# The Truth about Privatization in Latin America

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# The Truth about Privatization in Latin America


## Abstract

Privatization is under attack. Criticisms run from corrupt deals to abuse of market power and social welfare losses. We evaluate the empirical record on privatization relying on recent comprehensive studies from Latin America. There are four main results. First, the increased profitability of privatized firms is not explained by sample selection biases. Second, in the quest to identify the sources of increased profitability after privatization, we find little evidence that validates concerns of generalized market power abuses, exploitation of workers and lack of fiscal benefits. Third, the manner in which privatization is carried out matters. Transparency and homogeneity in procedures, speed, and limited restructuring prior to privatization lead to better outcomes and less room for corruption and discretion. Finally, privatization's success is enhanced by two complementary policies: re-regulation or deregulation of industries previously shielded from competitive forces; and an effective corporate governance framework that facilitates privatized firms' access to capital at lower costs. Overall, the empirical record shows that privatization leads to increased profitability and productivity, firm restructuring, fiscal benefits, output growth and even quality improvements. Most cases of privatization failure can be linked to poor contract design, opaque processes with heavy state involvement, lack of re-regulation and a poor corporate governance framework.

## 1. Introduction

After decades of poor performance and inefficient operations by state-owned enterprises, governments all over the world earnestly embraced privatization. Thousands of state-owned enterprises (SOEs) have been turned over to the private sector in Africa, Asia, Latin America, and Eastern and Western Europe. This trend was spurred by the well-documented poor performance and failures of SOEs (Mueller, 1989; Boardman and Vining, 1989) and the efficiency improvements after privatization around the world (Megginson et al., 1994; Ehrlich et al., 1994; La Porta and López-de-Silanes, 1999; Frydman et al., 1999; López-Calva and Sheshinski, 1999; Dewenter and Malatesta, 2001; Megginson and Netter, 2001; Chong and López-de-Silanes, 2003a; among many others). Yet despite the evidence on privatization around the world that points to improved performance, firm restructuring, fiscal benefits, increased output, and quality improvements, the initial trend has lost momentum, and privatization efforts have greatly stalled in recent years.

Privatization has recently been attacked by academia, politicians and the media, who have voiced concerns about its record, the sources of the gains and its impact on social welfare and the poor.[1] The negative reaction to privatization is reflected in opinion polls and some governments' reluctance to further their privatization programs.[2] Popular support for privatization, as for other structural policies, may be expected to follow a "J curve," declining at first and recovering when the policy matures (Przeworski, 1991). However, if politicians retreat from the now unpopular effort to restructure the role of the state in the economy, the window of opportunity to deepen privatization efforts may close.[3] While many countries have implemented large privatization programs, there is still a considerable way to go. In many countries, the state retains a large presence, often across many sectors of the economy (La Porta, López-de-Silanes, and Shleifer; 2002). In

[1] See Bayliss (2002) and Birdsall and Nellis (2002) for recent cross-country reviews of privatization failures. Criticism about specific countries or industries includes: Harper (2000), Wallsten (2001), Stiglitz (2002), Nellis (1999) and Coes (1998).

[2] Even in the United Kingdom, which led the privatization effort in the 1980s, polls show that privatization is becoming less popular. In 1983 around 43 percent of people wanted more privatization, by 1992 that number was down to 24 percent, and by 2002 it barely reached 19 percent (*The Economist*, 1998).

[3] Earle and Gehbach (2003) provide a framework that rationalizes why policy makers may pay too much attention to public sentiment and thus refrain from potentially welfare -improving actions.

these circumstances, it becomes imperative to analyze the real record of privatization and draw lessons from it.

The purpose of this paper is to evaluate the privatization experience and assess the empirical validity of the main concerns voiced against it. A particular focus on Latin America may be warranted in this analysis since, after the transition economies of Eastern Europe, Latin America is the region with the largest decline in the state's share of production in the last 20 years. The extent of privatization in Latin America and the quality of the data has allowed researchers to produce comprehensive analyses that provide appropriate academic responses to some of the main criticisms raised.

Overall, the empirical record shows that privatization leads not only to higher profitability, but also to large output and productivity growth, fiscal benefits, and even quality improvements and better access for the poor. Instances of failure exist, but in light of the overwhelming evidence, this should not be turned into an argument to stop privatization. The analysis in this paper suggests that privatization failures can be understood in a political economy framework. The roots can be traced to substantial state participation in opaque processes; poor contract design; inadequate re-regulation; and insufficient deregulation and corporate governance reform that increase the cost of capital and limit firm restructuring in a competitive environment.

The paper is organized as follows. Section 2 gives a brief overview of the rationale and extent of privatization around the world. The rest of the sections are structured around what we consider the four main areas of concern about privatization. Section 3 deals with the first hurdle: to confirm that the profitability increases recorded by the literature are robust, unbiased and are not solely explained by sample selection of the best firms. The first generation of privatization papers suffered from this problem. However, a recent series of Latin American studies analyzed here uses comprehensive firm-level data that provide robust evidence on performance changes after privatization. Section 4 analyzes criticisms of privatization concerning the welfare of workers, consumers and the state by asking: Who pays for the profitability gains? The evidence suggest that although labor cost reductions and price increases account for part of the gains, the bulk of the profitability improvement lies in deep firm restructuring and productivity growth. Section 5 examines the concerns about the proper role of the state in

firm restructuring before privatization and the opacity of procedures, which may lead to collusion and corruption. Section 6 assesses the role of complementary policies such as deregulation, re-regulation, and corporate governance reform. Particular attention is placed on sectors with market power and inefficient regulation following privatization. Section 7 concludes, providing some policy implications from the privatization record thus far.

## 2. A Brief Look at the Privatization Experience around the World

Fifty years ago, many famous economists and politicians favored state ownership of firms in several industries as monopoly power and externalities produced market failures. However, in the last ten years, the evidence on the failures of SOEs around the world and developments in contract and ownership theory have led to a reassessment of the benefits of state ownership in production (Shleifer, 1998). The literature emphasizes two reasons for the poor record of state ownership. First, the managerial strand of the literature reflects the idea that imperfect monitoring and poor incentives for managers of SOEs translates into inferior performance. There are many reasons to believe this would be so. The average SOE is not traded on the stock market and the threat of a takeover does not exist as control rests in the hands of the state. Discipline from creditors does not play much of a role either because most SOE loans are public debt and losses are typically covered by subsidies from the treasury. Additionally, the boards of directors rarely implement good corporate governance practices and management turnover obeys political rather than market forces (Vickers and Yarrow, 1988).

The second strand of the literature emphasizes the political economy aspects of state production. The political view points to the inherent conflict of interest in running SOEs, as managers seek to maximize their political capital and pursue inefficient decisions. Political interference in the firm's production results in excessive employment, poor choices of products and location, and inefficient investment (Shleifer and Vishny, 1996; La Porta and López-de-Silanes, 1999). SOEs face soft-budget constraints that allow them to implement such practices, as governments may not want to risk the political cost of firms going bust (López-Calva and Sheshinski, 1999). The basic claims

of the two strands of the literature have been validated by empirical research on SOEs and firm performance after privatization around the world.[4]

Motivated by the evidence of SOE failures, governments in more than 100 countries have undertaken privatization programs in the last twenty years (Megginson and Netter, 2001). Throughout the world, annual revenues from privatization soared during the late 1990s, peaking in 1998 at over US$100 billion (OECD, 2001). Not surprisingly, industrial countries have pursued privatization less vigorously than developing nations. Between 1984 and 1996, the participation of SOEs in industrial countries declined from a peak of 8.5 to about 5 percent of gross domestic product (GDP), while in developing countries production from state owned companies declined more steeply (see Figure 1). According to López-Calva and Sheshinski (1999), between 1980 and 1997, SOEs' activities as a percentage of GDP decreased from about 11 to 5 percent in middle income countries and from 15 to 3 percent in low income economies. Developing countries have also seen large reductions in SOE employment. In middle-income countries, SOE employment has come down from a peak of 13 to about 2 percent of total employment, while low income countries have gone from over 20 to about 9 percent (López-Calva and Sheshinski, 1999).

These averages mask great regional variations in the size and economic importance of the remaining state-owned production (see Figure 1). In Sub-Saharan Africa, only a few governments have openly adopted an explicit state-owned enterprise divestment strategy. The African privatization effort has been significant in only a handful of countries and state production still accounts for over 15 percent of GDP in the region.[5] Asia is another region with large variations, as several Asian countries have not consistently pursued a privatization strategy. China, for example, has only recently committed to privatize all but the largest state enterprises. In India, where privatization has thus far not figured prominently in the agenda, it is reported that 43 percent of the

[4] See Boardman and Vining, 1989; Megginson et al., 1994; Ehrlich et al., 1994; La Porta and López-de-Silanes, 1999; Frydman et al., 1999; Dewenter and Malatesta, 2001; and Chong and López-de-Silanes, 2003a, among others.

[5] However, recent research shows that the privatization effort in Africa may have been highly underestimated. Bennell, (1997) argues that most papers studying privatization in Africa have been based on low quality or outdated samples. Using a comprehensive survey of privatization transactions that spans sixteen years (1980-1995) and includes over 2,000 privatizations, he concludes that African privatization programs are larger than previously thought and that they have increased substantially during the 1990s.

country's capital stock is still owned by the state. Even after the Asian crisis of 1997, when private equity funds and multinationals were expecting large state-owned fire sales, many governments in the region still hung on to their assets in sectors such as energy, telecommunications, transportation and banking (*The Economist*, 2001).

In contrast, transition economies and Latin American countries have been very active in privatization. During the 1990s, transition economies in Eastern Europe and Central Asia accounted for 21 percent of total privatization revenues in developing countries, second only to Latin America (see Figure 2). In order to facilitate their shift to a market economy, most transition countries launched "mass privatization" programs that resulted in dramatic reductions of state ownership. These programs, however, have sometimes been unpopular given accusations of corruption and foot-dragging on implementing corporate governance reforms that has afforded poor protection for new minority investors.

Even against the backdrop of massive economic transformations in transition economies, the privatization record of Latin America seems remarkable. In the 1990s, Latin America accounted for 55 percent of total privatization revenues in the developing world (see Figure 2). The decline in economic activity of SOEs has been more substantial in Latin America than in Asia and Africa, bringing levels close to those of industrialized countries (see Figure 1)**.** However, from being the most active region in the 1990s, Latin America has virtually halted its privatization process in recent years.

The privatization impetus has also faded in other regions, leaving the bureaucrats very much in business. In fact, SOEs still account for more than 20 percent of investment, and about 5 percent of formal employment (Kikeri, 1999). When appropriately measured, by looking at ultimate ownership, governments may own or control much more than is apparent at first sight. A clear example is the case of government ownership of banks. Looking at data for the late 1990s, after bank privatization programs had been completed in many countries, the world mean of government ownership of the top ten banks was still 42 percent; and a somewhat lower 39 percent if we exclude former or current socialist countries (La Porta, López-de-Silanes and Shleifer, 2002). These data suggest that, while privatization has decreased government ownership, it has not reduced it to negligible levels.

Dramatic differences in the extent of privatization are also evident within regions. In Latin America, for example, countries with previously large SOE sectors, such as Ecuador, Nicaragua and Uruguay, have barely privatized in the 1990s, while others such as Argentina Bolivia, Guyana, Panama and Peru have raised revenues from comprehensive privatization programs that amount to over 10 percent of GDP (see Figure 3).

The difference in the extent of privatization across countries and the large amount of assets in the hands of the state highlight the importance of understanding the privatization record so far and of developing lessons for future privatization programs.[6]

## 3. Which Firms Are Up for Sale? Concerns about What is Privatized

### *3.1. Sample Selection Bias*

Privatization studies analyze the impact on firm performance by comparing pre- and post-privatization firm-level data. This literature has established worldwide evidence on the benefits of privatization in terms of increased firm profitability (i.e., Boubakri and Cosset, 1998 and 1999; Megginson et al., 1994; and Dewenter and Malatesta, 2001). However, critics have suggested that this evidence may be the result of sample selection bias, which may arise from five basic sources. First, politicians who conduct privatization have the incentive to only sell the healthiest firms—what critics refer to as the "crown jewels." According to this hypothesis, politicians only sell viable assets and keep poor performers, as investors engage in "cherry picking" (Bayliss, 2002). Second, several studies are based on information about firms privatized through public offerings on the stock exchange. Such samples are thus biased towards the largest, and probably the best performing firms. A third source of sample selection comes from the greater availability of data from industrialized countries, which may have relatively better-performing firms. Cross-country firm-level analyses are therefore biased as their samples include a

[6] The analysis in this paper only covers the privatization experience at the "country" or federal level—that is, assets sold by the central or federal government—which account for the majority of assets sold around the world so far. A different sample and experience is that of the privatization of services at the local, municipal or county level, where local governments "privatize" the public provision of services. These programs have only taken place in a few nations such as the United States (López-de-Silanes, Shleifer and Vishny, 1997) and England, where public service provision by the private sector has become a central issue.

disproportionate share of well-performing firms.[7] The fourth source emerges from the intense focus of the studies on oligopolistic or heavily regulated industries, where the gains from privatization may come from market power. Finally, a last source of concern in interpreting the positive results of privatized firms is survivorship bias. This bias is introduced when firms that went bankrupt after privatization are excluded from the sample that compares pre- and post-performance.

Several early studies on firm performance after privatization in Latin America suffer from these biases (see Table 1). Some of these papers are specific case studies of a limited number of large firms (i.e., Galal et al., 1994; Chong and Sánchez, 2003); others do not include econometric or statistical analysis (i.e., Sánchez and Corona, 1993; Hachette and Luders, 1994; Birch and Haar, 2000); others are econometric studies of one or two heavily regulated sectors (i.e., Ramamurti and Vernon, 1991; Ramamurti, 1996 and 1997; Pinheiro, 1996; López-de-Silanes and Zamarripa, 1995); and some provide evidence from cross-country analysis of oligopolistic sectors such as telecommunications (i.e., Ramamurti, 1996; Petrazzini and Clark, 1996; Ros, 1999; Wallsten, 2000).

Overcoming sample selection bias is empirically difficult and requires large amounts of pre- and post-privatization information for nearly complete cross-industry samples of privatized firms of all sizes. La Porta and López-de-Silanes (1999) deal with these issues by collecting information from 95 percent of non-financial firms privatized in Mexico in the period 1983–1992.[8] An additional benefit of this sample is that, with the exceptions of electricity and oil, Mexico undertook a comprehensive privatization program in which the goal was to eliminate state ownership across the board. As a result, the sample gathered contains large, medium and small firms that span over 40 sectors covering mining, manufacturing, agricultural products and services as varied as night clubs and soccer teams. These characteristics make it a good sample for testing the validity of the concerns raised above. The conclusion from the study is that sample selection bias does not explain the positive results reached by privatization, as profitability of privatized firms increases across sectors and firm sizes, even considering bankrupt firms. The median firm experienced a 24-percentage-point increase in operating

[7] Differences in accounting procedures may also be problematic in determining adequate measures of operating performance (Megginson and Netter, 2001).

profitability. There is little evidence that the Mexican government sold the "crown jewels," especially when one considers that this oil-rich nation retained petrol and some petrochemicals as state assets.[9]

Using comprehensive data and a methodology similar to López-de-Silanes (1997) and La Porta and López-de-Silanes (1999), a recent research effort across Latin America has expanded the detailed privatization analysis for the region, helping us address the concerns raised in this section. The papers cover the programs of Argentina, Bolivia, Brazil, Chile, Colombia, Mexico and Peru (Chong and López-de-Silanes, 2003a).[10] These studies compare firm performance before and after privatization, adjusting for macroeconomic and industry effects with matching firms. Figure 4 summarizes the data collection efforts of this series of papers. With the exception of Brazil, where access to pre-privatization data for non-publicly traded firms was denied, the coverage across firm sizes for all countries is enough to put to rest the main concerns regarding sample selection. The samples used for Bolivia and Chile are the smallest, around 66 percent in terms of value, while for the rest of the countries the samples cover 80, 90 and even 95 percent of transaction values and number of privatization contracts.

Extensive groundwork and creative ways of accessing non-public information allowed researchers to collect comprehensive pre- and post-privatization data. In Peru, for example, Torero (2002) obtained pre-privatization information from "white books," or original privatization documents that were available to prospective bidders when state-owned enterprises were being privatized. He was also able to collect comprehensive post-privatization data from pre-privatization dossiers, the Supervising Committee of Companies and Securities, the Superintendence of Banks and Securities, and other regulatory agencies. All in all, Torero collected information for nearly 90 percent of privatized firms in Peru. For Argentina, Galiani, Gertler, Schargrodsky and Sturzenegger (2003) drew a comprehensive sample based on information from individual companies, the Ministry of Economy and regulatory agencies. In Colombia, with smaller

[8] For accounting comparison reasons, financial firms privatized in Mexico were analyzed in a separate paper (see López-de-Silanes and Zamarripa, 1995).

[9] López-Calva and Sheshinski (1999) make similar claims after they analyze privatization programs and remaining SOE assets around the world.

[10] The specific studies in the book are: Galiani et al. (2003) for Argentina; Garrón et al. (2003) for Bolivia; Anuatti-Neto et al. (2003) for Brazil; Fischer et al. (2003) for Chile, Pombo and Ramírez (2003) for Colombia; Chong and López-de-Silanes (2003c) for Mexico and Torero (2002) for Peru.

privatization programs than those of Argentina and Peru, Pombo and Ramírez (2003) collected comprehensive information on the privatization of the Instituto de Fomento Industrial (IFI).[11] They constructed an unbalanced panel dataset with records from the Annual Manufacturing Survey starting in 1974 and ending in 1998. Their panel has over 140 variables covering 94 specific ISIC groups and survey information of about 6,000 establishments. Chong and López-de-Silanes (2003c) use the same database as La Porta and López-de-Silanes (1999), which combines information from the original privatization "white books" with information collected from surveys sent to privatized firms and data from the various census bureaus. The information for Mexico basically covers the whole program with 218 privatized non-financial SOEs between 1983 and 1992.

In Bolivia, information on privatized SOEs was particularly difficult to gather due to the relatively small size of firms and the lackadaisical record-keeping efforts in the country.[12] Garrón et al. (2003) complemented original information from government institutions with information collected through a survey sent to privatized firms. For Chile, Fischer, Serra and Gutiérrez (2003) faced significant complications in collecting data due to the long privatization period (1979–2001) and the change in accounting standards in 1982. Despite these problems, their data provide systematic evidence that complements more descriptive work by others (i.e., Luders, 1991; Sáez, 1992). Finally, Brazil's case proved the most difficult as Anuatti-Neto, Barossi-Filho, de Carvalho and Macedo were denied access to all pre-privatization information for non-publicly traded firms and were thus restricted to using information on firms traded on the stock exchange. Although their results may suffer from some sample selection bias, it represents one of the most comprehensive datasets in Brazil covering close to 95 percent of the total value of privatization transactions.

Overall, the coverage and industry-matching techniques of the recent series of privatization studies in Latin America reassure us that the higher profitability of privatized firms is hardly the result of sample selection bias.

[11] The role of the IFI in creating new manufacturing enterprises located in late industries was central during the 1950s and 1960s. The largest private capital enterprises in the steel, chemical, paper, fertilizer, metalworking and automobile sectors today were former IFI-associated companies (Pombo and Ramírez, 2003).

[12] Not surprisingly, prior to the effort by Garrón et al. there had been no formal empirical study on the impact of privatization on firm performance in Bolivia.

