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**SHOULD STATE-OWNED FIRMS CHANGE CEOs
BEFORE PRIVATIZATION?
THE CASE OF THE TELECOMMUNICATIONS INDUSTRY**

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Abstract*

Should state-owned enterprises change chief executive officer before privatizing? We test competing views on this question by complementing a recently released database with newly collected data. We are able to cover 77 telecommunications privatizations, which account for nearly 80 percent of the sector in terms of value. We find that CEO replacement will improve performance in the telecommunications industry before privatization as measured by penetration, operating efficiency, and profitability. CEO change before privatization does appear to have real consequences in firm performance before privatization. Moreover, findings are consistent with previous research that links CEO replacement and an increase in privatization prices.

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1. Introduction

Recent research shows that the change in CEO before privatization has a bearing on privatization prices. In fact, when taking endogeneity problems into account, López-de-Silanes (1997) shows that replacing the CEO before privatization is linked with a 54 percent increase in the net privatization price in the case of Mexico. Buyers may be willing to pay higher prices for firms whose CEOs have been replaced, as profitability of the firm may have improved due to restructuring before privatization. The new owners may have to do less tweaking with the firm after privatization and may reap benefits relatively faster. This finding is particularly important as CEO replacement before privatization has become a relatively common policy issue in developing countries, and it tends to receive relatively broad political support (Chong and López-de-Silanes, 2002a). Still, taking the findings by López-de-Silanes (1997) at face value, there is still some lack of understanding on the mechanisms by which CEO replacement may affect the productive process of a firm before privatization.

In this note we seek to complement the research by López-de-Silanes, by exploring the two key possible views by which replacement of top management before privatization may impact the productive process of the firm and thus increase privatization prices. The first view is that a change in CEO before privatization sends an unequivocal signal to prospective buyers on the seriousness of the privatization process. This eliminates incentives for corruption on the part of the old management that otherwise, would have tried to maximize rents before the firm is privatized. According to this signaling view, top management replacement before privatization will contribute to the increase in privatization prices once the firm is on sale, regardless of any restructuring done before privatization (Kikeri, 1999).

On the other hand, according to the restructuring view, the managers of state-owned enterprises are good in terms of political abilities but are not good at actually running firms. The current management has the wrong human capital to face competition and the new market conditions that the firm will soon face once it is privatized. A new chief executive officer, with the appropriate human capital, is thus needed in order to implement all necessary restructuring and run the firm efficiently until privatization takes place (Rosen, 1992; Barberis, Boycko, Shleifer, and Tsukanova, 1996). Thus, replacing the chief executive officer before privatization provides the firm with a step forward towards adapting the firm to the forthcoming market conditions before actual transference of ownership to private hands takes place. This, it is

believed, helps smooth out the transition of the firm to a competitive market economy. According to this view, top management replacement before privatization will yield higher privatization prices, as prospective buyers will value the restructuring done before privatization.¹

We build on a recent data set by Chong and López-de-Silanes (2002b) who collect information on privatization characteristics of state-owned enterprises for firms around the world. We focus on the sub-group of firms from the telecommunications sector. As is well known, until recently this sector has been typically considered among the “jewels” of privatization. Focusing on one single sector allows us to minimize potential problems related with industry heterogeneity. Also, the gathering of additional data necessary for this research is relatively less complicated, as several data sources are available for the case of telecommunications. We are thus able to expand the data set from Chong and López-de-Silanes and further minimize sample bias problems, if any.² Our paper is organized as follows. Section 2 describes the data employed. Section 3 presents our empirical findings. Finally, the last section concludes.

2. Data

Our sample is based on a data set by Chong and López-de-Silanes (2002b) who obtained information for 400 privatizations around the world for the period 1984-2000, of which around 74 were from the telecommunications sector. The sample covers about 75 percent of the privatizations carried out in the telecommunications sector in the world and account for an estimated 80 percent of the revenues brought in by privatizations in the sector worldwide during the 1990s (World Bank, 2001).³ Furthermore, we are able to expand their sample for telecommunications firms by around five percent by using three additional sources: the firms themselves, the regulatory agencies, and the International Telecommunications Union (2002). To

¹ Barberis, Boycko, Shleifer, and Tsukanova (1996) use a survey of Russian shops to measure the importance of alternative channels through which privatization promotes restructuring. While they find that the presence of new managers in privatized firms raises the likelihood of restructuring the firm after privatization, they show that keeping old managers but adding equity incentives in such firms do not promote restructuring after privatization. According to these researchers, their findings provide empirical support to the view that management replacement after privatization is crucial in the restructuring process of the firm.

