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Public versus Private Ownership

The Current State of the Debate

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Disappointment with insider trading in Russia, with voucher privatization in the Czech Republic, and with the privatization of infrastructure in many developing countries has spawned new critiques of privatization. How do theory and empirical evidence answer the much-debated questions, Which is more important to performance, competition or private ownership? Are state enterprises more subject to welfare-reducing interventions by government than private firms are? Do state enterprises suffer more from problems of corporate governance?

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Summary findings

At the heart of the debate about public versus private ownership lie three questions:

- Does competition matter more than ownership?
- Are state enterprises more subject to welfare-reducing interventions by government than private firms are?
- Do state enterprises suffer more from governance problems than private firms do?

Even if the answers to these questions favor private ownership, the question must still be asked: Do distortions in the process of privatization mean that privatized firms perform worse than state enterprises?

Shirley and Walsh's review found greater ambiguity about the merits of privatization and private ownership

in the theoretical literature than in the empirical literature. In most cases, empirical research strongly favors private ownership in competitive markets over a state-owned counterfactual (although construction of the counterfactual is itself a problem). Theory's ambiguity about ownership in monopoly markets seems better justified.

Since the choice confronting governments is between state ownership and privatization rather than between privatization and optimality, theory has left a gap that empirical work has tried to fill. Further research is needed.

This paper—a product of Regulation and Competition Policy, Development Research Group—is part of a larger effort in the group to analyze the effects of privatization and the role of regulation and politics. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Zeny Kranzer, room MC3-439, telephone 202-473-8526, fax 202-522-1155, email address zkranzer@worldbank.org. Policy Research Working Papers are also posted on the Web at www.worldbank.org/research/workingpapers. Mary Shirley may be contacted at mshirley@worldbank.org. August 2000. (67 pages)

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Public vs. Private Ownership: The current state of the Debate

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1. Introduction

The debate over state ownership continues to rage. Despite proclamations of a new paradigm following the rise of Margaret Thatcher and later the fall of Communism in Eastern Europe and the former Soviet Union, arguments over public versus private ownership persist. Disappointment with the results of insider privatization in Russia, voucher privatization in the Czech Republic and infrastructure privatization in many developing countries has spawned new critiques of privatization. Concerns about globalization have also fostered a backlash against privatization in some quarters. A growing empirical literature has begun to provide unambiguous tests of the theoretical arguments, yet much theory is uninformed by the empirical results. The objective of this article is to review the ownership literature, organize the main themes of the argument, and update the reader on the current evidence.

State ownership experienced a period of popularity among developed nations in the 1930's, 1940's and 1950's, and in developing nations throughout the postwar period. In industrialized nations, state ownership was viewed as the remedy for market failures such as externalities and monopoly, which at that time were considered widespread. In developing nations these justifications were coupled with arguments that state-owned enterprises (SOEs) facilitated "economic independence" and planned development. Theoretical attacks on state ownership date back to the work of Hayek and Friedman, but these theories did not gain momentum until the 1960's and 70's. At that time, an empirical literature emerged to test the theoretical prediction made by Alchian (1965) that SOEs will be inherently less efficient than private firms. Studies directly applying insights from theories of corporate governance and government behavior to questions of SOEs and privatization began to appear in the late 1980s and 1990s.

Meanwhile, governments in both industrialized and developing nations expressed concern about the SOE record of failure and waste. These concerns brought an increasing urgency to the debate on the merits of

state ownership. Are the failures of SOEs exaggerated: do they in fact perform worse than private firms? If the failures exist, and reform is necessary, how should it be accomplished? Can SOEs be reformed from within, or are they intrinsically inefficient? Would changes in the operating environment improve SOE performance, or is a wholesale change of ownership necessary? Are SOE inefficiencies a by-product of government-imposed social objectives, and do the benefits from these social goals outweigh the cost of inefficiency? Are there inevitable flaws in the process of privatization that will produce performance inferior to continued state ownership? Are the circumstances in some countries so inimical to successful privatization that state ownership will always dominate, at least in monopoly markets.

Three broad approaches to the SOE debate have emerged. First, one set of theories argues that product-market competition, not property rights, is the primary determinant of enterprise performance. A second set of theories focuses instead on ownership and hypothesizes that states use SOEs for purposes other than to maximize social welfare, in ways they could not if the firms were private, and that this will have an adverse effect on performance in any market structure. A third approach argues that, regardless of government's goals, private firms will be more successful than SOEs in addressing problems of corporate governance. Our survey examines each of these approaches in turn, and considers how they interact (sections 2-4). We then review the argument that, because of flaws in the process, privatized firms will perform worse than private firms and worse than SOEs (section 5). We give a sense of the empirical findings in each section and also provide an overview of the results of empirical work comparing public and private performance (section 6). Section 7 summarizes the implications of our findings.

2. The Role of Competition

The extent to which competition influences performance has important implications for reform. If the introduction of competition is sufficient to equalize public and private performance, then there is little need to consider the nature of ownership. However, if competition is not the only factor influencing SOE

operations, then the focus must be not solely on the market but also on the differences between public and private ownership. Thus, we address the question of competition before examining issues such as government behavior or corporate governance.

Market Structure and Operational Efficiency

Competition in product markets is widely viewed to improve allocative efficiency. In the presence of competing producers, prices will tend towards marginal cost, thus allocating resources to their highest value. Conversely, when competition is absent, prices are raised and production is lowered relative to the competitive equilibrium. There is theoretical evidence that this effect can be extended to public firms -- a small group of studies (Beato and Mas-Colell 1984; De Fraja and Delbono 1986; Cremer et al 1987) examines the allocative results of public-private competition in a Stackelberg duopoly framework. These studies suggest that the competitive (price at marginal cost) result will obtain if the public firm is the Stackelberg follower. Moreover, there is empirical evidence that in absence of competition, SOEs will produce allocatively inefficient results (Peltzman 1971; Jones 1985). Although allocative efficiency is clearly important, SOE behavior in this regard follows the well-understood patterns of private firms in various market structures (barring government-imposed rules on SOE pricing and output, which will be discussed later). The following discussion will focus on *operational* efficiency, defined as the maximization of the present value of outputs from a given set of inputs. It is argued that vigorous competition can enhance such efficiency, primarily through reducing managerial slack (X-inefficiency). We will first examine this operational-efficiency effect in general, and then determine whether it can be applied to SOEs.

The theory of competition's impact on operational efficiency originated with Hayek (1945) and Leibenstein (1966), and falls into two related categories: *incentive* effects and *information* effects. Competition in product markets creates incentive effects by threatening the managers of inefficient firms with diminished market share. This process is explored by Machlup (1967), who argues that since

managerial slack can only persist in the presence of supernormal profits, it can only exist in imperfectly competitive situations. Incentive effects are further developed by Winter (1971), who models competition as a natural selection process that prods initially inefficient firms to become efficient or disappear. Building on these insights, theories of information effects argue that competition provides information about costs and manager effort to owners, who would otherwise be in the dark. With this information, owners can design better incentive systems and evaluate manager efforts more accurately (Holmstrom 1982; Lin, Cai, and Li 1998; Yarrow 1986). Hart (1983) presents a much-cited model in which there is a common component of costs among firms, and managers whose costs are lower than the owners estimate can shirk and still meet their goals. However, if competition drives down prices and costs in an industry, owners will know that poor firm performance derives not from costs (which are common) but from managerial slack. A similar model is presented by Willig (1985), who shows that competition can reveal information about managerial effort by increasing the sensitivity of profits to costs. In both cases, it is assumed that armed with better information, owners can devise incentive structures that align managers' interests more closely with their own. (The difficulties surrounding the manager-owner relationship inform our discussion of public/private ownership, and will be explored fully in Part 4.)

While a strong case can be made that competition enhances internal efficiency, when considering SOEs it must still be determined whether SOEs will perform as well as private firms facing the same market structure, i.e. whether the effects of competition are stronger or weaker than the effects of ownership. In their landmark study, Vickers and Yarrow (1989) -- henceforth VY-- cite competition's information effect as an important influence on public-sector performance, but do not quantify the effect relative to ownership. Two types of arguments that emphasize ownership over competition have been made: one holds that political interference in SOEs overwhelms competition effects, while the other maintains that inherent difficulties in SOE management negate the impact of competition. These two arguments

surrounding political behavior and SOE management are not necessarily mutually exclusive, and will both be addressed in detail later in this paper.

Shleifer and Vishny (1994) and Boycko, Shleifer, and Vishny (1996) address the competition/ownership question by calling into question the motivation of politicians. They argue that, even in fully competitive environments, SOEs will be inefficient because politicians force them to pursue political goals such as over-employment. Because such distortionary interventions are more costly and transparent in private firms, they maintain that ownership differences are the key source of efficiency differences. Nellis (1994) supports the view that politicians will distort SOE functions to meet political goals, and suggests that the conditions for efficient SOE operations (competitive markets and autonomous, profit-maximizing managers) are precisely the conditions that politicians wish to avoid. Stiglitz (1993) raises similar questions, arguing that because of their desire to use SOEs for political purposes, politicians cannot credibly commit to encouraging competition. These arguments are backed up by research documenting political use and abuse of SOEs (Donahue 1989; Kikeri, Nellis, and Shirley 1992; and World Bank 1995). In this framework, then, competition would only be effective when governments are able to renounce using SOEs to meet political objectives, implicit or explicit. Sappington and Sidak (1999) extend this analysis. In their view, because SOEs rarely seek to maximize profits, they actually have greater incentives and ability to engage in anti-competitive behavior. In particular, these authors show that SOEs are more likely than private firms to set price below marginal cost, raising their competitors' costs through market or political methods, and seek regulatory barriers to entry. This analysis takes the dominance of ownership over market structure a step further: instead of a competitive market improving SOE performance, an SOE may in fact hamper market performance. Once again, this claim is supported by empirical evidence (Jones 1985; Kikeri, Nellis, and Shirley 1992; and World Bank 1995).

Boardman and Vining (1992) look more explicitly at competition and ownership by examining corporate governance problems. They consider claims (Borcherding et al 1982; Whitehead 1988) that in the case

where markets are fully competitive, ownership does not have an impact on efficiency. These claims assume, they argue, that owners monitor managers with equal effectiveness in the public and private sectors. Boardman and Vining challenge this assumption on several levels, maintaining that average private sector monitoring must be superior due to the presence of: owner-operated private firms; threats of takeover; failures in the political market; government monitors with self-serving interests; and a market for public managers that is highly distorted relative to the private market. They support this assertion with empirical work that demonstrates superior private performance in competitive markets. Nellis (1994) highlights similar advantages for private monitoring, including a more healthy market for managers and profit-oriented monitors.

The incentive and information effects of competition operate by strengthening the owner's ability to monitor the manager. But if the owner cannot (as Boardman and Vining argue) or will not (as Shleifer & Vishny and others maintain) create incentives to accompany that monitoring, then these effects of competition will not raise internal efficiency. Thus, the degree to which market structure influences operating efficiency depends on the relative vulnerability of public and private firms to political interference (discussed in part 3) and the relative success of public and private firms in creating effective corporate governance (discussed in part 4).

