EUROPEAN UNIVERSITY INSTITUTE, FLORENCE

DEPARTMENT OF ECONOMICS

EUI WORKING PAPER No. 86/214

THE RIGHT TO EMPLOYMENT PRINCIPLE AND SELF-MANAGED MARKET SOCIALISM: A HISTORICAL ACCOUNT AND AN ANALYTICAL APPRAISAL OF SOME OLD IDEAS

by

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This paper was prepared in connection with the research project on the "Effects of Workers' Participation on Enterprise Performance in Western Europe", directed at the E.U.I. by Professor D.M. Nuti.

BADIA FIESOLANA, SAN DOMENICO (FI)

Printed in Italy in March 1986
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Badia Fiesolana
- 50016 San Domenico (Fi) -
Italy

1. INTRODUCTION

In 1934 Oscar Lange and Marek Breit[2] wrote an essay containing a blueprint of the future socialist economy, and of the ways to implement it, as a chapter of the programme of the young left-wing socialists belonging to the group Plomienie. After the war the contribution of Breit and Lange was partially republished in a collection of Lange's papers (Lange, 1961); however the most interesting section of the original work, presenting a blueprint of a socialist market economy with a built-in mechanism for ensuring full employment and equality of income across self-managed firms was omitted.[3] Some years ago Tadeusz Kowalik drew my attention to the original model of the essay which, in the meantime, was made more easily accessible through reprinting in volume 2 of Lange's Collected Works (Lange, 1973). The most interesting feature of the model is the fact that workers have a right to employment, in the sense that self-managed firms "are under obligation to employ all the workers who apply for it."[4] This feature, which amounts to the extension to the field of producer cooperatives of the open-membership principle which is "typical of most farmer cooperatives and is the practice of consumer cooperatives",[5] entails the elimination of two possible flaws of Illyrian-type self-managed Socialism: 1) the tendency to produce high levels of involuntary unemployment; 2) the tendency to produce sizable differentiation in per capita earnings across self-managed firms.[6] Subsequently it was pointed out to me by Mario Ferrero that this feature could also be found in the socialist utopia of Theodor Herztka.[7] Later I realized that Herztka's model itself was the development of an earlier idea of Eugen Dühring, who, in his Cursus der Nationalökonomie had sketched a system of "economic communes", defined as "a community of people who through public entitlement to dispose of a district of land and soil and of a group of production establishments are bound together to common activity and equal sharing of income".[8] What is of particular relevance to us is that "The right to land and soil and to economic establishments ... no longer has the character of the old exclusive property ... It is replaced by a form of availability under public law, which outwardly also does not have the power to behave exclusively, in so far as between the different communes there is liberty of moving and settling anywhere and obligation to accept new members according to given legal norms and regulations ... But the guiding principle remains the general freedom of access" (Dühring, 1876, pp. 322-23). Going back in history this availability of land under public law may remind us in some ways of the structure of property rights in the open field village. It is from the recollection of the real or supposed institutions of the open field villages that Duhring may have derived the inspiration for his model. The open field village may indeed be described in many respects as "a community of people who, through public entitlement to dispose of a district of land and soil (originally in the framework of the legal set-up of the feudal system) ... are bound together to common activity". The "sharing of income" was also tendentially equal, in so far as open field agriculture "was a system primarily intended for the purpose of equalizing shares".[9] Even if it can hardly be said that the "guiding principle" of "the general freedom of access" applied to the open field village, still there was a certain peasant mobility between villages "according to given norms and regulations", the result of which was, according to Cohen and Weitzman (1975, p. 298) that "'the communal principle with its equalizing tendency' must have operated to an extent between villages as well as within a village."

The following passage by Duhring is interesting too and puts his model in a somehow different perspective: "One may thus regard the relationship to the natural and cultural auxiliary sources of production and existence, which are to be made common, as similar to present day belonging to a political formation and to participation in the communal economic infrastructures. The utilization of the public streets is albeit only a tiny example of an inevitable political community ... The socialitarian economic communes will have now to practice the principle of free individual mobility to an incomparably greater extent" (p. 323). In other, more modern, terms in Duhring's socialitäres System the means of production are quasi-public goods.

As to the idea of everybody's right of entry into workers' communities or associations as such, this can also be traced further back. According to Engländer (1864,vol. III, p. 89), who refers to French workers' associations of the first half of the nineteenth century, "all workers' associations continued to admit as a member of the association every worker presenting himself." In Owen's New Harmony, according to Tugan Baranowski (1921, p. 13) "all the candidates were accepted without selection in the community." This, according to him, is enough to account for the "sad end of that social experiment." In the Orbstone community, founded by Comb (a follower of Owen) "one of the fundamental rules of the community was the entirely free acceptance of new members" (Tugan-Baranowski, 1921, p. 17).

In Duhring's case, however, the free mobility of labor between the different communes was conceived in the framework of a homogeneous racial and ethnic community (see Dühring, 1876, p. 323). This sense of ethnic community was to play an important role later on in the foundation of Israel's cooperative settlements. It is interesting to note in fact that the conceptions of Duhring and Herztka were the source of Franz Oppenheimer's idea of the Siedlungsgenossenschaft10

(Settlement-cooperative) which had a major impact, through his plan, approved at the 1909 ninth Zionist Congress, on the beginning of the Jewish cooperative settlements in Palestine.[11] Carl Landauer even names Oppenheimer as "the intellectual author of the Kibbutz institution" (Landauer, 1959, vol. II, p. 1781). The above constitutes a beautiful case of List der Vernunft, owing to Dühring's scurrilous antisemitism !

The purpose of this paper is first of all to present the peculiar features of the Breit and Lange model and to compare them with those of Lange's later celebrated model of 1936. Herztka's original model of the "social economy"(1886)[12] or of "Freeland" (1890) will then be contrasted with Breit and Lange's. We shall also discuss whether a self-managed market economy with FML is able to provide incentives to sustain Pareto efficient allocations and to generate X-efficiency. In particular, attention will be paid to what features can be superimposed to FML in order to ensure a reasonable degree of X-efficency, as well as to the conditions under which a model with FML displays allocative efficiency. Finally, the possibility of a partial application of the right to employment principle in the framework of a capitalist system will be discussed.

2. THE BREIT AND LANGE MODEL OF 1934

In order to expound in the clearest and most "authoritative" way the structure of the Breit and Lange model we present a translation of the relevant passages, singling out the most important features.

1) Organization of production and self-management: "The various branches of production will be run by autonomous General Trusts; in their guidance the workers employed there will have a decisive role"

(Lange, 1973, p.170). This role is ensured "by means of a corresponding system of workers' councils" (p. 167).

This feature is probably taken by Breit and Lange from Heimann's version of Marktsozialismus, where "the individual industries organized into largely autonomous corporations were to sell to each other and to the consumers the commodities and services produced".[13] On the other hand the idea that socialist self-managed enterprises or associations should encompass a whole branch of production is a time-honored idea in the history of socialist thought.[14] In this respect one can see some analogy with Guild Socialism, where "a National Guild would be an association of all the workers by hand and brain concerned in the carrying on of a particular industry or service, and its function would be actually to carry on that industry or service on behalf of the whole community."[15] The weak point of all these and similar conceptions lies in the monopolistic power implied by such a type of industrial organization. The originality of Breit and Lange's proposal lies in having introduced the RTE principle as a device to break monopoly power, in a context therefore rather different from Herztka's. Within the tradition of Socialist thought, even aside from those who explicitly favor central planning, there is in fact a distinct contradiction between the philosophy of those, such as Herztka, and before him in some ways Buchez, who believe in the virtues of free entry and competition, leading, once private appropriation of the means of production is abolished, to the common good, and those, such as Blanc or Bernstein, who are critical of the mechanism of competition itself and are in favor of State intervention and large scale industry. Breit and Lange's proposal can be seen as a kind of synthesis of the two, because, thanks to FML, which plays in some way the role of free entry in ironing out extraprofits (or extra-wages: see below point 5, this section) the "invisible hand" of the allocative function of the market is supposed to work even in the presence of large trusts, thus finding a mechanism for implementing Heiman's precept that "collective organizations ... renounce all monopoly gain" (Eduard Heiman, Mehrwert und Gemeinwitschaft, Berlin, 1922, p. 185; quoted in Landauer, 1959, pp. 1643-44). It should also be noted that, while Herztka's adoption of FML is considered to be universal in his economy, in Breit and Lange it applies only to that part of the economy which is organized in large socialized trusts and not to the other non-socialized part, which continues to be organized in small scale private production units.[16]

2) Property rights and the role of the Bank: "All the capital of the trusts must be property of the General Bank, which may therefore withdraw capitals from one trust and transfer them to another ... The direction of the whole economic life will be in the hands of the National Bank, who ... will see that socialized plants and trusts behave strictly according to principles of economy (p. 168)."

3) Profitability calculus and the role of the market: "The socialized plants must first of all carry out a precise accounting of the costs and of the prices fetched by their products, namely a precise profitability calculus. To operate passive plants, bringing about losses, must be excluded a priori, insofar as it would require the throwing in by society of capitals which would be economically more productive in other plants" (pp. 170-71). In fact, "in the socialist economy the goods whose production is more profitable will also be the goods satisfying the most intensive needs, because the purchasing power of every person will be (approximatively) the same" (p. 171).

4) The accumulation rate: "Socialized plants ... must also bring about a surplus over costs" that will be "the source of accumulation of new capital"; "the General Bank will indicate a given rate of accumulation ... by which the incomes of plants must exceed their

costs of production, and will absolutely refuse credits to those plants which are unable to make up that accumulation rate (unless the unprofitability of these plants is only temporary), compelling them in this way to closure ... by way of their progressive 'dying out', namely by ceasing the amortization of invested capital" (pp. 171-72).

