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An Application to Transition Economies

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EMPLOYMENT AND SHARE TRADE UNDER EMPLOYEE SHARE OWNERSHIP: AN APPLICATION TO TRANSITION ECONOMIES[1]

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Abstract:

The paper focuses on internal markets for shares in employee owned firms, with special reference to Eastern Europe. It is proposed that shares should be viewed as implicit employment guarantees. This view provides new results on employment decisions and dynamics of internal share trade. When the firm has surplus labour, the tradability of shares ensures that employment adjusts to the socially optimal level. Those employees who are laid off get a full compensation for unemployment costs when selling their shares. The tradability of shares provides useful signals on the outside opportunities of labour. The paper also discusses the limitations of the model in the context of East Europe.

Keywords: Employee share ownership, employment adjustment, transition economies

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1 INTRODUCTION

Following the breakdown of Soviet hegemony in Eastern Europe, a new class of owners has emerged. Almost everywhere in the region, the privatisation methods have brought employees as owners in a huge number of enterprises.[2] The real significance of this development has been somewhat uncertain. Some have expected employee ownership to be only a temporary phenomenon (Chilosi, 1996). Some, apparently disturbed by the slow pace of the ownership change, have developed theoretical arguments why employee ownership would be more persistent (Blanchard and Aghion, 1996).

The empirical work on ownership change provides us with important insights. For instance, in the Baltic states ownership changes are much more common in firms which started with majority employee ownership than in firms with other type of majority owners (Jones and Mygind, 1998). Though much of the theoretical and conceptual literature focuses on ownership change from employees to outsiders, the empirical evidence suggests that the internal markets for shares are much more important, and that the direction of ownership change is usually from employees to managers (Gardawski 1996; Blasi, Kroumova and Kruse 1997; Jones and Mygind 1998).

Concerning the employment change, there is a common belief that employee owned firms would, *ceteris paribus*, have fewer layoffs than traditional firms. Some observers view this negatively, arguing that employee ownership hinders the necessary reallocation of labour.[3] Some scholars have pointed out that more job-preserving strategies might have positive externalities in the context of depressed labour markets (Uvalic and Vaughan-Whitehead, 1997b). However, the consensus, reflected in the empirical work, is that employee owned firms are more sensitive to the hardships of labour markets.

Thus, the literature has noted the link between ownership and employment decision, and acknowledged that labour market conditions might affect ownership change. There are, in my opinion, still serious deficiencies. There is a tendency to view employees as a homogeneous group of owners, as if every employee would have the same preferences towards the employment policy and own an equal amount of shares.[4] Perhaps for this reason, the internal market for shares has attracted little attention. As noted above, the trading of shares is much more common inside the enterprise than between insiders and outsiders. Furthermore, the empirical evidence clearly indicates that ownership in employee owned firms is not evenly distributed and it is constantly evolving.[5] The purpose of this paper is to investigate the internal markets for shares with a simple model and this its implications for the employment decision.

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[2] There is now voluminous literature on post-privatisation ownership structures in Eastern Europe. On employee ownership, see especially Uvalic and Vaughan-Whitehead (1997a) and Earle and Estrin (1996).

[3] This has become almost a standard assumption in the literature of transition and is endorsed by e.g. Frydman and Rapaczynski (1994, 1997); Boycko et al. (1996); and the World Bank (1996).

[4] This criticism is mainly addressed to the recent work on transition economies. In earlier work, the implications of worker heterogeneity were discussed e.g. by Domar (1966) and Furubotn (1976). Recently, Nuti (1997) has discussed the implications of different degrees of share distribution.

[5] For instance, I inspected a data-set of 66 Estonian companies where insiders owned the majority of shares and employees owned more shares than managers in 1995. In these companies, an average of 56 per cent of the insiders were also owners, median being 58 per cent and the range from 5 to 100 per cent. Moreover, of 39 firms in which the employee shareholders / employees ratio was higher than 50 per cent, 12 (31%) reported that the distribution of shares among insider *owners* was very unequal, meaning that the largest employee holding was more than ten times larger than the smallest holding (Source: PFPB-database, Center for East European Studies, Copenhagen Business School, author's calculations). In comparison, in a survey done in 1994 of Polish employee owned enterprises which went through the so-called privatisation through liquidation, the mean of employee shareholder/ employees ratio was 72 per cent

The desire to protect employment-related rents can usefully be considered the primary motivation in the formation of an employee owned firm. As discussed in section 2, this view suggests that shares can be understood as *implicit* employment guarantees. The emphasis is on the word implicit, since shares do not usually provide explicit protection against layoffs, contrary to what is typically the case in co-operatives. Instead, share ownership provides a seniority claim to the job. This view can be justified by the rational interests of both employees and managers. It provides some interesting and surprising results in the analysis of employment decision and share trade, as discussed in section 3.

Though the analytical part of this paper aims at generalisation, the inspiration for the paper has been the experiences of Eastern Europe. Indeed, to a great extent the paper focuses on the problem of "excess labour", a concept familiar to the students of transition economies. Therefore, it is also necessary to evaluate how the present analysis can be applied to the problems of Eastern Europe. This is done in section 4.