Kay and Thompson (1986) offer a rebuttal to the argument that ownership matters more than competition for productive efficiency. They argue that if competition is must be combined with a viable threat of exit such as a hostile takeover or bankruptcy, it will promote productive efficiency. If there is no way to force a productively inefficient firm out of business, they argue, the managers will have little incentive to raise efficiency. Pointing to the existence of large private monopolies that are productively inefficient, they argue that the importance of exit cuts across ownership forms. Furthermore, they cite empirical evidence that public and private performance is similar – both are good in competitive markets and sluggish in non-competitive markets. This empirical literature, however, represents early cross-sectional studies that

focused largely on utilities and in developed nations, which has since been supplemented by an empirical literature that finds overwhelming ownership effects (see section 6). Kay and Thompson conclude that while private ownership has an edge in fully competitive markets, focusing on ownership at the expense of competition produces sub-optimal results. However, if the threat of exit is as important for competition to raise productive efficiency as these authors suggest, then an emphasis on introducing credible threats of bankruptcy and takeover would produce the best results. The difficulties of introducing a credible exit threat in a public-ownership environment will be discussed in Part 4.

Yarrow (1986) follows an argument similar to Kay and Thompson (1986), acknowledging that while private firms have a general advantage in the monitoring of managers, it is the competitive and regulatory environment that shapes the incentives of managers. This conclusion is based on his survey of pre- and post-privatization firm performance in Britain, which suggested that performance depended more on market structure than on ownership (other pre- and post-privatization studies such as Megginson et al 1994 show ownership and market structure to act more as complements). Yarrow therefore also concludes that reforms emphasizing ownership over market structure are misguided. These findings are echoed in Caves (1990), who sees product-market competition as the source of both allocative and productive efficiency. Caves notes that private firms are better managed, but stresses that rigorous competition is necessary to shape the incentives of these managers. While this may be the case, he does not show that rigorous competition also shapes the incentives of public managers. In the context of developing nations, Cook and Kirkpatrick (1988) argue that because of massive market failures, privatization will simply produce private monopolies, and that promotion of competition and continued state ownership produce the best results. This argument, however, assumes that public ownership is the best response to market failure, an assumption that will be challenged in the following sections.

The theoretical arguments giving ownership dominance over market structure are strong. In the presence of political interference and poor governance in the public sector, it is probable that SOEs will perform

poorly even in highly competitive markets – or worse, that they will seek to cripple those markets. Since many objections to this argument are based on empirical observations, a review of the empirical literature is revealing. Those who place an emphasis on market structure argue that SOEs appear to have lower performance because most studies only examine SOEs in non-competitive markets. They predict that in competitive markets, there would be little difference between public and private firms. Those who believe that ownership has a greater impact theorize that SOE performance would lag private performance in both competitive and non-competitive industries. Early studies produced contrasting results. Caves & Christiansen (1980) found in a comparison of public and private railroads that in the presence of competition there is no difference between public and private efficiency. In contrast, Davies (1971) found a massive private-sector advantage in Australian airlines. More recent studies, using larger samples, broadly show that while both ownership and competition do affect performance, a public-private gap exists even in competitive markets. Boardman and Vining (1989, 1992) present data showing that private firms are more efficient than SOEs, even in competitive industries. Megginson, Nash, and Randenborgh (1994), looking at firm performance before and after privatization, find that private ownership increases efficiency in all situations, and that this effect is more pronounced in competitive markets. Ros (1999) finds that both ownership and market structure have significant effects on efficiency, but that the ownership effect is slightly more robust across different measures of performance. Our own survey of empirical results (see section 6) yields 16 studies of fully competitive markets, 11 of which demonstrate superior private performance and 5 of which indicate no difference. Evidence from transition economies yields similar mixed results. Looking at privatized firms in Russia, Earle and Estrin (1998) find that ownership has a much stronger impact on productivity than market structure. In a survey of studies on transition economies, however, Djankov and Murrell (2000) find that import competition has major positive effects outside of Russia. Focusing on Chinese SOEs, Li (1997) finds that productivity gains are associated with market liberalization. However, like Yarrow (1986), this study fails to consider the proper counterfactual: although the performance of SOEs may have improved in the presence of competition, the true question is whether this performance matches that of private (or privatized) firms.

The empirical literature suggests that while market structure has a positive impact performance, this impact fails to dominate the ownership effect. The argument that market-structure dominance rests on cases in which public and private firms in competitive environments perform equally well, and these cases are rare. Taken together with the theoretical literature, these empirical studies suggest that both competition and ownership affect firm performance, and there are many ways in which the effects of ownership can negate the influence of markets.

Natural Monopoly

There are, of course, some cases in which effective competition is neither possible nor desirable. These cases are usually natural monopolies, where indivisibility of networks or ever-increasing returns to scale dictate that the most efficient market structure is a single firm (although Noll 1999 makes a strong case that natural monopolies do not actually exist in their archetypal industry, telecommunications). VY call this the trade-off between allocative efficiency and scale economies. They present a model showing that in these cases, the duplication of fixed costs associated with firm entry outweighs the benefits enjoyed by consumers. This issue is especially relevant for SOE reform efforts, because a major rationale for state ownership in developed nations has been the existence of natural monopolies that limit competition. Market failure is even more of an issue in developing nations. Cook and Kirkpatrick (1988) cite extensive market failures in less-developed countries, and thus are highly critical of privatization efforts in these countries. Their argument assumes, however, that the best remedy to market failure is state ownership. In fact, where the market structure is taken as given, the focus of the literature shifts to whether state ownership or regulation of a private monopoly produces better results. Laffont and Tirole (1993) note, citing Williamson (1985) and Grossman and Hart (1986), that the results of such a comparison depend on whether contracts are complete or incomplete. This is an important distinction that we will return to in the section on government behavior. If contracts are complete, if they define all aspects of performance and every possible eventuality, then both regulation and public ownership face the same straightforward

issues of enforcement. Hence, both methods yield the same results. Public ownership and regulation of private firms will produce different results only in the presence of incomplete contracts, where some aspects of performance and eventualities cannot be defined in advance.

In the real world of incomplete contracts, which path produces the best results? The theoretical literature finds that the answer often depends on the institutional environment. Shapiro and Willig (1990) use a cost-of-information framework to analyze this question, and make a distinction between government agents (SOE managers or regulators) who have a great deal of operational autonomy and those who have little. In the case of more autonomous agents, they find that public ownership and private ownership with regulation produce the same results when information about profits is revealed only after investment, or when the government is indifferent the amount of money spent to acquire that information *ex ante*. When these conditions do not apply, they find that the case for public ownership grows with the efficiency of political markets and diminishes with the “salience” of the agent’s private agenda (both issues that will be addressed later). When the government agent has little autonomy, regulation is preferred when information on market failure is publicly known *and* information on profitability is revealed only after investments are made. While these results suggest that regulation is superior or at least equal to public ownership in some situations, several problems with regulation have been noted. Adam, Cavendish, and Mistry (1992) also present a model of the public ownership/private regulation choice. The results of this model depend on regulatory capacity, the importance of private information, and how much public officials deviate from government objectives. Analysis by Laffont and Tirole (1991a, 1993) suggests that managers of regulated firms are caught in a crossfire between their two sets of principals, the owners and the regulators. However, they still conclude that the relative cost efficiency of regulated private firms and public ownership is theoretically ambiguous. VY identify four problems of regulation that can lead to inefficiencies: overcapitalization (Averch-Johnson effect); asymmetric information; the complexities of regulating multiproduct firms; and regulatory capture. All of these problems could also affect the management of SOEs, however.

One way to address regulatory failure is to foster competition through bidding for the right to operate as a monopoly, a solution developed by Demsetz (1968). Kay and Thompson (1986) and Bishop and Kay (1989) support this solution to the natural monopoly problem, seeing it as a way to introduce a form of competition into non-competitive markets. Theoretically, this solution has the attractive property of combining the efficiency gains from a single producer with (contracted) incentives to price and produce at nearly competitive levels (VY). Williamson (1976) and Goldberg (1976) find several problems with this approach, however. They raise the possibility that the bidding may not be competitive, either because of collusion, asymmetric information, or incumbent advantages. Further, these authors argue that the incumbent and the winning bidder create a bi-lateral monopoly when pricing the assets that are to be turned over. Finally, since contracts are necessarily imperfect, there will be monitoring costs that may exceed the benefits from auctioning. Bishop and Kay (1989) respond by outlining criteria for contracting out: if the enterprise in question is similar to activities already carried out by the private sector, and if compliance with the contract can be easily monitored, then the Williamson/Goldberg difficulties can be overcome. As will be discussed later, Hart, Shleifer, and Vishny (1997) and Shleifer (1998) show that contracting out can be particularly effective when consumers have a choice among contracted suppliers, in effect negating the Williamson/Goldberg problems in the presence of competition.

A second method to reduce regulatory failure advocated in the literature is to use the regulatory mechanism to promote competition among parallel firms (perhaps with separate geographic monopolies). The regulated prices for one firm would depend on cost savings in other firms, thus producing a sort of “race to the top” in terms of internal efficiency (VY). Allocative efficiency would also be enhanced, as the regulatory process would mimic the results of a competitive industry. This method draws on insights from the principal-agent literature, which holds that a principal (regulator) can achieve gains by rewarding each agent (firm) on his efforts *relative* to all the other agents (Nalebuff and Stiglitz, 1983). This method requires, however, that all the firms face similar circumstances or that differences can be

measured and accounted for, and that they do not collude. These conditions may be difficult to achieve in practice.

Addressing the choice between regulation and privatization, Shirley, Nellis, and Kikeri (1992) and Vickers and Yarrow (1991) acknowledge the difficulty of privatizing natural monopolies, but note that the success of such privatizations depends on the regulatory capacity of the government. Thus, middle-income countries with more developed regulatory bodies may be better able to privatize and regulate than lower-income countries with weak regulation, which suggests that in all but the poorest countries, privatization and regulation is preferred to continued public ownership. However, lower-income countries may be less able to manage SOEs, and thence benefit more from privatization despite poor regulation. The empirical literature is less ambiguous than theory, finding that private regulated firms perform the same as or better than SOEs in most studies (see section 6). But the advantage of private firms in natural monopolies is not as clear as in competitive markets. Five out of 16 studies find that monopoly SOEs outperformed private monopolies. Quality of regulation dominates ownership in some circumstances, for reasons we examine later.

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Since ownership per se can affect performance, the next section investigates whether governments are likely to demand that their SOEs perform efficiently. Section 4 asks whether governments which *do* demand efficiency can overcome the inherent problems of separation of ownership and control.

3. Government Behavior and SOEs

Two different sets of assumptions can be used to analyze the behavior of governments. One expects political markets to work efficiently, such that rational governments have incentives to maximize social welfare. The other assumes that political markets are inefficient, and that government actors, such as bureaucrats or legislators, are able to maximize their own utility – in the form of votes, income, or favors – in ways that subvert the common good. In this environment, the concern is that government actors may

promote distortionary and inefficient SOE practices in order to reap political benefits. In contrast, there is less latitude for such a government to intervene in the operations of private firms.

Social-Welfare Maximizing Government

When political markets are assumed to work efficiently, bureaucrats and politicians will act as loyal agents of the citizens. In this scenario, competition among politicians allows voters to support those who most clearly represent their interests, rejecting those who do not. This forces politicians to align their policies with the interests of the voters, or be left out of office. Thus, politicians will seek to maximize social welfare, or more specifically, the sum of consumer and producer surplus (VY). Much of the rationale for public ownership is based on this framework. When there are significant market failures, a SOE manager can produce more efficient results than managers in the private sector. In industrialized nations, the market failures to be corrected were typically monopolies and externalities (Shleifer, 1998). By abandoning profit maximization in favor of social welfare maximization, an SOE that is a monopoly (natural or not) can adjust prices and output to approximate the competitive equilibrium (VY; Shleifer and Vishny 1994). Likewise, if industries with major externalities are dominated by SOEs, public managers can adjust prices to reflect the true social cost of the product. As mentioned before, these solutions usually require the SOE to be the sole producer in the industry, thus abandoning any hope of competition.