5) <u>The right of workers to be employed as a remedy for the monopolistic tendencies of trusts</u>: There is the danger that "socialized trusts could endeavor to pursue a monopolistic policy ... by increasing prices and limiting production ... This policy would allow the utilization of the surplus thereby acquired to increase wages in the given branches of industry and would be therefore exceedingly popular among their workers" (p. 172). In fact "in the Soviet Union the socialized trusts have shown far-reaching monopolistic tendencies. In order to eliminate those corporative tendencies the various trusts will be under obligation to take in all the workers applying for work ... Indeed, should a trust ... secure profits exceeding the accumulation rate, those profits must be utilized for increasing wages ... But the increase attracts workers from other branches of production where wages are lower, and compels the trust to reduce wages again, since the acquired surplus must be shared with the inflowing workers. In this way ... the socialist planned economy does succeed in exploiting all the gains and advantages of the concentration of production attained by capitalism, without the negative social and economic consequences that such a concentration brings about in the capitalist system, through monopolization of the market and limitation of production" (pp. 172-73).

6) <u>The allocation of investment</u>: "The inflow of workers to a given branch of production will be an index of the intensity of the growth of demand for a given good. The General Bank, basing itself on that

index, will invest capitals where workers will flow from other branches of production, and the magnitude of this inflow will be an index of the magnitude of the needs for investments. In such a way the investment policy of the General Bank will be deprived of any arbitrariness and will be founded on a given automatic index of the intensity of demand for the various goods" (p. 174).

Finally, it must be added that in the first footnote Breit and Lange state: "for the details we refer the readers to the enormous literature concerning this subject". They quote in this connection a few works of German (or Austrian) authors (Heimann, Landauer, Lederer) and Dickinson's article of 1934, but no mention is made of Herztka.

3. A COMPARISON WITH LANGE'S MODEL OF 1936

The comparison between the Breit and Lange model of 1934 and the 1936 Lange model is interesting more for what has changed in Lange's conception of the socialist economy in those two years than for what (not very much) has remained the same. In 1936 one can see a much greater compenetration of Lange's political and ideological interests with his work as an economic theorist, and so a much greater utilization of the tools of economic theory for modelling his project of the socialist economy. This may be linked in particular to the appreciation, which he had in the meantime reached, of the relevance of neoclassical economics for understanding the issue of the functioning of the socialist economy.[17] In particular, the theory of general economic equilibrium provides the analytical structure of his later paper but not of his former. At the same time at the base of both models there is the concept that the socialist economy can work in some way analogously to a market economy: through explicit market institutions in 1934; by way of an implicit market game in 1936.

Moreover in both models firms are autonomous units, with autonomous management and independent accounting. However, from the point of view of explicit institutions Lange's socialist economy of '36 is considered by Lange to be a planned economy, where, unlike producer goods, consumer goods and labor services are market allocated.[18] Even if the methodology of planning is quite different, one may see on this account some broad institutional similarity between Lange's socialist economy of 1936 and the contemporary Soviet economy, which is completely lacking in the Breit and Lange socialist economy of 1934. The latter however can be compared to the way in which the Soviet economy was run before the beginning of the five-year plans (trusts, market production, workers' councils, role of the Central Bank).[19] One should note also that in '36 there is no mention whatever of self-management: "managers are assumed to be public officials" (Lange, 1936, p. 61). Away goes, in '36, the idea of the right of access of workers to firms, which in '34 is related to the objective of breaking the monopoly power of large trusts. In '36 reference is made exclusively to the parametric function of prices, and so to the model of perfect competition (see in particular pp. 63 f.). In both models, however, "the accumulation of capital is performed 'corporately'" (Lange, 1936, p. 65). But, instead of loanable funds being allocated through an automatic rule according to worker flows, as in 1934, in 1936 demand for loanable funds is made equal to supply through the equilibrium determination of the rate of interest (p. 65). Still, in this case too,the allocation of investment funds follows a kind of automatic rule which deprives the investment policy of the central planning agency "of any arbitrariness".

4. HERZTKA'S MODEL OF THE "SOCIAL" ECONOMY

The model of socialist (or, according to his words, "social") economy of Theodor Herztka has in common with that of Breit and Lange the following basic features: 1) FML; 2) self-management; 3) market socialism.[20] In what follows, the model will be presented through excerpts of the utopian novel Freeland (Herztka, 1891) and of his previous non-fictional work Die Gesetze der sozialen Entwickelung (Herztka, 1886):[21]

1) Co-operative nature of the economy: "In order that labour may be free and self-controlling, the workers must combine as such, and not as small capitalists; they must not have over them any employer of any land or any name, not even an employer consisting of an association of themselves". "The right forms of the organization of free labour were best found through the free co-operation of all those who shared in this organization" (1891, p. 95). "The highest authority of the association is the general meeting, in which every member possesses an equal active and passive vote ... The management of the business of the association is placed in the hands of a directorate of x members, elected for x years by the general meeting, but their appointment can be at any time rescinded" (1891, p. 97). As can be seen, Herztka's is clearly a model of a cooperative economy and can be directly linked to the whole tradition of the cooperative movement and of associationist socialism.[22]

The formulation of Breit and Lange is more ambiguous: workers receive "wages", and the share in value added of that part which exceeds payment of wages and taxation. On the other hand in Herztka's economy "every member has a claim upon such a share of the net profits of the association as is proportionate to the amount of work he has contributed" (1891, p. 96; see also below, point 3). Moreover Breit and Lange's units are huge trusts, in which the opportunities for self-management are obviously more limited than in smaller producer cooperatives.

2) <u>Free mobility of labor</u>: "Everyone in Freeland must ... always have the right and the power - so far as his capabilities and his skill permitted - to apply himself to those branches of production which for the time being yield the largest revenue, and to this end all the means of production and all the seats of production must be available to everyone" (1891, p. 92). "Admission into every association is free to everyone, whether a member of any other association or not; any member can leave any association at any time" (1891, p. 96).

3) <u>Distributive criteria and imputation</u>: "Every member's contribution of work shall be measured by the number of hours he has worked; the older members receiving more that those who have joined the association later, in proportion of a premium of x per cent. for every year of seniority. Also, a premium can be contracted for, in the way of free association, for skilled labour ... The labour contribution of superintendents or directors shall, according to a voluntary arrangement with every individual concerned, be reckoned as equal to a certain numbers of hours of work per day" (1891, p. 96). "Interest, profit, and rent remain, but they are not separated from wages, with which they combine to form a single and indivisible return for labour" (1891, p. 260).

4) <u>Property rights</u>: "Any 'property' of the association, in the ordinary sense, does not exist. The members, it is true, possess the right of usufruct of the existing productive capital; but as they always share this right with every newly entering member, and are themselves bound to the association by nothing except their interest in the profits of their labour, so there can be no property-interest in the association so long as they are carrying on their work" (1891, p. 97). "Productive capital is, strictly speaking, as ownerless as

land; it belongs to everyone, and therefore to no one" (1891, p. 98). "Every inhabitant of Freeland has an equal and inalienable claim upon the whole of the land, and upon the means of production accumulated by the community" (1891, p. 137).

As far as land is concerned, the issue of "overcoming the natural monopoly of landlords" (1886, p. 153) is given special emphasis in Herztka's book of 1886.[23] It is first and foremost in order to overcome the "natural monopoly" that the principle of "free association" and "mobility of labor" is proposed in 1886: "The cultivation of soil will be left to associations, which are formed according to need and desire, extend their activity to bigger or smaller objects of cultivation, and to whom the undiminished produce of the land belongs. Everybody has the right, nobody the obligation, to enter into such an association" (1886, p. 174). As a consequence, "the individual worker obtained no higher net profit per hour of labour on the best land than upon the worst land that could be cultivated at all" (1891, p. 102).

5) <u>The allocative function of the market</u>: "The price of all the products of work, determined through competition, rules in a quite automatic fashion the in- and outflow of labour forces, always according to the measure of need for the products of the different branches of work" (1886, pp. 174-75).[24]

6) <u>The role of the Bank</u>: "The supreme authority in Freeland was at the same time the banker of the whole population. Not merely every association, but every individual, had his account in the books of the central bank, which undertook the receipts and the disboursements from the millions of pounds which at a later date many of the associations had to receive and pay ... A 'clearing system', which really included everything, made these numberless debit and credit operations possible with scarcely any employment of actual money, but simply by additions

and subtractions from the accounts in the books. No one paid cash, but gave chèques on his account at the central bank, which gave him credit for his earnings, debited his spendings to him, and gave him every month a statement of his account ... In this way the bank was informed of the minutest detail of every business transaction throughout the whole country" (1891, p. 108). Obviously one suspects that the Bank could hardly perform as described without the help of the most powerful of modern computers!

7) Transparence of the market and the organized spreading of information: "... unlimited publicity in connection with equally unlimited freedom of movement. Everyone in Freeland must always know what products were for the time being in greater or less demand, and in what branch of production for the time being there was a greater or less profit to be made ... A careful statistical report had to register comprehensively and ... with as much promptitude as possible every movement of production on the one hand and of consumption on the other, as well as to give universal publicity to the movement of prices of all products" (1891, p.92).

8) Investment: "The instruments of labour and the other capitalistic aids to labour could be provided to any amount and of any quality" (1891, p. 93). "Then as to capital: the Free Society undertook to place it at the disposal of everyone who wished for it, and that without interest, on condition that it was reimbursed out of the proceeds of production within a period the length of which was to be determined by the nature of the proposed investment"(1891, p. 93).25 As a matter of fact, "the surplus of the current production would suffice to meet the heaviest fresh claims for capital that could arise" (1891, p. 101). However, this fortunate situation, that reminds one of Keynes' mythical state in which the "euthanasia of the rentier" results from the "increase in the volume of capital until it ceases to

be scarce" (Keynes, 1936, p. 376),[26] could not be reached at once. "At the beginning, when the need for capital was unlimited, and the means of supplying that need as yet underdeveloped", "the free commonwealth could not offer more that it could supply, and it had therefore to reserve to itself a right of selection from among the investments that applied for credit" (1891, p. 101). It is also interesting to note that "this interference during the first year extended only to the controlling of the amount and order of granting the credit asked for, and not to the way in which it was used. In this respect, from the very beginning the principle of producers' responsibility was carried out to the fullest extent" (1891, p. 102).