² Still, Chong and López-de-Silanes (2002b) provide evidence that their sample of firms is unbiased.

³ These researchers prepared a detailed questionnaire addressed to the CEO with a recommendation to direct it to the chief financial officer and the director of human resources of the corresponding firms. They also used additional sources extensively, in particular, documents from multilateral organizations, regulatory agencies, ministries, and international publications (Chong and López-de-Silanes, 2002b).

achieve this, we followed a procedure analogous to that in Chong and López-de-Silanes (2002b). Thus, we organized a questionnaire in two different areas. The first area covered pre-privatization firm characteristics, such as sales, profits, liabilities, CEO change, and the presence of unions. The second area focused on the privatization process, and in particular, on shares sold, the type of sale, and foreign participation. The key explanatory variable of interest is a dummy variable that equals one if the firm changed CEO up to three years prior to privatization, and zero otherwise.⁴

We complemented our firm-specific information with country-level macroeconomic data, mainly from the World Bank (2001) and Wallsten (2001). In particular, we used the rate of growth, the rate of inflation, the gross domestic product, and the presence of an independent regulatory agency at the time of CEO replacement, among other measures. Additionally, we gathered information on economic performance at the firm level from Bloomberg, Economica, Worldscope, and the International Telecommunications Union (2002).⁵ Following related work on the telecommunications literature, three basic outcome measures were collected: change in telephone lines per inhabitant before and after CEO change (penetration), change in telephone lines per employee before and after CEO change (operational efficiency), and change in returns on sales before and after CEO change (profitability). Table 1 presents exact definitions of all the variables used in this paper.⁶

3. Evidence

Along the basic lines of the methodology by La Porta and López-de-Silanes (1999), Table 2 provides empirical evidence on the link between CEO change before privatization and change in economic performance after replacement. The evidence points towards a confirmation of the view that CEO replacement before privatization is associated with firm restructuring, rather than with firm signaling. Not only is the coefficient of our variable of interest positively associated with change in firm performance before privatization, but it is also statistically significant at 1

⁴ In fact, according to our sample, CEO change before privatization varies widely from region to region. While it has been common in Africa, Latin America, and developed countries, it has been much less used in Asia and Transition Economies.

⁵ Subscription-based Bloomberg, Economica, and Worldscope deliver international financial information in a standardized format that facilitates comparisons between companies, countries, regions, and industries. Worldscope, for instance, covers approximately 90 percent of the world's stock market value and includes records on more than 20,000 active companies representing over 50 emerging and established markets.

percent with respect to change in penetration, and at 5 percent with respect to both change in operating efficiency and change in profitability. In fact, the results suggest that CEO change has a considerable positive impact on changes in performance, as it adds 35 percentage points to mean changes in penetration, 57 percentage points to mean changes in operating efficiency and 7 percentage points to mean changes in profitability. Interestingly, these results are stable to the inclusion of a dummy variable that accounts for the presence of an independent regulatory agency at the time of CEO replacement. The latter is also shown in Table 2.

Furthermore, according to our results, CEO replacement is the only statistically significant variable that is robustly linked with change in firm economic performance among the privatization characteristics considered in this research. In fact, while foreign participation in the privatization process yields a positive and statistically significant sign with respect to change in firm profitability, it does not have any bearing on either change in penetration or change in operating efficiency. Similar results are obtained in the case of the percentage of shares sold, as such a variable is only statistically significant when associated with change in profitability, but not when linked with change in penetration or change in operating efficiency.⁷

Similarly, most of the firm characteristics considered in this paper do not appear to have a bearing on change in economic performance either. For instance, a dummy that accounts for net total liabilities before privatization usually does not yield a statistically significant link with the change in performance variables considered, and when it does, it is at ten percent and with the wrong sign (operating efficiency). On the other hand, average sales before privatization is statistically significant with change in profitability only, while a dummy that accounts for the presence of unions has no bearing on performance change. However, some country-specific variables do appear to have a bearing on change in firm performance. In particular, a dummy that accounts for whether the country has pursued economic reforms yields a positive sign, which is statistically significant at five percent or better with respect to change in penetration and change in profitability. However, such a variable is only weakly significant with respect to change in operating efficiency in the absence of a regulatory agency dummy.

