E U I W O R K I N G P A P E R No. 85/162

OPTIMAL EMPLOYMENT AND INVESTMENT POLICIES IN SELF-FINANCED PRODUCER COOPERATIVES

by

WILL BARTLETT

BADIA FIESOLANA, SAN DOMENICO DI FIESOLE

© The Author(s). European University Institute.
Acknowledgements

I am grateful to Pierre Dehez, Alexis Jacquemin and Mario Nuti for helpful comments at various stages in the preparation of this paper, although any errors are my own responsibility. Earlier drafts of the paper were presented at the Workshop on Labour-Managed Firms, European University Institute, April 1984; the conference of the Development Studies Association, Bradford, September 1984 and the International Conference on Economic Policies and Control Theory, Venice, February 1985. Financial assistance for the research was provided by the Project on Workers' Participation and Enterprise Performance in Western Europe at the European University Institute.
Abstract

That a producer cooperative sector may form part of an employment-creating programme of industrial restructuring and reform in Western Europe has been given increasing attention in recent years. However, existing firms of this type often find difficulty in raising outside finance for expansion. In this paper it is shown that the long-run prospects for employment creation within such firms, when they are entirely dependent upon internal sources of accumulation, are rather bleak, even though they may, upon start-up, provide a low cost-per-workplace and thus generate relatively much employment per unit of initial capital. The analysis is thus consistent with the view that an active policy of new-firm creation, and the development of specialized outside credit institutions would be important measures of policy to enhance the long-run job-creation effects of a cooperative sector.
OPTIMAL EMPLOYMENT AND INVESTMENT POLICIES
IN SELF-FINANCED PRODUCER COOPERATIVES

As unemployment in Western Europe follows its seemingly irresistible upward course, increasing attention is being given to the countercyclical growth in the numbers of producer cooperatives. Either in a defensive or innovative mode, such organizations are coming to be seen as at least a part of a possible solution to the withering base of productive employment opportunities in conventional capitalist enterprises. Skills and enthusiasms which would otherwise be dissipated in fruitless job-search on the dole may be preserved and enhanced in organizations which reverse the orthodox production relationship between capital and hired labour.

This paper addresses the issue of the employment and growth behaviour of producer cooperatives by analyzing a dynamic model of a "labour-managed firm". Analysis of such firms originated in the classic works of Ward (1958) and Vanek (1970). These and subsequent developments in the theory have been succinctly set out in texts by Ireland and Law (1982) and Stephen (1984). Most analyses have focused the discussion on the conditions of static equilibrium, either of a fixed membership cooperative with hours variable (Sen, 1966; Berman, 1977) or a variable membership cooperative with fixed hours as in Ward's original analysis. Furubotn (1971) was the first to extend the static model of the labour-managed firm by requiring a fixed membership cooperative to maximize the discounted utility of intertempo-
eral consumption. In a later article (Furubotn, 1976) the initial membership sets an exogenously determined upper limit to the labour force over the time horizon so as to retain decision-making control. The principal result is to show that some self-financed investment will be undertaken by the firm, but the actual path of accumulation is not analyzed. Atkinson (1973), Sapir (1980) and Bonin (1983) analyze labour-managed firms which finance expansion from external sources. Atkinson presents a model of 'managerial' labour-management in which the firm can grow faster than the expansion of demand in the industry via expenditure on sales promotion. Sapir presents a model of a "tenured" labour-managed firm in which there is a central group of skilled workers who hire unskilled employees but may admit them to membership after costly training. Bonin analyzes a model which depends upon costly adjustment of both membership and capital with the result that the sensitivity of optimal policies to parameter shifts depends upon the direction of adjustment, i.e. whether the firm is expanding or contracting.

However, the analysis of the labour-managed firm under external financing is not very appropriate in the case of most Western European producer cooperatives since these typically face extremely imperfect capital markets. It is therefore more plausible to model such firms under a regime of self-financed expansion. Moreover where external financing is available, a matching amount of internal finance is often stipulated. This is understandable, since, as Schlicht and von Weizsäcker (1977) have ob-
served, the problem of moral hazard which exists when creditors have no control over the disposition of funds will drive lenders to seek to obtain some evidence of commitment from the borrowing cooperative. The assumption of self-financing, in addition, highlights the essence of the problem of growth for the labour-managed firm in that future gains in consumption are derived at the expense of reductions in current consumption, and also, that membership expansion is attractive to support any capital accumulation programme, but simultaneously unattractive since its benefits have to be shared over a wider workforce.

In the next section, therefore, an analysis of an internally financed labour-managed firm is presented which follows from and develops the model of Furubotn (1971). The major difference is that the assumption of an exogenously fixed labour force is dropped. Rather, the level of optimal employment is derived endogenously as a solution to the optimization problem.  

Consider a labour-managed firm maximizing the discounted utility of consumption per head of the workforce. Thus the actual size of the workforce is not in itself a direct consideration in the utility function. The cooperative is in a competitive market environment for its output, facing a product price \( p = 1 \). Output at time \( t \), \( Q(t) \), is produced by means of capital \( K(t) \) and labour \( L(t) \), according to the production function \( Q(t) = F(K(t), L(t)) \), which is characterized by increasing returns to scale at low levels of output and decreasing returns to scale at
higher levels of output, so that the scale elasticity $e(K,L)$, equal to the sum of the output elasticities, varies smoothly from higher to lower values passing through the unit value at a unique locus in K-L space.

It is of particular interest to consider the case where, for given L, the function is convex for low values of K and concave at higher values. Thus we assume $F_K, F_L \geq 0; F_{LK} = F_{KL} \geq 0; F_{LL} \leq 0$ and $F_{KK} < 0$. Somewhat similar versions of a convex-concave production function have received increasing attention recently in studies of dynamic optimization under central planning (Skiba, 1978) and under monopolistic capitalism (Dechert, 1983, 1984). In the present case we consider a labour-managed firm with its distinctive maximand, which saves and invests a proportion $s(t)$ of its net revenue, $y(t)$, where $y(t) = \frac{Q(t) - rK(t)}{L(t)}$ where in turn $r$ is a fixed unit charge on capital, which may be taken to represent a capital tax, or a minimum return which the cooperative wished to make on its capital stock, reflecting the interest rate on outside lending opportunities. It is further assumed that physical capital depreciates at a constant proportional rate $\delta$, and that the cooperative discounts future income at a rate of time preference $\rho$. Thus the maximization problem for an infinite horizon is:

$$\max \int_0^\infty u\{(1 - s(t))y(t)\}e^{-\rho t}dt$$

subject to

$$K(t) = s(t)\cdot y(t)\cdot L(t) - \delta K(t)$$

$$K(0) = K_0$$

$$0 \leq s(t) \leq 1;\ L(t) \geq 0$$
(From this point on the time dependence notation "x(t)" will be replaced by the notation "x" where time dependence is treated implicitly.)

