

A Positive Theory of “Give-away” Privatization*

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Abstract

We make a first step towards a positive theory of privatization, in a framework similar to the one of Shleifer and Vishny’s “Politicians and Firms” (QJE, 1994). In our model, a government may want to privatize because privatization can provide managers with stronger incentives to exert effort, and more managerial effort may help to maintain jobs that otherwise would be destroyed. However, the government trades off better managerial incentives with the costs of losing control, here, over funds that the government provides for the restructuring of firms. We also show that if managers care for the size of their firm, privatization may weaken, not strengthen incentives.

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1. Introduction

Privatization has been on the agendas of many western countries since the late seventies. It has also been a main building block of the transition strategies of former centrally planned economies. The scale of world-wide privatization is considerable. According to the OECD (2002), the average annual value of privatized assets in the world amounted to 54 billion USD in the period covering 1990 to 2001, and the total privatization proceeds in accession countries between 1999-2001 are around 60 billion USD.

Two economic approaches compete in explaining why state-owned enterprises (SOEs) are inefficient. Following Sappington and Stiglitz (1987), who showed that privatization does not matter when complete contracts can be written, both approaches assume contractual incompleteness. Laffont and Tirole (1993) and Schmidt (1996) argue that weak commitment power of benevolent governments, the monopoly status of SOEs, and informational asymmetries, are the causes for bad managerial incentives under state ownership.

The second approach, brought forward by Shleifer and Vishny (1994), argues that self-interested politicians intervene in the conduct of SOEs in order to pursue goals that are not aligned with enterprise efficiency. In particular, politicians are interested in maintaining excess levels of employment to please their constituency. Privatization ‘depoliticizes’ enterprises: When managers receive cash-flow and control rights over assets, it becomes more costly for politicians to influence the conduct of firms, their incentives to intervene decrease, and the management of firms can make more efficient decisions. This approach has been refined by Bennesen (2000) who analyzes the impact of privatization in a political structure allowing different coalitions between organised interest groups competing for excess employment and subsidies.

The models of Shleifer-Vishny and Bennesen, while providing predictions about the effect of privatization, do not help to understand the motives of a government to privatize. Given that the government loses its ability to influence firms conduct as a consequence of privatization, why should privatizations ever happen – except for exogenous reasons?

In this paper we make a first step towards a positive theory of privatization in a

framework similar to the one of Shleifer and Vishny. We argue that the government may, after all, be interested in making firms more efficient. Privatization may provide managers with stronger incentives to exert effort; more managerial effort may help to create jobs, or to maintain jobs that otherwise would be destroyed, *without* requiring the inefficient kind of government intervention Shleifer and Vishny investigate. Put differently, privatizing, via increased managerial efficiency, may be a cheaper way to maintain or to create employment than the subsidization of loss-making SOEs. As Shleifer and Vishny assume that managers are intrinsically motivated to take efficient decisions, this effect is absent in their model.

This point and the tradeoffs a government faces when privatizing a firm are brought forward in a simple framework (laid out in Section 2) that combines elements of Shleifer and Vishny's model with the Dewatripont and Maskin (1995) model on soft budget constraints. In the model, the government's aim is to preserve employment in a firm hit by a macroshock like transition. Restructuring requires injection of funds, and a costly effort by the manager. Following Dewatripont and Maskin (1995), Laffont and Tirole (1993) and Schmidt (1996), we assume that the manager's cost of undertaking effort is private information. Capital markets are imperfect and managers have no cash. Hence, only the government can provide the funds for restructuring, privatization can only be carried out through give-away schemes, and the government cannot screen managers according to their productivities.

In Section 3, we consider that the government has the choice to either transfer cash flow and control rights in a bundle, or to keep the status quo. Privatization then involves the following trade-off for the government. On the one hand, productive managers' incentives to restructure increase when they receive cash flow rights. This is in the interest of the government as restructured firms can employ more labor in a profitable way than unstructured ones. On the other hand, the government loses control over the restructuring funds, which gives rise to a soft budget constraint problem. Unproductive managers abuse their control rights and divert the capital. Subsequently, they blackmail the government, which in order to avoid bankruptcy and layoff of workers, refinances the firm. This effect arises naturally in a dynamic model of privatization like ours, while it is, by design, excluded in the static one Shleifer and Vishny propose.

Privatization thus combines *first best* (some managers restructure) and *third best* (other managers shirk *and* steal the money of the government). State ownership corresponds to the *second best*: while there is less or no restructuring effort by the manager, the government avoids the softer budget constraint of unstructured firms that arise as a result of the transfer of control to the manager. When the enterprise is sufficiently profitable, the positive incentive effects outweigh the negative effects on the budget and the firm is privatized.

