Privatization and Efficiency: From Principals and Agents to Political Economy

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Summary

We survey the theoretical literature on privatization and efficiency by tracing its evolution from the applications of agency theory to recent contributions in the field of political economy. The first ones extend the theory of regulation with incomplete information to address privatization issues, comparing State Owned Entreprises (SOEs) with private regulated firms. The benefits of privatization may either derive from the constraints it places on malevolent agents or to the impossibility of commitment by a benevolent government because of incomplete contracts. Contributions dealing with political economy issues separate privatization from restructuring decisions. They either explore bargaining between managers and politicians or analyze the impact of privatization shaped by political preferences on efficiency. The theoretical results regarding the relation between privatization and efficiency do not lead to any definitive conclusion. Privatization may increase productive efficiency when restructuring takes place whereas its effects on allocative efficiency still remain uncertain.

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1 Introduction

Over recent decades privatization policies have been implemented all over the world[1] and the economic literature devoted to privatization issues has been constantly increasing[2]. According to the common wisdom, goverments implement privatization policies in order to achive the following goals: 1) to reduce national budget deficits and the stock of national debt 2) to foster financial markets development 3) to increase efficiency. Concerning the first objective, the privatization of the State Owned Enterprises (from now on SOEs) obviously implicates a reduction in government expenditure due to subsidies. Moreover, if after privatization former SOEs become and remain more profitable, they can also help increase tax revenues. Further, experience has shown that privatization revenues do not lead to an increase in government spending, because they are considered a once and for all yield and are earmarked to reduce the stock of national debt. As to the second objective, current experience is consistent with a positive impact of privatization policies on financial market development. Empirical analyses show that privatization has contributed to the growth of stock market capitalization and trading all over the world (Megginson and Netter, 2001). The third aim can be considered more controversial. Conventional wisdom assumes that privatization policies contribute to increase efficiency given that a huge amount of resources is moved from government control to market allocation. However such a "popular" belief may be due to ideological faith on the virtues of economic liberalism rather than to a proper assessment of the impact of the firm's ownership on productive and allocative efficiency.

Empirical studies show that ownership changes increase efficiency in competitive markets, but are less conclusive when considering the pure effects of privatization alone (Vickers and Yarrow, 1988; Boardman and Vining 1992, Sheshinski and Lopez-Calva 2003). According to Megginson and Netter (2001), privately owned firms are generally more efficient than otherwise comparable SOEs. However, improvements in productive efficiency do not necessarily also imply an increase in allocative efficiency. In the Eastern European countries privatization has occurred during their transition to market economies. In Western countries privatization has been frequently accompanied by liberalization and regulatory changes, as far as public utilities markets are concerned. In both cases, it may be difficult to disentangle the pure effect of ownership

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[1] See Bortolotti and Siniscalco (2004) for an international analysis.

[2] This literature has been extensively reviewed in Megginson and Netter (2001). Other surveys can be found in Bortolotti and Siniscalco (2004), Sheshinski and Lopez-Calva (2003), Shirley and Walsh (2004).

changes from the impact of the evolution of market structure.

Together with empirical studies, the theoretical literaure dealing with the relationship between privatization and efficiency has been growing over the last twenty years. Moreover, the theoretical results are ambivalent about the impact of ownership changes on efficiency. Although this literature has been rapidly reviewed in most empirical studies devoted to privatization policies, to the best of our knowledge, there is no survey in economic literature focusing exclusively on theoretical studies dealing with the impact of privatization policies on efficiency. Such studies could be useful in assessing the pure effect of ownership changes and would show a gradual shift from normative to positive analysis, as the focus of attention moves from the theory of incentives with incomplete information to political economy issues. The latter are obviously at the core of privatization decisions despite the fact that they have been only recently analyzed by the theoretical literature.

In this survey section two reviews the seminal papers based on agency theory. We show how theoretical analysis evolved from studies where privatization benefits are linked to the assumption of a malevolent government to other contributions showing how these benefits instead derive from the impossibility of commitment by a benevolent government, due to incomplete contracts. Most studies reviewed in the second section compare SOEs with private regulated firms and are based on the theory of regulation with imperfect information. In section three regulatory topics are ignored and analysis is focused on political economy issues. Section four concludes.

2 Privatization and Principal-Agent Theory

The initial contributions to the theoretical literature on privatization and efficiency can be considered as extensions of the Principal-Agent theory to ownership issues. The seminal paper was by Sappington and Stiglitz (1987). In considering an auction system between potential producers for the right to provide a good they extend the analysis already developed by Loeb and Magat (1979) to privatization issues and investigate optimal regulation with asymmetric information. According to Sappington and Stiglitz, both private and public production are similar because they are characterized by a process of delegation of authority and responsability to managers[3]. The authors compare SOEs with private firms on the basis of their "fundamental privatization theorem", providing conditions under which ownership does not matter, as public production cannot improve upon private production. Their theorem is

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[3]One can think about a hierarchy of authority that ends with managers.

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the first of the three "indifference results" characterizing the literaure about privatization and its efficiency effects. From the methodological point of view this result (and its implications) is similar to the fundamental theorems of welfare economics. It states the conditions under which private firms can perform as well as public firms in order to find "privatization failures" which require government intervention in production.

According to the fundamental privatization theorem, any government aiming to reach efficiency and equity goals (including rent extraction) can always delegate production decisions to a private firm through an auction system[4], provided that some ideal assumptions concerning information, risk-aversion and collusion are respected. Potential producers (agents) must be risk-neutral and characterized by symmetric beliefs about the least-cost production technology. Actual costs are only learned after the right to produce has been awarded. The government (principal) is not aware of the production technology but has a "social" valuation $V(z)$ regarding the amount of output z to be produced, including equity goals and externality effects. The government auctions off the right to receive a compensation scheme $P(z) = V(z)$ for production, thereby equalizing the optimization problem of the firm, conditional on the cost realization, with social surplus maximization. In this manner a first best is achieved. Moreover, given that the right to produce and obtain compensation $P(z)$ is awarded to the firm with the highest bid, the auction process will select the firm with the lowest expected costs. No rents will then accrue to the private firm through the bidding process, also considering that prior beliefs about the production technology are simmetric among potential producers.

However if one relaxes the assumptions characterizing the "ideal setting" described by Sappington and Stiglitz, privatization failures emerge, as efficiency and equity goals can no longer be achieved. For example rent extraction is limited by risk-aversion, scarce competition among potential bidders and by an informed principal. When potential producers are risk-neutral, the government does not need to pay risk premia to them, even though they may be poorly informed about the technology and then quite uncertain about their final compensation. If potential producers have better information but are risk-averse, the government faces a trade-off because awarding the right to produce to the most informed party would be efficient, but at the same time a risk premium must be paid to the agent, so that the rents will accrue to him. The gov-

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[4]Assuming increasing returns to scale, it would be optimal to select just one private producer, so that the framework developed by Sappington and Stiglitz can be adapted to public intervention in industries characterized by a natural monopoly.

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ernment could share the risk with the firm to reduce compensation, but in this case the incentive for efficient performance would be reduced. In contrast, with no risk sharing on the part of the government, the winner of the auction could be the least risk-averse producer, but not necessarily the most efficient one.

