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PRIVATIZING THE PRIVATIZED

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ABSTRACT

In the first part of this paper we argue that three reforms must be implemented if privatization is to increase efficiency. First, establishing unitary control rights within the firm. Second, making privatized firms face hard budget constraints. Third, establishing a non-corruptible judicial system and transparent bankruptcy procedures. The question arises as to what course of action should be undertaken when these reforms have not been undertaken and privatizers have only a small window of opportunity? Either they privatize hastily today, or not at all. Should they go ahead with privatization and hope that the newly privatized firms will create the demand for good laws? In the case of behemoths, the answer is not clear cut. Privatization without prior implementation of the three reforms mentioned above will simply replace government bureaucrats with private mafias (i.e., private groups with the power to extract fiscal transfers). These private mafias might behave more voraciously than the bureaucrats they are replacing, reducing aggregate efficiency and further hindering the growth of the competitive private sector. In the second part we address the more traditional issues of auction design and of restructuring and regulation of monopolies with network externalities.

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I. Introduction

It has become part of accepted wisdom that privatizing state owned enterprises and introducing competition is socially desirable because private owners will maximize profits instead of engaging in political patronage. As a result, productive efficiency and economic growth will increase. Consequently, consumers will enjoy a higher standard of living, better quality goods and lower prices. During the last decade, however, we have learned that simply transferring the ownership of state owned enterprises to private hands, and breaking up state monopolies does not automatically lead to higher efficiency. It is also necessary to privatize the privatized.

Privatizing the privatized entails at least three reforms: First, reestablishing property rights *within* each firm, so that new owners enjoy full residual rights of control in their firm. Second, *outside* the firm, facing new owners with “hard budget constraints,” so that they do not have the power to either extract fiscal transfers, or obtain bailouts. Third, establishing a non-corruptible judicial system, and transparent bankruptcy procedures that are free from political pressures.

Policy makers can be assured that privatization will increase efficiency *only if* these three conditions are satisfied. Unfortunately, not all of these conditions have been satisfied in many of the countries that have implemented privatization programs. The question arises as to what course of action should be undertaken in such cases. Should one wait until the government has the capacity to implement the required reforms? What if privatizers have only a small window of opportunity? Either they privatize hastily today, or not at all. Should they go ahead with privatization and hope that the newly privatized firms will create the demand for good laws?

In order to address these issues it is convenient to classify state owned enterprises into two groups: small shops and large behemoths. In the case of small shops, such as restaurants, the power of the State is not necessary to establish unitary control within the firm. Furthermore, small shops are not big enough to command a soft budget constraint. Accordingly, it is clear that the best strategy is to privatize the small shop sector as quickly as possible. This will promote the growth of the competitive private sector, increase the rate of economic growth and reinforce the demand for laws that protect private property.

In the case of behemoths, unfortunately, the answers to the above questions are not clear cut. In this case privatization without prior implementation of the three reforms mentioned above will simply replace government bureaucrats with private mafias (i.e., private groups with the power to extract fiscal transfers). These private mafias might behave more voraciously than the bureaucrats they are replacing, reducing aggregate efficiency and further hindering the growth of the competitive private sector.

Once a decision has been made on whether to privatize before or after implementing the three reforms mentioned above, the more traditional issues of privatization must be tackled. In this respect, two major issues are of concern to policymakers. First, what criteria should be used to transfer state owned enterprises to the private sector? Should distributive and social justice criteria enter into the objective function of privatizers? Or should the only objective be to transfer a state owned enterprise to those agents who value it most, and ensure that the price received is the highest possible? If so, what type of auction schemes are the most appropriate? The second set of issues of practical concern relates to state monopolies where network

externalities are essential. What principles should guide their restructuring? How should regulation with regard to pricing and access be designed? What is the best entry policy?

In this paper we will discuss in more detail the issues we have raised, we will provide some examples that illustrate some of the trade-offs involved, and we will enumerate some unresolved questions. The objective is limited: we will neither propose definitive answers, nor conduct empirical tests of the various hypothesis that have been proposed. Future empirical and theoretical research on these questions should help policymakers to make decisions that would facilitate the policy reform process.

Needless to say the list of issues we will consider is not exhaustive. In particular, we will consider neither transitional aspects of privatization in Eastern Europe and China, nor aspects of the privatization of particular sectors such as social security and education¹. Nonetheless, we would like to point out that the framework we propose applies to Eastern Europe and China.

The structure of the paper is as follows. In section II we will discuss the reestablishment of property rights within the firm. In section III we will analyze the elimination of soft budget constraints and bankruptcy reform. In sections IV and V we will discuss restructuring and regulation issues as well as auction design. Finally, section VI contains the conclusions and an agenda for future research.

II. Property Rights Within the Firm

In this section we will consider the first necessary condition for privatizing the privatized. Specifically, we will address the need to ensure that the new owners enjoy full

control over their firms. One important case in which this condition might not hold is that of large corporations in which managers do not own a significant share of the firm. The agency problems involved and their potential solutions are well known (see Hart (1995)). In order to concentrate on other mechanisms at work in privatizing countries, we will disregard this case by identifying managers with shareholders.

In many state-owned enterprises control of a firm is divided among several “stakeholders”. The stakeholders of a firm are groups whose payoff depends largely on the activities undertaken by the firm. These groups often have the power to interrupt the functioning of the firm. One such group of stakeholders is labor unions. They not only have the power to control the wage bill, but also have the power to define what tasks must be performed by each worker. Other stakeholders include the networks of suppliers that sell inputs with an excessively high markup. A typical example is the case of transport companies that systematically lose a significant share of the merchandise they transport. When a state owned enterprise is located in a small city where it is the primary employer, there is a third class of stakeholders formed by local and state politicians and their allies in the Central Government. These political rings form patronage networks that help politicians stay in power.

An important implication, in the case of behemoths, is that new private owners typically do not have the ability to eliminate the power of other stakeholders and establish their control rights. Stakeholders have a vested interest in maintaining the patronage networks and the inefficiencies of the firm. Thus, eliminating their power entails a severe political struggle that can only be undertaken by the State. Therefore, in practice, there are

¹ On these issues see Blanchard (1997) and Feldstein (1998).

only two possible outcomes: either stakeholders are weakened and property rights within the firm reestablished prior to privatization, or the newly privatized firm will suffer from divided control. It is very rare to observe behemoths where new owners have weakened other stakeholders.

It follows that if a large state owned enterprise is privatized without reducing the power of major stakeholders, then the new owners will receive cash flow rights and, at most, some control rights. Why should this prevent the new owners from implementing efficient production and investment decisions? In other words, why is it that the Coase Theorem cannot be implemented?