2 SHARES AS IMPLICIT EMPLOYMENT GUARANTEES

2.1 Why do employees buy (and keep) shares?

Many economists have been sceptical about the viability of employee ownership in general. Their doubts are usually related to the workers' wealth constraints and risk aversion. Employees obviously have only limited funds to invest in company shares. Tying up a substantial proportion of one's wealth to one's own firm limits the possibilities to further diversify this wealth to different assets, and from a risk bearing point of view, employees end up having "too much" invested in their own firm. I am somewhat sceptical on the diversification argument in the context of Eastern Europe where the possibilities to diversify are quite limited for most people[6], but the fact remains that wealth constraints and risk aversion should impose costs on employee shareholding. Some features specific to transition economies surely enforce this problem. For instance, bank loans for acquiring shares have been mostly unavailable, thus preventing employees with no savings from participating in ownership. In addition, it may be years before the investment in shares pays itself, since many firms are in dire need of investments and do not have free cash to pay out as dividends. Thus, when making the initial investment in shares, the employees may have to wait years to get return on their investment, for which reason share-owning is unattractive for employees preferring current consumption. Tradability of shares may alleviate this problem, but the market for shares may be illiquid (this is discussed further in section 4). Also the possibility that the shares turn out to be worthless still remains, thereby reinforcing the notions of employee risk aversion.[7]

(Gardawski, 1995). I have not seen similar figures for Russia, but many authors report that there is considerable trading of shares between insiders, especially from employees to managers, which would certainly affect the concentration of shares among insiders (Gurkov 1996, Blasi et al. 1997).

[6] In addition, during the period of high inflation which the countries experienced in early transition, company shares may have been a relatively safe asset compared to bank deposits. Pärli (1996) has made this observation in a case study on an Estonian firm.

[7] The critics of employee ownership often argue that owners' risk aversion may have adverse effects on investment behaviour. If this argument is accepted, then employee ownership generates not only private but also social costs. The proponents of employee ownership reply to this criticism that the productivity gains from employee ownership outweigh these social costs, but accept the notion of private costs in explaining the rarity of employee controlled enterprises in developed industrial countries. Even though these arguments are important and interesting, I choose to ignore them in the remainder of the paper, in order to concentrate on the employment determination question.

Despite these costs, employee ownership has proven to be common in Eastern Europe. If these costs are higher for insiders than for outside-owners, there must be something to compensate for these costs. The special advantages granted to employees in many of the countries undergoing privatisation processes, like the pre-emptive rights to subscribe shares in Russia and the special leasing contracts in Poland, have certainly contributed to the prevalence of employee ownership and have enabled employees to overcome the wealth constraints. However, employee ownership is prominent also in Estonia, where employees were not given only few advantages compared to other domestic investors.[8] Even when shares are initially purchased at reduced prices, keeping them may, in the longer run, be a costlier strategy than selling them.

This paper adopts the view that the motivation behind employee share ownership is the protection of employment-related rents. Employees are more sensitive to job cuts than are outside owners or managers. By acquiring shares, employees reduce the probability of getting unemployed. The diminished risk of layoff may well compensate for the risk associated with the investment, especially in the context of depressed labour markets. However, it turns out that this argument needs strong qualifications.

2.2   The free-rider problem related to employee ownership

An interesting paper related to the issue at hand is Chilosi (1996). Much in the same vein as the above, he argues that employees' time preferences and risk aversion put employee shareholding at a disadvantage compared to outside ownership. He also notes that there are private benefits from employee control, but he argues that the existence of private benefits does not affect share trade, when employees play Nash (non-co-operatively). Consider an employee in a large company, where ownership is diffused among many employees. There are gains from trade to be made, when an employee sells his share to an outsider with a more long term perspective and who is less prone to risk. Moreover, the impact of the transaction on the employee's job security is negligible, because he owns only a small proportion of shares. However, when all employees reason this way, the firm ceases to be employee-owned. Employees defend their jobs only when they decide on the share trade collectively (Blanchard and Aghion, 1996).

However, in my reading, the experience of Eastern Europe has not confirmed this hypothesis, which suggest that employee ownership should be a relatively short-term phenomenon. This could, however, be explained by the constraints outsiders face when considering investing in employee owned firms. These constraints include poor minority rights protection, restrictions on share trade, and asymmetric information between outsiders and insiders. The above argument posits us with a problem in suggesting that the probability of layoffs is determined by the type of majority owner and not by whether the individual himself owns shares or not. On this note, we need to give a satisfactory explanation as to how share owning and job security are related.

A preliminary answer is that the act of selling one's share is distinct from many other free rider problems in one important respect: It is observable. The managers control share registers. Therefore, an employee selling his share to an outsider might be punished, either by his fellow employees, or, more likely, by the managers of the firm. Managers have the power to exert the ultimate punishment, which is dismissal.[9] This is obviously sufficient to prevent free-riding and forces the employees to take the costs of job loss into account. The motivation for this kind of behaviour is naturally to prevent control transactions. Also, employees who sell their shares to

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[8] Mygind (1997).
[9] This is observed in Russia; see Blasi, Kroumova and Kruse (1997).

outsiders may be punished by other employees, whose jobs this kind of behaviour puts in danger. In other words, peer pressure may prevent employees from free riding.