In developing nations, the assumption of a social-welfare maximizing government has also been adopted, although for different reasons. Developing nations turned to public ownership to accumulate productive assets that were domestically-owned and to promote a broader socialist program, as well as for the reasons of externality and natural monopoly cited in industrialized nations.

Other SOE goals intend to promote social welfare in ways beyond addressing market failure. Some scholars (Turvey 1968; Wintrobe 1985) argue that the benefits of these social goals outweigh the resulting loss of efficiency. Choksi (1979) provides a long list of social benefits that SOEs have been intended to

provide, including facilitation of industrialization through central planning, acceleration of technology transfer, increased employment, reduced inequality, regional development, and increased national security or “autonomy”. Focusing mainly on developed nations, some see a role for SOEs in addressing market failures such as natural monopolies (Millward 1983), and in providing an additional avenue for macroeconomic policy via price controls (Millward 1976). Willner (1996), also considering developed nations, argues that public ownership reduces income inequality and increases product quality, at an acceptable loss of economic efficiency. In the context of developing nations, some argue that SOEs contribute to capital formation, technology transfer, and income redistribution (Sacristan 1980; Labra 1980), although these arguments are often made within a Marxist framework and thus suffer from the associated theoretical problems of that ideology.

Despite their conclusions that social benefits can outweigh economic costs, none of these articles present a framework in which these costs and benefits can be quantified. Therefore, comparisons and judgements about the costs and benefits of social goals are inherently arbitrary. Jones (1991) confronts this issue more directly than other studies, but still falls short of a usable method of quantifying costs and benefits. With the exception of a few case studies, the empirical literature has not seriously tested the argument that social benefits of SOEs outweigh the economic costs. Galal et al (1994) find that after privatization, consumer and labor welfare went up in 11 out of 12 cases in developing and industrialized countries, despite layoffs and price increases. They found that the losses of laid-off workers were compensated by severance pay and outweighed by the gains from stock shares to those who kept their jobs. The loss to consumers from higher prices was considerably smaller than the benefits of expanded and better service.

Moreover, with the exception of Millward (1983), the articles supporting the social benefits of SOEs fail to consider other ways of achieving social goals besides public ownership. The large literature on the regulation of private natural monopolies is largely ignored, as are alternative methods of addressing income inequality, provision of public goods, and macroeconomic stabilization.

Recent studies on the rationale for public ownership have focused on the ability and desirability of government intervention, assuming welfare-maximizing government. Sappington and Stiglitz (1987) argue that public ownership reduces the cost of government involvement in markets, and that this involvement is beneficial when market failures must be corrected. They develop these benefits of government involvement by introducing their Fundamental Privatization Theorem. This theorem identifies the conditions that are necessary to make a transfer from public production to private production efficiency-enhancing – i.e. when the market does at least as well as a benevolent government. When these conditions hold, private producers have the advantage. When these conditions fail, which the authors claim happens almost constantly, the benevolent government assumption should be relaxed and market and government failures should be carefully compared. Shapiro and Willig (1990) find a similar difference in the cost of intervention, and show that this difference is due to the different structures of information in public and private sectors. Furthermore, they find that such intervention is desirable when the following conditions hold: there are significant market failures; managers have private information about costs and profitability; and managers' private agendas are kept in check by an efficient political market.

Controversy surrounds the idea that public ownership is the best solution to market failure, even with a welfare-maximizing government. There are two main challenges to this view of public ownership: first that market failure can be addressed through more efficient means, and second that even benevolent governments have incentives to skew the *distribution* of the maximized social welfare.

Hart, Shleifer, and Vishny (1997) and Shleifer (1998) present a useful framework for analyzing ownership decisions in the presence of welfare-maximizing government. This framework stands in stark contrast to that put forward by Sappington and Stiglitz or Shapiro and Willig, and it is both more intuitive and more consistent with established theories of contracting. In a benevolent-government environment, Hart et al and Shleifer argue that the decision to produce in the public or private sector is analogous to a

firm's decision to buy an input on the market or produce it in-house, an issue first explored by Coase (1937). If a government desires a certain good or service to be provided, it can produce the good or service itself by contracting with employees and managers, or it can contract with a private firm to provide the product. As with regulation, in the presence of complete contracts the problem becomes one of enforcement. There is no performance difference between production done in-house and by a contracted firm. However, in the real world of imperfect contracts, Grossman and Hart (1986), Hart and Moore (1990), and Hart (1995), show that tradeoffs emerge between public and private production.

Hart, Shleifer, and Vishny (1997) argue that the most important of these tradeoffs is between efficiency and quality. They present a model where quality and cost are correlated. Even benevolent public managers have weak motivation to invest in either cost reduction or quality improvement because they would receive little or none of the benefit. Private contractors, on the other hand, can pocket the fruits of cost savings. They thus have strong incentives to reduce costs but will only preserve quality where it is contracted for. Thus, excessive cost-cutting in the private sector can lead to decreases in non-contractible quality (privatized prisons are given as an example). However, Hart, Shleifer and Vishny (1997) and Shleifer (1998) note that even when non-contractible quality is an important part of output, private contractors may still have an edge because of forces that compel them to maintain quality. These forces include consumer choice among suppliers (competition), and the effect of reputation on future sales. Overall, Shleifer (1998) concludes that even in an environment where government seeks to maximize social welfare and contracts are incomplete, public ownership is preferred to private contracting only when both of the following are true: non-contractible quality and innovation are important and cost cutting will lower this quality, and consumer choice and reputation are ineffective. Historical evidence from the United States presents mixed evidence on this theory. Troesken (2000) finds that public water utilities around the turn of the century provided more connections to minority neighborhoods than did private water utilities, resulting in lower minority typhoid rates in cities served by public firms. This supports the argument that contracting is not effective when competition is limited and quality is

important. However, Troesken (1999) reports that private water utilities around the turn of the century invested in just as much water purification as public waterworks did, resulting in fairly equal disease rates between the two systems. This finding suggests that private ownership may be viable even in the worst-case scenario presented by Shleifer (1998), although a crucial question is whether investments in purification can be considered “contractible” or not.

As was noted earlier, Williamson (1976) and Goldberg (1976) outline several pitfalls for contracting schemes, including a breakdown in competition to information asymmetries, collusion, or incumbent advantages, and the risk that the complexities of transferring assets leads to inefficient *ex-ante* investment. However, the implications of these criticisms are strongest when there is also no product-market competition, as in the case of natural monopoly. When consumers have a choice among contractors, Shleifer and Vishny (1997) and Shleifer (1998) argue that the socially optimal result will obtain. Empirical analysis, looking at public services such as garbage collection, shows that while public ownership or an auctioned monopoly produce sub-optimal results, private contractors in competition for customers yield high efficiency (Savas 1977; Edwards and Stevens 1978). This evidence suggests that the Williamson/Goldberg objections are true for auctioned monopolies, and that the Hart/Shleifer/Vishny framework (rather than the Sappington/Stiglitz framework) accurately describes more competitive situations.

VY raise the second challenge to SOE performance in the environment of what they call “publicly interested” government: that governments will skew the distribution of welfare. They examine the assumption that bureaucrats and politicians in this environment seek to maximize the sum of consumer and producer surplus. While this sum may in fact be maximized, VY argue that government has incentives to place non-optimal relative weights on these two surpluses. Governments may place more emphasis on consumer surplus than on producer surplus, because consumers have more voting power than producers, or because transfers to low-income consumers are deemed politically desirable. In a

similar vein, Schmidt (1996) raises a related point by showing that a benevolent government may over-subsidize SOEs relative to private enterprises. If the government always chooses a level of production that matches social cost and social benefit, the SOE manager will have no incentive to reduce costs, and will therefore require greater subsidies. Privatization, Schmidt argues, is a way for the government to credibly deny itself private information about production costs, and therefore force the new private manager to reduce costs, since subsidies now reflect social benefits rather than firm costs. This argument that SOEs receive larger subsidies than private firms is backed up by empirical observations (Kórnai 1980; Shirley and Nellis 1991; World Bank 1995; Claessens and Peters 1997; Djankov 1999).

Thus, even in the theoretical case where governments maximize social welfare, public ownership may not always be the best solution to market failure. In this situation, the choice between public and private production depends on the ease with which contracts are monitored and enforced; the degree of potential competition among private suppliers; the importance of non-contractible quality and innovation; and the propensity of even enlightened governments to favor consumers (voters) over producers. Many more questions about the merits of public ownership emerge when we relax the unrealistic assumption that governments always act in the public interest. This case is explored in the next section.

Self-Interested Government

As discussed above, many of the arguments for the supremacy of public ownership rest on the assumption that politicians seek to maximize social welfare, which in turn depends on efficient political markets. Theories of self-interested government undermine this framework by identifying serious imperfections in political markets. Most obviously, governments in non-democratic systems face little competition aside from the occasional threat of a coup by another would-be dictator. Moreover, it is argued that major shortcomings exist in political markets even in democracies. Boardman and Vining (1992) draw on Mitchell (1989) and Buchanan (1969) to argue that while political markets tend towards the maximum efficiency possible within a given set of institutions, there is great variation in political efficiency *between*

those sets of institutions. A political market can thus operate well below the efficiency attainable with *ideal* institutions. As will be explored below, a self-interested government operating in inefficient political markets has more scope for intervention in public firms than in private firms.

VY provide more specific arguments against efficient political markets by examining the principal-agent problem between voters and politicians. First, they note that this relationship is characterized by major information asymmetries, when efficiency demands that voters be well informed about the actions taken by politicians and the consequences of those actions. Second, they argue that elections are poor mechanisms for producing information on voter's preferences, as they are held infrequently and are not constrained to deal with any specific issue. Third, if the benefits of a welfare-enhancing policy are widely dispersed and the losses concentrated, all those who benefit have the incentive to free ride on any effort to support the policy, while the potential losers have incentives to defeat it. This is an example of the classic collective-action problem (Olson, 1965) as applied to voting. These arguments suggest that the principals (voters) will have great difficulty aligning the interests of the agents (politicians) with their own. The similar difficulties found between politicians and bureaucrats or firm managers will be discussed in the section on corporate governance.

The most common alternative to the public-interest framework assumes that politicians and bureaucrats behave like rational actors who maximize their own utility, in a world where voters have limited information and influence on their decisions (VY; Vickers and Yarrow 1991). Analysis in this framework is often called public choice. Applying this framework to the discussion of market failure, Shepsle and Weingast (1984) argue that due to imperfect political markets, government intervention is not always the best response to market failure. They maintain that a careful comparison of the relative institutions (market and government) is necessary to find the least-bad solution.

In a world of limited information, politicians may use SOEs to produce political benefits for themselves, at the cost of inefficient and distortionary SOE operations. Shapiro and Willig (1990) explore the impact of imperfect political markets on the desirability of public ownership. They model a public manager's utility as a mixed function of social welfare and private welfare, where private welfare reflects either personal benefits or the gap between short-run political pressures and long-run public good. They argue that the relative weights placed on these two kinds of welfare depends on the efficiency of the political market – the less efficient the market, the more weight managers place on private welfare. This corresponds with case studies and observations of SOE operations (Jones 1985; Kikeri, Nellis, and Shirley 1992; and World Bank 1995). Boycko, Shleifer, and Vishny (1996) find that political intervention in public enterprises is likely, since politicians who manipulate SOE operations for political reasons receive all of the benefits of such interventions, but bear little of the direct (subsidies) or indirect (inefficiencies) costs. Boycko et al also argue that it is more transparent and difficult for politicians to overtly subsidize private firms than to slant SOE operations so as to serve their political goals. This argument is backed up by Sappington and Stiglitz (1987) and Shapiro and Willig (1990), who also hold that state ownership reduces the cost of state intervention. By defining intervention as the promotion of excess employment, Boycko et al find such interventions to be distortionary and inefficient. Jones (1985) also focuses on the use of SOEs by politicians to transfer wealth and favors from one group to another. He finds that these transfers generally run from low-income groups to well-connected groups in the middle or upper class, and argues that this is usually the result of politicians' deliberate efforts to reward their supporters. Like Boycko et al, Jones finds that political transfers through SOEs are far less transparent, and therefore far more attractive, than traditional taxes and subsidies. Stiglitz (1993) notes the impact these tendencies have on SOEs – by agreeing to serve politician's interests, SOEs receive subsidies and are protected from competition.