A firm with divided control among several stakeholders, who act non-cooperatively, is equivalent to an economy where all agents have open access to the capital stock of others. In contrast to a private access economy, agents in a common access economy have the ability to appropriate a share from the capital stock of others. This appropriation can be accomplished by outright expropriation, or through the fiscal process. That is, appropriation occurs by extracting fiscal subsidies, which in turn must be financed through higher taxes on the rest of the population or through higher inflation. In the case of a firm, the existence of open access means that each stakeholder has the power to set the quantities and the prices of the inputs it supplies.

Two points are worth noting. First, the existence of open access does not imply that stakeholders will appropriate the entire capital stock at once and drive it to zero. They will do so at inefficiently high rates but aggregate capital may even still grow, though at an inefficiently low rate. That is, there is a “milking effect.” Second, when there is open access, an increase in the physical return to capital does not induce more investment and a

higher growth rate. This is because the equilibrium appropriation rate increases and, thus, the rate of return faced by each agent (after appropriation by others) remains unchanged. This is the “voracity effect” (Tornell and Lane (1999)).

To explain the milking and the voracity effects, consider a firm in which there are only two stakeholders: the union and the owner. The union has the power to set the wage bill, whereas the owner decides what share of profits to reinvest. If the union were to increase wages excessively, the owner would reduce the reinvestment rate. Consequently, future capital and future wages would be smaller than what they would be if the union followed a less aggressive wage policy. This interplay between wage setting and the reinvestment decision determines an equilibrium, which is generally characterized by excessive wages and low investment relative to the unitary control case. Note that in this equilibrium there is a milking effect, but the firm is not destroyed by stakeholders. The reason stakeholders do not dismantle the firm and invest their booty outside the firm at the market rate of return is because the firm has a higher rate of return and there are break-up costs. However, each stakeholder drives down the other stakeholder to its reservation level, resulting in a milking effect. That is, at each point in time the union sets the wage bill at a level that is higher than what labor productivity would indicate. Nonetheless, this wage level is lower than that which would induce the owner to shut down the firm. Why does the union not set the wage at a lower level? Given the appropriation policy of the other stakeholders, such a “sacrifice” would not pay off. Lower wages today will not lead to greater reinvestment; they will simply leave more resources for the other stakeholders to appropriate today. For instance, the owner will simply remove more resources in the form of profits, suppliers will increase their prices, etc.

Suppose the firm enjoys a windfall or its productivity increases exogenously. Will the owner increase the reinvestment rate to take advantage of the new opportunities? Not only is the answer no, but the reinvestment rate will actually fall! The reason for this is straightforward. Suppose the physical rate of return goes up by 10%. This implies that the union can afford to increase its appropriation rate (i.e., the wage bill) by 10% while still leaving the owner indifferent between shutting down and keeping the firm alive. Similarly, the owner will be able to increase his appropriation rate (i.e., reduce the reinvestment rate) by 10%, while still leaving the union indifferent between devouring the firm with excessive wage demands, and keeping it alive. Since the physical rate of return of the firm grows by 10%, while the total appropriation rate goes up by 20%, it follows that the growth rate of the firm will experience a net decrease of 10% as a result of the windfall. This illustrates the voracity effect.

An important implication of the voracity effect is that the owner of the firm has no incentive to adopt new technologies that increase the profitability of the firm. This is because, ex-post, the union would increase the wage bill so as to leave the firm with the same rate of return it receives without the innovation. This implies that the existence of divided control within a firm induces “rational atrophy.” In such a manner, dominant firms in a given industry systematically fail to adopt technological innovations that have proven to reduce costs.

In summary, if a state owned enterprise with control divided among several stakeholders is privatized without prior reestablishment of property rights, the new owner will find it optimal to milk the firm. Furthermore, since other stakeholders will appropriate

any increases in the raw profitability of the firm, the new owners will not make efficiency enhancing investments.

To illustrate that these points are not simply theoretical niceties, we will relate the experience of the integrated steel producers in the US. This is a striking example of milking, voracity and rational atrophy in action. Although the integrated steel producers in the US are not state owned enterprises, analyzing their evolution is relevant for the study of privatization for two reasons. First, as in many state owned enterprises, there is divided control within these firms. Second, US integrated steel firms had sufficient political power to enjoy, at least for a while, soft budget constraints.

During the 1970's and 1980's, the integrated steel industry in the US was successful in obtaining trade protection. Unfortunately, higher revenues were squandered in the form of higher wages and investments outside of the steel industry. The wage premium of steel over manufacturing increased from 24% in 1970 to 57% in 1982, despite the fact that the ratio of labor productivity in steel to that in manufacturing fell from 0.7 to 0.6 during this period. Furthermore, there was a concurrent fall in the share of profits that management of big integrated steel producers, such as US Steel, invested in steel. Profits were increasingly invested in sectors outside of the steel industry (out of unions' reach) or distributed as dividends. As a result, the ratio of steel-related assets to total assets in US Steel fell from 56% in 1976 to 19% in 1990.

The existence of rational atrophy is evidenced by the failure of the integrated steel firms to adopt, on a timely basis, new technologies that were available and had been proven to increase productivity. The most important of those technological innovations were continuous casting and the minimill technology. As a result, trade protection had the

unintended effect of inducing the entry of new small steel producers (the minimills) that in recent years have managed to capture more than 40% of the US steel market. It should be clear that divided control is at the root of this self-inflicted atrophy. That is, the failure of established firms to adopt new technologies, and thus allow small entrants to capture a significant share of the US market.

Next, we will consider the actions taken by some governments to reestablish unitary control in state owned enterprises. The most striking examples of the struggles involved in reestablishing property rights are the cases of British Steel and of British Coal. Stakeholders in these sectors were so entrenched that even government ministers attempted to block the restructuring process. In order to restructure these firms, Prime Minister Thatcher hired a businessman, Sir Ian MacGregor, who had no links to the political establishment. It took seven years of restructuring before British Steel was privatized. The case of British Coal was more dramatic: when MacGregor decided to close some inefficient coal mines in 1984, the head of the miners union, Mr. Scargill, launched a strike that lasted almost a year. This strike was nationwide and it appeared that it would spread to other sectors, with the danger of toppling the government as it had done in 1974. After offering workers severance payments far in excess of that required by law and helping Scargill's rivals to create new unions and break the picket line, MacGregor was able to defeat Scargill. It should be clear that no private agent would have had the power to do this. These episodes are amply described in MacGregor (1986) and Thatcher (1993).

Another well known example of the reestablishment of property rights occurs in Mexico. Before privatization the steel and mining sectors were heavily unionized.

Furthermore, since the state owned enterprises were located in company towns, there was opposition to the privatization, not only from unions but also from politicians at the local and national level. The government sought to replace the sole labor contract with five different contracts, one for each plant. Furthermore, it wanted to include in the new contracts the right of new owners to reduce employment as needed. The union not only refused to consider these issues but also would not agree to a direct, secret ballot by the workers on these issues. After months of unwillingness on the part of the unions to make any concessions, the government used the threat of bankruptcy to induce the union to accept a secret vote by the workers. To supplement this strategy, the army was called in to protect the plants and mines and workers were offered a severance package similar to that of the British Coal miners. Throughout the process, there were several marches to Mexico City and street blockades. In order to neutralize high ranking opponents of privatization, the ministry in charge of privatization hired, as an advisor, Sir Ian MacGregor to explain why those measures were necessary.