The utility function is assumed to have the following properties:

\[ u'(c) > 0 ; \quad u''(c) < 0 ; \quad \lim_{c \to 0} u'(c) = \infty \]  

In this problem K is the state variable and the control variables are s and L. The current value Hamiltonian is given by:

\[ H = u\{(1 - s) \cdot y(K,L)} + m\{s \cdot y(K,L) \cdot L - \delta \cdot K\} \]  

where \( m = m(t) \) is the current value multiplier associated with ii), and is equal to \( e^{-\rho t} \cdot \psi(t) \) where \( \psi(t) \) is the ordinary multiplier.

The optimality conditions are as follows:

\[ \frac{\partial H}{\partial s} = u'(c) \cdot (-y) + m \cdot y \cdot L \geq 0 \quad \text{as} \quad 0 < s < 1 \]  

\[ s = 1 \]  

The case where \( s = 1 \) is ruled out by assumption v). In the following analysis we consider the case where vii) holds with equality and \( s > 0 \) throughout.

\[ \frac{\partial H}{\partial L} = u'(c) \cdot (1 - s) y \bigg[ Y_L + \frac{m \cdot s \cdot \bar{Y}_L}{\bar{Y}} \bigg] < 0 \quad \text{as} \quad L \geq 0 \]  

and again we consider only the case where \( L > 0 \) throughout, so viii) holds with equality.

\[ \dot{m} = \rho m - H_K = (\rho + \delta) m - u'(c) \cdot (1 - s) \cdot y_K - m \cdot s \cdot y_L \cdot L \]  

and

\[ \lim_{t \to \infty} e^{-\rho t} \cdot \psi(t) \cdot K(t) = 0 \]
is the transversality condition. \(^{11}\)

From vii) it can be seen that, along the optimal path:

\[ m = \frac{u'(c)}{L} \] \(\text{xii})

Thus the shadow valuation of investment, \(m\), is inversely related to consumption per head (for given \(L\)), as one might expect. However, for given levels of consumption per head, the more workers among whom the benefits of an additional unit of investment must be spread, the lower the shadow valuation of that unit.

Now, from viii) and xi) we obtain:

\[(1 - s)y_L + s(y_L + y/L) = 0 \] \(\text{xii})

Thus:

\[ F_L = (1 - s)y \] \(\text{xiii})

Equation xiii) is quite striking. It shows that for any given momentary level of savings (which varies along the optimal path) the optimal employment level is found by equating the marginal product of labour with the level of consumption per head. This could be considered to be a sort of "golden rule" for cooperative investment in which, however, employment itself is an endogenous choice variable, rather than being exogenously determined by the "natural growth rate" as in the standard one-sector neoclassical growth model. The situation at any instant is shown in the following diagram.
The intuitive explanation of the rule is that employment of an additional worker adds to the total saving of the firm by an amount \( s \cdot F_L \). However it changes the utility of the average consumption level by \( -u_L = -u' \cdot c_L = -u' \cdot (1 - s) \cdot y_L \). The value of the extra investment measured in units of consumption is \( m \cdot s \cdot F_L = u' \cdot s \cdot F_L / L \). When these two effects are equated, the rule shown in xiii) emerges.

The optimal employment level is found at \( L^* \) where \( F_L \) and \( (1 - s)y \) intersect at \( C \). Should the level of savings fall to zero optimal employment would fall to \( L \). At this point the marginal product function intersects the average revenue per head at its maximum at \( A \). This is precisely the static maximization solution originally presented by Ward (1958). Thus Ward's solution emerges as a special case of the present model, where the shadow valuation of investment, \( m \), is zero. At
the other extreme, if the firm were entirely "growth-minded" so that the maximization was applied only to the accumulation term in \( v_i \), then for such a "megalomaniac" firm (to use Vanek's phrase) the equilibrium would be found at \( D \) with an optimal employment of \( \bar{L} \). These are limiting values of employment, and \( L^* \) represents an equilibrium of these two opposing tendencies, which is established along the optimal path. Clearly, when intertemporal considerations are taken into account the worker-managed firm will employ more labour for a given capital stock than previous analysis, based upon static optimization, has allowed for. This is important for the comparison of economic systems, since a capitalist firm with similar technological possibilities and facing similar market conditions and a wage rate \( \bar{w} \), will produce at a point such as \( B \) (where it is earning positive profits). The standard comparison is then between points \( A \) and \( B \) showing the labour-managed firm to be employment restrictive relative to its capitalist counterpart (Stephen, 1984). However in an intertemporal model under self-financing, the comparison is between points \( B \) and \( C \). An illustrative example is shown in Figure 1 where it is the capitalist firm which is relatively employment restrictive.\(^{12}\) In general however, the comparison between points \( B \) and \( C \) may go either way, but the important point is that the supposed superiority of the capitalist firm in this respect no longer applies.

Continuing with the analysis, from ii) and ix) and using conditions xi) and xiii) we can obtain the equations of motion of the system as:

\[
\dot{m} = -m \sqrt{F_K(K,L)} - (\rho + \delta + r) \bar{w} \quad \text{xiv)
\]
The two solutions are \( F_{K_i}(K, L) = \rho + \delta + r, \ i = 1,2 \). Substitution into (xv) gives the two solutions for \( \dot{K} = 0 \), namely:

\[
\varepsilon(K^*_i, L^*_i) = 1 + \rho v_i(K^*_i, L^*_i)
\]

where \( v \) is the capital-output ratio. Thus the two equilibria are in the increasing returns to scale region of the production function.\(^{13}\)

Now, xi) and xiii) together imply that along an optimal path the following relation holds:
mL = u'\over F_L(K,L)

which implicitly gives L as a function of K and m. Therefore we may write

L = \phi(K,m)

(along an optimal path), and it can be easily shown (see Appendix) that

\phi_m < 0, \phi_K < 0

whenever the elasticity of marginal utility is not unreasonably high. The equations of motion of the state and costate variables (K and m) can now be written as a system of autonomous differential equations:

\dot{m} = -m\over F_K(K,\phi(K,m)) - (\rho + \delta + r) = \psi_1(K,m)

\dot{K} = F(K,\phi(K,m)) - (r + \delta)K - \phi(K,m)F_L(K,\phi(K,m)) = \psi_2(K,m)

and the associated phase diagram can be derived from the following information:

\frac{dm}{dK}\bigg|_{\dot{m}=0} = \frac{(F_{KK} + F_{KL} \phi_K)}{F_{KL} \phi_m} < 0 \text{ as } F_{KK} + F_{KL} \phi_K < 0 \quad \text{xxii)}

\frac{dm}{dK}\bigg|_{\dot{K}=0} = \frac{(F_K - (r + \delta) - LF_{LK} - LF_{LL} \phi_K)}{-LF_{LL} \phi_m} > 0 \text{ as } F_K - (r + \delta) > LF_{LK} + LF_{LL} \phi_K \quad \text{xxiii)}

Equation xxii) will be positive for small K when \( F_{KK} \) is large enough to be the dominant term. At larger values of K, the expression will have a negative sign. Expression xxiii) is sign indeterminate.

