

On privatization methods in Eastern Europe and their implications¹

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Abstract

We have two goals in this paper. The first is to draw lessons from the privatization experiences in Eastern Europe so far, in particular with respect to the relation between alternative privatization methods, the evolution of ownership after privatization and restructuring. The second is to draw from these lessons to suggest ways in which remaining privatization programmes might be designed or improved, when political constraints and economic realities are taken into account.

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1. Restructuring, outsider ownership, and insider privatization

Let us summarize our reading of the experience so far in three propositions. The last two propositions are stated too strongly and we qualify them below, but they help sharpen the discussion.

- State firms need to be restructured.
- Restructuring requires outsider ownership.
- Political constraints require insider privatization.

Let us take each proposition in turn.

1.1. The need for restructuring

The proposition that state firms need restructuring is not controversial. The flaws of state firms were well documented before transition, and the evidence on firms since transition has confirmed the initial diagnosis.²

Restructuring has many dimensions: it requires expertise (about the nature of markets, of marketing, of product design, and so on), expertise which is not available inside the firm initially. It requires new capital: not only is capital old, but much of it cannot be used to produce goods which are of sufficient quality to compete, even at low labour costs, on the world market.

Restructuring also requires the closing of some of the activities of the firm. This typically implies plant closings and lay-offs. And the evidence so far also suggests that restructuring requires laying off many of the top managers of the firm, who typically do not have the skills needed to run the firms in a market economy.

The need for outside expertise and new capital, and the likelihood of lay-offs both of workers and of managers, all play an important role in what follows.

1.2. Restructuring and outside ownership

Our second proposition that restructuring requires outside ownership is more controversial.³

It is important here to introduce a distinction between what Grosfeld and Roland (1996) have called 'defensive restructuring' and 'strategic' restructuring.⁴

In the face of adverse shifts in demand, and under an increasingly hard budget constraint, most state firms have implemented 'defensive restructuring', that is reduced employment and closed some of the largest loss-making operations. These measures were needed for them to survive.

What we have in mind here, however, and what we described in the previous section is not 'defensive' but rather 'strategic' restructuring: those more radical measures which allow firms not only to survive the initial shock but also to grow over time. The evidence here is that outsider ownership is a necessary, although not a sufficient condition for deep restructuring and there is little evidence of strategic restructuring in firms without outside ownership, as measured for example by the introduction of new technology, the level of investment, turnover of management and so on.⁵

At the same time, it is also clear that outside ownership is not a sufficient condition for strategic restructuring. What is needed is concentrated outside ownership, with owners who have the ability and the knowledge needed to exert effective control, to emerge. This takes time. This is clear from the experience of the Czech Republic, which, despite a rapid shift to outsider ownership, has had a lower rate of growth of productivity in the ex-state sector than most of its neighbours.^{6,7} Indeed, in the surveys of privatized firms in the different countries of Central Europe, the only firms which so far show clear evidence of strategic restructuring are those which are under majority foreign ownership.⁸

Why does outside ownership appear to be a necessary condition for restructuring? We believe that the main reason is not that the objective function of insiders is fundamentally different from those of outsiders (except for the wedges coming from imperfections in credit and labour markets we discuss below). The main reason appears to be the inability of firms to raise the required amount of capital and pay for expertise under insider ownership.

It is difficult under insider ownership to protect outside minority interests and thus to raise minority equity capital. Access to debt finance is an imperfect substitute, and is also

limited.⁹ Finally, outside expertise, which is needed for restructuring, is too expensive to buy and, for the same reasons as above, experts cannot be rewarded with minority equity positions. Without access to capital and expertise, the scope for strategic restructuring is indeed limited.

1.3. Political constraints and insider privatization

There are counter-examples to our third proposition that political constraints dictate the dominance of insider privatization. The main and obvious one is that of the Czech Republic, where voucher privatization has led to outsider ownership. Another is that of Estonia, where direct sales to outsiders have played a major role.

