UNIVERSITÀ DEGLI STUDI DI PADOVA

Dipartimento di Scienze Economiche "Marco Fanno"

ARE WORKERS' ENTERPRISES ENTRY POLICIES CONVENTIONAL?

MICHELE MORETTO
Università di Padova

GIANPAOLO ROSSINI
Università di Bologna

January 2008

"MARCO FANNO" WORKING PAPER N.66

Are Workers' Enterprises entry policies conventional?*

Michele Moretto
University of Padova
Department of Economics
Via del Santo, 22; Padova, Italy
michele.moretto@unipd.it

Gianpaolo Rossini
University of Bologna
Department of Economics
Strada Maggiore, 45; Bologna, Italy
gianpaolo.rossini@unibo.it

Revised version: November 22, 2007

Abstract

One of the reasons why workers' enterprises (*WE*) still represent a relevant chunk of the economy may lay in some affinities with conventional profit maximizing firms. To provide a solid basis to this presumption, we compare the entry policies of *WEs* and conventional firms when size is set at entry and kept fixed afterwards. Even though short run differences remain between *WEs* and conventional firms, a long run coincidence appears in an uncertain dynamic environment. Endogenizing size and time of entry we see that the two kinds of firms enter at the same trigger market price and size. Both of them enter earlier and choose a dimension larger than the minimum efficient scale. This generalised coincidence may be another way to explain why *WEs* still make for an important share of the economy (Hesse and Cihàk, 2007) despite the ongoing mantra of their imminent demise.

JEL Classification: G13, J54, L3

Keywords: Workers' enterprises, entry, uncertainty, rigidity

*We thank Geoff Stewart, Paola Valbonesi and an anonymous referee for their useful comments. We acknowledge the financial support under the 60% scheme for the academic year 2006-7 from the Universities of Bologna and Padova. The paper has benefited from presentations at the Workshop on "Real Options: Theory and Applications", held in Rimini (Italy) (April, 26, 2007), at the Annual EARIE Conference, held in Valencia (September 6-9, 2007) and at the Annual ASSET Conference held in Padova (November 1-3, 2007).

1 Prologue

In Labour Managed firms (*LMFs*) workers own and govern the enterprise on an equal foot. *LMFs* exist in many countries and industries (Craig and Pencavel, 1992, 1995; Moretto and Rossini, 2003). For instance, *LM* banks are quite common in both developed and emerging countries and seem to contribute to equity and financial stability (Hesse and Cihàk, 2007). Last but not least, *LMFs* are quite close to firms belonging to the broad *U.S. Census* category dubbed *Nonemployer* (Moretto and Rossini, 2007) and, in particular, to the large subset corresponding to *Partnerships,* very popular among infant firms in high tech sectors.

Whenever we compare a *LMF* with a profit maximizing firm (*PMF*), dubbed conventional, we come across some fundamental differences in short run behavior, while a kind of long run coincidence holds.

In the short run the supply of the *LMF* reacts in a negative manner to a higher market price. The same occurs to the amount of labour hired. Moreover, an increase in fixed costs generates a larger membership as the *LMF* needs fresh employee-members to bear larger overheads[1]. These reactions, deemed as "perverse", are cast within the original modelling of the *LMF* (Ward, 1958; Vanek, 1970) and are still quite popular. Unfortunately, they lack realism since they are based on the assumption that, in the short term, an *LMF* changes, as a result of market signals, the membership size decided at the foundation. This weakness has been amended by the proponents of the new theory of the Workers' Enterprise (*WE*) (Sertel, 1987; 1991; 1993; Fehr and Sertel, 1993). *WE*s, based on the evolution of the traditional *LMF* underpinning, are quite similar to *LMFs,* but for membership, that may give rise to two alternative arrangements. In the first, size is chosen at the time of entry in the market and is not liable to vary in the short run. In the second, there exists a competitive market for memberships and, thanks to it, the number of members can change in the short run. In both cases "perversities" of the *LMF* shy away[2].