We can also calculate
\[
\frac{\partial \dot{m}}{\partial m} = -mF_{KL} + \phi_m - \frac{F_{KL}}{(\rho + \delta + 1)} < 0 \quad \text{xxiv)}
\]
which is positive near \(K^*, L^*\) when \(\phi_\gamma = 0\).

\[
\frac{\partial \dot{K}}{\partial K} = F_K - (r + \delta) - LF_{LK} - LF_{LL} \phi_K > 0 \quad \text{xxv)}
\]
which has the same sign as xxiii). At \((K^*, L^*)\) both xxv) and xxiii) have sign given by \(\rho \geq LF_{LK} + LF_{LL} \phi_K\), and will therefore be negative for "small" \(\rho\), positive for "large" \(\rho\). These sign changes affect the dynamics symmetrically and so do not alter the quantitative nature of the solution paths. (We could say the system was "structurally stable").

The phase diagram, for the case \(\rho\) "small", then looks as follows.

![Phase Diagram](image-url)
For any initial capital endowment $K_o$, the firm chooses an employment level and savings rate so as to place itself on the optimal path. If $K_o < K_1^*$, then a gradual process of capital accumulation takes place until the optimal capital stock is reached. However, since $\phi_K < 0$, the labour force would be gradually reduced along such an optimal path. The intuitive reason is as follows. When the capital stock is low, in order to achieve desired savings, for any given savings rate relatively much labour must be employed (i.e. relative to the static case—see Fig. 1). However, as the capital stock rises relatively less labour is needed to produce output from which savings may be made. Moreover, as the equilibrium is approached, the savings rate diminishes, so a movement "up" the labour marginal product curve takes place, bringing about a further reduction in labour input. At equilibrium, the savings rate is just sufficient to cover depreciation and the firm produces at a level in $y-L$ space formally equivalent to that described by the static model. Notice also that since $F_{KL} > 0$, the marginal product of capital curve shifts down with the reduction in labour input. Thus the target capital stock ($K_1^*$) recedes as it is approached. If this effect were very strong an equilibrium might not be attained. This explains the presence of the term $F_{KL}$ in equations xxii-xxiv). (See also equation A8 in the Appendix.) Similarly if $\rho$ were "very high" (so that $\rho + \delta + r$ were above the maximum marginal capital product) no equilibrium will be attained, reflecting the implied unwillingness of workers to forego present consumption. Notice also that along an optimal path, from $K_o < K_1^*$, the shadow valuation of in-
investment is increasing (since L is decreasing). This is analogous to the "reverse flexible accelerator" effect described by Dechert (1983) for the case of a monopolistic capitalist firm facing increasing returns to scale.

It is precisely because of the presence of increasing returns to scale that cooperative workers (in this model) are willing to invest at all, in order to capture the gains of increasing returns, relative to the opportunity cost of capital \((r + \delta + \rho)\). It seems paradoxical that an equilibrium should be found where the marginal productivity of capital is still rising, but the explanation is that in the labour-managed firm, there is no interest in maximizing the return to capital as such. As long as the marginal unit of capital is covering its opportunity cost, that is all that is required. This point may be made clearer by considering the case where \(K_0 > K_1^*\). In this case there is an incentive to make net disinvestment by not meeting the full depreciation cost of existing assets. Incomes may be maximized by moving at least close to the maximum of the average revenue function and augmenting current income by allowing capital to depreciate. However, as capital is run down, the average and marginal labour productivity is reduced shifting down the maximum of the average productivity curve. This forces an increase in employment to maintain income per worker as the capital stock diminishes. As long as capital marginal productivity is above its opportunity cost it pays to keep running down capital and consuming the "producer surplus". Eventually the process terminates at \(K_1^*\), at which point the savings rate has risen sufficiently to just cover depreciation of the remaining assets.¹⁶
Conclusion

A model of a self-financed producer cooperative firm has been analyzed in a dynamic framework where the level of employment and the savings rate are freely chosen. It has been shown that, where the initial capital endowment is low relative to its equilibrium level, the initial level of employment will exceed that predicted by previous analyses of such firms conducted, as they have mostly been, in a static framework. Initial employment levels may also exceed those predicted for a similarly placed profit maximizing capitalist firm, especially in an environment where average labour productivity is low relative to the level of wages, e.g. in depressed or declining industries. However, along the subsequent expansion path as capital accumulates, employment within the firm is reduced. This reinforces the commonly accepted notion that an active policy of new-firm creation would be necessary to maintain aggregate employment in a producer cooperative sector. It also provides an easily testable hypothesis against which to assess the validity of the income-per-worker maximizing model.

That the model may not stand up to such a test is suggested by the historical experience of the labour-managed industrial sector in Yugoslavia, where employment and the capital stock have increased simultaneously, despite the absence of much new-firm creation, and have not moved in an inverse fashion as the current model predicts. Should the current model be refuted by evidence from Western European producer cooperatives, future theoretical re-
search could be oriented in a number of directions. The most promising would seem to be the incorporation of adjustment costs along the lines of Bonin (1983) and Feichtinger (1984), and the modification of the objective function of the firm to incorporate a less individualistic maximand. A number of possibilities have been suggested in the literature, and they are reviewed in Stephen (1984). However, the present model, by pushing a simple structure to its logical conclusions, has yielded insights that may be robust in the face of anything other than a quite radical reformulation of the theory.

Finally it should be noted that the provision of external credit facilities, by providing the possibility of external financing, would alter the results of this paper significantly. The advantages of external as against internal means of financing have been argued at length in the literature from Vanek (1970, 1977) onwards. Although a formal dynamic model of the external financing case is beyond the scope of this paper, the analysis contained here should be viewed as giving support to Vanek's contention. To overcome the problem of the "low level equilibrium trap" described above (i.e. the equilibrium at $K_1^*$), it may be necessary to establish specialized credit institutions to finance the producer cooperative sector.
Appendix

Putting $L = \phi(K,m)$ we can write xvii) as:

$$m\phi(K,m) = u'\sqrt{F_L(K,\phi(K,m))}$$  \hspace{1cm} A1.

a) Differentiating implicitly w.r.t. $m$ gives:

$$L + m\phi_m' = u'' \cdot F_{LL} \phi_m$$  \hspace{1cm} A2.

So

$$\phi_m = \frac{-L^2}{(1 - \alpha \beta)u'} < 0 \text{ for } \alpha \beta < 1$$  \hspace{1cm} A3.

where $\alpha = \frac{u'' \cdot F_L}{u'} = \frac{u'' \cdot c}{u'} = \text{elasticity of marginal utility}$ evaluated along an optimal path.

$$\beta = \frac{F_{LL} \cdot L}{F_L} = \text{marginal output elasticity of labour}$$

$$\alpha < 0, \beta < 0.$$  

b) Differentiating A1 implicitly w.r.t. $K$ gives:

$$m\phi_K = u'' \cdot \bar{F_{LK}} + F_{LL} \phi_K$$  \hspace{1cm} A4.