This kind of privatization failures could be invoked to explain widespread State intervention when production is risky because the technology is new and related capital investments are huge: early electrification or the development of railroads could be well known examples, but so would government involvment in the European aircraft industry. Moreover in very risky businesses the fear of defaults increases capital cost for private producers, while SOEs could carry out such investments with lower financial costs. Sappington and Stiglitz show that privatization failures can also arise because of contracting costs, liability limits and problems associated with contract implementation. However the remedy need not necessarily be SOEs. The transaction costs associated with government intervention can be considered *a priori* smaller in a public firm than in a private firm. However, identifying the costs and benefits of direct public intervention imposed developing a theory of Government behaviour. However such a theory was far from being developed until the most recent contributions to the field of political economy appeared. According to Sappington and Stiglitz, the dichotomy between privatization and nationalization had to be overcome and the following alternative solutions needed to be considered: a) outsourcing[5] if the production is such to avoid privatization failures (an "ideal setting" prevails) b) regulation of private producers even when they are selected through an auction mechanism, if privatization failures are more likely, but market failures like natural monopoly are at stake. Regulation is associated with "intermediate" transaction costs, providing a remedy for privatization failures while avoiding the costs associated to nationalization at the same time[6].

After the seminal work by Sappington and Stiglitz the literaure has focused on the comparison between SOEs and private regulated firms, implicitly considering direct ownership as an alternative to external regulation by State authorities. These contributions examine more sophisticated regulatory mechanisms to deal with asymmetric information between the firm and the regulator. In particular, they exploit the previous result by Baron and Myerson (1982) that we summarise in Appendix 1,

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[5]Outsourcing of some services by SOEs or by public departments frequently involves very simple production technologies and very competitive activities that can reflect the "ideal setting" of Sappington and Stiglitz.

[6]Sappington and Stiglitz are considering a public, but politically independent regulatory agency.
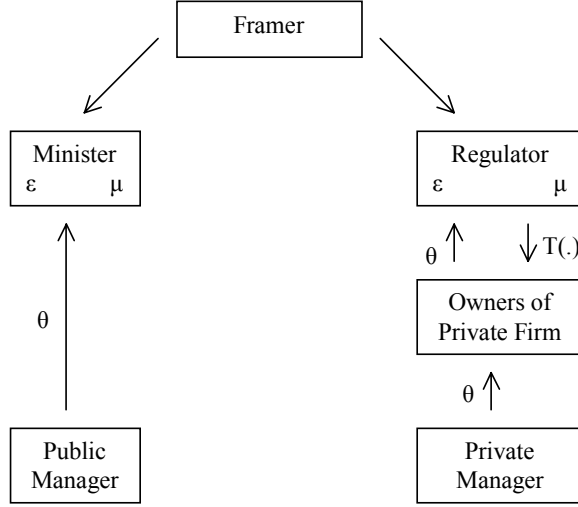
Figure 1: Relathionships between principals and agents in public and private enterprise

as reference to this result it is essential to appreciate the different models that will be surveyed in the next subsection[7]. However among all the contributions based on the theory of regulation with asymmetric information we can further distinguish those studies that are based on the assumption of a "malevolent" government (subsection 2.1) from those that are not and find privatization benefits by studying commitment issues when contracts are incomplete (subsection 2.2).

2.1 Privatization with "malevolent" agents

According to Shapiro and Willig (1990), the main difference between SOEs and regulated private firms lies in the information flows in the framework of hierarchical relationships among public officials (i.e. ministers or regulators, private owners and managers, due to the strategic use of private information. The vertical relationships between principals and agents considered in their analysis are represented in Figure 1. We shall refer to this framework as a useful benchmark to also discuss further contributions to literature.

At the head of the hierarchical relationships there is a *framer*, who is a public spirited agent that originally chooses to operate production

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[7]For a recent and unified analysis of economic models dealing with regulation in the framework of imperfect information the interested reader can see Armstrong and Sappington (2004).

with SOEs or with private regulated firms with the aim of maximizing social welfare:

$$W = S(z, \mu) + \lambda \Pi(z, \theta) \tag{1}$$

where z is the output level and μ and θ are two parameters representing different kinds of private information related to the external social benefit of the firm's activity and to its profitability respectively. The contribution of firm profits $\Pi(z, \theta)$ to overall social welfare is amplified by $\lambda > 1$, that may alternatively represent the unit benefits of avoided taxes to the Treasury - if net profits are positive - or the unit cost of raising public funds if there are losses to be covered by government subsidies. Although Shapiro and Willig do not characterize it further, we suggest that the framer could easily represent a benevolent parliamentary majority - operating on behalf of its constituency - that delegates administrative power either to a minister - if a SOE has been chosen - or to a regulator controlling the owners of the private firm. θ is unknown at the time the framer must choose between a public or a private firm. The framer only knows that θ is distributed on the interval $[\theta_1, \theta_2]$ with a probability function $f(\theta)$ and cumulative distribution function $F(\theta)$. In contrast, managers at the end of the chain have private information θ about the firm's profitability. They either report this information directly to the minister - if they run a SOE - or to the owners of the private firm in the opposite case. Finally, by virtue of their position, the minister and the regulator observe the public interest impact variable μ.

Shapiro and Willig are not interested in analyzing the agency relationship between managers and their principals (minister or private owners). The main assumption that drives the results of the model is that public officials, i.e. the minister or regulator, have the following objective function:

$$V = W + \gamma J(z, \varepsilon) \tag{2}$$

including not only overall social welfare but also the function $J(z, \varepsilon)$, representing their private agenda that can be satisfied on the basis of both the firm's output and the private information ε about the divergence between social and private aims, and the extent to which the political system allows public officials to pursue their private goals, measured by the parameter γ[8]. The advantage of SOEs is the absence of agency costs for the minister, as it is assumed the manager completely reports θ to

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[8]Shapiro and Willig do not explore regulation issues further. The fact that a regulator could have a private agenda could suggest the idea of regulatory capture.

him. In contrast, with private regulated firms θ is reported by the manager to the private owners so that the regulator then faces an information revelation problem. He must choose an appropriate regulation scheme based on transfers $T(z)$ to motivate the private firm. Finding the optimal regulatory contract implies solving a second best problem analogous to that analyzed by Baron and Myerson (1982), reported in Appendix 1. Therefore, given the cost of public funds, transfers are information rents that must be minimized, at the cost of output reductions for the less profitable firm.

The agency cost of regulating a private firm with asymmetric information implies not only a reduction in payoffs for both the public-spirited framer and the regulator - corresponding to the public tranfers $T(z)$ - but also output distorsions compared to the public enterprise solution. However agency costs can also imply privatization benefits in that output distorsions also affect the private agenda of the public official that, as a malevolent regulator, now finds more difficult to reach his private goals. Given that the public-spirited framer may want to put constraints on malevolent public officials that pursue their own private agenda, privatization represents a useful information barrier because a completely informed minister is transformed into a less informed regulator[9].

Shapiro e Willig can then reach their "indifference result" concerning SOEs and regulated private firms, stating that ownership is neutral from the point of view of social welfare if private information about profitability is irrelevant or there are no costs from raising public funds[10]. In contrast, if the latter are positive and there is private information on firm profitability, privatization can increase efficiency if agency benefits outweigh agency costs. The economic rationale behind privatization then depends on the weight of private information about the firm's profitability and on the performance of the political system in its ability to constrain the behavior of public officials. Hence, greater privatization benefits will accrue to countries with more corruption because of their flawed political system.

