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A THEORY OF PRIVATISATION

Maxim Boycko, Andrei Shleifer and Robert W. Vishny[1]

Public enterprises around the world have proved to be highly inefficient, primarily because they pursue strategies, such as excess employment, that satisfy the political objectives of politicians who control them. Privatisation of public enterprises can raise the cost to politicians of influencing them, since subsidies to private firms necessary to force them to remain inefficient are politically harder to sustain than wasted profits of the state firms. In this way, privatisation leads to efficient restructuring of firms. Moreover, privatisation is more effective when combined with a tight monetary policy, and when the new owners of firms are profit maximising investors, rather than their employees or even managers.

In the last decade, privatisation of state enterprises has swept the world. Thousands of state firms from Africa, Asia, Latin America, Western and Eastern Europe have gone private (Kikeri *et al.* 1992). A critical factor behind this move to privatisation is the well-documented poor performance of public enterprises. Donahue (1989) surveys multiple studies showing the significantly higher cost of public relative to private provision of municipal services in the United States. Lopez de Silanes (1993) documents the inferior profitability of state relative to private firms in Mexico in the 1980s. Mueller (1989) and Vining and Boardman (1992) survey dozens of studies of public and private firms around the world, most of which show that private firms are more efficient. More recent studies have actually shown that efficiency improves after privatisation (World Bank, 1992; Megginson *et al.*, 1994). In this paper, we develop a model of privatisation that explains the relative inefficiency of public firms and the improvements of efficiency after privatisation, as well as several other empirical findings concerning privatisation.

The starting point of our analysis is the commonplace observation that public enterprises are inefficient because they address the objectives of politicians rather than maximise efficiency. One key objective of politicians is employment: they care about votes of the people whose jobs are in danger and, in many cases, unions have significant influence on political parties. For example, Donahue (1989) describes evidence showing higher employment per unit of output in publicly provided municipal services. The British government for a long time refused to close grossly inefficient coal mines to preserve mining jobs. While excess employment is not the only politically demanded inefficiency of state firms (for example, Credit Lyonnais, the money losing French state

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bank, made its worst loans to the friends of the governing socialist party),[2] it is surely the most commonly noted one. Below, we focus on the implications of the political demand for excess employment by public enterprises.

In Section II, we present a simple model in which a spending politician, such as an industrial minister, who controls the decisions of a public enterprise, forces it, for political reasons, to spend too much on labour. This politician does not fully internalise the cost of the profits foregone by the Treasury and by private shareholders that the firm might have. The manager can bribe this politician to agree to lower employment, and in some cases corruption improves efficiency. However, corruption contracts are usually neither legal nor enforceable, so inefficiency is not necessarily cured by corruption.

This analysis raises a question: can a reformer make it more difficult for spending politicians to benefit from excess employment of public enterprises? A reformer in this model is a newly elected leader, such as Margaret Thatcher in Britain, Carlos Salinas in Mexico, or Vaclav Klaus in the Czech Republic, who derives political benefits not from excess employment in public enterprises, but from low spending and taxes. It is not that reformers are benevolent, but rather that their political constituents are taxpayers rather than the beneficiaries of public largesse. These reformers want to constrain the actions of their own spending ministries, or alternatively, to tie the hands of future governments (such as future Labour governments in Britain) that might be more inclined to spend money on public enterprise employment. In effect, these reformers represent the interests of the Treasury against those of the spending ministries.

Our paper discusses privatisation as a strategy available to the reformers to reduce inefficiency of public enterprises. By privatisation we mean a combination of the reallocation of control rights over employment from politicians to managers and the increase in cash flow ownership of managers and private investors.[3] At first glance, it seems that privatisation should reduce employment if managers maximise profits and have no interest in excess employment. However, a spending politician still wants to influence firms and can use government subsidies to convince their managers to keep up employment. In principle, there is nothing magic about privatisation: just as the spending politician was willing to give up profits of a public firm on excess labour spending, he is willing to subsidise a privatised firm to 'buy' excess labour spending. How, then, does privatisation serve the reformer's interests and separate the firm from the spending politician?