2.3 Why shares should be viewed as implicit employment guarantees?

The risk of punishment explains why employees cannot freely sell shares, yet the question of how share owning and job security are related still remains. My main objection to the argument made by Chilosi is that if one's share owning and probability of lay-off were independent, we would not have a satisfactory explanation as to why employee owned firms exist at all. If control is a public good for all employees, then every employee would rather see their colleagues to acquire the majority control than putting their own money at stake. On the other hand, employee ownership cannot be explained as an outcome of atomistic decision-making, since it would seldom be rational for an individual employee to buy shares in the company he is working for, independent of his fellow employees. The patterns of employee ownership that we observe show that if there is any (non-managerial) employee ownership, many employees are involved (small firms excepted). The control benefits and motivation effects are borne only when a sufficient number of employees are owners, and therefore employee ownership requires collective action. Employees need some *ex ante* guarantees that their share holding protects them from layoffs. These guarantees are seldom explicit, hence I choose to label them implicit employment guarantees.[10]

By their very nature, implicit contracts carry the threat that they will be breached. The greater the possibility that the contract will be reneged, the less the likelihood of it ever being made. But there are actually important *ex post* –constraints, which reinforce the contract. The most obvious explanation is that share ownership gives employees power vis-à-vis the managers through the exercise of voting rights. This point may be vividly illustrated with an example. Consider the case where half of the employees collectively own the controlling stake of the company, say, 60 per cent, the other half of the employees owns no shares, managers own 20 per cent of the shares, and outsiders own 20 per cent. The employees are all identical in characteristics other than share ownership. Suppose that the management wishes to lay-off half of the workers. By selecting the workers randomly, the ownership stake of laid-off employees is around 30 per cent. By colluding with outsiders or selling the shares to them, they can oust the "bad" management, which destroyed their jobs. Thus, the management would be inclined to favour shareowners in the lay-off decision. By laying-off non-owners, the ownership relations do not change. In this way, share owning protects employees from layoffs.

An alternative explanation as to why share owning may provide job security is consistent with the reasons for employee share ownership in developed countries. Share schemes and stock options are often meant for motivating employees and giving valuable employees incentives to stay in the firm rather than to quit. Laying off employee-owners would undermine these objectives. Breaching the contract could also spoil the industrial relations climate in the firm. This point will not be elaborated upon here, but it provides a strong argument as to why share ownership should be regarded as an implicit employment guarantee.

3 EMPLOYMENT CHOICE

3.1 Employees as shareholders and stakeholders

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[10] There exists of course another possibility for the existence of employee ownership, which is that the employees buy shares to take advantage of the undervaluation of these shares. The objective of the employees were then to make quick profits from their shares. Though this explanation undoubtedly applies to employee ownership in Eastern Europe in some extent, it runs counter to the observation that employee ownership still remains important in the area.

In the literature on transition economies, it has been common to assume that employee owned firms maximise either employment, wages, or both. Somewhat strangely, it is often ignored that employees have an interest as shareowners as well. The objective function of employees is therefore different from e.g. union bargaining models, where employees do not share the profits of the enterprise, but only rents. I suggest that the objective function should incorporate employees' objectives both as shareholders and as stakeholders.

Let us investigate this using a simple model. The production technology involves one variable input, labour (l), and fixed capital. The production function has the usual properties, $F'>0$ and $F''<0$. The production decisions of the firm do not affect the price of its product. The (market) wage (w) is exogenous in the model, as is capital cost, k. If the employee is laid off, he loses some income during the period of unemployment, before he is hired again at the wage w.

There is only one period in the model, during which the price of the product, wage level and capital costs are fixed. The price of output is normalised to one. In the beginning of the period is privatisation. The firm decides on the employment level in a way specified below. The employment level may be revised later. At the end of the period the profits generated by the firm are distributed to the owners in proportion to shareholding.

I assume that the privatisation agency and the employees of the firm bargain over the privatisation price. Due to the information advantage of insiders, political objectives of privatisation and credit constraints, the realised price for shares does not likely reflect either the true value of the assets or the maximum price employees would pay for shares. Shares may be sold with a substantial discount. This gives opportunities to profit from selling shares, and the initial ownership structure therefore rather reflects the opportunities the buyer had before privatisation than any long-term commitment to the firm. To make the analysis simple, I assume that employees initially buy 100 per cent of the shares and all employees buy an equal amount of shares.