But outsider privatization appears to be more the exception than the rule. In most other countries, privatization has in effect privileged insiders. This is true of Russia, where, despite the description of privatization as voucher privatization, insiders are majority owners in most firms. This is true in most of the CIS countries, and in the countries which were previously parts of Yugoslavia. In the Slovak Republic, the second wave of voucher privatization has been stopped, to be replaced by privatization plans more favourable to insiders. In Poland, 'mass privatization', a voucher privatization programme with a limited stake for insiders, remained on the shelf until 1995, and is all but massive in scope; the dominant method has been insider privatization.

These evolutions are not hard to explain. The assumption made by many at the beginning of transition that state firms were controlled by the state, to be disposed of as the state wanted, was simply incorrect. Once central planning had disappeared and the power of ministries had been reduced, state firms were in fact controlled by insiders, who could largely block or sabotage outsider privatization, either at the level of the firm or, more conventionally, at the political level.

Except for those state firms with the worst prospects, prior to restructuring, strict outsider privatization with its risk of lay-offs and unemployment is an unattractive option for insiders. This is why outsider privatization has typically played a limited role in transition.

If one accepts our three propositions, the question becomes *how best to design privatization so as to go from insider privatization (imposed by political constraints) to outsider ownership (required for restructuring)*. In other words, *the way to think about alternative initial insider ownership structures is as an alternative transition device towards outsider ownership*. This is the issue to which we now turn.

2. A benchmark: Efficient resale

A plausible argument is that, if insiders own the firm but cannot restructure it themselves, they will have the right incentives to sell it to an outsider who can. We argue in this section that the argument may not hold. The best way is to start with the case where the argument is indeed correct, and then see what conditions will lead it to fail.

Let us formalize the implications of restructuring as follows. Think of a representative state firm as employing n workers (for the moment we make no distinction between workers and managers). In the absence of restructuring, the product *per* worker is equal to x , which we think of as low but sufficient to maintain the firm alive.¹⁰

Based on our earlier discussion, assume that restructuring requires outside ownership and leads to:

1. An improvement in the productivity of the firm. With external finance and

expertise, the product *per* worker increases from x to $y > x$, where y is defined as net of the outsider's restructuring costs.

2. Lay-offs, leading to the replacement of a proportion λ of incumbent workers.¹¹ For notational simplicity, we shall assume for most of the paper that λ is equal to one, so that all incumbent workers are replaced; no qualitative result depends on this simplification. We nevertheless introduce λ here so that we can discuss the effects of different risks of being laid off below.

The reservation wage (more formally, the wage equivalent of being unemployed, which depends on both unemployment benefits and the probability of finding another job) for laid-off workers is equal to R . After restructuring, workers in the restructured firm (who, under our assumption that λ is equal to one, are all new workers) are all paid the market wage, w .

We assume that $w > R$, *i.e.* the wage paid by private firms exceeds the reservation wage. This assumption—of a positive wedge between the private wage and the reservation wage—plays an important role in what follows. While we do not derive it from first principles, we think it is empirically and theoretically justified. Empirically, the evidence is that workers in Eastern Europe (and elsewhere) think of unemployment as a worse outcome than employment at private sector wages. Theoretically, this assumption naturally follows from either efficiency wage or bargaining considerations.

Under the assumption that privatization gives the firm to the insiders, but that restructuring can only be achieved under outsider ownership, restructuring implies the resale of the firm to outsiders. Let us look at the conditions under which resale takes place.

2.1. The resale conditions

An outsider will buy the firm only if he gets a majority of the shares and thus can restructure. Otherwise, as a minority shareholder, he would, under our assumptions, not receive any profit, and thus the price he would be willing to pay would be equal to zero. Let q^b denote the maximum price an outsider is willing to pay for one share of the firm, conditional on buying a majority of shares. q^b is equal to net profit *per* share, thus to the product *per* worker after restructuring minus the market wage:

$$q^b = y - w$$

Let q^s denote the minimum price at which each worker is willing to sell his share. We assume initially that workers do not collude. That is, each worker individually decides whether to sell his share, taking the actions of other workers as given. Then, q^s satisfies:

$$q^s + R = (y - w) + R$$

Under the assumption that the outsider gets a majority of the shares and thus will restructure the firm, the left hand side gives what an individual worker gets if he sells his share: the sale price, plus the reservation wage (as the sale implies, under the assumption that $\lambda = 1$, that the worker loses his job and becomes unemployed). The right hand side gives what the worker gets if he holds on to his share: profit *per* share plus the reservation wage (as, again, he finds himself unemployed, whether or not he sells his share).

