the ratio between A's and B's marginal utility of income is equal to the A's coefficient of interest in B.

In other words, if A's variation of satisfaction induced by a given variation of income is higher, then A overestimates B's satisfaction, in his total utility function (xxvi), so as to amplify the weakened reaction of the latter. Indeed, A estimates how B would react if B were placed in A's situation (i.e., if initial conditions were comparable).

If utility functions are identical, such a disparity between the satisfactions means that A's income is lower than B's. This expresses a lower effort of the first. Then, A grants a heavier weight to B's satisfaction since he knows that B's work is more intensive.

That is a manifestation of solidarity, manifestation which becomes obvious if individuals are assumed to be identical. In these circumstances, everyone making the same calculation, with the same utility function, ends up by offering the same amount of labour ($l^a/L = l^b/L = 1/2$), and consequently receives the same income ($s^a = s^b$) which provides the same marginal utility ($U_{sa} = U_{sb}$).

This being so, everyone's work is optimum if he bestows the same weight upon others' satisfaction as he does upon his own ($\alpha = 1$).

To avoid any misunderstanding, let us be quite clear about the meaning of the word "solidarity". Generally speaking, solidarity is mutual dependence between individuals: some can only develop if others can do it, too.

In our world, where the affluent society is far from being realized, higher production is an absolute necessity. Then, solidarity shows itself in the following way: everyone is granted an interest all the more important as the effort he makes to get out of the reign of scarcity is higher.

Everyone is free to work more or less, but he knows that his income is a function of the exertion he makes and that attention paid to him is also a function of this exertion (like he, himself, allots to others an interest all the more important as their efforts are higher).

CONCLUSION

With all due deference to the enemies of self-management, economics are not entirely unfavourable to it. Everything hangs on the assumptions underlying the analysis. The flexibility of deductive models allows for the rectification of an hypothesis as soon as the conclusion seems to be embarrassing.

When individuals are supposed to be egoist, the neoclassical theory shows very well that the capitalist system is the best. Consequently, it is not difficult to arrive at the inefficiency of the labour-managed firm.

This is not the case if everyone is assumed to take others into account, that is, if solidarity really exists. That assumption is by far the most consistent with self-management.

Thus, one only has to look favourably on self-management to perceive that the labour-managed firm is not inefficient, even if using tools with another object in view.

The conclusion is quite clear: self-management is condemned by its adversaries and, often, owing to the complicity of theorists who think they are favourable to it, on ethical grounds, but not at all through economic reasoning.

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FOOT-NOTES

- (1) Such as ATKINSON's model dealing with the growth of the enterprise [1].
- (2) HORVAT postulates a target function identical to the standard neoclassical one (total profit maximization) with the single difference that workers decide upon the aspired wage rate ([9] [10] and more recently [11]). The paradoxical results of the Illyrian firm disappear but the labour-managed firm produces less than its capitalist twin when the wage rate of the labour-managed firm is greater.
- (3) WARD [19].
- (4) VANEK [18].
- (5) Quote, among their numerous papers [7] [8] [16]. See also, in French, DUMAS's paper [6].
- (6) The term "social short-run" is by VANEK.
- (7) Note, only, they are unfavourable to self-management (insufficient investment incentive), but also they are derived from the incoherency proclaimed in this paper.
- (8) Apart from SEN's [17] and more recent MARKUSEN's [13] [14] contributions. Yet their objective is quite different from ours.
- (9) This assumption facilitates the comparison with the profit-maximizing firm. But its removal does not change at all the performances of the labour-managed firm.
- (10) The following notations will be used:

$$H_i = \frac{\partial H}{\partial J}; \quad H_{ii} = \frac{\partial^2 H}{\partial J^2}.$$

- (11) See DOMAR [4] and VANEK [18].
- (12) See DOMAR [4], MEADE [15] and DAURES [2] [3], each of them dealing with the subject in a different way.

- (13) DUBRAVČIĆ [5]. See also MEADE [15].
- (14) The following notations will be used:

$$U_{ii} = \frac{\partial^2 U}{\partial l^i}; \quad U_{ii} = \frac{\partial^2 U}{\partial s^i}; \quad s_i' = \frac{\partial s^i}{\partial l^i}; \quad s_i^b = \frac{\partial s^b}{\partial l^i};$$

$$X_{ii} = \frac{\partial X}{\partial l^i}; \quad L_i = \frac{\partial L}{\partial l^i}; \quad l_i^b = \frac{\partial l^b}{\partial l^i}.$$

- (15) Thus, some VANEK's comments are justified. See VANEK [18] Chap. 12.
- (16) See MARKUSEN [13] [14].
- (17) That assumption is proposed by MARKUSEN [13] [14].
- (18) That situation is thought out by SEN [17].

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ALOKACIJA RADA I SAMOUPRAVNO PREDUZEĆE

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Rezime

Wardov model, koji se obično navodi kao teoretska referenca, veoma malo osvetljava prednosti samoupravljanja. Čini se da je samoupravno preduzeće, čiji je cilj maksimiranje dohotka po radniku, ukleto:

1) Ono ima manji radni input i otuda daje manji proizvod nego preduzeće koje maksimira profit.