Similar measures were undertaken during the privatization of almost all other Mexican state owned enterprises. The most dramatic example occurred at the Port of Veracruz. Although historically Veracruz had been the most important Mexican port, in the preceding decades it had become next to impossible to import or export any merchandise through the harbor due to heavy union entrenchment. As a remedy to this in the early 1990's, President Salinas called on the army take the port by surprise and secure it from the unions.

As a result of these actions, almost all newly privatized firms in the UK and Mexico experienced an increase in productive efficiency and profitability. These

improvements in efficiency have been documented by La Porta and Lopez de Silanes (1997) in the case of Mexico, and Newbery (1997) and Vickers and Yarrow (1989) for the UK. Earlier papers that find that privatized firms are more efficient than state owned enterprises are Boardman and Vining (1989) and Megginson, Nash and Van Randenborgh (1994).

The privatization of two Mexican airlines illustrates the milking effect that occurs when a state owned enterprise is privatized without reestablishing unitary control prior to privatization (Hanson (1994) and Rogozinski (1997)). Aeromexico and Mexicana were originally private airlines. However, the government had to take them over as a result of financial problems in 1959 and 1982, respectively.

The strongest stakeholders in each of these cases were the unions. In the midst of a labor contract dispute, the government decided to let Aeromexico go bankrupt in the late 1980s.² A new company was created with the assets and landing rights of Aeromexico, but it was free of stakeholders. In 1988 the government sold its 65% stake in Aeromexico for US\$300 million. The other airline, Mexicana, represents the first important privatization of the administration of President Salinas. In contrast to Aeromexico, it was privatized without any prior labor restructuring despite the fact that it too had a very strong union and divided control. The government owned 51% of Mexicana's shares—the remaining shares were publicly held. In 1989 the Government transferred 50% of its shares, plus the control of Mexicana, to a private group. The payment was not in cash but was in the form of debt to the government. In addition the controlling group committed US\$140 million

² Aeromexico and Fundidora Monterrey were the first cases in which a large firm was allowed to go bankrupt since the PRI came to power in the 1930s.

dollars to be injected as capital. In light of our previous discussion, the inability of the government to sell Mexicana for cash can be attributed to the fact that unitary control within the firm was not reestablished prior to privatization.

The events that ensued show that divided control leads to inefficient outcomes. While Aeromexico, which enjoyed unitary control, did quite well in the early 1990s, Mexicana's performance was dismal. Aeromexico reduced its work force from 12,000 to 3,000 and succeeded in raising on-time arrival rates from 75% in 1988 to 95% in 1991. In contrast, Mexicana was only able to reduce employment from 14,000 to 11,000, and increase its on-time arrival rate from 73% in 1989 to 86% in 1991. What is more astonishing, however, is that although Aeromexico was initially a much smaller airline than Mexicana, it became the dominant firm a few years later. Aeromexico increased its share of the domestic market from around 35% in 1989 to roughly 45% in 1993. In contrast, during the same period, Mexicana's share fell from 50% to 30%.

One important difference during this time is that Aeromexico leased airplanes to increase their fleet while Mexicana purchased new planes, dramatically increasing its debt. Some have pointed out that the prudent policy was definitely to lease planes instead of purchasing them. The result was that in 1993 Mexicana was on the brink of bankruptcy.

Seizing the opportunity, Aeromexico bought a controlling share in Mexicana. The controlling group of Aeromexico financed this purchase in part by borrowing. Ex-post, this purchase was not a good idea because Aeromexico encountered financial difficulties. To make a long story short, the creditors took control of both airlines, and the debts of both companies were recently taken over by Fobaproa, the government's bailout agency.

III. Elimination of Soft Budget Constraints

The term “soft budget constraint” was coined by Janos Kornai to identify a situation that was prevalent in Communist Europe (see Kornai (1992)). Under the communist regime inefficiently run firms did not face the threat of bankruptcy. They simply received fiscal transfers to cover the difference between their revenues and costs. The existence of soft budget constraints meant that firms were able to induce the government to finance their deficits.

Several state owned enterprises throughout the western world have also enjoyed soft budget constraints. Clearly, there are strong political forces at work behind this privilege. Thus, it is far from true that a firm’s soft budget constraint will vanish with the sole act of privatizing it, or by decree. The point we want to emphasize in this section is that if the privatization of a state owned enterprise is not accompanied by decisive government actions that eliminate the soft budget constraint enjoyed by a firm, it is not likely that efficiency in that firm will improve.

Here we describe ways in which soft budget constraints have manifested themselves in the aftermath of privatization. We will consider three situations: banks with low capitalization and implicit government guarantees; private mafias; and non-transparent bankruptcy procedures.

III.1 Banks

The existence of banks that are poorly capitalized and that enjoy implicit government guarantees has disastrous effects throughout the economy. First, not only does it exacerbate the milking effect in firms where there is divided control, but it can also

induce inefficient decisions in firms with unitary control. Second, this banking condition restrains the growth of the competitive private sector.

In several countries, the privatization of banks has led to lending booms (i.e., abnormally high growth of loans during a span of a few years). These lending booms have been associated with a deterioration of the banks' loan portfolios, as an increasing share of loans are allocated to very risky projects with negative expected present value. Another possibility is that lending booms reflect corruption. In both cases the result is that, after a few years, a significant share of loans becomes non-performing. Since it is politically very costly for governments to let banks go bankrupt, a bailout takes place.

It has not been the case that all countries that have privatized their banking systems have lacked an adequate prudential regulatory framework. For instance, in Mexico new regulations were adopted before the privatization was initiated, yet this was insufficient in promoting prudent lending practices. Thus, the solution cannot simply be "to improve the regulatory framework."

According to some observers, the problem has been caused by the confluence of two factors. First, the capital owned by the people that control a bank is small relative to capital of the bank that is at risk. Second, there is an implicit guarantee on the part of the government to bail out depositors and, in several cases, bank owners too. In these circumstances it becomes profitable for people who control a bank to allocate loans to negative expected value projects. These negative expected value projects are profitable from the perspective of bank owners either because (1) they have high variance returns; (2) they generate personal benefits (perhaps they are loans to companies with which they have links); or (3) simply because they are stealing the funds.

In the Mexican case, for instance, although at the time of the privatization the capital of each bank was equal to 8% of total assets, as required by regulations, the owners' capital was quite small. The mechanism at work was the following. Bank A lent money to the owner of Bank B so that she could meet the required capital adequacy ratio. Bank B in turn lent money to the owner of Bank C, and so on. As a result, the net aggregate capital of the Mexican banking system was actually quite small.