So

$$\phi_K = \frac{u'' \cdot F_{LK}}{m - F_{LL} \cdot u''}$$

Using xi), this becomes:

$$\phi_K = \frac{\alpha \gamma (L/K)}{1 - \alpha \beta} < 0 \text{ for } \alpha \beta < 1$$  \hspace{1cm} A5.

where $\gamma = \frac{F_{LK} \cdot K}{F_L}$ = marginal output elasticity of capital

$\gamma > 0.$
Stability Analysis

Linearize xx) and xxii) around $K^*, m^*$ by Taylor expansion:

$$
\begin{bmatrix}
\dot{m} \\
\dot{K}
\end{bmatrix} =
\begin{bmatrix}
a_{11} & a_{12} \\
a_{21} & a_{22}
\end{bmatrix}
\begin{bmatrix}
m - m^* \\
K - K^*
\end{bmatrix} \tag{A6}
$$

$$
a_{11} = -m \frac{F_{KL}}{\phi_m} \tag{A6.}
$$

$$
a_{12} = -m \frac{F_{KK}}{\phi_K} + F_{KL} \frac{\phi_K}{\phi_m} \tag{A6.}
$$

$$
a_{21} = F_{L} \frac{\phi_m}{\phi_F} - m \frac{F_{L}}{\phi_{LL}} \phi_m = -LF_{LL} \phi_m 
$$

$$
a_{22} = \rho - LF_{LK} - LF_{LL} \phi_K \tag{A6.}
$$

This gives:

$$
a_{11} + a_{22} = \rho \tag{A7.}
$$

And:

$$
a_{11} a_{22} - a_{12} a_{21} = \frac{L}{(1 - \alpha \beta)} \left[ \rho F_{KL} + L (F_{LL} F_{KK} - F_{KL}^2) \right] \tag{A.8}
$$

The characteristic equation of the system is:

$$
\lambda^2 - (a_{11} + a_{22}) \lambda + (a_{11} a_{22} - a_{12} a_{21}) = 0 \tag{A9}
$$

This has two roots. If $(a_{11} a_{22} - a_{12} a_{21})$ is negative, the roots will be real and of opposite sign. This will clearly be the solution associated with $K_1^*, m_1^*$. If, however, $(a_{11} a_{22} - a_{12} a_{21})$ is positive the roots will be imaginary with positive real parts. This is the solution associated with $K_2^*, m_2^*$. (See Derrick and Grossman, 1981.)
NOTES

1. A number of recent analyses have tried to combine aspects of both these approaches by supposing short-run employment variability within a fixed membership group. See Miyazaki and Neary (1983) and Bonin (1983).

2. The "managerial" theory of the firm is based on the notion of the separation of ownership from control and holds that managers are able to influence the objectives of the firm in their own interest.

3. This model has been criticised by de Meza (1983) on the grounds that it possesses no interior steady state solution. However, the addition of the reasonable assumption of imperfect substitutability between members and non-members, is, as de Meza shows, sufficient to rescue the model from this criticism.

4. In a study of Western European producer cooperatives Younge and Rigge (1984) found that: "Loan capital is frequently hard to raise because of ignorance about worker cooperatives in financial institutions. Banks are frequently reluctant to lend to cooperatives and even when they do interest rates may be higher than those charged to more conventionally run enterprises" (p. 3). In U.K. cooperatives, Jones and Backus (1977) found that "most investment is financed by retained earnings", and Stephen (1984) reports a similar situation in French producer cooperatives and the Spanish Mondragon group where "much capital is internally financed" (p. 191). In the latter case however, the
group has developed its own bank, a credit cooperative, the resources of which are a major source of working capital for the group. The same argument follows through for cooperatives in developing countries such as those discussed by Espinosa and Zimbalist (1978) in Chile and by Uca (1983) in Turkey.

5. The Cooperative Bank in the U.K. will advance credit to cooperatives only on condition of a matching amount of internal finance. A similar situation exists for Yugoslav self-managed firms.

6. Recently a dynamic model of a labour-managed firm with endogenous employment has been presented by Feichtinger (1984), but the analysis is limited to short-run adjustments through the assumption of a fixed capital stock. The present paper does not impose this restriction.

7. See Stephen (1984, p. 43-44) for an analysis of the case where the cooperative's objective includes employment, in and for itself. This additional objective seems to be important in the Mondragon case, according to reports of interviews made there. See Thomas and Logan (1982).

8. Thus \( \varepsilon(K,L) = \left( \frac{\partial F}{\partial L} \cdot \frac{L}{F} \right) + \left( \frac{\partial F}{\partial K} \cdot \frac{K}{F} \right) = \frac{LF + KF}{F} \), where \( F_x = \frac{\partial F}{\partial x} \).

9. Along this locus therefore, there are locally constant returns to scale. Vanek dubs this the locus of maximum physical efficiency.

10. There is a large literature on the impact on investment decisions of a short, finite, horizon (Furubotn, 1978).
An infinite horizon, however, represents the general case, and is therefore adopted in this paper. A finite time horizon, $[0,T]$, can be treated as a special case of the present model.

11. In common with Dechert (1984) we may use a result proved by Michel (1982) which demonstrates that the transversality condition is necessary for optimality in a general class of models in which the Hamiltonian is concave in the control variables though not necessarily concave in the state variable.

12. Of course, the comparison is only valid for a given capital stock, and hence at the beginning of a programme of capital accumulation when $K(0) = K_0$, since the accumulation paths of the two types of firm will differ over time.

13. In the static model where the labour-managed firm maximizes average revenue per head net of a capital charge per head $\left(\frac{P0 - rK}{L}\right)$, production is shown to take place where $\epsilon = 1$. If the static self-financed firm were modelled by setting $r = 0$, as in Vanek (1977), the same result would emerge since $p_F^L = y$, $p_F^K = 0$ would be the optimal input rules. These results can be seen to follow from the assumption of myopic decision making, which implies $\rho = 0$, and that there is only one period of production.

14. Specifically, the condition for xiv) to hold is $\alpha \beta < 1$, where $\alpha$ is the elasticity of marginal utility, $\beta$ is the marginal output elasticity of employment. Typically $\alpha$ will be small enough to ensure this inequality.
15. So long as \( K_0 \) is not too small. There may be a critical value, \( K^C_0 \), below which the cooperative would not produce at all, since incomes would be too low to attract any workers.

16. A self-financed labour-managed economy in which neither borrowing nor lending took place would therefore not yield the same "equivalence" property which Vanek (1970) and Drèze (1976) have claimed between a labour-managed economy under external financing and a profit-maximizing capitalist economy.

17. It should be noted however that the inverse association between employment and accumulation will be weak if \( \alpha \), and hence \( \phi_k \), is close to zero. In the limit, however, employment will be at best insensitive to accumulation.

18. For example the Banca Nazionale del Lavoro in Italy has a special fund of 100 billion Lira to finance cooperative enterprise (Younge and Rigge, Prospects for workers' cooperatives in Europe, Vol. 1 - Overview, Commission of the European Communities, Luxembourg, 1984).
References


--------, 1984, Membership and employment in an egalitarian cooperative, Economica 51, 295-305.