In 3.2, we address a second point. By and large, the western privatization experience is in line with the prediction of Shleifer and Vishny. Some of the earlier studies found little effect of privatization, but the most recent and comprehensive ones by Megginson, Nash and van Randenborgh (1994) and Megginson and Netter (1998) find that privatized firms become more profitable, increase their capital investment spending and their labor productivity, and receive less subsidies. However, in transition economies, the efficiency gains associated to privatization appear less prominent. Carlin, van Reenen and Wolf (1995) find no effect of private ownership on the restructuring activities of managers. Konings (1997) sample of 334 firms in Romania, Bulgaria and Hungary indicates no significant differences in the growth rate of privatized enterprises vs SOE's. Frydman et al (1999) analyze a sample of 218 mid-size manufacturing firms in the Czech Republic, Hungary and Poland, and corroborate the view that only outsider ownership involves efficiency gains. For Russia, Earle and Estrin (1997) find no significant performance difference between SOEs and privatized enterprises. Djankov (1999) identifies no significant difference in restructuring activities between SOEs and privatized enterprises in a sample of six CIS countries, and for Mongolia, Anderson et al. (2000) even find that SOEs are performing better than privatized enterprises.

Our model shows that the incentive effects of give-away privatization depend to a large extent on the objectives that managers pursue, which may explain the difference between the transition and the OECD experience. In contrast to Shleifer and Vishny (1994), we do not constrain our analysis to intrinsically profit-oriented managers, but consider that managers may have an interest in preserving excess employment. They may be empire-builders [Jensen (1986)]; they may dislike changes in their organization [Aghion, Dewatripont and Rey (1997)]; or they may face powerful worker collectives

[Aghion and Blanchard (1995)]. In transition economies, managers may strive for political influence that increases with the number of workers a manager employs. Ericson (1999) reports survey evidence that “*prestige, power and social obligation motivate management, rather than the pursuit of the creation of economic value.*”

In our model, when managers have an interest in preserving employment, while the government is subject to a budget constraint (as it is the case for many transition economies), privatization may *weaken* rather than strengthen the incentives of managers. The intuition is that state ownership may give managers ‘negative’ incentives to restructure: unless they work hard, the government fires workers because it cannot afford to cover the losses due to excess employment.¹ This induces the more productive among them to exert effort. But, upon receiving control over restructuring funds, these negative incentives lose their bite. Managers can divert the restructuring funds in order to cover the losses due to too much employment, rather than going through a painful restructuring process which takes much effort. The non-restructuring option becoming more attractive, privatization can hence only improve the incentives of managers if the positive incentives associated with residual claimancy are sufficiently strong, i.e., in rather profitable firms. In unprofitable ones, however, incentives would deteriorate when the firm were privatized. In 3.3, we briefly discuss what can be learnt if one allows for separate transfer of cash flow and control rights.

Section 4 discusses some empirical support for the assumptions of our model and implications of the analysis. Section 5 concludes.

2. The Model

The firm is initially state-owned and employs excess labor L . The government, G (“it”), receives a political benefit B_G if no workers are fired, and loses it otherwise. Thus, B_G can be interpreted as the marginal rate of substitution between political benefits and one unit of capital. B_G depends, for instance, on external pressure to stabilize the budget, on the preferences of the median voter and on the situation the government inherits

¹Cf. Pinto, Belka and Krajewski (1996) who report that Polish state managers began restructuring when budget constraints became harder due to the monetary stabilization programme.

from its predecessors. We assume that G has two units of capital, and that $B_G \in [1, 2)$. Thus, it is worthwhile for G to provide one unit of capital in order to maintain high employment, but it would *ex ante* not be willing to pay two units of capital. We assume that the government is the only source of finance. This reflects underdeveloped financial markets, and in the case of transition economies, the fact that assets were usually given to insider managers, who were able to secure funds from state-owned banks.

The manager, M, prefers, *ceteris paribus*, a larger to a smaller firm, that is, higher to lower employment,² and receives a private benefit $B_M \in [0, 2)$ when no labor is shed, while he loses these benefits in case jobs are destroyed. In a way similar to B_G , B_M represents the marginal rate of substitution between managerial rents and one unit of capital that may originate from profits of the firm or subsidies.

Successful restructuring of the enterprise requires first, new capital, i.e., *financial restructuring*, and second, *managerial effort*. When M exerts restructuring effort, he incurs disutility e . The disutility is known only to him, but not to the government, who only knows that e is uniformly distributed on the support $[0, \bar{e}]$. If M shirks, he incurs no disutility.

After the injection of funds, three situations ('states') are possible:

1. '*UR*': Without financial restructuring, the firm remains *unrestructured* and both M and G end up with a zero payoff. Managerial effort alone has no effect on the enterprise, and will consequently never be undertaken unless the firm is also financially restructured.
2. '*PR*': If financial restructuring takes place, but is not supported by managerial effort, the enterprise is *partially restructured* and it depends on the size of employment whether or not the firm can be run in a profitable way. Employing excess employment L , the firm makes losses $R(L) \in [-1, 0]$; when excess employment is fired, the firm generates a profit $R(0) \in [1, 2]$.
3. '*CR*': If both financial restructuring and managerial effort take place, the firm is

²This notion of a relationship between managerial private benefit and the 'size' of the firm is also used by Schmidt (1996).

completely restructured, and generates a profit of $R_e(L) \geq R(0) + 1$.