This question has been addressed by several authors. Schmidt (1990) argues that privatisation reduces the amount of information that politicians have, which may lead to the reduction of subsidies and restructuring. Shapiro and Willig (1990) make a clear case that privatisation must draw a line between politicians and firms, and like Schmidt, use an information argument to show how it works. We agree with the general approach of these papers, although we are not sure why privatisation necessarily changes the information of politicians.

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[2] *The Economist*, April 9, 1994.
[3] Grossman and Hart (1986) stress the distinction between control and cash flow rights.

In this paper, we argue that it may be politically less costly for the politician to spend the profits of the firm on labour without remitting them to the Treasury than to generate new subsidies for the privatised firm. The public and the reformers may not be aware of the potential profits that a state firm is wasting, but they are keenly aware of the alternative uses of tax revenues, and would not wish to spend public money to subsidise private firms not to restructure. This difference between the political costs of foregone profits of state firms and of subsidies to private firms is the channel through which privatisation works in this paper. One important conclusion of this analysis is that a tough monetary policy makes privatisation much more effective.

In Sections I and II, we discuss a very simple model in which the only active players are the spending politician and the manager. In Section III, we consider the role of other potentially active players, such as the employees and the core investors. We discuss the effect of worker ownership and outside investor ownership on the likelihood of restructuring. In our model, different types of privatisation have different implications for efficiency.

Section IV concludes.

I. POLITICAL CONTROL OF FIRMS

A simple model

We consider a firm that only chooses its level of spending on labour E. It can spend an efficient amount L or a higher amount $H > L$. The higher spending comes from excess wages and employment. The restriction of only two levels of spending is introduced for simplicity.

There are two players in this model who have preferences over E: the politician and the manager. The manager here is assumed to represent private shareholders. We begin by assuming that the manager and shareholders own a fraction α of the firm's profits, while the Treasury owns a fraction $(1 - \alpha)$. The politician himself owns no equity. In a public firm, α is close to zero, whereas in a private firm, α is close to 1.

To begin, we assume that the objective function of the politician (in dollars) is given by:

$$Up = qE - m(1 - \alpha)E. \tag{1}$$

The politician prefers higher labour spending since it is a source of political benefits, such as voting support from the employees and labour unions. The marginal benefit to him of an extra dollar of such spending is $q < 1$. But spending more on labour reduces the value of the Treasury's share of profits of the firm. The politician cares about these profits because the Treasury can impose sanctions on him if the firm loses (or fails to make) money. Importantly, the politician does not care directly about the share of the profits foregone by the manager and private shareholders, which matter only to the extent that angering shareholders reduces the net potential political benefit of excess employment q. The cost to the politician of a dollar of profits foregone by the Treasury as a result of spending on labour is m. We assume $m < 1$ because the politician cares less about the Treasury's income than he does about his own money. This, too, creates a bias for too much employment. The politician's

objective function thus trades off the political benefits of higher employment against the political costs of the profits foregone by the Treasury.

The objective function of the manager (shareholders) is simply given by his share of profits:

$$Um = -\alpha E. \tag{2}$$

We can extend the model to allow the manager to care about employment directly; the results are very similar as long as the manager cares relatively more about profits than the politician does.

The critical parameter in this model is who controls labour spending. Initially, we assume that the firm is publicly controlled, meaning that E is chosen by the politician. This assumption accurately represents the situation with most public enterprises, where the government exerts substantial influence over their key decisions, particularly when political issues such as employment are involved. For example, the French government refused to back the management of Air France in its attempt to reduce labour costs, with the result that the management left and the employees stayed.

When the politician controls E, we assume he chooses $E = H$. Denote by $\Delta E = H - L$ the incremental gain in labour spending from switching from L to H. Then the assumption that the politician uses his control rights to choose $E = H$ can be rewritten as:

$$m(1 - \alpha) < q. \tag{3}$$

This condition says that political benefits per dollar of extra spending on labour exceed political costs per dollar of profits foregone by the Treasury from such spending. In this way, we illustrate the idea that political control leads to inefficiencies that benefit politicians at the expense of the Treasury and other shareholders.