We can combine the effects of employees being both shareholders and stakeholders and call this function the joint return function for capital owners and labour. We may start with the assumption that all employees incur identical costs in the event of layoff. These costs include wage losses, search, training and relocations costs, and are denoted by c. L defines the initial level of employment in the firm. Importantly, it is assumed that the firm employs excess labour in the sense that by labour reductions it could achieve a Pareto improvement, i.e. increase the wealth of all employees. The profit function is

$F(l) - wl - k$

The income function is

$wl + (w-c)(L-l)$

These two expressions can be combined to write the joint return maximising function:

(1) $F(l) - (w-c)l - k + (w-c)L$

This is subject to the zero-profit constraint

(2) $F(l) - wl - k > 0$

The first-order condition of (1) gives

(3) $F'(l) = w - c.$

This is just another way to state that under joint return maximisation, the cost of unemployment is internalised, and the marginal product of the marginal employee is equal to his opportunity income. It is also clear that the chosen level of employment is generally higher under joint return maximisation than it is under profit maximisation. Only in the case where the firm earns no rents or where the workers can costlessly move from one firm to another ($c=0$) would the joint return optimum be equal to the profit maximising level.

In the following I will note the joint return maximising level of employment as L^*. This level should be interpreted as the socially optimal level of employment, because it maximises the return to employees both as capital owners and as workers. The determination of the employment under joint return maximisation is shown in Figure 1, where the profit maximising level of employment is denoted by L'.

Figure 1 around here

3.2   Decision on employment under equal distribution of shares

The interesting question is whether the joint return optimum is achieved in employee owned enterprises. The employment decision is ultimately dependent on the company executives. They might prefer a profit-maximising level of employment, but the choice is constrained by employees' majority share owning. If labour is cut more than employees think is justifiable, they may express their protest at shareholder meeting and terminate the managers' contracts.[11] Therefore, the employment decision requires the support of at least 50 per cent of the shareholders. A median voter approach can be applied here. The manager needs the support of at least 50 per cent of employees for the decision on employment level.

Our benchmark case is that all employees are identical and that each has the same amount of shares. In particular, the costs of unemployment are assumed to be the same for all employees, and are denoted by c. Due to these assumptions, everyone has the same preferences concerning employment. Each employee owns $1 / L$ shares. Since all employees own shares, the probability of layoff is assumed to be identical for each employee, and layoff is done by lottery. The probability of unemployment is the same for each employee and it is $(L-l)/L$. We must take also risk aversion into account. The individual's payoff from a given level of employment may be written as

$$(4) \frac{1}{L}(F(l) - wl - k) + w - \frac{L-l}{L}c - r(l,c).$$

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[11] Of course, governance arrangements in Eastern Europe do not work as smoothly as assumed here. The model presented here may well overestimate employees' ability to influence employment decisions. Its advantage is however analytical convenience.

The last term is risk premium, which is the disutility of the risk that the individual himself will be laid off, and which depends on the chosen level of employment and unemployment costs.

The first order condition of (4) is

$$(5) F'(l) = w - c + L r_l.$$

The last term is necessarily negative, implicating that employees are risk averse. Comparing (5) with (3), it is obvious that the chosen level of employment under individual decision making is higher than the joint return optimum. This is because of risk aversion. Were employees risk neutral, (5) would be identical to (3). Thus, equal ownership by all employees leads to a higher level of employment than would be socially optimal. In addition, the implicit guarantees on employment security are breached.

There are different ways to solve this dilemma. One possibility would be that the firm adopts a severance payment, covering the full the costs of unemployment. Employee share ownership offers a novel way to organise the severance payment. The firm may buy the shares back from ($L-l$) employees and then distribute the shares to the remaining employees. The pay-off is now for both those employees who stay and for those who leave

$$(6) \frac{1}{L}(F(l) - wl - k - (L-l)c) + w.$$

The last term in brackets (($L-l$)c) is the cost of severance payment, which is imposed on all shareholders, and the last term is w since everyone now gets the same income (those who leave get the severance payment which compensates for the exact amount of lost income). Comparing (6) with (4), it is clear that all employees would prefer this severance payment since the payoff with it is higher than without it (because there is now no risk involved). It is easy to see that the first order condition of (6) is identical to (3). The adopted severance payment leads to the socially optimal level of employment, $L*$. Moreover, a Pareto improvement has taken place, since no employee earns less than before and the profits have risen.

The price for the shares can be derived from (6). It is

$$\frac{1}{L}(F(L*) - wL* - k - (L - L*)c) + c.$$

This may be written as

$$(7) \frac{1}{L}P(L*) + \frac{L*}{L}c.$$

$P(L*)$ above denotes profits (as defined in the expression (2)) with employment $L*$ and the last term is a premium for the cost of unemployment.

There is another possibility for achieving the optimal level of employment, which in this framework is equivalent to the one above, namely that the employees achieve the efficient outcome by trading

shares among themselves.[12] This possibility is based on the idea that shares are implicit employment guarantees, and that selling one's share is then equivalent to selling one's seniority to the job.[13] When the share trade is based on voluntary transactions between similar employees, it is clear that the only possible equilibrium price is the one at which all employees are indifferent to either buying or selling. The only price which fulfils this condition is (7).

The surprising result of the above analysis is that the tradability of shares ensures that the socially efficient level of employment is achieved, and after the employment cuts, everyone is better off. Moreover, in this regard, employee ownership is more efficient than outsider or managerial ownership, which would result in an adjustment of the employment to the profit maximising level. This result was derived from the preferences of individual employees. However, it should be noted that it is in effect only the individuals' welfare, which is now maximised. For instance, if the firm started from a level of employment lower than $L*$, but at least as high than the profit maximising level, then the insiders would certainly not hire new employees up to the point $L*$, since that would lower their own rents.