--------, 1984, Has the Averch-Johnson effect been theoretically justified?, Journal of Economic Dynamics and Control 8, 1-17.


| No. 1: Jacques PELKMANS          | The European Community and the Newly Industrialized Countries |
| No. 3: Aldo RUSTICHINI          | Seasonality in Eurodollar Interest Rates |
| No. 9: Manfred E. STREIT       | Information Processing in Futures Markets. An Essay on the Adequacy of an Abstraction. |
| No. 10: Kumaraswamy VELUPILLAI | When Workers Save and Invest: Some Kaldorian Dynamics |
| No. 11: Kumaraswamy VELUPILLAI | A Neo-Cambridge Model of Income Distribution and Unemployment |
| No. 12: Kumaraswamy VELUPILLAI | On Lindahl's Theory of Distribution |
| Guglielmo CHIODI                |                                         |
| No. 22: Don PATINKIN           | Paul A. Samuelson on Monetary Theory |
| No. 23: Marcello DE CECCO      | Inflation and Structural Change in the Euro-Dollar Market |
| No. 24: Marcello DE CECCO      | The Vicious/Virtuous Circle Debate in the '20s and the '70s |
| No. 25: Manfred E. STREIT      | Modelling, Managing and Monitoring Futures Trading: Frontiers of Analytical Inquiry |
| No. 26: Domenico Mario NUTI    | Economic Crisis in Eastern Europe: Prospects and Repercussions |
| No. 34: Jean-Paul FITOUSSI    | Modern Macroeconomic Theory; an Overview |
| No. 35: Richard M. GOODWIN     | Economic Systems and their Regulation |
| Kumaraswamy VELUPILLAI         |                                         |
| No. 46: Alessandra VENTURINI   | Is the Bargaining Theory Still an Effective Framework of Analysis for Strike Patterns in Europe? |
| No. 47: Richard M. GOODWIN     | Schumpeter: The Man I Knew |
| No. 48: Jean-Paul FITOUSSI     | Politique de l'Emploi et Réduction de la Durée du Travail |
| Daniel SZPIRO                  |                                         |
| No. 56: Berc RUSTEM            | Preferences in Policy Optimization and Optimal Economic Policy |
| Kumaraswamy VELUPILLAI         |                                         |
| No. 60: Jean-Paul FITOUSSI     | Adjusting to Competitive Depression. The Case of the Reduction in Working Time |
| No. 64: Marcello DE CECCO      | Italian Monetary Policy in the 1980s |
No. 65: Gianpaolo ROSSINI
Intra-industry Trade in Two areas: Some Aspects of Trade Within and Outside a Custom Union

No. 66: Wolfgang GEBAUER
Euromarkets and Monetary Control: The Deutschmark Case

No. 67: Gerd WEINRICH
On the Theory of Effective Demand under Stochastic Rationing

No. 68: Saul ESTRIN
The Effects of Worker Participation upon Productivity in French Producer Cooperatives

No. 69: Berc RUSTEM
On the Formalization of Political Preferences: A Contribution to the Frischian Scheme

No. 70: Sheila A. CHAPMAN

No. 71: Will BARTLETT
Unemployment, Migration and Industrialization in Yugoslavia, 1958–1982

No. 72: Wolfgang GEBAUER
Inflation and Interest: the Fisher Theorem Revisited

No. 73: Elisabeth DE GELLINCK
Inter-Industry and Inter-Temporal Variations in the Effect of Trade on Industry Performance

84/103: Marcello DE CECCO
The International Debt Problem in the Interwar Period

84/105: Derek C. JONES
The Economic Performance of Producer Cooperatives within Command Economies: Evidence for the Case of Poland

84/111: Jean-Paul FITOUSSI
A Non-Linear Model of Fluctuations in Output in a Mixed Economy

84/113: Domenico Mario NUTI
Mergers and Disequilibrium in Labour-Managed Economies

84/114: Saul ESTRIN
Jan SVEJNAR
Explanations of Earnings in Yugoslavia: the Capital and Labor Schools Compared

84/116: Reinhard JOHN
On the Weak Axiom of Revealed Preference Without Demand Continuity Assumptions
84/118: Pierre DEHEZ  
Monopolistic Equilibrium and Involuntary Unemployment

84/119: Domenico Mario NUTI  
Economic and Financial Evaluation of Investment Projects: General Principles and E.C. Procedures

84/120: Marcello DE CECCO  
Monetary Theory and Roman History

84/121: Marcello DE CECCO  
International and Transnational Financial Relations

84/122: Marcello DE CECCO  
Modes of Financial Development: American Banking Dynamics and World Financial Crises

84/123: Lionello PUNZO  
Multisectoral Models and Joint Production

84/126: John CABLE  
Employee Participation and Firm Performance: a Prisoners' Dilemma Framework

84/127: Jesper JESPERSEN  
Financial Model Building and Financial Multipliers of the Danish Economy

84/128: Ugo PAGANO  
Welfare, Productivity and Self-Management

85/155: François DUCHENE  
Beyond the First C.A.P.

85/156: Domenico Mario NUTI  
Political and Economic Fluctuations in the Socialist System

85/157: Christophe DEISSENBERG  
On the Determination of Macroeconomic Policies with Robust Outcome

85/161: Domenico Mario NUTI  
A Critique of Orwell's Oligarchic Collectivism as an Economic System

83/162: Will BARTLETT  
Optimal Employment and Investment Policies in Self-Financed Producer Cooperatives

Spare copies of these Working Papers can be obtained from:

Secretariat Economics Department  
European University Institute  
Badia Fiesolana  
50016 S. Domenico di Fiesole (Fi)  
Italy
EUI Working Papers are published and distributed by the European University Institute, Florence.

Copies can be obtained free of charge -- depending on the availability of stocks -- from:

The Publications Officer
European University Institute
Badia Fiesolana
I-50016 San Domenico di Fiesole(FI)
Italy

Please use order form overleaf.
To: The Publications Officer
European University Institute
Badia Fiesolana
I-50016 San Domenico di Fiesole (FI)
Italy

From: Name: ...............................  
Address: ...............................  
...............................  
...............................  
...............................  

Please send me the following EUI Working Paper(s):

No.: ...............................  
Author, title: ...............................  
...............................  
...............................  
...............................  

Date: ...............................  
Signature: ...............................
1: Jacques PELKMANS
   The European Community and the Newly Industrialized Countries *

2: Joseph H.H. WEILER
   Supranationalism Revisited -
   Retrospective and Prospective. The
   European Communities After Thirty Years *

3: Aldo RUSTICHINI
   Seasonality in Eurodollar Interest Rates

4: Mauro CAPPELLETTI/ David GOLAY
   Judicial Review, Transnational and Federal: Impact on Integration

5: Leonard GLESKE
   The European Monetary System: Present Situation and Future Prospects *

6: Manfred HINZ
   Massenkult und Todessymbolik in der national-sozialistischen Architektur *

7: Wilhelm BURKLIN
   The "Greens" and the "New Politics": Goodbye to the Three-Party System?