Putting the two equations together:

$$q^s = q^b = y - w$$

The selling and buying prices are the same, and resale will thus always go through. This razor-edge result is familiar from the Grossman-Hart free-rider argument: dispersed shareholders (in this case workers-owners) extract all the surplus from restructuring.

If the outsider must spend funds to acquire the firm which he cannot recover, then no outsider will want to buy the firm, as the total cost of acquisition will exceed the value of the firm. The fragility of the resale condition in this case is not specific to our case, and does not worry us here. We know from the theoretical discussion which followed the initial Grossman-Hart result that it is easy to modify it to yield $q^s < q^b$, and we see this as the more realistic outcome.

Outside investors can take advantage of the liquidity problems faced by a positive fraction of shareholders, which will lead them to sell at a lower price than q^s .¹² This is likely to be particularly relevant in countries in transition, where most workers-shareholders have no access to credit and may value current cash q more highly than future cash, $(y - w)$ (adjusted for the discount rate; we have implicitly assumed a zero discount rate here). There is evidence that this effect has been at work in Russia.¹³

Once they control the firm, investors may also be able to dilute part of the incumbent workers-shareholders' claims, so that workers, if they hold on to their shares, will receive only a fraction of $(y - w)$ and are thus willing to accept a lower selling price. This again is likely to be especially relevant in countries in transition, in which the room for—illegal—dilution is higher than in the West.

Thus, under this benchmark, resale is unlikely to be an issue. We now consider two cases where resale may not take place.

3. Collusion among workers

We have assumed that workers did not collude in resale, that each worker individually decided whether to sell or not. What happens if they collude? The discussion of the Grossman-Hart result has emphasized that the presence of large shareholders or of coalitions of shareholders reduces the free-rider problem and thus makes takeovers more likely to succeed.¹⁴ We would thus expect collusion to make resale more likely. In fact, the effect of collusion may work perversely here, and make resale less likely.

In short, the reason is that resale has two implications for workers-shareholders. On the one hand restructuring increases profits. On the other, it puts their job at risk. If the cost of being unemployed is high, this may prevent resale.

More formally, if the workers as a group decide to sell their shares, restructuring takes place and they each get $R + q^s$. If they decide not to sell, they prevent outsider privatization and thus keep x , the product *per* worker in the absence of restructuring. Hence:

$$q^s = x - R$$

whereas, as before,

$$q^b = y - w$$

Thus, resale takes place if and only if:

$$q^b \geq q^s \Leftrightarrow y - x \geq w - R \quad (1)$$

If the initial shareholders were not also workers in the firm, the condition for resale to take place would become $y - x \geq 0$ and would, under our assumption that restructuring improves productivity, be automatically satisfied. Resale would take place even if the outsider had to spend additional funds to acquire the firm (as long as these costs were less than $n(y - x)$). This is the 'large shareholder effect' of Grossman and Hart (1980).

But the shareholders here are also workers in the firm. And under collusion, they internalize the fact that they will find themselves unemployed if the firm is sold, and therefore want to be compensated accordingly. Thus, despite the fact that restructuring is socially desirable (under our assumptions, it leaves employment constant and increases output), if the cost of being unemployed, $w - R$, is larger than the net surplus generated by restructuring, $y - x$, the sale will not take place.

This captures what we think is indeed a potentially serious danger of insider privatization as a transition device. When shareholders are also the workers in the firm, the fear of unemployment may become a major obstacle to resale to outsiders.

This analysis points to the importance of two main factors in the resale process under collusion.