3.3   Some remarks

The analysis applied here resembles that of Brown (1998). She argues that in a situation where an employee-owned firm becomes subject to a take-over attempt by an outsider, the price of shares involved in the transfer of control includes a premium for unemployment costs. Thereby, employee ownership guarantees that all take-overs are efficient. The reasoning is similar to that of this paper, though some practical differences may be pointed out. First of all, the analysis in this paper implies that there is no reason, apart from certain institutional constraints discussed below, why employee owned firms would not reach the optimal level of employment by internal decision-making. The redistribution of shares among employees minimises the large take-over costs, which are likely to prevent many potentially efficient ownership transfers between insiders and outsiders. On the other hand, external investors may contribute to a greater overall efficiency (as is often argued in the context of transition economies literature), which may compensate for the take-over costs. Outside owners may also have better access to capital markets, meaning that they can better afford the lump-sum contributions for shares.

Another important insight may be noted from the expressions above. The socially efficient level of employment depends on the marginal product and cost of unemployment only and not on wage level. That is, we have solved the optimal level of employment for any wage. However, due to zero profit constraint, too high a wage can make the identified level of employment unattainable. The new zero profit constraint at the employment $L*$ is defined by

$$(8) F(L*) - wL* - k - (L - L*)c > 0$$

The shareholders are indifferent to any wage in the range with upper limit the wage which equals expression (8) to zero and the lower limit being w-c. However, the trading of shares requires that the premium for shares is lowered by the same amount than wages.

Though risk is not explicitly modelled, its impact should be considered. Those employees who acquire shares lower their unemployment risk, but are now exposed to more equity risk. In contrast,

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[12] This equivalence is in fact similar to Modigliani-Miller (1958) irrelevance theorem.

[13] Obviously, selling one's share is not the same as quitting, because the connection between share owning and being employed is not explicit. It means mainly giving away the seniority claim to the job, which in the particular model with excess employment leads to the termination of employment contract.

those who sell the shares with full premium for unemployment are now free of all risk. This suggests that risk averse employees would not be willing to pay the full premium for the shares. Since trading of risk is involved, the price settled should be lower than expression (7) would suggest.

The question that remains after the analysis is how the sellers and buyers are determined. The answer to this question will be clearer once we allow for one degree of employee heterogeneity.

3.4 Employment decision with heterogeneous employees

The notion of identical employees does not correspond well with the real world. A minimum amount of heterogeneity, which does not complicate the analysis, is to recognise that employees have different costs of unemployment. For instance, a young worker might find it easier than an elder worker to find new work. Another group with potentially low unemployment costs is that comprised of workers who value the time used outside the labour market more than average workers, for instance those near retirement age.

Suppose that the outside opportunities are independent of the productivity of the worker in the enterprise. The value marginal product (VMP) curve, wage rate and outside opportunities (labour supply, LS) curve are shown in the figure 2. Again, the social optimum is at the point where VMP and LS curve cross. There is however little reason why this would be the chosen level of employment in the voting process described above. First, the preferences of employees concerning employment choice now differ. Each worker has his own preferred level of employment, and only by rare coincidence will the level decided by voting equal the socially optimal level. Another reason why layoffs would rarely be socially optimal is that the cost of unemployment is likely to be private information of the employees. Managers do not have the information necessary for laying off those workers who have the lowest costs of unemployment and employees have no incentives to reveal this information.

Figure 2 around here

The tradability of the shares provides a mechanism whereby labour can be efficiently allocated. The price of the shares now determines the labour supply. Again, we assume that if an employee sells his share, he will be laid off. Consider the situation where the price of shares with initial employment L is $(1/L)P(L)$. At this price, no employee is willing to trade, if $c>0$, because trading of shares would imply losing the job and there would be no gain from the trade. But when the price is raised, some employees will find it advantageous to sell their shares because the premium for shares now covers the cost of unemployment. When these people leave the firm, the profits are augmented to the benefit of those who remain in the firm. This has the surprising implication that a rise in the price of shares would also improve the welfare of those who bought the shares. However, some employees benefit more than others from the price rises. Suppose that the price is set arbitrarily to a level so that there exists an employee e, who is indifferent to whether he buys or sells. Now, all those employees on the LS curve to the right from e gain more than e, because their cost of unemployment are less than that of e. The fact that the shares must sell at an equal price has the implication that the maximum price, which those employees who remain in the firm are willing to pay, is less than the price which would lead to a socially optimal level of employment.

This can be shown formally. Note that c and l are now functionally related, so we have to solve only one of them. The payoff is the same for all employees who stay in the firm. We have to solve the level of employment that maximises the payoff for those who stay:

(9) $\max F(l) - wl - k - (L - l)c.$

The first-order condition of (9) is

(10) $F'(l) = w - c + (L - l)\dfrac{\partial c}{\partial l}.$

With an upward sloping labour supply curve, the last term is necessarily negative, which means that the chosen level of employment is higher than the efficient level.