Two comments. First, the above assumptions are based on the idea that new capital increases the productivity of workers. Nonetheless, without managerial effort, the marginal productivity of the L excess workers and remains negative, outweighing the profits that are generated by workers whose marginal productivity is positive. When both new capital and managerial effort are provided, all workers can be employed in a profitable way, and no labor needs to be shed.³ Second, as will become clear below, the assumptions that completely restructured firms need not reduce their employment, together with $R_e(L) \geq R(0) + 1$, ensure that the government will have no incentive to intervene in the conduct of such a firm, and that productive managers have no incentive to behave opportunistically.

2.1. Ownership

At this stage, we restrict our attention to two possible ownership forms. When the firm is *state-owned*, G controls the use of the funds injected in the firm, and decides whether or not to fire workers. Through *privatization*, G gives both cash flow and control rights over restructuring funds and employment in the firm to the manager who has no cash. We blackbox the topic of worker-management relations. At this stage, we only analyze the joint transfer of control and cash flow rights. In section 3.3, we briefly discuss separate transfers of control and cash flow rights.

Property rights come to the forefront when complete contracts are not feasible. In the spirit of Grossman and Hart (1986), we assume the following concerning contractibility:

Assumption 1: The use of funds, employment, and profits are not verifiable.

Assumption 2: As in a standard debt contract, the funds injected can be recovered by the government, provided the firm has positive profits.

Assumption 3: The state of the enterprise (UR , PR , CR) is assumed to be observable, but non-verifiable by a third party. Consequently, the government cannot write

³Notice that the distinction between fully and partially restructured firms corresponds to Grosfeld and Roland (1995) concept of ‘strategic’ versus ‘defensive’ restructuring.

incentive contracts with the manager that link an effort level with some specified payment.

Given these assumptions, the allocation of *control rights* (between G and M) over the use of funds and the choice of employment becomes crucial for the course the restructuring process takes, and the only way to provide managers with restructuring incentives is to transfer the *cash flow rights* to them.

2.2. Timing and payoffs

Figure 1 presents the extensive form of the game. Initially, the enterprise is state-owned. G injects a unit of capital, and decides whether or not to privatize the firm. G's ownership decision cannot be influenced by M; the structure of the game, however, ensures that under privatization the manager can never lose compared to the status quo. Upon privatization, M and G sign a contract that commits M to pay back the funds that are injected in the firm. Subsequently, Nature determines the type of the manager. In what follows we describe the subgames under state and private ownership, respectively.

State ownership

1. M decides whether to exert effort or to shirk, and G assures that the capital initially injected is used for restructuring purposes.
2. After having observed the state of the firm (either completely or partially restructured), G decides on whether or not to reduce employment in the firm. In case M has exerted effort, it is always optimal to maintain all workers.
3. Payoffs are realized.

For each leaf of the game tree, the first term denotes G's, the latter M's payoff, which, for simplicity are also summarized in Table 1.

<i>Table 1: SOE</i>	G's payoff	M's payoff
CR	$R_e + B_G - 1$	$B_M - e$
PR, no workers fired	$R(L) + B_G - 1$	B_M
PR, L workers fired	$R(0) - 1$	0

Private ownership

1. The manager decides on the use of the capital that G has injected. Either he uses it for the restructuring of the firm and exerts effort, or he keeps the money 'in his pocket' and shirks. If M has exerted effort, the firm is completely restructured, otherwise it remains unrestructured.
2. If M has shirked, he asks G for refinancing. Then, G decides whether to bailout the firm by providing an additional unit of capital; otherwise, the firm is liquidated. If G injects the capital, it controls the proper use of it. Subsequently, M decides on whether or not to layoff workers in the firm which at this time is partially restructured.
3. Payoffs are realized.

The payoffs are summarized in Table 2.

<i>Table 2: privatized</i>	G's payoff	M's payoff
CR	B_G	$R_e(L) + B_M - 1 - e$
Liquidated	-1	1
PR, no workers fired	$B_G - 2$	$R(L) + B_M + 1$
PR, L workers fired	$R(0) - 2$	1

A couple of remarks may be useful to explain the thoughts behind the game and payoffs under private ownership. First, notice that when M retains all workers after the bailout, he finances the losses of the firm through the funds he received in the beginning

of the game. When M lays off workers, G is entitled to cash in the profits the firm yields, since M owes two units of capital to G.⁴

Second, it may seem that there is a contradiction between the assumption that no contracts can be written contingent on the state of the firm, and the assumption that the government can recoup profits (partially or totally). What we have in mind is similar to a standard debt contract: if the manager does not pay the credit back, the creditor (government) can step in to get its money back. This does not collide with the fact that incentive contracts are unfeasible. Notice also that the assumption is not important for our main results: We could assume that the government cannot get back any of the funds it lent to the firm. However, this would bias the results against privatization, which we want to avoid.