8: Athanasios MOULAKIS
   Unilateralism or the Shadow of Confusion *

9: Manfred E. STREIT
   Information Processing in Futures Markets. An Essay on the Adequacy of an Abstraction *

10: Kumaraswamy VELUPILLAI
    When Workers Save and Invest: Some Kaldorian Dynamics *

11: Kumaraswamy VELUPILLAI
    A Neo-Cambridge Model of Income Distribution and Unemployment *

12: Kumaraswamy VELUPILLAI/ Guglielmo CHIODI
    On Lindahl's Theory of Distribution *

13: Gunther TEUBNER
    Reflexive Rationalitaet des Rechts *

14: Gunther TEUBNER
    Substantive and Reflexive Elements in Modern Law *

15: Jens ALBER
    Some Causes and Consequences of Social Security Expenditure Development in Western Europe, 1949-1977 *

* : Working Paper out of print
<table>
<thead>
<tr>
<th>No.</th>
<th>Author</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>Ian BUDGE</td>
<td>Democratic Party Government: Formation and Functioning in Twenty-One Countries *</td>
</tr>
<tr>
<td>17</td>
<td>Hans DAALDER</td>
<td>Parties and Political Mobilization: An Initial Mapping *</td>
</tr>
<tr>
<td>18</td>
<td>Giuseppe DI PALMA</td>
<td>Party Government and Democratic Reproducibility: The Dilemma of New Democracies *</td>
</tr>
<tr>
<td>19</td>
<td>Richard S. KATZ</td>
<td>Party Government: A Rationalistic Conception *</td>
</tr>
<tr>
<td>20</td>
<td>Juerg STEINER</td>
<td>Decision Process and Policy Outcome: An Attempt to Conceptualize the Problem at the Cross-National Level *</td>
</tr>
<tr>
<td>21</td>
<td>Jens ALBER</td>
<td>The Emergence of Welfare Classes in West Germany: Theoretical Perspectives and Empirical Evidence *</td>
</tr>
<tr>
<td>22</td>
<td>Don PATINKIN</td>
<td>Paul A. Samuelson and Monetary Theory</td>
</tr>
<tr>
<td>23</td>
<td>Marcello DE CECCO</td>
<td>Inflation and Structural Change in the Euro-Dollar Market *</td>
</tr>
<tr>
<td>24</td>
<td>Marcello DE CECCO</td>
<td>The Vicious/Virtuoso Circle Debate in the '20s and the '70s *</td>
</tr>
<tr>
<td>25</td>
<td>Manfred E. STREIT</td>
<td>Modelling, Managing and Monitoring Futures Trading: Frontiers of Analytical Inquiry *</td>
</tr>
<tr>
<td>26</td>
<td>Domenico Mario NUTI</td>
<td>Economic Crisis in Eastern Europe - Prospects and Repercussions</td>
</tr>
<tr>
<td>27</td>
<td>Terence C. DAINTITH</td>
<td>Legal Analysis of Economic Policy *</td>
</tr>
<tr>
<td>28</td>
<td>Frank C. CASTLES/</td>
<td>Left-Right Political Scales: Some Expert Judgements *</td>
</tr>
<tr>
<td></td>
<td>Peter MAIR</td>
<td></td>
</tr>
<tr>
<td>29</td>
<td>Karl HOHMANN</td>
<td>The Ability of German Political Parties to Resolve the Given Problems: the Situation in 1982 *</td>
</tr>
<tr>
<td>30</td>
<td>Max KAASE</td>
<td>The Concept of Political Culture: Its Meaning for Comparative Political Research *</td>
</tr>
</tbody>
</table>

* : Working Paper out of print
31: Klaus TOEPFER  
Possibilities and Limitations of a Regional Economic Development Policy in the Federal Republic of Germany *

32: Ronald INGLEHART  
The Changing Structure of Political Cleavages Among West European Elites and Publics *

33: Moshe LISSAK  
Boundaries and Institutional Linkages Between Elites: Some Illustrations from Civil-Military Elites in Israel *

34: Jean-Paul FITOUSSI  
Modern Macroeconomic Theory: An Overview *

35: Richard M. GOODWIN/Kumaraswamy VELUPILLAI  
Economic Systems and their Regulation *

36: Maria MAGUIRE  
The Growth of Income Maintenance Expenditure in Ireland, 1951-1979 *

37: G. LOWELL FIELD/John HIGLEY  

38: Dietrich HERZOG  
New Protest Elites in the Political System of West Berlin: The Eclipse of Consensus? *

39: Edward O. LAUMANN/David KNOKE  
A Framework for Concatenated Event Analysis

40: Gwen MOOR/Richard D. ALBA  
Class and Prestige Origins in the American Elite

41: Peter MAIR  

42: Joseph H.H. WEILER  
Israel and the Creation of a Palestine State. The Art of the Impossible and the Possible *

43: Franz Urban PAPPI  
Boundary Specification and Structural Models of Elite Systems: Social Circles Revisited

44: Thomas GAWRON/Ralf ROGOWSKI  
Zur Implementation von Gerichtsurteilen. Hypothesen zu den Wirkungsbedingungen von Entscheidungen des Bundesverfassungsgerichts *
45: Alexis PAULY/ René DIEDERICH
Migrant Workers and Civil Liberties *

46: Alessandra VENTURINI
Is the Bargaining Theory Still an Effective Framework of Analysis for Strike Patterns in Europe? *

47: Richard A. GOODWIN
Schumpeter: The Man I Knew

48: J.P. FITOUSSI/ Daniel SZPIRO
Politique de l’Emploi et Réduction de la Durée du Travail

49: Bruno DE WITTE
Retour à Costa. La Primauté du Droit Communautaire à la Lumière du Droit International

50: Massimo A. BENEDETTELLI
Eguaglianza e Libera Circolazione dei Lavoratori: Principio di Eguaglianza e Divieti di Discriminazione nella Giurisprudenza Comunitaria in Materia di Diritti di Mobilità Territoriale e Professionale dei Lavoratori

51: Gunther TEUBNER
Corporate Responsibility as a Problem of Company Constitution *

52: Erich SCHANZE
Potentials and Limits of Economic Analysis: The Constitution of the Firm

53: Maurizio COTTA
Career and Recruitment Patterns of Italian Legislators. A Contribution of the Understanding of a Polarized System *

54: Mattei DOGAN
How to become a Cabinet Minister in Italy: Unwritten Rules of the Political Game *

55: Mariano BAENA DEL ALCAZAR/ Narciso PIZARRO
The Structure of the Spanish Power Elite 1939-1979 *

56: Berc RUSTEM/ Kumaraswamy VELUPILLAI
Preferences in Policy Optimization and Optimal Economic Policy

57: Giorgio FREDDI
Bureaucratic Rationalities and the Prospect for Party Government *

59: Christopher Hill/ James MAYALL
The Sanctions Problem: International and European Perspectives