In the long run *LMFs*, *WEs* and *PMFs* are indistinguishable. This has engendered the paradox maintaining that, in the long run, it is immaterial whether capital hires labour or the other way round (Samuelson, 1957; Dow, 1993). However, this result should be taken with great care, since the long run comparison between *PMF* and *WE* has been so far confined to a static framework where the entry process is not explicitly modeled.

Here comes our main purpose, i.e. to model the entry decision and to test the long run convergence of *WE* and *PMF* facing market uncertainty and investment irreversibility. After all, one of the main reasons why *WEs* still represent a significant chunk of the economy may lay in some basic affinities with respect

[1] We may consider hiring labor that will not become member of the *LMF*. This possibility is considered in the literature (Bonin and Putterman, 1987). The resulting *LMF* is a sort of hybrid closer to a *PMF,* or, in other words, an intermediate arrangement between the *LMF* and the conventional firm.

[2] A further confirm of the non-perversities of *WEs* come in a differential game framework investigated by Cellini and Lambertini (2006).

to conventional firms. In this sense we shall provide a further interpretation of the persistence of *WE* in many economies (Hesse and Cihàk, 2007) despite the ongoing mantra of their imminent demise. To interpret this unexpected survival (and flourishing) we show fresh similarities between *WE* and *PMF.* The framework is one of dynamic market uncertainty where firms possess the option to delay entry. In this scenario, firms observe market demand. Then, they choose size and set the price, that triggers entry, in an optimal way, regardless of market structure (Leahy, 1993, Grenadier 2002).

With no uncertainty in a dynamic setting the trigger prices of *WE*s and *PMF*s are the same (Moretto and Rossini, 2007): the two enterprises follow parallel patterns and in equilibrium cannot be distinguished. This happens if both firms do not change, after entry, the amount of labour employed even when market incentives require it.

This assumption closely mirrors the internal organization of human capital intensive companies. Here, labor has a high specific value and firms are reluctant either to reduce it or to increase it due to large adjustment costs. Whenever this rigidity occurs, the *PMF* gets quite close to a *WE* constrained by a fixed membership after entry. Without this constraint affinities would shrink sharply.

The paper goes on as follows: In the next section we are concerned with the *WE* textbook case in a static environment; in section 3 we model entry, size and trigger prices under uncertainty. Conclusions are drawn in the epilogue.

2 The textbook case

We shortly present the *WE* static short run model drawn from current literature.[3]

We consider a *WE* producing a homogenous good with the short run Marshallian technology $Q(L)$, with $Q(0) = 0$, $Q'(L) > 0$, $Q''(L) < 0$ and $L \in \left[\underline{L}, \bar{L}\right]$, where Q is the quantity manufactured and L is the labor input. The good is sold at price p.

The *WE* sets optimal membership maximizing the surplus per worker (value added ($y(p;L)$) minus market wage (w)):

$$y(p;L) - w = \frac{pQ(L) - I}{L} - w \tag{1}$$

where I indicates the sunk - fixed cost.

The short run (sr) first order condition (FOC) yields:

$$pQ'(L^{sr}_{WE}) = y(p;L^{sr}_{WE}) \tag{2}$$

Provided that $y(p;L) - w > 0$ we get the well known result that the optimal amount of labor employed by the *WE* in the short run is smaller than for the conventional firm (PM), given by the marginal condition $pQ'(L^{sr}_{PM}) = w$.

[3] For a recent survey on the literature on *WE* and labour participation see Moretto and Rossini (2003).

In the long run (lr) competition dissipates all rents. Fresh firms, using the same technology $Q(L)$, the same variable and fixed costs, will enter at the Marshallian point:

$$p_{WE} = AC(\hat{L}) \equiv \frac{w\hat{L} + I}{Q(\hat{L})}, \tag{3}$$

where $AC(\hat{L})$ is the long run average total cost evaluated at the minimum efficient scale, i.e.: $L_{WE}^{lr} \equiv \hat{L} = \arg\min AC(L)$. Moreover, in the long run profits are null and the two firms behave the same way, i.e. $L_{WE}^{lr} = L_{PM}^{lr}$.