Third, in stage 2 of the game, we assume that if the manager has shirked, the government steps in, and at this stage controls the use of funds. In a way similar to the assumption about the government's ability to recoup part of the funds it has injected, this assumption is taken to stack the deck in favor of privatization, and it is not needed for any of the results. We believe our setting to make sense for the following reasons. In case privatization has not had positive effects, the manager is clearly bad, and any money injected into the manager-controlled firm would be wasted. However, refinancing under government control is pareto-improving. Thus, there is no reason why the manager should not be willing to allow the government to control the use of funds at the *ex post* stage. One could model this bargaining game explicitly, without gaining additional insights.

3. Analysis of the Model

We solve the model by backward induction. In *state ownership*, and if M has not exerted effort, G's employment choice is:

⁴Notice that an option that does not occur in equilibrium is that M would ask for refinancing and exert effort subsequently. Here, M has nothing to gain compared to immediate restructuring, since he must pay back both units of capital. In particular, if waiting implies a small cost, immediate restructuring becomes a strictly dominant strategy for productive managers.

$$L, \text{ if } B_G \geq R(0) - R(L), \quad ((1))$$

$$0, \text{ if } B_G < R(0) - R(L). \quad ((2))$$

In other words, G preserves (cuts) excess employment in a partially restructured firm if its political benefit associated with high employment is large (small) relative to additional profits that are generated by the respective employment cuts. In the remainder of the paper we will label a government that preserves employment in a partially restructured firm ‘*employment-maximizing*’. A government that cuts down employment will be labeled ‘*budget-stabilizing*’.⁵ Unlike Bennedsen (2000), we do not try to explain the origin of these rents, but are rather concerned about how different magnitudes of rents may affect a government’s decision to privatize.

Inspecting the payoffs in Table 2 it is clear that in *private ownership* the government always bails out the firm, since both players cannot lose compared to liquidation. Thus G’s loss of control over the restructuring funds when the firm is privatized gives rise to a soft budget constraint as in Dewatripont and Maskin (1995). Upon receiving additional funds, M employs

$$L, \text{ if } B_M \geq -R(L), \quad ((3))$$

$$0, \text{ if } B_M < -R(L). \quad ((4))$$

We will label a manager who has preferences according to condition (3), ‘*rent-seeking*’; if M’s preferences correspond to cond. (4) we will use the term ‘*profit-oriented*’.

Figure 2 depicts cond. (1) to (4) in the space of G’s (x-axis) and M’s (y-axis) preferences. There are four cases the emergence of which is due to our assumption of discrete employment choice. These cases should be considered as a discrete approximation for the continuum of possible constellations that emerge when the choice of employment is continuous.

⁵Notice that the government may fire workers, even if keeping excess employment increases the joint pay-off of G and M. This is the case if $B_G < R(0) - R(L)$, but $B_G + B_M \geq R(0) - R(L) \equiv \Delta R$. However, since M has no cash, he cannot bribe G to retain excess employment.

Case A: Privatization involves less excess employment if (1) and (4) hold.

Case B: Excess employment is preserved irrespective of ownership if (1) and (3) hold.

Case C: Excess employment is laid off irrespective of ownership if (2) and (4) hold.

Case D: Privatization involves more excess employment if (2) and (3) hold.

If, as in cases *B* and *C*, *G*'s and *M*'s interests are sufficiently aligned, employment decisions are not affected by ownership. The relative size of *M*'s to *G*'s rents becomes crucial in cases *A* and *D*.

We focus on the two cases that provide the most interesting insights: first, the situation in which an employment-maximizing government faces a profit-oriented manager (case *A*); second, the case of a budget-stabilizing government facing a rent-seeking manager (case *D*). Case *A* is similar to the one proposed by Shleifer and Vishny (1994). Here, the manager's objective is maximization of profits, while the government is seeking to preserve excess employment. As in Shleifer and Vishny, privatization leads to labor-shedding. The opposite is true in case *D* where the government's private benefit associated with preserving high employment is smaller than the manager's. We believe that this is a relevant case for some transition economies, in particular, the former Soviet Union where managers of larger firms seek political influence that depends on the size of the firm.

3.1. Employment-maximizing government, profit-oriented manager

We first derive the cutoff disutility levels beyond which managers shirk. A comparison of these levels in state versus private ownership allows to examine the incentive effects associated with privatization. We then analyze the budgetary effects of privatization, and, finally, derive conditions under which the government decides to privatize. It turns out that this case reflects the evidence about privatization in the West: the transfer of cash flow and control rights improves managerial incentives, and involves less excess employment and subsidies.

Incentives: In state ownership, exerting effort has no benefits, but only costs for *M*, since the government preserves high employment irrespective of the state the enterprise

is in. Consequently, there are no incentives to exert effort. Comparing the two payoffs, we can solve for the critical disutility level beyond which the manager shirks in private ownership:

$$e_p^a = R_e - 2 + B_M. \quad ((5))$$

Employment: Denote $\alpha_p^a = \frac{e_p^a}{\bar{e}}$ the probability that the ‘private’ manager exerts effort. Since $(1 - \alpha_p^a)$ managers shirk and subsequently cut down employment, the expected excess employment in private ownership is

$$L_p^a = \alpha_p^a L, \quad ((6))$$

which is smaller than the expected excess employment in state ownership where excess employment is always maintained.