### *3.2. Non-Comparable Data*

There are two additional problems with data collection procedures relating to the comparability of firms before and after the sale. In several countries, governments have either split existing SOEs to sell them as independent units, or grouped them together to form packages of firms to be sold as a unit. In both cases, large amounts of data are needed to conduct a firm-by-firm analysis of the pre- and post-privatization period. Having information disaggregated at the plant level and access to financial statements prepared before the sale are essential to keep units comparable across time. A second set of problems with the data emerges from changes in the sample after privatization as the SOE may be merged with the acquiring firm or with one of its subsidiaries. In both cases a new entity is created, making it difficult, if not impossible, to make meaningful comparisons.

Figure 5 summarizes the different problems faced by the researchers in the 7 Latin American countries that undertook recent comprehensive privatization analyses. All countries had to deal with the issues raised above to different degrees. In some instances, the problem was solved using detailed firm-unit or plant level accounting information provided by auditing companies before privatization (Torero, 2002; Galiani et al., 2003; Garrón et al., 2003). In other cases, this was done by taking advantage of privatization agreements that required firms to keep separate books for different units allowing data aggregation (Torero, 2002). Other methods used included estimating proxy financial information (Anuatti-Neto et al., 2003; Fischer et al., 2003; Pombo and Ramírez, 2003) or disassembling firms into their original constituents (Fischer et al., 2003; Anuatti-Neto et al., 2003). Finally, when none of the previous efforts could be undertaken, firms were discarded from the sample to ensure clean estimates.

The resulting samples typically excluded: (1) some cases of SOEs for which, often due to mergers or spinoffs, data from the pre-privatization period was missing; (2) a few instances of very small state ownership shares being sold (Argentina and Chile), firms that underwent changes in accounting (Bolivia and Chile), and some very recent privatization cases (Bolivia and Brazil); and (3) firms that were liquidated after privatization, although robustness checks were applied to ensure results would not be significantly changed with their inclusion (see Figure 5).

To summarize, several early privatization studies suffered from biases introduced by non-comprehensive samples and the use of "poor" data when the nature of the firm changed before and after privatization. Today, due to recent Latin American studies outlined in this paper and other efforts, mainly for Eastern European countries, these concerns have been largely put to rest with comprehensive firm-level data across sectors and company sizes.[13] The rest of this section outlines the evidence on performance changes after privatization emerging from the Latin American countries included in Chong and López-de-Silanes (2003a).

### *3.3. Evidence from Comprehensive Data Samples on Privatization in Latin America*

In this section we analyze the recent Latin American evidence on the effects of privatization. As previously explained, the data are some of the most comprehensive and up to date for the region, allowing us to address many of the concerns raised about privatization. The basic results for the sample of Latin American countries are presented in Figures 6 through 11.[14] We analyze profitability, operating efficiency, the behavior of inputs, output and taxes. In accordance with earlier worldwide evidence (i.e., Megginson et al., 1994; Boubakri and Cosset, 1998 and 1999; D'Souza and Megginson, 1999), Latin American studies find improvements in firm's profitability. These increases are typically accompanied by reductions in unit costs, boosts in output and lower or constant levels of employment and investment. The evidence suggests that higher efficiency, achieved through firm restructuring and productivity improvements, underpins profitability gains. The raw results on firm performance are followed by industry-adjusted information to

[13] Comprehensive privatization studies for Eastern European countries have also found higher profitability results although the accounting data for such countries is more problematic. Some examples are Claessens et al. (1997) for the Czech Republic, Dyck (1997) for East Germany, and Frydman et al. (1999) for the Czech Republic, Hungary, and Poland. For most of these cases accounting differences before and after privatization are of greater concern than for the case of Latin America, where SOEs used to file and collect similar information to that of private firms.

[14] The data presented in this paper come from the series of papers in the book edited by Chong and López-de-Silanes (2003a). Homogeneous data for such extensive samples are difficult to collect since not all the same information is available or reported for all firms in all countries. The figures in this section show comparable information across countries but the comparisons are not perfect. When we lack strictly comparable information, we do not include that data for these countries in the figures and we only discuss the results in the text. The specific information for each country comes from: Galiani, Gertler, Schargrodsky and Sturzenegger (2003) for Argentina; Anuatti-Neto, Barossi-Filho, de Cavalho and Macedo (2003) for Brazil; Garrón, Machicado and Capra (2003) for Bolivia; Fischer, Serra and Gutiérrez

verify their robustness. Whenever possible, we show the data for median firms as they are less affected by outliers.

### *3.3.1. Raw Data*

The evidence from Latin America shows substantial gains in profitability after privatization, measured by net-income-to-sales and operating-income-to-sales ratios (see Figure 6). For the countries in the sample, the median net-income-to-sales (operating-income-to-sales) ratio increased 14 (12) percentage points. The largest gains are in Peru and Argentina, where median changes reached about 20 percentage points. Brazil shows the smallest gains, between 2 to 5 percentage points depending on the ratio. Unlike their counterparts in other countries, Colombian SOEs were highly profitable before privatization. The Colombian levels of relative profitability are largely explained by the protective industrial policy implemented by the government during the 1980s (Pombo and Ramírez, 2003).

The data for Latin America also suggest that the main reason behind the profitability gains is the improved operating efficiency brought about by privatization. In Figure 7 we explore this issue using: costs-per-unit, the ratio of sales-over-assets and the ratio of sales-over-employment. Costs-per-unit plummet with the median decline equivalent to 16 percent for the countries with available data. The results are statistically significant at 1 percent for all countries except Chile. In 4 out the 7 countries SOEs were highly unprofitable before privatization with losses above 10 percent of sales in terms of net-income-to-sales. The exceptions are Chile and Bolivia, whose SOEs exhibited slightly positive profitability ratios, and Colombia, where the SOE sector was very profitable compared to private competitors.

The sales-to-asset ratios show a similar trend on the rise in 4 out of 5 countries. The median country increase in ratio is 26 percent. Peru is the only country with a fall of about 20 percent in sales-to-assets as privatized SOEs engaged in large investments that overtook output increases. Finally, the impact on sales-to-employment is dramatic with a median gain of almost 70 percent. Chile and Mexico show the most impressive results, as

(2003) for Chile; Pombo and Ramírez (2003) for Colombia; Chong and López-de-Silanes (2003b) for Mexico; and Torero (2002) for Peru.

sales-per-employee doubled. Information for Colombia, not in the figure for reasons of strict comparability, suggests that SOEs also underwent restructuring with significant efficiency gains. The mean (median) manufacturing firm in Colombia experienced a 43 (13) percent gain in labor productivity and the total factor productivity index increased at a rate of 2.4 percent per year.

As Figure 8 shows, labor retrenchment is a significant component of the privatization experience in Latin America. Privatized firms reduced a substantial percentage of their workforce in almost all countries. The exception to this trend is Chile, where the mean number of workers in privatized firms increased by 15 percent and the median fell by 5 percent. In general, the median country reduced 24 percent of its workforce. Privatized SOEs in Colombia, Mexico and Peru show significant reductions as the median firm fired 24, 57, and 56 percent of its workforce, respectively. The magnitude of employment reductions in these countries speaks of SOEs with bloated workforces providing evidence in line with the political economy view of the benefits of privatization. The evidence on labor cuts suggests that transfers from workers to shareholders may be a significant component of the success of privatization. We will explore this issue in Section 4.

A priori, the impact of privatization on investment is not clear. One could expect privatized firms to avoid new investments since SOEs usually have ample idle capacity. On the other hand, if the production process used by the SOE is outdated, one could expect a large increase in investment. Except for the case of Argentina, where investment increased by over 350 percent, the data for the rest of Latin America confirm the initial hypothesis as investment exhibits modest gains, or statistically insignificant changes.

Our analysis so far suggests that the profitability gains of privatized firms are mostly due to efficiency gains. Most countries show drastic cuts in employment and fairly consistent capital stocks. Perhaps the most striking finding is that the output of privatized SOEs dramatically increased, despite dwindling employment and modest investment. As Figure 9 shows, output increased significantly in the region. The largest gains are in Mexico and Colombia, where median output increased 68 and 59 percent respectively. The country with the lowest, albeit significant, increase in output is Brazil, where real sales went up 17 percent.

### *3.3.2. Adjusted Ratios*

Latin America underwent major economic transformations as countries embraced liberal policies and opened up their borders during the 1990s. Most of these countries expanded and contracted at various points, leading to concerns about the interpretation of the evidence just discussed. In particular, one may argue that the large profitability and output increases and the rapid growth in productivity may only be the result of macroeconomic and industry changes in the region. To isolate the role of privatization, the series of studies in Chong and López-de-Silanes (2003a) present industry-adjusted measures providing robustness to the patterns discussed so far.

The data displayed in Figure 9 allow us to rule out macroeconomic factors as the driving force behind post-privatization output growth: median industry-adjusted sales grew 27.5 percent in the region. In Brazil and Peru, for example, matching private firms basically stagnated as the median industry-adjusted output of privatized firms in those countries increased at about the same rate as the raw numbers. Meanwhile, the improved economic conditions and industry factors in Mexico and Colombia account for about one-fifth and three-fifths of output growth respectively.

Relative to industry benchmarks the median (mean) employment of privatized firms fell roughly 24 (35) percent in the region (see Figure 8). In contrast, relative investment behavior differs across countries. Median industry-adjusted investment-to-sales and investment-to-asset ratios fell considerably in Brazil and Mexico, but showed a marked increase in Argentina, Chile and Colombia.

The second most important finding of this section is shown in Figures 10 and 11, which make evident the closing gap between privatized and comparable private firms after privatization. The most dramatic example of convergence is for Mexico, where the net-income-to-sales gap between privatized and private firms disappeared and even turned slightly in favor of privatized SOEs. The Argentinean data, although not in the same comparable format, also show a similar pattern of "catching up." The industry-adjusted net-income-to-sales (operating-income-to-sales) ratio increased 188 (129) percent after privatization. The profitability gap between Colombian privatized and private firms also closed, albeit from a different starting point. Before privatization, the median firm in the SOE energy sector was about 20 percentage points more profitable

than its private counterpart. Substantially lower levels of protection of these firms explain the narrowing gap with the private sector after privatization. Finally, Brazilian and Chilean privatized samples also improved their relative profitability with respect to their industry competitors. In the case of Brazil, privatized SOEs became slightly more profitable than their private competitors, while the gap between Chilean privatized and private firms narrowed to about 20 percent.

Figure 11 shows the closing gap between privatized and private firms in terms of unit costs. Brazilian privatized firms quickly reduced the 9-percentage-point gap to about 2 percentage points, a similar level as Chilean firms before and after privatization. In Argentina, industry-adjusted unit costs declined 10 percent. Meanwhile, Mexico's privatized SOEs substantially cut costs eliminating a large 14-percentage-point gap with private competitors. The catching-up effect of privatization is explained by the large gains in operating efficiency that more than survive industry adjustments. Relative to industry benchmarks, median sales-per-employee went up 9 percent in Argentina, 28 percent in Bolivia, and a massive 88 percent in Mexico. Similarly, median industry-adjusted sales-to-asset ratios increased 20 percent in Mexico, 34 percent in Brazil, 49 percent in Chile, and 142 percent in Bolivia. All of these numbers suggest that a large component of the higher profitability comes from improved efficiency, lining up with the rest of the evidence presented in the following section.

## 4. Who Wins and Loses from Privatization? Concerns about Exploitation of Market Power, Workers and the Government

Some of the main criticisms against privatization are based on the belief that the gains in firm profitability are achieved at the expense of society. These gains are claimed to be extracted from consumers through the use of market power, from workers by means of lower salaries, and from the government who gives up a stream of positive cash flows (Campbell-White and Bhatia, 1998; Bayliss, 2002). In this section, we use the recent empirical evidence from Latin America and elsewhere to assess the sources of profitability gains of privatized SOEs.

### *4.1. Government Revenues*

Critics of privatization often argue that the government, and thus society at large, loses from privatization because it gives up a positive stream of cash flows and puts them in the hands of private buyers. The argument is extended to claim that the sale of SOEs is equivalent to a "privatization of gains and a socialization of losses." In other words, well-connected groups are able to reap the profits of privatized firms and receive government-sponsored bailouts when things go wrong. The evidence used to support these claims comes mostly from case studies of profitable SOEs that were privatized, unprofitable SOEs that turned out to be great moneymakers after privatization, and SOEs that became money losers and went into financial distress. This perception has swayed public opinion because of the excessive costs levied on society in some cases of botched privatizations. In Mexico, for example, the bailouts granted to keep banks and highways from going bankrupt increased public debt from less than 25 of GDP to over 50 percent (López-Calva, 2003).

The underlying logic of these arguments is similar to that undergirding the arguments for the economic benefits of state production, which in the 1950s and 1960s justified the existence of SOEs on the grounds that they help solve market failures by taking into account the social costs of their actions. Today, there is ample academic evidence of the opposite in at least three areas. First, there is systematic evidence that SOEs are less efficient than private firms in developed and developing countries (Shleifer and Vishny, 1994; Shleifer, 1998). Second, SOEs' inefficiency may be the natural result of political meddling as governments use them to achieve political objectives. This political use of state production leads to excessive employment, inefficient investments and inadequate location of production sites, among other things (see López-de-Silanes, Shleifer and Vishny, 1997). Finally, during the last ten years, a large body of empirical work reviewed in previous sections shows that, by and large, privatization leads to substantial increases in the profitability of firms and not the other way around.

The criticisms of privatization that center around what the government gives up disregard the fact that SOEs are typically money-losing entities before privatization and that the visible losses may underestimate the real bottom line as its precise magnitude is obscured by large cross-subsidies from other SOEs and soft loans from the government.

In fact, tax collection from SOEs improved after privatization in most Latin American countries analyzed in Chong and López-de-Silanes (2003a). Brazil, the country with the smallest gains in profitability, experienced a 1 percentag point decrease in its net-taxes-to-sales ratio although it was still positive after privatization (the difference is not statistically significant). Meanwhile, in Mexico the same ratio increased 7.6 percentage points.Although we do not have direct information for Argentina, Bolivia, Chile and Peru, since net-income-over-sales increased between 12 and 20 percentage points, it is safe to assume that net-taxes-over-sales should have also increased by a few percentage points. Increased fiscal revenues mean more resources that can be channeled to address pressing social needs, thereby benefiting society at large.

Higher tax revenues, if managed appropriately, should allow governments an increased capability for welfare-improving activities to benefit the poorest segments of society. Argentina, Bolivia, Mexico and Peru are examples of countries where privatization revenues and the increased tax receipts from non-profit-making firms was probably large enough to offset the costs of job losses (Rama, 1999; Chong and López-de-Silanes, 2003c). However, privatization revenues need not be a blessing if they are misused. For example, Anuatti-Neto et al. (2003) point out that in Brazil privatization brought about high "macroeconomic costs" as its revenues may have delayed fiscal adjustment and helped prop up an overvalued currency. This is obviously not an argument against privatization, but against the political misuse of the resources it generates.

Overall, the empirical literature on privatization shows that it impacts the government's budget by reducing its previous subsidies to SOEs, obtaining substantial revenue from the sale and more taxes on higher profits. The benefits of a well-managed privatization program could be substantial, not only for the privatized firm but also for society.

### *4.2. Worker Exploitation*

The second potential source of gains after privatization is transfers from workers to shareholders as cuts in labor costs may account for a large fraction of reduced total costs. Labor cost reductions can come from two sources: fewer workers or lower wages and

benefits. As explained in Section 3.3, the set of papers that look at comprehensive samples from Latin America find that direct employment by the median SOE falls between 20 to 30 percent after privatization depending on the measure (see Figure 8). Layoffs explain part of the cost reduction and thus higher profits after privatization. The other potential component is cuts in wages and benefits. The hypothesis that privatization leads to redistribution of income from workers to the new owners predicts a reduction in real wages and benefits for those workers that remain in the firm. Data on wages at the firm level are scarce, but for those countries with available information (Argentina, Bolivia, Mexico and Peru) the evidence shows the exact opposite: real and industry-adjusted wages of workers in privatized firms increase. As Figure 12 shows, real and industry-adjusted wages for the median firm increase by about 100 percent in Mexico and Peru. In Argentina, the increase is about 70 percent, and in Bolivia the change is still positive but substantially smaller.

The two components of the transfers from workers to profits move in opposite directions. Therefore, the fraction of profitability changes that may be attributed to labor cost savings needs to consider the lower costs due to layoffs and the higher costs due to wage increases for the remaining workers. Following the methodology in La Porta and López-de-Silanes (1999), recent studies by Galiani et al. (2003), Garrón et al. (2003) and Torero (2002) compute the impact on profits from lower labor costs after privatization.[15] The evidence from Argentina, Bolivia, Mexico and Peru in Figure 13 shows that, even with the extreme assumption that laid-off workers had zero productivity, the median savings from labor costs is equivalent to 23 (20) percent of gains in net-income-to-sales (operating-income-to-sales) after privatization. The range of calculations extends from close to 5 percent in Peru to 45 percent in Mexico. This back-of-the-envelope calculation is extreme since we are assuming zero productivity of laid-off workers. If we assumed that these workers are half as productive as those retained by the firm, the median savings

[15] Savings from lower labor costs are computed as

$$\frac{Wage_{bp}*(L_{bp}-L_{ap})}{Sales_{ap}}$$

where $Wage_{bp}$ is the average wage of employees in the SOE before privatization; $L_{bp}$ is the number of workers employed before privatization; $L_{ap}$ is the number of employed workers after privatization; and $Sales_{ap}$ is the value of sales after privatization. The resulting number is thus expressed as a fraction of sales. We then divide the number by the percentage-point increase in net-income-to-sales and operating-income-to-sales ratios to determine the percentage of the respective increase that is due to transfers from workers.

from reduced labor costs for the countries with data falls to 11.6 (10) percent of the gains in net-income-to-sales (operating-income-to-sales). Overall, the evidence does show that labor cost reductions are a source of the gains after privatization, but it is hard to make the argument that these savings explain the bulk of the higher observed profitability.

The welfare of displaced workers after privatization is also an issue for consideration. The calculations above also overstate the worker losses to the extent that some of those laid off found alternative employment or attach some value to leisure. In fact, Galiani et al. (2003) suggest that some of these workers did find jobs. They carried out a survey among displaced workers in Argentina and estimated that their welfare loss was equivalent to 39 to 51 percent of their pre-privatization earnings and that 40 percent of them actually thought they were not worse off after privatization. This is actually surprising since most theories and evidence suggest that workers in SOEs are overpaid and have very low productivity (see Section 3.3). Further work is needed in this area to provide clearer evidence on the extent of worker welfare losses, but the available evidence thus far suggests that although laid-off workers do lose in this process, the losses may not be as large as previously thought.

Finally, privatization could also have compositional effects on the labor force and hurt unskilled workers disproportionately. The empirical evidence on this issue is inconclusive for the two Latin American countries with disaggregated wage and employment data. In Bolivia, blue-collar workers fared better than white-collar employees did since only 4 percent of them were laid off and over 35 percent of white-collar workers were fired by the median firm. In terms of wages, the data run in the opposite direction as unskilled workers that remained saw their real (industry-adjusted) wages increase only 4.2 (3.4) percent versus a 15 (30) percent rise for skilled workers. The case of Mexican blue-collar workers also shows inconclusive results, but this time with higher blue-collar layoffs in the median firm (61 percent or 32 percent industry-adjusted), and sharp rises in blue-collar real and industry-adjusted wages that climbed 148 and 122 percent respectively. Meanwhile, fewer white-collar employees were fired by the median firm (46 percent and 31 percent industry-adjusted), but those who stayed enjoyed substantially smaller real wage increases than those of blue-collars (100 and 48

percent industry-adjusted). Therefore, for neither of these countries can we conclude that unskilled workers fare worse than skilled labor as a result of privatization.