3 *WE*'s entry under uncertainty

The above analysis is confined to a deterministic framework and considers a *WE* already in the market, neglecting the entry process.

Our main purpose is to model the entry policy of a single *WE* in isolation regardless of rivals. In this sense, we may say that the firm is myopic since it disregards any potential reaction by rivals. Therefore, we are bound to see what happens if the firm becomes farsighted dismissing its myopic habit.

We begin investigating a *WE* that has an option to enter the market with an irreversibly sunk investment project of finite size. The controls are time of entry and size in terms of labor membership.

In the vein of real option theory we assume that (Dixit and Pindyck, 1994):

1. The project, corresponding to a start-up decision, is of finite size with an entry cost I and technology described above.

2. The investment I is irreversibly sunk. It can neither be changed, nor temporarily stopped, nor shut down, but it can be delayed while waiting for new information.[4]

3. For the sake of comparison with the textbook case, the instantaneous short run surplus per worker after entry is equal to (1) when the market wage w per unit of labour is constant over time.

4. The *WE* faces an infinitely elastic demand function: the uncertain market price is driven by the following trendless stochastic differential equation:

$$dp_t = \sigma p_t dB_t \qquad \text{with } \sigma > 0 \text{ and } p_0 = p, \tag{4}$$

   where dB_t is the standard increment of a Wiener process (or Brownian motion), uncorrelated over time and satisfying the conditions that $E(dB_t) = 0$ and $E(dB_t^2) = dt$. Therefore $E(dp_t) = 0$ and $E(dp_t^2) = (\sigma p_t)^2 dt$, i.e. starting from the initial value p_0, the random position of the price p_t at time $t > 0$ has a normal distribution with mean p_0 and variance $p_0^2(e^{\sigma^2 t} - 1)$

[4] This avoids the analysis of operating options, such as the ability of the firm to reduce output and to shut down. These options increase the value of the firm. See McDonald and Siegel (1986) and, for a thorough discussion, Dixit and Pindyck (1994, chs. 6 and 7).

which increases as we look further and further into the future. Moreover, it should be noted that the process "has no memory" (i.e. it is Markovian), and hence *i*) at any point in time t, the observed p_t is the best predictor of future profits, *ii*) p_t may next move upwards or downwards with equal probability[5].

5. The project is funded by *WE* members, who are all alike and maximize the discounted value of expected individual value added.

6. Finally, as pointed out in the introduction with regard to the change in membership, L is chosen before entry and held fixed afterwards.

Given these assumptions, only if the price is high enough, the *WE* enters setting the optimal size (L). The decision process requires a backward procedure. First, for any L, the value of the individual option to enter is computed. Subsequently, homogeneous employee-members of the *WE* choose L which maximizes the individual (option) value at entry.

The employee-member of a *WE* of size L determines whether and when to start the new project solving an optimal stopping time problem by selecting the investment timing which maximizes:

$$f_{WE}(p;L) = \max_T E_0\left[(y(p_T;L) - w)\, e^{-\rho T} \mid p_0 = p\right]. \tag{5}$$

Each employee-member holds an option to invest corresponding to (5) and has an interest in exercising it cooperatively at the same time. He waits up to time T, where T is a random variable whose distribution can be obtained from that of (4). Then, he invests when p_t, starting from p_0, reaches an upper value, say $p_T \equiv p_{WE}$. Assuming that p_{WE} exists, taking expectation of (5), we are able to write the member's value function, before investing, as:

$$f_{WE}(p;L) = E_0(e^{-\rho T})\left[(y(p_{WE};L) - w) \mid p_0 = p\right]$$

Moreover, by using some standard results in the theory of stochastic processes, we are able to show that (Dixit and Pindyck, 1994, p. 315-316; Dixit et al., 1999):

$$E_0[e^{-\rho T} \mid p_0 = p] = \left(\frac{p}{p_{WE}}\right)^{\beta}$$

Then, we get**:**

$$f_{WE}(p;L) \quad = \quad (y(p_{WE};L) - w)\left(\frac{p}{p_{WE}}\right)^{\beta} \quad \text{for } p < p_{WE}. \tag{6}$$