If the privatization of state owned enterprises occurs in a situation where owners do not enjoy full control rights and banks enjoy implicit bail out guarantees, all hell breaks loose. First, milking is no longer limited to the assets of the firm. Managers/owners may borrow using the firm's assets as collateral, and appropriate such funds in diverse manners. A case in point, a manager may buy inputs with a high markup relative to the market price, and then have the difference deposited in a secret account. As a result, the firm accumulates debt, while the owner's private wealth increases. Banks are willing to lend to such a firm, despite knowing that resources will be used inefficiently, because they expect a government bail out.

A second mechanism that has been observed concerns lending by banks to buyers of state owned enterprises that are being privatized. In some cases, banks' owners have acquired the state owned enterprises themselves. In this case the lending spree can continue virtually unchecked. This cycle was particularly pronounced in Chile during the second half of the 1970s—at the time, large private conglomerates formed around the big banks. The unfortunate ending of this episode was the well-known Chilean re-nationalization of banks that took place in the early 1980s, costing nearly 15% of GDP (Hachette and Ludders (1993)).

A horror story that illustrates quite clearly the points made above is that of Mr. Cabal-Peniche, a successful banana grower in the south of Mexico. In 1991 he acquired a medium-sized bank. At the time, this acquisition was heralded as one of the successes of the Mexican privatization program in promoting popular capitalism. The bank borrowed abroad and lent Mr. Cabal money to buy, among other things, Del Monte. Mr. Cabal continued to borrow money; a few years later he simply disappeared with more than US500 million dollars. He is still a fugitive. The Mexican government was forced to absorb all the liabilities and Del Monte, a costly bailout.

Another consequence of a hasty bank privatization is the formation of “evergreen accounts.” When banks enjoy government guarantees, and the stake of bank owners is very small, banks have incentives to make risky loans with high variance and low expected return. After a few years a significant share of these loans become non-performing. Banks with low capitalization do not have incentives to officially recognize these bad loans. In this way they avoid having to inject new capital in order to make the appropriate provisions. This situation can persist for a long time if there is regulatory forbearance. When this occurs, banks lend to the non-performing accounts the interest that had to be paid and the amount that had to be amortized. Given that these accounts never become performing, the bank is forced to capitalize unpaid interest indefinitely. That is why they are known as “evergreen accounts.” Since these accounts grow exponentially, over time, banks have less resources available to lend to new projects. This in turn restrains the growth of the private sector. The recent Mexican experience is a clear illustration of this mechanism (Krueger and Tornell (1998)).

The question arises as to why authorities allow the schemes mentioned above to occur. One possible explanation is that at the time, authorities do not realize that buyers of banks are not using their own capital. Another explanation that has been given is that privatizers face strong pressures to complete the privatization process quickly. Otherwise, the support for privatization would end, and the forces of the past would reorganize to block further progress.

III.2 Bankruptcy Procedures and Reform of the Judicial System

If inefficient investment decisions that lead to financial problems are not followed by bankruptcy, then firm controllers might have incentives to undertake inefficient actions. We have discussed the circumstances in which such processes will occur. In many countries judicial systems are heavily influenced by politicians. Furthermore, in some cases bankruptcy procedures are so convoluted that it is virtually impossible for creditors to seize the assets of non-performing debtors. Even worse, bankruptcy cases are decided based on political criteria. It should be clear that in order for privatization to increase efficiency, it is necessary to implement judicial reform. Unfortunately, we have learned during the last decade that this is easier said than done.

The legal systems of many countries developed during the statist era. In fact, they were a useful tool for political control. Firms knew that political support to the regime would be translated into favorable future legal decisions in the event that the firm in question ran into trouble. Interestingly, this convoluted system proved to be very useful during the pre-privatizing restructuring of state owned enterprises and in negotiations with stakeholders, as described above.

Legal reform has proven much more difficult to achieve than theory would indicate. The drawback has been that, in the post-privatization phase, this lack of legal reform has impeded quick sanctions against inefficient activities undertaken by owners of newly privatized firms. In almost every instance there has been a sufficiently strong incentive for politicians to intervene in favor of firms that should have gone bankrupt.

An efficient bankruptcy procedure should lead to liquidation when the firm is not viable, and should lead to restructuring when financial distress has been caused by transitory bad shocks. Furthermore, bankruptcy rules should be sufficiently simple, thus making it impossible for politicians to induce discretionary decisions.

It is not clear that countries undergoing reform should adopt the bankruptcy procedures used in developed countries, such as the US. The U.S. bankruptcy procedures are quite complicated, and in some instances lead to inefficient decisions: chapter 7 bankruptcy leads to unnecessary liquidation of viable firms, while chapter 11 sometimes leads to inefficient reorganization under existing management. Recently, there have been proposals to reform bankruptcy procedures (see Aghion, Hart and Moore (1994)). Under these proposals all claims of a bankrupt firm would be canceled. The senior claimants would receive the equity of the new firm, and the other claimants would receive options to purchase equity. Shares would then be traded among claimants. Finally, the new shareholders would vote on whether to liquidate or restructure the firm.

Under this scheme, the only role of the judge is to coordinate the process. Accordingly, with this type of scheme there is no room for the government to defend incumbent management. It would be of practical importance to analyze how this type of procedure might be implemented in specific countries.

Policymakers (at least in Latin America and the UK) have been aware for some time of these alternative bankruptcy procedures. So why is it that these procedures have not been adopted yet, or at a different level, why has there been no legal reform? Is it simply a lack of knowledge on the part of authorities? Or is legal reform something that cannot be imposed from the top, but rather, a slow process that must start from below? Perhaps as the private sector develops will it demand a better legal framework. I am not aware of any cross-country analysis of the evolution of legal systems. In the case of Mexico, the lack of bankruptcy reform can be explained by the huge stock of non-performing loans. This implies that a coalition of debtors will veto such reform.

III.3 The Privatization Decision and Private Mafias

Suppose that the government does not, at present, have the capacity to reduce the power of stakeholders within state owned enterprises, nor can it implement judicial reform in the short run. However, the political process has enabled the privatization of some state owned enterprises. Is the optimal policy to gather a small team of non-corruptible privatizers, let them do the job as quickly as possible, and then hope for the best? Or, is more efficacious to wait until the government has the capacity to reestablish property rights in the state owned enterprises and implement hard budget constraints? These issues have been at the core of the privatization decision in transition economies, as well as in market economies. Unfortunately, the answers to these questions are not obvious.

Suppose it is unlikely that the government will ever be able to eliminate the power of stakeholders in a given firm. Meanwhile, there is a chance that private agents might have the incentives and the resources to buy back stakeholders, or neutralize their power.

Furthermore, suppose that the firm in question is not powerful enough to enjoy a soft budget constraint. In this case it is clear that privatizing without prior restructuring is the right policy.