### *4.3. Abuse of Market Power and Consumer Exploitation*

The last concern about the sources of post-privatization gains is that the increase in firm profitability may come at the expense of consumers through weak regulation and abuse of market power. The recent series of papers from Latin America reviewed in Section 3 provides useful data to assess these claims. If market power is a significant determinant of the gains, we should expect firms in noncompetitive sectors to experience large gains in operating income due to higher product prices. Since profits are likely to be higher in the noncompetitive sectors before and after privatization, the relevant comparison to establish the facts for this section is relative changes among privatized firms in competitive and noncompetitive sectors.

For the Latin American countries with data disaggregated by competitive and noncompetitive sectors, we find that changes in profitability are generally larger in the competitive sector.[16] This evidence goes against the hypothesis that market power explains most of the gains. As Figure 14 shows, the median ratio of operating-income-to-sales in Mexico increased 14.5 percentage points for privatized firms in the competitive sector and only 8.5 points for firms in noncompetitive industries. Similarly, competitive firms in Colombia performed relatively better than their noncompetitive counterparts as their median profitability decreased by only 2 percentage points compared to the 13-point drop for noncompetitive sectors that underwent severe deregulation. In Chile, although the noncompetitive sectors' profitability increased more (8.5 percentage points), it is not statistically different from the 5.5-percentage-point increase in competitive sectors. Data for Peru reinforce this trend as firms in noncompetitive sectors increased their profitability by an average of 27 percentage points while the mean increase in the whole sample was 32 percentage points.

[16] Firms are classified as competitive and noncompetitive as follows: (1) for Chile, firms are classified as non-competitive if they are in telecommunications, electricity or social services sectors; (2) for Colombia, noncompetitive firms are those in the energy sector; (3) for Mexico, firms are classified based on the description of the industry provided in the privatization prospectus of the firm; and (4) for Peru, the noncompetitive sector is formed by firms in the electricity, financial and telecommunications sectors and

Regression analysis for Peru and Bolivia using concentration proxies also helps us assess the role of market power. Confirming the trend above, market concentration in both countries was found not to be a significant determinant of profits. Finally, information on firms' product prices before and after privatization in Mexico also suggests that market power is not a large source of gains. Cumulative price increases in the noncompetitive sector in Mexico were only 6 percent higher than the growth of the industry-matched PPI index over the post-privatization period. La Porta and López-de-Silanes (1999) use this product price data to draw a quick calculation of the contribution of changes in prices to the observed change in profitability of the whole sample of privatized firms. Their data show that price increases accounted for only 5 (7) percent of the change in mean (median) operating-income-to-sales after privatization.[17] If market power were an important source of profits for privatized firms, those in noncompetitive sectors would be expected to show lower growth in employment, investment and output than firms in competitive sectors (see La Porta and López-de-Silanes, 1999). Available evidence for Latin America does not support these claims either (see Figure 15). In Mexico and Colombia, employment dropped 46 and 24 percent for firms in the competitive sector, and it only decreased 19 and 10 percent for noncompetitive firms, respectively. In Chile, the pattern is even more striking: employment actually increased in both sectors, rising 16 percent in competitive industries and 32 percent in noncompetitive sectors. For Peru, employment data show no divergence in results between competitive and non-competitive sectors as the latter declined by 50 percent while employment fell 51 percent for the whole sample. Output growth data for Mexico and Peru reinforce this trend. In Peru, output growth for both sectors was very similar with noncompetitive firms increasing sales 47 percent and the sales of the whole sample going up 50 percent.

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the data under "competitive" industries shows the numbers for the whole sample instead. The data for Peru refer to mean rather than median values.

[17] To isolate the contribution of changes in relative prices as a factor behind the observed profitability gains, the calculation compares the observed percentage-point increase in operating-income-to-sales with what would have taken place if privatized firms had increased output but left real prices unchanged at pre-privatization levels. Specifically, the formula used for the price contribution is

$$\text{Price Contribution}=\frac{\text{Sales}_{ap}-\text{Cost}_{ap}}{\text{Sales}_{ap}}-\frac{[\text{Sales}_{ap}/(1+\pi)]-\text{Cost}_{ap}}{\text{Sales}_{ap}/(1+\pi)}$$

where $\text{Sales}_{ap}$ are sales in the post-privatization period, $\text{Cost}_{ap}$ are operating costs in the post-privatization period and $\pi$ is the increase in real prices.

Similarly, in Mexico, output of competitive firms increased 56 percent, while sales in the noncompetitive sector went up 78 percent.

Additional evidence comes from investment patterns. Investment-per-employee grew 49 and 154 percent in the noncompetitive sectors of Mexico and Colombia, respectively. Meanwhile, the same ratio grew only 29 percent in competitive sectors of Mexico and stagnated in Colombia's competitive industries. The evidence for Chile here runs in the opposite direction but it is hardly conclusive of market power abuse. Although investment-per-employee grew 74 percent in Chile's competitive sectors, it also grew almost 50 percent in noncompetitive industries.

Overall, the Latin American evidence presented in this section does not support the claim that consumer exploitation is a significant source of privatization gains. These studies suggest that a large source of the gains may lie in deep firm restructuring that leads to lower costs and higher efficiency. Evidence from Chile and Mexico are suggestive of this pattern. Unit costs in the competitive sector fell 3 percent in Chile and 13 percent in Mexico, while those of noncompetitive industries decreased 8 percent and 24 percent in each respective country. To conclude, abuse of market power may be an issue for some firms, but the bulk of the evidence suggests it is not the main reason explaining privatization gains across the board.

### *4.4. Other Dimensions of Consumer Welfare beyond the Effect on Prices*

Beyond its effect on prices, privatization may impact consumer welfare through decreased access, poorer distribution and lower quality of goods and services (Bayliss and Hall, 2000; Bayliss, 2001; Akram, 2000; Freije and Rivas, 2002; and Birdsall and Nellis, 2002). These concerns are significant because, for the most part, the poorest segments of society are the main consumers of goods and services previously produced by SOEs. The evidence of increased output, firm restructuring and prices presented in Sections 3.3 and 4.3 should alleviate some of these concerns, particularly for the case of standardized goods and products. Output and price are suitable proxies for measuring the availability of most of these goods. However, in the case of services and public utilities, access and distribution may still be a concern as some segments of the population may lack access to the network and thus may be unable to purchase these services

independently of their price. Similarly, the quality of services such as water, electricity, telecommunications, or transportation may be reduced to try to meet price regulation, for example. In all of these circumstances, consumer welfare may suffer as a result of privatization.

Some review studies of privatization cases are pessimistic about its success in the service sector. Bayliss (2002) points to examples of botched privatizations in Puerto Rico and Trinidad and Tobago where water privatization led to price hikes and no apparent improvement in provision. Similarly, the privatization of the electric sector in the Dominican Republic is claimed to have led to more blackouts and higher utility prices, culminating in civil unrest and the deaths of several demonstrators. It is evident that one can always find cases of failure and cases of success. Therefore, the only true way to address this question is to gather data that allow a more interesting, systematic and economically robust analysis.

A first generation of privatization studies shed light on this subject by analyzing case studies in several countries. Galal et al. (1994), for example, analyze 12 privatization cases in Chile, Malaysia, Mexico and the United Kingdom, including firms in sectors such as airlines and telecommunications. Their results indicate that privatization led to welfare gains of about 25% of the pre-privatization sales in 11 of the 12 cases. Early work on the privatization experience in Argentina (i.e., Crampes and Estache, 1996; Estache and Rodriguez, 1996; and Carbajo and Estache, 1996) also show significant gains in access to services such as water, power and port infrastructure. With regard to telecommunications and railroad infrastructure, Ramamurti (1996 and 1997) concludes that privatization had a positive effect in Latin America because it led to a technological overhaul of the sector and increased both access and quality of the services. Similarly, Ros (1999) examines the effect of privatization on the telecom sector in 110 countries and finds that the transfer of control from the public to the private sector led to significantly higher teledensity levels. Although the level of competition had a positive effect on industry efficiency, only privatization was related to network expansions.

A new generation of studies has emerged with more detailed data and new econometric approaches that seem to corroborate the early results in terms of access and quality. For instance, Torero and Pasco-Font (2001) show the number of telephone lines

in Peru increased from 2.9 to 7.8 per 100 inhabitants and the electrification coefficient jumped from 48 to 70 percent between 1993 and 1998. Another study by Torero et al. (2003) tests the impact of the privatization of telecommunications on the welfare of urban consumers in Peru showing significant welfare gains and dramatic improvements in terms of efficiency, access and quality of service. Similarly, Fischer et al. (2003) find improvements in access and service quality in the telecommunications sector in Chile, where the number of phone lines in operation increased six fold, bringing teledensity levels from 4.7 to 23.1 lines per 100 inhabitants between 1987 and 2001. The average length of the waiting period for a new phone line dropped from 416 days in 1993 to only 6 days in 2001, while the waiting list for a phone had dropped from a peak of 314,000 households in 1992 to only 32,000 by 2001.[18]

There are similar examples of improvements in access to water, electricity, telecommunications and other services throughout the region that have created benefits beyond lower prices. Nonetheless, one may still be concerned about the distributional impacts of the increased coverage, as it may not be reaching the poorest sectors of society. Bayliss (2002) recognizes that privatization has the potential for welfare enhancing outcomes if it leads to low-income households gaining access to the service network. However, her review of cases suggests that the drive to seek higher profits in the private provision of services will almost invariably lead to a loss for the poor. Birdsall and Nellis (2002) also argue that privatization may lead to improvements in efficiency and profitability accompanied by worse income distribution and wealth.[19] They conclude that the gains in profitability are probably not worth the distributive effects they create.

Again, recent detailed econometric analyses with better samples provide some answers to these concerns. Galiani et al. (2002) has some of the best data available for the municipal level in Argentina, where about 30 percent of localities privatized water delivery services. Their results show a significant increase in the proportion of households connected to water services in municipalities that privatized compared to those that did not. Their regression estimates suggest that as a result of privatization the

[18] Trujillo et al. (2002) provide evidence for 21 Latin American countries between 1985 and 1998 and find that private sector involvement in utilities and transport yielded marginally positive results on GDP per capita.

[19] They also indicate that these results are less valid for Latin America than for transition economies, and less relevant for utilities' privatization than for banks or oil.

number of households connected to the water network increased by 11.6 percent excluding Buenos Aires, where 98% of households were already connected. Similarly, using less comprehensive data from Bolivia, Barja et al. (2002) find that privatization increased access to water relative to both the existing trend and the non-privatized areas. More importantly, they find that the relative benefits of water privatization are larger for the poorest segments of the population who gained from the largest increases in access.

Galiani et al. (2003) cleverly design tests that map water delivery to infant mortality in order to directly address the concerns about quality after privatization. Their regressions show that, controlling for other factors, Argentinean child mortality fell by 5 to 7 percent more in areas that privatized water services than those that did not. The effect was larger in the poorest municipalities that privatized where child mortality fell 24 percent. Privatization translated into 375 child deaths prevented per year. Along a similar line, Mookherjee and McKenzie (2003) provide an overview of four studies from Argentina, Bolivia, Mexico and Nicaragua that use household surveys to measure the impact of privatization on welfare. They conclude that the sale of SOEs brought positive welfare effects and that the poorest segments of the population appear to be relatively better off. In Argentina, for example, they report falling electricity prices that improved the welfare of all income deciles. For Bolivia, they also report welfare gains from increased electricity access for all but the top income deciles. The gains exceeded 100 percent for the lowest deciles in spite of real price increases. In Nicaragua, although the price of electricity increased, since the budget share allocated to electricity is typically low, the welfare loss to households that already had access was less than one percent of their per-capita expenditure. On the other hand, the value of gaining access to electricity was positive and of a larger magnitude for lower income deciles who had relatively less access before privatization. The net positive impact of electricity privatization for these low-income groups reached nearly 16 percent of per-capita expenditure.

So far, Sections 3 and 4 have provided evidence that addresses most of the criticisms of privatization. What remains unaddressed, however, is how to make sense of the cases of privatization failures pointed out by several authors (see Bayliss, 2002 and Birdsall and Nellis, 2002 for reviews). It will always be possible to find instances of failed privatizations, but we should not distort this information and turn it into an

argument against privatization itself. The overwhelming evidence showing that it can be done right suggests that we should look for the reasons why it failed in certain instances. In the next two sections, we argue that many of these failures have two roots: (1) the role of politicians in the privatization process that may lead to corruption, renegotiation and opportunistic behavior; and (2) the lack of an appropriate post-privatization regulatory and corporate governance framework that sets the boundaries for non-abusive corporate behavior and facilitates investment.

## 5. What is the Best Approach for Selling? Concerns about the Privatization Process

Privatization requires heavy government involvement as politicians set up the method and run the process through which they end up either "selling their own firms" or "firing themselves or their friends" (Perotti, 1995; Biais and Perotti, 2002; Bortolotti, Fantini and Scarpa, 2001; Earle and Gehlbach, 2003). Looking at the privatization process in this light shows the relevance of understanding the impact of the process' characteristics and the opportunities for corruption they may provide. Privatization may be the last chance for politicians to appropriate cash flows or deliver favors that further their political objectives. There are three areas where the role of the politicians in privatization is central: (a) the method of privatization chosen; (b) the restructuring of firms before they are sold off; and (c) the types of contracts written.

### *5.1. The Method of Privatization*

The way the privatization process is carried out is of utmost importance. A successful program can increase social welfare and bring about efficiency gains across the board, while a botched process may create opportunities for inefficiency and corruption. In Argentina, as in other countries, an obscure bidding process raised suspicions of corruption and political favoritism. When governments fail to ensure a crystal clear process, the perception of corruption can breed unease among the public and may lead to a backlash against privatization. In principle, a clear and homogeneous privatization process should be established from the start and special emphasis should be placed on making the auction results as transparent as possible. In reality, however, only a handful

of countries have followed this path. Many fail to establish clear guidelines because their privatization programs were originally planned as small affairs or because they lack the necessary skills to do so. Alternatively, politicians may have strong incentives to create obscure and arbitrary privatization mechanisms that allow them to extract higher rents for themselves or their constituencies. Providing systematic evidence of the impact of the privatization process on the sale price and subsequent firm performance is difficult though not impossible. The existing empirical literature has taken two approaches to address these issues.

The first approach is to use cross-country comparisons. Chong and Riaño (2003), for example, analyze 285 privatizations in industrialized and developing countries and find a positive relationship between bureaucratic quality, lack of corruption and privatization prices. Their results show that, when controlling for macroeconomic conditions and firm characteristics, a one-point increase in the 0-to-10 indices of bureaucratic quality and lack corruption is associated with a 10.2 and 9.6 percent increase in the price-per-dollar-of-assets paid in privatizations, respectively. Similarly, Bortolotti, Fantini and Scarpa (2001) analyze data for 49 countries and conclude that strong legal institutions and adequately developed capital markets substantially contribute to successful privatizations. Finally, Chong and Sánchez (2003) provide data for infrastructure privatization contracts in Brazil, Chile, Colombia and Peru to show that establishing a clear and transparent contractual arrangement helped achieve the privatization objectives set out by these governments. In conclusion, these results suggest that the success or failure of privatization programs is influenced by the honesty and efficiency of the government and by the simplicity and transparency of contractual agreements.

The second approach to analyzing the impact of the method of privatization is to use within-country data. López-de-Silanes (1997) for Mexico and Arin and Okten (2002) for Turkey have the advantage of being able to control for potentially omitted variables and therefore provide a fuller analysis of the impact of several restructuring measures and privatization mechanisms on the net price of SOEs.[20]

[20] The net price in these studies is defined as the net privatization price (after the costs of privatization and restructuring are deducted) divided by the dollar value of the firms' assets. The benefit of focusing on this measure is that it provides a useful framework for comparing across firms and gives a benchmark against

The case of Mexico is a good illustration of the impact of specific differences in the privatization process since the program lasted over a decade and was executed by different administrations. An additional benefit of this sample is that although the general method of first-price sealed-bid auction was the rule throughout the period, certain firms were privatized with specific requirements that provide useful variations to analyze. Between 1982 and 1988, privatization was not conducted as a centralized program, allowing each ministry to sell enterprises in their realms of operations. The result of this policy was a plethora of requirements for bidders and methods of payment. In contrast, the administration that took power in 1988 established a centralized privatization office and developed a homogenous process, which improved transparency by mandating public disclosure of the bidding stages through the press. Econometric estimations show that, controlling for macroeconomic and firm-level characteristics, firms privatized under the second period sold at a premium of about 15 percent (López-de-Silanes, 1997). The gains in efficiency due to better coordination and the presumably reduced room for corruption and political meddling have a clear mapping in the price received for enterprises sold.

Econometric work with firm-level data from Mexico also shows that different auction requirements make a substantial difference in the net price received by the government for SOEs. Firms sold under restrictions banning foreign bidders, requiring a pre-qualification stage or asking for cash-only-payments had significantly lower prices per dollar of assets sold. Therefore, there is an effect of these requirements that is independent of the fact that they reduce competition in the auction: this evidence suggests that idiosyncratic and arbitrary privatization processes come at a direct cost to the government in term of SOEs' prices.

The speed at which each privatization takes place may also have an impact on net prices raised. The theoretical literature is split between the benefits and costs of a short process. While there are potential costs of rushing a sale, such as not attracting enough

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which to think about the relative price of other privatization goals pursued by the government. Privatization programs are typically designed with the aim of pursuing revenue generation, to get out of a fiscal crisis or to serve redistributive purposes. For Mexico, Peru, Brazil and Colombia, the price paid was a crucial motivation in selecting winners for almost all privatized SOEs (López-de-Silanes, 1997; Torero, 2002; Anuatti-Neto et al., 2003; Pombo and Ramírez, 2003). Furthermore, economists have generally endorsed the goal of maximizing revenues. Bolton and Roland (1992) show that a policy of maximizing net sales revenue is likely to be consistent with a policy of maximizing social welfare since the proceeds from the sale can be used to subsidize employment, investment, a social safety net and other public goods.

bidders or not having enough time to set up an appropriate regulatory framework, the advocates of a speedy process point to the benefits to quickly disposing of money-losing firms and avoiding costly restructuring (Coes, 1998). In order to address this issue, the recent literature has tried to measure the impact that the length of the privatization process has on the price that is paid for the specific SOE. Some believe that a lengthy privatization process should come at no cost since managers' concern for their reputation will lead them to run the firm efficiently (Bolton and Roland, 1992), or that the announcement of privatization may improve stakeholders' incentives and could therefore boost company performance (Caves, 1990). On the other hand, if we think of privatization as a process similar to the situation of a firm in financial distress, we would expect the privatization announcement to be followed by a deterioration of incentives and performance (Altman, 1984; Wruck, 1990).

Within-country firm-level panel data are ideally set up for resolving this dispute. Evidence from Mexico and Turkey shows that, controlling for firm and industry characteristics; lengthy privatization processes come at a substantial cost to the government. The announcement of privatization in these countries brought a considerable deterioration in performance, which is probably due to the collapse of managers' incentives, and disgruntled workers who see their futures as highly uncertain (López-de-Silanes, 1997 and Arin and Okten, 2002).[21]

### *5.2. Restructuring Firms prior to Privatization*

Government restructuring of SOEs prior to their sale is an issue that is likely to be fraught with political difficulties since this is probably the last chance for government officials to extract benefits. As with other policies, restructuring programs can be defended rationally on grounds that it may increase revenues from the sale, or may ensure that firms are sent out to the market in the best conditions to minimize layoffs and secure their survival (Nellis and Kikeri, 1989; Kikeri et al., 1992; Kikeri, 1999). As a result, there is great ambivalence about the optimal policy approach towards restructuring prior to privatization.