Corruption

Even if the politician controls labour spending and (3) holds, it might be in the interest of the manager (and shareholders) to bribe the politician to cut the firm's labour spending. There are two ways of thinking about this bribe. First, it could be a payoff to change E (or some other decision that the politician imposes on the firm) from H to L. Second, it could be a payment to transfer the control rights over E from the politician to the manager. Since in this model the manager chooses $E = L$ once he gets control rights, the bribe necessary to buy control from the politician is the same as the bribe needed to get the politician to change his decision. We show below that corruption reduces the set of parameter values for which labour spending is excessive.

Denote the necessary bribe by b. With bribes, the politician's utility is given by:

$$Up = -m(1 - \alpha) E + qE + b, \tag{4}$$

and the manager's utility is given by:

$$Um = -\alpha E - b. \tag{5}$$

Since utility is transferable, the manager succeeds in bribing the politician to choose $E = L$ if their combined utility is higher at L than at H, i.e., if

$$m(1 - \alpha) + \alpha > q. \tag{6}$$

Both (3) and (6) can be satisfied simultaneously: the politician chooses H without corruption but is willing to be bribed and choose efficient labour spending. The bribe divides the surplus between the manager and the politician according to the Nash or some other bargaining solution.

   This result illustrates the Coase theorem for our model. When side-payments in the form of bribes are allowed, the manager and the politician choose the outcome that, from their joint viewpoint, is the most efficient. If (6) holds, the 'jointly efficient' outcome coincides with the socially efficient one $E = L$, but if (6) fails, the two may differ. Condition (6) is different from social efficiency in two ways. First, when $m < 1$, the politician does not fully internalise the foregone profits from excessive labour spending. The Treasury is too soft to make him act as a full shareholder. Second, excess labour spending benefits the politician since it enables him to get votes away from other politicians, but it should not enter the social welfare function. Thus corruption generally raises efficiency, in that it allows private investors to buy their way out of some of the inefficiencies demanded by politicians, but it does not always lead to first best.[4]

   There are, however, some problems with using corruption to renegotiate to a more efficient resource allocation, even if (6) holds. First, corruption in most societies is illegal, so both the giver and the receiver of a bribe risk going to jail. The illegality of corruption is a particular problem when the bribe-supported outcome leads to substantial losses by the workers, who have an incentive to expose the politician. For the same reason of illegality, the corruption contract is unenforceable in courts. After collecting a bribe, the politician can renew his demand that labour spending be kept at a high level, or ask for another bribe. Since the manager has no recourse to enforce the initial agreement, he might never offer a bribe in the first place. Of course, there are other mechanisms of contract enforcement, such as reputations, but in transition economies the horizons of politicians are often too short to develop a reputation for efficient bribe taking.[5] In this case, we are back to the case of the politician choosing the inefficient outcome as long as condition (3) holds.

II. PRIVATISATION

By privatisation we mean a combination of two changes undertaken by a reformer. The first is turnover of control from spending politicians to managers, often referred to as corporatisation. Such turnover can be implemented by a strong reform government that effectively suppresses the ministries and the bureaucracy, as happened in Czechoslovakia. Alternatively, such turnover can happen more spontaneously, as the power of bureaucracy to protect its control rights diminishes. Such slow turnover of control from politicians to managers occurred in Russia in the early 1990s.

   The second change that is usually part of most privatisations is the reduction of the cash flow ownership by the Treasury and the increase of cash flow ownership of managers and outside shareholders. The Treasury can sell its

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[4] See Leff (1964), Rose-Ackerman (1978), Shleifer and Vishny (1993, 1994).
[5] For a further discussion of this issue, see Shleifer (1994).

shares for cash, or it can give them away through vouchers or some other allocation scheme. Our model shows how both the reallocation of control rights and the increase in private cash flow rights contribute to restructuring.[6]

When the managers and shareholders interested in maximising profits get control over labour spending, they obviously choose $E = L$. This, however, is not the end of the story. For just as before a manager paid a politician with control rights to agree to $E = L$, the politician can now try to pay shareholders not to restructure. The mechanism that politicians use is typically not bribes, but subsidies from the Treasury to the firms, also known as soft budget constraints.[7] Indeed, this is the main question about privatisation: why would a politician fail to buy his way to high labour spending through subsidies? To show how privatisation leads to restructuring, we must establish conditions under which managers with control rights choose to restructure even when they must forego subsidies from the Treasury.