9) <u>The principle of producers' responsibility and liability of members for the debts of the association</u>: "The members shall, in case of the dissolution or liquidation of an association, be liable for the contracted loan in equal proportions; which liability, so far as regards the still outstanding amount, attaches also to newly entering members. When a member leaves, his liability for the already contracted loan shall not cease. This liability for the debts of the association shall, in case of dissolution or liquidation, be in proportion to the claim of the liable member upon existing property" (1891, pp. 96-97). Here there is a particularly relevant difference from the model of Breit and Lange: property of the capital goods of the association is vested with the association itself and not with the Bank, as in Breit and Lange. This is collateral to the fact that recipients of investment funds are liable to reimbursement in the case of HerztKa, and apparently they are not in the case of Breit and Lange (even if this is not explicitly stated). Obviously, the obligation of repayment provides an incentive to efficient utilization of capital: "As it was necessary for the producers to be sucessful in order to repay the capital taken up, so it was their business to see that care

was taken to make a profitable use of such capital" (1891, p. 102). "If, however, the commonwealth had to be responsible for the investments of individuals - that is, of the associations - then the several associations would have no motive to avoid employing such mechanical aids as would save less labour than they cost. The necessary consequence of this liberality on the part of the commonwealth would therefore be that the commonwealth would assume a right of supervision and control over those who required capital; and this would be incompatible with freedom and progress. All sense of personal responsibility would be lost, the commonwealth would be compelled to busy itself with matters which did not belong to it, and loss would be inevitable in spite of all arbitrary restraints from above" (1891, p. 277). It is interesting to note that these remarks by Herztka, which can also be used to criticise the institutional organization of investment in the model of Breit and Lange, had some prophetic value, in so far as they apply to some well known flaws of the investment process in actual Soviet-type economies. It should also be noted that, if one considers the risks associated with investment, the possible risk aversion by members of producer associations, the possible psychological costs associated with the investment process itself,[27] together with the obligation to share with incoming new members the benefits of successful investment, on balance the demand for new investment funds could well not exceed their supply at a zero rate of interest, without the marginal rate of return to investment being reduced to nought.

10) Finances: "The public expenditure of the community should be covered by a contribution from each individual exactly in proportion to his net income"; "one of its objects was to create the capital required for the purposes of production. But it was only at first that the whole of this had to be met out of the current tax, as afterwards

the repayment of the loans partly met the new demands". "By means of its bank the community had everyone's income in hand sooner than the earners themselves; and it was merely necessary to debit the earners with the amount and the tax was paid. Hence in Freeland the tax was regarded not as a deduction from net incomes, but as an outlay deduced from the gross product, just like trade expenses" (1891, p. 109). This passage obviously has some predictive value foreshadowing the modern system of tax deduction at the source, beside, as noted before, requiring modern computers to be nearly plausible. At the same time in the 1886 version of the model capital formation is also financed through savings of individuals and associations (1886, pp. 220-23). The latter save in order to build reserves needed to "be able to endure bad business years without insolvency" and to avoid undergoing bankruptcy; the former in order to make provisions for the future over and above the threshold provided to everybody by society. Moreover associations will utilize parts of retained earnings to finance investment; at the same time "the amounts utilized for improvements of the business will be treated as interest-bearing loans of the older members. The newly entering members can claim their share only on the revenue that is left after deduction of interest payments" (1886, pp. 220-21). Of course this is not coherent with Freeland's later model, in which investment funds are provided interest-free by the State: in fact this feature cannot be found there.

5. THE INCENTIVE COMPATIBILITY OF A MODEL WITH "FREE MOBILITY OF LABOR": THE INCENTIVES TOWARDS ALLOCATIVE EFFICIENCY

After having considered the different models of self-managed socialism embodying the principle of the right to access, and the background of those models in the history of ideas, we will consider now whether a self- managed market economy with FML (which we shall dubb as Freelandia) is compatible with incentives leading to allocative as well as to X- efficiency. With an extension of the original notion by Hurwicz (1972), where the term referred to the incentives towards generation of the informational requirements for efficient planning mechanisms, we shall dubb this issue that of incentive compatibility. It seems in fact logical to extend the concept of incentive compatibilty to the general issue of whether a system has built-in incentives to bring about (or sustain) given desirable outcomes, such as those relating to allocative and X-efficiency.

It is quite obvious that a model of an economy with FML faces great difficulties from the point of view of X-efficiency. Let us however leave aside this issue for the moment and suppose that the production function of the self-managed Freelandian firm is the same as that of the Illyrian and of the entrepreneurial firm.[28] In other terms, the level of production is supposed to be the same for comparable endowements of the factors. Accordingly, we shall consider first the issue of whether the system is incentive compatible (in our general sense) from the side of allocative efficiency. In what follows, as is usually the case in this type of discussion, we disregard the possible relationship between amount and type of work performed and individual welfare.

Some informal consideration of the issue of allocative efficiency is provided by Breit and Lange (see quotations in section 2) and by Herztka (see quotations in points 5), 7), 9), section 4). In both cases the authors believe in the existence of some mechanism, centered on the working of the market and on FML, which brings about some degree of allocative efficiency in their models.[29] In order to see if this belief is justified, let us first simplify things as far as possible and assume only one good to be produced by cooperative firms with homogeneous labor as the only variable factor. Suppose that net income is distributed equally among cooperative members and that labor can instantaneously and costlessly move among firms. Suppose also that for whatever reasons (different location, different availability of non-reproducible resources, different know-how,[30] and, in the short-run, different capital endowements) the production functions of firms are different. Then, in equilibrium the <u>average</u> income per worker will be equalized everywhere because of FML, but the marginal productivity of labor in general will not, and the allocation of labor will not be optimal.[31] This is in fact just a particular instance of the general case of "free access equilibrium" which "is inefficient because what tends to get equated among alternative uses is the average product of the variable factor instead of its <u>marginal</u> product" (Weitzman, 1974, p. 225). This result on the other hand depends on the existence of barriers to entry hindering reproduction at will of the best knowledge technology or access to the existing limited natural resources through competitive bidding for the price of their services, up to the level where they do not bring about any differential advantages to producers having hold of them. We shall see below in fact that, under standard perfectly competitive assumptions, in long-run equilibrium an economy with FML is characterized by Pareto Optimality.

An obvious reason for different availability of natural resources would be the cultivation by cooperative firms, such as Herztka's associations, of soils of different fertility. A remedy for the ensuing inefficiencies in the distribution of labor on available soil would theoretically be the imposition of differential taxes on soil, equal to equilibrium differential rents. But to this type of solution Herztka would certainly repeat his objections to Henry George's proposal of "the progressive taxation of the soil, which stepwise will wipe out the groundrent and leave to the soil tiller only the wage of his work and the interest in the otherwise invested capitals": 1) "How many gradings of the tax on the soil must be provided, in order that any grading of soil rentability will be correspondingly hit ?" 2) "How will the difference between capital interests on the investments made on the soil and the pure rent be determined ?"(Herztka, 1886, p. 172). It should also be considered that Herztka seems totally unaware of the issue of the efficient distribution of labor on the soil and of the allocative function of the rent, being only concerned with its presumed consequences on distribution and on the level of activity.

Let us first continue to suppose that only one good is produced in the economy (alternatively one could consider what follows as referring to production in any given industry, through the usual partial equilibrium approach that characterizes these types of discussions). Let us also skip for the moment the issue of access to non-reproducible resources and suppose that no barriers to entry exist, technology is public only and there are only two factors of production, capital (allocated through an equilibrium interest rate, but, as previously, adjustable only in the long-run) and homogeneous labor. Let us also assume that the (differentiable) production function of competitive firms in any given industry satisfies Frisch's "regular ultra-passum law", in other words shows first increasing, then locally constant, and finally decreasing returns to scale.[32] Suppose also that the point in which returns are locally constant implies sufficiently little production to render the non-convexities of production functions of no practical importance at the level of industry. In other words, firms are "small". Then, as is well known, in Illyria, in short-run competitive equilibrium, marginal and average productivities of labor (net of per capita interest charges) are equalized within each firm. In the long run, however, the equalization of net average labor productivities through free entry brings about allocative efficiency.[33] Under FML, if we continue to suppose the movement of workers towards better paid employments to be costless and instantaneous, what is equalized in the short run is <u>average</u> labor productivity, net of capital costs.[34] In the long-run, however, free entry brings about the equalization of marginal productivities both of capital and labor across the economy, and this, under the circumstances, entails the optimum allocation of the factors of production.[35] In order to show this let x be the value of the capital of the representative firm, r the rate of interest, y the quantity of the homogeneous product produced by the firm, p its price, z employment, c the value of equilibrium per capita earnings in the economy. Then in long-run equilibrium:

$$\frac{py - rx}{z} = c; \qquad (5.1)$$

$$c = \max_{x,z} \frac{py - rx}{z}. \qquad (5.2)$$

As a matter of fact, long-run equilibrium implies not only that per capita earnings are equalized all over the economy (which, in the present model is the short-run equilibrium condition), but also that in each firm per capita earnings are maximized both with respect to capital as well as to labor. Were the latter conditions not realized, workers from overstaffed firms could improve their revenues by joining together, hiring capital and forming new firms with the "right" quantities of capital and labor. Likewise, should a firm be "understaffed", workers could improve their lot by joining in. In both cases the given situation could not be a long-run equilibrium.

From (5.1) and (5.2) one derives:

$$p \frac{\partial y}{\partial x} = r; \qquad (5.3)$$

$$p \frac{\partial y}{\partial z} = c: \qquad (5.4)$$

the marginal productivities of the factors are equalized all over the economy. Q.E.D.