The literature yields two possible frameworks in which political pressures affect SOE operations. The first assumes that there is a hierarchy of control from voters to politicians to firms, and that this hierarchy

faces principal/agent problems at multiple levels. A second theory abandons the idea of such a hierarchy, treating politicians, firm managers, and related interest groups as essentially equal actors who bargain and swap favors.

Most arguments based on principal-agent problems within a hierarchy draw heavily from Alchian (1965). Alchian argues that the key difference between public and private firms is the incentive and ability of owners to monitor managers. In the case of private firms, ownership is concentrated relative to the public sector, and ownership shares may be sold. As a result, private owners have the incentive to monitor the performance of their managers, and to align the managers' interests with their own. In the case of public firms, ownership is highly diffused (indeed all citizens are owners), and shares of ownership have no value and may not be sold. Thus, owners of public firms not only have little incentive to monitor their managers, but even if there were such an incentive they would free-ride on any monitoring efforts. As a result of this disparity in monitoring, Alchian argues, public firms will have lower internal efficiency than private firms. Alchian's theory thus describes the principal-agent problem between voters and politicians (the other problem, between politicians and firm managers, will be discussed in section 4). Alchian's argument spurred a furious empirical debate on the relative efficiency of public and private ownership, the results of which are summarized at the end of this paper.

VY also address the principal/agent problem between voters and politicians, as we have seen above. Taking a more specific approach than Alchian, they begin by defining the goal of politicians as election to office or advancement to higher office. Politicians in a party have a common interest in electoral victory, and will promote or demote more junior members based on their contribution to that victory. Where monitors of public enterprises are subject to promotion or demotion on the basis of their efforts on behalf of the party, they will use all means at their disposal, including SOEs, to further the electoral success of the party. VY note that if political markets are efficient, this motivation does not necessarily imply inefficient use of the SOE. Informed voters will reward a party that increases their welfare by running

SOEs efficiently. However, principal/agent problems between voters and politicians prevent the political market from performing efficiently. As described previously, voters and politicians have asymmetric information, elections do not provide information on specific issues, and the diffuse benefits of efficient government fosters free-riding among voters. VY show that in the case of SOEs, these problems can be manifested in the following way. Realizing that in an election with many issues, a vote will not necessarily signal a desire for more efficient SOEs, and that even if it did, free-riding on the efforts of other voters is likely, the average voter will not invest in acquiring information about the performance of an SOE or the actions of its monitor. While it is possible that in imperfect markets, the maximization of electoral prospects leads to harmful interference in private firms as well, we have seen that such interventions are more transparent and more difficult (Jones 1985; Sappington and Stiglitz 1987; Shapiro and Willig 1990; Boycko, Shleifer, Vishny 1996).

An alternative to the principal/agent approach to self-interested governments abandons the idea of a chain of command in favor of a network of managers and politicians who strike bargains to maximize their own benefits. This theory describes three manifestations of bargaining behavior – the petitioning of politicians by SOE managers, equal bargaining between the two, and the “capture” of the political element by managers. These manifestations of public choice behavior vary by the relative power of these two groups.

In the first case, politicians and bureaucrats are assumed to act in their own interests, and are assumed to place highest value on income, power, and prestige. All three can be enhanced in the public sector by increases in managers’ budgets (costs), whereas in the private sector, increased profits are the source of such rewards. SOE managers are modeled as constantly petitioning for ever-growing budgets and transfers, and caring about efficiency only to the extent to which there is competition among bureaus for the provision of government services. These insights are based largely on Niskanen’s theories of bureaucracy (1971 and 1975). They are supported by empirical work (De Alessi 1969 and 1974; Wagner

and Weber 1975; Orzechowski 1977; Deacon 1979) that identifies artificially high budgets and staffing levels among government bureaus. Alternative formulations of a manager's utility function include security of tenure (DeAlessi 1974), and the opportunity to shirk (Berle and Means 1932; Jensen and Meckling 1976; Fama and Jensen 1983). Although private managers may share these objectives, it is more difficult and more transparent for them to meet these objectives through political action than it is for SOE managers. And while politicians' and bureaucrats' demands might be met by SOEs improving their profitability, it requires less managerial effort to petition for transfers.

The second form of public choice behavior grows naturally out of the insights of the first. If SOEs are always asking – competing, most likely – for higher budgets, while politicians can allocate funds to a variety of purposes besides transfers to SOEs, then managers must have something to offer the politicians in return. Shleifer and Vishny (1994) examine such a situation, comparing the results of different assumptions about the prevalence of bribes. Their basic model holds that SOE managers create employment that is politically desirable and economically inefficient, while politicians grant managers budget increases in return. Monetary bribes, if allowed, alleviate any mismatch in this process and may pass in either direction. In the case where bribes are allowed, they find that differences in ownership do not translate into differences in the amount of superfluous employment, as budgets and bribes will be modified to produce the same result. In some cases, SOE managers can “buy” additional independence by bribing politicians, which can lead to more efficient staffing levels. In this framework, they find that corporatization generally produces more efficient results than continued state ownership, regardless of the bribe regime. Boycko, Shleifer, Vishny (1996) extends this analysis, arguing that such deals are more likely under public ownership than private ownership. Therefore, they recommend privatization as the best solution to SOE inefficiencies, as it makes political intervention more difficult.

The third manifestation of self-interested behavior occurs where SOE interest groups have more clout than suggested by the passive budget-maximizer or equal bargainer models presented above. In this case

SOE interests “capture” the government body charged with monitoring (Borcherding, Bush, and Spann 1977; Borcherding et al 1982). Focusing on organized groups of public employees rather than SOE managers, they argue that SOE employees trade votes for regulations that both increase the demand for their work and limit the number of those who can compete with them. This relationship is different from the private-sector capture scenario (Stigler 1971; Peltzman 1976; Laffont and Tirole 1991b) in which interest groups exert pressure not through votes but with bribes, campaign contributions, and ex-ante employment opportunities to regulators. Previous sections have emphasized how electoral prospects focus the attention of politicians, but the institution of a secret ballot makes enforcement of such contracts difficult (Borcherding et al 1982). Pommerehne and Frey (1978) and Courant, Gramlich and Rubinfeld (1980) demonstrate empirical support for this criticism. Given this inability to enforce contracts that are based on votes, SOEs might rely on more verifiable methods (bribes, political donations, etc.). Or, instead of SOE interests capturing their monitoring body with their voting power, perhaps a more realistic scenario is for the monitoring body to award favors to the SOE ex-ante, thus giving the SOE interests an incentive to keep the incumbent party in office (Shleifer and Vishny 1994).

There is empirical evidence that SOE managers and politicians do in fact interact in ways that benefit themselves at the expense of general welfare. Shleifer and Vishny (1994) catalogue numerous cases of SOE inefficiency that result from political meddlings. These inefficiencies usually take the form of excess employment, above-market wages, investment in projects that benefit politicians rather than consumers, and allocative distortions resulting from skewed pricing schemes. Frydman, Gray, et al (1998), focusing on state ownership in transition economies, find that “politicization” prevents SOEs from restructuring. In particular, they show that political pressures prevent layoffs. Similar processes are described in Jones (1985), Donahue (1989), Kikeri, Nellis, and Shirley (1992) and World Bank (1995).

Drawing on this literature, with its emphasis on the deals made between politicians and SOE managers, it is possible to define the conditions under which politicians will use SOE operations to meet political goals. First, the degree of such behavior depends on the degree of imperfection in the political markets. The more heavily distorted the political market, the farther a politician can deviate from social welfare maximization (Shapiro and Willig 1990; Jones 1985; VY). A related condition may be the independence of the press – politicians may be more able to distort SOE operations the less the press is likely or able to detect and publicize such distortions. A second influence on political intervention in SOEs is the ease with which budgets and regulations can be arbitrarily manipulated. An institutional framework in which a politician can easily increase an SOEs subsidy or hobble its competition will allow more such activity than a framework where these decisions are subject to scrutiny and can be blocked by other political players. A third factor influencing the degree of political intervention is the nature of the institutional relationship between the government and the enterprise. If an enterprise is run as a department of a ministry, with its managers directly appointed by a minister or chief executive, then political interventions will be easy and common. Alternatively, if the government acts as the dominant shareholder of a largely independent firm, acting through a board of directors, political intervention may be possible but is more costly and more transparent (Galal 1991; Shirley, Nellis 1991). A fourth determinate of political intervention is the prevalence of corruption. Since bribes can facilitate the deal-making process between politician and SOE manager, political interventions will be easier in an environment where such activities are commonplace and unpunished (although Shleifer and Vishny 1994 suggest that bribes can sometimes actually reduce SOE inefficiencies). Finally, as is made clear by historical evidence on the timing of reforms, the degree of political intervention depends on the opportunity cost of SOE inefficiency (World Bank 1995). A country that is, for example, enriched by a high-value export may find the costs of inefficiency to be acceptable. If the market for that export deteriorates and the economy suffers, however, politicians may find that previously sustainable inefficiencies are now unaffordable. In such a situation, SOE reforms and even privatizations are often undertaken.

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Judging from the literature on government behavior, even assuming governments act to maximize social welfare, SOEs are the superior solution to market failures only in a relatively rare set of circumstances. Moreover, another body of analysis strongly suggests that government actors do not behave in this way – rather, they behave as rational players who maximize their own welfare. SOEs will thus be used to serve the purposes of politicians in most political markets, at the expense of efficiency. Intervention in private firms will also occur, but will be less effective because of higher costs and greater transparency. If we ignore this body of thought and assume that government actors put their interests aside and demand efficient results from their SOEs, another issue remains. Are governments as capable as private owners of inducing SOEs to produce efficient results, given the problems inherent in the separation of ownership and control?

4. Corporate Governance

Public and private firms face a similar problem. In both cases, owners seldom manage the day-to-day operations of the firm. As a result, they face a principal/agent problem with those whom they hire to do the managing. Resolving this principal/agent dilemma is crucial to efficient firm operation. Although both public and private firms face this problem, their responses and therefore their performance can differ significantly. This section examines the problems of separation of ownership and control and some of the ways to address these problems, and then considers the different ways that SOEs and private firms respond to these problems and solutions.