[5] Notice that, by the Markov property of (4), the quality of all subsequent results does not change for any non-zero trend of price.

where $1 < \beta < \infty$ is the positive root[6] of the auxiliary quadratic equation $\Psi(\beta) = \frac{1}{2}\sigma^2\beta(\beta-1) - \rho = 0$, which may be used to get (6). The individual option value (6) represents the expected net per capita dividend of the project, i.e., $y(p_{WE}; L) - w$, multiplied by the expected discount factor, i.e., $\left(\frac{p}{p_{WE}}\right)^{\beta}$. This factor depends mostly on the volatility of the market price and the ratio between the market price and the trigger price that makes the firm enter. If uncertainty is high β goes down. Therefore, the optimal investing rule implies that $f_{WE}(p; L) > y(p; L) - w$ for all $p < p_{WE}$ since $f_{WE}(p; L)$ contains the value of the option to enter[7].

Consistently with (1), entry occurs if the cash flow generated by the project is weakly larger than the long run average cost. Maximizing (6) for p_{WE}, we see that the *WE* should invest when the market price exceeds the break-even threshold:

$$p_{WE} = \frac{\beta}{\beta-1} AC(L) \tag{7}$$

which is the (deterministic) Marshall trigger $AC(L)$ multiplied by $\frac{\beta}{\beta-1} > 1$, due to irreversibility of entry under uncertainty. The consequence is that, with new observations on market profitability obtained by waiting, the enterprise reduces the downside risk (Dixit and Pindyck, 1994, p. 142).

Substituting (7) back into (6) and maximizing with respect to L, the optimal entry size of *WE* can be obtained from:

$$p_{WE} Q'(L^{sr}_{WE}) \quad = \quad w + f_{WE}(L^{sr}_{WE}) > w. \tag{8}$$

where $f_{WE}(L^{sr}_{WE}) \equiv \frac{1}{\beta-1}(w + \frac{I}{L^{sr}_{WE}})$.

The *WE* chooses the optimal size equating the value marginal product - which is decreasing by concavity of the technology - to the "supplemented wage", that exceeds the market wage w. The Marshallian full cost of the investment imputed to each employee-member is $w + f_{WE}$, larger than w, since

[6] The auxiliary equation has two roots:

$$\beta_1 = \frac{\sigma + \sqrt{8\rho + \sigma^2}}{2\sigma} > 1$$

and

$$\beta_2 = \frac{\sigma - \sqrt{8\rho + \sigma^2}}{2\sigma} < 0.$$

We set $\beta_1 \equiv \beta$, and a simple calculation may show that

$$\frac{\partial \beta}{\partial \sigma} < 0.$$

[7] Before entry $\left(\frac{p}{p_{WE}}\right) < 1$ and it has a power $\beta > 1$. Therefore as uncertainty increases, β goes down and the expected discount factor increases. As a matter of fact this ratio is smaller than unity with a power larger than 1 and decreasing.

The expected discount factor takes into account uncertainty (since β depends on σ), intertemporal preferences (since β depends on ρ) and the relative price of the good at any t on the price of the good that would trigger entry.

each member of the *WE* owns an equal option to delay entry. After all, would-be employee-members are workers endowed with the option (and the skill) to build an egalitarian *partnership* making for a compensation larger than w.