Furthermore, from (5.1), (5.3), (5.4) one derives:

$$y = \frac{\partial y}{\partial z} z + \frac{\partial y}{\partial x} x: \qquad (5.5)$$

in long-run equilibrium production takes place under constant returns to scale, the same condition that applies under similar circumstances to Illyria,[36] as well as to competitive capitalism.

The previous results are summarized in the following table, where w is the competitive wage rate:

TABLE 1

EQUILIBRIUM OF ENTREPRENEURIAL, ILLYRIAN AND FREELANDIAN FIRMS

	Short-run equilibrium	Long-run equilibrium
Entre. Firm	$p \dfrac{\partial y}{\partial z} = w$	$\max\limits_{x,z} (py - rx - wz) = 0$ $\Rightarrow p \dfrac{\partial y}{\partial z} = w \qquad p \dfrac{\partial y}{\partial x} = r$
Illyr. Firm	$p \dfrac{\partial y}{\partial z} = \dfrac{py - rx}{z}$	$\max\limits_{x,z} \dfrac{py - rx}{z} = c$ $\Rightarrow p \dfrac{\partial y}{\partial z} = c \qquad p \dfrac{\partial y}{\partial x} = r$
Freel. Firm	$\dfrac{py - rx}{z} = c$	
	Note: $y = y(x,z)$	Note: by given r, $w = c$

Let us now turn to a general equilibrium context such as Drèze (1976), where the above simplifying assumptions regarding the number of products, of factors, of types of labor, and the absence of non-reproducible resources are discarded, without affecting, as we shall see, the result concerning the allocative optimality of FML equilibrium. In Drèze agents are workers endowed with different tastes and working capabilities for the different types of work. Firms maximize net value added per equivalent worker, where the different types of work are weighted by "unit shares" which are "within each firm, a set of weights defining value shares for the different types of labor", by given parametric prices, and rents for the use of non-reproducible resources. In the Drèze self-managed economy "the definition of budget sets implies perfect mobility of labor across firms", in so far as in the definition of budget sets, alongside prices and endowments enter also the "unit shares" of the different types of works in the different firms.In this framework Drèze, relying on a previous research paper (Drèze, 1974), states two important propositions, namely that every labor-managed equilibrium can be translated into a competitive equilibrium and that the set of Pareto optima can be sustained either as competitive or as labor management equilibria and they coincide with the set of the latter (p. 1127).[37] In other words, "labour mobility between labour-managed firms entails the same equilibrium properties as competitive labour markets" (Drèze, 1974, p. 28) and "in equilibrium, either labor mobility or competitive labor markets lead to labor incomes geared to marginal productivity" (Drèze, 1976, p. 1127). A straightforward institutional interpretation of the model is that there is FML, namely that workers have the right to be employed according to their qualifications by the firm of their choice, while firms determine the "unit shares" for the different types of labor in such a way that the different types of workers requiring employment are just in such a number as to maximize value added for adjusted unit of labor. These were not the institutions that Drèze had in mind, but the overall result is the same as if the legal set-up required the consent of management for the admission of workers to the different firms, such as in the Illyrian framework to which Drèze was directing his analysis. Obviously this is true only in the case of general equilibrium. In the case of disequilibrium the behavior of the two systems could be very different indeed.

The previous perfectly competitive analyses clearly do not apply to the Breit and Lange case, where firms are huge trusts embracing a whole branch of production. In this case prices obviously cannot be taken as parametric (unless they are determined centrally; but this does not correspond to the Breit and Lange context, as can be seen from point 4 in sect. 2), nor can returns to scale be supposed to be constant or decreasing at a "small" production level (otherwise there would be no reason to organize production in large "General Trusts"). In general there will therefore be no question of market processes bringing about, on their own, optimal allocation of resources or Pareto optimality. However, as expounded by the authors, because of the right to access, the behavior of their trusts will obviously be less restrictive, in terms of output and employment, than that of the entrepreneurial counterpart,[38] and, owing to well known analyses of self-managed Illyrian monopoly,[39] also of the Illyrian counterpart.

Summing up one can see that where FML comes crucially into play is not in the perfectly competitive long-run equilibrium, where the properties of the entrepreneurial economy, self-managed Illyria and self-managed Freelandia are analogous for comparable models, but in short-run equilibrium, in the static properties of monopoly or monopolistic competition, and, first and foremost, under disequilibrium conditions, where, unlike the other two economies, an economy with FML, by definition, does not allow involuntary unemployment. Moreover FML obviously avoids the well-known possible perverse dynamic behavior of the Illyrian firm.[40] For instance, if the price of the product of the firm increases, in case of FML new workers will join in and employment and production will increase, ruling out the possibility of a decrease, as may happen in Illyria. On the other hand one should also take into consideration that, outside the long-run equilibrium position, misallocation of labor, because of lack of a tendency to equalize its marginal productivity in the short run, may be quite serious. In the longer run, even independently of free entry, which will presumably take a long time to fully work out its effects, some tendencies towards equalization of marginal productivity of labor may set in through investment behavior. Investments in fact could prove more efficient where labor is relatively more plentiful and its marginal productivity lower. As remarked by Nuti, this adaptation of the capital structure to the structure of employment could be speeded up by mergers.[41]

Let us now briefly examine the allocative consequences of the investment procedure which Breit and Lange envisage in their version of the model. The rule for the allocation of loanable funds stated in point 6) of section 2 presupposes an automatic mechanism for allocating funds according to labor flows, but it does not spell it out explicitly. An obvious specification would be that investment funds are apportioned only to firms increasing their enrollment in proportion to the increase. This implies the equality of the marginal capital-labor ratio across firms and sectors; this rule however is seemingly deprived of an evident economic justification. The only rationale for it lies in directing investment flows to branches where per capita earnings are higher than elsewhere, as a sign of demand pressure (or sinking in costs). But this re-direction of funds would be more reasonably achieved through lending funds (collected through a levy by the General Bank, according to the model) on the basis of a market determined interest rate. One should also consider that the above mentioned levy, being a proportion of net product and not of the value of capital assets, does not help in the efficient allocation of the capital stock. Had the levy to be paid according to the value of assets, it would have created an incentive to firms to get rid of pieces of equipment of low productive value in a particular firm, passing them to others which would put them to better use. But, as it stands, no such incentive is built into the model. Note also that the equalization of the levy all over the economy, and the tendential elimination of net revenues above the notional wage bill because of RTE does not amount to the equalization of the profit <u>rate</u> all over the economy, as in free competition, as stated by Kowalik (1970, p.

975), unless capital-output ratios happen to be the same everywhere. Finally one can remark that an advantage of the Breit and Lange investment rule would be to lessen the possible hostility of existing workers against the influx of newcomers (see below, sect.7), as this would be accompanied by an influx of financial resources to the firm.

6. THE INCENTIVE COMPATIBILITY OF A MODEL WITH "FREE MOBILITY OF LABOR": 2) THE INCENTIVES TOWARDS X-EFFICIENCY

Let us now turn to consider the issue of X-efficiency.[42] A first incentive towards X-efficiency is provided by the fact that, until a compensatory movement of labor takes place, a firm producing a higher income per worker than elsewhere allows higher earnings for its workers. This applies both to the model of Breit and Lange as well as to Herztka's. However, reasonably, this incentive will be rather weak, for three reasons:

1) It will be only transitory, and all the weaker the shorter the time-span of adjustment. According to Herztka the adjustment time is indeed very short: "Our Statistical Department publishes an unbroken series of exact comparative statistics, from which can at any time be seen where either fresh demand or excess of labour is likely to arise; our supply of labour is controlled by these returns, and that is sufficient - with rare exceptions - to preserve a perfect equilibrium in production" (1891, p. 267). In reality this speed of adjustment does not seem very realistic. It is not very reasonable to assume that workers will be ready to change association, especially taking into account the costs (economic or otherwise) of moving and the fact that the prospects of the different associations must be appraised with respect to their long-run performance. Moreover one should consider

the implications of the seniority premium, which will be discussed later on.

2) It will be related only to the influence that the work effort of a member of the cooperative has on his own earnings through its effect on the overall income of the firm. But this effect for the rank and file member of a large cooperative could be negligeable.[43] Of course sociological mechanisms of emulation and social control could set in, which would be enhanced by the cooperative character of the firm, and would probably be stronger the smaller its size; but the concrete importance of those mechanisms is uncertain.

3) According to the Yugoslav experience, in a cooperative economy it is highly probable that a tendency will set in for cooperative firms in economic difficulties to fall back on the collectivity for financial support, a tendency that political factors may sometimes render irresistible. Moreover the same kind of behavior may render it very difficult to force bankruptcies, as is actually the case in present day Yugoslavia.[44] However one can also think that bankruptcies could be less difficult to force in an economy with FML, and so with no involuntary unemployment.

Herztka tackles the issue of the incentives towards X-efficiency in his 1886 book in rather general terms: "Work organized on the basis of economic inequality of rights maintains quite naturally all the premises of overwhelming competitiveness, because it always enjoys the advantage of the most powerful stimulus to industry - workers' own interest - whereas the exploiting production (under capitalism) is stimulated only through discipline" (1886, p 181). In 1890 he is more precise and articulate, and more acutely aware of the issue: "What interest has the <u>individual</u> producer - that is the <u>individual</u> association - to introduce improvements, since it must seem to be much simpler, less troublesome, and less risky, to allow others to take the initiative and to attach oneself to them when success is certain ? ... What prompts your producers to run risks ... when the profit to be gained thereby must so quickly be shared by everybody ?" (1891, p. 277). Herztka's answer to these questions is that there are the following three types of incentives towards X-efficiency:

1) Identification with the firm and "ésprit de corps": "The ambition of seeing the establishment to which one belongs in the van and not in the rear of all others" (1891, p. 277).