Separation of Ownership and Control

Most large, modern firms separate the functions of ownership and control, granting the rights to the firm's profits to the owners, who hire managers. This arrangement has the desirable property of allowing specialization in management and ownership (Fama and Jensen 1983; Dyck 1999). Managers can be selected for their comparative advantage in firm operation, and are subjected to a market for their services. However, the separation of ownership and control also has the undesirable property that

decision-makers bear few of the consequences of their decisions. Since managers' personal objectives are different from those of owners, a conflict emerges between the two groups. Managers have every incentive to use their control to serve their own purposes at the expense of profitability and owner welfare, or even to expropriate investments funds altogether (Berle and Means, 1932; Jensen and Meckling 1976; Fama and Jensen 1983; VY; Stiglitz 1993; Shleifer and Vishny 1995; Lin, Cai, and Li 1998; Kane 1999; Dyck 1999; Shleifer, Vishny, La Porta, and Lopez-de-Silanes 1999a). Despite these agency problems, there is evidence that separation of ownership and control yields net benefits. Jensen and Meckling (1976) conclude that the benefits of specialization outweigh agency costs (monitoring and contracting). Fama and Jensen (1983) identify the circumstances in which varying degrees of separation are appropriate. The extent to which this principal-agent problem is resolved has a major impact on the development of capital markets, dividend practices, and availability of external finance (Shleifer, Vishny, La Porta, and Lopez-de-Silanes 1999a) as well as on firm valuation (Shleifer, Vishny, La Porta, and Lopez-de-Silanes 1999b).

Problems of separation of ownership and control arise in both private firms and SOEs. Some argue that this fact alone eliminates the differences between public and private ownership. For example, Chang and Singh (1997) maintain that SOEs and large private firms must both contend with unwieldy bureaucracies, and that both of the respective disciplinary mechanisms – political and economic markets – are imperfect. They conclude that private firms therefore have no inherent advantage in corporate governance. Vernon-Wortzel and Wortzel (1989) make a similar argument, maintaining that the performance of any organization, public or private, depends on management culture and the clarity of goals and objectives. When the objectives are vague and contradictory, and the management culture does not value efficiency, then performance will decay. They claim this explains the patchwork of success and failure among both private and public firms. However, these analyses entirely ignore the mainstream theoretical framework of corporate governance that is detailed below. Moreover, they present no theoretical model or empirical evidence to show that public and private management problems are the same. In particular, Vernon-

Wortzel and Wortzel fail to identify why sub-optimal “cultures” develop and persist in some settings but are replaced by optimal cultures in others -- essentially, they neglect the corporate governance implications of public ownership.

A more widely accepted view is that there are important differences between public and private governance, and that these differences impact performance. Differences between public and private corporate governance can be examined in the context of the four major methods of governance: monitoring by owners, formal legal restraints, takeovers, and bankruptcy.

Monitoring

Monitoring by owners represents the first solution to the separation of ownership and control, and may lead owners to write a contract with managers that makes income or continued employment dependent upon firm performance. Such ex-ante systems are in fact widely used, although their efficacy has been debated in both empirical and theoretical studies (see Shleifer and Vishny 1995 for an excellent overview of this literature). One problem with monitoring by owners is that information asymmetries may allow managers significant leeway in negotiating contracts (Stiglitz 1975; Hart 1983; Willig 1985; Yarrow 1986; VY; Stiglitz 1993; Kane 1999). Indeed, the fact that managers have more information about running the firm may be the reason they were hired by the non-expert owners. As a result, even if contracts are carefully monitored by owners, managers may still be able to deviate significantly from profit maximization by negotiating so-called “soft targets” (Hart 1983). A more serious monitoring problem is introduced if ownership is widely dispersed. In such a situation, each individual owner will have an incentive to free-ride off the costly monitoring efforts of other owners, and a sub-optimal level of monitoring will result. This problem is reviewed in Furubotn and Pejovich (1972); Yarrow (1986); VY; Vickers and Yarrow (1991); Shleifer and Vishny (1995); Dyck (1999); and Kane (1999).

A possible solution to this collective-action problem is to concentrate ownership among a few large shareholders, who are likely to have more incentive and ability to monitor managers (Shleifer and Vishny 1986, 1995; Dyck 1999; Stiglitz 1999). Shleifer and Vishny (1995) review both the benefits and drawbacks of this approach. They present empirical evidence showing that large shareholding is associated with more active corporate governance (Shivdasani 1993; Kaplan and Minton 1994; Franks and Mayer 1994; Kang and Shivdasani 1995). However, Shleifer and Vishny also note studies showing that ownership concentration results in above-optimal risk concentration (Demsetz and Lehn 1985); harms efficiency if owners with larger shareholdings pursue their own interests at the expense of smaller shareholders (Stulz 1988; Morck, Shleifer and Vishny 1988; Dyck 1999); and produces suboptimal monitoring when owners are themselves agents, as in the case of banks (Morck, Shleifer, and Vishny 1990). Shleifer and Vishny (1995) conclude that concentrated ownership does not guarantee shareholder monitoring of management contracts.

Since monitoring depends largely on the characteristics of the owners, it is not surprising that public and private owners monitor in different ways. Alchain's (1965) seminal work on SOE governance argues that since all citizens can be considered SOE owners, an SOE's ownership is more widely distributed than a private firm's ever could be. Moreover, since there is no way for any single owner to sell (alienate) his or her share of an SOE, public owners stand to gain or lose less from firm performance than do private owners, who can sell their shares. Alchain argues that these two factors combine to produce sub-optimal levels of monitoring in the public sector. A related problem is that without a market for ownership, information on firm performance is scarce and non-comparable. This junction of information and monitoring failures is noted by Vickers and Yarrow (1991) and Lin, Cai and Li (1998), who argue that while both public and private systems of ownership suffer from collective-action problems in monitoring, the ability of markets to generate information gives private ownership a crucial advantage in the monitoring process. Kane (1999) makes a similar argument, noting that monitoring is particularly weak when ownership is diffuse and information is poor, and that both situations arise in public ownership.

This suggests that problems of monitoring in the public sector will be serious relative to admittedly imperfect private monitoring, and result in higher management discretion and worse public performance.

An alternative approach is to consider government to be the owner of public firms, rather than all voters (Yarrow 1986). Instead of being dispersed, ownership is highly concentrated, eliminating the collective action problem and leading to more effective monitoring. However, if government is a concentrated owner it faces the costs as well as the benefits of concentration: i.e., the government will bear more risk than is optimal, and is free to pursue inefficient goals without the checking influence of smaller owners (non-profit goals, in the case of SOEs). These difficulties, combined with the problems of opportunistic behavior discussed earlier, suggest that monitoring of SOEs is no more effective than in the private sector, and can in fact be worse (Vickers and Yarrow 1991, Boardman and Vining 1992).

Contracts

The literature suggests formal legal protection of owners as a second method of controlling managers. While this approach tries to solve agency problems through a contract, the contract in this case broadly describes the exchange of financing from the owner/investors for profit-maximizing services from the manager, rather than narrowly specifying management punishments and rewards. Armed with such a contract, owners can turn to the court system if they believe that managers have violated the contract by failing to maximize owner welfare. As Dyck (1999) notes, this contract-enforcement process requires that high-quality information be available to owners, as it both serves to alert them to managerial slack and provide them with evidence in court. However, we have seen that information asymmetries between owners and managers are significant, and in fact are part of the motivation for separating these functions. This suggests that ex-post legal protections may be imperfect methods of controlling managers. Shleifer and Vishny (1995) present empirical studies on the enforcement of such contracts in a variety of nations, arguing that the differences in legal systems between nations account for much of the variation in corporate governance strategies.

The characteristics of public ownership does not preclude the possibility of such a contract between the SOE manager and government that can be enforced by the court system. Several nations have attempted to reform their SOEs with such performance contracts. However, empirical studies indicate that performance contracts are likely to fail. Looking at performance contracts in both industrialized and developing nations, Nellis (1989) finds that the effectiveness of such agreements is low, and is often reduced by unforeseen events, political pressures, and failure of governments to fulfil their obligations. There is some evidence from China, however, that tying managerial rewards to firm performance improves productivity, even under continued state ownership (Groves, Hong, McMillan, and Naughton 1994; Li 1997). Groves et al (1995) also provide evidence that SOE managers can be subjected to a sort of labor market where performance is rewarded and failure punished.

Takeover

If neither direct monitoring nor legal regulation of the owner-manager relationship bring about efficient manager behavior, takeovers present a third possible tool of corporate governance. By buying most or all of a firm's shares, an investor can temporarily produce a very high concentration of ownership, thus bypassing the collective-action problem discussed above (Yarrow 1986; VY; Shleifer and Vishny 1995; Dyck 1999). Jensen and Ruback (1983) provide an important early analysis of the impact of takeovers, finding that shareholders of the acquiring firm as well as shareholders of the target-firm benefit, and that these gains are driven by efficiency rather than market power. Studies by Coffee (1986), Jensen (1988), and Easterbrook and Fischel (1991) further support the view that takeovers address the ownership/control problem, and VY present a model showing that managers respond to threats of takeover with relatively higher effort.

However, doubts remain about the efficacy of takeovers. First, the purported benefit of takeovers is to concentrate ownership, which facilitates management change. As we have seen, ownership concentration

suffers from problems of its own. Indeed, Shleifer and Vishny (1988) address the possibility that, if managers in the bidding firms are the ones making decisions about acquisitions, takeovers may introduce *more* opportunities for management discretion. A second objection claims that either the bidder will have to buy shares at prices that reflect higher future profits (making the takeover almost prohibitively expensive), or all current shareholders will choose to hold on to their shares, in the anticipation that they will appreciate if the takeover is successful (Grossman and Hart 1980). Shleifer and Vishny (1988) and VY counter that this effect is exaggerated, pointing to the fact that takeovers do in fact occur, although they acknowledge that the expense of a takeover implies that only grossly inefficient firms will be targeted.

Because shares in public firms cannot be sold, there is no threat of takeovers short of full-scale privatization (Yarrow 1986, VY). Public managers can rest assured that inefficiency and mounting debts are not likely to result in a drastic ownership change that would cost them their job. To the extent that takeovers pose effective threats to management in the private sector, this deficiency puts public firms at a disadvantage. It could be argued that full privatization is a public-sector analogue to takeovers (Wintrobe 1987, Caves 1990). However, there are several problems with this argument. First, while poor performance in the private sector makes takeovers highly likely, poor performance in the public sector by no means guarantees privatization. Second, while a *credible* threat to privatize may induce higher managerial effort, sooner or later, the privatization must go forward, or credibility will be lost and shirking will resume. Thus the performance effects of privatization threats do not support ongoing public ownership.

Bankruptcy

Even if these three avenues of corporate control fail to promote efficient management, a firm in a competitive market cannot continue making losses forever. At some point it must enter bankruptcy – indeed, the very existence of bankruptcy implies the imperfections in the previously mentioned systems

(Stiglitz 1999a). Although the details of the bankruptcy process vary by country, the essential elements are change in management, liquidation of assets, and restructuring of debt. Because of the difficulty of collecting debts in bankruptcy (Baird and Jackson 1985; Weiss 1990; Gertner and Scharfstein 1991; White 1993; all cited in Shleifer and Vishny 1995), both equity and credit owners prefer that bankruptcy function as an ex-ante threat to management, rather than an ex-post remediation. Defining bankruptcy as an excess of liabilities over assets, VY find that in an uncertain environment, the ex-ante threat of bankruptcy is effective in boosting managers' performance and thus owner value. There are cases, however, when bankruptcy's usefulness as a tool of corporate governance is limited. Shleifer and Vishny (1995) warn that bankruptcy, with its reliance on efficient court systems and well-designed laws, is only effective in developed nations. Taking the transition in Eastern Europe as an example, Stiglitz (1999a) goes on to warn that the expected results of bankruptcy – change of management, repayment of creditors and equity holders – do not always obtain, especially when institutions protecting property rights are weak.