The case of nondiscretionary governance systems is also considered. If public officials (i.e. minister or regulator) have no information about the social value of production, where this kind of information is com-

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[9]In the case of regulated firms, it is as if the government commits himself to respect private property rights to information (see subsection 2.2).

[10]With private information on firm profitability and no cost of raising public funds the regulatory solution suggested by Loeb and Magat could be implemented through franchise auctions as suggested by Sappington and Stiglitz. No output distortions would arise, eliminating then both agency costs and agency benefits. To justify public production the privatization failures listed by Sappington and Stiglitz should be invoked.

pletly controlled by the framer, then the framer himself will find it convenient to give them no discretion in order to maximize social welfare. However such a conclusion obviously depends on the assumption of a public-spirited framer. For example, a malevolent framer may want to reduce the discretion of an independent (benevolent) regulator preventing him from using the control of the firm to pursue his own private agenda. In this case the social benefit of reducing regulatory discretion may be questioned[11].

As noted above, agency relationships between firm owners and managers are neglected by Shapiro and Willig. This kind of relationships lie at the core of Principal-Agent theory and are very important to study when the aims of the owners diverge from those of the manager. At the simplest level, it can be assumed that managerial utility is a function of income and effort. As a monitoring problem arises, an optimal contract to constrain manager behavior and avoid slack should be designed. This kind of problem raises the issue of productive efficiency that should be considered together with allocative efficiency when evaluating privatization policies. Pint's analysis (1991) integrates Shapiro and Willig's model by exploring managers behavior in the framework of alternative regulatory mechanisms affecting a natural monopoly that could be either privatized or nationalized. The payoff function of the manager (independent of the ownership structure) is separable on his salary $w\left(.\right)$ and slack δ:

$$U = \vartheta\delta + g\left(w\left(.\right)\right) \tag{3}$$

being ϑ the costant marginal utility of slack. When expressing the production function as a labor requirement function $L(z, K, \theta)$, one can see that the manager can exploit his private information regarding the technological parameter θ and his hidden action regarding the combination between capital and labor (K/L), to report excessive labor requirements in order to finance his slack with an information rent[12]. Therefore, one should design an optimal incentive contract so that the manager gets

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[11]Attempts by political majorities to reduce the regulatory discretion of independent regulators may be explained by the persitence of Treasury stakes in partially privatized firms whose value can be affected by parliamentary decisions aiming to allow greater rate of returns on the firms' assets. Empirical evidence consistent with this phenomenon is shown by Bortolotti and Faccio (2004) and discussed in section 3.

[12]Without any incentive compatible contract the manager would find it convenient to report a value $\hat{\theta} > \theta$, such that the amount of labor required to produce $z\left(\hat{\theta}\right)$ with $K\left(\hat{\theta}\right)$ would be lower with respect to $L\left(z\left(\hat{\theta}\right), K\left(\hat{\theta}\right), \hat{\theta}\right)$ assuming that $\frac{\partial L}{\partial \theta} > 0$. Therefore the manager would be able to finance his slack δ by saving labor with respect his declared requirement $\bar{w}\left[L\left(z\left(\hat{\theta}\right), K\left(\hat{\theta}\right), \hat{\theta}\right) - L\left(z\left(\hat{\theta}\right), K\left(\hat{\theta}\right), \theta\right)\right]$ and

the level of salary and information rent enabling him to report the true θ. However private and public owners differ in terms of their payoff functions. The private firm maximizes its expected profits, given the price of labor $\bar{w}$ and the price of capital i:

$$\max_{K(\theta),z(\theta),\delta(\theta),w(\theta)} E_\theta \left\{ p\left(z\left(\theta\right)\right) z\left(\theta\right) - iK\left(\theta\right) - \bar{w}L\left(z,K,\theta\right) - \delta\left(\theta\right) - w\left(\theta\right) \right\}$$

(4)

In contrast, the government, being a vote seeker, operates the public firm with the aim of maximizing the expected sum of the net benefits of its constituency:

$$\max_{K(\theta),z(\theta),\delta(\theta),w(\theta)} E_\theta \left\{ \alpha_1 S\left(.\right) + \alpha_2 \Pi\left(.\right) + \alpha_3 \bar{w}L\left(.\right) \right\}$$

(5)

where $\alpha_i \geqslant 0$ $(i = 1, 2, 3)$ is the weight given to each component of its payoff function, i.e. the consumers surplus, the SOE profit and the total amount of workers salaries (under the assumption that all workers belong to the government constituency)[13].

Due to the incentive issues arising from agency problems between owners and managers, only second best efficiency can be achieved by both types of firms. As the government is biased towards labor and consumer surplus, the manager of a nationalized firm is expected to receive higher information rents in order to respect his incentive compatibility constraint at larger level of output. He therefore receives a higher salary and enjoys more slack. Consequently, the distorsion of the nationalized firm towards the use of excessive labor reduces its productive efficiency. In contrast, SOEs may be relatively more efficient from the allocative point of view as they care more about consumer surplus. However when the weight given to consumer surplus in the payoff function of the government is excessive, the output level will exceed the second best benchmark. Privatized firms may also be inefficient from the productive point of view because of Rate of Return regulation. Due to the Averch-Johnson effect (1962), their productive choice is biased towards capital.

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make a profit $\Pi\left(\hat{\theta}\right)$.

[13]In his model, Pint neglects the distinction between the framer and the public official and does not consider the choice between public and private firm. He only compares these two kinds of natural monopoly. However, following Shapiro and Willig, in the nazionalized firm we can consider a (malevolent) vote seeker framer coinciding with the (malevolent) public owner. In this case, the latter would also be a regulator given the agency problem with the manager. In this manner Pint identifies the private agenda with the electoral support. As regards the private firm, the public, but politically independent regulatory agency can adopt either ROR or price-cap mechanisms.

In contrast, when incentive mechanisms like price-caps are adopted, privatized firms are more efficient from the productive point of view, as they can select the efficient K/L ratio.

One of the results of privatization policies is that managerial incentives could also be positively affected by the market for corporate control. Vickers and Yarrow (1988) emphasize that disperse share ownership can reduce the effectiveness of shareholder monitoring over managers, but takeover bids can concentrate ownership and eliminate externalities associated with multiple holdings. Takeover threats can operate as an incentive mechanism for managers towards internal efficiency, but could also negatively affect manager performance by raising the rate at which managers discount future utility as the likelyhood of a takeover increases. Furthermore takeover activity may be motivated by different factors other than capital gains - like market power or the reduction of tax liabilities - so that even an efficient management can become subject to it. Consequently, the incentives to pursue efficieny based on takeover threats turn out to be weakened. We shall not developed this argument further as the wide literature on corporate governance that can offer additional insights is beyond the scope of this review[14]. Not only takeovers, but also bankruptcy threats may become an incentive for managers of private firms, while SOEs risk becoming less efficient because of soft budget constraints. This issue will be analyzed in the next subsection.