Budget: Subsidies have negative sign, and profit transfers from M to G a positive one. Irrespective of ownership, there is the initial subsidy G pays to all firms. Completely restructured private firms pay back their loan. Private managers who have not restructured receive additional subsidies, but the profits of these firms are collected by the government. The net transfer from G to M in private ownership is hence $(1 - \alpha_p^a) [R(0) - 2] < 0$. In state ownership, the government controls the use of funds and hence there is no need for refinancing. However, G must finance the losses due to excess employment which amounts to $R(L) - 1$. Hence, in both private and state ownership, there are subsidies from G to M. Subsidies in state ownership are larger than the ones in private ownership, because $|R(0) - 2| < |R(L) - 1|$.

Privatization decision: By comparison of the government’s payoff under state and private ownership, we derive the government’s value associated with privatization:

$$V^a = \alpha_p^a B_G + (1 - \alpha_p^a) [R(0) - 2] - [B_G + R(L) - 1]. \quad ((7))$$

If $V^a \geq 0$, the government privatizes, otherwise the firm is kept in state ownership. By substituting for α_p^a , and rearranging we derive Proposition 1.

Proposition 1. *Suppose the government is employment-maximizing, and the manager profit-maximizing. Then, the government privatizes firms, which when completely re-*

structured, yield

$$R \geq R_e^a = 2 - B_M + \bar{e} \frac{[B_G + 1 - \Delta R]}{[B_G + 2 - R(0)]}. \quad ((8))$$

Eq. (7) and Proposition 1 shed some light on the important question: Why would a government whose main interest is to preserve employment want to privatize? We show the costs and benefits of privatization from the government's perspective. On one hand, privatization involves the loss of jobs in those firms where managers do not exert effort. On the other hand, private ownership incites productive managers to exert effort, while in state ownership they would shirk. Inducing the manager to exert effort is the cheapest way to preserve jobs since restructured firms can employ more workers in an efficient way. Hence, the net job destruction due to privatization decreases, the larger the incentive effects of privatization. This is tantamount to larger R_e and/or smaller \bar{e} , that is, the higher managerial skills are on average. By the same token, better incentives involve less subsidies since more managers pay back their loan in private ownership. At the cut-off value R_e^a , the costs of preserving the employment differential between state and private ownership outweighs its benefit, and the government prefers to privatize.

3.2. Budget-stabilizing Government, rent-seeking manager

A government that is disciplined by the need to stabilize its budget cuts down employment unless the manager has restructured. In private ownership, the manager maintains high employment as outlined at the beginning of this section. By comparing the critical disutility levels in state and private ownership, the following Proposition can be established.

Proposition 2. *Suppose the government is budget-stabilizing and the manager rent-seeking. Then, incentives are stronger in state than in private ownership if and only if*

$$B_M > R_e - R(L) - 2. \quad ((9))$$

Proposition 2 states that managerial incentives deteriorate as a consequence of privatization when managerial rents are sufficiently large, and the effect of restructuring

on the profitability of firms is not too strong. The intuition of this result goes as follows. In state ownership, managers have some incentive to exert restructuring effort, because the government has a credible threat to cut employment unless the manager has restructured, and preserving high employment has substantial value for them. Privatization has two effects in this situation. First, the transfer of *cash flow rights* improves M's incentives, but only slightly as R_e is small. Second, receiving *control* over the restructuring funds the manager can divert the funds in order to finance the losses associated with excess employment. In turn, the commitment of the government not to refinance the firm is undermined, because it becomes less expensive for the government to keep the enterprise afloat when the manager pays for the losses of the firm. G is then willing to inject another unit of capital in order to preserve high employment. Expecting to be bailed out, the non-restructuring option becomes more attractive to the manager than going through the restructuring process. Hence, if condition (9) holds, a manager, who in state ownership, would exert effort, shirks in private ownership.

It should be noted that privatization would here *not* be in the interest of the government. That is, one would have to depart from a positive perspective to rationalize weaker incentives as a consequence of privatization. However, in transition economies, governments have oftentimes been under external pressure to privatize which may rationalize why privatization involved, on average, limited efficiency gains in many transition economies.

Proposition 2 has an interesting implication for the theory of ownership that builds on Grossman and Hart (1986). Here, two parties invest in assets that if used within their relationship have higher value than outside of the relationship. If the assets are not integrated, i.e., if each party controls only one asset, the parties underinvest, since they are subject to a problem of moral hazard in teams [Holmström (1982)]. Each party only partially internalizes the consequences of their investments. In order to overcome this free-riding problem and to maximize the joint surplus, ownership should be given to the party to whom the relationship is more important.

In our setup, M and G's investments are substitutes. If the manager exerts effort, the joint surplus is maximized and no further investment by the government is required. The

government being the owner of the firm internalizes losses and penalizes the manager by laying off workers in case he has shirked. It is this threat that makes the manager exert effort. In this situation, the transfer of cash flow rights from G to M has an ambiguous effect on overall efficiency. It increases the incentives of M, but distorts the ones of G. As a consequence, the prediction that ownership should be concentrated in the hands of the party that cares most about a joint project does not necessarily hold. Indeed, it can be optimal to give ownership to the party for who the project is less important (here: the government), in order to sustain the incentives of both parties to behave in an efficient way.