If SOEs face a credible threat of bankruptcy, this might constitute a final check on managerial discretion, but VY and Vickers and Yarrow (1991) suggest that there is no public-sector equivalent of bankruptcy. They acknowledge (like Laffont and Tirole, 1991a and 1993; and Stiglitz 1993) that hard budget constraints are not inherently impossible to implement for SOEs, and that budget constraints can sometimes be softened for private firms. These arguments suggest that the role of bankruptcy in the control of public firms depends on specific policy choices by governments. There is evidence that these policy choices often reflect political, rather than economic priorities. Looking primarily at socialist economies, Kornai (1980) and Kornai and Weibull (1983) find that, because loss-making SOEs will be subsidized (by the government or government-directed banks), the SOE managers have little incentive to improve efficiency or avoid unprofitable investments. Stiglitz (1993) also argues that politicians fail to credibly commit to ending subsidies to SOEs, given their incentives to use SOEs to pursue political goals.

Sheshinski and Lopez-Calva (1999) present a simple model showing that whenever the political cost of bankrupting an SOE exceeds the political cost of subsidizing it, politicians will extend subsidies. Because this reduces the downside risk of investments, they argue that in such an environment SOE managers will engage in inefficient investments. Dewatripont and Maskin (1995) and Berglof and Roland (1998) develop more rigorous models of this process, highlighting the role of sunk costs in motivating continued subsidies. Schmidt (1996) argues that even under a welfare-maximizing government, subsidies intended to address externalities will actually reduce the cost-cutting incentives of SOE managers, thus requiring yet larger subsidies. Schmidt presents privatization as a way for governments to credibly commit to reduced subsidies. Empirical evidence suggests that soft budget constraints are indeed associated with poor SOE performance (Shirley and Nellis 1991, World Bank 1995). Claessens and Peters (1997) document this problem in detail by looking at Bulgaria, where bank financing of large loss-making SOEs hindered the restructuring of those enterprises. They argue that the continued support for these inefficient SOEs de-capitalized the banking system and upset the fiscal balance (through unpaid taxes). Djankov (1999) describes a similar process in Romania, where a reform regimen for failing SOEs did not harden budget constraints and therefore did not promote restructuring.

* * * *

The literature just reviewed suggests that competition cannot substitute for private ownership; that politicians in inefficient political markets may distort SOE operations for their own interests; and that even if they don't, the task of motivating managers is even more daunting in the public sector than in the private sector. Based on these analyses, the case for public ownership is limited to a small set of cases (see Hart, Shleifer, and Vishny 1997 for a discussion of where to draw the line between public and private provision of public goods). These insights are useful for policymakers currently faced with the choice between public and private ownership. However, what advice can be given when SOEs already exist? In the next section, we examine the case of reform through privatization, and identify the cases in which privatized firms may not act like private firms.

5. State Ownership and Privatization

The literature surveyed above suggests that in most cases private ownership is more effective than public ownership. It is a further question whether a *privatized* firm, a firm which has been moved from public to private ownership, will perform in the same way as firms that have always been private. If there are significant differences between private and privatized firms, then *privatized* ownership may not produce better performance than public ownership. Most opponents of privatization base their arguments on this problem. The private/privatized distinction is seen as particularly relevant in developing nations and in situations where governments are self-interested. In this section we examine the situations when privatized firms fail to behave like private firms. We also consider whether privatized firms should be *expected* to behave like private firms, or whether the goal of privatization should be to simply improve performance relative to state ownership. Finally, we examine the argument that changes in government objectives, signaled by a willingness to privatize, may complicate the analysis of government ownership.

The factors that prevent privatized firms from behaving like private firms can be separated into two general categories. First, the state of a country's markets and institutions can play a major role in privatization outcomes. Second, the political motivations of policymakers can cause them to design sub-optimal privatization plans. The affect of both factors on post-privatization performance is examined in the following sections.

Institutional and Market Factors

The effect of a country's institutions and market structures on privatization has inspired a large literature (see Havrylyshyn and McGettigan 1999 for a review focusing on transition economies; Shirley, Kikeri,

and Nellis 1992 for a discussion of developing nations). A major focus of this literature has been the impact of market structure on privatization outcomes. In industrialized nations, the most common market-structure concern is that privatization of natural monopolies will produce inefficient results (VY). Options for handling natural monopolies in developed nations were reviewed in section 2. Recall that these options included privatization and regulation through auctioned contracts, parallel geographic monopolies, and regulatory plans that reward relative performance among contractors. In general, it has been found that privatization and regulation of natural monopolies presents a viable alternative to state ownership. In developing nations and transition economies, there is concern that monopolies are likely to exist because of pervasive market failure, lack of information, and high entry costs. Cook and Kirkpatrick (1988) maintain that developing nations are marked by pervasive natural monopoly conditions. Thus, they argue that privatization is likely to simply replace a public monopoly with a private one. Adam, Cavendish, and Mistry (1992), surveying privatizations in seven developing countries, characterize the industries into which the SOEs were privatized as highly concentrated. Commander and Killick (1988) and Jackson and Palmer (1988) make similar arguments, claiming that increasing returns and therefore natural monopolies are common in developing nations.

It is true that if a privatized SOE is able to establish or maintain a monopoly, allocative and productive efficiency will suffer relative to the competitive-market outcome. Nevertheless, recalling that competition effects fail to dominate ownership (see section 2), it is entirely possible that a private firm in an imperfect market may perform better than a SOE. The record of privatizations in the developing world supports this possibility, and weakens the arguments of this group of authors. Several major empirical studies have found marked improvements in post-privatization performance in developing nations (Megginson, Nash, Randenborgh 1994; Galal, Jones, Tandon, Vogelsang 1994; Ramamurti 1997; La Porta and Lopez-de-Silanes 1997). Frydman et al (1997) and (1998), Claessens, Djankov, Pohl (1997), and Pohl et al (1997) find similar results in transition economies. In the sample of the empirical literature reviewed in this paper, out of 10 studies that look at post-privatization performance in developing nations,

eight report performance gains while two find no change. If natural monopoly were truly pervasive in developing and transition economies, the empirical results would show weaker post-privatization performance.

Underdevelopment of capital markets, bankruptcy procedures, and court systems are also cited as institutional obstacles to effective privatization. Specifically, the weakness of these institutions, particularly in transition or developing nations, is seen as reducing the effectiveness of private corporate governance. Cook and Kirkpatrick (1988) and (1997) argue that weak capital markets and costly information in developing nations preclude takeovers. Additionally, they maintain that underdeveloped capital markets also soften budget constraints in developing nations. Looking at transition economies, Stiglitz (1999a) identifies corrupt and underdeveloped court systems as a major impediment to efficient bankruptcy institutions. Also looking at transition economies, Nellis (1999) notes that banks, often still run by the state, failed to adequately harden the budget constraints faced by privatized firms. When combined with cumbersome and uncertain bankruptcy procedures, he concludes that bankruptcy did not provide an adequate check on management. Brada (1996) is skeptical of the view that banks in transition economies, as the primary conduits of credit, can serve as de-facto owners. This study also blames ineffective bankruptcy institutions for this failure. Stiglitz (1999a) also finds that state-run or recently privatized banks in transition economies failed to harden budget constraints. Taken together, these studies suggest that in developing and transition economies, institutional problems can weaken corporate governance by preventing takeovers and softening budget constraints. If these problems are serious, a case can be made (and Cook and Kirkpatrick 1988 and 1997 do) that privatization will result in sub-optimal performance.

The critical question is not whether corporate governance is weak compared to standards in developed countries, but whether state ownership produces better results. The empirical literature cited above suggests that these institutional weaknesses do not prevent privatized firms from boosting their

performance relative to SOEs. Performance gains in privately operated water systems in Argentina (Alcazar, Abdala, Shirley 2000), Cote d'Ivoire (Menard and Clarke 2000), and even Guinea (Clarke, Menard, Zuluaga 2000), for example, suggest that underdeveloped markets, poor information, and weak and poorly enforced bankruptcy and takeover laws do not necessarily mean that a privatized monopoly will under-perform SOEs. Further evidence indicates that bankruptcy is not universally hopeless in transition. Schmidt and Schnitzer (1993) provide theoretical evidence that the threat of bankruptcy has an impact on the managers of newly privatized firms. Dittus (1994) offers evidence that banks have, on the whole, allocated credit efficiently in transition economies, and Capek (1995) finds that newly-formed banks are more able to break free of old lending institutions and achieve more efficient allocations of credit. Commander, Dutz, and Stern (1999) report that with the admittedly large exception of the former Soviet Union, Romania, and Bulgaria, most transition economies have introduced hard budget constraints.

Political Goals and Privatization

The motivations for government policy are of utmost importance in shaping the performance of a privatized firm. Most governments cite enterprise efficiency, private sector development, and budgetary relief as the official objectives of privatization. Other objectives can, however, creep into a privatization program and distort the operations of the privatized firms. These additional objectives are no surprise in the framework of a rational, self-interested government, but they are also possible in models where governments are assumed to maximize social welfare.

As noted by VY and Caves (1990), governments often seek to maximize the revenues from a SOE sale. One way to achieve this is to limit ex-post competition, thus raising the value of the firm's future income stream. Another distortion noted by these authors arises when governments distribute ownership shares as widely as possible for reasons of equity, diluting ownership among many small owners, with

detrimental effects on monitoring. Revenue maximization and an “equitable” distribution of shares can be consistent with maximizing social welfare. However, the effect of these goals is to undermine the overall efficiency of the economy. If the newly privatized firm is protected from competition, then the gains in allocative and productive efficiency will be lower than privatization into a competitive market.

Britain’s privatization experience in the 1980’s produced this combination of privatization with curbs on competition. VY find that in the telecommunications, natural gas, and electricity industries, government policy deliberately limited the degree of entry and competition, to the benefit of incumbents and the detriment of consumers and overall efficiency. Foreman-Peck and Manning (1988) examine accusations of poor quality and low productivity at British Telecom, and find that the ideal strategy would have been to split up the incumbent in a manner similar to AT&T’s breakup. Based on the outcome of privatization in Britain, Caves (1990) is particularly critical of privatization plans that neglect competition-enhancing measures. He argues that while state ownership is inefficient, private ownership is also inefficient unless there is vigorous competition. Caves sees monopoly, natural and otherwise, as widespread and is therefore skeptical of privatization in general. Kay and Thompson (1986), and Yarrow (1986) also examine the British privatization experience, and reach similar conclusions. These authors are highly critical of privatization without competition, arguing that the gains from privatization are lost if a public monopoly is simply replaced with a private monopoly.

While the neglect of competition opportunities is important from a policy perspective, the critical question is not whether the performance of privatized firms is optimal, but whether it is better than under state ownership. Large-sample empirical studies suggest that even in imperfect markets and even in LDCs, privatized firms can exhibit performance gains (Megginson, Nash, Randenborgh 1994; Dewenter and Malatesta 1999; Frydman et al 1998; D’Souza and Megginson 1999a and 1999b). Out of the post-privatization studies articles surveyed in section 6, 12 examined firms in industries with limited or varying levels of competition. Seven of these studies showed improved performance, while five showed

little change. Two of these five had sample sizes of only one, however, and should be treated with caution.

If governments are seen as self-interested, the scope for distortionary privatization policies is wider. First, bowing to pressure from interest groups, governments may choose non-optimal methods of privatization that include selling a SOE to the incumbent managers or employees. Ownership by these groups presents a number of difficulties. Although manager ownership completely eliminates the ownership-control gap, the possibilities for capital infusion are limited (Estrin et. al. 1995) and the impact on performance is theoretically ambiguous (Frydman et. al. 1997). The empirical literature, focusing mainly on voucher privatizations in Russia and the Czech Republic, is critical of worker ownership. Most studies maintain that firms owned by workers are unlikely to engage in necessary restructuring; worker-owners will maximize non-profit objectives such as wages, job security, and reduced hours. These difficulties are discussed by Earle et. al. (1995); Frydman, Gray et. al. (1998); Barberis et al (1996) Havarylyshyn and McGettigan (1999); Kane (1999); Dyck (1999); Claessens and Djankov (1999); and Nellis (1999).