2.2 Privatization with incomplete contracts

One weakness of the contributions reviewed above is that the benefits of privatization depend on the crucial assumption of a malevolent government. To strengthen privatization gains, subsequents contributions assume a completely benevolent government, but emphasize that agency relationships are characterized by incomplete contracts. In this framework the government faces unavoidable commitment issues that can explain the advantages of privatization policies. Due to bounded rationality and the excessive cost of listing each specific right over the firms' assets, contracts are frequently incomplete and property rights matter because they give the owner the authority to dispose of the firm's assets in any event. Grossman and Hart (1986) have shown that when unforeseen contingiencies arise within contractual relationships, the residual decision rights are implicit in ownership.

Laffont and Tirole (1991) compare private and public firms in the framework of incomplete contracts by extending their previous model of regulation with incomplete information (Laffont and Tirole, 1986). They

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[14]The literature concerning the relationship between corporate governance and privatization issues is surveyed in Megginson and Netter (2001).

consider the following cost function $c = \theta - e$, being e the managerial effort associated with cost reduction activities. According to the information structure, the regulator knows c and thus disposes of a further signal to infer the value of θ, that remains uncertain. However cost reducing activities represent a hidden action from the regulator's point of view (as already seen in Pint moral hazard issues add to adverse selection problems). Therefore regulated firms can increase their information rents *vis à vis* regulator by reducing productive efficiency, as actually occurs in the second best solution of the model. If we consider Shapiro and Willig (1990) as the usual benchmark (see Figure 1), we can state that, together with Pint, Laffont and Tirole (1991) also analyze the agency relationships between owners and the manager who bears the effort cost $\psi(e)$ and is informed about the cost parameter θ. However the authors point out that private regulated firms are characterized by multiple agency problems because their managers are controlled by two principals: shareholders and the regulator. The objectives of the two principals may differ and when offering incentive compatible contracts to the agent, neither shareholders nor the regulator internalize the aims of the other principal in their own agency problem.

The inefficiency resulting from the multiple agency problem represents the cost of private ownership, when the latter is separated from managerial control and firms are regulated. In contrast, the cost of public ownership depends on the reduced incentive to invest faced by SOEs managers. According to Laffont and Tirole, SOEs managers fear that their noncontractible investments may be expropriated ex post by the government to achieve social goals. In fact, due to contract incompleteness, the government cannot commit ex ante not to expropriate investment ex post because in SOEs it possesses the residual property rights on the firm's assets. The investment quoted by Laffont and Tirole may range from cost reducing activities to firm facilities (club goods reserved to firm managers). After building a new plant, the government may decide ex post to force the firm to hire excess labor, thus reducing the rate of return on this investment (or grant access to the firm's facilities - once reserved to firm managers - to the entire population). What is important to point out here is that the decision of the government to redeploy firm's investments to social goals may be socially optimal ex post, but managers' fears about investment expropriation may lead them to decide not to invest at all ex ante[15]. This is the cost of public ownership.

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[15]Laffont and Tirole assume that shareholders will not expropriate the investment of the manager, because they have no incentive to reallocate its associated benefits to outsiders.

As stated above, by comparing ownership structures in their model, Laffont and Tirole find that managerial effort is lower in regulated private firms. However their insights about privatization and efficiency may lead to ambiguous results, as they suggest in their conclusions. According to the authors, neglecting regulatory capture and considering the government as a single principal could limit the analysis. One may recall that both issues were dealt with in Shapiro-Willig's contribution where the regulator had a private agenda and the government was separated from the framer.

Unlike Shapiro and Willig, Schmidt (1996a) considers a model where the framer and the goverment coincide, so that the latter has to decide between nationalization and privatization. If the firm is nationalized then the government becomes the owner while in the case of privatization the firm is auctioned, the government keeps the revenues, and becomes a less informed regulator. As in Laffont and Tirole, a benevolent government is assumed and the agency relationship between owners and the manager is explored to derive conclusions regarding productive and allocative efficiency. According to Schmidt, the manager has a preference for higher output levels, enabling him to obtain higher budgets, and dislikes efforts to minimize costs. By assumption $\psi(e) = e$ and $\theta \in [\theta_1, \theta_2]$ represents the cost parameter $(\theta_2 > \theta_1)$. The manager's effort affects costs stocastically: with probability $pr(e)$, $\theta = \theta_1$ and with probability $1 - pr(e)$, $\theta = \theta_2$. As in Shapiro and Willig, inside SOEs both the manager and the government know θ. In fact, the access to cost information is a residual right pertaining to ownership. When the firms is privatized the government loses access to cost information together with ownership and simply knows the distribution of θ, according to the probabilities shown above.

In his model, Schmidt is concerned with the issue of the soft budget constraint[16]. Inside SOEs managers have weaker incentives to minimize costs, as ex ante government threats to reduce output and shut down the firm in case of high costs $(\theta = \theta_2)$ are not credible. Given that a (benevolent) government would maximize social welfare, even when it observes a higher costs level (implying a lower e) a manager's incentives would not lead him to reduce output ex post. In other words, given contract incompleteness, the government cannot commit ex ante to reduce output to punish the manager even when it realizes there are higher costs. As a consequence, the likelihood of slack is higher in SOEs. In practice governments will continue to bail out inefficient SOEs.

If the firm is privatized, the government no longer observes θ, and faces the usual problem of regulation with incomplete information. As-

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[16]The concept of soft budget constraint was introduced by Kornai (1986).

suming that a regulatory scheme *à la* Baron-Myerson is implemented, an inefficient manager would automatically be punished because if $\theta = \theta_2$ the regulatory contract would imply reductions in output with respect to the first best. Therefore the *empire builder* manager operating in the private firm regulated *à la* Baron-Myerson is induced to put all his efforts into minimizing costs to increase the likelihood that $\theta = \theta_1$.

When comparing nationalization and privatization Schmidt finds a higher level of productive efficiency in private firms while allocative efficiency is greater in SOEs[17].When implementing privatization policies, a benevolent government commits himself not to have access to cost information to harden budget constraints. Therefore, privatization works as an informational barrier as in Shapiro and Willig, but without the need to introduce the assumption of a malevolent government. However, as Schmidt points out, if there are welfare gains from privatization policies even in the case of a benevolent government, one can expect further benefits from privatizing SOEs if the goverment is malevolent. In order to reinforce his previous results, in a subsequent paper Schmidt (1996b) introduces the assumption that the private owner and the manager coincide, thus eliminating the preference of the latter for higher outputs. His previous conclusions are also confirmed in this new framework.

While it is reasonable to believe that the soft budget constraint negatively affects productive efficiency, one could also argue that such effects are not limited to SOEs. Governments may also decide to bail out inefficient private firms to preserve employment or protect national production *vis à vis* foreign imports. Considering this issue, Segal (1998) goes a step further than Schmidt by assuming that firms may even behave strategically by choosing actions that lead to unprofitable production in order to receive State subsidies, if the latter exceed the amount of profits they can obtain from pursuing efficient production decisions. Segal considers the case of a monopolist, structurally receiving State subsidies because of market failures that were driving down industry output. Such a case could be consistent with the experience of many vertically integrated public utilities considered as natural monopolies and owned by the European States during the last century. However social issues may also be related to full employement and thus be extended to industries not necessarily characterised by market failures like natural monopoly. Even if investments devoted to increase productive efficiency are not costly, the firm that could receive State subsidies may prefer not to carry out such investments and deliberately make its product costly or

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[17]This result is similar to that found by Pint and at the same time is not in contrast with that of Laffont and Tirole. If one considers a nazionalized firm then the manager invests less in cost reduction or in redeployable assets respectively.

unwanted by consumers, anticipating a bailout when the threat of shut down becomes credible. In this case welfare is reduced by two effects: productive inefficiency and the social cost of public subsidies. Moreover, welfare reductions may even overcome the deadweight loss due to monopolistic production.