This needs not to be a serious problem, however. Employment would settle to the level of (10) only if the employment adjustment were allowed only in the beginning of the period. If later adjustments are permitted, the employees would find that after the initial adjustments there would still be Pareto improvements to be made. By augmenting the price of shares, more employees would be induced to leave and profits would rise. This process would go on after the social optimum is reached. Thus, the precondition for reaching the social optimum is that shares may be traded at different prices at different times.

Some readers may object that if outside opportunities and productivity were correlated, the resulting share redistribution would undermine the productivity of the firm. The firm, however, has an instrument to prevent this, namely wage differentiation. In the model, everyone has (for simplicity) the same wage and productivity, but what really matters is the difference between the wage and outside opportunities. The firm may ensure that valuable employees stay in the firm by paying them higher wages. A correct measure of the employee's willingness to own shares should be measured as the difference between his wage in the firm and his opportunity wage.

The above analysis reveals some important insights. First, trading of shares provides a mechanism whereby the employees signal their outside opportunities, thus enabling the optimum allocation of employment. Second, it suggests that ownership of the shares would concentrate among those workers who most value the employment in the particular firm. A plausible interpretation of that finding would be that those workers who have invested in firm-specific human capital would be willing to buy shares.

Third, the analysis suggests that employee share ownership may be a mechanism for avoiding some problems which employee entrenchment without rights to residual returns may cause. Some of these problems have been identified in the insider-outsider theories of labour market.[14] The inefficient allocation of labour in these models arises from the non-tradability of job rights. What I propose here is that employee ownership provides a mechanism whereby employees can reallocate their job rights in an optimal fashion.

3.5 The effects of wage flexibility

In section 3.3, it was noted than when all employees own an equal amount of shares, the wage level has no real significance. A cut in wages would lead to a rise in profits of a similar amount and the

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[14] For early formulations of these theories, see e.g. Solow (1985) and Lindbeck and Snowden (1988).

effects would be the same for each employee. Wage cuts may thus be viewed as an alternative way to reallocate the labour. The results are analytically similar to those of share trade, though the mechanism is different. When the firm lowers the wage, some employees will go to the outside labour market. The shareholders would lower the wage to the point where the VMP and LS curves cross.

The imperfections of the capital market are actually in favour of carrying out the labour allocation by wage cuts rather than by share trade. When wages are cut, no trading of shares has to take place. Employment guarantees have not been breached either, since there are no layoffs, but only resignations. There is one basic difference, however. $(L-L^*)/L$ of the firm's shares now belong to outsiders. Outside-owners have fundamentally different objectives concerning the employment policies of the firm. The remaining insiders may find the presence of outside owners disturbing, especially if the latter's number is large. However, there is another problem. Once a proportion of shares belongs to outsiders, the insiders have an incentive to exploit the situation by increasing the wages after the employment adjustment has taken place, thereby shifting the rent allocation in favour of the remaining insiders.[15] Thus, the mechanism of using wage cuts in reallocating labour is subject to *ex post* moral hazard. In conclusion, there are costs associated with both mechanisms.

4 EMPLOYEE OWNERSHIP IN EASTERN EUROPE

The above view of share trading as a method of reallocating labour admittedly comprises some assumptions which may not be completely realistic in the conditions of Eastern Europe. This section discusses the limits of the model in this context. The results of this section on ownership dynamics, rent distribution and employment differ considerably from those in the section 3. However, the purpose of the analytical exercise was to show that the problems experienced by employee owned firms may not necessarily be due to economic inefficiencies inherent within this type of firm. Instead, the problems identified here have a more institutional origin. They point to the capital market imperfections, informational constraints or "bounded rationality", and to power structures and power abuse.

4.1   Imperfect share trade

As shown in the above, efficient reallocation of labour through share trade may only be achieved if shares sell at a premium that compensates for unemployment costs. Though I have no citable evidence as to whether these premiums are observed or not, I suspect that usually the prices do not carry such a premium.[16] This might be due to the capital market imperfections and institutional arrangements. For instance, the prices of shares may be set administratively at a lower level than the market value would be. Whatever the reason, it is interesting to think of the implications imperfections have on enterprise behaviour.

If the prices of shares do not reflect the true value of shares and do not carry a premium for unemployment costs, it would, in our model, lead to drying up of share markets. No-one would sell his share while employed since this would lead to job loss without corresponding compensation. Employment reduction would be realised through wage cuts, or to the extent downward rigidity of wages is an issue, through layoffs. Because of the risk aversion of the workers, the level of employment would be higher than the social optimum, as demonstrated above. Because of the

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[15] See Nuti (1997).

[16] If so, this would not be unique for transition economies. Craig and Pencavel (1992) argue on similar grounds that the shares in cooperatives should carry a premium for employment security. In the empirical analysis, they find instead that the shares of cooperatives are persistently undervalued.

excess labour, employee owned firms would in good times have labour reserves they could use without the need for employing outside labour. The employment behaviour of employee owned firms would then inhibit rigidity similar to that of co-operatives (Meade, 1972), though for somewhat different reasons.