2) Costs of deplacement: the "risk of having to leave these homes", which are "for the most part in the neighbourhood of their respective work-places ... if their undertaking is not kept up to a level with others" (1891, p. 278).

3) Fear of losing the seniority premium: "the elder workmen - that is, those that have been engaged a longer time in an undertaking - enjoy a constantly increasing premium; their work-time has a higher value by several units per cent. than that of the late comers. Hence, notwithstanding the solidarity of interest,[45] the members of each association have to take care their establishment is not excelled" (ibidem).

The first two apply clearly also to Breit and Lange (who however do not concern themselves in any way with the incentive compatibility of their model, as far as X-efficiency considerations are concerned), while the third refers to a feature peculiar to Herztka, which however is in no way in contradiction with the logic of the Breit and Lange model.

Obviously of the three types of incentives the most plausible is the third. Its effectiveness will depend on the concrete profile of the seniority premium on the one hand and on the extent to which individual behavior affects the firm's performance, on the other. According to Herztka, "the premium allowed to the older members ...

which varies in different associations from one to three per cent. for each year ... in cases of long-continued labour ... amounts to a very respectable sum" (1891, p. 99). It may also be the case that the existence of the seniority premium could bring about favorable consequences on incentives of non strictly economic nature (such as identification of oneself with the interest of the firm, as seemingly happens in the Japanese firm, where promotion depends strictly on length of service). Moreover, even if Herztka hints to the contrary (see quote in point 1 of section 4), one could well think of disciplinary measures against inefficient workers and a hierarchical organization of the day-to-day running of the cooperative firm, just as one could likewise think of career prospects for cooperative employees according to their performance, bringing about increases in earnings above the seniority premium. The latter feature is indeed hinted at by Herztka, where he mentions the contractual premium for skilled labor and the special remuneration of superintendents and directors (see quotations in point 3) of section 4).

It should be noted that for an incentive scheme based on seniority such as that formulated above to be practicable, there should be some sort of barriers to entry and time should be necessary for the growth of the firm (because, for instance, of "learning by doing" or because the opportunities for collecting external finance depend on internal accumulation), as indeed is the case in reality. Otherwise there would be an interest for "late-comers" to join together and form new firms instead of being happy with a lower share in the net product of existing ones, so that the "vintage" of a firm would be also that of its crew and older firms would be able to enroll new workers only by offering them the same share as senior ones, unless seniority is related to greater productivity, because, for instance, of increased experience. In the latter case "elder workmen" would anyhow be able to get a greater share than "late comers", even if they were compelled (e. g. by bankruptcy) to change firm.

Supposing that the above conditions apply we shall now show that the seniority scheme really works. Namely that in general there will be an interest, on the part of "elder workmen" at least, in the performance of the firm, even if there is instantaneous adjustment of the structure of employment to a short-run equilibrium situation in which workers have no interest to change firms any more. Assuming an incentive scheme which is a slight generalization of Herztka's scheme of seniority premium (see point 3) above), let the rate of earnings of the workers of seniority of j years, d_j, be determined by the following distributive formula:

$$d_j = \frac{a_j(y - rx)}{\sum a_i z_i}, \qquad (6.1)$$

where y is the value added produced by the firm, a_i is the weight of workers with seniority i in the distribution of net product, $a_{i+1} > a_i$, z_i is the number of workers of seniority i (working, by assumption, a standard working day), n is the seniority of the most senior workers, r is the rate of interest and x is the amount of borrowed capital. The weights a_i are supposed to be determined exogeneously by law. This is indeed the case in Herztka, where the seniority premium is stated in the "Model Statute" of Freeland's associations (1891,p. 96). As above $y = y(z,x)$, where now $z = \sum z_i$, and $y(\cdot)$ is differentiable. As far as the structure of employment is concerned, one must remember that firms are obliged by law to accept everybody who wants to be hired. However any newcomer has the right to have as a distributional weight a_0 only; if a worker moves to another firm he loses his seniority premium in the previous one. Note moreover that the distribution formula is well defined, in the sense that the sum of payments to workers of the different cohorts is equal to the net product of the firm. In equilibrium $d_i > c$ if $z_i \neq 0$ and $z_j = 0$ for all $j < i$, if $d_i \leq c$, where c is the rate of earnings of workers with no seniority prevailing in the economy. The relationship of the rates of pay of workers of different cohorts, j and i, is given

by: $\frac{d_j}{d_i} = \frac{a_j}{a_i}$, as can easily be seen from (5.1). Furthermore, if the rate of earnings of the marginal cohort is c, and i its seniority, the equilibrium pay of the workers of the oldest cohort k is given by:

$$d_k = \frac{a_k}{a_i} c, \qquad (6.2)$$

and therefore is higher the higher is $\frac{a_k}{a_i}$, namely the lower is i.[46]

Now, from (6.1) one may see that, if the membership of the firm were not to change, d_j would be an increasing function of net income. Therefore, the higher the net income, the lower the cohort whose rate of pay exceeds c. Thus, the higher y, the lower the seniority of workers of the "youngest" cohort. Given that the earnings of senior workers are inversely related to the seniority of the "youngest" ones (cf. eq. (6.2)), one may conclude that the firm as a whole will have an interest in the maximization of net product. Everybody would fare best if in any year the firm were to be prosperous enough to ensure the new incoming workers a rate of pay greater or equal to c. The influx of new workers will however put a ceiling to the maximum equilibrium amount of pay senior workers would be able to receive in any given year. It must be noted that the mechanism of the seniority premium outlined above should mitigate the inevitable hostility of senior workers towards compulsory employment of (and income sharing with) "younger" ones. However, no such hostility should exist in the case of incoming workers increasing the earnings of senior ones. In order to see under which conditions this occurs, note that:

$$\frac{\partial d_k}{\partial z_j} = \frac{a_k}{\sum a_i z_i}\left(\frac{\partial y}{\partial z} - d_j\right),$$

Putting $j = 0$ and $d_o = c$, yields:

$$\frac{\partial d_o}{\partial z_o} = \frac{a_o}{\sum a_i z_i}\left(\frac{\partial y}{\partial z} - c\right). \tag{6.3}$$

Now, in equilibrium $\frac{\partial y}{\partial z}$ cannot be greater than c, because otherwise $\frac{\partial d_o}{\partial z_o} > 0$, and workers from other firms, earning there c, by joining the firm, could benefit from earnings higher than c.[47]

On the other hand, if $\frac{\partial y}{\partial z} < c$, earnings of workers of the older cohorts would benefit from <u>reducing</u> employment, but this would not be allowed by the rules of the game. It should be noted that no possibility of "bribing" workers of younger cohorts by giving them a side payment for leaving the firm exists, because every potential newcomer would have to be bribed. In fact, as long as $d_o > c$, enrollment in the firm will increase anyhow, even if $\frac{\partial y}{\partial z} < c$, thus diminishing the earnings of other cohorts, until equality of d_o and c is reestablished. In this case obviously senior workers will lose by the entry of new members and they could try to put some obstacles on the right of entry of newcomers.[48] It should also be noted that the contradiction between the interests of new and older members, who are bound to suffer from the entry of new ones after a certain threshold of membership is reached, is a general feature of other types (i.e. farm and consumers) of cooperatives characterized by the open membership feature (Heflebower, 1980, p. 19). The possible contradiction between the interest of senior workers and latecomers is however eliminated in Meade's inegalitarian cooperatives, where a seniority premium is implicitly established through the provision that the shares of new members are freely bargained. In this way "the workers-partners ... who came in early bearing the initial risks in a concern which turns out to do well will earn more than those workers who come in later when the success of the enterprise is already established" (Meade, 1972, p. 419).

Until now we have assumed a homogeneous labor force, as far as its productive capabilities are concerned. If one takes into consideration the different qualifications of labor, not only seniority, but also specialization, skills and individual capabilities may be associated with higher weights in the distribution formula: this after all is explicitly envisaged by Herztka (and considered formally by Dr)ze in his model, where however no seniority premium applies).

Let us finally consider the seniority premium from the viewpoint of <u>allocative</u> efficiency. The conclusions in this respect must however be rather mixed. On the one hand the seniority premium may be a hindrance to labor mobility; this however applies not only to Freelandia, but to any economic organization in which seniority as such plays a role in differentiating remunerations, from state bureaucracies to the "length of service wage system" of Japanese firms. On the other, the seniority system may also result in a reduction of the costs to firms associated with greater mobility; in particular it may favor the internalization of the benefits of corporate investment in human capital, thus possibly having in this respect beneficial intertemporal allocative consequences. These may accompany also the increased commitment of workers to the long-run prospectives of labor-managed firms, through the introduction of the seniority premium, by its ensuing consequences on the concrete aspects of firm financing, especially related to moral hazard, such as expounded by Schlicht and Weizsäcker (1977). It should be noted that in the latter article a seniority premium "beyond the point which could be explained by corresponding productivity differences" (p. 65) is seen as an alternative mechanism to the maintainance of unemployment for creating mobility costs and furthering workers' commitment to the firms. These considerations may be somehow generalized to apply also to some aspects of labor relations in other types of economic systems. In a context of lifetime employment such as in Japan, a seniority premium would increase the cost of labor to senior firms, which could be thought to be overburdened in principle by seniority payments to older workers. This could however be compensated by the increased commitment of senior workers to the firm, and at the same time by the interest of junior ones to reach a seniority position in the firm where the seniority premium applies. This interest however would also exist in the newer firms, provided they are expected to last as long as older ones. But if expectations are such that the future lifetime of a firm is considered, not unreasonably (owing to relatively higher mortality of younger firms), to be a positive function of its past lifetime, the only way for younger firms to create the same degree of commitment in their workers would be to pay higher wages to their labor force than paid to workers of comparable seniority in older firms, thus losing an otherwise possible advantage on the latter.