⁶ Summary statistics for all the variables used are presented in Appendix 1.

⁷ Moreover, we do not obtain the expected sign.

4. Conclusions

In a context in which state-owned enterprises still represent a sizable fraction of the world's gross domestic product, investment, and employment (Kikeri, 1999) and in light of the current political sensitivities towards privatization in several regions, we provide evidence on the benefits of CEO replacement before privatization that complements López-de-Silanes (1997) by showing that actual firm restructuring may be the missing link between CEO replacement and privatization prices. From a policy perspective, our research helps provide a better understanding of what works and what does not work in privatization programs, and thus may help improve the design of future programs. In fact, as actual firm reform appears to be the mechanism at play between CEO replacement and privatization prices, governments should weigh the trade-off between political costs and economic benefits of restructuring the firm.

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Table 1. Definition of Variables

Variable	Description
<i>Privatization Characteristics</i>	
CEO change	Dummy variable equal to 1 if the company changed CEO up to three years prior to privatization, 0 otherwise (Chong and Lopez-de-Silanes, 2002).
Foreign participation	Dummy variable equal to 1 if foreign participation was allowed in the privatization process, and 0 otherwise (Chong and Lopez-de-Silanes, 2002).
Share sold	Percentage of firm's shares sold in privatization (Chong and Lopez-de-Silanes, 2002).
Independent agency	Dummy variable equal to 1 when an independent regulatory agency was established, and 0 otherwise. An independent agency means that the country has a regulatory agency not directly under control of a ministry (Wallsten, 2001).
<i>Firm Characteristics</i>	
Penetration	Percentage change between the two-year average of firm lines per 100 inhabitants before CEO change and the two-year average after CEO change (WorldScope, 2001; International Telecommunications Union, 2002).
Operating efficiency	Percentage change between the two-year average of firm lines per employee before CEO change and the two-year average after CEO change (WorldScope, 2001; International Telecommunications Union, 2002).
Profitability	Change between the two-year average of return on sales before CEO change and the two-year average after CEO change (WorldScope, 2001; International Telecommunications Union, 2002; Bloomberg and Economica).
Net total liabilities	Dummy variable equal to 1 if net total liabilities are greater than zero up to three years prior to privatization, and 0 otherwise (Chong and Lopez-de-Silanes, 2002).
Sales	The net present value of the three-year average of firm sales before CEO change. The sales value were denominated in US\$ of the initial year (Chong and Lopez-de-Silanes, 2002).
Presence of unions	Dummy variable equal to 1 if firm had unions or strikes up to three years prior to privatization, and 0 otherwise (Chong and Lopez-de-Silanes, 2002).
<i>Country-Specific Variables</i>	
Economic growth	Average rate of growth of the country three years prior to privatization (World Bank, 2001).
Gross domestic product	Gross Domestic Product (US\$ PPP) in logs. Average of the three years prior to privatization (World Bank, 2001).
Urban population	Average percentage of urban population three years prior to privatization (World Bank, 2001).
Expropriation risk	Index that can take values between 0 and 10, with lower scores indicating a lower risk of expropriation (ICRG's risk ratings).
Economics reforms	Dummy variable equal to 1 if telecom privatization took place in an economics reform context (World Bank).
Continental dummies	Dummy equal to 1 if to account for the following regions: Latin America, Middle East and Africa, Transition Economies, 0 otherwise.