Like co-operatives, employee owned firms would not be averse to employing outside labour if needed, as long as these new employees are not granted ownership rights. The incumbent insiders would only be willing to share ownership in the case that the outsiders would pay the full price of the shares plus a premium for employment guarantee.[17] The imperfect tradability of shares also implies that the firm will remain employee owned only for as long as the original group of employees has the majority ownership share. But when the original cohort of workers gradually retires and becomes outsiders, the firm will no longer be employee-owned, and employee ownership would then be a medium term phenomenon. This is characteristic for the closely held firms in general. When the original entrepreneurs retire and no longer have employment or other stakes in the company, they usually sell the firm to outsiders.[18]

There is another point to be made. It is sometimes argued that the willingness of employees to hold their shares depends on the price they pay for them. This may be so, but in our model the price initially paid determines only whether the employees can buy shares at the time of privatisation, and this price does not affect later transactions. This is how it should be if the employees would correctly assess the value of the shares. Anecdotal evidence illustrates that some employees may indeed view the proper opportunity value as being the initial price for shares, most notoriously in Russia, where some new owners reportedly sold their shares for a bottle of vodka. The trading of shares observed in East Europe may partly reflect ignorance rather than voluntary and mutually beneficial transactions between rational agents. There is also evidence that managers, obviously possessing superior information on the value of shares, induce employees to sell their shares below their actual value, in worst cases using threats and punishments (Gurkov, 1997).

4.2   Unequal distribution of shares

One feature in the above analysis was that share ownership was equally distributed among all employees. In reality, it is only in rare cases that all employees are owners, and the ownership of shares is often unequally distributed among employees. In a dynamic setting, it is of course perfectly plausible that not all employees are interested in buying insurance for their job. Neither do all employees have equal access to shares, because of financial or informational constraints. At times employees may improve their liquidity by selling their shares, even if the shares are undervalued. All this might lead to the unequal ownership patterns, which we usually observe in reality.

The implications of unequal ownership have received little attention in the literature. Nuti (1997) has argued that when employees have a greater stake in share ownership than in labour input, the problem of excess labour will vanish. The same result can be derived by using the median voter approach from the previous section. When ownership is unequally distributed, the median voter is likely to own a greater stake as $1/L$, i.e. his stake as input supplier, and thus he will prefer a lower level of employment. More importantly, his share ownership will insure him personally against layoffs, and so the median voter will support any layoff scheme that would not include him

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[17]   On the other hand, the firm could encourage valuable employees to invest in firm-specific human capital by selling shares guaranteeing job security, even at prices which do not reflect full value.

[18] This is analogous also with the analyses of producer co-operatives life cycle (see Ben-Ner 1984; Miyazaki 1984), where the transformation into entrepreneurial firm is basically due to the non-tradability of shares.

personally. Therefore, we would expect faster employment adjustment in firms with unequal ownership distribution. In fact, with a sufficient degree of inequality the level of employment would be expected to converge to the profit maximising level. The chosen level of employment may, under unequal distribution of shares, well be lower than the social optimum.

Another interesting implication is related to wages. When the median voter owns more than $1/L$, any reduction in wages will make him better off, because his gain in profits will be larger than the loss in wages. Shareowners are presumable in a better position to influence the wage level than non-owning employees. This would mean that the wage of non-owners would be driven down to their reservation wage. In this case, the wage level would have distributional consequences. In fact, if the employees were organised in a strong union, concerned with the welfare of all its members, the resulting rent distribution could be more equitable than in the case of unequal share ownership.

In other words, the point here is that when ownership is unequally divided there is no reason why those employees who own shares should be concerned with the welfare of those who do not own shares. I am inclined here to share the view of Furubotn (1976) that the objective function of employee owned firms should not be interpreted as consisting of the welfare of all employees, but instead of the preferences of individuals actually making the decisions.

4.3   Does the residual return and control belong to employees?

Quite deliberately, I have saved the discussion on the role of managers for the end of the paper. All serious empirical work on employee ownership in East Europe recognises that managers are not simply the faithful agents of employees, but economic agents who might have preferences substantially different from those of employees. Normally the managers also own a considerable amount of shares. Given the weak corporate governance culture in most of the countries in the region, the managers are in an excellent position to divert rents from the shareholders to themselves.[19] Because of this, and because of the information limitations employees have, some observers have argued that at least in the Russian context, employees do not regard shares as long-term claims to the future revenues the firm generates but rather as a means to prevent layoffs and bargain for wages (Buck et al., 1998). If so, the models which assume that the employees objective function is to maximise the size of the wage bill, might be proper approaches.