For the remainder of the analysis, we assume that $B_M \leq R_e - R(L) - 2$. It is then straightforward to show that first, employment in private firms is larger than in state firms; second, the budgetary impact of privatization is negative. The value function of privatization is set up in a way similar to (7) with $\alpha_p^d = \frac{R_e - R(L) - 2}{\bar{e}}$ and $\alpha_s^d = \frac{B_M}{\bar{e}}$. By substitution, we obtain the condition under which G privatizes:

$$(1 - \alpha_s^p)B_G > 2(1 - \alpha_d^p) + \alpha_d^s [R_e - R(0)] + R(0) - 1. \quad ((10))$$

where the left hand side represents G's benefit associated with additional employment in private firms, and the right hand side the respective budgetary losses. Substituting and rearranging yields the next proposition. As in the preceding subsection, privatization becomes desirable the more profitable the firm is if managers make a restructuring effort.

Proposition 3. *Suppose the government is budget-stabilizing, the manager rent-seeking, and $B_M \leq R_e - R(L) - 2$. Then, the government privatizes firms, which when completely restructured, yield*

$$R \geq R_e^d = \frac{[\bar{e} - B_M] [R(\underline{L}) - B_M] + \bar{e}}{[2 - B_M]}. \quad ((11))$$

3.3. Separate transfer of control and cash flow rights

In the preceding analysis, we have only looked at the joint transfer of cash flow and control rights. We here summarize what can be learned from looking at mixed ownership forms in which cash flow and control rights are held by different parties.⁶

⁶Debande and Friebe (1999) contains a more exhaustive treatment of this question.

Following Shleifer and Vishny's (1994) typology, we label '*regulation*' an allocation of ownership rights in which the government retains control rights, and the manager receives cash flow rights. There is an evident budgetary advantage of regulation: G does not lose control over the restructuring funds. More interestingly, regulation can also improve the incentives of M to exert effort: While M's payoff when exerting effort is the same under both regulation and privatization, M's payoff if he does not exert effort is lower under regulation than under privatization. Not only can M not pocket the injected funds, but G can set employment to levels that M does not like, which induces M to work harder.⁷

Under '*corporatization*', M receives control rights while the government retains cash flow rights. It is straightforward to show that this ownership form combines the worst elements of privatization and state ownership. First, it provides bad incentives to restructure, since the manager never internalizes the consequences of his actions. Moreover, M gains control over the restructuring funds and can divert them to unproductive uses. This complements Bennesen (2000) and Shleifer and Vishny's (1994) view that it is dangerous to transfer control rights to private agents without transferring cash flow rights as well.

4. Discussion

We here discuss two assumptions of our model and some implications. First, our model builds on the assumption that managerial effort can affect the technology of firms such that more labor can be employed in a profitable way. This notion of restructuring, similar to what Grosfeld and Roland (1995) call "strategic restructuring", is in contrast to what Shleifer and Vishny believe to be the main task of managers: to fire excess em-

⁷The result may be theoretically interesting, because it points to the fact that government control used in bad states may increase managerial incentives to reach the good state. We would, however, not want to stress the result too much, as it builds on a simplification: In our model, there is no conflict between the manager and the government if the firm is restructured. If this were the case, as in Shleifer and Vishny (1994), the retention of control rights by the government would reduce the manager's incentives to exert effort. There would then be a tradeoff for the government when deciding whether or not to retain control rights.

ployment. Empirical studies provide a mixed picture about the effects of privatization on employment of firms. Megginson et al. (1994) find that privatization involved more employment; Gupta et al. (2001) and Djankov and Murrell (2002) find that employment levels decline, but with the interesting qualification that this effect is stronger for richer economies. Bilsen and Konings (1998) report that transition leads to some initial job destruction, but do not find major differences in the behaviour between SOEs and privatized firms. In Boubakri and Cosset's (1998) sample of developing (not transition) economies, privatization increases employment. Finally, Frydman et al. (1999) provide clear evidence that privatization increases employment. The effect is particularly striking for insider-privatized firms that lay off even less workers than SOEs. We thus conclude that both hypothesis appear to be equally well supported by empirical work.

Second, the model also builds on the assumption that state ownership may be beneficial because government control makes it harder for managers to divert funds. This raises the question to which extent governments can execute their control rights in transition economies. Looking at three countries, Russia, Hungary and East Germany is interesting in that respect.

At the outset of transition in Russia, government's control over firms was already rather weak, because control rights had been delegated from ministries to the management of firms during Gorbachev's reforms. These early reforms proved to be a major obstacle for substantial reforms at later stages. As Boycko, Shleifer and Vishny (1995) argue, they had created a powerful group in society that had to be bribed in order to agree to reforms. Whether or not the Russian government could have managed to regain control over the corporatized firms, rather than giving them away to insiders, is a question to be answered by historians.