Denote the subsidy from the Treasury to the firm by t. Since the Treasury owns $(1 - \alpha)$ of the cash flows, it gets the fraction $(1 - \alpha)$ of this subsidy back, so the effective subsidy is αt. If the politician could ask the Treasury to subsidise the firm at no cost to himself, he would pay the firm infinite subsidies not to restructure and no restructuring will ever take place. But the Treasury has to raise the money for the subsidies through either taxes or inflation, both of which are unpopular. We denote the cost to the politician of making a (net) subsidy αt by $k\alpha t$. In the plausible case, $k < 1$, since subsidies are less expensive to the politician than bribes out of his own pocket, which correspond to $k = 1$.

This model has two parameters that reflect the cost to the politician of foregone Treasury revenue: m and k. The first measures the cost to the politician of profits foregone by the Treasury, the second measures his political cost of subsidies. If the Treasury suffers no illusions from the corporate veil, then $m = k$. However, it is more reasonable to suppose that it is easier for the politician to squander a firm's profits on inefficiencies than to get additional subsidies for it, in which case $m < k$. When a firm squanders its profits, most members of the government do not known that it is potentially profitable and hence do not claim a piece of its profits for the Treasury and indirectly for their own pet projects. As a result, the minister who oversees this firm can spend the profits on political benefits, such as employment at a relatively low political cost. In contrast, when a firm receives a subsidy, the minister must compete for the resources of the Treasury with all the other politicians who argue for their favourite projects. As a result, buying political benefits with the money that is already in the Treasury is more expensive than just spending the profits of the firm. We keep the two parameters k and m separate to be able to evaluate the effect of each on the likelihood of restructuring.

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[6] An alternative model of privatisation is to keep control in the hands of politicians but also to give them personal cash flow rights. Such 'nomenklatura privatisation' is easy to analyse in our model, and can be shown to increase efficiency relative to political control with no cash flow rights. Although nomenklatura privatisation has sometimes been advocated for Eastern Europe, it is politically too unpopular to make it a viable privatisation strategy.

[7] Kornai (1979) is the classical study of soft budget constraints. More recent models include Dewatripont and Maskin (1990), Li (1992), and Schmidt (1990).

We assume that corruption is infeasible (bribes are equivalent to the case of $k = 1$), since we have already noted some problems with bribes, and we want to focus on new issues. The objective function of the politician is given by:

$$Up = -m(1-\alpha)E + qE - k\alpha t, \qquad (7)$$

and the objective function of the manager is given by:

$$Um = -\alpha E + \alpha t. \qquad (8)$$

We can compute the Nash bargaining solution to this problem. Without subsidies, the manager chooses efficient labour spending L. He and the politician then bargain and he chooses labour spending H if he is better off with H and a transfer than he is with L. The politician's incremental utility from switching to H is given by:

$$-m(1-\alpha)\Delta E + q\Delta E - k\alpha t \qquad (9)$$

and the manager's incremental utility from switching to H is given by:

$$-\alpha\Delta E + \alpha t. \qquad (10)$$

The Nash Bargaining solution is given by maximising the product of (9) and (10) over t, which yields the equilibrium transfer:

$$t = \Delta E[-m(1-\alpha) + q + k\alpha]/(2k\alpha). \qquad (11)$$

This bargain fails to be struck if the manager (or the politician) is worse off with $E = H$ and transfer t than he is with $E = L$ and no transfer. The condition for neither of them benefitting from the switch [i.e. both (9) and (10) are negative with t given by (11)] is:

$$k\alpha + m(1-\alpha) > q. \qquad (12)$$

When (12) holds, privatisation leads to restructuring in that the politician cannot successfully use subsidies to convince the manager to choose $E = H$.