[21] The evidence for the case of Turkey should only be regarded as tentative since the lack of data has, so far, prevented a robust instrumental variables analysis for this country.

López-de-Silanes (1997) summarizes the theoretical arguments for and against various measures of prior-restructuring and suggests that the issue should be resolved empirically. However, even with firm-level data this is not a straightforward proposition as restructuring measures are not undertaken randomly, but are selectively targeted to firms that need them most. We would expect the government to absorb debt of highly indebted SOEs, to fire workers when firms face serious over-employment and to invest in new machinery when production processes are outdated. If the endogenous nature of these measures is not considered, we run the risk of reaching the wrong conclusions as regression coefficients would capture not only the effect of the restructuring measure, but also the negative effects of being in distress or having a bloated workforce.

Available empirical evidence strongly suggests that restructuring policies do not lead to better net prices per dollar of assets sold. For the case of Mexico, López-de-Silanes (1997) shows that, after controlling for endogeneity, the optimal policy seems to be to refrain as much as possible from engaging in SOE restructuring. Some of the most popular measures, such as debt absorption, do not increase net prices, while measures such as the establishment of investment and efficiency programs actually reduce net prices. These facts may be the result of politicians themselves carrying out the restructuring programs and emphasizing their political preferences when deciding what to invest in and what to do with existing infrastructure. It is disingenuous to think that the government can satisfy the desires of the new owners better that they could themselves. In Mexico's case, a few changes to the privatization mechanism could have yielded large benefits: an emphasis on speed, firing the CEO before privatization and refraining from other costly restructuring measures would have increased net prices by 135 percent. A similar study by Chong and Galdo (2002) analyzes a cross-country sample of telecommunications firms that were privatized between 1985 and 2000 showing that ordinary least squares and instrumental variables regressions yield no evidence that streamlining before privatization is linked to higher net prices. Finally, evidence from Turkey (Arin and Okten, 2002) also supports the conclusion that restructuring measures are either useless or counterproductive in raising net prices.

One of the most sensitive topics in the area of firm restructuring prior to privatization is that of labor force retrenchment. In order to analyze the impact of such

retrenchment policies beyond their effects on privatization prices, Chong and López-de-Silanes (2003c) construct a worldwide privatization database containing detailed pre-privatization firm and labor force characteristics, labor restructuring measures undertaken by the government and information on post-privatization labor re-hiring policies, among other things. Table 3 shows that in spite of heavy unionization rates, most governments around the world downsize the labor force of SOEs before privatization. In 78 percent of the sample there was labor retrenchment, while only 33 percent of all firms experienced voluntary downsizing programs. Employment guarantees were established as part of privatization in 28 percent of the cases while pay cuts before privatization were very infrequent (7.5 percent). Asia is the only region of the world with significantly lower frequency of labor downsizing before privatization. Governments in Latin America deviated little from this pattern; the only notable exception is the low frequency of employment guarantees, which was only used in 8 percent of all firms privatized in the region. Table 3 also shows that Latin American SOEs were heavily unionized and active: two-thirds of SOEs privatized in the region experienced labor strikes in the three years before privatization.

Following the methodology in Chong and López-de-Silanes (2003c), we ran OLS and instrumental variables regressions for the 94 SOEs privatized in Latin America to test if labor restructuring policies in this region mapped into higher net prices per dollar of firm sales.[22] The first column of Table 4 shows the OLS results, suggesting that labor downsizing before privatization has a significant negative impact equivalent to 28 percent of the average net price per dollar of sales. The instrumental variables' results in column 2 shows that once we control for endogeneity, the coefficient drops essentially to zero and loses all significance.[23] The results for Latin America reflect those for other regions:

[22] The net price is calculated as the cash that accrues to the government after all privatization and restructuring costs are taken into account. This number is adjusted by the percentage of the firm's shares sold and divided by the average of net sales during the three years prior to privatization The sample for Latin America includes firms in the following countries: Argentina, Barbados, Belize, Bolivia, Brazil, Chile, Colombia, the Dominican Republic, El Salvador, Grenada, Guatemala, Guyana, Jamaica, Mexico, Panama, Peru, Saint Vincent, Puerto Rico, St. Kitts and Nevis, Trinidad and Tobago, and Venezuela.

[23] We apply a two-step instrumental variables approach by estimating a non-linear reduced-form equation that describes the probability that a particular labor restructuring policy will be implemented. The instruments used are classified in two groups: firm-level and macroeconomic-level determinants. The firm-level variables included the presence of a leading agent bank, involvement of a ministry before privatization, the political affiliation of unions, and sectoral dummies. The macroeconomic variables include the average GDP growth rate and the degree of openness in the three years prior to privatization

labor downsizing before privatization is not priced by the buyers. From the point of view of increased government revenues, if an SOE is overstaffed, it is probably best for governments to wait and let the new owners make the decisions after they buy the firm.

The other two regressions in Table 4 focus on the effect of labor retrenchment in the form of voluntary downsizing programs in which governments offer monetary incentives for workers to quit. Even after controlling for endogeneity, voluntary downsizing leads to a marginally significant discount in the net price paid by private buyers. This negative effect could be potentially explained by adverse selection, as workers with the highest productivity or the best chances of finding alternative work are more likely to leave. Voluntary downsizing may therefore hurt firms, tending to result in the termination of valuable workers and the retention of less productive ones (Fallick, 1995; Rama, 1999). As predicted by theoretical models (Kahn, 1985; Diwan, 1994; Jeon and Laffont, 1999), and despite the fact that voluntary separation programs are politically palatable, the findings here show that these programs may weaken firms and distort the composition of the workforce.

To shed further light on the "quality of firing" carried out by governments before privatization, Chong and López-de-Silanes (2003c) collected data on the hiring policies of SOEs after privatization. While hiring new workers probably responds to the legitimate business needs of privatized firms, re-hiring previously fired workers could mean that the downsizing programs before privatization went too far. After all, why else would a firm re-hire a worker that was deemed expendable a relatively short time before? Figure 16 shows that close to 45 percent of all firms that underwent labor retrenchment programs in the three years prior to privatization hired back some of the fired workers after privatization. Across countries, only 10 percent of firms with government-run retrenchment programs ended up hiring back some of those workers in the exact same positions within 18 months after privatization (*re-hire same*). Latin America is the region with the highest percentage of firms rehiring workers (53 percent) and rehiring to the same jobs that they had previously held (20 percent).

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and the legal origin of the country. None of these variables are statistically significant when included in the price equation. The *F*-statistic for the excluded instruments is statistically significant at 1 percent in all cases.

Table 5 analyzes the determinants of the probability that the privatized SOE with labor retrenchment programs before privatization would hire new workers (*new hires*) or old workers previously fired by the government (*re-hires*). Results show that the existence of a voluntary downsizing program before privatization does not predict a higher probability of firms hiring new workers after privatization (column 1). Meanwhile, a voluntary downsizing program before privatization increases by 34 percentage points the probability that the private buyer will re-hire some of the workers that were previously fired by the government.[24]

The hiring behavior of firms in the post-privatization period says a great deal about the quality of the firing process and provides further evidence against the wisdom of government restructuring before privatization. Based on the evidence in this section, governments should think hard before restructuring the workforce of to-be-privatized SOEs. The political costs are high, the impact on net prices is low, and the firm could end up losing some of its most valuable employees.

### *5.3. Type of Privatization Contract*

The type of privatization contract written is another potential area that may leave room for opportunistic behavior from politicians and private buyers. The simplest contracts are straightforward outright sales of assets in which the government disconnects itself completely from the operational future of the privatized firm. Other types of contracts may actually lead to a perverse relationship between the privatized firm and the state as managers and bureaucrats collude to serve their interests at the expense of consumers and taxpayers. These contracts could take the form of the provision of services, the construction of infrastructure projects or the establishment of joint ventures between private companies and the government. The common element in all of these cases is that the umbilical cord between the government and the firm has not been severed, leaving ample room for a complex set of problems. Shleifer and Vishny (1994) develop a theoretical model to help understand the incentives faced by firms in instances of partial privatization that may be extended to the situations mentioned above. When privatized

[24] Regressions control for labor rigidities coming from the collective relations laws from each country as the incidence of re-hires after privatization could also reflect the firing costs and rigidities of the labor market.

firms depend significantly on the state, they may not restructure as expected because it is easier for them to extract rents from the government than to undergo painful reforms. Politicians, on the other hand, have incentives to keep them afloat by subsidizing them and shielding them from competition. It is not difficult to imagine that these arrangements persist because they are beneficial for both parties, although they reduce social welfare. As Bayliss (2002) points out, water privatization programs in Guinea and Cote d'Ivoire are examples of poor deals in which the private sector was able to make substantial profits controlling the distribution and fee collection of the service, while the government spent resources maintaining the infrastructure.

In an attempt to find a solution to the complications that these relationships generate, Engel et al. (1999, 2001) analyze the Chilean infrastructure concessions during the 1990s and note that franchising programs can provide a better alternative to the traditional approach of full state financing for infrastructure projects, particularly for governments that are financially and politically constrained. The regulatory framework, however, must be effective in order to reap the potential benefits of franchising and avoid falling into hold-up problems in which firms underbid to get the contracts but then threaten with bankruptcy if a renegotiation is not granted.

Empirical evidence provided in Guasch (2001) shows that renegotiations in concessions are fairly common. He analyzes over 1,000 concessions granted in Latin American countries during the 1990s and finds that over 60 percent of them had been substantially renegotiated within 3 years. Infrastructure projects are usually very risky because of the difficulty inherent in forecasting demand. Therefore, firms usually press for income guarantees and other explicit or implicit insurance mechanisms that end up costing the government too much. It may occasionally be in the best interest of countries to give out these guarantees, but they should be made in an explicit fashion, accounted for transparently and, ideally, provided in exchange for a fee (Engel et al., 2003).

In all of these situations the solution should also include very clear disclosure and monitoring mechanisms to avoid related party transactions at unfair terms. Such transactions may end up bankrupting the joint venture or the asset that the government has an interest in keeping afloat to the benefit of the private corporation, as happened in the case of highways and commercial banks in Chile and Mexico (Ramírez, 1998; La

Porta, López-de-Silanes and Zamarripa, 2003; and Johnson et al., 2000). These are not easy issues to solve and many of the failures of privatization can be linked to perverse incentives provided by misguided privatization concession contracts.

The evidence in this section can be understood from a political economy perspective. Privatization involves politicians with incentives and objectives. Therefore, the design of the privatization process and the contracts ultimately written, the restrictions attached to the sale of SOEs and the restructuring measures adopted before privatization should be understood as opportunities for politicians to extract rents and hand out favors. This perspective helps rationalize instances in which corruption in privatization leads to disastrous results. The policy lesson is clear: a transparent and expeditious privatization process leaves less room for corruption and collusion between politicians and businessmen who may try to benefit from opaqueness. Of course, in the final analysis, one must also consider the time needed to set up an effective privatizing agency and build the regulatory framework that should be in place before SOEs with market power are sold. We turn to this topic in the next section.

## 6. Complementary Policies: Re-Regulation and Corporate Governance

The previous section analyzed some of the main failures in privatization emerging from policies or decisions taken before or at the time of privatization. In this section, we turn to the impact of the regulatory and institutional framework after privatization. Privatization should not be looked at in isolation. Its success is likely to depend on at least two sets of complementary policies. The first is deregulation and re-regulation of sectors with market power or in which government ownership represented a substantial percentage of total assets prior to privatization. The second is the establishment of a set of institutions that promote good corporate governance facilitating access to capital and allowing recently privatized firms to finance their growth without dependence on the state. Many privatization failures can be explained by a lack of careful consideration of these two complementary sets of policies.

### *6.1. Privatization, Re-Regulation and Deregulation*

There is no question that an appropriate regulatory framework after privatization is a key component of the success or failure of the program, particularly in utilities and services. Based on the available evidence, a common element across many failed examples of privatization is inadequate regulation leading to sub-optimal levels of competition or allowing producers to keep the gains from privatization without sharing them with consumers (Megginson and Netter, 2001; Boubakri and Cosset, 1999). The classic position of critics is to turn this into an argument against further privatization. However, the ample empirical evidence surveyed here shows that privatization can be done correctly, and can lead to social gains. This should be enough to discard a simplistic interpretation of cases of failures.

There are two prominent instances in which regulation should be carefully revised in conjunction to privatization: (1) industries characterized as natural monopolies or where oligopolistic market structures exist; and (2) industries where the government owns most of the assets in the industry even if no individual firm had substantial market power. Sectors with heavy state presence tend to be protected by a web of regulations originally instituted to cut SOE losses and reduce fiscal deficits. In some of these cases, the regulatory effort needed can be better understood as "deregulation" to get rid of protective structures that shield companies from competition and could allow privatized firms to make extraordinary gains at the cost of consumers. As explained in the early and more recent literature (Yarrow, 1986; Allen and Gale, 1999), competition and deregulation should be carefully considered in privatization. Winston (1993) argues that deregulation has the power to produce efficiency improvements, which can benefit consumers and producers. There is no reason to believe that deregulation should lead to different outcomes in the case of privatization of over-protected industries.[25] In cases of sectors with oligopolistic power, the deregulation effort needs to be complemented by a re-regulation that clearly establishes a new package of rules and disclosures that would enhance supervision and reduce abuse of market power.

[25] For the case of Mexico, La Porta and López-de-Silanes (1999) find that deregulation—particularly the removal of price and/or quantity controls and trade barriers—is linked to faster convergence of privatized firms to industry benchmarks.

Re-regulation of oligopolistic sectors is complicated because of the weakness in the regulatory governance. As Fischer and Serra (2002) explain, regulators are often subject to pressures from populist politicians and industry lobbyists and their low salaries make then susceptible to capture. Moreover, regulatory systems often operate within the context of an inefficient and perhaps even corrupt judicial system.

There are two ways in which deregulation complements privatization, as explained in La Porta and López-de-Silanes (1999). At the most basic level, product market competition provides a tool to weed out the least efficient firms. This process may take too long, or not work at all, if regulation inhibits new entry or makes exit costly. Wallsten (2001) undertakes an econometric analysis of the effects of telecommunications' privatization and regulation in a panel of 30 countries in Latin America and Africa. His results show that competition from mobile operators and privatization combined with the existence of a separate regulator are significantly associated with increases in labor efficiency, mainlines per capita and connection capacity. A casual interpretation of his results suggests that privatization of oligopolistic industries without concurrent reforms may not necessarily improve welfare.

Secondly, deregulation may also complement privatization by raising the cost of political intervention. Whereas an inefficient monopoly can squander its rents without endangering its existence, an inefficient firm in a competitive industry would have to receive a subsidy to stay afloat. The introduction of competition forces politicians to have to pay firms directly to engage in politically motivated actions whereas before the costs of these measures was absorbed by an SOE that did not have to worry about market performance. In fact, competition is often restricted precisely because it raises the costs of political influence. Colombia and Mexico provide good examples of deregulatory policy actions that, when coupled with privatization, can be used as a lever to transform the economic landscape and reduce political interference in the economy. In the early 1990s, Colombia began an economic openness program through the promotion of market competition and deregulation. As Pombo and Ramírez (2003) explain, privatization was conceived of as an instrument for economic deregulation and the promotion of market competition. A decade earlier, Mexico started to transform its previously closed economy characterized by capital controls, price regulation, restrictions on foreign direct

investment, high tariffs, import quotas and a large state-owned public sector. As in the case of Colombia, privatization coupled with deregulation played a key role in the drive to restructure the economy and help privatized SOEs catch up to their private peers (La Porta and López-de-Silanes, 1999).

Generally speaking, re-regulation or deregulation can take place at three different moments: before privatization, at the time of privatization or after the SOE has been sold. The literature has emphasized the importance of having efficient regulation at an early stage. Re-regulation or deregulating before privatization of the industry may increase the pace of divestiture and help sell companies at a higher price if it reduces regulatory risk as Bortolotti, Fantini and Siniscalco (2001) argue for the case of the electric sector. Wallsten (2002) finds that countries that established a separate regulatory authority in telecommunications prior to privatization not only benefited from increased telecom investment and telephone penetration, but also gained from investors' willingness to pay more for the telecom firms.[26] However, it is not easy to establish effective pre-privatization regulation for at least three reasons: First, changes to the regulatory regime prior to privatization are likely to lower SOE profits, translating into higher financial needs for the government at a very difficult time. Second, without the pressure of imminent privatization the political will for a true regulatory reform might not materialize. Finally, governments with little experience in privatization often find it difficult to carry out an effective pre-privatization regulatory reform.

Deregulation and re-regulation at the time of privatization, clarifying the new set of rules, solves the first two problems and reduces regulatory risk discounts. There is evidence that as long as a suitable regulatory framework is in place at or before the time of privatization, consumers and the government should benefit from the process. Chisari et al. (1999) use a computable general equilibrium model for Argentina to show that the gains from efficient regulation are non-trivial. Their model estimated the gains from the private operation of utilities at about 0.9 percent of GDP and those of effective regulation at an additional 0.35 percent of GDP. Moreover, they find that the distribution of the gains across income classes is driven by the effectiveness of the regulators. In short, their claim is that clear re-regulation is good for the poor.

[26] Chong and Galdo (2003) find similar results.

Lack of regulatory capabilities at the time of privatization coupled with a desire to maximize price at the time of the sale has led several governments to postpone full and clear re-regulation. Trying to establish an adequate regulatory scheme after privatization may be problematic from a political economy perspective. Since the agency in charge of enforcing and regulating the contracts is often the same or a subordinated entity to the agency that carried out the privatization, there is an incentive for lax enforcement to avoid exposing past mistakes. Chong and Sánchez (2003) document that for a broad number of concessions in infrastructure projects the private sector was able to bargain and keep protective regulation after privatization because of the threat of bankruptcy, withdrawal, or desertion of future investment commitments. All of these impact the reputation and credibility of privatizing politicians. According to the evidence in Guasch (2001), in the last 15 years, concession contracts in developing countries have often led to renegotiations. In Latin America and the Caribbean, 40 percent of all concession contracts were renegotiated just over 2.2 years after they were signed. Engel et al. (2003) argue that opportunistic renegotiations of concessions are common because of a "privatize now, regulate latter" approach. Cost overruns in concessions and unclear rules governing contingencies provide private owners with the opportunity to extract economic rents from the government. Finally, attempting to substantially alter the regulatory framework after the sale may also prove difficult as new constituencies against re-regulation are created at the time of privatization. Shareholders and managers of privatized SOEs are joined by workers and even consumers who could benefit from the protective regulatory status of firms.

The political economy approach explains why it is hard to bring about changes in regulation after privatization and why privatized firms are frequently able to renegotiate their contracts on more favorable terms. In this context, we believe that it is advisable to push for changes in the regulatory framework at the time of privatization or earlier if possible. However, one needs to be aware that perfection in developing the new regulatory framework may need a lot of time and this should not be used as an excuse for postponing the privatization of money-losing entities.

### *6.2. Privatization and Corporate Governance*

The last issue we would like to address in this paper is the connection between the success of privatization and the establishment of an institutional framework that promotes good corporate governance. The absence of this framework increases the cost of capital preventing privatized firms from undertaking the investments needed to operate in a more competitive environment. The access to alternative sources of finance at low cost allows firms to survive and grow without state help.