While such insider privatization does complicate the problem of governance, most transition governments (notably Hungary, Poland, and Estonia) have successfully avoided this form of privatization -- in fact, the countries of the former Soviet Union and the Czech Republic are the only examples of major insider privatization. In their extensive review of the literature on transition economies, Djankov and Murrell (2000) find that privatization is strongly associated with enterprise restructuring, except in the former Soviet Union. It would be wrong to conclude, therefore, that political pressures make this form of privatization impossible to avoid.

A second avenue through which government objectives can distort privatization is suggested by Boycko, Shleifer and Vishny (1996b). They reject the usual model of government as a homogenous actor and argue that governments, particularly in transition economies, are often uneasy coalitions of reformers and

traditionalists. In such divided governments, ministers are likely to pursue their own agendas, which can include blocking reforms if the constituencies of those ministers benefit from the status quo. While the reformers in a government may be able to push through a general privatization program, the anti-reform ministers successfully prevent pre-privatization restructuring (such as layoffs, investment, or breakup of monopolies). These authors maintain that the lack of restructuring before Russia's privatization can largely be traced to that country's badly divided government.

An additional way for self-interested governments to take advantage of privatization is selling the enterprise at a heavy discount to a favored supporter in exchange for a bribe or political favors. Owners chosen for their political clout may have incentives to distort SOE operations in ways that benefit their political patrons, for example, by employing redundant workers or distorting prices. The government may be more susceptible to demands for subsidies and protection from those favored owners than from private owners in general. In such an environment, marked by soft budget constraints, limited competition, weak corporate governance, and continued emphasis on non-profit objectives, it is likely that the performance of privatized firms will be sub-optimal. More importantly, it is possible that in such circumstances their performance will not exceed that of SOEs. From a theoretical standpoint, however, it is not clear that these abuses would be significantly *worse* than those that can occur under state ownership. Refer to section 3 of this paper, and Jones (1985), Shleifer and Vishny (1994), Shirley, Kikeri, and Nellis (1992), and Boycko, Shleifer, and Vishny (1996a) for a review of politically-motivated abuse of SOEs.

Hart, Shleifer, and Vishny (1997) make a distinction between corrupt politicians who seek bribes and corrupt politicians who use patronage to reward political supporters. If patronage is more of a problem than bribe-taking, they argue that privatization is desirable because it reduces opportunities for patronage, while for this same reason politicians will privatize less than is optimal. On the other hand, if bribe-taking is more likely than patronage, they argue that privatization may be risky because the process itself

may be corrupted, while for this reason politicians will privatize more than is optimal. Shleifer (1998) extends this analysis by noting that if the costs of ongoing corruption in SOEs outweigh the potential costs from a corrupt privatization, then privatization is still the best policy. This paper also claims that it may be easier to rid a privatization process of corruption than to reform endemic corruption throughout government. Frydman, Gray et al (1998) provide empirical evidence that political interference hinders enterprise restructuring, although not necessarily in a corruption-driven framework.

The balance of the empirical evidence, however, indicates that despite the hazards of such corrupt privatizations, the performance of privatized firms is superior to that of SOEs. Studies including data from developing and transition nations (Megginson, Nash, Randenborgh 1994; La Porta, Lopez-de-Silanes 1997; D'Souza, Megginson 1999a; Frydman et al 1997 and 1998; Pohl et al 1997) show that firms improve their performance when privatized. Moreover, in the sample of studies reviewed in section 6, the studies finding equal performance between SOEs and privatized firms tended to focus on developed nations, where corruption has less explanatory value than elsewhere.

Altered Government Objectives?

Much of the rationale for privatization is based on the observation that governments distort SOE operations to meet political goals. Furthermore, the literature examining the interactions of political goals and privatization assumes that governments that operate SOEs inefficiently also run the risk of privatizing inefficiently. Both of these positions, however, ignore the argument that the mere existence of a privatization agenda implies that the government's goals have changed fundamentally. The objectives of a government can change for a number of reasons: an exogenous economic shock that raises the opportunity cost of inefficiency, or a change in the makeup of the government, through democratic or non-democratic transition (World Bank 1995). Instead of maximizing its own rents and power, the government places a priority on efficiency. It can be argued that governments that engage in privatization are not the ones that only seek rents and power, and vice versa. Such a position has two implications:

governments that privatize, by their very nature, may be less tempted to distort the process for their own interests; and governments that privatize may be better suited to efficiently managing SOEs. If these arguments are true, then an obstacle to privatization (political interference in the process) is weakened while a rationale for privatization (political interference in SOEs) is also undermined. No study known to the authors has examined this issue directly, although Hart, Shleifer, and Vishny (1997), Shleifer (1998), and Keefer (1998) explore the implications of corruption and institutions for contracting out.

Despite the generally positive results of privatization, there are enough examples of privatization gone wrong to undermine the argument that privatizing governments are less likely to pursue political goals in the process. The privatization experience in Russia, in particular, suggests that governments that are willing to privatize are still capable of engaging in self-interested behavior (Stiglitz 1999a and 1999b; Shleifer 1997).

Alternatives to Privatization?

Up to this point, we have argued that privatization is generally the best way to reform SOEs and reduce the distortions they create. However, the literature has come to focus on privatization as the primary method of reform only in the last decade (World Bank 1995; Shleifer and Vishny 1997; Shleifer 1998; Nellis 1999). Before this shift in emphasis, alternative reform methods were given equal or greater weight (Shirley 1983; Bishop, Kay 1986; Galal 1991; Shirley, Nellis 1991). While the argument for privatization has some theoretical basis and is strongly supported by the empirical evidence, many continue to support alternatives to privatization. The failed privatizations in some transition countries (the former Soviet Union and the Czech Republic), coupled with the apparent success of gradual SOE reform in China, has added strength to the case for privatization alternatives.

McMillan and Naughton (1992) review the progress made by SOEs in China, making two important observations. First, they argue that entry of new private firms is crucial to the overall transformation of

the economy. These new firms both reduce the scope of SOEs relative to the whole economy, and provide competition for the SOEs. This competition, the authors argue, has more of an impact on SOE efficiency than ownership. Second, they argue that non-privatization reforms can boost SOE performance. Liberalization provides SOEs with market signals, enhanced autonomy gives managers the ability to improve efficiency, and the retention of profits gives them the incentive to do so. This argument is backed by Groves et al (1994), who find that creating performance incentives for managers leads to increased worker productivity. McMillan and Naughton (1992) conclude that China's strategy of gradual reform, which liberalizes markets, encourages new entry, and reforms SOEs with new autonomy and incentive structures, provides better results than the privatization-centered reforms in Eastern Europe and the former Soviet Union. Stiglitz (1999a and 1999b) draws attention to the relative growth performance of China and the former Soviet Union, and draws similar conclusions.

McMillan and Naughton (1992) make a valuable point about the importance of new entry in transition economies. The conditions that promote entry, and the effects of entry on allocative and productive efficiency, have been largely overlooked by the transition literature. However, the McMillan/Naughton/Stiglitz conclusion on the superiority of gradual, non privatization reforms has been challenged at several levels. Sachs and Woo (1994) argue that the economies of China and Eastern Europe/former Soviet Union present fundamentally different challenges, negating any comparison. They maintain that, with such a large agricultural sector, China's problem was mainly one of development. The primary task, after liberalization, was to promote entry and shift labor from agriculture to industry. In Eastern Europe/former Soviet Union, on the other hand, the problem was one of structural adjustment in an urban and "over-industrialized" economy. Privatization was necessary to re-structure industry. The initial conditions of the two cases dictated the results: while development in China enhanced the welfare of virtually all groups, re-structuring in Eastern Europe/former Soviet Union produced both winners and losers. Dabrowski, Gomulka, and Rostowski (2000) find similar flaws in the McMillan/Naughton/Stiglitz argument. They also argue that a simple comparison of growth rates in China and the former Soviet

Union is misleading. China is an underdeveloped, industrializing nation with significant growth potential, while the FSU mainly faces problems of reorganizing an existing industrial base. Furthermore, these authors claim that Chinese SOEs face much less effective – in fact, almost non-existent -- corporate governance than that suggested by McMillan and Naughton. Finally, they note that the Stiglitz/McMillan/Naughton argument ignores the successful “speedy” transitions of Hungary, Poland, Slovenia, and (to a lesser extent) the Baltics. Citing EBRD data, the authors argue that in general, “early” reformers and privatizers experience less income inequality and higher standards of living than do “late” reformers and privatizers.

Moreover, McMillan and Naughton’s argument that SOEs can be reformed from within fails to test the appropriate counter-factual. Even if gradual reforms improved SOE performance relative to the status quo, could privatization would have yielded still greater improvements? These authors implicitly discount this possibility by pointing to the failed privatizations in the former Soviet Union, but they ignore successful privatizations in other developing and transition nations.

* * * *

Extraneous objectives and underdeveloped markets and institutions can introduce distortions in the privatization process that cause privatized firms to perform less well than a purely private firm. However, this does not necessarily mean that a privatized firm will under-perform a publicly owned firm. Criticism of privatization on the grounds that privatized firms do not perfectly mimic private firms (Stiglitz 1999a and 1999b; Cook, Kirkpatrick 1997; Caves 1990; Kay, Thompson 1986) is misguided if privatized firms still outperform SOEs. The empirical evidence suggests that this is the case -- while privatized firms may not be identical to private firms, they are usually superior to state-owned enterprises.

In categorizing the success or failure of privatizations, it is useful to make distinctions between privatization in developing, industrialized, and transition economies; and also between the transition experiences of Eastern Europe and the former Soviet Union. Nellis (1999) provides a good overview of

such categorizations, and the conclusions that may be drawn from them. As noted before, privatization in developing nations has generally been seen as a success (Megginson, Nash, Randenborgh 1994; Galal, Jones, Tandon, Vogelsang 1994; Ramamurti 1997; Boubakri, Cosset 1998; La Porta and Lopez-de-Silanes 1997). Privatizations in Eastern Europe have also generally met with success (Frydman et al 1997 and 1998; Pohl et al 1997; Claessens, Djankov, Pohl 1997). However, privatizations in Russia and the other nations of the former Soviet Union have been marked by failures to restructure and poor firm performance (Djankov 1999; Frydman, Gray et al 1998; Djankov and Murrell 2000; EBRD 1999). Nellis (1999), synthesizing the lessons from the Russian experience, concludes that too much emphasis was placed on speedy privatization, and not enough emphasis was placed on fostering competition, creating property rights and court systems to enforce them, avoiding insider privatization, and the other institutions necessary for well-functioning markets and corporate governance. These findings are echoed in Stiglitz (1999a) and (1999b), and Shleifer (1997). Nevertheless, Nellis points to the record of successful privatizations in Eastern Europe and maintains that privatization is a key part of transition.

6. Empirical Work

A review of the evidence from empirical studies sheds additional light on the relative performance of public and private enterprises. Empirical study of SOE efficiency began in earnest after Alchain (1965) predicted that publicly-owned firms would be inherently less efficient than private firms. Early work compared public and private firms in the same industry, and focused on utilities and infrastructure in industrialized nations. Subsequent research branched into more competitive industries and developing nations. Some scholars criticized these cross-sectional comparisons, arguing that the differences due to ownership could never be isolated from other spurious differences (Millward, 1982, 1983). However, the wave of privatizations in developed nations during the 1980's, particularly in Britain, opened a new avenue of empirical investigation: same-firm performance before and after privatization could be

compared. Privatizations in developing nations and transition economies brought more opportunities for such comparisons.