The left hand side of (12) measures the cost to the politician of getting the firm not to restructure, in terms of both the foregone profits and the needed subsidies. The right hand side is the benefit to the politician of high labour spending. When the cost exceeds the benefit, the politician cannot convince the manager not to restructure. To understand why privatisation works in this model, we can compare (12) to (3) and (6).

The difference between (12) and (3) is the presence of the term αk in (12): the cost of getting the firm not to restructure is higher for the politician after privatisation. Privatisation works because, to convince the manager who has control rights to have high labour costs, the politician must compensate him (and shareholders) for foregone profits, which are proportional to the privatised cash flow stake α. In contrast, when the politician controls the firm, he does not need to pay for the profits foregone by the private investors. The politician pays for the profits foregone by the private shareholders with subsidies, and the cost to him of a dollar of subsidies is k. The term αk thus measures the cost to the politician of convincing the manager with control rights not to restructure.

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The difference between (12) and (6) is that (12) has αk where (6) has α. When the manager bribes the politician to allow low labour spending, his foregone profits from high labour spending are also fully internalised, except now the cost of a dollar of foregone profits is exactly a dollar. With privatisation rather than bribes, the cost of a dollar of foregone profits is k rather than a dollar, so privatisation is not quite as effective as corruption [(12) is harder to satisfy than (6)]. However, corruption and privatisation work in similar ways: they get the politician to internalise the cost of profits foregone by the manager and outside shareholders. Since corruption has its own problems, privatisation may be the best available way to stimulate restructuring.

When does (12) hold and (3) fail? First, even for a fixed α and $k = m$, the left hand side of (12) is higher than that of (3) because, once control rights are turned over from the politician to the manager, the politician has to compensate the manager for the foregone profits if he wants high employment. By making the politician internalise the cost of the inefficiency borne by the manager and shareholders, this transfer of control encourages restructuring.

Second, when $k > m$, the left hand side of (12) rises with α, and hence higher private ownership is conducive to restructuring. As cash flow ownership is transferred from the Treasury to the manager (and outside shareholders), the politician must pay for excess labour spending not in terms of relatively cheap to him profits foregone by the Treasury, but in terms of relatively expensive to him subsidies. As a result, as more cash flows are privatised, condition (12) is more likely to become satisfied even when (3) fails. When subsidies are costlier to the politician than foregone profits, privatisation of cash flows and not just the transfer of control rights raises the overall cost to the politician of preventing restructuring. In this case, which we regard as the most plausible, a high α is essential for the restructuring to take place.

A high k is naturally interpreted as a tough monetary policy stance. Because a tough monetary stance makes subsidies costly to the politician, it facilitates restructuring. Indeed, condition (12) shows that there is an interaction between k and α: the harder is the monetary policy stance, the lower is the management ownership necessary to bring about restructuring. This result may describe the restructuring in Poland of public but managerially controlled firms during the regime of a restrictive monetary policy, which occurred even before privatisation (see Pinto et al. 1993). At the same time, when monetary policy is extremely loose, as it was in Russian in 1993, even high management ownership does not induce managers to give up huge government subsidies and restructure. Indeed, if k is low, no α might be high enough to satisfy (12). More generally, both a high k, meaning a restrictive monetary policy, and a high α might be needed to assure restructuring. We have made this argument informally in our earlier paper on the Russian privatisation (Boycko et al. 1993).

We began this paper by asking: how does privatisation work? In this section, we proposed a channel through which privatisation widens the separation between the manager and the politician, and in this way stimulates restructuring. By transferring control from politicians to the managers,

privatisation makes politicians accountable for the profits used on excess labour spending, since they need to subsidise the firm to convince managers to incur this spending. By transferring cash flow rights from the Treasury to the managers (and outside shareholders), privatisation forces politicians to pay for these foregone profits not through the relatively cheap mechanism of failing to remit profits to the Treasury, but through a more expensive mechanism of extracting subsidies from the Treasury. Privatisation thus works because, first, it makes politicians pay for the private share of profits, and, second, it raises the cost of such payments.