The development and appropriate functioning of stock and credit markets needs a solid regulatory framework that promotes investor protection and disclosure. Recent research has shown a strong link between firm's access to capital and laws efficiently enforced (La Porta, López-de-Silanes, Shleifer and Vishny, 1997; 1998; 2002; La Porta, López-de-Silanes and Shleifer, 2003). In countries where large numbers of firms have been sent out to the private market and deregulation has increased competition and lowered trade barriers, there is an urgent need for institutions that can efficiently channel resources to the new private sector. While the old laws and institutions might have been efficient in covering the needs of SOEs, private enterprises and privatized firms require different services and stand to benefit from the development of deep stock and credit markets. Ariyo and Jerome (1999), argue that the absence of developed capital markets and the lack of appropriate legal and judicial structures have hindered the success of privatization in Africa.

Before privatization, government banks are typically used as a source of financing. Yet in most privatization programs, the banking sector is one of those turned over to private hands. If financing for privatized SOEs is expected to come from privatized banks, or from any other private credit institution, there is an urgent need to make sure that creditor rights, embedded in bankruptcy laws, and the efficiency of courts are strengthened and streamlined. Without proper bankruptcy procedures that allow for the expedient recovery of assets, financial institutions will be reluctant to lend in fear of potential losses and may end up failing to satisfy the financial needs of the private sector. Moreover, the banking system itself is rendered more vulnerable to crises without effective creditor rights as it loses its ability to repossess collateral expediently (La Porta, López-de-Silanes and Zamarripa, 2003).

The development of large stock markets where firms can access long-term funds is also an important complementary measure to privatization. In some cases, governments have provided a boost to stock markets by privatizing SOEs through initial public offerings. However, this is not enough to ensure the development of the market and its usefulness as a source of future financing for these firms. Privatization without a commitment to improve shareholder rights in corporate and securities laws will probably lead to widespread abuse and appropriation of benefits by managers or those in control with only small gains for minority investors in the form of dividends, for example.[27] The failure to institute appropriate securities laws and effective enforcement may be responsible for many of the scandals that are now blamed on privatization in the Czech Republic, for example (Dyck, 2001; Glaeser et al., 2001). An additional benefit of corporate governance reform is that the improvement in disclosures and accounting standards facilitates the work of regulators. As Carey et al. (1994) and Campos-Méndez et al. (2001) argue, post-privatization regulators end up relying on standard accounting data instead of imposing specific regulatory accounting needs. If this is the case, enhanced accounting standards, particularly in the area of disclosure of related party transactions and situations of conflict of interest, should be of great benefit to regulators of privatized firms.

The reform of corporate governance institutions through the establishment and enforcement of effective securities, corporate and bankruptcy laws should become an essential complementary policy in order to prevent expropriation by controlling investors and to promote the development of stable sources of funds to which privatized firms can turn to finance their growth. We should not forget that many financially troubled private firms became state-owned in the last 50 years as a result of the limited access to capital that pushed them to seek government financing (López-de-Silanes, 1994).

## 7. Conclusions

The push for privatization and the drive to restructure the role of the state in production has lost its appeal. A large political backlash to privatization has been brewing for some time. Public opinion and policymakers in Latin America and other regions of the world

[27] See La Porta, López-de-Silanes, Shleifer and Vishny, 2000b; La Porta, López-de-Silanes and Shleifer, 2003; and López-de-Silanes, 2002.

have turned against privatization. The goal of this paper is to help set the privatization record straight by analyzing systematic evidence emerging from comprehensive studies around the world. In this quest, we benefit from a recent series of academic papers focusing on the Latin American experience. Due to their extensive coverage and systematic econometric approach, these papers are able to address the series of concerns voiced against privatization.

The evidence lines up: countries that privatize benefit and the gains are not only kept by firm owners—they are also distributed to society. These findings do not mean that failures do not occur, but rather that they are not the norm. Most instances of failure can be explained by three factors. First, opaque processes with heavy state involvement open up the door to corruption and opportunistic behavior. Second, poor contract design and regulatory capture are linked to a lack of deregulation and inadequate re-regulation. Third, deficient corporate governance institutions raise the cost of capital, hamper restructuring efforts and may throw firms back into the hands of the state. The understanding of the political economy mechanisms behind the causes of failure should be used to improve privatization, not to stop it.

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## TABLE 1.
## RECENT STUDIES ON FIRM PERFORMANCE AFTER PRIVATIZATION IN LATIN AMERICA

| Study | Sample, Period and Methodology | Summary of Findings and Conclusions |
|---|---|---|
| Birch and Haar (2000) | A descriptive study of the privatization experience in the last two decades in Argentina, Brazil, Chile, Colombia, Mexico, Peru, Venezuela and some Caribbean countries. | The authors find sizeable effects of privatization on the macroeconomic conditions (both in the short and long run). They also show a positive effect of privatization on productivity and a negative effect on employment. |
| Chisari, Estache and Romero (1999) | The study assesses macroeconomic and distributional effects of privatization in Argentina's gas, electricity, telecommunications, and water sectors. It uses a computable general equilibrium model. | The study concludes that effective regulation translates into annual gains of about 1.25 billion of GDP. Privatization cannot be blamed for increased unemployment as it may be due to ineffective regulation. |
| Chong and Sánchez (2003) | A detailed analysis of the contractual arrangements of privatizations and concessions in infrastructure. It covers four countries: Brazil, Chile, Colombia and Peru. | It concludes that clear, homogeneous, transparent and credible institutional processes during privatization yield positive outcomes. |
| Clarke and Cull (2001) | This study uses evidence from the privatization program of provincial banks in Argentina during the 1990s. It tests econometrically how political constraints affect transactions during bank privatization. | It finds that provinces with high fiscal deficits were willing to, first, accept layoffs; and second, to guarantee a larger part of the privatized bank's portfolio in return for a higher sale price. |
| Galal, Jones, Tandon, and Vogelsang (1994) | It compares post-privatization performance of 12 large firms from Chile and Mexico. The companies covered are mostly airlines and regulated utilities. | This study finds net welfare gains in 11 of 12 cases covered. Gains are on average equal to 26 percent of the firms' pre-divestiture sales. It finds no case where workers were made worse off, and 3 cases in which workers' conditions improved. |
| Hachette and Luders (1994) | This study analyzes the difference in 10 performance indicators of 144 private, public and privatized firms in Chile during the period from 1974-1987. | It finds no significant differences in behavior among public, private and privatized firms that operate under similar sets of rules and regulations. |
| La Porta and López-de-Silanes (1999) | The authors test whether performance of most Mexican SOEs privatized through June 1992 improves after divestment. They compare firms' performance with an industry-matched control group. They split performance improvements documented between industry and firm-specific influences. | This study finds that the output of privatized firms increased by more than 50 percent; employment declined by half, though wages for remaining workers increased. Firms achieved about a 25 percent increase in operating profitability, eliminating the need for subsidies, which equal 12.7 percent of GDP. Higher product prices explain 5 percent of the improvement, transfers from laid-off workers 31 percent, and incentive-related productivity gains explain the remaining 64 percent. |
| Petrazzini and Clark (1996) | Using International Telecommunications Union data through 1994, it tests whether deregulation and privatization impact the level and growth of teledensity, prices, service quality and employment. The sample covers 26 developing countries, including some Latin American nations. | Deregulation and privatization are both associated with significant improvements in the level and growth of teledensity, but have no consistent impact on the quality of service. Deregulation is associated with lower prices and increased employment; privatization has the opposite effect. |

| Study | Sample, Period and Methodology | Summary of Findings and Conclusions |
|---|---|---|
| Pinheiro (1996) | It analyzes the performance of 50 former Brazilian SOEs before and after privatization. It uses data up until 1994. The variables used are net sales, net profits, net assets, investment, employment and indebtedness. | The study concludes that privatization has improved the performance of the firms. It shows that the null hypothesis of no change in behavior is rejected for the production, efficiency, profitability and investment variables. It finds a significant negative impact on employment. |
| Ramamurti (1996) | It surveys 4 telecoms, 2 airlines, and 1 toll-road privatization program during 1987-1991. It discusses political economic issues, methods used to overcome bureaucratic/ideological opposition to divestiture. | It concludes that privatization had positive results for telecoms, partly due to the scope for improvement of technology, capital investment, and attractiveness of offer terms. In the case of the airlines and toll road there was less room for productivity enhancement, and thus little improvement is observed. |
| Ramamurti (1997) | Examines the restructuring and privatization of Ferrocarriles Argentinos in 1990. It tests whether productivity, employment, and the need for operating subsidies change after divestiture. | It documents a 370 percent improvement in labor productivity and a 78.7 percent decline in employment. Services were expanded and improved, and delivered at lower cost to consumers. The need for operating subsidies was largely eliminated. |
| Ros (1999) | Uses ITU data and panel data regressions to examine the effects of privatization and competition on network expansion and efficiency. The study covers 110 countries during the 1986-1995 period. | Countries with at least 50 percent of private ownership in the main telecom firm have significantly higher teledensity levels and growth rates. Both privatization and competition increase efficiency. However, only privatization is positively associated with network expansion. |
| Sánchez and Corona (1993) | Uses a descriptive case-study approach to analyze the privatization experiences of Argentina, Chile, Colombia and Mexico. It focuses on the preparatory measures taken prior to privatization; on valuation, sale mechanisms, regulation and supervision, and on the fiscal and macroeconomic impact of privatization. | The authors find great differences in the effects of privatization in the countries covered by the study. They conclude that firms, institutions and regulations need sufficient time to prepare for the privatization process to be successful. |
| Trujillo, Martin, Estache, and Campos (2002) | This study uses a sample of 21 Latin American countries covering from 1985 to 1998. It uses pooled and panel data with fixed and random effects to examine the macroeconomic effects of private sector participation in infrastructure. | The authors find that private sector involvement in utilities and transport have minimal positive effects on GDP. There is crowding out of private investment, private participation reduces recurrent expenditures except in transport where it has the opposite effect. The net effect on the public sector account is uncertain. |
| Wallsten (2001) | Analyses the effect of telecommunication reforms. It explores the impact of privatization, competition, and regulation on telecom firms' performance. This study covers 30 African and Latin American countries during the 1984-1997 period. | It indicates that competition is significantly associated with increases in per capita access to telecommunication services and with decreases in its costs. Privatization is helpful only if coupled with effective, independent regulation. The study concludes that competition combined with privatization is best. Privatizing a monopoly without regulatory reforms should be avoided. |

Sources: Chong and López-de-Silanes (2003a) and Megginson and Netter (2001)

**TABLE 2.**
**IDB PROJECT: FIRM PERFORMANCE AFTER PRIVATIZATION IN LATIN AMERICA**

| Study | Country | Sample, Period and Methodology | Summary of Findings and Conclusions |
|---|---|---|---|
| Galiani, Gertler, Schargrodsky and Sturzenegger | Argentina | It covers 21 federal non-financial SOEs plus all privatized banks in Argentina. This coverage equals 74% of the total privatization revenues. It tests whether performance indicators of SOEs improved after privatization. Period: 1991-2000. | Profitability of non-financial firms increased 188% after privatization. Employment decreased approximately 40% as a result of privatization. Investment increased at least 350% after privatization. There was no impact on prices. |
| Garrón, Machicado and Capra | Bolivia | It covers 32 firms, which account for 60% of total transactions in Bolivia. This study tests whether performance indicators of SOEs improved after privatization. Period: 1992-1999. | Privatization did not have a significant impact on profitability, but increased operating efficiency (142%) and decreased employment (85%), investment in physical assets (83%) and sales (33%). |
| Anuatti-Neto, Barossi-Filho, de Carvalho and Macedo | Brazil | It includes 102 publicly traded firms (equivalent to 94% of total value of transactions in the country). It tests whether performance indicators improved after privatization. Period: 1987-2000. | Privatization improved the firms' profitability (14%) and reduced their unit costs (33%) and investment to sales (41%). |
| Fischer, Serra and Gutiérrez | Chile | Due to political and economic turbulence during the 1970s and changes in accounting standards, this study covers only 37 non-financial firms. It tests whether performance indicators improved after privatization. Period: 1979-2001. | It finds no significant increase in profitability after privatization. There is no difference between the regulated and unregulated sectors in productivity. It concludes that there is no evidence that firms fired workers after privatization. Layoffs occurred prior to privatization. |
| Pombo and Ramírez | Colombia | It analyses 30 former IFI Program firms, which account for 95% of the total accumulated privatization sales. This study tests whether performance indicators improved after privatization. Period: 1974-1998. | Firms were profitable before privatization. Labor productivity grew 13% and investment fell from 5.9 to 2.5% per year due to previous over investment. Employment was reduced by 23%. |
| La Porta and López-de-Silanes | Mexico | An assessment of whether the performance of 218 privatized SOEs improved after divestment. It compares performance with industry-matched firms, and splits improvements documented between industry and firm-specific results. Period: 1983-1991. | The output of privatized firms increased 54.3%, while employment declined by half (though wages for remaining workers increased). Firms achieved a 24% point increase in operating profitability, eliminating need for subsidies that amounted to 12.7% of GDP. Higher product prices explain 5% of improvements: transfers from laid-off workers, 31% and incentive-related productivity gains the remaining 64% of the improvement. |
| Torero | Peru | This study covers 36 non-financial firms, which account for 90% of privatization cases and 86% of total transactions. In addition, it includes a separate analysis for the financial sector. It tests whether performance indicators improved after privatization. Period: 1986-2000. | Profitability, operational efficiency and output increased after privatization. The ratio of sales to employees increased by 50% in telecommunications, 69% in electricity and 25% in the financial sector. After privatization 36% of employees retained their jobs. |

Source: Chong and López-de-Silanes (2003a)

## TABLE 3.
## LABOR RESTRUCTURING BEFORE PRIVATIZATION AROUND THE WORLD

| | Latin America | Asia | Africa and Middle East | Developed Countries | Transition Economies | All |
|---|---|---|---|---|---|---|
| Downsizing | 82.2% | 58.3% | 79.7% | 79.2% | 76.2% | 78.2% |
| Voluntary downsizing | 32.5% | 12.5% | 45.3% | 28.6% | 14.3% | 32.5% |
| Employment guarantee | 8.4% | 20.1% | 51.6% | 13.0% | 52.4% | 28.2% |
| Pay cut | 8.9% | 0.0% | 1.6% | 13.0% | 7.1% | 7.5% |
| Unions | 92.1% | 58.3% | 81.2% | 83.1% | 88.1% | 84.4% |
| Strikes | 66.3% | 29.2% | 45.3% | 29.8% | 47.6% | 47.4% |
| Number of Firms | 101 | 24 | 64 | 77 | 42 | 308 |

This table presents the percentage of firms, grouped by region, that engaged in labor restructuring. The variables are defined as follows: (1) Downsizing, which is a dummy variable equal to one if the firm undertook any downsizing of the labor force up to three years prior to privatization and zero otherwise. Downsizing may be classified as voluntary or compulsory, and may be targeted according to age (age-biased downsizing), skills (skill-biased downsizing), gender (female-biased downsizing), or may be neutral (no particular group targeted). (2) Voluntary Downsizing, which is a dummy variable equal to one if the SOE reduced its labor force in an exclusively non-coercive manner during the three years prior to privatization and zero otherwise. The most common methods of voluntary downsizing are incentive-based measures such as severance packages and pension enhancements. (3) Employment Guarantee, which is a dummy variable equal to one if the SOE made any promise regarding the employment status of workers during the three years prior to privatization and zero otherwise; (4) Pay Cut, which is a dummy variable equal to one if there were any reductions in the salary or wage of workers during the three years prior to privatization and zero otherwise. (5) Unions, which is a dummy variable equal to one if the SOE had a union up to three years prior to privatization and zero otherwise. (6) Strikes, which is a dummy variable equal to one if the SOE suffered any kind of protest such as picketing or strikes in the three years prior to privatization.

Source: Chong and López-de-Silanes (2003c).

## TABLE 4.
## LABOR RESTRUCTURING AND PRIVATIZATION PRICES IN LATIN AMERICA

| Dependent Variable: Net Price | | | | |
|---|---|---|---|---|
| Variables | OLS | IV | OLS | IV |
| | (1) | (2) | (3) | (4) |
| ***1.- Firm and privatization characteristics:*** | | | | |
| Net total liabilities | 0.0176 | 0.0168 | 0.0216 | 0.0153 |
| | (0.041) | (0.043) | (0.040) | (0.042) |
| Mining | 0.3265 [a] | 0.3406 [a] | 0.293 [a] | 0.3466 [a] |
| | (0.071) | (0.067) | (0.074) | (0.061) |
| Industry | 0.2580 [a] | 0.2711 [a] | 0.2104 [a] | 0.277 [a] |
| | (0.076) | (0.074) | (0.075) | (0.065) |
| Services | 0.4106 [a] | 0.4232 [a] | 0.3565 [a] | 0.4177 [a] |
| | (0.069) | (0.066) | (0.072) | (0.057) |
| Foreign | 0.0561 [c] | 0.0737 [b] | 0.0666 [b] | 0.0856 [b] |
| | (0.033) | (0.036) | (0.033) | (0.038) |
| ***2.- Labor Characteristics:*** | | | | |
| Unions | -0.1592 | -0.1821 | -0.1878 | -0.1814 |
| | (0.131) | (0.149) | (0.122) | (0.143) |
| ***3.- Labor Policies:*** | | | | |
| Downsizing | -0.1683 [a] | -0.0201 | | |
| | (0.044) | (0.027) | | |
| Voluntary downsizing | | | -0.1213 [a] | -0.0558 [c] |
| | | | (0.038) | (0.032) |
| ***4.- Macroeconomic Variable:*** | | | | |
| Gross Domestic Product | 0.0673 [a] | 0.0681 [a] | 0.0687 [a] | 0.0713 [a] |
| | (0.010) | (0.010) | (0.010) | (0.011) |
| Constant | -1.2120 [a] | -1.3512 [a] | -1.2715 [a] | -1.4746 [a] |
| | (0.334) | (0.341) | (0.311) | (0.350) |
| Observations | 94 | 94 | 94 | 94 |
| R-squared | 0.47 | 0.38 | 0.53 | 0.41 |
| F | 11.36 | 10.32 | 11.59 | 12.35 |
| Prob > F | 0.000 | 0.000 | 0.000 | 0.000 |

a = significant at 1 percent; b = significant at 5 percent; c = significant at 10 percent.
The dependent variable is the "net price" which is defined as the amount that accrues to the government from the sale of the SOE, after all privatization and restructuring costs are taken into account, adjusted by the percentage of company shares sold and divided by the average net sales of the SOE during the three years prior to its privatization. The independent variables are defined as follows: (1) Net total liabilities, which is a dummy variable equal to one if net total liabilities of the firm were greater than zero up to three years prior to privatization and zero otherwise; (2) Dummy variables for sectors (Mining, Industry and Services) equal to one if the SOE is part of that sector and zero otherwise; (3) Foreign, which is a dummy variable equal to one if foreign firms were allowed to bid on the sale of the SOE and zero otherwise; (4) Unions, which is a dummy variable equal to one if the SOE had a union up to three years prior to privatization and zero otherwise; (5) Downsizing, which is a dummy variable equal to one if the firm undertook any downsizing of the labor force up to three years prior to privatization and zero otherwise. Downsizing may be classified as voluntary or compulsory, and may be targeted according to age (age-biased downsizing), skills (skill-biased downsizing), gender (female-biased downsizing), or may be neutral (no particular group targeted). (6) Voluntary downsizing, which is a dummy variable equal to one if the SOE reduced its labor force in an exclusively non-coercive manner during the three years prior to privatization and zero otherwise. The most common methods of voluntary downsizing are incentive-based measures such as severance packages and pension enhancements. (7) Gross Domestic Product, which is the log of the average GDP in the country (in US dollars at purchasing power parity) during the three years prior to privatization. All regressions include firm size controls. Columns (1) and (3) provide estimates from OLS regressions, while Columns (2) and (4) show the second stage of the two-step instrumental variable procedure used in order to account for the endogenous nature of the labor downsizing variables. The instrumental variable approach is carried out according to the procedure outlined in Chong and López-de-Silanes (2003c). Robust standard errors are given in parentheses.
Source: Chong and López-de-Silanes (2003c).