Only if the State were able to write long term contracts with the monopolist, conditioning the subsidy on the firm's decisions about production and investments, could welfare costs be avoided. However contract incompleteness generally prevents a full description of production and future technology thereby also preventing intertemporal commitment on these issues.

Segal suggests that governments can harden budget constraints by credibly limiting the size of the State budget. He gives the equivalent example of the infinite social cost of public funds, but recent constraints imposed on budget deficits in the European Union (together with caps imposed on State aid to national firms) are even better examples of credible commitments that could avoid the dissipation of social surplus by subsidized monopolies. Another way to harden budget constraints would be to introduce competition into the industry. In the case of public utilities this implies breaking the vertical integrated utility by liberalization, unbundling the monopolistic network from service provision where competition may be sustainable. But in this case then one could ask whether privatization is really necessary.

Lülfesmann (2002) points out that the government is ex post led to bail out inefficient private firms as well. In particular, he directs his attention to regulated private firms, assuming that government remains concerned with allocative efficiency even after privatization, pursuing the aim of first best efficiency as it does with SOEs (in this manner he neglects the sophisticated regulatory schemes presented in the previous section). Therefore commitment issues could not explain greater productive efficiency in private firms. Lülfesmann shows instead that both private and public owners may be induced to renegotiate the initial wage contract with managers when technological conditions change and there is a credible threat to quit or shut down the firm. Given the hypothesis of a pure benevolent government, the author concentrates on this kind of renegotiation issues assuming that the owners and manager will equally split the related surplus during the renegotiation phase (Nash bargaining solution). However, as nationalised firms evaluate production more than private firms (taking into account the consumer surplus), their managers can obtain higher salaries. Such higher compensation represents a soft budget constraint but, due to renegotiation opportunities, it does not prevent the attainment of a first best level of effort. When production

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can be carried on only if an innovative production technology that drastically reduces fixed costs has been developed, productive efficiency may be greater in public firms. Managers are led to place greater efforts on innovation because if they succeed, they will receive greater compensation during the renegotiation phase, while if they do not succeed the firm will be shut down. Such an explanation may be consistent with the heavy involvement of national government in the aerospace industry, biotechnology or other risky and innovative businesses. In contrast, when basic technologies are highly viable, productive efficiency can be greater in private firms, but the result is independent of commitment issues. Rather one could state that the budget constraints harden as manager compensation only depends on profits and they do not overinvest in effort.

Like Sappington and Stiglitz, Schleifer (1998) conceives privatization as outsourcing by the government facing the "make or buy" decision. Differences between private or public provision of goods and services mainly depend on contract incompleteness, because the government "cannot fully anticipate, describe, stipulate, regulate and enforce exactly what it wants" (p. 137). According to the author, it may be easier to write contingent contracts for public utilities than for firms supplying education or social services. Given that quality is often non contractible, ownership of assets is relevant because it implies residual rights of decision. Government employees may receive weaker incentives to reduce costs and innovate, but the high-powered incentives of private firms in this respect may in turn have a potentially negative effect on service quality as far as hospitals and schools are concerned. Nevertheless, even in this case, public ownership is not necessarily the optimal solution because the opportunity for consumers to switch providers coupled with sufficient competition in the market may preserve the incentives to supply high quality even in private firms. When asymmetric information about quality prevents the competitive mechanism from working, reputational concerns may avoid deleterious effects on quality provision. Finally Schleifer finds that, in the case of health, education and social services, public ownership may be replaced by non-profit firms that, according to Weisbrod and Karpoff (1968) can avoid reducing quality to minimise costs, as the constraints on profit distribution maintain an incentive to supply high quality services.

3 Privatization and Political Economy

The original contribution by Shapiro and Willig suggested that malevolent public officials are hierarchically linked to a public-spirited framer who has to decide between privatization and nationalization. Pint ex-

amined a labor intensive public firm given that he identifies the private agenda of the (vote seeking) government with electoral support. However at the same time he also considered a public, but politically independent regulatory agency. Vickers and Yarrow (1988) pointed out that even if privatization decisions may be Pareto efficient from the point of view of the society as a whole, they do not necessarily maximize political consensus because privatization benefits may be widespread, while privatization costs may simply concern a small part of the constituency, i.e. workers of the former SOE. If only workers that fear unemployment care about privatization and are informed about its weight in political platforms, then politicians may decide not to pursue privatization policies in order to not lose votes and be re-elected.

3.1   Politicians, Firms and Excess Employment

The issue of political benefits connected to excess employment returns again in the analyses by Shleifer and Vishny (1994) and to Boycko, Shleifer and Vishny (1996). According to such analyses, the inefficiency of SOEs still depends on their distorsions towards excess employment, but they apply a new methodological approach to studying this problem, starting from the fact that the reduction of employment through privatization cannot be trivially assumed[18]. Agency theory and regulatory mechanisms are left aside while bargaining issues become more relvant. Managers and politicians bargain over the decisions of the firm and the politicians may try to maintain excess employment even in private firms. Therefore one cannot automatically assume that privatization leads to an increase in efficiency by reducing labor costs.

Shleifer and Vishny further analyze the distinction between ownership and control of the enterprise. A continuum of firm structures can then be considered according to the portion of shares respectively owned by the manager (private enterpreneur serving the interests of shareholders) and by the Treasury. Therefore, in addition to pure SOEs and private firms, one can also consider the corporatized firm, where the transfer of control rights from the politician to the manager occurs independently of pure privatization (implying a change of ownership rights as well), and the regulated private firm. In the latter case, the politician can continue to excercise control rights through regulation in order to maintain excess employment even if the manager and private shareholders own the firm.

Reducing excess employment to reap efficiency gains only depends

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[18]In fact the empirical evidence is not definitive in this respect (Megginson and Netter, 2001).

on a restructuring process, but privatization does not necessarily lead to such a process. Thanks to public tranfers, the politician may in fact try to corrrupt the private manager to maintain excess employment even in private firms. Thus privatization does not necessarily eliminate soft budget constraints, as Segal also shows. But according to Shleifer and Vishny corruption can also work in the opposite manner because managers can corrupt politicians with control rights in order to be free to restructure, reduce labor costs and make greater profits. Corruption mechanisms are then represented as a Nash bargaining process enabling parties to reach their jointly efficient solution (which differs of course from the first best) and split the related surplus. Shleifer and Vishny are therefore able to show a new "indifference result", the third in the literature, regarding privatization: "with bribes, the allocation of resources is independent of either the allocation of cash flow rights or the allocation of control rights over excess employment"[19].