In Hungary, similar decentralization developments had taken place prior to 1989. However, supported by a public opinion opposed to spontaneous privatizations carried out by insiders, control over the state-owned firms was firmly re-established. Subsequently, Hungary opted for a cash-sales-to-outsiders scheme, rather than transferring property rights to insiders. The Hungarian State Property Agency targeted foreign investors, and was able to raise substantial revenues, in particular, through privatization of profitable sectors like energy, telecommunication and tourism.

(East) Germany's Treuhandanstalt, however, decided to give away firms, mostly to outsiders and to provide massive subsidies for restructuring purposes without exerting a sufficient degree of control over the firms. A serious problem emerged, when the political costs of unemployment increased rapidly [Dyck and Wruck (1998)], and, in terms of our model, the government changed its type from budget-stabilizing to employment-maximizing. While rapid privatization might have been a good idea as long as the government was committed not to refinance, the rapid give-away strategy turned out to be very costly once this commitment was undermined. The Treuhandanstalt continued to inject funds into firms in order to secure employment. The total net costs of privatization are estimated 300 billion DM, a large part of which were subsidies given to outside investors. In contrast to Russia, Treuhandanstalt would have been able to control its firms, maintain the unprofitable ones in state ownership in order to minimize losses, while privatizing the profitable ones.

The brief discussion above shows that whether or not a government is able to re-establish control over firms, depends mainly on political factors. It appears that in Russia, the political balance of power might not have allowed the government to regain control, while in Hungary, the government was supported by the public in its attempts to bring spontaneous privatization to a halt. In the case of Germany, rapid privatization was a strategic choice brought forward in particular by the liberal party, and seems to have been chosen rather on political than on economic grounds.

One surprising implication of our model is that privatization may soften, rather than harden the budget constraints of firms. Djankov and Murrell (2002) provide evidence that privatization tends to reduce the extent of the soft budget constraint problem. However, the situation seems to differ between Central and Eastern Europe on one hand, and Russia on the other. In Russia, the incidence of state support for failing firms appears to have increased rather than decreased after privatization. One should however be careful in assuming a causality, because many other things have changed during the nineties in Russia, in particular, fiscal decentralization may have increased the scope and taste for politicians' interventions. Megginson and Netter (2001) confirm the same picture: privatization has hardened the budget constraints in Central and Eastern Europe, but not in Russia and other CIS countries. Finally, the example of

Treuhand shows that privatization may be accompanied by massive subsidization.

Give-away privatization has been the most important mode of privatization in transition economies, and we believe our model to be particularly suited for insider privatization, which has been the most important form of privatization in transition economies. However, it also carries over to non-cash outsider privatization, as governments cannot screen potential new owners according to their willingness to pay. Because being in control of a firm allows owners to extract rents, unproductive agents have an incentive to acquire firms. The absence of screening mechanisms does not allow to distinguish them from the more productive ones. Privatization in East Germany provides a wealth of cases [cf. Heimbrecht (1993)] that fit our idea of managers and investors diverting the funds injected by Treuhandanstalt and utilizing the fact that Treuhandanstalt's commitment power decreased over time, due to increasing unemployment.

But even in mature market economies, the absence of screening through a price mechanism causes problems: Wolfram (1998) shows that when insider managers stayed in control of privatized electricity companies, they have extracted rents at the expense of private shareholders. Megginson, Nash and van Randenborgh (1994) find that the post-privatization performance of companies that changed the composition of their board of directors improved significantly compared to others in which the board remained unchanged. Screening and managerial turnover thus appear to be essential components of a successful privatization strategy.

5. Concluding remarks

In this paper, we have analyzed the motives of a self-interested government to privatize a firm to insiders. Predictions about enterprise efficiency, employment and subsidies have been developed, which are in line with the experience in many transition economies. We have shown that governments trade off the loss of control over restructuring funds against better managerial incentives. The theory also predicts that potentially profitable firms should be more likely to be privatized. We have also pointed to the risk that when privatization is imposed from the outside, privatization weakens managerial incentives when managers care for high employment.

References

- [1] Aghion P. and O. Blanchard (1995), "On Insider Privatization", *European Economic Review*, 40, pp. 759-66.
- [2] Aghion P., M. Dewatripont and P. Rey (1997), "Innovation, Firm Behaviour and the Nature of Competition", mimeo IDEI.
- [3] Anderson, J., Y. Lee and P. Murrell (2000), "Competition and Privatization Amidst Weak Institutions: Evidence from Mongolia", *Economic Inquiry*, 38, pp. 527-49.
- [4] Bennesen, M. (2000), "Political Ownership", *Journal of Public Economics*, 76, pp. 559-581.
- [5] Bilsen, V. and J. Konings (1998), "Job Creation, Job Destruction and Growth of Newly Established, Privatised and State-Owned Enterprises in Transition Economies: Survey Evidence from Bulgaria, Hungary and Romania", *Journal of Comparative Economics*, 26, pp. 429-45.
- [6] Boubakri, N. and J. Cosset (1998), "The Financial and Operating Performance of Newly Privatized Firms: Evidence from Developing Countries", *Journal of Finance*, 53, pp. 1081-110.
- [7] Boycko M., A. Shleifer and R. Vishny (1995), *Privatizing Russia*, MIT Press, Cambridge.
- [8] Carlin W., J. van Reenen J. and T. Wolfe (1995), "Enterprise Restructuring in Early Transition: The Case Study Evidence from Central and Eastern Europe", *Economics of Transition*, 3, pp. 427-58.
- [9] Debande O., and G. Friebe (1999), "A Positive Theory of Insider Privatization", Discussion Paper 99/05, Stockholm Institute of Transition Economics.
- [10] Dewatripont M. and E. Maskin (1995), "Credit and Efficiency in Centralized and Decentralized Economies", *Review of Economic Studies*, 62, pp. 541-55.