2) Promena prodajne cene proizvoda dovodi do promene radnog inputa, a otuda i do promene nivoa proizvodnje, u suprotnom smeru. Ova negativno nagnuta kriva ponude odražava paradoksalno ponašanje, s obzirom da porast cene obično označava kvantitativnu nedovoljnost ponude.

Prvo objašnjenje ovih nedostataka može da se nađe u Dubravčičevoj analizi. Ovaj autor poredi dva tipa kooperativa u zavisnosti od toga da li se rad ili kapital kolektivno upotrebljava kao preduzetnički input, to jest poredi »proizvođački kooperativ« i »kapitalistički kooperativ«. On pokazuje da, ma kakav preduzetnički input bio, kooperativni sistem, u kome je kriterijum za donošenje odluka neka prosečna količina, vodi ka:

1) nepravilnoj alokaciji resursa: kooperativ ima manji preduzetnički input, bilo rada bilo kapitala, nego što je to optimalno sa stanovišta preduzeća koje maksimira profit;

2) negativno nagnutoj krivulji ponude proizvoda: promena cene proizvoda izaziva promenu preduzetničkog inputa (bilo rada bilo kapitala), a otuda i promenu nivoa proizvodnje, u suprotnom smeru.

Pogrešili bismo, međutim, ako bismo kooperativni sistem okrivili za neefikasnost, s obzirom da se neefikasnost ispoljava samo u uskim granicama koje su određene inicijalnim pretpostavkama. Neoklasična paradigma, koja predstavlja zajedničku osnovu za sve formalne teorije samoupravnog preduzeća, zasnovana je na egzozizmu, a samoupravno pravo se javlja samo ako su pojedinci svesni svoje

međuzavisnosti. Da bi se ponovo uspostavila koherentnost, solidarnost se mora eksplicitno uvesti u analizu samoupravnog preduzeća. To je sasvim moguće kada se zaključuje na osnovu rada koji su uložili dati članovi kolektiva, a ne na osnovu varijacija u broju radnika koji nude istu količinu rada.

Polazeći od ovoga lako može da se dokaže da je optimalna alokacija rada moguća kada je solidarnost uzeta u obzir, a da nije moguća kada je solidarnost apstrahovana.

Prvo se pretpostavlja da su pojedinci egoistični: svako posmatra radne napore drugog kao konstantu.

1) Ako se ukupni višak deli između svih radnika, prema nekom datom kriterijumu, niko nije stimulisan da radi, s obzirom da se rezultat pojedinačnog radnog napora deli između svih članova kolektiva (ovde se izuzima slučaj preduzeća sastavljenog od jednog čoveka),

2) Uprkos tome, ako je deo ukupnog viška koji se dodeljuje radniku proporcionalan količini rada koju je on uložio, optimum se može postići pod uslovom da proizvodna funkcija odražava konstantne prinose na obim proizvodnje.

Kada analizu ograničimo na slučaj raspodele prema radu, pojedinci mogu da ulože optimalnu količinu rada ako su svesni svoje međuzavisnosti i ako, pre svega, ispoljavaju solidarnost.

1) U prvom slučaju, osoba A uzima u obzir varijacije u radnom naporu osobe B, i obratno. U ovim okolnostima, zahtev optimuma je ispunjen ako povećani radni napor osobe A izaziva proporcionalno povećanje radnog napora osobe B. Na taj se način tehnički problem pretvara u socijalni problem. Konstantni prinosi na obim proizvodnje nisu neophodni ako su neproporcionalni prinosi na obim proizvodnje neutralisani nekim odgovarajućim ponašanjem.

2) Rezultat je uverljiviji kada se pretpostavi da svako uzima u obzir korisnost drugog (pomoću »koeficijenta simpatije«). Tada se, izuzimajući gore pomenute specijalne slučajeve (preduzeće sastavljeno od jednog čoveka, konstantni prinosi na obim proizvodnje), optimum postiže kada se odnos granične korisnosti dohotka osobe A prema graničnoj korisnosti dohotka osobe B izjednači sa koeficijentom zainteresovanosti osobe A za osobu B.

Ako su varijacije u satisfakciji osobe A, prouzrokovane datim varijacijama dohotka, veće od varijacija u satisfakciji osobe B, dohodak osobe A je manji, a ovo odražava manji radni napor. Konsekventno ovome, osoba A daje veći ponder satisfakciji osobe B, jer zna da je rad osobe B intenzivniji. Ovo predstavlja manifestaciju solidarnosti. U našem svetu, u kome smo daleko od toga da ostvarimo bogato društvo, solidarnost znači da se svakome poklanja pažnja, utoliko veća ukoliko su naponi koje on čini da bi se izvukao iz carstva nužnosti — veći.

Zaključak je sasvim jasan. Bez solidarnosti ne može se postići optimalna alokacija rada u samoupravnom preduzeću. Solidarnost dovodi do takve alokacije rada. Ova druga pretpostavka je najkonzistentnija sa samoupravljanjem. Stoga, ako samoupravljanje napadaju njegovi protivnici, oni to čine na etičkim, a ne na ekonomskim osnovama.