

The Privatization Origins of Political Corporations

Felipe González
Mounu Prem
Francisco Urzúa I.

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Felipe González

Mounu Prem

Francisco Urzúa I.[†]

We show how the sale of state owned firms in dictatorships may lead to the creation of political corporations operating in democracies. Using several novel datasets, we characterize the privatizations of the Pinochet regime in Chile using a data driven algorithm, confirming that some state owned firms were sold underpriced to politically connected individuals. We then show how firms with crooked privatization processes grew and benefited from Pinochet and in democracy formed political connections, financed political campaigns, and were more likely to appear in the Panama Papers. These results reveal how authoritarian regimes can influence a subsequent democracy and document a way in which political corporations are created.

Keywords: corporation, privatization, rent seeking, dictatorship, democracy

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[†]González: PUC-Chile, Instituto de Economía; contact email: fagonza4@uc.cl. Prem: Universidad del Rosario, Department of Economics. Urzúa: Erasmus University, Rotterdam School of Management.

1 Introduction

Political corporations – large firms with political influence – play an important role in democracies (Zingales, 2017), but little is known about how these corporations are created in the first place. In contrast to the idea that *well-implemented* privatizations should depoliticize firms (Boycko et al., 1997), this paper shows that political corporations may emerge as a result of *crooked* privatization reforms. The sale of state-owned firms is usually plagued by controversies regarding sale prices and the identity of buyers. An example is Russia, where a large number of state owned firms were sold underpriced to individuals who stripped them down and used the money to bribe politicians and block reforms (Black et al., 2000). Russia is not an exception as we found controversial privatizations in Argentina, China, India, Mexico, Serbia, Turkey, Uganda, and the UK, among others.¹ Despite their prevalence, there is surprisingly little evidence about the subsequent behavior of firms privatized in crooked or controversial processes.² Finding a suitable context to study this matter is challenging, as we need to observe comparable firms with different types of privatization processes, and measure their future behavior over an extended period of time.

We study the privatizations of the Pinochet regime in Chile (1973–1990), policy perceived as successful with a World Bank report claiming they “improved domestic and world welfare” (Galal, 1994). However, some of these privatizations have been controversial because of sale prices and the identity of buyers. An example is one of the largest chemical and mining companies in the world, sold underpriced to Pinochet’s son-in-law and nowadays involved in several political scandals. Using several novel datasets, we characterize privatizations using a data driven algorithm, confirming that some state owned firms were sold underpriced to politically connected individuals, i.e. crooked processes we define as controversial. We then compare *similar* firms that were privatized differently and find that firms with controversial privatizations benefitted from the Pinochet regime and, after democratization, formed dynamic political connections, financed political campaigns, and were more likely to appear in the Panama Papers. These results suggest that firms sold underpriced to politically connected individuals were later transformed into political corporations and reveal how authoritarian regimes can sustain their influence even after a regime change.

To study political corporations and privatizations in Chile, we construct several datasets. Firms listed in the stock market were required to annually report their activities to a regulatory agency. We digitized the information in these reports including balance sheets, income statements, debt with banks, and the names of owners and board members. These firms are among the largest

¹ For details about these privatization processes see Saba and Manzetti (1997); Celarier (1997); Baran (2000); Tangri and Mwenda (2001); Green and Haskel (2004); Milovanović (2007); Fisman and Wang (2014).

² An exception is Fisman and Wang (2014), which studies causes and consequences of corruption in Chinese privatizations. In the absence of controversies, the state usually obtain revenues from selling state owned assets and firms experience increased productivity (La Porta and López-de-Silanes, 1999; D’Souza and Megginson, 1999; Frydman et al., 1999). Megginson and Netter (2001) and Estrin et al. (2009) provide excellent surveys of the literature.

corporations in the country. Then, using the names of all firms privatized by the Pinochet regime, we identify privatizations with annual reports. To characterize their privatization processes, we collected data on buyers and sale prices using a wide range of sources. Finally, we use the names of owners, board members, and firms, together with the names of politicians in the dictatorship and democracy periods (1990–), to measure the formation of political connections, to identify firms contributing to political campaigns, and to measure tax avoidance in the Panama Papers.