Let us now turn to the long run. Since competition dissipates all rents, the option value to delay entry goes to zero (i.e. $f_{WE} = 0$). However, by the infinite elasticity of demand, the optimal entry trigger (7) is not altered[8]. All firms are alike and demand is infinitely elastic. Then, each employee-member maximizes her individual option to enter. By doing that she ends up choosing the optimal dimension of the industry as a whole. This means that L_{WE}^{lr} is the dimension of a *WE* encompassing all employee-members in the industry.

Then, we may prove that:

Proposition 1 *a) Long run competition forces the WE to operate with a larger dimension than in the short run, i.e.:*

$$L_{WE}^{sr} < \hat{L} < L_{WE}^{lr},$$

b) The entry trigger price reacts in distinct ways in the long run vis à vis the short run, i.e.:

$$\frac{\partial p_{WE}^{sr}}{\partial L} < 0 \qquad \frac{\partial p_{WE}^{lr}}{\partial L} > 0.$$

Proof. Let us consider first the part *a)* of the *Proposition*. Substituting (7) into ((6) and rearranging we write the L-th employee-member's value of the project prior to investing:

$$f_{WE}(p; L) = A(L)p^{\beta} \qquad \text{for } p < p_{WE}(L), \tag{9}$$

where the constant $A(L)$ is given by:

$$A(L) \equiv \frac{(\beta - 1)^{\beta-1}}{\beta^{\beta}} AC(L)^{-\beta} \frac{(wL + I)}{L} > 0. \tag{10}$$

By (9) the optimal dimension requires choosing L for which $A(L)$ is the largest. This is equivalent to maximizing

$$a(L) \equiv AC(L)^{-\beta} \frac{(wL + I)}{L},$$

which gives the first order condition:

$$\frac{L_N Q'(L_N)}{Q(L_N)} = 1 - \frac{(\beta - 1)}{\beta} \frac{I}{(\frac{w}{\rho} L_N + I)}. \tag{11}$$

Since the r.h.s. of (11) is less than one, a necessary condition for an optimal solution is an output elasticity $\varepsilon_{QL} \equiv \frac{LQ'(L)}{Q(L)} < 1$, i.e., the average productivity

[8] See Leahy (1993, p.1118); Dixit and Pindyck (1994, p. 254-257); Grenadier (2002, p.703-704).

$\frac{Q(L)}{L}$ must be a decreasing function of labor, as from Assumption 1. Furthermore, by simple manipulation of (11) we get (8). Consider now the option value to invest by the industry as a whole. By Assumptions 4 and 5, this is given by:

$$F_{WE}(p;L) = f_{WE}(p;L)L \tag{12}$$

where $f_{WE}(p;L)$ is the value of the project for the L-th member of the WE, given by (9). Defining $b(L) \equiv La(L)$, the optimal size is simply given by:[9]

$$b'(L) = a(L) + La'(L) = 0. \tag{13}$$

Over the range where the SOC holds $a'(L_{WE}^{sr}) = 0$. Therefore, $b'(L_{WE}^{sr}) = a(L_{WE}^{sr}) > 0$.

If an L_{WE}^{lr} exists such that $b'(L_{WE}^{lr}) = 0$, this will necessarily be:

$$L_{WE}^{sr} < L_{WE}^{lr}.$$

Define now the average cost function $AC(L) \equiv \frac{wL+I}{Q(L)}$. By the concavity of $Q(L)$ it may be shown that $\lim_{L\to 0} AC(L) = +\infty$ and $\lim_{L\to +\infty} AC(L) = +\infty$. By taking the derivative with respect to L, we get:

$$\frac{\partial AC}{\partial L} = \frac{wQ(L) - (wL+I)Q'(L)}{Q(L)^2} = \begin{cases} <0 & \text{if} \quad \varepsilon_{QL} = \frac{LQ'(L)}{Q(L)} > 1 - \frac{I}{(wL+I)} \\ >0 & \text{if} \quad \varepsilon_{QL} = \frac{LQ'(L)}{Q(L)} < 1 - \frac{I}{(wL+I)} \end{cases} \tag{14}$$