7. THE RIGHT TO EMPLOYMENT PRINCIPLE AND THE CAPITALIST ECONOMY

Until now we have considered the institution consisting of the legal right of workers to be hired by the firm of their choice (RTE) as a part of a whole institutional set-up, including collective property, self-management, income sharing. Let us see what could happen if RTE were placed in a capitalist institutional set-up. The first obvious consequence would be that the application of RTE to a capitalist economy would solve, by definition, its involuntary unemployment problem, at the cost however of creating other kinds of problems, in particular with respect to entrepreneurial and other incentives. The idea of applying somehow the RTE principle to capitalism is not so wild as it seems since forms of compulsory hiring for selected categories of people (handicapped, refugees) already exist in a number of countries .[49] Let us therefore examine whether there is a case for extending this kind of discipline. We shall consider only the arguments in favor of the scheme, since the contrary ones can all too easily be worked out by the reader for himself. It seems to me however that on balance there is no motive to dismiss out of hand the scheme as impracticable and utopistic.

A first application of RTE could be in engineering socially desirable employment (such as in particular of young persons without work experience) which might otherwise be blocked because of the impossibility for firms to internalize the external benefits of training.

More generally, compelling firms to employ people on demand under given conditions could indeed be a better system than subsidising employment or providing for unemployment benefits. The burden on the economy of the financing the ensuing public expenditure would be avoided, and this might be greater than that resulting from the adoption of RTE. This could be the case especially if workers employed on demand were to receive reduced wages, comparable, e. g., to unemployment benefits or welfare payments they would be entitled to receive under alternative provisions. The net productive gain (if any) of the increased employment should also be considered, beside the possible increase (if any) in human happiness and personal dignity through working on a job (even at reduced wages), rather than living on welfare. One should also appreciate the favorable consequences on social stability and public order of keeping otherwise idle individuals busy at work. The scheme could be selective in the sense e.g. of being limited to large firms, where personal relationships matter less. Obviously, in order that no firm would be overburdened by this type of compulsory hiring, a maximum ceiling to workers hired on demand could be set for any single firm (as is actually the case in the already existing schemes mentioned above). For instance, the "limit on the numbers to be so engaged could be set according to a scale taking into account the firm's absolute size and relative profitability or the level of income";[50] or, one may add, according to the amount of profits distributed to shareholders, and so not contributing directly, through re-investment, to increased employment opportunities. As is usually the case with the already existing schemes, these limits should be set high enough at any given moment to ensure the employment of everyone concerned. Once rightfully dismissed from a post because of a breach in labor discipline the possibility of employment on demand once again in the same firm could be excluded. Hiring on demand could also be envisaged as temporary: after a given period the firm could either regularly employ workers hired on demand, or dismiss them. This could provide an incentive for compulsorily employed workers to perform efficiently. At the same time it would provide an opportunity for firms to screen a pool of workers to consider in their future hiring into the regular labor force. This opportunity could be enhanced (and the cost of the scheme to firms diminished) by the interest of applicants in joining prospectively expanding firms, increasing their possibilities of being taken on later by the firm as regular employees. It is obvious then that according to the concrete profile of the regulations and the size of the wages for employment on demand, the scheme could have either a left-wing, or a right-wing ideological flavor. In a left-wing optic it could be considered as a kind of social insurance for having a place of work, in addition to having a minimum income. From a right-wing viewpoint it could be considered as a way to avoid paying welfare payments to idle individuals. For everybody it could be considered as a way to overcome externalities which could not be taken into account by private bargaining in the labor market, justifying as such the infringement of the principle of freedom of contracting, and to increase effective employment and the level of national income.

Another unconventional scheme which is claimed to bring about full employment in a capitalist economy (but which is obviously applicable to market economies in general, capitalist or socialist) even in the short run and out of equilibrium, without facing the problems of incentive compatibility which arise in an economy with FML, is Martin Weitzman's share economy. This is because, "a share economy equilibrates at <u>positive</u> excess demand for labour and, by continuity, remains at a level of positive excess demand even after undergoing a small disequilibrating shock".[51] But in reality, contrary to the assumption on which his claim rests, functions are not necessarily smooth, deflationary shocks are not necessarily "small" and the economy never rests on a long-run equilibrium position nor necessarily in its immediate vicinity. Thus Weitzman's theoretical solution to the involuntary unemployment issue of a market economy, though of great interest because of its originality and inventiveness, is at most an imperfect one. Moreover the organizational and informational difficulties (such as lack of knowledge of where employment opportunities are actually available and for whom) leading to possible, at least temporary, involuntary unemployment would remain, as would the hindrances toward the employment of low-productivity workers, owing to the cost of contracting, cost of labor force management, moral hazard, etc. At the same time the the possibility would remain of new employment being blocked in case of depressed expectations, with conjectured revenue curves being inelastic for increased production. With FML involuntary unemployment is ruled out, whatever the amplitude of the shocks, at any moment, in and out of equilibrium. However, both would face the difficulty considered in footnote 48. Moreover, is really involuntary unemployment as such really problem? Or is it rather <u>qualified</u> unemployment? Or destitution? Or the inability for somebody to be in <u>productive</u> employment and to reach an 'acceptable' and predictable minimum income level ?

8. CONCLUSION

The model of the self-managed economy with FML is interesting both because of its historical lineage and because it constitutes a straightforward variant of a well established model: that of self-managed market socialism. Thus it is worth studying at least as an ideal type and as a term of reference. The most interesting aspect of the model is that FML eliminates at the root any possible tendency to create involuntary unemployment and large income differentials between firms by way of employment restriction. It presents, however, obvious incentive problems. Incentives towards X-efficiency can be introduced by providing for different claims to the net product of cooperative firms in relation to seniority. Moreover the possibility of firing under given circumstances implying misbehavior on the part of the worker would obviously be maintained. In this case too the incentive works with respect to senior workers only, the only ones who really stand to lose by being fired. Moreover it remains true that the stimuli provided by the risk of unemployment are lacking. But the risk of unemployment hardly exerts its disciplining impact on worker behavior under any system, capitalist or socialist, where full employment prevails, or, even more so, where the labor market is a sellers market. Thus this is a problem which is tied more to full employment than to FML as such.

Turning to allocative efficiency, we have seen that under standard assumptions a model of a self-managed market economy with FML is compatible with long-run equilibria that satisfy Pareto-optimality. However, the fact that under very peculiar abstract circumstances a model of an economy can provide or not for Pareto optimality can hardly be considered of paramount importance, given that at any rate no such a thing as a Pareto optimum is bound to exist in the real world: the choice between alternative economic systems is certainly not a choice between first and second best. What is more important is some clue as to the concrete dimensions of inefficiencies that a system can plausibly bring about in practice. The trouble with FML is that the degree of inefficiency (both X- and allocative inefficiency, owing to the built-in tendency to the misallocation of labor) could be very substantial indeed. This is true in particular in cases of sizable indivisibilities and limited technological substitutability between factors.[52] In sectors where these conditions prevail the system would probably result in far too much employment. While the seniority premium could in some ways take care of the issue of X-inefficiency, no easy solution to the allocative inefficiency problem is in sight. It must also be considered that the model involves issues of non-strictly economic character, such as the issue of freedom of association, in the sense of freedom of forming coalitions (or cooperatives) which entail the possibility of excluding unwanted would-be members. It seems obvious also that FML, like any limitation in the right to "hire and fire", whatever the economic system, would unfavorably affect entrepreneurial incentives as such.

A final word of caution: Yugoslavs should not be told of the free mobility of labor principle: they might even take it seriously and give it a try too !

NOTES

[1] I have benefited from a number of comments and suggestions in the preparation of the present paper. I would like in particular to thank Will Bartlett, Saul Estrin, Stanislaw Gomulka, Michael Keren, Tadeusz Kowalik, Martin Weitzman, Peter Wiles for their useful remarks. The usual caveats apply. Previous versions of the paper have been presented at the first scientific conference of AISSEC in Turin (October 1984) and at the fourth international conference on the economics of self-mangement in Liège (July 1985).

[2] Marek Breit was a Polish economist, of the same generation of Lange and Kalecki, with both of whom he was closely associated. He was killed by the Nazis during the war. His main contribution is an essay on monetary and investment theory, in an imperfectly competitive framework, published in the Zeitschrift fur Nationalökonomie in 1935. From there Kalecki drew his celebrated "principle of increasing risk". For more detailed information about Breit, see Chilosi, 1982a.

[3] Section 5, "Jak będzie funkcionowała ekonomia socjalistyczna?" (pp. 170-74 in Lange, 1973) of part two, by Breit and Lange, of Gospodarka...(1934). An Italian translation, with a brief introduction, was presented by the present author in 1982 (Chilosi 1982b). It should be noted that actually the Płomienie volume was published anonymously and no mention can be found there of the authors of the (three) different parts. The authors are named, however, in Lange, 1973, p. 547. According to a private communication by T.Kowalik, Lange did not want to republish the model in 1961 because he thought it to be naive and also because at that time he was critical to the idea of market socialism as such.

[4]Lange (1973), p. 173. This same feature is called by Herztka, as we shall see in section 4, "free mobility of labor". In the present paper "right to employment" (shortened as RTE), "right to access", "free mobility of labor" (shortened as FML) are all used synonymously. All of them mean the right of workers to be employed by (or participate in) the firm of their choice; however we shall usually use FML to indicate the more comprehensive application of the principle to the whole of the national economy.

[5]Heflebower, 1980, p. 15; the farmers' cooperatives to which Heflebower refers are the commodity handling or service ones.