Table 2. CEO Change and Pre-Privatization Performance

Variables	Penetration		Operating Efficiency		Profitability	
<i>1.- Privatization Characteristics:</i>						
CEO change	0.3583 *** (0.095)	0.3574 *** (0.095)	0.5800 ** (0.274)	0.5776 ** (0.266)	0.0722 ** (0.033)	0.0722 ** (0.033)
Foreign Participation	-0.1128 (0.123)	-0.0722 (0.123)	-0.3208 (0.261)	-0.2179 (0.259)	0.0669 * (0.039)	0.0679 * (0.040)
Share Sold	-0.0023 (0.004)	-0.0007 (0.004)	-0.0097 (0.011)	-0.0055 (0.009)	-0.0022 * (0.001)	-0.0021 * (0.001)
Independent Agency		-0.2393 ** (0.097)		-0.6067 ** (0.229)		-0.0063 (0.027)
<i>2.- Firm characteristics:</i>						
Net total liabilities	0.0875 (0.107)	0.0488 (0.104)	0.4488 * (0.256)	0.3505 (0.222)	0.0367 (0.033)	0.0357 (0.034)
Sales	0.0026 (0.004)	0.0011 (0.004)	0.0064 (0.015)	0.0025 (0.015)	-0.0039 ** (0.002)	-0.0039 ** (0.002)
Presence of unions	-0.0011 (0.251)	-0.0972 (0.244)	-0.1631 (0.364)	-0.4068 (0.372)	0.0230 (0.049)	0.0204 (0.053)
<i>3.- Country-Specific Variables:</i>						
Economic Growth	0.0222 (0.018)	0.0220 (0.016)	0.0624 (0.072)	0.0617 *** (0.068)	0.0049 (0.005)	0.0049 (0.005)
Gross Domestic Product	-0.0092 (0.034)	0.0069 (0.031)	-0.0790 (0.093)	-0.0381 (0.092)	-0.0256 * (0.012)	-0.0252 * (0.012)
Urban Population	-0.0178 *** (0.003)	-0.0175 *** (0.003)	-0.0199 *** (0.006)	-0.0191 *** (0.005)	0.0013 (0.001)	0.0013 (0.001)
Expropriation Risk	0.0160 (0.051)	0.0265 (0.050)	-0.0040 (0.123)	0.0227 (0.117)	-0.0728 ** (0.017)	-0.0725 ** (0.017)
Economics Reforms	0.2653 ** (0.118)	0.1919 * (0.112)	0.4510 * (0.244)	0.2648 (0.226)	0.1087 *** (0.040)	0.1068 ** (0.040)
Latin America	0.5677 *** (0.174)	0.5879 *** (0.154)	1.4845 ** (0.586)	1.5358 *** (0.558)	-0.0580 (0.054)	-0.0575 (0.054)
Asia	0.7435 ** (0.307)	0.7280 * (0.315)	0.3214 (0.543)	0.2822 (0.559)	-0.1492 *** (0.052)	-0.1496 *** (0.052)
Africa and Middle East	0.2725 (0.253)	0.3020 (0.243)	-0.4543 (0.388)	-0.3795 (0.393)	-0.1276 ** (0.056)	-0.1268 ** (0.056)
Transition Economies	0.3140 *** (0.142)	0.2869 ** (0.138)	0.3731 (0.351)	0.3044 (0.350)	-0.1038 ** (0.044)	-0.1045 ** (0.045)
Constant	1.3200 (0.900)	0.9251 (0.930)	3.7332 (2.573)	2.7318 (2.662)	1.2463 *** (0.371)	1.2359 *** (0.376)
Observations	77	77	77	77	77	77
R-squared	0.73	0.76	0.50	0.54	0.62	0.62
F	12.81	15.54	5.47	6.59	3.85	3.62
Prob > F	0.000	0.000	0.000	0.000	0.000	0.000