In contrast, if several stakeholders are deeply entrenched, and no single stakeholder has the ability to establish unitary control, then it is not clear that a hasty privatization is socially desirable. Since it would take the full power of the state to reestablish private property rights, waiting until the government acquires the capacity to enforce property rights might be the correct strategy. However, suppose the government will never attain such power. Then, what is socially preferable, to keep state owned enterprises in government hands, or privatize them?

If the private sector has not been privatized, what difference does it make if a firm is in the State's hands or in private hands? One viewpoint is that if a firm is in the State's hands, it is easier for politicians to induce the firm to undertake inefficient actions, such as having excess employment. Meanwhile, under private management it is more difficult for politicians to influence the firm, thus, the firm's productive efficiency might increase (Shleifer and Vishny (1994)). A second viewpoint is that since there is divided control within the firm, the new owners will have incentives to milk it. Meanwhile, if the firm is kept under government control, the manager will ultimately have to respond to top government officials. To the extent that top officials internalize part of the future costs associated with firms' inefficiency, they will restrain managers from undertaking inefficient actions. Note also that private owners have the capacity to milk a firm in 'legal' ways, whereas bureaucrats are in some sense restrained by government regulations. We thus conclude that in the case of behemoths, it is not clear that transferring them to the private

sector is socially efficient. This is because privatization might lead to the formation of “private mafias,” i.e., private groups with the power to extract fiscal transfers.

This last point is related to the Political Economy concept of encompassing groups (see Olson (1982), and Tornell and Lane (1999)). Among economies that suffer from the existence of rent-seeking groups, those with very few encompassing groups tend to experience less aggregate rent-seeking than those with many powerful groups. This is the result of two mechanisms. Encompassing groups are de facto claimants to a significant share of national income. Furthermore, since there are very few encompassing groups in the economy, they are able to overcome the free rider problem and not induce policies that would kill the goose that lays the golden egg. In contrast, when there are several groups with the power to extract fiscal transfers, it is unlikely that these parties will be able to coordinate in limiting their fiscal appropriations. Thus, such an economy will experience overappropriation and decline.

A revealing example of how privatization might place state owned enterprises in the hands of private mafias, who might behave more voraciously than bureaucrats, is the case of the postal service and airports in Argentina. In the early 1990s the administration of President Menem initiated the privatization of Airports and Postal Service. The stated objective was to create an efficient communications infrastructure in order to increase productivity in Argentina. In a recent book Domingo Cavallo, Minister of the Economy at the time, describes how forces in the highest echelons of power, both in Parliament and in the Executive branch, were trying to ensure that these government monopolies ended up in the hands of Mr. Yabran and his associates. Cavallo (1997) describes the fights waged in order to impede this transfer of assets, and how this was connected to his dismissal as

Minister of the Economy. Mr. Yabran has been associated with several crimes and political conflicts in Argentina. For mysterious reasons he has recently killed himself.

Now, we would like to elaborate on how the points we have made relate to transition economies³. It will be useful to distinguish small shops, such as restaurants, from behemoths such as oil companies. The former are not likely to either enjoy soft budget constraints, nor will they suffer from acute divided control within the firm. For the latter, the opposite is true. Therefore, for the small shops' sector it is clear that the correct policy is to privatize as fast as possible. Not only will productive efficiency increase, but it will also promote the development of a new competitive private sector. However, for large enterprises privatizing as fast as possible may not be the best policy for the reasons described above.

In the early 1990s Russia engineered a massive transfer of state owned enterprises to the private sector under the so called "voucher" privatization (Boycko, Schleifer and Vishny (1995)). Privatization vouchers were distributed among the entire population. Then auctions for almost all state owned enterprises took place. The objective was to transfer as much State property to the private sector as possible while the window of opportunity remained opened. In this manner, it would have been impossible for the communists to ever recreate the status quo ex ante. The privatization was performed with neither any restructuring of the major state owned enterprises, nor with the elimination of the stakeholders' power. It was believed that in the future the population would sell its shares, and that some big investors would acquire a significant share of firms. These large groups would then force inefficient management out of the firm and, as a result,

³ The paper by Schwartz, et. al. (1999) in this volume analyzes in detail economies in transition.

privatization would improve efficiency. In the case of large state owned enterprises, this was not the outcome⁴. Instead, preexisting stakeholders and managers increased their ownership share in these firms. As is well known, the result of the Russian privatization scheme has been the formation of the infamous oligarchs' club (Goldman (1998)). These oligarchs have been quite efficient in extracting fiscal transfers. Of course, this need not mean that the alternative of not having privatized would have been superior. However, the answer is not unambiguous as the looting might generate popular discontent, bringing to power those phantoms that were feared by reformers in the first place.

Lastly, we would like to comment on the idea often expressed in policy circles that, in LDCs as well as in transition economies, through time a new competitive private sector will develop. Thus, the problems posed by state owned enterprise's stakeholders and soft budget constraints will disappear if left to themselves. The argument is that an increasing share of GDP will be produced by the new competitive private sector, and the old state owned enterprise sector will become minuscule and powerless. The policy implication of this view is that government efforts should concentrate on promoting new enterprises, and not expend energy trying to eliminate the power of stakeholders.

The validity of this statement is far from obvious. If stakeholders are strong to begin with, it is not clear that the new private sector will be able to grow and render this oligarchic sector small relative to the economy. As the economy will experience incipient growth, stakeholders will increasingly demand more fiscal subsidies and also expand their ownership of fixed factors that confer political power. This in turn will be translated into a higher tax burden on the competitive new private sector. The result will be either an

⁴ This scheme was criticized early on by the head privatizer in Mexico in a provocative article entitled

inhibition of the development of the new competitive private sector or, at best, a growth path along which the oligarchic sector grows at the same pace as the rest of the economy. As a result, this economy will be trapped in a low growth trajectory. Tornell and Velasco (1992) present a model in which the economy evolves along such a path.

Given that the government does not have the ability to eliminate the power of stakeholders, when is it more likely that the relative size and power of the state owned enterprise sector will decline: under privatization or under no privatization? To address this issue, we must first note that, in the case of large state owned enterprises, the choice is between leaving the firms and their stakeholders within the State, or converting them into “private mafias.” In both cases, stakeholders will have the power to extract fiscal subsidies. The question then becomes: under which regime will the stakeholders have less power to pillage the State? As we mentioned earlier, at present there is neither enough cross-country evidence, nor theoretical work to answer the preceding questions.

In summary, it is not clear whether it is socially optimal to privatize state owned enterprises before privatizing the privatized. On the one hand, the window of opportunity for privatizing might not recur. On the other hand, a hasty privatization might leave state owned enterprises assets in hands of private mafias. It is possible that these mafias would grow in power and extract even more fiscal resources than what the alternative of waiting might have entailed. In other words, privatization should not be used as a pretext to avoid confronting the real problem facing the economy: the existence of strong stakeholders that face divided control within their firms and soft budget constraints.