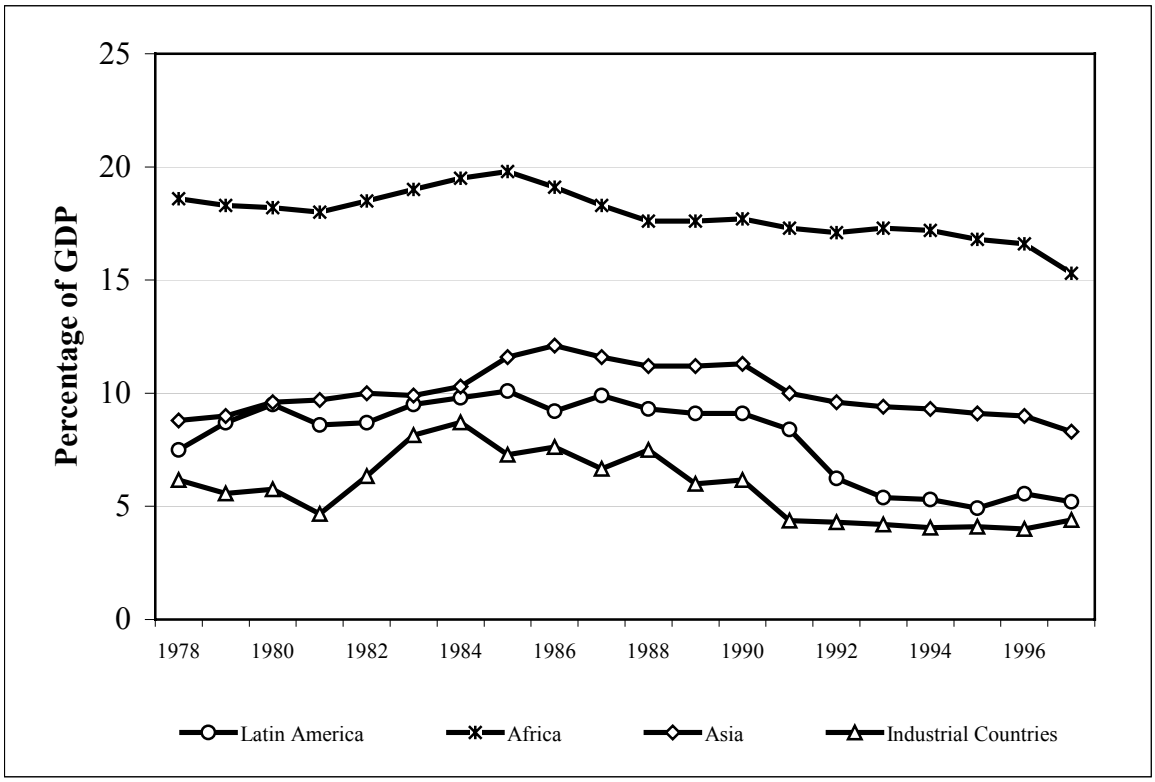
## TABLE 5
## RE-HIRES AND NEW HIRES IN PRIVATIZED FIRMS IN LATIN AMERICA

| | Dependent Variable: New-hires | | Dependent Variable: Re-hires | |
|---|---|---|---|---|
| | Probit (1) | dF/dX | Probit (2) | dF/dX |
| Voluntary downsizing | 0.6035 | [0.1600] | 0.9004[b] | [0.3370] |
| | (0.3835) | | (0.3826) | |
| Strikes | 0.6026 | [0.1408] | 1.0382[b] | [0.3961] |
| | (0.4309) | | (0.4235) | |
| Foreign Participation | -0.3092 | [-0.0852] | -0.2469 | [-0.0943] |
| | (0.4074) | | (0.3879) | |
| Collective Relations Laws | -0.2898 | [-0.0767] | -0.8634[c] | [-0.3340] |
| | (0.4835) | | (0.5221) | |
| Constant | 0.1453 | | -10.1961[b] | |
| | (4.2973) | | (4.3490) | |
| Observations | 76 | | 76 | |
| Log likelihood | -29.49 | | -33.99 | |
| Wald chi2 | 6.58 | | 13.60 | |

a = significant at 1 percent; b = significant at 5 percent; c = significant at 10 percent.
The dependent variables are defined as follows: (1) New hires, which is a dummy variable equal to one if the privatized firm hired new workers up to 18 months after privatization, and zero otherwise; (2) Re-hires, which is a dummy variable equal to one if the privatized firm re-hired previously fired workers up to 18 months after privatization, and zero otherwise. The independent variables are defined as follows: (1) Voluntary downsizing, which is a dummy variable equal to one if the SOE cut its labor force in an exclusively non-coercive manner during the three years prior to privatization, and zero otherwise. The most common methods of voluntary downsizing are incentive-based measures such as severance packages and pension enhancements. (2) Strikes, which is a dummy variable equal to one if there were any protests, picketing or strikes up to three years prior to privatization, and zero otherwise. (3) Foreign, which is a dummy variable equal to one if foreign firms were allowed to bid for the SOE, and zero otherwise. (4) the collective relations laws index ranges from 0 to 3 and measures the level of protection granted to workers by labor and employment laws (higher values of the index represent more stringent laws regarding worker protection). It measures the areas of collective bargaining, worker participation in management, and collective disputes. All regressions include a partial privatization dummy, sectoral dummies and country macro controls. Standard errors and marginal effects are given in parentheses and brackets respectively.

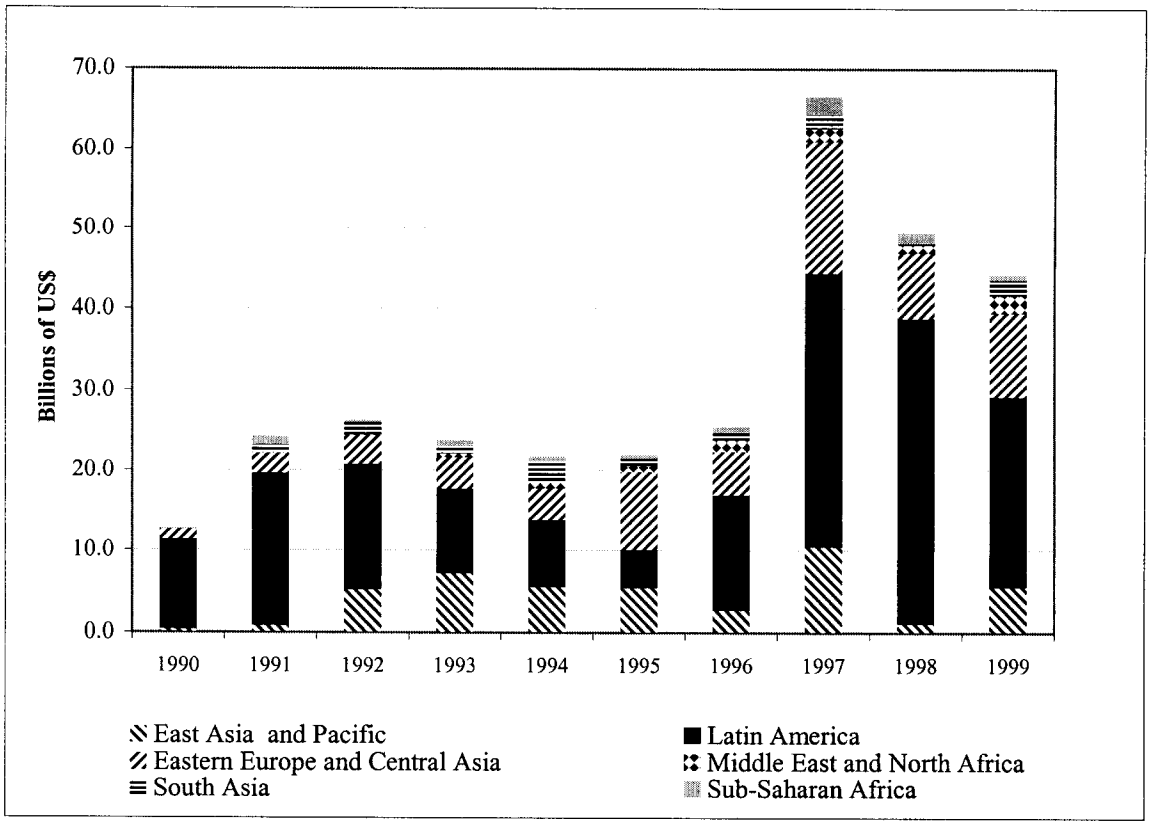
Sources: Data collected by the authors; Botero et al. (2003); and Chong and López-de-Silanes (2003c).

**FIGURE 1.**
**ECONOMIC ACTIVITY OF STATE-OWNED ENTERPRISES**
**(PERCENTAGE OF GDP)***



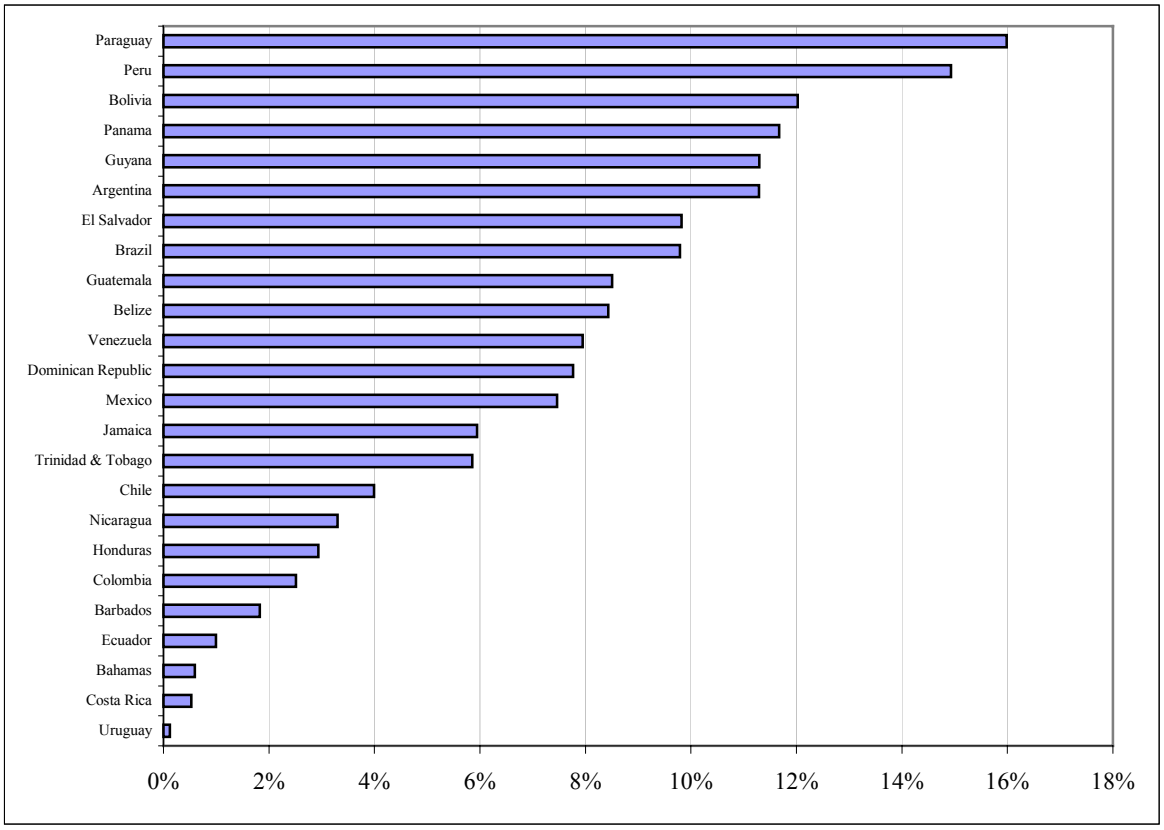

* Weighted average.
Source: World Bank (2001a).

## FIGURE 2.
## DEVELOPING COUNTRIES' PROCEEDS FROM PRIVATIZATION, 1990-1999



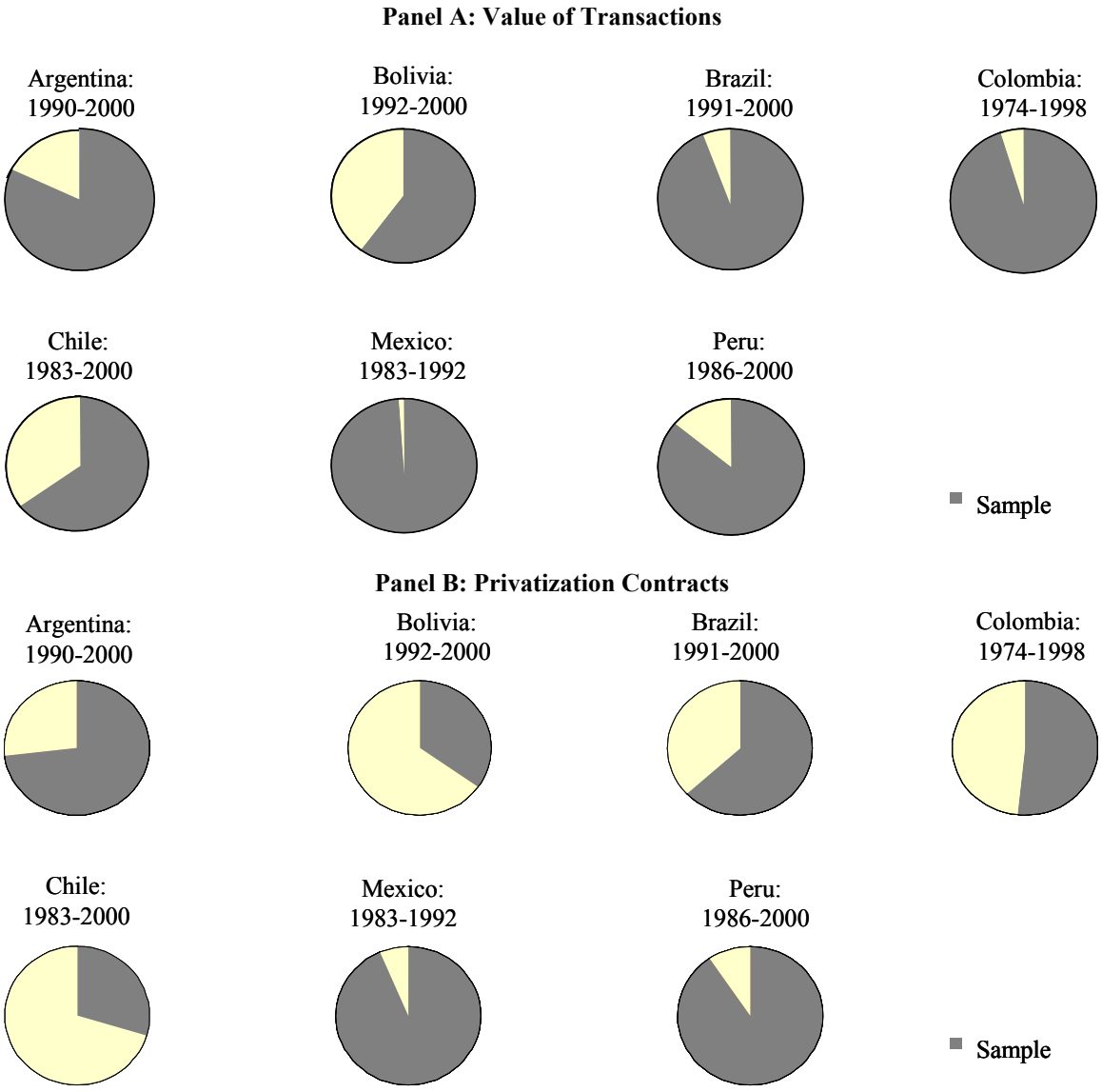

Source: World Bank (2001a).

**FIGURE 3.**
**PRIVATIZATION IN LATIN AMERICA, 1990-2000**
**(REVENUES FROM PRIVATIZATION AS A PERCENTAGE OF 1999 GDP)**




Source: Lora (2001).

## FIGURE 4.
## AVAILABILITY OF PRIVATIZATION DATA IN LATIN AMERICA




Panel A shows the value of transactions included in the studies as a percentage of the total value of privatization transactions in each country. Panel B shows the number of privatization contracts included in the studies as a percentage of the total number of privatization contracts in the country.

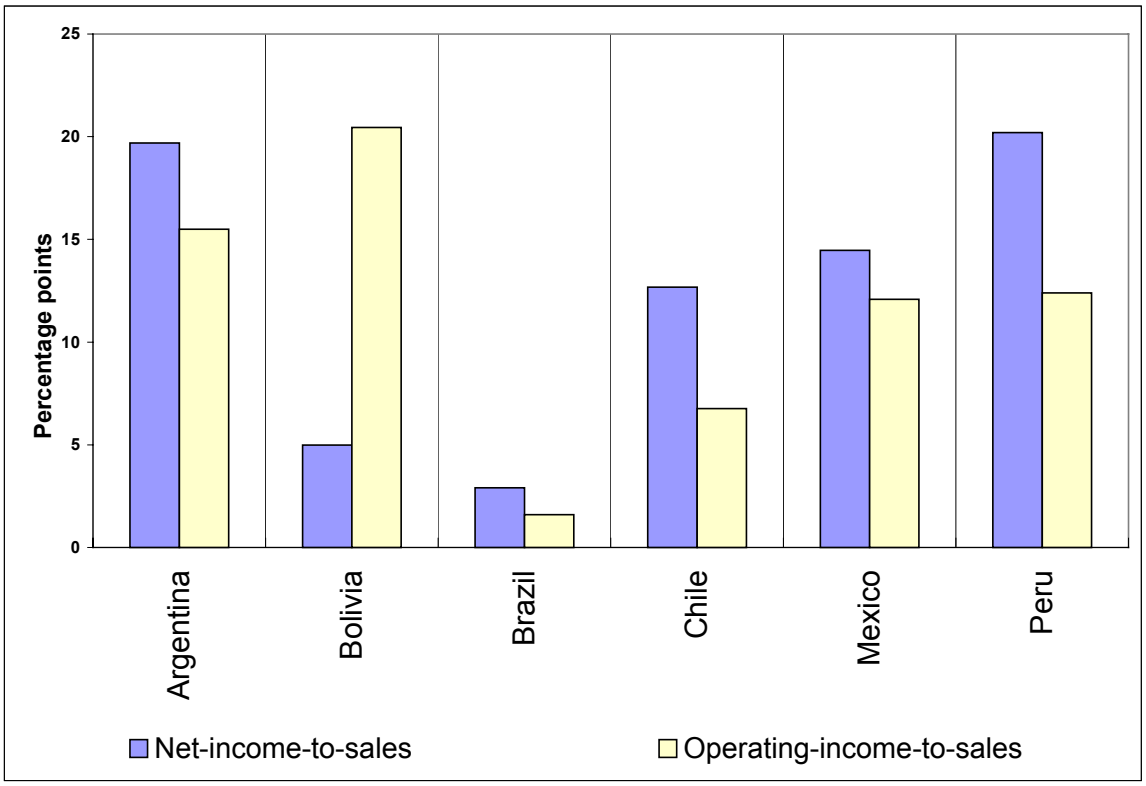
Sources: Galiani et al. (2003); Garrón et al. (2003); Anuatti-Neto et al. (2003); Pombo and Ramírez (2003); Fischer et al. (2003); Chong and López-de-Silanes (2003a and 2003b); and Torero (2003).