Robust standard errors in parentheses

* significant at 10%; ** significant at 5%; *** significant at 1%

Appendix 1. Summary Statistics

Variable	Obs	Mean	Median	Std. Dev.	Min	Max
<i>Privatization Characteristics</i>						
CEO change	77	0.468	0.000	0.502	0.000	1.000
Foreign Participation	77	0.870	1.000	0.338	0.000	1.000
Share Sold	77	34.612	30.000	19.676	1.000	95.000
Independent Agency	77	0.351	0.000	0.480	0.000	1.000
<i>Firm Characteristics</i>						
Penetration	77	0.534	0.265	0.617	0.001	2.431
Operating efficiency	77	0.862	0.351	1.231	-0.350	6.418
Profitability	77	0.059	0.040	0.165	-0.476	0.792
Net total liabilities	77	0.468	0.000	0.502	0.000	1.000
Sales	77	3.545	1.430	5.079	0.003	21.991
Presence of unions	77	0.870	1.000	0.338	0.000	1.000
<i>Country-Specific Variables</i>						
Economic growth	77	2.928	3.319	3.726	-11.144	12.822
Gross Domestic Product	77	25.382	25.571	2.176	19.448	28.856
Urban Population	77	66.198	70.500	19.778	12.853	100.000
Expropriation Risk	77	2.221	2.000	1.510	1.000	7.000
Latin America	77	0.247	0.000	0.434	0.000	1.000
Asia	77	0.104	0.000	0.307	0.000	1.000
Africa and Middle East	77	0.117	0.000	0.323	0.000	1.000
Transition Economies	77	0.156	0.000	0.365	0.000	1.000

Appendix 2. Firm and Country Sample

Company	Country	Year of privatization
Albanian Mobile Communications	Albania	2000
Belgacom	Belgium	1995
Belize Telecommunications Ltd.	Belize	1988
Bezeq	Israel	1998
British Telecom	United Kingdom	1984 , 1991
Bulgarian Telecommunications Co.	Bulgaria	2000
CANTV	Venezuela	1991
CTE	El Salvador	1998
Cabo Verde Telecom	Cape Verde	1995
China Telecom - Hong Kong Ltd.	China	1997
Compania de Telefonos Chile (CTC)	Chile	1988
Deutsche Telekom	Germany	1996 , 1999
ENTEL	Bolivia	1995
Embratel SA	Brazil	1998
Entel and CPT	Peru	1994
Entel- Telecom SA	Argentina	1990
Entel- Telefonica de Argentina SA	Argentina	1990
Estonia Telecom	Estonia	1993 , 1999
France Telecom	France	1997, 1998
Ghana Telecom	Ghana	1996
Guyana Telephone and Telegraph	Guyana	1991
Hrvatske Telekomunicacije	Croatia	1999
INDOSAT	Indonesia	1994
INTEL	El Salvador	1998
INTEL SA	Panama	1997
Jordan Telecom	Jordan	2000
Korea Telecom	Korea, Rep.	1999
Lattelekom	Latvia	1994
Lietuvos Telekomas	Lithuania	1998
NTT	Japan	1987, 1988, 1998, 1999
P.T.Telkom	Indonesia	1995
Portugal Telecom	Portugal	1995, 1996, 1997
Puerto Rico Telephone Co. (PRTC)	Puerto Rico	1999
Q-tel	Qatar	1998
Royal KPN	Netherlands	1994 , 1995
SKANTEL	St. Kitts and Nevis	1992 , 1994
SPT Telecom	Czech Republic	1994
Singapore Telecommunications	Singapore	1993 , 1996
Sonatel	Senegal	1997
Sonera	Finland	1998 , 1999
Sri Lanka Telecommunications	Sri Lanka	1997
Svyazinvest	Russian Federation	1997
Swisscom	Switzerland	1998
Tele Centro Sul	Brazil	1998
TeleDanmark	Denmark	1998
Telecom Eireanne	Ireland	1996
Telecom Italia	Italy	1997
Telecom Serbia	Yugoslavia, FR	1997
Telecommunications of Jamaica (TOJ)	Jamaica	1990
Telefonica del Peru	Peru	1996
Telekom Austria	Austria	1998
Telekomunikacja Polska SA	Poland	1998 , 2000
Telosp Celular Participacoes SA	Brazil	1998
Telfonica	Spain	1997
Telgua	Guatemala	1998
Telia	Sweden	2000
Telkom	South Africa	1997
Telstra	Australia	1997 , 1999
Telus	Canada	1990
Trinidad and Tobago Telephone Co. (T&TT)	Trinidad and Tobago	1989
Uganda Telecommunications Ltd	Uganda	2000