- The probability of becoming unemployed, λ , under outsider privatization. We have assumed in our derivation that the probability was equal to one. This is too extreme, but as long as λ is positive, the risk of unemployment will decrease the likelihood that the firm will be sold. This suggests that outsiders may want to offer employment guarantees.
For example if keeping existing workers rather than replacing them decreases the product *per* worker after restructuring from y to $y' < y$, resale will take place as long as $(y' - x)$ still remains positive. To some extent, outsiders have indeed often done so. (In the case of direct outsider privatization, such as in Eastern Germany, buyers have typically been required to offer similar employment guarantees, very much for the same reasons as here.)
- The cost of being unemployed, defined as $w - R$. The larger the difference between the market wage and the reservation wage, the larger the wedge, the less likely resale and restructuring. If this cost is increasing with the level of unemployment, this implies that the more depressed labour market conditions, the stronger the opposition will be to resale and to restructuring.¹⁵

4. Workers *versus* managers

We have so far ignored managers. We now turn to resale, when managers receive a large ownership share in insider privatization.

We first need to describe what happens to managers under restructuring. Assume the state firm has one manager and that the probability that he remains in the firm after restructuring is equal to π . And, consider, to start and to make things easy, the extreme—and unrealistic—case where insider privatization gives the manager full ownership in the firm. Then the argument resembles very much the argument we presented for workers in the case of collusion.

Let B be the benefits of control, or more formally the difference between the income

when managing the firm, and the income equivalent of becoming unemployed (which again depends not only on unemployment benefits, but also on job market prospects for managers if laid off). Following the same steps as before, resale will take place if and only if:

$$n(y - x) \geq \pi B \quad (2)$$

The left-hand side is the highest price investors are willing to pay for the firm as a whole. The right-hand side is the 'bribe' which must be paid to the manager to compensate for the risk of being laid off.

Resale will fail if the benefits of control for the manager exceed the total increase in the product of the firm. While the logic is the same, there are however a number of interesting differences between equation (1) and (2).

- Even if there is more than one manager, the scope for collusion among managers is clearly much larger for managers than for workers. Thus, the outcome is much more likely to be collusion and the potential relevance of the wedge in blocking resale. This factor makes resale less likely.
- Being laid off is likely to be a much more informative negative signal for a manager than for a worker (who may be laid off simply because the plant he worked in is closed). This in turn implies that it may be much harder for the manager to find another job, increasing B . This factor also makes resale less likely. Working in the opposite direction is the fact that the market for managers in Eastern Europe has typically been much more buoyant than for workers.
- There are obviously fewer managers than workers (this is reflected by the presence of n on the left-hand side of equation (2)). In comparing conditions (1) and (2) we are comparing the benefits of control for each manager times the number of managers to the difference between the wage and the wage equivalent of unemployment times all laid-off workers. One would expect the bribe to managers to be much less than the total bribe to workers required for resale. The evidence from Russia, however, suggests that the benefits of control are large: bribing managers to leave, or to accept restructuring and the risk of losing their job has proven surprisingly costly. This may come from the ability of managers to extract substantially more than their product from the firm, from their ability to appropriate large rents under insider ownership.

We have looked in the last two sections at the two extreme cases of full worker or full manager ownership. In practice, all privatization programmes have given shares to both groups. (Even if, in Russia, managers appear to be very much in charge and workers are acting as passive shareholders, it remains true that workers typically have much larger shareholdings than managers combined.) Allowing for shares to both groups leads to unsurprising conclusions in our framework: both the unemployment and the benefits of control wedges matter. The only relevant point lies outside of our formal model: the scope for collusion is likely to increase with the importance of the shareholdings of managers.

5. Back to political constraints

We have proceeded under the maintained assumption that insider privatization took place, that the firms were initially given to the insiders. Given this assumption, we have reached a clear conclusion: if possible, privatization should be designed so as to avoid collusion in resale. If not, collusion may prevent resale and in turn restructuring.¹⁶

We shall examine below how privatization can be designed to avoid collusion. But we must first question our maintained assumption. If there is no collusion in resale, resale will take place and workers could be left worse off as a result of privatization followed by resale. In other words, even full insider privatization could be a poisoned gift. Will not workers then oppose privatization altogether?

Let us be more specific here, relying on the model we developed in sections 2 and 3. If there is no collusion in resale, then, resale will always take place, as it will be in the interest of each individual worker to sell his or her shares. But workers may end up collectively worse off. This will be the case if the following condition holds:

$$R + (y - w) < x$$

The left-hand side of the equation is what workers get once resale has taken place, namely the reservation wage plus the proceeds from the sale of the firm. The right-hand side is what they receive under the *status quo*. This inequality can be rewritten as:

$$y - x < w - R$$

Note that this is exactly the same condition as the condition under which we showed that resale would not take place if workers could collude.