“Too Much Vodka” (Rogozinski (1993)).

IV. Restructuring and Regulation

Large state owned enterprises are typically conglomerates that encapsulate almost all firms in a given industry. During the privatization of these enterprises, the question arises as to the manner in which they should be broken up as well as into how many units they should be divided. There are two cases to consider. In one case, there are common networks which are vital to the industry, such as in electricity, fixed-link telephony, gas, water, rail, and similar industries. In the other case, such networks are not vital.

In the case that networks are not vital, there is a general consensus that state owned enterprises should be broken up into as many independent firms as possible. This is constrained by the need to avoid a loss of efficiency due to the existence of economies of scale or scope. Monopolies are dealt with in such a manner. The case of Mexico Steel is a good example. Five plants comprised the state steel monopoly in Mexico. Some argued that since steel is a commodity and Mexico an open market, a private conglomerate of the five would not enjoy monopoly power. They wanted the firm to be privatized as it was to exploit the synergies across the plants. They claimed that the plants would fail independent of each other. Others argued that even in the absence of monopoly power a conglomerate would still command huge political power at the national level. Since it would be the largest employer in each of the states in which the plants were located, a conglomerate would be able to influence national elections. This political power could then be used to extract fiscal concessions or even to induce the implementation of trade barriers (despite NAFTA). In the end, the steel conglomerate was broken up and each of the five plants was sold to a different group. Eight years have passed since this break up; only one of the newly created firms has had financial problems

and the controlling group has been replaced. Coincidentally, this firm is the only one that was not broken up.

By contrast, in industries where networks are essential, the issues involved are more complicated and there is no consensus on the most appropriate policy. In fact different countries have followed diverse privatization strategies in specific sectors.

An important point is that when a network is essential, there is not much difference between a state owned enterprise and a private regulated monopoly. This is because it is extremely difficult to regulate a big conglomerate, both for logistic and for political reasons. If privatization is to make a difference, it must first separate the network from the units that form the state owned enterprise. Second, it must ensure the existence of competition in the newly created units. Finally, privatizers must create a clear framework to regulate the network company and to establish clear access rules and prices for the new units.

An important point to consider is that when a network is essential to an industry, there is little difference between a state owned enterprise and a regulated private monopoly. This is a result of the inherent difficulties, both logistic and political in nature, of regulating a big conglomerate. If privatization is to make any real difference in this situation, it must first separate the unit that controls the network from the other units that comprise the state owned enterprise. It must also ensure that there will be competition among newly created independent firms formed from these units. Finally, those instituting the privatization must create a clear framework of regulation for the network company and must establish clear access rules and pricing for the independent firms. These issues are discussed in more detail by Noll (1999).

Two observations are in order. First, the existence of competition among the new units eliminates the need for detailed regulation of those units, making the regulatory task an order of magnitude simpler. Second, there is no clear justification for privatizing the network company and converting it into a private monopoly, as the gains in efficiency derive from competition in the new units.

The privatization of the power industry in the UK clearly illustrates the points just mentioned (see Newbery (1997) and Vickers and Yarrow (1988)). This industry has three segments: generation, transmission (from the plants to the consumption centers), and distribution. The case for having several plants connected to the same network derives from the notion that if there were a reduction in energy generation in one plant, due to maintenance or accident, other plants could cover that shortage. However, once various plants are interconnected, there must be some sort of coordination to ensure that, at the margin, the cheapest energy is produced. For this reason, electricity generation-transmission has been traditionally considered a natural monopoly.

In the UK, as part of the privatization process, the three segments were separated into different companies. The transmission network was to be controlled in a centralized manner by one company, while distribution companies and generation plants would be owned by several firms. In order to allocate access rights to the generating plants, a sort of a stock market for electricity was created. In this market, each generator submits bids every day, stipulating the quantity and price of electricity it is willing to supply the next day. Thus, there is a clearing mechanism that selects the cheapest energy for each hour of the day.

Another interesting example of the issues involved is the story of the privatization of the telephone companies in Mexico and Argentina (Rogozinski (1997)). While both systems were privatized, the phone monopoly was not broken up in Mexico while it was divided into two companies in Argentina. In each country the options were hotly debated and the rationales seemed sensible a priori. The phone systems in both countries needed significant investment in new fiber optic lines and equipment. The Mexican government decided to grant a six year monopoly over long distance services to the newly privatized company. At the end of that period, however, the market would be opened to new entrants. It was argued that the threat of competition would induce Telmex to invest its profits in new lines and equipment during the monopoly period, so that it would have a dominant position once the six years had elapsed. It seems the strategy worked since Telmex complied with its original investment plan by the time the long distance market was opened in 1997. At present, Telmex is the dominant firm in both local and long distance telephone service. This has in turn led to complaints of anticompetitive behavior.

The argument made in Argentina was that splitting the phone company into two firms would induce competition. As a result, both firms would invest in new lines and equipment in order to gain a larger market share. Of course, it is not clear how collusion would be avoided. I am not aware of any study that compares the evolution of privatized telephones companies in Mexico and Argentina. Furthermore, there is a lack of systematic cross-country comparisons of the behavior of prices and investment of state owned enterprises in which networks are essential. Cross-country studies of the industries that have been privatized during the last decade would be very useful.

Post-privatization regulation is a very important issue in industries with network externalities. Regulation must cover pricing, access to the network and entry to the industry. Fortunately, there is a large literature dealing with these issues. See for instance Armstrong, Cowan and Vickers (1994), Bishop, Kay and Mayer (1994), Noll (1999) and Viscusi, et. al. (1992). The evolution of regulation is also a very important issue. How do we ensure, once the privatized firm has made sunk investments, that regulation will not be changed in order to reduce the ex-post rate of return? How do we prevent a capture of the regulators by the regulated firms? These and related issues are analyzed by Krueger (1993) and Noll (1989).

V. Auction Design

Suppose that the stakeholders' question has been answered one way or the other. The next question then is how to transfer a given state owned enterprise to the private sector. One possibility is to transfer ownership to either stakeholders, or to the population at large (or to both, as most commonly occurs). The second possibility is to sell part or all of the state owned enterprise to a strategic group, and place the rest in the stock market. In any case, the objective should be to transfer a state owned enterprise to those that can use it most efficiently and profitably, and ensure that the buyers pay as much as possible.

One difficulty with placing a state owned enterprise in the stock market is that, with few exceptions, state owned enterprises are loss-making firms. As a result, it is unlikely that the stock market will place a positive price to those firms. A strategy that has been followed in some cases is for the government to restructure the state owned

enterprise, and after a few profitable years launch a public offering. Such was the case of British Steel.

Another alternative is to sell the state owned enterprise to a small group of strategic buyers. In this case, it is possible to price the state owned enterprise based on counterfactuals. That is, it is possible to discuss with buyers what the expected income of the company would be if it were managed under international best practices. Then, by applying appropriate country and industry risk premiums, an appropriate reference price could be obtained. Technical advisors and investment banks play a useful role in this process.