[6]In what follows, when we speak of "Illyria" we refer to the simple Ward model, expounded under such a name in his 1958 paper and later elaborated by Vanek (1970), Meade (1972) and in a number of other contributions. The reason why the Illyrian model may bring about high levels of unemployment lies with the lack of short-run forces pushing towards a clearing of the labor market (or, in Vanek's words, quasi-market): new employment is provided in Illyria only if the marginal productivity of prospective new workers exceeds the per capita income of existing employees. To this one may add the possible destabilizing effects of the famous backward bending short-run supply curve of self-managed firms. In general, however, this perverse behavior of supply curves is a possibility, not a necessity, but for the simplest formulation of the model. Pryor (1983, pp. 150-52) enumerates seven different types of circumstances under which "the backward bending supply curve ... would or would not occur". The simplest one is when more than one input are involved in the production process (for a detailed analysis of this case see Pfouts and Rosenfielde, 1985). One should note however that such circumstances rule out the <u>necessity</u>, not the <u>possibility</u> of backward

bending supply curves. On the other hand the introduction of FML rules out such a possibility. A tendency towards sizable differences of earnings in the different firms may be produced by the hypothesis of firm behavior according to which employment is restricted to the level at which incomes per capita are the highest, together with the existence of monopoly power and of barriers to entry. This tendency is compounded if, for whatever motives, the posted rentals on fixed production factors, with which enterprises are differently endowed, are set below their scarcity value. The same occurs if investment funds, with which capital goods are bought, are rationed at lower than equilibrium rates of interest, as has occurred in Yugoslavia, where interest rates have been allowed to be negative in real terms over long periods (see Estrin and Bartlett, 1983, p. 90). Furthermore, in the case of imperfect or rationed capital markets, if firms with higher per capita earnings also have a higher re-investment ratio, this widens the differences in capital-labor ratios and so enhances differences in productivities and in earnings in time. This seems in fact to have taken place in Yugoslavia, where "differential reinvestment propensities have widened the technological gap between high- and low- wage industries, thereby increasing interindustry labor productivity differentials over time. This increase in interindustry productivity differentials is the principal cause of increasing interindustry wage differentials over time" (Wachtel, 1972, p. 558). With FML firms cannot restrict employment, and the system produces equality of earnings all over the economy. In the case of the seniority premium envisaged in sect. 6 below, however, FML produces automatic equalization of earnings among firms only with respect to the "youngest" vintage of the labor force, even if a tendency towards equalization of incomes in time through the accession of workers to the different firms will anyhow set in.

An extensive empirical analysis by Estrin into the realities of Yugoslav self-management has produced results that are consistent with the previously assumed two tendencies of the theoretical standard Illyrian model (Estrin, 1983, especially ch. 5; see also Estrin and Bartlett, 1983, and the literature quoted by them, as well as Estrin and Svejnar, 1985, where the competing explanation of interfirm and intersectoral earnings inequalities in the Yugoslav economy by the "labor" and "capital school" are empirically tested). As is well known, however, free entry in the standard perfectly competitive Illyrian model produces in long-run equilibrium both full employment and equalization of per capita earnings across firms (see, e. g. Meade, 1972, p. 397). It goes without saying that Illyrian-type theorizing is not the only one purporting to highlight the fundamental features of Yugoslav-type self-management. For other types of theorizing on the labor-managed firm, see Pryor, 1983, in particular pp. 143-147, and the literature which is referred to by him. For a denial of the relevance of Illyrian theory in explaining the real behavior of Yugoslav firms, based on his personal experience of Yugoslav self-management, see Horvat, 1982, p. 342.

[7]See Ferrero, 1983. A synthetic account of the main features of Herztka's utopia could otherwise be found in a footnote of Ward (1967), p. 226. See also Ward (1980). To Ward refers Jan Vanek, when, in his 1972 book, he briefly examines the possible (favorable) consequences of giving to "all unemployed ... the right to join a firm of their own choosing" (Jan Vanek, 1972, p. 278). Jaroslav Vanek too hints briefly at "the introduction of a right-to-job (or right-to-employment) as a new basic human right", with respect to his model of "autonomous labor-managed firms" in ch. 10 of his 1977 book (p. 208).

It is worth noting that Herztka's Freeland was an enormous success, being reissued in countless editions and translated into various languages. For a while Freeland associations purporting to put the scheme into practice arose in a number of countries, as well as an International Freeland Society. There was even an aborted attempt to a Freeland settlement in Kenya; William Lane's unsuccessful Australian settlement in Paraguay was also inspired by Herztka. For more information on Herztka, Herztka's scheme, and the attempts to put it into practice, see in particular Cole (1956), appendix to ch. XII.

[8]Dühring (1876), pp. 322. Eugen Dühring's system of "economic communes" is pointed to as the source of Herztka's Freeland model by Friedlaender (1901, pp. 35-37) and Albrecht (1927, pp. 245-47). The latter accuses Herztka of plagiarism, not having acknowledged his source. This indictment seems not entirely justified, since Herztka's proposal is more complex and articulated than Duhring's. It is interesting to note that the model of Wirtschaftscommunen was dropped completely from the third edition of Duhring's Cursus (1892), as the author "on the basis of growing self criticism had long since given it up as a logically unsound scheme" (Dühring, 1900, p. 639).

[9]P. Vinogradoff, Villainage in England, Oxford, Clarendon press, 1892, p. 297; quoted in Cohen and Weitzman, 1975, p. 297.

[10]Cfr. Oppenheimer (1890).

[11] Daniel, 1976. Oppenheimer mentions his liberaler Sozialismus as "having been developed by elaborating the theories of Duhring and Herztka" (Oppenheimer, 1928, p. 306). Herztka's book was Known to Herzl, who quotes it, at the beginning of his Judenstaat, in order to "point out the difference between (his) construction with Freeland's

utopia", "a very complicated mechanism ... which it is by no means proved can be put into motion" (Herzl, 1896, p. 4). For more information about Oppenheimer, see Schumpeter, 1954 and the voice "Oppenheimer" in International Biographical Dictionary of Central-European Emigrès 1933-1945.

[12]Actually Herztka (1886) speaks more comprehensively of "the social state" (der soziale Staat).

[13]Landauer, 1959, II, p. 1643. Heiman's view in turn appears to have been inspired by the 1919 Wissel and Mollendorff proposal for the organization of industries in large, partly self-managed, cartels. Wissel even succeeded in bringing about a limited implementation of his proposal, in his capacity as minister of economics of the Weimar Republic, before being ousted by his party opponents (see Landauer, 1959, I, pp. 843-845; II, p. 1643).

[14]It could be found, e. g., in Bernstein: "As long as associations included only a fragment of those belonging to a given industrial branch, they were submitted to the coercitive laws of competition ... A domination of production by the producers themselves is possible only as far as competition between them is suppressed, and this can be reached only through monopoly" (quoted by Oppenheimer, 1922, p. 158), and in Oppenheimer: "the production cooperative of the future" not only "must be open like a consumer association" but must also "have the monopoly of a market with sufficient purchasing power" (1922, pp. 164-65; see also p. 158). Compare also Lassalle (1863), p. 4: "The principle of the free individual association of workers can produce a betterment of the condition of the working class" (namely can break the "iron law of wages"), "only through its application and

extension to large industrial production"(emphasis in the original suppressed, italics added).

[15]Cole, 1921, p. 99. The influence of the idea of Guild Socialism in Breit and Lange's proposal can also be seen also in the fact that "first of all trade unions and, as far as they exist, workers' cooperatives must be called to organize the different national trusts" (Lange, 1973, p. 167).

[16]Lange, 1973, pp. 174-75. It is worth noting that the fact that "in any actual socialist community there must be a large number of means of production privately owned (e.g. by peasants, artisans, and small-scale entrepreneurs)" is re-asserted in 1936 (Lange, 1936, p. 61).

[17]See Lange, 1935, p. 191: "in providing a scientific basis for the current administration of the capitalist economy 'bourgeois' economics has developed a theory of equilibrium which can also serve as a basis for the current administration of a socialist economy ... In so far, modern economic theory ... has a universal significance." Both this article and his 1936 paper on the Economics of Socialism were written during his stay in the USA. He had left Poland in January 1934 (Kowalik, 1970, p. 976), and the change in the cultural environment could have something to do with the evolution of his ideas. In particular, according to Kowalik, of influence was his attendance, at Harvard, of Schumpeter's lectures. It should be noted however that he had already published, the previous year, a paper on general equilibrium in the Zeitschrift fur Nationalökonomie (Lange, 1933); thus his interest in general equilibrium as such was earlier.

[18]"In the socialist system as described we have a genuine market (in the institutional sense of the word) for consumers' goods and for the

services of labour. But there is no market for capital goods and productive resources outside of labour" (Lange, 1936, pp. 60-61). Later, in a letter to Hayek, Lange asserts in 1940 that his aim in '36 was to show how prices could be determined even without a market in an institutional sense, but that the solution he favored in practice contemplated price determination by the market whenever there were many agents. Only in case of monopoly or oligopoly were prices to be set by public authorities (Lange, 1973, pp. 567-68).

[19]The latter remark has been suggested to me by Tadeusz Kowalik.

[20]Hence Horvat's assertion that "Herztka foreshadowed so-called market socialism, which appeared in the next century" (Horvat, 1982, p. 122).

[21]In some points the emphasis in the original text has been suppressed.

[22]For the concept of associationist socialism cfr. the definition of Gide and Rist (1909, p. 266): "Nous appelons <u>socialistes associationistes</u> ceux qui ont cru que l' association libre peut suffire à donner la solution de toutes les questions sociales, pourvu qu' elle soit organizée d' après un plan preconçu", and also Schumpeter, 1954, pp. 454 f.).

[23]Thus in this respect Herztka can be linked to the current of land reformers, starting from Thomas Paine and Thomas Spence, and including Weitling, Henry George, Loria, Walras, Duhring up to Oppenheimer himself (see Landauer, 1959). For a historical sketch of the idea of monopoly of land, which can be traced back to Adam Smith at least, cfr. Schumpeter, 1954, pp. 264, 854.