Then, a value $\hat{L} > 0$ exists such that $\frac{\partial AC}{\partial L} = 0$ and it is given by:

$$\frac{\hat{L}Q'(\hat{L})}{Q(\hat{L})} = \left(1 - \frac{I}{(w\hat{L}+I)}\right). \tag{15}$$

The second order condition confirms that $AC(L)$ is a convex function with a minimum represented by $\hat{L}$. Since $\frac{(\beta-1)}{\beta} < 1$, by comparing (15) and (11), we notice that in the short run the WE operates only in the descending branch of the average cost curve to the left of the minimum. That is:

$$1 - \frac{(\beta-1)}{\beta}\frac{I}{(wL+I)} > 1 - \frac{I}{(wL+I)}$$

which implies that $\hat{L} > L_{WE}^{sr}$. On the contrary,by comparing (15) and (13), we have:

$$\frac{(\beta-1)}{\beta}\left(1 - \frac{I}{(wL+I)}\right) < 1 - \frac{I}{(wL+I)},$$

which, in the range where the SOC holds, implies that $\hat{L} < L_{WE}^{lr}$.

[9] The SOC is:

$$b''(L) = 2a'(L) + La''(L) < 0.$$

In general $a''(L) < 0$ does not imply that $b''(L) < 0$: the two regions, where the SOC holds, overlap only partially (See Moretto and Rossini 2007).

This proves part *a)* of the *Proposition.*

Finally since by (7) we get $\frac{\partial p_{WE}}{\partial L} \propto \frac{\partial AC}{\partial L}$, making use of (14) and (15), it may be shown that $\frac{\partial p^{sr}_{WE}}{\partial L} < 0$ and $\frac{\partial p^{lr}_{WE}}{\partial L} > 0$. This proves part *b)* of the *Proposition.* ■

To sum up:

1. under uncertainty the *WE* enters in both the short run and the long run if the market price is larger than the average total cost $AC(L) \equiv \frac{wL+I}{Q(L)}$ multiplied by a coefficient $\frac{\beta}{\beta-1}$,

2. the myopic *WE* enters with a size lower than minimum efficient scale $\hat{L}$

3. the farsighted *WE,* under long run competition, adopts a size which is above the efficient scale $\hat{L}$.

In other words, in the short run myopic equilibrium, the *WE* operates to the left of the minimum efficient scale, while, in the long run farsighted equilibrium, to the right.

Furthermore, we notice that, the optimal entry triggers of the short run *WE* and of the long run *WE* react in opposite ways with respect to dimension. Then, although we do not know whether p^{sr}_{WE} is larger or smaller than p^{lr}_{WE}, since it depends on the shape of $AC(L)$, as a result of competition - free entry - firms exercise their option sooner. This occurs since the potential entry of new rivals reduces the value of the option to wait in the hands of the members of the *WE.*

Finally, in the long run the *WE* chooses optimal size equating the value marginal product to the market wage w. This choice coincides with that of a *PMF* that determines the amount of labor to hire before entry, sticking to it afterwards, regardless of market signals (Moretto and Rossini, 2007). When considering the effects of free entry, both the *PMF* and the *WE* abandon their respective myopic attitude and their behaviors converge, i.e., they enter with a size larger than that dictated by the minimum efficient scale level and, *ceteris paribus*, wait less before entering.

4 Epilogue

In an uncertain dynamic environment firms may anticipate competitive reactions of potential rivals. If they have the option to determine the best time to start producing and if they cannot change their size after entry, a long run coincidence between a *WE* and a conventional firm emerges.

At entry, in a myopic environment *WE*s are smaller than conventional firms. While, in the long run under uncertainty, free entry and risk neutrality a conventional firm and a *WE* both enter with a larger size than that dictated by the minimum efficient scale. Moreover, they wait less, as they both anticipate the effects of entry.