Suppose the decision was made to sell part or all of a state owned enterprise to a strategic buyer and that technical advisors calculated a reference price for the firm as an ongoing business. As our discussion in previous sections suggest, the government should aim at obtaining all-cash bids and terminating its direct involvement with the state owned enterprise. Otherwise, it risks having to make transfers to this company in the future.

If the government limits offers to all-cash offers, it substantially reduces the number of potential bidders. This can be problematic because, as is well known from auction theory, when there are few buyers it is very difficult to elicit the reference price. The maximum price that can be obtained through an auction equals the second highest value.

Thus, if auction rules limit offers to be all-cash, the privatizer might attract only one or two buyers. As a result, the single bidder will offer only a pittance for the company, or if there are few bidders they are likely to collude and will similarly pay relatively a few pennies.

Thus, a question of practical relevance is how to design auctions in cases in which all-cash bids are desired, but where there are very few bidders able to make cash bids. As we shall explain below, a one way to achieve this objective is to allow non-cash bids. In this way the number of bidders will increase, and any of the standard auctions will elicit a price in the neighborhood of the reference price.

Permitting non-cash bids opens Pandora's box. This is because an infinite number of offers, vectors of deferred payments and guarantees, are now possible. Once the privatizer moves away from the clear prerequisite of all-cash offers, it is not possible to prevent bidders from offering any vector of deferred payments. Disqualifying that bidder ex-post would provoke political pressures, and allegations of corruption.

It is clear that, in general, different discount rates must be applied to value each of the bids. When these transactions are performed in countries like the US or the UK, valuations are done after the bids are handed in by a team of accountants, investment bankers and lawyers. However, this procedure is politically very dangerous for a bureaucrat in charge of privatizing a state owned enterprise, as he might be accused of favoritism. To illustrate this, suppose that bidder 1 offers 100 million cash while bidder 2 offers 1000 million to be paid in 5 years. Who is the winner? Well it depends on the discount factor used. Of course, bid 2 is more risky and probably the bidder will simply milk the firm and run away. However, if the bureaucrat sets the discount rate for bid 2 at a sufficiently high rate so that bidder 2 loses, then bidder 2 will most likely accuse the bureaucrat of favoring bidder 1. Although this example is a caricature, anyone familiar with some privatization experiences will see the validity of such an analogy.

The solution implemented in Mexico was to produce valuation rules that were made public in advance of the auctions. Basically, the discount rate applied to each payment increased exponentially as the offered payment for a given year converged to the projected cash flow of the given year.

Recall that the initial objective was to obtain all-cash bids. In order to effect this goal, discount rates were set at sufficiently high levels so that bidders would find it profitable to borrow funds in the capital market in order to make an all-cash bid.

Summing up, if the objective is to obtain all-cash bids, it is sometimes necessary to allow non-cash bids in order to increase the number of potential bidders so as to escape the second highest bid principle. However, doing so may thwart the transparency of the privatization process. Thus, mechanisms different from those used in typical mergers and acquisitions transactions must be devised. The best way to achieve this objective remains an open question.

The second set of questions has to do with the type of auction the privatizer should adopt. Should there be a sealed bid auction or an open auction? Should bidders be allowed to know the bids made by the other bidders? Should there be one or multiple rounds of bids? Should a minimum price be established? Under the standard assumptions made in the auction design literature, there is a sense in which open and sealed bids are equivalent. However, when a state owned enterprise is privatized, there are some elements that do not accurately fit this framework. On one hand, buyers' values might be positively correlated, in which case the privatizer would like a bidder to learn what the bids of others are. On the other hand, there might be few bidders—this increases the danger of collusion.

An open auction or a repeated auction in which information is shared, might ameliorate the first concern. However, these strategies might increase the likelihood of collusion.

Next, we consider the third question regarding auction design. Typically, state owned enterprises are big conglomerates, and it is generally optimal to sell the different parts of the state owned enterprise as independent firms. In this case the questions that arise are: Should all parts be auctioned simultaneously or sequentially? Should bids for combinations of parts be allowed? To address these questions, it is important to note that in many cases state owned enterprises have very profitable units and, concurrently, other units that need some investment. So, the question arises should there be a rule according to which: (i) profitable parts will be sold only in conjunction with one of the parts that needs investment; and (ii) the set of winning bids will be the one that maximizes the sum of the bids. The latter condition this implies that a given plant might end up in the hands of someone that did not offer the highest bid for that plant.

The idea aired in policy circles is that offering all plants simultaneously in a big auction and using the rules just described is efficient in cases where there are a few bidders; this approach increases competition and it allows efficient aggregation of plants. To see this, suppose that there are three bidders and three plants. Bidder 1 is interested in plant A, bidder 2 in A and B, while bidder 3 only wants C and B. In the absence of rules (i) and (ii), bidder 3 will offer zero for plant C because zero is the second highest bid. However, if those rules were imposed, plant C could only be sold in conjunction with A or B. It then follows that bidder 1 might be willing to make a bid for C. This in turn will induce 3 to offer a positive price for C, instead of zero.

It is interesting to compare the 1991 auction of the Mexican steel plants with the auction of the radio spectrum rights occurring in 1994 in the U.S. In both cases, all units were auctioned simultaneously, not sequentially. In the Mexican case, however, bids for combinations of units were allowed, but not so in the US. Multiple rounds of bids with sharing of information were used in the U.S., whereas in Mexico there was a single highest bid closed-envelope auction (with no sharing of information). The reason for these differences is that in the US there were many potential buyers and thousands of spectrum rights to be auctioned, while in Mexico there were less than ten plants and few bidders. Thus, Mexican privatizers were more concerned with collusion, as the buyers knew quite well the plants and their potential. In contrast, U.S. privatizers were more concerned with an efficient transmission of information across bidders. Furthermore, bids for combinations of licenses were not allowed in the U.S. because, given the high number of licenses to be auctioned, the complexity of the auction process would have increased immensely.

The issues that we have enumerated in this section are of interest to policymakers. A systematic analysis of the trade-offs involved in innovative auction design should help guide policy in countries that are initiating reform. The following references deal with the issues we have discussed in this section. Kikeri, Nellis and Shirley (1992), Lopez de Silanes (1997), McMillan (1994), Milgrom (forthcoming), and Nankani and Vuylsteke (1988).

VI. Concluding Remarks and Research Agenda

Traditionally, the analysis of privatization has dealt with two main issues. The first concerns the criteria that should be used to transfer a state owned enterprise to the private sector. More specifically, should the only objective be to maximize the price of the firm?

Also what are the most appropriate auction rules? The second issue deals with the principles that should guide the restructuring of state monopoly and the appropriate accompanying regulatory framework.