Table 1 shows a summary of this empirical literature. The main criteria for inclusion in this table were frequency of citation, and inclusion in highly-cited review articles (Millward 1982; Millward and Parker 1983; Borcharding et. al. 1982; Boardman and Vining 1989; D'Souza and Megginson 1999a; and Megginson and Netter 2000). The sets of articles cited by these reviews (particularly the last three) have considerable overlap. It was essentially this common set of articles, with some additions from the earlier literature on utilities, that was used to form Table 1. Secondary criteria for inclusion in this table were the use of statistical tests and sample size. Studies with extremely small sample sizes were dropped unless they were highly cited; studies that were based on anecdotal evidence only were always dropped. It is possible that some forthcoming or unpublished articles have been omitted. The articles were categorized into "private superior", "ambiguous", or "public superior" based on the balance of empirical evidence presented in each study. If a study found public superiority in some cases and private superiority in others, it was categorized based on the relative numbers of observations or restrictiveness of conditions of the two findings. If public and private superiority are found in approximately equal numbers of observations and in equally restrictive conditions, then the study is categorized as "ambiguous".

The included articles span the period from 1971 to the present, use a variety of performance measures, and are balanced with respect to developing/industrialized nations. A variety of competitive environments are considered, from statutory monopoly to perfect competition.

Table 1

Study	Industry	Measure of Performance	Methodology	Sample Size	Country	Market Structure	
							0 = LDC
Private Ownership Superior	Hill 1982	Textiles	capital + labor prod	0	81	0	4
	Perkins 1983	Mfg.	capital + labor prod	0	300	0	3
	Kitchen 1976	Garbage collection	cost	0	48	2	1
	Savas 1977*	Garbage collection	cost	0	315	2	Mixed
	Crain, Zardkoohi 1978	Water supply	cost	0	?	2	1
	Edwards, Stevens 1978	Garbage collection	cost	0	77	2	3
	Funkhouser, McAvoy 1979	Mfg.	cost, profits	0	99	0	4
	Pryke 1992	Mixed	cost, profits	0	6	2	3
	Majumdar 1998	Mixed	efficiency	0	industry-wide	0	mixed
	Davies 1971	Airlines	labor prod.	0	2	2	2
	Ros 1999	Telecom	labor prod.	0	17 countries	0, 2	mixed
	Peltzman 1971	Electricity	price	0	128	2	1
	Bennett, Johnson 1979	Garbage collection	price	0	2	2	2
	Dewenter, Malatesta 1999**	Mixed	profits	0	1369	2	mixed
	Boardman, Vining 1989	Mfg.	profits, labor prod	0	499	2	4
	Boardman, Vining 1992	Mixed	profits, labor prod	0	370	2	3, 4
	Ehrlich, Gallis-Hamonno, Liu, and Lutter 1994	Airlines	TFP	0	23	0, 2	mixed
	Gupta 1982	Chemicals	TFP	0	?	0	4
	La Porta, Lopez-de-Silanes 1997	Mixed	cost, profits, labor prod	1	218	0	mixed
	Frydman, Gray, Hessel, Rapaczynski 1997	Mfg.	cost, labor prod.	1	185	1	4
	Ramamurti 1997	Railroad	labor prod.	1	8	0	2
	Megginson, Nash, Randenborgh 1994	Mixed	labor prod., profits	1	61	0, 2	mixed
	Pohl, Anderson, Claessens, Djankov 1997	Mfg.	labor prod., TFP	1	6300	1	4
	Eckel, Eckel, Singal 1996	Airlines	price	1	1	2	4
	Claessens, Djankov, Pohl 1997	Mixed	profits	1	706	1	4
	Boubakri, Cosset 1998	Mixed	profits	1	79	0	mixed
	Dewenter, Malatesta 1999**	Mixed	profits	1	63	0, 2	mixed
	D'Souza, Megginson 1999a**	Mixed	profits	1	85	0, 2	mixed
	D'Souza, Megginson 1999b**	Telecom	profits	1	17	0, 2	mixed
	Frydman, Hessel, Rapaczynski 1998	Mfg.	restructuring	1	130	1	4
	Barberis, Boycko, Shleifer, Tsukanova 1996	Retail	restructuring	1	413	1	4
	Galal, Jones, Tandong, Vogelsang 1994	Mixed	TFP/welfare	1	12	0, 2	mixed

Table 1 (cont'd)

	Study	Industry	Measure of Performance	Methodology	Sample Size	Country 0 = LDC 1 = transition 2 = industrialized	Market Structure 1 = no competition 2-3 = intermediate 4 = full competition
Ambiguous Or No	Yunker 1975	Electricity	Cost	0	73	2	1
	Kemper, Quigley 1976	Garbage collection	Cost	0	90	2	3
Difference	Atkinson, Halvorsen 1986	Electricity	Cost	0	153	2	1
	Forsyth, Hocking 1980	Airlines	labor prod.	0	2	2	2
	Yarrow 1986	Mixed	Profits	0	5	2	4
	Kole, Mulherin 1997	Mixed	profits, labor prod	0	17	2	4
	Tyler 1979	Mfg.	TFP	0	38	0	4
	Caves, Christensen 1980	Railroad	TFP	0	2	2	4
	Foreman-Peck, Manning 1988	Telecom	labor prod.	1	1	2	2
	Adam, Cavendish & Mistry 1992	Mixed	labor prod.	1	6	0	mixed
	Frydman, Gray, Hessel, Rapaczynski 1998	Mfg.	labor prod.	1	218	1	4
	Bishop, Kay 1989	Mixed	Profits	1	12	2	mixed
	Martin, Parker 1995	Mixed	profits, labor prod	1	11	2	mixed
	Boubakri, Cosset 1998	Mixed	Profits	1	16	0	?
	Newbery, Pollitt 1997***	Electricity	TFP/welfare	1	1	2	2
Public Ownership	Meyer 1975	Electricity	Cost	0	180	2	1
	Mann, Mikesell 1976	Water supply	Cost	0	214	2	1
Superior	Neuberg 1977	Electricity	Cost	0	?	2	1
	Fare, Grosskopf, Logan 1985	Electricity	allocative + tech efficiency	0	153	2	1
	Pescatrice, Trapani 1980	Electricity	cost	0	56	2	1

* Savas 1977 finds that competing private contractors for garbage collection are superior to public ownership, which in turn is superior to an auctioned monopoly. Some may argue that this demonstrates public superiority. In our judgement, these results support private ownership.

** Dewenter and Malatesta 1999 is a single article. However, the authors conduct two very distinct studies, using different samples and methodology. Thus we count these as two studies. D'Souza and Megginson 1999a and 1999b are two distinct published articles.

*** Newbery and Pollit find an overall increase in welfare due to privatization. However, they find that producers gain while the government and consumers lose. Therefore, we judged their results to be "ambiguous" with regard to public or private superiority.

Of the 52 studies included in Table 1, 32 conclude that the performance of private *and* privatized firms are significantly superior to that of public firms. 15 studies find either that there is no significant relationship between ownership and performance, or that the relationship is ambiguous (different evidence supports both public and private superiority). Five studies conclude that publicly-owned firms perform better than private firms. The dominance of studies finding superior private performance is robust across all sub-categories. Of the 31 studies that compare private and public firms operating in the

same industry, 18 conclude that private firms have higher performance, while 8 report mixed results and five find superior public performance. Among the 21 studies that examine the performance of a firm before and after privatization, 14 find that performance improves, while seven find no significant change.

Private superiority is also evident in both industrialized and developing nations. If we double count the seven studies that examine both developing-country and industrialized-country privatization by including them in both categories, then among industrial countries we have 19 private-superior studies, 11 neutral studies, and 5 public-superior studies among industrial countries. Among developing nations there are 15 private-superior studies and 3 neutral studies, with no studies where public enterprises do better.

Private firms do better in fully competitive markets. In such markets, there are 11 private-superior studies and five neutral studies. This advantage persists but is less pronounced in monopolistic markets, where six studies find private superiority, five find neutral results, and five find public superiority. No studies find that public ownership is superior in potentially competitive industries.

This body of empirical literature indicates that private or privatized ownership is superior to public ownership in a variety of situations. The balance of studies show that firm performance improves after privatization. Private firms perform better in all market structures, although the relative ambiguity of this result in monopolies suggests that private ownership and competition are complements. Private ownership has an advantage in both industrialized and developing nations, and this lead is more pronounced in the latter. This result is especially noteworthy, given the argument by many SOE proponents that market failures in developing nations make SOEs more viable relative to private firms.

7. Conclusion

Our review found greater ambiguity about ownership in theory than in the empirical literature. In the debate over the effects of competition, theory suggests that ownership may matter and if so, that private firms will outperform SOEs. The empirical studies squarely favor private ownership in competitive markets. Theory's ambiguity about ownership in monopoly markets seems better justified, since the empirical literature is also less conclusive about the effects of ownership in such markets. Theories that assume a welfare maximizing government suggest that SOEs can correct market failures. In contrast, public choice theories are skeptical of the benevolent government model. Corporate governance theories suggest that even well intentioned governments may not be able to assure that SOE managers do their bidding. The empirical literature favors those skeptical of SOEs as a tool to address market failures. In studies of industrialized countries, where we might expect more developed political markets to motivate greater government concern with welfare maximization or better information and incentives to overcome corporate governance problems, private firms still have an advantage. The private advantage is more pronounced in developing countries, where market failures are more likely.

Theoretical critiques of privatization suggest that distorted objectives, market failures and poor institutions will lead to costly failures. Some of the theoretical studies voicing concern about inevitable privatization failures suffer from the absence of a realistic SOE counterfactual or are extrapolating from a few, prominent cases, such as Russia. The 21 empirical studies we cite in Table 1 find that most firms do better and all firms at least as well after privatization. None of the studies find that performance would be better had they not been privatized.

The current debate over privatization is partly an understandable reaction to prominent and recent failures. To the extent that it prompts further re-examination of the privatization experience, it will be a welcome development. Additional empirical studies of privatization, especially of regulated monopolies,

is needed and could benefit from the longer experience and larger sample sizes now available. Sorting out the effects of regulation versus ownership will be difficult but well worth the challenge, since many governments are only now considering divestiture of monopolies. The political economy of privatization also merits further examination.

The outcome of the privatization debate will be less healthy, however, to the extent that it feeds any backlash against privatization and private ownership in general. The dialogue between theorists and empiricists on this point is weak. Part of the problem seems to be the choice of counterfactual. Much of the recent theoretical critiques of privatization address deviations from optimal firm behavior. Not surprisingly, since an optimal firm is hard to find, such a framework highlights the flaws and shortcomings of privatized firms. Empirical research has taken state ownership as the counterfactual, and as we have seen, documented gains in most cases. Construction of the state-owned counterfactual is a problem since the privatization decision suggest that the utility function of the government has changed. A government that puts higher value on efficiency or sound fiscal policies would operate its SOEs differently as well. Those theories that do treat state-owned firms as a counterfactual to privatization do not address this issue or consider how likely it is that distorted objectives for privatization signal perverse goals for SOEs. Empirical research consists largely of before-and-after comparisons that do not capture any change in government preferences, nor controls for changes in markets. Galal et al (1994) do try to construct a counterfactual that they adjust for changes in government's objectives and control for other changes, but such adjustments are necessarily arbitrary and the sample is small.

Since the choice confronting governments is between state ownership and privatization, rather than between privatization and optimality, theory had left a gap that empirical work has tried to fill. Further research is needed to model the institutional circumstances under which privatization will dominate state ownership and vice versa.

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