Let us state this result above as follows. As we saw in section 3, if $y - x < w - R$ and there is scope for collusion in resale, resale will not take place. If privatization is designed to avoid collusion, then, as we saw in section 2, resale will take place after privatization. But, as the equation above shows, there will now be opposition by the workers to privatization itself. If workers have to approve privatization in the first place, then privatization may not take place. In other words, this result suggests that designing privatization so as to avoid collusion in resale just shifts the problem back one step from opposition to resale when collusion is feasible, to opposition by workers to privatization itself when collusion in resale is not feasible.

This result points to an important issue: that a privatization programme designed to prevent collusion in resale will be less appealing to insiders, and thus may be harder to implement in the first place.

We believe however that it is still better to design privatization so as to avoid the scope for collusion in resale, and face the political opposition to privatization this may in turn generate. The reasons are the following.

If privatization allows for collusion, privatization will take place. If, once privatization has taken place, workers collude to prevent resale, there is little the government can then do. By then, the firms are private, and the state has no control over them.

In contrast, if privatization is designed so as to avoid collusion, the government may be able to implement privatization even if the workers in state firms are opposed to privatization. Keeping the *status quo*, avoiding privatization altogether and maintaining the firms in limbo or under the control of the state may simply not be an option. This can be formalized straightforwardly by assuming that, without privatization, workers do not receive x , but rather x' , where $x' < x$. For x' sufficiently low, workers will still choose privatization, even if they know that it will eventually lead to resale. And it may be politically difficult for insiders to object to a privatization programme which gives them full ownership of state firms.¹⁷

6. Shares to outsiders

We have so far considered only pure insider privatization, privatization where all the shares were given to the insiders in the firm. Our model however suggests that there may be room for giving or selling a proportion of shares to outsiders at the start, and indicates what this proportion may depend on.

Let α be the proportion of shares given to the insiders, and thus $(1 - \alpha)$ be the proportion of shares given or sold to outsiders at the start of privatization.

Assume that $y - x > w - R$. This condition implies that, under pure insider privatization ($\alpha = 0$) if they can collude, workers will agree to resale and, if they cannot, they will agree to privatization, followed by resale. Assume also that $x > R$. This implies that, under pure outsider privatization ($\alpha = 1$), workers, if they can collude, will oppose resale, and if they cannot, will oppose privatization.

We can then ask: what is the minimum value of α , call it α^* , such that privatization, resale and restructuring will take place?

Take first the case where privatization does not prevent collusion in resale. Under collusion, resale will take place only if the workers are collectively better off as a result. Following the same logic as before gives the following condition for resale:

$$R + \alpha(y - w) \geq x$$

or equivalently, if:

$$\alpha \geq \alpha^* \equiv \frac{x - R}{y - x}$$

Under our assumptions, α^* is between zero and one. If this condition is satisfied, then resale will take place, and workers will be better off after resale. Knowing that resale will take place, they will also accept privatization in the first place.

Take now the case where privatization prevents collusion in resale. Then, we know that resale will always take place, and will take place at price $y - w$, the price investors are willing to pay for the firm. Thus, insiders know that, when resale has taken place, they will end up with $R + \alpha(y - w)$, which may or may not be greater than x . They will therefore oppose privatization unless the following condition is satisfied:

$$R + \alpha(y - w) \geq x$$

or, equivalently:

$$\alpha \geq \alpha^* \equiv \frac{x - R}{y - x}$$

Note that the value of α^* is the same in both cases. The reason for this equality is the same as in the previous section. If collusion is feasible, workers oppose resale unless they get enough of the proceeds. If collusion is not feasible, then the anticipation that resale will occur after privatization leads them to oppose privatization unless they know that they will be better off after resale, that they will get enough of the proceeds.

Again, and for the same reasons as in the previous section, we believe that the government should design privatization so as to avoid resale, and that it may be able to impose privatization at a lower value of α than α^* . It may again be politically difficult for workers to object to a privatization which gives them a large proportion of shares in the firm.