**FIGURE 5.**
**REASONS FOR FIRM EXCLUSION FROM THE PRIVATIZATION SAMPLE**

| | Merger with private firm | Sale of small minority participation | Firm was liquidated | Information not found | Sale was too recent | Change in accounting standards |
|---|---|---|---|---|---|---|
| Argentina | X | X | X | X | | |
| Bolivia | X | | | X | X | X |
| Brazil | X | X | | X | X | |
| Chile | X | | X | X | | X |
| Colombia | X | | | X | | |
| Mexico | X | | X | X | | |
| Peru | X | | X | X | | |

Sources: Galiani et al. (2003); Garrón et al. (2003); Anuatti-Neto et al. (2003); Fischer et al. (2003); Pombo and Ramírez (2003); Chong and López-de-Silanes (2003a and 2003b); and Torero (2003).

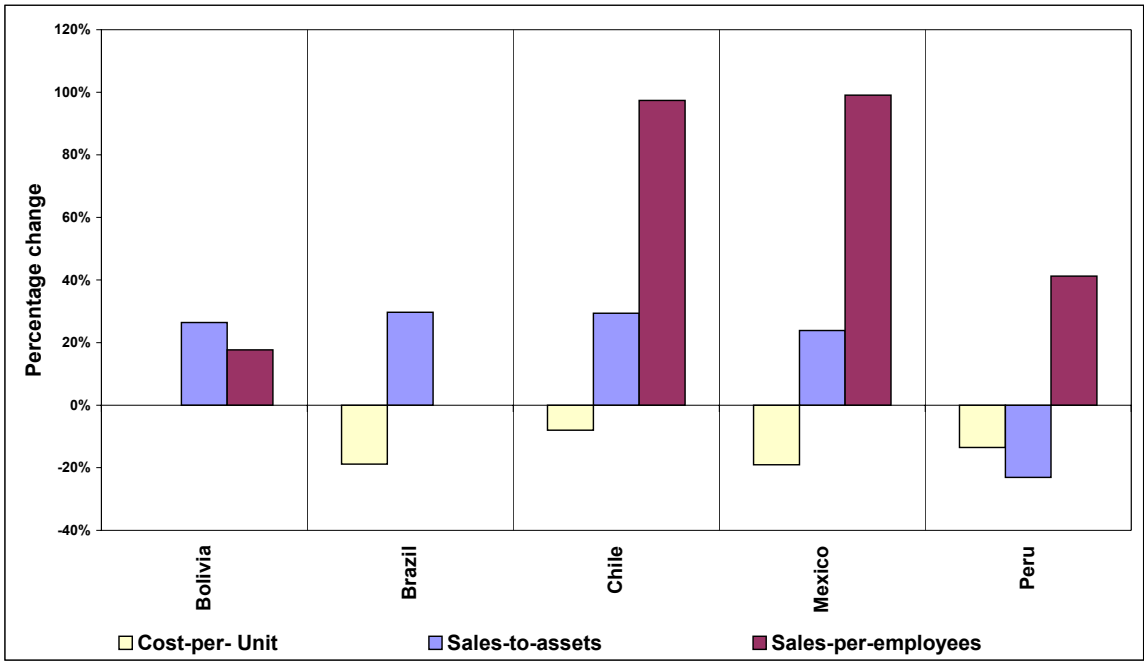
## FIGURE 6.
## PROFITABILITY CHANGES AFTER PRIVATIZATION IN LATIN AMERICA




The figure presents the median change in the net-income-to-sales ratio and the operating-income-to-sales ratio after privatization. The components of the variables are defined as follows: (1) Net income is equal to operating income minus interest expenses and net taxes paid, as well as the cost of any extraordinary items; (2) Operating income is equal to sales minus operating expenses, minus cost of sales, and minus depreciation; and (3) Sales are equal to the total value of products and services sold, nationally and internationally, minus sales returns and discounts.

Sources: Galiani et al. (2003); Garrón et al. (2003); Anuatti-Neto et al. (2003); Fischer et al. (2003); Chong and López-de-Silanes (2003b); and Torero (2003).

## FIGURE 7.
## OPERATING EFFICIENCY AFTER PRIVATIZATION IN LATIN AMERICA

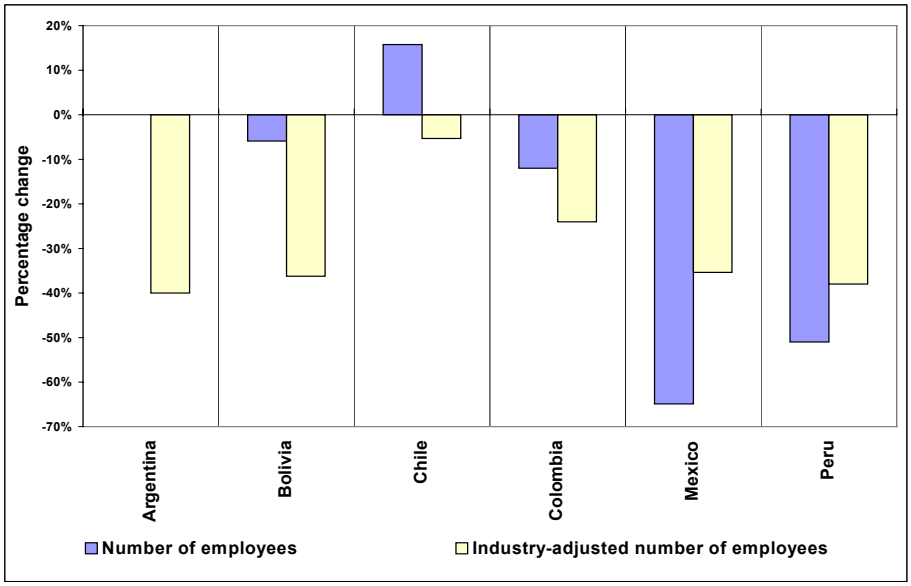



The figure presents the median change in the cost-per-unit ratio, the sales-to-assets ratio and the sales-per-employees ratio for each country after privatization. Cost-per-unit is defined as the ratio of cost of sales to sales. The components of the variables are defined as follows: (1) Cost of sales is equal to the direct expense involved in the production of a good (or provision of a service), including raw material expenditure plus total compensation paid to blue-collar workers; (2) Sales are equal to the total value of products and services sold, nationally and internationally, minus sales returns and discounts; (3) Employees corresponds to the total number of workers (paid and unpaid) who depend directly on the company; and (4) Assets are defined as property, plant and equipment (PPE), which is equal to the value of a company's fixed assets adjusted for inflation. For Brazil, the sales-per-employees ratio is not available. For Bolivia, cost-per-unit information is not available.

Sources: Garrón et al. (2003); Anuatti-Neto et al. (2003); Fischer et al. (2003); Chong and López-de-Silanes (2003b); and Torero (2003).

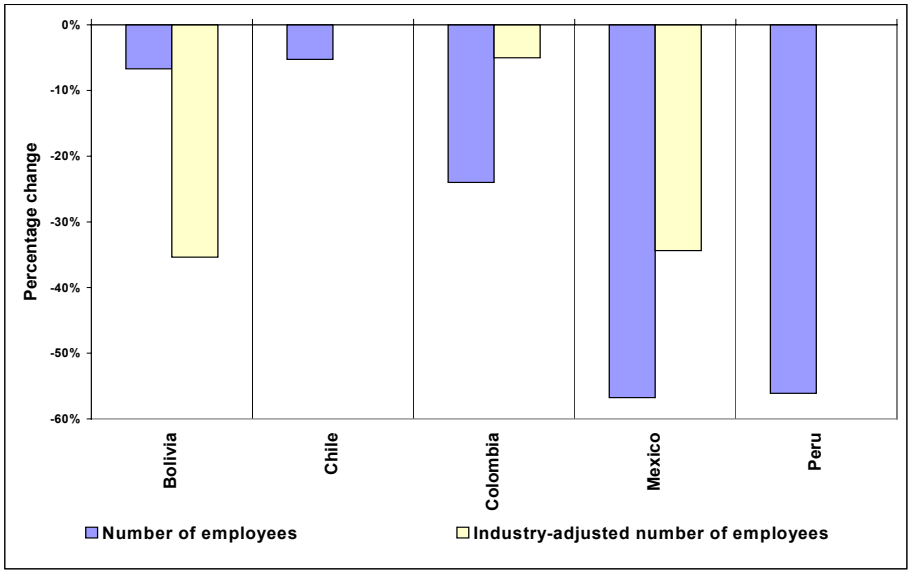
## FIGURE 8.
## EMPLOYMENT CHANGES AFTER PRIVATIZATION IN LATIN AMERICA

**Panel A: Mean Values**



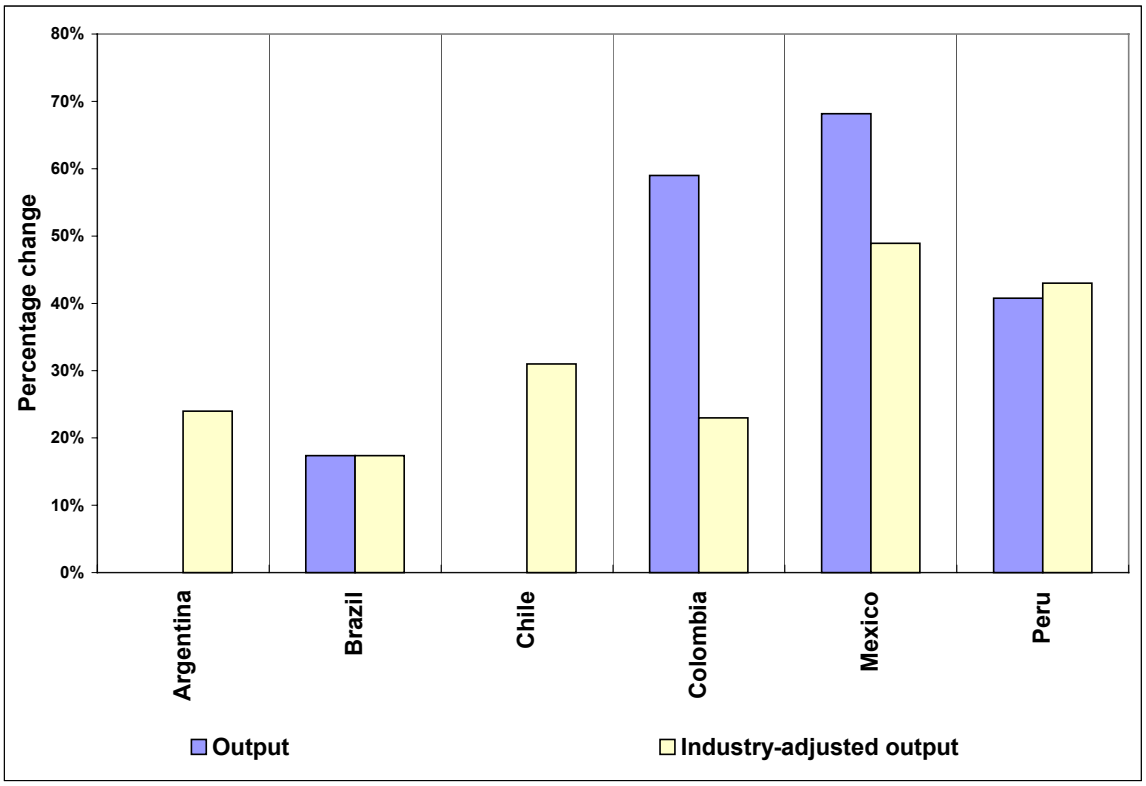

*

**Panel B: Median Values**




The figure presents the percentage change in the number of employees and the industry-adjusted number of employees after privatization for each country. Panel A shows mean values; Panel B shows median values. The number of employees corresponds to the total number of workers (paid and unpaid) who depend directly on the company. The industry-adjusted number of employees is computed by augmenting the pre-privatization number by the difference between the cumulative growth rate of the number of employees of the firm and the cumulative growth rate of the number of employees of the control group in the post-privatization period relative to the average number of employees before privatization. For Argentina the mean number of employees information is not available; for Chile and Peru the median industry-adjusted information is not available.
Sources: Galiani et al. (2003); Garrón et al. (2003); Fischer et al. (2003); Pombo and Ramírez (2003); Chong and López-de-Silanes (2003b); and Torero (2003).

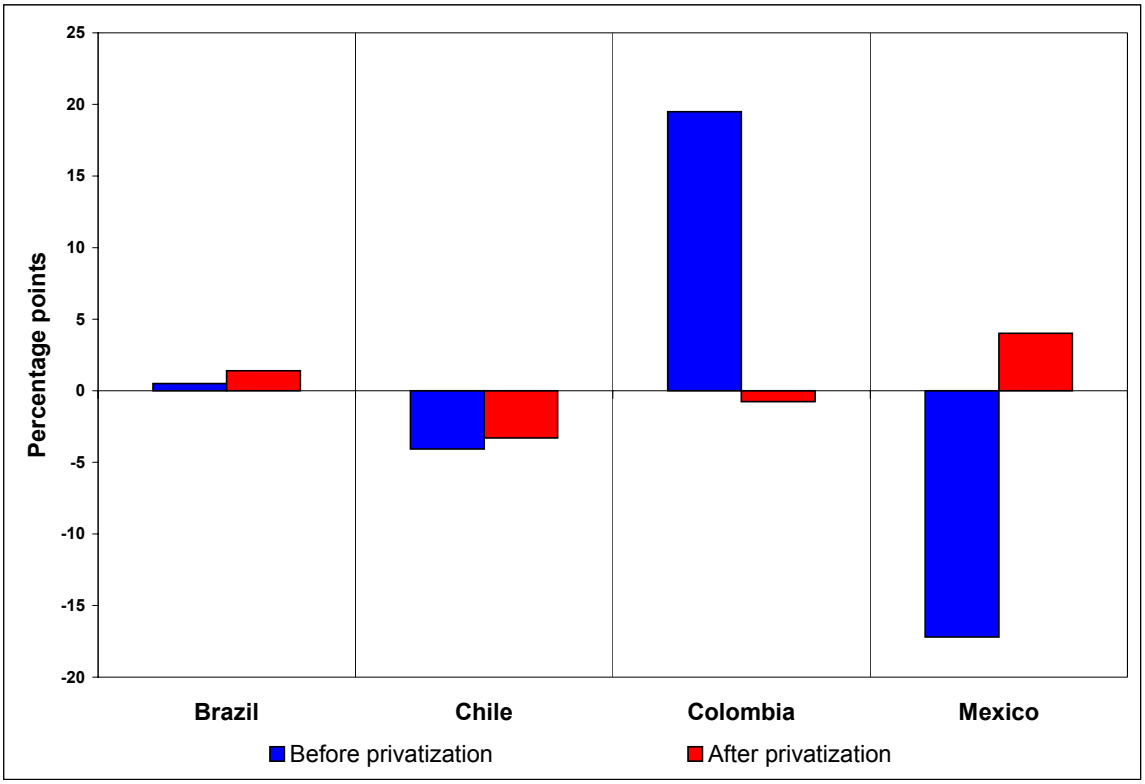
## FIGURE 9
## OUTPUT CHANGES AFTER PRIVATIZATION IN LATIN AMERICA




The figure presents the median change in output and industry-adjusted output after privatization for each country. Output is defined as the monetary value of sales. The industry-adjusted output is computed by augmenting the preprivatization value by the difference between the cumulative growth rate of output of the firm and the cumulative growth rate of output of the control group in the postprivatization period relative to the average level of output before privatization. For Colombia, the information corresponds to mean values; for Peru, industry-adjusted output information is expressed in mean values; for Argentina and Chile output information is not available.

Sources: Galiani et al. (2003); Anuatti-Neto et al. (2003); Fischer et al. (2003); Pombo and Ramirez (2003); Chong and López-de-Silanes (2003b); and Torero (2003).

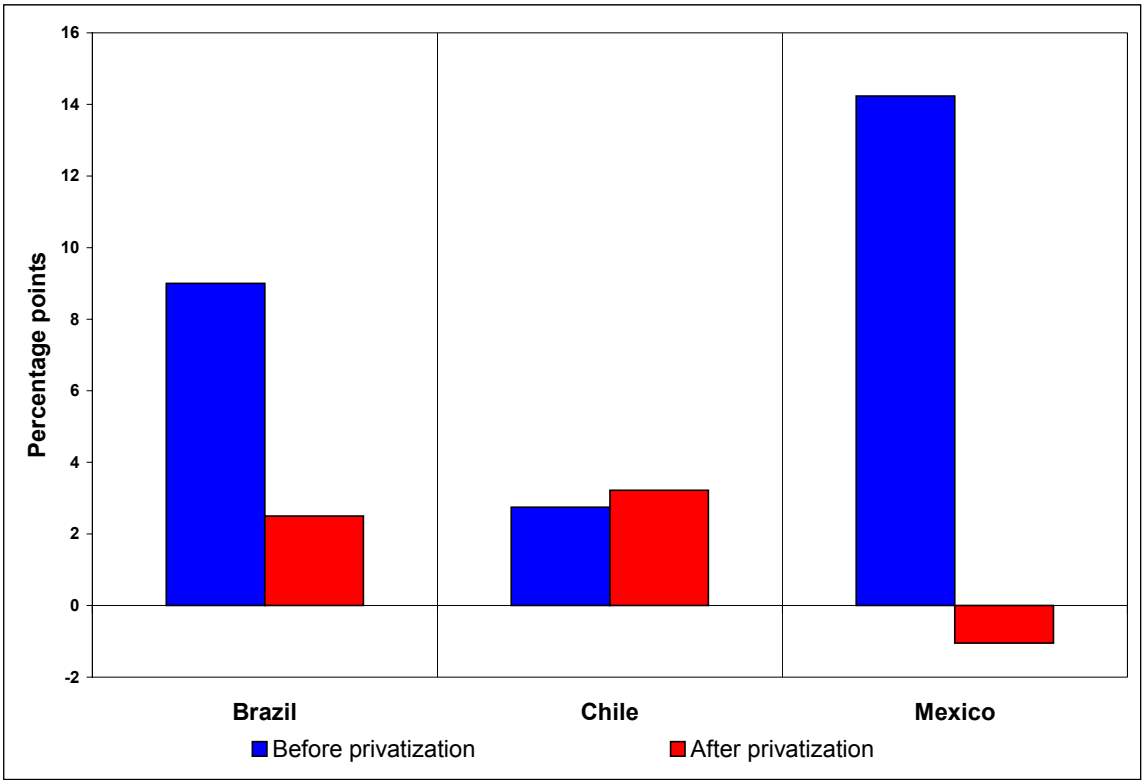
## FIGURE 10
## NET-INCOME-TO-SALES GAP BETWEEN PRIVATIZED AND PRIVATE FIRMS BEFORE AND AFTER PRIVATIZATION




The figure presents the net-income-to-sales gap between privatized SOEs and private firms, before and after privatization. The components of the net-income-to-sales ratio are defined as follows: (1) Net income is equal to operating income minus interest expenses and net taxes paid, as well as the cost of any extraordinary items; and (2) Sales are equal to the total value of products and services sold, nationally and internationally, minus sales returns and discounts. For Colombia information is from the energy sector.

Sources: Anuatti-Neto et al. (2003); Fischer et al. (2003); Pombo and Ramirez (2003); and Chong and López-de-Silanes (2003b).