Even though our results have been obtained in a simplified framework, the coincidence of behavior at entry between a *WE* and a conventional firm facing after entry labor rigidities, provide a further interpretation of the persistence of

WEs in many industries where human capital specificities make labor flexibility costly.

A more realistic picture requires that each firm perceive the industry demand in the long run as a downward sloping curve. If that was the case, also the optimal triggers would differ between the myopic and the non myopic *WE*. Nonetheless, as proved by Grenadier (2002) for the conventional firm, the results do not change much.

References

[1] Bonin, J. and Putterman, L. (1987), *Economics of Cooperation and the Labor-Managed Economy*, Harwood Academic Publishers, New York.

[2] Cellini, R. and Lambertini, L. (2006), "Workers' enterprises are not perverse: differential oligopoly game with sticky price", *Review of Economic Design*, **10**, 233-248.

[3] Craig, B. and Pencavel, J. (1992), "The behavior of worker cooperatives: the plywood companies on the Pacific Northwest", *American Economic Review*, **82**, 1083-1105.

[4] Craig, B. and Pencavel, J. (1995), "Participation and productivity: a comparison of worker cooperatives and conventional firms in the plywood industry", *Brookings Papers: Microeconomics*, 121-174.

[5] Dixit A., (1993), *The Art of Smooth Pasting.* Harwood Academic Publishers, Chur, Switzerland.

[6] Dixit A., and Pindyck R., (1994), *Investment under Uncertainty.* Princeton University Press, Princeton.

[7] Dixit A., Pindyck R., and Sødal S., (1999), "A Markup Interpretation of Optimal Investment Rules," *The Economic Journal,* **109**, 179-189.

[8] Dow, G. (1993), "Why capital hires labour: a bargaining perspective", *American Economic Review*, **83**, 118-34.

[9] Fehr, E. and Sertel, M. (1993), "Two forms of workers enterprises facing imperfect labour markets", *Economic Letters*, **41**, 121-127.

[10] Grenadier, S. (2002), "Option exercise games: an application to the equilibrium investment strategies of firms", *Review of Financial Studies*, **15**, 691-721.

[11] Hesse, H. and Cihàk, M. (2007), "Cooperative banks and financial stability", *IMF Working Paper* No. 07/02.

[12] Leahy, J. (1993), "Investment in competitive equilibrium: the optimality of myopic behavior", *Quarterly Journal of Economics*, **108**, 1105-33.

[13] McDonald, R. and Siegel, D. (1986), "The Value of Waiting to Invest," *Quarterly Journal of Economics*, **101**, 707-28.

[14] Moretto, M. and Rossini, G. (2003), "Labour participation". In: Bianchi, P. and Lambertini, L. (eds.) *Technology, Information and Market Dynamics.* Edward Elgar, Cheltenham, UK.

[15] Moretto, M. and Rossini, G. (2007), "Partnerships vs. conventional Firms Entry strategies", Forthcoming in: *Southern Economic Journal.*

[16] Pestieau, P. and Thisse J.F. (1979), "On market imperfections and labour management", *Economic Letters*, **3**, 353-356.

[17] Samuelson, P.A. (1957), "Wages and interest: a modern dissection of Marxian economic models", *American Economic Review*, **47**, 884-912.

[18] Sertel, M. (1987), "Workers' enterprises are not perverse", *European Economic Review*, **31**, 1619-25.

[19] Sertel, M. (1991), "Workers' enterprises in imperfect competition", *Journal of Comparative Economics*, **15**, 698-710.

[20] Sertel, M. (1993), "Workers enterprises in price competition", *Management and Decision Economics*, **14**, 445-449.

[21] Vanek J., (1970), *The General Theory of Labor Managed Market Economies*. Cornell University Press, Ithaca, N.Y..

[22] Ward, B. (1958), "The firm in Illyria: market syndacalism", *American Economic Review*, **48**, 566-89.