*: Working Paper out of print
60: Jean-Paul FITOUSSI

Adjusting to Competitive Depression. The Case of the Reduction in Working Time

61: Philippe LEFORT

Idéologie et Morale Bourgeoise de la Famille dans le Ménager de Paris et le Second Libro di Famiglia, de L.B. Alberti *

62: Peter BROCKMEIER

Die Dichter und das Kritisieren

63: Hans-Martin PAWLOWSKI

Law and Social Conflict

64: Marcello DE CECCO

Italian Monetary Policy in the 1980s *

65: Gianpaolo ROSSINI

Intraindustry Trade in Two Areas: Some Aspects of Trade Within and Outside a Custom Union

66: Wolfgang GEBAUER

Euromarkets and Monetary Control: The Deutschemark Case

67: Gerd WEINRICH

On the Theory of Effective Demand under Stochastic Rationing

68: Saul ESTRIN/
Derek C. JONES

The Effects of Worker Participation upon Productivity in French Producer Cooperatives *

69: Berc RUSTEM

Kumaraswamy VELUPILLAI

On the Formalization of Political Preferences: A Contribution to the Frischian Scheme *

70: Werner MAIHOFER

Politique et Morale *

71: Samuel COHN

Five Centuries of Dying in Siena: Comparison with Southern France *

72: Wolfgang GEBAUER

Inflation and Interest: the Fisher Theorem Revisited

73: Patrick NERHOT

Rationalism and the Modern State *

74: Philippe SCHMITTER

Democratic Theory and Neo-Corporatist Practice *

75: Sheila A. CHAPMAN


* : Working Paper out of print

77: Scott Newton, The 1949 Sterling Crisis and British Policy towards European Integration

78: Giorgio Fodor, Why did Europe need a Marshall Plan in 1947?

79: Philippe Mioche, The Origins of the Monnet Plan: How a Transitory Experiment answered to Deep-Rooted Needs

80: Werner Abelshauser, The Economic Policy of Ludwig Erhard

81: Helge Pharo, The Domestic and International Implications of Norwegian Reconstruction

82: Heiner R. Adamsen, Investitionspolitik in der Bundesrepublik Deutschland 1949-1951

83: Jean Bouvier, Le Plan Monnet et l'Economie Française 1947-1952

84: Mariuccia Salvati, Industrial and Economic Policy in the Italian Reconstruction

85: William Diebold, Jr., Trade and Payments in Western Europe in Historical Perspective: A Personal View By an Interested Party

86: Frances Lynch, French Reconstruction in a European Context

87: Gunther Teubner, Verrechtlichung. Begriffe, Merkmale, Grenzen, Auswege

88: Maria Spinedi, Les Crimes Internationaux de l'Etat dans les Travaux de Codification de la Responsabilité des Etats Entrepris par les Nations Unies

89: Jelle Visser, Dimensions of Union Growth in Postwar Western Europe

90: Will Bartlett, Unemployment, Migration and Industrialization in Yugoslavia, 1958-1977

*: Working Paper out of print
<table>
<thead>
<tr>
<th>No.</th>
<th>Author(s)</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>91.</td>
<td>Wolfgang GEBAUER</td>
<td>Kondratieff's Long Waves</td>
</tr>
<tr>
<td>92.</td>
<td>Elisabeth DE GHELLINCK/ Paul A. GEROSKI/ Alexis JACQUEMIN</td>
<td>Inter-Industry and Inter-Temporal Variations in the Effect of Trade on Industry Performance</td>
</tr>
<tr>
<td>93.</td>
<td>Gunther TEUBNER/ Helmut WILLKE</td>
<td>Kontext und Autonomie. Gesellschaftliche Selbststeuerung durch Reflexives Recht *</td>
</tr>
<tr>
<td>94.</td>
<td>Wolfgang STREECK/ Philippe C. SCHMITTER</td>
<td>Community, Market, State- and Associations. The Prospective Contribution of Interest Governance to Social Order</td>
</tr>
<tr>
<td>95.</td>
<td>Nigel GRIFFIN</td>
<td>&quot;Virtue Versus Letters&quot;: The Society of Jesus 1550-1580 and the Export of an Idea</td>
</tr>
<tr>
<td>96.</td>
<td>Andreas KUNZ</td>
<td>Arbeitsbeziehungen und Arbeitskonflikte im öffentlichen Sektor. Deutschland und Grossbritannien im Vergleich 1914-1924 *</td>
</tr>
<tr>
<td>97.</td>
<td>Wolfgang STREECK</td>
<td>Neo-Corporatist Industrial Relations and the Economic Crisis in West Germany *</td>
</tr>
<tr>
<td>98.</td>
<td>Simon A. HORNER</td>
<td>The Isle of Man and the Channel Islands - A Study of their Status under Constitutional, International and European Law</td>
</tr>
<tr>
<td>99.</td>
<td>Daniel ROCHE</td>
<td>Le Monde des Ombres</td>
</tr>
<tr>
<td>84/100.</td>
<td>Gunther TEUBNER</td>
<td>After Legal Instrumentalism? *</td>
</tr>
<tr>
<td>84/101.</td>
<td>Patrick NERHOT</td>
<td>Contribution aux Débats sur le Droit Subjectif et le Droit Objectif comme Sources du Droit *</td>
</tr>
<tr>
<td>84/102.</td>
<td>Jelle VISSER</td>
<td>The Position of Central Confederations in the National Union Movements</td>
</tr>
<tr>
<td>84/103.</td>
<td>Marcello DE CECCO</td>
<td>The International Debt Problem in the Inter-War Period</td>
</tr>
<tr>
<td>84/104.</td>
<td>M. Rainer LEPSIUS</td>
<td>Sociology in Germany and Austria 1918-1945. The Emigration of the Social Sciences and its Consequences.</td>
</tr>
</tbody>
</table>
Development of Sociology in Germany after the Second World War, 1945-1967

84/105: Derek JONES

The Economic Performances of Producer Cooperations within Command Economies: Evidence for the Case of Poland

84/106: Philippe C. SCHMITTER

Neo-Corporatism and the State *

84/107: Marcos BUSER

Der Einfluss der Wirtschaftsverbaende auf Gesetzgebungsprozesse und das Vollzugswesen im Bereich des Umweltschutzes

84/108: Frans van WAARDEN

Bureaucracy around the State: Varieties of Collective Self-Regulation in the Dutch Dairy Industry

84/109: Ruggero RANIERI

The Italian Iron and Steel Industry and European Integration

84/110: Peter FARAGO

Nachfragemacht und die kollektiven Reaktionen der Nahrungsmittelindustrie

84/111: Jean-Paul FITOUSSI/Kumasawamy VELUPILLAI

A Non-Linear Model of Fluctuations in Output in a Mixed Economy

84/112: Anna Elisabetta GALEOTTI

Individualism and Political Theory

84/113: Domenico Mario NUTI

Mergers and Disequilibrium in Labour-Managed Economies

84/114: Saul ESTRIN/Jan SVEJNAR

Explanations of Earnings in Yugoslavia: The Capital and Labor Schools Compared

84/115: Alan CAWSON/John BALLARD

A Bibliography of Corporatism

84/116: Reinhard JOHN

On the Weak Axiom of Revealed Preference Without Demand Continuity Assumptions

84/117: Richard T. GRIFFITHS/ Frances F.B. LYNCH

The FRITALUX/FINEBEL Negotiations 1949/1950

84/118: Pierre DEHEZ

Monopolistic Equilibrium and Involuntary Unemployment

84/119: Domenico Mario NUTI

Economic and Financial Evaluation of Investment Projects; General Principles and E.C. Procedures