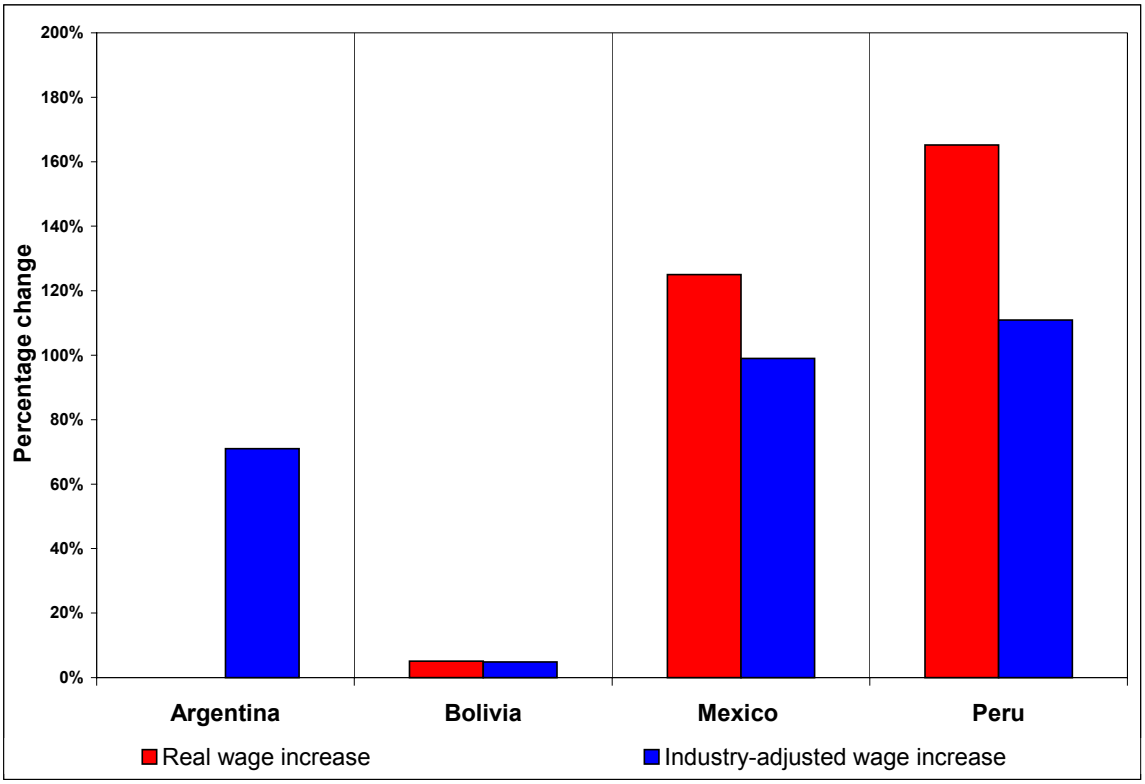
## FIGURE 11
## COST-PER-UNIT GAP BETWEEN PRIVATIZED AND PRIVATE FIRMS BEFORE AND AFTER PRIVATIZATION




The figure presents the cost-per-unit gap between privatized SOEs and private firms, before and after privatization. Cost-per-unit is defined as the ratio of costs of sales to net sales. The components of the cost-per-unit ratio are defined as follows: (1) Cost of sales is equal to the direct expense involved in the production of a good (or provision of a service), including raw material expenditure plus total compensation paid to blue-collar workers; and (2) Sales are equal to the total value of products and services sold, nationally and internationally, minus sales returns and discounts.

Sources: Anuatti-Neto et al. (2003); Fischer et al. (2002); and Chong and López-de-Silanes (2003b).

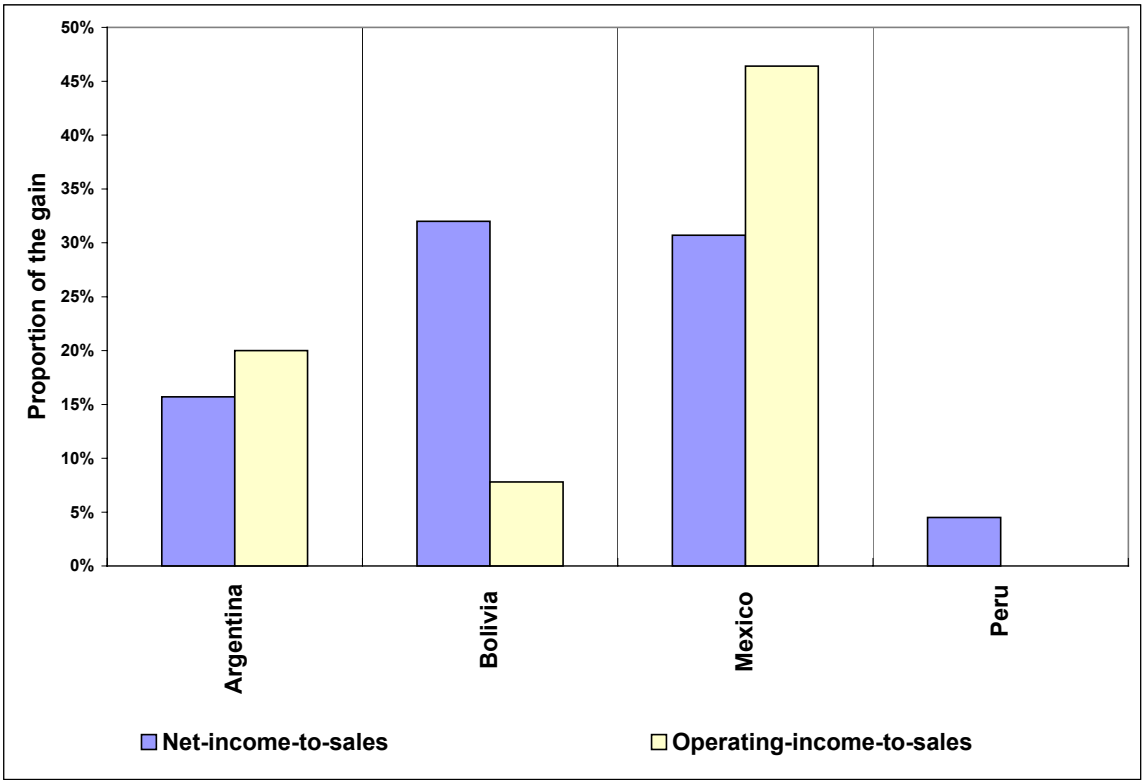
## FIGURE 12
## REAL AND INDUSTRY-ADJUSTED CHANGES IN WAGES AFTER PRIVATIZATION




The figure shows the median increase in real wages and industry-adjusted wages after privatization for each country. Real average wages are defined as the inflation-adjusted total compensation paid to the average worker. The Consumer Price Index was used as a deflator to calculate real wages. Industry-adjusted wages are computed by augmenting the preprivatization value by the difference between the cumulative growth rate of real wages per worker of the firm and the cumulative growth rate of real wages per worker of the control group in the postprivatization period relative to the average real wage per worker before privatization. For Mexico, Bolivia and Peru information is for a sub sample of firms that have available wage evidence.

Source: Galiani et al. (2003); Garron et al. (2003); Chong and López-de-Silanes (2003c); and Torero (2003).

## FIGURE 13
## TRANSFERS FROM WORKERS AS A PERCENTAGE OF INCREASED PROFITABILITY AFTER PRIVATIZATION



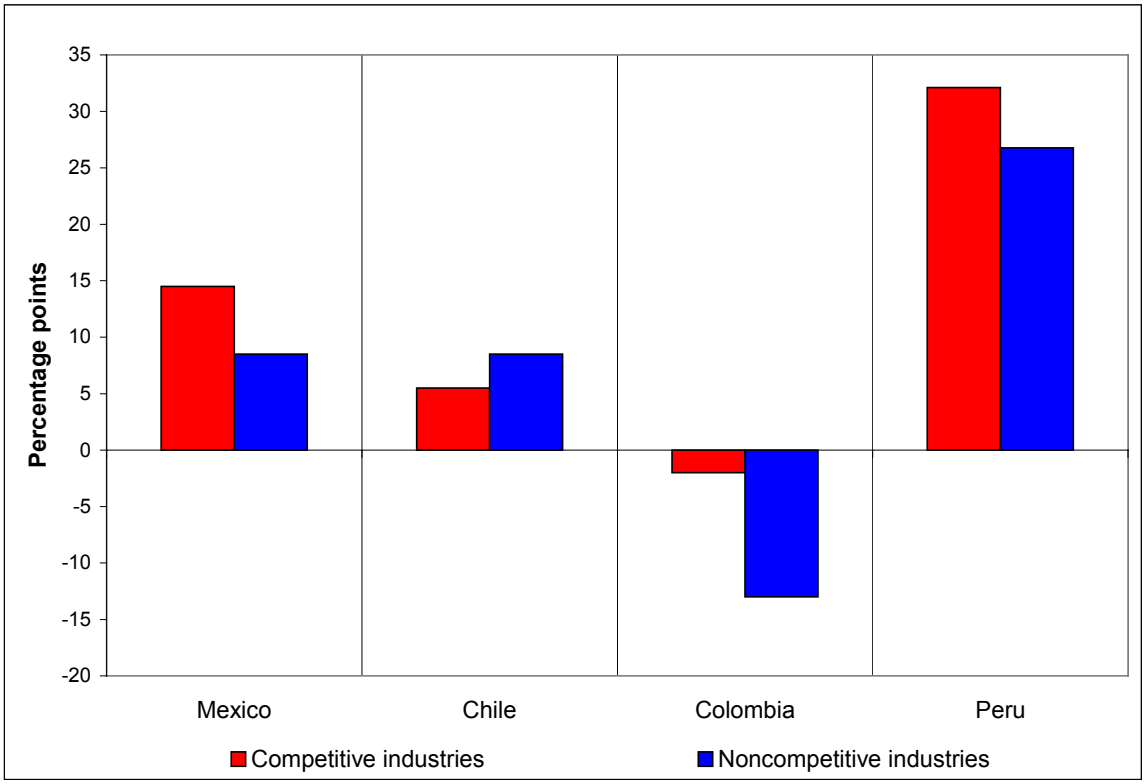

The figure shows the median gain in net-income-to-sales and operating-income-to-sales explained by savings in labor costs due to layoffs after privatization. Savings due to layoffs is calculated as:

$$\frac{Wage_{bp}*(L_{bp}-L_{ap})}{Sales_{ap}}$$

Where $Wage_{bp}$ is the average wage of employees in SOE before privatization; $L_{bp}$ is the number of workers employed before privatization; $L_{ap}$ is the number of workers employed after privatization; and $Sales_{ap}$ is the monetary value of sales after privatization. The resulting number is thus expressed as a fraction of sales. We then divide by the percentage point increase in the operating-income-to-sales ratio to determine the percentage of the increase that is due to transfers from workers. For Mexico, Bolivia and Peru information is for a sub sample of firms that have available wage evidence.

Source: Galiani et al. (2003); Garron et al. (2003); Chong and López-de-Silanes (2003c); and Torero (2003).

## FIGURE 14
## CHANGES IN PROFITABILITY OF PRIVATIZED FIRMS IN COMPETITIVE AND NONCOMPETITIVE INDUSTRIES IN LATIN AMERICA

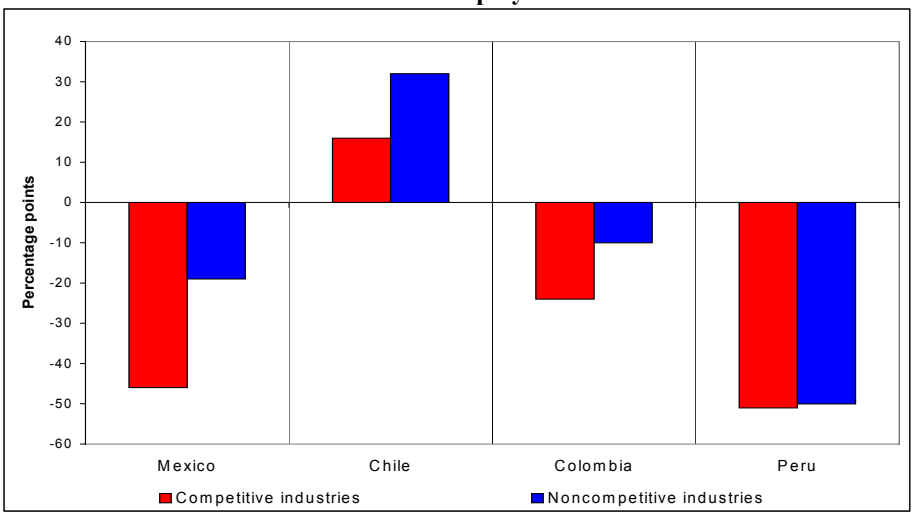



The figure presents the median change in profitability for competitive and noncompetitive industries after privatization. Profitability is defined as the median ratio of operating-income-to-sales except for Peru where it is the mean net- income-to-sales ratio. Firms are sorted as competitive and noncompetitive as follows: (1) for Mexico, firms are classified into competitive and noncompetitive based on the description of the industry provided by the privatization prospectus of the firm; (2) for Chile, firms are classified as non-competitive if they are in telecommunications, electricity or social services sectors; and as competitive if they are not; (3) for Peru, the noncompetitive sectors are electricity, financial and telecommunications and the data for the competitive industries shows aggregate information for the whole sample; (4) for Colombia, noncompetitive firms are those in the energy sector, all other sectors are considered competitive. For Peru, the information is expressed in mean values.

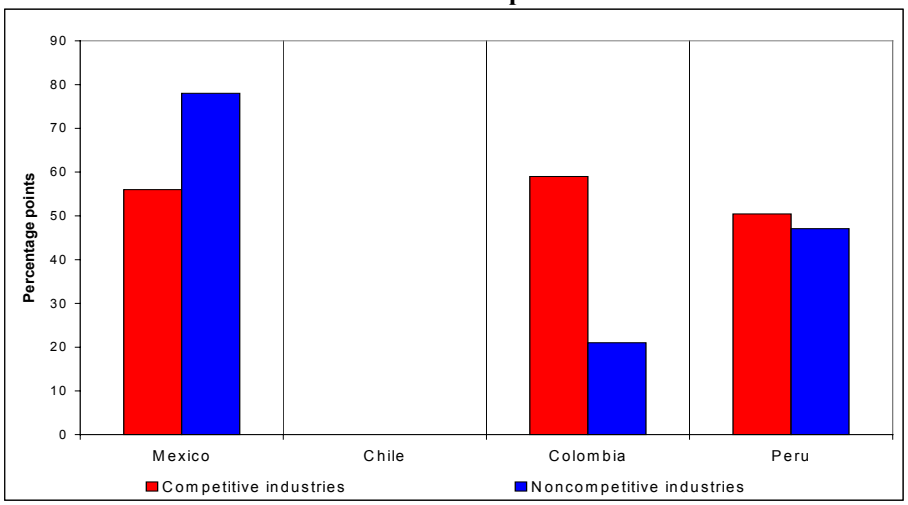
Source: Chong and López-de-Silanes (2003c); Fischer et al. (2003); Pombo and Ramirez (2003); and Torero (2003).

## FIGURE 15
## CHANGES IN EMPLOYMENT AND OUTPUT OF PRIVATIZED FIRMS IN COMPETITIVE AND NONCOMPETITIVE INDUSTRIES IN LATIN AMERICA

**Panel A: Employment**



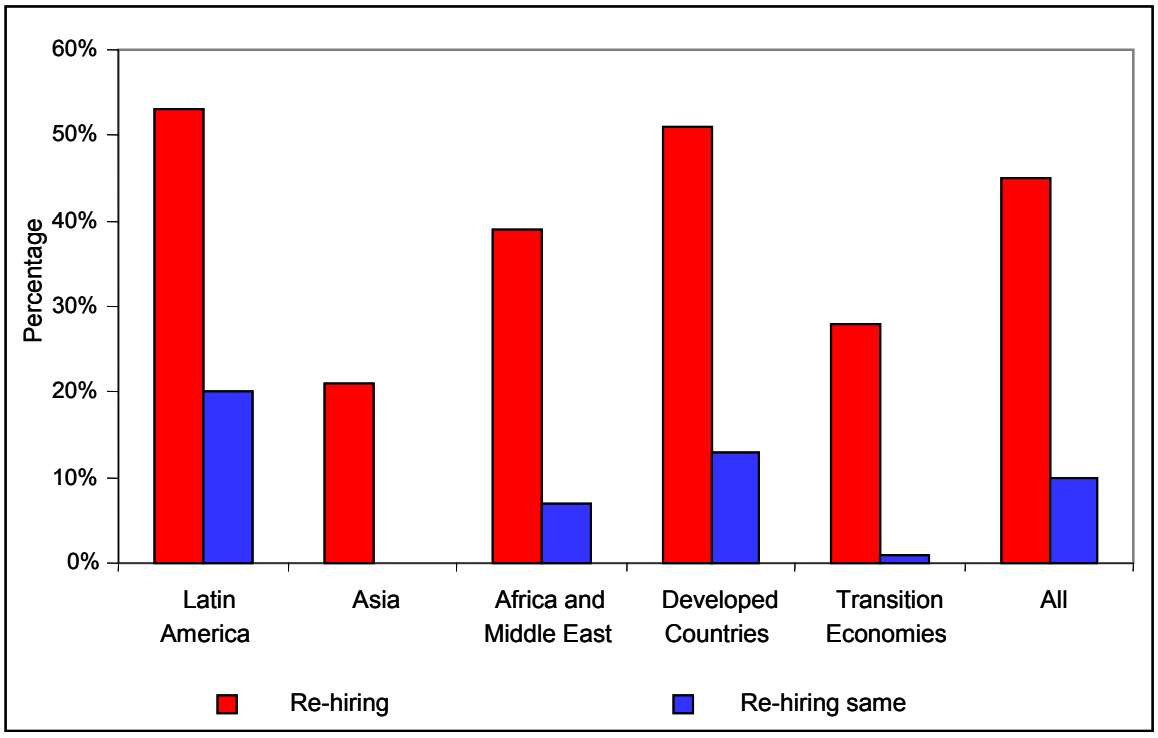

**Panel B: Output**




The figure presents the median change in employment (Panel A) and output (Panel B) for competitive and noncompetitive industries after privatization. The variables are defined as follows: (1) Employment corresponds to the total number of workers (paid and unpaid) who depend directly on the company; (2) Output is the monetary value of sales. Firms are sorted as competitive and noncompetitive as follows: (1) for Mexico, firms are classified into competitive and noncompetitive based on the description of the industry provided by the privatization prospectus of the firm; (2) for Chile, firms are classified as non-competitive if they are in telecommunications, electricity or social services sectors; and as competitive if they are not; (3) for Peru, the noncompetitive sectors are electricity, financial and telecommunications and the information for competitive industries shows data for the whole sample; (4) for Colombia, noncompetitive firms are those in the energy sector, all other sectors are considered competitive. For Peru, the information is expressed in mean values. For Chile, output information is not available.

Source: Chong and López-de-Silanes (2003c); Fischer et al. (2003); Pombo and Ramirez (2003); and Torero (2003).

## FIGURE 16
## RE-HIRING AFTER PRIVATIZATION BY REGION




The figure presents the percentage of privatized firms which re-hired workers after privatization in each geographic region. Variables are defined as follows: (1) Re-hiring is a dummy variable equal to one if the privatized firm re-hired previously fired workers up to 18 months after privatization, and zero otherwise; (2) Re-hiring same is a dummy variable equal to one if the privatized firm re-hires previously fired workers and places them in the same department from which they were fired up to 18 months after privatization, and zero otherwise. Previously fired workers are those that were terminated during the three years prior to privatization.

Source: Chong and López-de-Silanes (2003c).