[24]This Smithian belief in the regulatory power of the market and of self-interest can be partly found also in Duhring (according to whom "the consequences of the Manchester doctrine of economic freedom and overall equality of competition can be found fulfilled for the first time in (his) socialitarian economic doctrine"; see Dühring, 1876, p. 514). Hence the identification by Oppenheimer of the ideas of Dühring, Herztka and himself as <u>liberaler Sozialismus</u>. It may be added as a curiosity that Oppenheimer was the teacher of Erhard, and has been considered in some ways as an inspirer,(or a "prophet"; see Preiser, 1964, p. 21) of the West German "social market economy".

[25]This feature, of capital lent to associations under favorable conditions by a public body, plays an important role in previous proposals (such as those by Blanc and Lassalle) for fostering the development of producer associations.

[26]This is not the only contact point between Keynes and Herztka, who was an underconsumptionist, and dedicated a whole chapter of his 1886 book to the issue of "Overproduction". See also, e. g., the following excerpts from <u>Freeland</u>'s preface: "The industrial activity of the present day is a ceaseless confused struggle with the various symptoms of the dreadful evil known as 'overproduction'" (p. vii). "We do not produce that wealth which our present capacity makes it possible for us to produce, but only so much as we have use for; and this use depends, not upon our capacity of producing, but upon our capacity of consuming" (p. xviii). Some of Herztka's pages are closely reminiscent of Keynes' rather extravagant passages, where he reinterprets according to his underconsumptionist vision the economic history of mankind (the Egyptian pyramids included; see Herztka, 1891, pp. 358-59). Obviously Herztka was part of that underconsumptionist heretical undercurrent of the history of economic

thought to which Keynes refers in chapter 23 of the General Theory. The same applies to Dühring, who was also an underconsumptionist (cfr. Dühring, 1876, pp. 227-231).

[27]For a concise analysis of the possible ambivalent attitudes of cooperative members towards investment, see Dubravcic, 1971, p. 305.

[28]We use the term "entrepreneurial" in the same sense as Meade (1972), to indicate in general the profit maximizing firm.

[29]A similar point can be found in Oppenheimer: "While equalizing the revenue of 'worker units', the free mobility of labor regulates in the most complete way, free of crises, the relationship of supply to demand" (1922, p. 517).

[30]This however runs against the provision by Herztka of "no business secrets whatever" (1891, p. 104).

[31]This was already noted by Adolphe Landry in 1908, when, in his Manuel d' Economique, he examines Herztka's proposal; see Ferrero, 1984, p. 239. Tendencies towards producing short-run inefficiencies in the allocation of labor characterize the cooperative economy in general and Illyria in particular. As Pryor (1983, p. 156) aptly points out, "In the short-run in an economy composed exclusively of production cooperatives, there is no assurance that the marginal value productivity of workers in different enterprises will be equal. Therefore, we conclude that such an economy will experience inefficiencies that the profit maximizing economy does not".

[32]Cfr. Frisch (1965), ch. 8. This is the law of production that generates the usual U- shaped cost curve.

[33]Cfr., e.g., Meade, 1972, pp. 396-99. Vanek, 1970, ch. 2. It should be considered that in the model "in the short run the cost of entry is infinite", while "entry is costless in the long run" (Jensen and Meckling, 1979, p. 478).

[34]For a simple theoretical analysis of the short-run behavior of producer cooperatives with open membership, as opposed to the behavior of cooperatives where the membership is closed, see Heflebower (1980, pp. 17-20). An analysis of open producers' cooperatives as opposed to closed ones, in the case of physicians' cooperatives, can be found in Pauly and Redisch, 1973.

[35]For a similar statement see Cugno (1983), where a proof is attempted, in the very particular case of a Cobb-Douglas production function and free capital.

[36]See Estrin, 1983, pp. 38-39; Vanek, 1970, pp. 30-31, 40. This result corresponds to the statement by Pauly and Redisch (1973, p. 94) that a system of "not-for-Profit Hospital or physician cooperatives" produces the same "long-run industry equilibrium" in the case of closed-staff as well as of open-staff (where RTE applies), and in the case of discriminatory hiring (which corresponds to the inegalitarian cooperative case).

[37]The two propositions are proved in Drèze (1974) under assumptions which are standard in general competitive models. The assumptions needed for proving the first proposition are minimal. The second, however, (like the second theorem of Welfare Economics of which it is an extension) requires the rather strong assumption of convexity of production sets.

[38]This can be explained analytically as follows: Suppose that there are one or more monopolistic firms in a capitalist environment, experiencing extra-profits because of the control of the market. At the same time, in sectors where barriers to entry do not exist competitive firms' current surpluses will be just enough to pay for renting fixed assets. Suppose wages to be the same everywhere. Shifting to a FML environment, in which allocation of the means of production continues to be through a competitive market, the monopolistic firms will experience an influx of workers willing to share the previous extra-profits, now becoming extra-wages, that the competitive firms will be unable to pay. The influx will cease once monopolistic extra-profits (or -wages) disappear, and the monopolistic FML firms will have greater employment, and greater production, than their capitalistic counterpart. It is worth noting, however, that, if the elasticity of demand facing the FML monopolist when its labor force is fully employed in production is less than one, its revenue improves if it reduces production. Therefore it may leave part of its labor force idle, or anyhow allow some slack, in order to maximize per capita earnings, creating in such a way some hidden unemployment.

[39]The conclusion being that "in any given monopolistic conditions the cooperative will always be more restrictive than the corresponding entrepreneurial firm" (Meade, 1972, p. 405). See also Vanek, 1970, ch. 6.

[40]See what has been said previously, in footnote 6, on this subject.

[41]See Nuti (1983).

[42]The latter "is concerned with the type of inefficiency resulting from missing opportunities to utilize existing resources within

productive organizations" and "it is concerned with all types of non-allocative efficiency" that result "from the complete or partial lack of motivation to use economic opportunities as effectively as they might be used". (Leibenstein, 1981, p. 98). It should be noted that the distinction of the issues of X- and allocative efficiency, even if useful, is somewhat artificial, if only for the obvious reason that an issue of X-efficiency is also the extent of the interest on the part of management in the success of the firm, and so, among others, in realizing the input mix which brings about, under suitable circumstances, allocative efficiency.

[43]For considerations of this type see Meade, 1972, p. 395. What is implied in the text is that the effort supplied cannot really be monitored and measured in an objective way so as to be included in the calculation of the amount of work supplied altogether by individual members, and to affect in a corresponding way their shares of the net income of the cooperative. For an interesting consideration of the contrary case, see however, Sen (1966).

[44]Cfr. Lydall, 1984, pp. 219-20; Jones and Svejnar, 1982, pp. 88, 90-91; Knight, 1985, pp. 105, 114, 115.

[45]This "solidarity of interest" lies in the fact that everybody will have an interest in the good performance of any production unit; because of FML improvements in the performance of any single firm can potentially benefit anybody. The same cannot be said of Illyria, where, in principle, the "common interest" is confined to one's own firm. It is obvious however that even in Freelandia the "solidarity of interest" finds a limit in the seniority premium. Moreover in both cases the free rider problem applies.

[46]In reality, the rate of pay of the oldest cohort, if i>0, may be slightly higher, because the number of senior workers of any cohort can only diminish (if they change firm), but not increase, in order to bring down the rate of pay of the marginal cohort exactly to c. It could also be lower, if "marginal" workers are unwilling, leaving the firm, to forfeit the potentialities of future higher pay provided by their seniority, should the performance of the firm improve in the future. All this however does not change the picture in a really important way.

[47]In fact, as it turns out from (3), entry of a new worker increases above c the earnings of the workers with no seniority in the firm, previously earning c, and so also of the new entrants.

[48]It can be remarked, in passing, that the same issue is open in Weitzman's share economy (Weitzman, 1984, pp. 108 f.). This is probably the true Achilles' heel of this unconventional proposal for getting rid of involuntary unemployment. After all, if unemployed workers were ready to accept decreases in their wages for the sake of achieving full employment, there wouldn't be much scope for social engineering of the type advocated by Weitzman!

[49]On another level an interesting example of an allocative mechanism based on the adoption of the principle of FML and the sharing system of remuneration <u>inside an organization</u> is provided by the past organization of the legal service of the Italian INPS (the state social security organization). Lawyers belonging to the service were free in the past to choose the town and the office where they worked. There was a tendency to migrate, because of a sharing system of remuneration, to places where the greatest amount of per capita work in form of law suits was available, thus providing for an

efficient distribution of available manpower. At the same time there was also a tendency for lawyers belonging to the south of Italy (where the majority of lawyers originate) to migrate to the south, and because of relative overcrowding of the offices in southern towns, to receive lower earnings than in the north. Following lobbying by southern lawyers inside INPS the sharing and free mobility system has been suppressed, so that currently southern lawyers have the same remuneration, but a lower work burden than their colleagues in the north. (I owe this piece of information to Carlo Casarosa.)

[50]Jan Vanek, 1972, p. 278. Vanek mentions that "a scheme of this kind, so far limited to the highly trained newcomers to the work force, is being already in operation" in Yugoslavia.

[51]Weitzman, 1983, p. 778. It is worth noting that the difference between Weitzman's sharing system and the sharing system of the Illyrian firm lies in the fact that in the latter the maximand is a ratio (<u>per capita</u> income) while in the former it is a global quantity (profit). The same applies, according to Zafiris (1983), to the inegalitarian cooperative, which does not show the same employment restrictive tendencies of the Illyrian firm. It is also interesting to note that in the Illyrian system, as compared to the inegalitarian cooperative one, unemployment may be seen to derive from the blocking by law of possible mutually profitable employment contracts, by barring inegalitarian sharing arrangements. On the other hand in Weitzman's sharing economy full employment is brought about by artificially checking the natural tendency (highlighted by implicit wage theorists) of wage contracts to be settled in fixed (money or real) terms. It should finally be noted that Weitzman's scheme has

been conceived for application to a capitalist economy, but it is applicable as such to the entrepreneurial economy in general.

[52]The fact that "a technology in which labor was highly substitutable in the short run" is a prerequisite for Herztka's "system to work" is stressed by Ward (1967, p. 225).

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