Such a result represents an application of the Coase theorem: it shows that with full corruption, politicians and managers can reach an efficient allocation of (their) resources independently of the distribution of control and ownership rights. However as corruption is illegal it cannot easily be implemented. Due to strategic behavior economic agents make their decisions in a non cooperative framework where only reputation issues would eventually bind them. Therefore there are good reasons to move away from the indifference result and try to show whether privatization potentially matters when corruption cannot be fully implemented. The level of excess employment (a benefit for politicians and a cost for managers) and the level of public transfer (a benefit for managers and eventually a cost for politicians) differ in the equilibrium with no bribes compared to the equilibrium with full corruption and are affected by the distribution of ownership and control rights. Actually Shleifer and Vishny find that corporatization matters because when a manager gains control of the firm, he may partially restructure and reduce excess employment. At the same time, he can extract surplus from politicians in the form of public transfer from the Treasury, so that the budget constraint softens with corporatization. However privatization after corporatization does not matter because "with manager control, the allocation in the no-bribes equilibrium is independent of management ownership"[20]. To see how privatization matters in such a framework one needs to introduce some further assumptions concerning both the crucial relationship between politicians and the Treasury and the cost of public transfers.

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[19]See proposition 1 in Shleifer and Vishny (1994), p. 1006.

[20]See proposition 6 in Shleifer and Vishny (1994), p. 1010.

Boycko, Shleifer and Vishny (1996) explain why privatization can lead to restructuring by trying to resolve the following question: why would a politician fail to buy his way to high labor spending through subsidies to private firms? The answer lies in the cost of subsidies. Let us denote by T the subsidy from the Treasury to the firm and by α the share of cash flow owned by the manager (private shareholders). Since the Treasury owns $(1 - \alpha)$ of the cash flow, it gets fraction $(1 - \alpha)$ of this subsidy back. So the effective subsidy is αT. If the politician could ask the Treasury to subsidize the privatized firm at no cost for himself, he would pay infinite subsidies to obtain excess employment and no restructuring could ever take place. But if the Treasury has to finance subsidies by raising taxes or inflation - thereby taking then unpopular decisions - the cost to politicians of making a net subsidy αT becomes $k\alpha T$[21]. This is added to the cost to politicians of foregoing Treasury revenue due to excess employment, measured by m. In the model the objective function of the politician is then given by:

$$U_p = -m(1 - \alpha)E + qE - k\alpha t \tag{6}$$

where E denotes the level of labor spending and q the marginal political benefit of a money unit of such a spending ($q < 1$). The assumption that the politician can use his control rights to choose a higher level of employment implies $m(1 - \alpha) < q$. The utility function of the manager is given by:

$$U_m = -\alpha E + \alpha T \tag{7}$$

The authors say that $m < k$ because it is reasonable to assume that it is easier for politicians to squander firm's profits on inefficiencies than to obtain additional subsidies for them. In reality, a minister must compete with other politicians for Treasury resources while it is easier for him to simply spend the profits of a firm he directly controls. It is interesting to notice that competition among politicians for Treasury resources becomes fiercer under tight macroeconomic policies or for countries overwhelmed by very high public debts (like Italy for example). Therefore privatization will lead to restructuring only when the following condition holds:

$$k\alpha + m(1 - \alpha) > q \tag{8}$$

In fact when the inequality holds the political cost of subsidies and the financial cost of foregone profits are greater than the political bene-

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[21]$k < 1$, since subsidies are less costly for the politician than bribes out of his own pocket.

fits of spending in excess employment. It is worthwhile emphasizing that such a condition may not hold for some firms whose excess employment is crucial for political consensus[22]. On the basis of these conclusions Boycko, Shleifer and Vishny distinguish between privatized firms controlled by large outside investors, by their employees or by managers. The first ones are more likely to restrucuture as they are harder to convince through subsidies to increase employment spending.

Issues regarding the separation between ownership and control and the difference between privatization and restructuring may be crucial when considering empirical evidence about partial privatizations. In their survey Megginson and Netter (2001) show that firms with mixed ownership (where the Treasury still holds a part of the stakes) are more efficient than SOEs but less efficient than completely privatized firms. Bortolotti and Faccio (2004) find that at the end of 2000, through ownership or "golden shares", governments controlled 62.4 % of privatised firms. Surprisingly they also find that large government stakes have no negative effects on either adjusted market value or stock price performance. Therefore government reluctance to complete privatization matters but - contrary to what is expected - large State holdings could even positively affect the market value of privatized firms. In reality, the government "can shield privatized companies from competition, afford them a favorable regulatory environment, subsidize loans or guarantee contracts"[23]. Following such a strategy the Treasury, as a shareholder, could acquire financial benefits and use them to relax public finance constraints or competition among politicians for its resources or even avoid increasing fiscal pressure. One cannot exclude that partially privatized firms protected by the government could also avoid more restructuring to preserve at least a part of the overmanning that continues to yield political benefits. Further efficiency gains could then require the total release of shares by the Treasury.

In spite of the conventional wisdom that only considers the soft budget constraint as a consequence of benevolent politicians facing a commitment problem, Shleifer and Vishny (1994) and Boycko, Shleifer and Vishny (1996) propose political motivations for the soft budget constraint by assuming political benefits of excess labor in public firms. More recently, Robinson and Torvik (2005) go a step further in this direction: in their political economy model of the soft budget constraint, political benefits are not assumed to exist, but emerge as a result. Start-

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[22]An example could be the Italian National Airline, Alitalia which continues to receive State subsidies without significant restructuring - even after a partial privatization - and risk of bankruptcy in 2004.

[23]See Bortolotti and Faccio (2004), pp. 2-3.

ing from the fact that there are asymmetries in what they can promise to different groups of voters, politicians can commit only to policies that are ex post optimal for them. According to their strategy, in the first place they want to finance "bad" projects, "bad" firms in our idea, whose revenues do not cover costs, if they know that only themselves will be able to credibly refinance them in the future, in this way redistributing resources to their core supporters. The latters are then encouraged to vote for them because they anticipate the subsequent bail out. In this new framework politicians may desire a soft budget constraint even if information is complete[24] because of its influence on the outcome of elections. Given that bad projects produce an economic loss, they are more likely to be implemented when the rents of being in power are high, that is when the gain from influencing the election outcome is higher. This generally happens in countries with flawed institutions.

3.2 The Efficiency of Privatization Policies driven by Political Preferences

Previous contributions introduced a separation between privatization and restructuring decisions that could be fruitful when discussing the impact of privatization on efficiency. Classical contributions to the political economy literature are more interested in the feasibility, credibility and the distributive implications of privatization decisions whose contribution to efficiency is simply assumed as given. Bortolotti and Pinotti (2003) show how these classical contributions could be adapted to privatization issues. They establish that, *ceteris paribus*, "majoritarian" political systems, as opposed to "consensual-corporatist" democracies should be more likely to privatize, because they are more competitive and able to drive down political rents, reducing the opposition to privatization decisions. The partisan dimension of privatization is explicitly analyzed by Biais and Perotti (2002), showing that right wing politicians privatize in order to gain future support from the constituency of shareholders of newly privatized firms[25]. However they also show that left wing parties can strategically make privatization decisions in order to win future elections, but with the aim of maximizing privatization revenues and using them to realize redistributive policies. Therefore the

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[24]According to the theory that downplays any political reason for the existence of soft budget constraint, if politicians knew that a project was poor, it would never has been financed.

[25]Biais and Perotti assume that conservative parties maximize the utility of the rich while left parties maximize the utility of the poor. By allocating shares of newly privatized companies to the middle class, the right makes the median voter averse to the redistribution policies of the left and gains support in future elections.

implementation of privatization decisions could also be shaped by political preferences with conservative governments tending to privatize by public offers and left wing governments that will more frequently choose private placements to strategic investors or share issues in international exchanges, in order to generate higher revenues.