Leaving that question aside, we can focus on the determinants of α^* . Rewrite α^* as:

$$\alpha^* = 1 - \frac{(y-x) - (w-R)}{y-w}$$

The minimum share going to insiders can be lower the worse the initial conditions (the lower x), or the more productive the firm after restructuring (the higher y). (Thinking of firms as differing in their x and y , this also explains why firms with both the worst initial situation and/or the best prospects may be privatized through low α privatization, in effect through outsider privatization.)

The share is also a function of labour market conditions, measured by the cost of being unemployed, $w - R$. The worse the labour market conditions, the worse the cost of being unemployed, the higher the share which has to go to insiders. The reason is simple: the higher payments at resale are needed to compensate for the higher cost of becoming unemployed.

7. Drawing implications for privatization programmes

We draw three sets of practical implications from our formal discussion.

1. *Insider privatization should be set so as to reduce the room for collusion in resale.*
 The experience of Russia and other countries suggests (in part, *a contrario*) a number of ways in which collusion can be made less likely.
 The resale process should be set up so that workers can trade shares anonymously. Involving the firm in any way, administrative or otherwise, in the resale process makes collusion much easier, with the manager often playing the role of enforcer. This suggests avoiding in-firm registration of shares, as well as ESOP-like structures holding some of the workers' shares.¹⁸
 This also suggests the undesirability of creating shares which may be difficult to resell, such as non-voting shares. Outsiders will not want to buy non-voting shares, at least until they hold a majority of voting shares. The rationale for the issuance of non-voting shares to workers appears to be built on the assumption that the firm will remain insider-owned, and that in that case it may be better to make the managers relatively more powerful. But if, as we have argued, restructuring requires resale, issuance of non-voting shares is counter-productive.
 There may however be a rationale for imposing restrictions on time before resale, for example for rules preventing workers from reselling their shares for some period of time after the initial distribution. The reason is to avoid purchases of workers' shares by managers. While our model implies that outside investors will be willing to pay more for shares than managers (as they can restructure the firm and managers cannot), it may take time for these investors to appear. During that time, a higher value on current cash for workers than for managers may lead workers to sell to managers, making resale more difficult.
2. *Privatization should be more generous to workers than to managers.*
 This second recommendation depends crucially on the implementation of the first. If anti-collusion devices are not put in place then, as we have seen, whether, from the point of view of resale, shares should be given relatively more to workers or to

managers is ambiguous. Our guess is that in large firms at least, it may be cheaper to bribe the manager into giving up benefits of control than to bribe a well-organized coalition of workers who are likely to lose their jobs.

This second conclusion also ignores the pre-resale period, where more power to managers may well be desirable (although whether managers need a large number of shares to be powerful within the firm is questionable. The experience of Russia suggests that managers control the firms even if, as is usually the case, they are minority shareholders.).

3. *Subject to political constraints, as many shares as possible should be given or sold to outsiders at the initial privatization stage.*

Rather obviously, given that outsider ownership is the ultimate goal, the more outside shareholders at the beginning, the better. Even if outside shareholders are small, as may be the case after a voucher programme, they do not have the wedge that insiders have in resale and thus will not prevent the emergence of concentrated outsider ownership.

Outsider ownership is important for another reason, because it leads to the existence of a market for shares where insiders can sell their shares more easily, making anonymous selling easier, and thus making collusion harder.

8. Conclusions

This paper has developed a simple framework to analyse the evolution of ownership structures after privatization. While offering insider privatization may enable governments to initially overcome political constraints and thereby accelerate the privatization process, it may also make it harder to ultimately achieve outside ownership structures more conducive to comprehensive restructuring.

After analysing what appear to be the main obstacles to the evolution from insider to outsider ownership structures, we have suggested ways in which the design of mass privatization programmes can minimize such obstacles.

First, insider privatization should be set so as to avoid collusion in resale. In particular, shares should be traded anonymously, the registration of shares should be done outside the firm, and non-voting shares should be avoided. Second, conditional on implementing the first, privatization rules should be more generous to workers than to managers. Finally, subject to political constraints, as many shares as possible should be initially distributed or sold to outsiders (individual voucher holders, investment funds, foreign investors, *etc.*) thereby facilitating the emergence of a market for shares where insiders can sell their shares more easily and more anonymously.