III. DESIRABLE OWNERSHIP STRUCTURES

In the previous sections, we examined two types of control over firms: that by politicians and that by managers. Managers were not distinguished from outside shareholders. The reality is more complicated. In many countries, enterprise employees get significant control rights even before privatisation. In addition, managers do not always have the same preferences as outside shareholders. In thinking about desirable control structures, we can rank potential shareholders in terms of their concerns for labour spending versus profits. Thus employees are even more concerned about labour spending relative to foregone profits than the politicians. After all, the politicians' interest in labour spending is derived from pressure from the unions and the (potentially) unemployed. Managers in reality are in between politicians and outside shareholders, since managers have some concern for empire building/employment whereas outsiders have none.

The fundamental implication of our analysis is that the closer are shareholders' tastes to those of the politicians, the less likely restructuring is to occur. When these shareholders get control rights, it is relatively cheaper for politicians to convince them not to restructure through the use of subsidies.

This simple logic has several implications. First, it suggests that worker control is bad for restructuring. Workers are unlikely to want layoffs necessary for restructuring to begin with, especially if they can get subsidies. Formally, if we replace the manager's objective function (2) by one that puts some weight on labour spending, it is easy to check that restructuring is less likely. This result confirms well established scepticism about worker control (as opposed to control-free cash flow ownership common in the United States and other countries – see Hansmann (1990)). It is also consistent with scepticism about significant worker ownership in privatisation (Lipton and Sachs, 1990; Boycko *et al.* 1993).

Second, very similar logic suggests that, from the point of view of restructuring, control by large outside investors, who are unlikely to care about employment, is superior to control by managers, who care about it more. The reason, as before, is that large investors are harder to convince through subsidies not to restructure since their tastes are farther away from those of the politicians. In addition, large outside investors, unlike managers, need not be cash constrained, and hence could afford a larger ownership stake α, which

also makes effective subsidisation harder. This result suggests that the presence of large outside investors is conducive to efficiency (see Shleifer and Vishny, 1986). It accords well with recommendations for core investors for East European privatisation programmes (see Frydman and Rapaczynski, 1991; Lipton and Sachs, 1990, and Phelps *et al.* 1993), which also happens to be a common practice in other countries, such as Mexico and France.

The result on desirability of large shareholders should be interpreted carefully. The reason that outside shareholders promote restructuring is their interest in profits. If large shareholders are politicised, in the sense that they are pressured or bribed to bring their objectives in line with those of the politicians, they can become detrimental to restructuring. In Russia, for example, politicians want to create industrial holding companies that become core investors in privatised firms. This strategy is designed to increase political influence on firms, not to reduce it. Indeed, throughout the world, government holding companies come to represent the tastes of the politicians, and as a result, slow down rather than encourage restructuring.

A more subtle example of the same potential danger would be privatisation in Poland, in which several government-sponsored mutual funds are to become controlling shareholders of privatising companies through a free allocation of shares to these funds, which in turn are to be owned by Polish citizens. This programme is intended to be a quick way to bring core investors to privatised firms, provided that those investors maximise profits. If, in contrast, the government-regulated mutual funds come to represent the preferences of politicians, they might work to prevent restructuring rather than facilitate it. To be effective, large blockholders must be private parties whose objective is to maximise profits.

IV. CONCLUSION

This paper started with an empirically plausible assumption that the inefficiency of state firms results from their pursuing well specified objectives of politicians, such as excess labour spending. We have presented a model in which privatisation effectively drives a wedge between politicians and managers, i.e., depoliticises firms and leads to their restructuring, even when politicians can use subsidies to convince privatised firms not to restructure, In this model, privatisation and an effective stabilisation policy can work together to make restructuring more likely, by making it too costly for politicians to subsidise firms.

At a more general level, this paper tried to show that the critical agency problem that explains the inefficiency of public firms is the agency problem with politicians rather than that with managers. We believe that managerial discretion problems are usually minor relative to political discretion problems. Privatisation works because it controls political discretion.

Russian Privatisation Centre

Harvard University

University of Chicago

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