The political economy of privatization has been explicitly analyzed more recently by Börner (2004). Börner also separates privatization and restructuring decisions: the government may either privatize or restructure a SOE characterized by low productive efficiency. But in addition the author compares the effects of privatization and restructuring decisions according to different government preferences. When privatizing, the government does not necessarily pursue efficiency aims and therefore privatization incentives may even prove to be excessive if privatization decisions are due to votes or revenue maximization. In these cases the government may be led to carry out politically motivated reforms in the short run, even if such decisions are not the best ones in the long run according to the maximization of social welfare. Börner's model builds on Schmidt's (1996a,b): both in case of privatization and in case of restructuring a manager is hired (by the private owners and by the government respectively) to invest in cost reduction activities in an incomplete contracts setting. The manager's rewards can only be conditioned on profits. The manager's effort e affects costs stocastically because with probability $pr(e)$ reforms will be successful in increasing productive efficiency while with probability $1 - pr(e)$ reforms will fail and the firm will be shut down. If reforms prove to be successful the owner of the firm determines the employment level and the output is then produced[26].

If the government were a welfare maximizer it would trade-off privatization benefits accruing from the enhancement of productive efficiency with restructuring benefits deriving from the opportunity to choose the socially optimal employment level. With privatization, the owners choose the profit maximizing employment level and this leads to a higher effort by the manager which in turn means a higher probability that reforms will be successfull. In case of restructuring social benefits not only derive from a lower level of unemployment but also from reduced redistribution losses as the total cost of public funds decreases with unemployment subsidies. Moreover a welfare oriented government is not concerned with privatization prices as it is not interested in the distributive effects of reforms. In contrast, the strategies of a voter oriented

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[26]In case of privatization the government covers the costs of unemployment and credibly commits to not interfere with private employment choice. In case of restructuring the government chooses the employment level and internalizes the unemployment costs.

government would be consistent with underpricing (or voucher privatization[27]). In fact, a voter oriented government would aim to maximise its chance of re-election and is attracted by the opportunity to transfer the profits of privatized firms directly to the citizens. Therefore it is rational for it to choose the lowest possible privatization price. However restructuring policies carried out within SOEs may be attractive not because of the social cost of unemployment implied by privatization policies, but to allow transfers to citizens to be maximized through an increase in the total wage payments implied by a higher employment level. Finally Börner considers the case of the "egoistic government" which maximizes its own expected revenues (be they devoted to political projects or to the private pockets of politicians). This kind of government is induced to choose the highest privatization price. Instead in case of restructuring it chooses a lower employment level compared to the welfare oriented government thereby trying to reduce labor costs.

The analysis carried out by Börner captures the short sightness of reforms implemented because of political preferences. Voter oriented governments may show inefficiently high incentives to privatize as privatization may be the cheapest way to increase voters revenues. Alternatively, by restructuring SOEs this kind of government would choose a higher than socially optimal employment level, for solely distributive reasons. If this last effect prevails, incentives to privatize would turn out to be inefficiently low. Also egoistic governments may have an inefficiently high incentive to privatize, as they undervalue the social cost of unemployment. From their point of view total wage payments are only a cost like unemployment subsidies. To the extent that the latter are lower than labor costs an egoistic government always prefers privatization policies in pursuing revenue maximization. Only with better institutional arrengements are inefficient incentives to privatize reduced: the government may induced to choose privatization more frequently than restructuring, but such a choice results in an increase in social welfare.

4 Conclusions

The theoretical literature about privatization and efficiency relies on "indifference theorems", claiming the ownership structure is neutral, thereby justifiying privatization policies on grounds of efficiency when observing neutrality failures. In their seminal contribution Sappington and Stiglitz state that public production cannot improve upon private

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[27]Voucher privatization, implemented in Russia and in the Czech Republic, implicates the distribution of assets free to citizens. Therefore in this case the privatization price is zero.

production, because the government could always delegate the provision of a good to a private firm through an auction mechanism and reach both productive and allocative efficiency if an "ideal setting" prevails. To the extent that in the real world the assumptions behind this "ideal setting" are not respected, government intervention may be required to restore efficiency. However nationalization is neither desirable nor necessary, as the government can use a politically independent regulatory agency. Therefore the subsequent literature compares SOEs to regulated private firms and is built on the theory of regulation with imperfect information.

Even with incomplete information about production costs, regulation could achieve first best optimality if a transfer equivalent to the information rent were awarded to low cost firms to prevent them from exploiting their private information. However if public funds are costly this regulatory mechanism is not optimal. In the "ideal setting" described by Sappington and Stiglitz rents could be completely dissipated within franchise auctions. The optimal regulatory mechanism found by Baron and Myerson (1982) reduces information rents, but implies output distorsions for the inefficient firm. However, assuming a malevolent government, incomplete information about costs may also be the source of benefits if SOEs are privatized and public intervention is put into the hands of a malevolent regulator. To the extent that the latter needs to resort to a regulatory mechanism *à la* Baron and Myerson to obtain cost revelation by the private manager, he will find it more difficult to pursue his private agenda which is negatively affected by output distorsions. Therefore privatization may become equivalent to an information barrier. Due to the interposition of this barrier, social welfare can increase with privatization if malevolent ministers are transformed into regulators. That is why the "indifference theorem" of Shapiro and Willig claims that ownership is neutral for social welfare if private information on profitability is irrelevant or there are no costs of raising public funds. In reality if private information is irrelevant there would be no benefits from privatization conceived as an information barrier: SOEs and private regulated firms would be equivalent in this respect. In contrast when the conditions for neutrality do not hold, ownership becomes relevant and greater privatization benefits are expected to accrue especially to countries with flawed political systems, as malevolent governments can pursue their private agenda more easily.

If in addition one considers the incentive issues arising from agency problems between owners and managers, only second best efficiency can be reached by both SOEs and privatized firms. Governments that maximize the welfare of their constituencies may be (excessively) biased towards labor and consumer surplus. Then managers of nationalized firms

are expected to receive higher information rents in order to respect their incentive compatibility constraints at larger level of output. Private regulated firms may be more efficient from the productive point of view (provided that they are regulated with price-cap mechanisms).

To the extent that previous results strongly depend on initial assumptions about government behavior, privatization benefits may not appear robust in this literature. Further efforts are thus being devoted to show that privatizing and regulating formerly SOEs may increase efficiency even when the government behaves as a benevolent maximizer of the social surplus. This part of the literaure no longer relies on "indifference theorems", as ownership is always important because of incomplete contracts. When unforeseen contingencies arise, resorting to residual control rights becomes usual in contractual relationships. Such rights are connected to ownership, but this raises commitment issues involving governments.

In effect benevolent governments cannot commit themselves to reduce output or even shut down inefficient SOEs. As these types of governments maximize social welfare, they will always bail out SOEs in spite of their (non credible) threats. In contrast, managers of private firms regulated *à la* Baron-Myerson are adversely affected by output distorsions and increase their efforts to reduce costs. Therefore allocative efficiency turns out to be greater in SOEs while productive efficiency is higher in regulated private firms. Contract incompleteness can further prevent productive efficiency from being achieved in subsidized firms. Due to the impossibility of granting state contingent subsidies, SOEs may even find it worthwhile to maintain an inefficient behavior in order to continuously receive financial support from the government. However there is no reason to exclude that even private firms may follow this behavior because the government sometimes financially assists them to avoid an increase in unemployment or to protect national production *vis à vis* foreign imports.