Endnotes

1. Written for the EBRD conference on Privatization and Restructuring, April 1996. We thank Daron Acemoglu, Simon Commander, Mark Schankerman, Andrei Shleifer and Elu Von Thadden for discussions and comments on an earlier draft.
2. See for example the case studies in Johnson and Loveman (1995) for Poland, or

the experience of firms in Eastern Germany documented by Carlin and Mayer (1995).

3. The available evidence on the relation between outside ownership and restructuring is reviewed in more detail in the survey by Aghion and Carlin, 1996.
4. An often-used synonym for the first is 'reactive', an often used synonym for the second is 'deep'.
5. See Chapter 8 of the EBRD *1995 Transition Report*. For more detail on restructuring with or without new managers, see the study of small scale privatization in Russia by Barberis *et al.* (1996).
6. The process of consolidation of ownership is now taking place in the Czech Republic, in part through takeovers of Investment Funds. Whether takeovers of funds by banks, as is often the case, will lead to the right ownership structure is discussed in Aghion and Carlin (1996) and Aghion, Bolton and Fries (1996).
7. An interesting question in this respect is whether the 'mass privatization' programme in Poland, which tried to put in place a competent and concentrated ownership structure from the start—a goal which delayed its implementation for close to five years—will in the end achieve restructuring of firms faster than its Czech counterpart, which achieved outsider ownership faster but has let the right ownership structure emerge over time.
8. Even there, one must be careful before interpreting this correlation as causal. Which firms chose which route was surely not random, and sample selection is a serious issue.
9. It is all the more difficult to use debt finance when insider privatization, as in the case for example in Poland, takes the form of a discounted sale of the firm to insiders financed by long-term debt to the state, resulting in highly leveraged newly privatized firms.
10. To capture the idea that survival may not be assured, one could alternatively assume that, without restructuring, the product *per* worker is X , with probability p , and 0 otherwise. While in a dynamic context this modification introduces interesting dynamics—as unstructured firms slowly disappear, leading to higher unemployment, it is, in a static model, equivalent to our assumption, with $x \equiv pX$.
11. We assume for simplicity that, while there is turnover of workers, total employment remains the same. This is inessential for our purposes, as what matters for incumbent workers is their probability of being laid off, not whether they are replaced or not.
12. See Bolton and Von Thadden (1995).
13. It is not clear however how one should interpret the low value of shares in the Russian stock market in comparison to the apparent value of Russian companies. It could reflect the low value of shares under insider ownership together with the expectation that insider ownership will remain for some time, or the premium on current cash.
14. See Holmstrom and Nalebuff (1992).
15. This interaction between unemployment, restructuring, and privatization rules is central to understanding the general pattern of transition. See Blanchard (1997), Lecture 3.
16. Note that this takes as given that the faster restructuring takes place the better. This is surely the case in our model, where restructuring leads to an increase in output and no change in employment. But if, as is often the case, restructuring leads to an initial decrease in employment, there may well be good reasons not to want too fast a speed of restructuring. These reasons rely on standard second-best arguments, and the presence of other distortions in the economy. See lecture 3 in Blanchard (1997).

17. There is at least a third argument, but one which is always dangerous to make. Insiders may not fully realise the dynamic implications of a specific privatization programme at the time the programme is put in place. It is widely believed for example that the lack of opposition of managers of state firms to the Czech privatization programme has been in large part due to the fact that they did not predict the development of investment funds, and the subsequent consolidation of outsider ownership.
18. Originally conceived as an instrument whereby managers could 'group and dominate the employee vote', the Funds of workers' shares (FARPs) operate in less than 5 per cent of the privatized firms surveyed by Blasi and Shleifer (1996). A main reason for this is that informal control by managers of their employee-shareholders has proved to be quite effective. In particular, voting at the shareholders' meetings is not confidential in 66 per cent of the firms surveyed by Blasi and therefore employees are being silenced by the fear of being laid-off if they vote against the firm's manager. Also workers are encouraged to give proxies to middle-managers instructed by top management. Finally, the management's control of the shareholder register creates a managerial supervision of the employees' sales of shares to outsiders.

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