However, there are some doubts as to how effectively employees could use their share ownership for that purpose. The corporate governance procedures are rather clumsy and slow in affecting the decisions of managers. It seems that in many countries in the region the employees' participation in the governance is rather limited and, for instance, in Russia employees usually do not have any seats in corporate boards (Gardawski, 1996; Blasi, Kroumova and Kruse 1997). Many models, including the median voter approach presented here, presume that employees could prevent layoffs before the decision is in effect. In reality, however, the decision on employment belongs to managers and not to shareholders, and the employees can act on this only after the move has been implemented. If the employees do not control the boards, their response to layoffs may be delayed and diluted. After the layoffs, it is already known who will be laid off, and if there is no immediate threats of additional cuts in labour, it might be difficult to motivate those employees who have preserved their jobs to a concerted action for those who lost theirs. Also, a failed attempt to oust the general director could potentially threaten the jobs of those who were against him.

If neither residual returns nor control belongs to employee shareholders, the whole concept of ownership loses its meaning. The "employee owned firm" would hardly have any characteristics of

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[19] Some interesting examples of this from Russia are in Bim (1996).

its own, except perhaps a poorer access to capital markets. There is some evidence from Russia that the degree of nominal ownership by employees has little explanatory power on firm policies (Earle, Estrin and Leshchenko, 1996; Blasi, Kruse and Kroumova, 1997). It should be noted that these negative conclusions on employee influence are drawn from the Russian experience, where corporate governance is the weakest, and it is by no means certain whether these remarks apply to the Central European countries.

5 CONCLUSION

I have argued in the paper that the internal market for shares in employee owned firms has been neglected in the analysis so far, though internal share trade in insider owned firms is much more common than trade with outsiders. Many interesting results can be derived by focusing on share trade among employees. I argue that shares should be viewed as implicit employment guarantees, first of all by giving employees the guarantee that their investment will not be expropriated, and secondly because of the power it gives to employees. This view of share ownership leads to interesting results concerning employment adjustment. When shares are freely tradable, they carry a premium for unemployment costs. This guarantees that all employees are fully compensated for the costs of layoffs. Employee ownership leads to a socially optimal level of employment. Share trade also provides valuable signals on the outside opportunities of the employees. It is predicted that the ownership of shares will concentrate among the employees who most value their employment in the particular firm.

It is put in question whether these optimistic predictions will materialise in Eastern Europe. First, if the shares do not carry such a premium and prices for shares are set administratively, employment does not adjust optimally, neither will the resulting layoffs lead to Pareto improvements. Second, there might be a considerable amount of arbitrariness in the trading process. The share trade may reflect liquidity constraints and ignorance rather than long term optimisation by rational agents. Third, it is not clear whether the employees' share in residual returns and control is proportional to their nominal ownership.

In the light of the discussion section 4, it is easy to share the opinion of some economists working on this topic, namely that the behaviour of employee owned firms in Eastern Europe is foremost an empirical issue. My hope is, however, that this paper will give some new perspectives on the conceptual and theoretical issues on employee ownership and perhaps to give some new ideas for empirical work. I would also very much like to promote the view that the research should consider the problems of employee ownership taking individual employees, whose preferences are reflected in the political process of ownership, as the point of departure, rather than taking the objective function as given. This would certainly open new perspectives for the empirical research as well.

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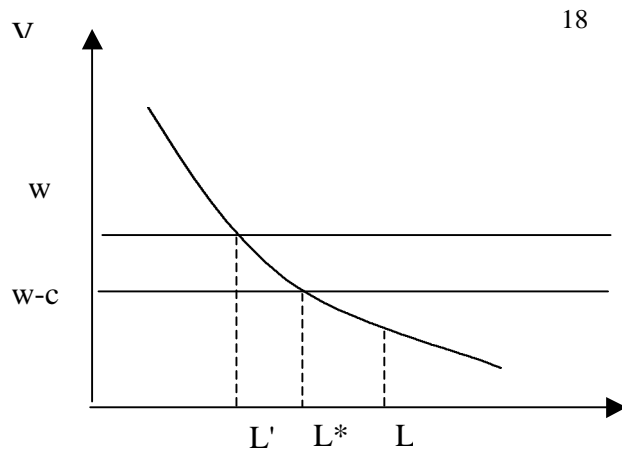World Bank, the (1996), *From Plan to Market: World Bank Development Report 1996*, Washington D.C.

FIGURE 1. The profit maximising (L'), joint return maximising (L*) and initial (L) levels employment with identical unemployment costs.
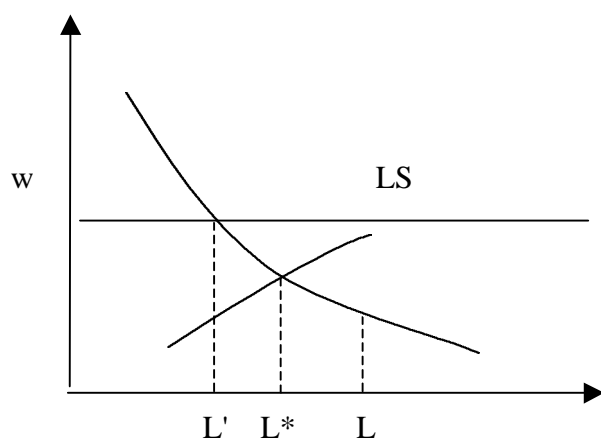

FIGURE 2. The profit maximising (L'), joint return maximising (L*) and initial (L) levels employment with unidentical unemployment costs.