- [11] Djankov, S. (1999), "Ownership Structure and Enterprise Restructuring in Six Newly Independent States", World Bank Research Paper no 2047, The World Bank, Washington DC.
- [12] Djankov S. and P. Murrell (2002), "Enterprise Restructuring in Transition: A Quantitative Survey", *Journal of Economic Literature*, 40, pp. 739-92.
- [13] D'Souza, J. and W. Megginson (1999), "The Financial and Operating Performance of Privatized Firms during the 1990s", *Journal of Finance*, 54, pp. 1397-438.
- [14] Dyck A. and K. Wruck (1998), "Organization Structure, Contract Design and Government Ownership: A Clinical Analysis of German Privatization", *Journal of Corporate Finance*, 4, pp. 265-99.
- [15] Earle, J. and S. Estrin (1997), "After Voucher Privatization: The Structure of Corporate Ownership in Russian Manufacturing Industry", SITE (Stockholm School of Economics) Discussion Paper 120.
- [16] Ericson, R. (1999), "The Post-Soviet Russian Economic System: An Industrial Feudalism", SITE (Stockholm School of Economics) Discussion Paper 140.
- [17] Grosfeld I. and Roland R. (1995), "Defensive and Strategic Restructuring in Central European Enterprises", CEPR Discussion Paper 1135.
- [18] Grossman S. and Hart O. (1986), "The Costs and Benefits of Ownership: A Theory of Vertical and Lateral Integration", *Journal of Political Economy*, 94, pp. 691-719.
- [19] Gupta S., C. Schiller, H. Ma and E. Tiongson (2001), "Privatization, Labor and Social Safety Nets", *Journal of Economic Surveys*, 15, pp. 647-69.
- [20] Frydman R., C. Gray, W. Hessel and M. Rapaczynski (1999), "When Does Privatization Work? The Impact of Private Ownership on Corporate Performance in Transition Economies", *Quarterly Journal of Economics*, 114, pp. 1153-191.
- [21] Heimbrecht J. (1993), "Wie die Treuhandbetriebe verkauft wurden" in Liedtke R. (ed.), *Die Treuhand und die zweite Enteignung der Ostdeutschen (Treuhand and the Second Expropriation of the East Germans)*, Spangenberg, München, pp. 57-71.

- [22] Holmström B. (1982), “Moral Hazard in Teams”, *Rand Journal of Economics*, 13, pp. 324-40.
- [23] Jensen M. (1986), “Agency Costs of Free Cash Flow, Corporate Finance, and Takeovers”, *American Economic Review (Papers and Proceedings)*, 76, pp. 323-29.
- [24] Konings J. (1997), “Firm Growth and Ownership in Transition Countries”, *Economics Letters*, 55, pp. 413-18.
- [25] Laffont J.-J. and J. Tirole (1993), *A Theory of Incentives in Procurement and Regulation*, MIT Press, Cambridge, Mass.
- [26] Megginson W., R. Nash and M. van Randenborgh (1994), “The Financial and Operating Performance of Newly Privatized Firms: An International Empirical Analysis”, *Journal of Finance*, 49, pp. 403-52.
- [27] Megginson W. and J. Netter (2001), “From State to Market: a Survey of Empirical Studies on Privatization”, *Journal of Economic Literature*, 39, pp. 321-89.
- [28] OECD (2002), *Financial Market Trends*, June, 82, Paris, OECD.
- [29] Pinto, B., M. Belka and S. Krajewski (1993), “Transforming State Enterprises in Poland: Evidence on Adjustment by Manufacturing Firms”, *Brookings Papers on Economic Activity, Macroeconomics*, pp. 213-69.
- [30] Sappington D. and J. Stiglitz (1987), “Privatization, Information and Incentives”, *Journal of Policy Analysis and Management*, pp. 567-82.
- [31] Schmidt K. (1996), “The Costs and Benefits of Privatization: An Incomplete Contracts Approach”, *Journal of Law, Economics and Organization*, 12, pp. 1-24.
- [32] Shleifer A. and Vishny R. (1994), “Politicians and Firms”, *Quarterly Journal of Economics*, 109, pp. 995-1025.
- [33] Wolfram C. (1998), “Increases in Executive Pay Following Privatization”, *Journal of Economics & Management Strategy*, 7, pp. 327-61.