The incentives to invest may be greater in private regulated firms because within SOEs the government cannot commit not to expropriate investment benefits to reach social goals. The investment decisions of public managers are then negatively affected in that they anticipate expropriation. According to Laffont and Tirole, reduced incentives to invest represent the cost of public ownership. But there is also a cost related to private ownership. In fact, if firms are privatized and then regulated, the manager is controlled by two principals: the shareholders and the regulatory agency. As each principal fails to internalize the aims of the other in his objective function, the resulting inefficiencies represent the cost of private ownership. No clear cut conclusions can

therefore be drawn about the superiority of private ownership compared to the public ownership from the efficiency point of view.

Assuming a completely benevolent government is probably both the merit and the limit of the contributions based on the incomplete contracts theory. These contributions are not concerned with the active role that the goverment can play in shaping privatization policies. In contrast, more recent papers analyze the institutional characteristics of privatization decisions by assuming that privatization policies may be driven by politicians' preferences. In this case efficiency is affected even if political decisions pursue different goals. The relationships between politicians and firms are discussed in a more general framework that includes decisions to susbidize private firms as well. This fact was also incidentally noticed also by previous contributions and has leads to consider the political control of the firms that have been corporatized or partially privatized.

Within this framework not only can politicians bribe managers to keep excess employment within the firm, but managers can also bribe politicans in order to be free to maximize productive efficiency by reducing labor costs. Hence a new "indifference theorem" arises whereby if corruption were fully allowed in political systems then the resulting allocation of resources would be completely independent of the ownership and control of the firm. Due to obvious problems in implementing corruption, privatization may become crucial as ownership and control matter concerning both the employment decisions inside the firm and the distributions of subsidies by the Treasury. While privatizations do not necessarily lead to restructuring so long as politicians can obtain benefits from excess employment, if government subsidies become extremely costly due to tight monetary policies or the unsustainable fiscal pressure then politicians may actually prefere restructuring as the political burden of financial losses may be too high. Then productive efficiency will be positively affected. This seems consistent with the recent experience of privatization in Western European countries like Italy. Taking care of financial needs of the government leads to consider different political preferences. The government may privatize to maximise the revenue of voters holding a share of newly privatized companies or may be "egoistic" and privatize simply in order to maximize its own revenues. Hence excessive incentives to privatize can then arise, while the government would have been better off restructuring SOEs in the short term and considering privatization only in the long term. This in turns appears to be consistent with privatization failures occuring in some Eastern European countries.

The theoretical literature we surveyed is not conclusive about the

impact of privatization policies on a firm's efficiency. In our opinion one issue which has not been sufficiently taken into account is the behavior of bureaucrats inside SOEs. In most contributions managers of SOEs do not appear to be very different from managers operating private firms as far as their objective function is concerned. Differences in performance appear to be mostly related to differences in the objective functions of their principals. Classical contributions regarding the analysis of bureaucracy (Niskanen and other scholars) should probably be considered to shed more light on bureaucratic activities inside SOEs and make comparisons with private regulated firms. Moreover issues related to regulatory capture may be even important for this comparison. The interplay between regulation and privatization as well as beween liberalization and privatization also needs to be considered to disentangle the effects due to ownership changes from those due to regulatory activities and market structure evolution. Finally the consequences of privatization programs should also be investigated in a general equilibrium framework. Recent empirical works show that governments still holding some stakes in partially privatized firms can contribute to the financial success of these firms. When the Treasury behaves simply as a shareholder for the sake of public finance it may contribute to an excessive valuation of ex-SOEs, like for example public utilities in the telecom or in the energy sector, and draw capital resources away from other industrial sectors with non negligible effects on allocative efficiency as investments in newly privatised firms may be excessive.

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A   Appendix 1

Let us start by considering a regulatory agency that has to implement a cost-reflective price regulation with imperfect information about the cost parameter θ of a monopolist. For the sake of simplicity let $\theta \in [\theta_1, \theta_2]$ represents the distribution of cost parameter ($\theta_2 > \theta_1$). With complete information about the cost parameter the regulator could implement a first best regulation scheme by setting $p_k = \theta_k$, $k = 1, 2$. If this same regulation scheme were implemented with imperfect information the firm with type θ_1 could strategically declare a cost parameter θ_2 to obtain an information rent equivalent to the area $A + B$ in Figure 2. In this case the output produced would only be z_2, with a social cost corresponding to the efficiency loss represented by area C. To eliminate this loss the regulator could implement the regulation scheme by Loeb and Magat (1979) and promise the regulated firm of type θ_1 that it will pay a transfer $T_1 = A + B$ equivalent to its information rent, when declaring $\theta = \theta_1$. In fact, such a regulatory scheme is incentive compatible for the type θ_1 firm as it should produce output z_1 to cash the transfer T_1, so that a first best allocation can be obtained. However such a scheme is not optimal when the social welfare function includes the cost of raising public funds or when it gives more weight to the consumer surplus than to the producer surplus. In this case transfers paid to regulated firms should be minimized to reach optimality[28]. The regulatory scheme by Baron and Myerson actually reaches this result. According to this scheme, the type θ_2 firm subscribes a regulatory contract whereby it can set $p_2' > \theta_2$ to produce output z_2' with a transfer $T_2 < 0$, so that the profit margin related to pricing above marginal costs is exactly compensated by the negative transfer (equivalent to a lump-sum tax) as $T_2 = D$. Such a regulatory contract implements a second best allocation, as output is distorted for the high cost firm, and a social cost equivalent to area E persists. However in the meantime it reduces the transfer that should be paid to the low cost firm to avoid its strategic behaviour *vis à vis* the regulator. The optimal contract for type θ_1 firm includes $p_1 = \theta_1$ (to produce the first best output z_1) and a transfer $T_1 = A < A + B$. Therefore the information rent left to the low cost firm is reduced compared to the solution proposed by Loeb and Magat (1979): even if this firm should strategically declare a cost parameter θ_2 it could collect a surplus only equivalent to area A, given that the optimal contract for the high cost firm allows pricing above marginal cost, but compensates the profit margin with an equivalent transfer $T_2 = D < 0$.

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[28]Alternatively this rent could be extracted through franchise auctions as suggested by Sappington and Stiglitz (1989).
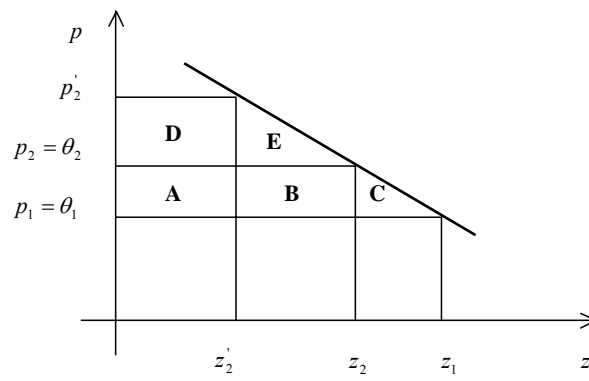
Figure 2: Baron and Myerson's regulation

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