Although these issues are indispensable in the design of any privatization program, other issues regarding the existence of well established property rights must also be taken into consideration. We have identified three reforms that must be implemented if privatization is to increase efficiency. First, establishing unitary control rights within the firm. Second, making privatized firms face hard budget constraints. Third, establishing a non-corruptible judicial system and transparent bankruptcy procedures.

In this paper we have posed many questions while not providing answers. Further empirical research is necessary in order to better aid the policy making process and to guide theoretical research. We have identified in this paper five areas in which future research would be useful. It has been nearly a decade since a large number of countries initiated privatization. Therefore it should soon be possible to perform systematic cross-country empirical studies and produce the data that will be needed to begin to answer the questions we have raised.

An initial area of research would involve a cross-country comparison of the evolution of privatized industries in which network externalities are essential, for instance telephone and electrical power industries. It would be important to study under which circumstances the breaking up of monopolies has led to more efficient outcomes. This would involve comparing regulatory frameworks and measuring social benefits. The main question would be under which regimes is there the least chance of the regulators being captured by those they are supposed to be regulating? A second important area that

deserves research is the issue of auction design. It would be useful to have insight into what results have been obtained with different auction schemes over the last decade. Can we identify which auctions have worked best in specific circumstances? Third, A cross-country study of the evolution of privatized banking systems is needed. Why is it that in several countries, such as Chile and Mexico, privatization was followed by severe lending booms and crises? What lessons have we learned regarding the proper regulation of banks? Fourth, it would be beneficial to perform a cross country study that identifies the stakeholders in a certain set of industries and analyze the post-privatization performance of firms in which unitary control has been reestablished versus those in which it has not. Case studies describing the creation of private mafias in the aftermath of privatization would be illuminating. Finally, the construction of indices of the prevalence of soft budget constraints would allow us to study, across time and across countries, the interrelationships between privatization and the evolution of fiscal discipline.

References

- Aghion, P., O. Hart and J. Moore, 1994, "Improving Bankruptcy Procedure," *Washington University Law Quarterly*, Vol. 72, No. 3, 849-872.
- Armstrong, M., S. Cowan, J. Vickers, 1994, *Regulatory Reform*. Cambridge: MIT Press.
- Aspe, P. 1993, *Economic Transformation the Mexican Way*. Cambridge: MIT Press.
- Barberis, N, M. Boycko, A. Shleifer, and N Tsukanova, 1996, " How Does Privatization Work: Evidence From the Russian Shops," *Journal of Political Economy*, Vol. 104(4) 764-790.
- Bishop, M., J. Kay and C. Mayer, 1994, *The Regulatory Challenge*. Oxford: Oxford University Press.
- Blanchard, O., 1997, *The Economics of Post-Communist Transition*, Clarendon Lectures. Oxford: Oxford University Press.
- Boardman, A. and A. Vining, 1992, "Ownership versus Competition: Efficiency in Public Enterprise," *Public Choice*, 73, 205-239.
- Boycko, M, A. Schleifer and R. Vishny, 1995, *Privatizing Russia*. Cambridge: MIT Press.
- Cavallo, D., 1997, *El Peso de la Verdad*, Buenos Aires: Editorial Planeta.
- Feldstein, M., ed., 1998, *Privatizing Social Security*, Chicago: The University of Chicago Press.
- Goldman, M., 1998, "Russian Billionaire's Club," *The International Economy*, September.
- Hachette, D. and R. Luders, 1993, *Privatization in Chile*, ICS Press.
- Hanson, G., 1994, "Antitrust in Post-Privatization Latin America: An Analysis of the Mexican Airlines Industry," *The Quarterly Review of Economics and Finance*, Vol 34, 199-216.
- Hart, O., 1995, *Firms, Contracts and Financial Structure*, Oxford: Oxford University Press.
- Kikeri, S., J. Nellis and M, Shirley, 1992, "Privatization: The Lessons From experience," The World Bank.

Kornai, J., 1992, *The Socialist System: The Political Economy of Socialism*, Princeton: Princeton University Press.

Krueger, A., 1993, *Political Economy of Policy Reform in Developing Countries*. Cambridge: MIT Press.

Krueger, A. and A. Tornell, 1998, "The Role of Bank Restructuring in Recuperating From Crises: Mexico 1995-1998," mimeo, Harvard University.

La Porta, R. and F. Lopez-de-Silanes, 1997, "The Benefits of Privatization: Evidence From Mexico," NBER working paper 6215.

Lopez-de-Silanes, F., 1997, "Determinants of Privatization Prices," *Quarterly Journal of Economics*, 112(4), 965-1026.

MacGregor, I., 1986, *The Enemies Within*. London: Collins.

McMillan, J., 1994, "Selling Spectrum Rights," *Journal of Economic Perspectives*.

Meggison, W., R. Nash and M. Van Randenborgh, 1994, "The Financial and Operating Performance of Newly Privatized Firms: an International Empirical Analysis," *Journal of Finance*, Vol. 49(2) 403-452.

Milgrom, P., forthcoming, *Auction Theory for Privatization*, Cambridge: Cambridge University Press.

Nankani H. and C. Vuylsteke, 1988, *Techniques of Privatization of State Owned Enterprises*. The World Bank.

Newbery, D., 1997, "Privatization, Restructuring and Regulation of Network Utilities," The Walras-Pareto Lectures, mimeo, University of Cambridge.

Noll, R., 1989, "Economic Perspectives on the Politics of Regulation," in *Handbook of Industrial Organization*, Amsterdam: North Holland.

Noll, R., 1999, "Telecommunications Reform in Developing Countries," presented at the conference: "Economic Policy Reform: What We Know and What We Need to Know" at Stanford University in September 1998.

Olson, M., 1982, *The Rise and Decline of Nations*, New Haven: Yale University Press.

Rogosinski, J., 1993, "Too Much Vodka!" *The International Economy*, March.

Rogozinski, J., 1997, *La Privatizacion en Mexico*. Mexico: Editorial Trillas.

Schwartz, M., E. Lazear and S. Rosen, 1999, "Russia in Transition," presented at the conference: "Economic Policy Reform: What We Know and What We Need to Know" at Stanford University in September 1998.

Shleifer, A. and R. Vishny, "Politicians and Firms," *Quarterly Journal of Economics*, Vol. 109(4), 995-1025.

Thatcher, M., 1993, *The Downing Street Years*, Harper Collins.

Tornell, A., 1997, "Rational Atrophy: The US Steel Industry," mimeo, Harvard University.

Tornell, A. and P. Lane, 1999, "Voracity and Growth," *American Economic Review*.

Tornell, A. and A. Velasco, 1992, "The Tragedy of the Commons and Economic Growth," *Journal of Political Economy*.

Vickers, J. and G. Yarrow, 1989, *Privatization*. Cambridge: MIT Press.

Viscusi, et. al., 1992, *Economics of Regulation and Antitrust*, Heath.

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