*: Working Paper out of print
84/120: Marcello DE CECCO  
Monetary Theory and Roman History

84/121: Marcello DE CECCO  
International and Transnational Financial Relations

84/122: Marcello DE CECCO  
Modes of Financial Development: American Banking Dynamics and World Financial Crises

84/123: Lionello F. PUNZO/Kumuraswamy VELUPILLAI  
Multisectoral Models and Joint Production

84/124: John FARQUHARSON  
The Management of Agriculture and Food Supplies in Germany, 1944-47

84/125: Ian HARDEN/Norman LEWIS  
De-Legalisation in Britain in the 1980s *

84/126: John CABLE  
Employee Participation and Firm Performance. A Prisoners' Dilemma Framework

84/127: Jesper JESPERSEN  
Financial Model Building and Financial Multipliers of the Danish Economy

84/128: Ugo PAGANO  
Welfare, Productivity and Self-Management

84/129: Maureen CAIN  
Beyond Informal Justice *

85/130: Otfrid HOEFFE  
Political Justice - Outline of a Philosophical Theory

85/131: Stuart J. WOOLF  
Charity and Family Subsistence: Florence in the Early Nineteenth Century

85/132: Massimo MARCOLIN  
The Casa d'Industria in Bologna during the Napoleonic Period: Public Relief and Subsistence Strategies

85/133: Osvaldo RAGGIO  
Strutture di parentela e controllo delle risorse in un'area di transito: la Val Fontanabuona tra Cinque e Seicento

85/134: Renzo SABBATINI  
Work and Family in a Lucchese Paper-Making Village at the Beginning of the Nineteenth Century

*: Working Paper out of print
85/135: Sabine JURATIC
	solitude féminine et travail des femmes à Paris à la fin du XVIIIème siècle

85/136: Laurence FONTAINE

les effets déséquilibrants du colportage sur les structures de famille et les pratiques économiques dans la vallée de l'Oisans, 18e-19e siècles

85/137: Christopher JOHNSON

Artisans vs. Fabricants: Urban Protoindustrialisation and the Evolution of Work Culture in Lodève and Bédarieux, 1740-1830

85/138: Daniela LOMBARDI

La demande d’assistance et les réponses des autorités urbaines face à une crise conjoncturelle: Florence 1619-1622

85/139: Orstrom MOLLER

Financing European Integration: The European Communities and the Proposed European Union.

85/140: John PINDER

Economic and Social Powers of the European Union and the Member States: Subordinate or Coordinate Relationship

85/141: Vlad CONSTANTINESCO

La Répartition des Compétences Entre l'Union et les Etats Membres dans le Projet de Traité Instituant l'Union Européenne.

85/142: Peter BRUECKNER

Foreign Affairs Power and Policy in the Draft Treaty Establishing the European Union.

85/143: Jan DE MEYER

Belgium and the Draft Treaty Establishing the European Union.

85/144: Per LACHMANN

The Draft Treaty Establishing the European Union: Constitutional and Political Implications in Denmark.

85/145: Thijmen KOOPMANS

The Judicial System Envisaged in the Draft Treaty.

85/146: John TEMPLE-LANG

The Draft Treaty Establishing the European Union and the Member

*: Working Paper out of print
85/147: Carl Otto Lenz  
States: Ireland  

85/148: David Edward/ Richard McAllister/ Robert Lane  
The Draft Treaty establishing the European Union: Report on the United Kingdom

85/149: Joseph J. M. Van der Ven  
Les droits de l'Homme: leur universalite' en face de la diversite' des civilisations. *

85/150: Ralf Rogowski  
Meso-Corporatism and Labour Conflict Resolution *

85/151: Jacques Genton  
Problèmes Constituionnels et Politiques poses en France par une eventual- le ratification et mise en oeuvre du projet de Traite d’Union Européenne

85/152: Marjanne de Kwaasteniet  
Education as a verzuilin phenomenon Public and independent education in the Nederlands

85/153: Gianfranco Pasquino and Luciano Bardi  
The Institutions and the Process of Decision-Making in the Draft Treaty

85/154: Joseph Weiler and James Modrall  
The Creation of the Union and Its Relation to the EC Treaties

85/155: François Duchene  
Beyond the first C.A.P.

85/156: Domenico Mario Nuti  
Political and Economic Fluctuations in the Socialist System

85/157: Gianfranco Poggi  
Niklas Luhmann on the Welfare State and its Law

85/158: Christophe Deissenberg  
On the Determination of Macroeconomic Policies with Robust Outcome

85/159: Pier Paolo D'Attorre  
ERP Aid and the Problems of Productivity in Italy during the 1950s

85/160: Hans-Georg Deggau  
Ueber einige Voraussetzungen und Folgen der Verrechtlichung

85/161: Domenico Mario Nuti  
Orwell's Oligarchic Collectivism as an Economic System

*: Working Paper out of print
<table>
<thead>
<tr>
<th>Publication Number</th>
<th>Author(s)</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>85/162</td>
<td>Will Bartlett</td>
<td>Optimal Employment and Investment Policies in Self-Financed Produce Cooperatives</td>
</tr>
<tr>
<td>85/163</td>
<td>Terence Daintith</td>
<td>The Design and Performance of Long-term Contracts</td>
</tr>
<tr>
<td>85/165</td>
<td>Philippe C. Schmitter</td>
<td>Speculations about the Prospective Demise of Authoritarian Regimes and its possible Consequences</td>
</tr>
<tr>
<td>85/166</td>
<td>Bruno P. F. Wanrooij</td>
<td>The American 'Model' in the Moral Education of Fascist Italy</td>
</tr>
<tr>
<td>85/167</td>
<td>Th. E. Abeltshauser/Joern Pipkorn</td>
<td>Zur Entwicklung des Europäischen Gesellschafts- und Unternehmensrechts</td>
</tr>
<tr>
<td>85/168</td>
<td>Philippe Mioche</td>
<td>Les difficultés de la modernisation dans le cas de l'industrie française de la machine outil, 1941-1953</td>
</tr>
<tr>
<td>85/169</td>
<td>Jean Gabszewicz/Paolo Garella</td>
<td>Asymmetric international trade</td>
</tr>
<tr>
<td>85/170</td>
<td>Jean Gabszewicz/Paolo Garella</td>
<td>Subjective Price Search and Price Competition</td>
</tr>
</tbody>
</table>

* : Working Paper out of print