We detect firms that had a controversial privatization process using a data driven algorithm. Using book values, balance sheets, and the identity of buyers and board members before privatization, we construct relative measures of underpricing and closeness to the Pinochet regime. The underpricing variable reveals substantial differences in the prices at which firms were sold. Within-industry differences in underpricing are difficult to predict using pre-privatization firm-level variables. The closeness-to-the-regime variable shows a wide range of buyer types, from those closely connected to Pinochet to those with no relationship at all. These variables allow us to characterize privatizations using data and employ a clustering algorithm to detect groups of firms. When comparing groups, we find firms that were sold underpriced to people close to the regime, i.e. controversial privatizations.³ We crosscheck the classification delivered by the algorithm using the names of firms mentioned in two well known investigations (Marcel, 1989; Mönckeberg, 2001).

After constructing the data, we begin by showing that firms with controversial privatizations were relatively similar to other privatized firms *before* privatization. Controversial and uncontroversial firms had similar level of indebtedness and performance, and operated in a wide range of industries. This similarity in observable variables suggests that controversies in privatization processes were unrelated to firm behavior and industry dynamics. Interestingly, however, the day after the referendum that ended the Pinochet regime in October 1988 – an event that happened after most privatizations – firms with controversial privatizations experienced an 8 percentage points decrease in abnormal returns in their stock prices. These patterns suggest that financial investors perceived that controversial firms lost value after learning that the regime was going to (unexpectedly) come to an end, a fact consistent with these firms obtaining benefits from the regime (Fisman, 2001).

Motivated by the reaction of financial investors, which suggests the existence of benefits flowing from the regime to specific firms, we study the evolution of economic and political outcomes by comparing controversial and otherwise *similar* uncontroversial privatizations within industries. First, we focus on the short-run after privatization and study debt financing between privatized firms and state owned banks, since previous research has shown companies may use these financial institutions to extract rents.⁴ Second, we study the political behavior of firms after Pinochet left power (1990–2005) by analyzing the relationship between controversial firms, political con-

³ Examples of other articles using clustering algorithms include Brocas et al. (2014), which classifies subjects using their revealed choices, and Crone (2005), which constructs an alternative definition of regions in the U.S.

⁴ Khwaja and Mian (2005) show that politically connected firms in Pakistan used government banks to extract rents. See also Claessens et al. (2002), Sapienza (2004), Lucca et al. (2014), and González and Prem (2017).

nections, campaign finance, and tax avoidance.⁵

Our analysis reveals that firms with controversial privatizations obtained more loans at lower interest rates from state owned banks towards the end of the regime (1988-1990). This result is consistent with our stock market findings and constitutes additional evidence suggesting these firms were benefitting from the regime. Our econometric strategy uses the unexpected outcome of the referendum that ended the Pinochet regime and a detailed analysis of loans from state owned banks. Consistent with this cheaper financing we observe that controversial firms, *smaller* than uncontroversial ones before privatization, were then significantly *larger* when democracy arrived.

Next, we show that firms with controversial privatizations formed dynamic political connections, financed political campaigns, and were more likely to appear in the Panama Papers. Using the names of politicians in the dictatorship and democracy periods, and the names of board members, we find that controversial firms employed politicians 25 percentage points more often. Moreover, the employment decisions are dynamic because firms *substituted* political connections from the *old* to the *new* democratic regime after democratization. Towards the year 2005, controversial firms employed 40 percentage points more politicians of the new democratic regime. This finding is important because political connections are associated with misallocation of resources (Cingano and Pinotti, 2013; Colonelli and Prem, 2017), inefficiencies that produce rents for connected individuals (Blanes i Vidal et al., 2012). Finally, we find that controversial firms were 31 percentage points more likely to finance political campaigns and 36 percentage points more likely to appear in the Panama Papers than uncontroversial firms. Taken together, these results suggest that state owned firms privatized by a dictatorship can influence politics even after a regime change.

We complement our findings in two directions. First, we implement econometric exercises showing results are robust to different classification methods, estimation techniques, additional control variables, and when accounting for the effect of unobservable variables using new methods that rely on coefficient stability across regression specifications (Altonji et al., 2005; Oster, 2017). Second, we abstract from our classification method and study the relative importance of underpricing and buyer identity and find that both are important empirically. Overall, we conclude that our estimates appear to represent robust estimates arising from controversial privatizations.

This paper contributes to the economics literature studying political corporations (Zingales, 2017), the persistence of elites (Acemoglu and Robinson, 2008), and the “revolving door” in politics (Blanes i Vidal et al., 2012). As emphasized by Zingales (2017, p. 113), although large firms are important political actors throughout the world “the commonly prevailing view of the firm ignores all elements of politics and power.” We contribute to this literature by showing the privatization origins of political corporations. In doing so, our analysis constitutes an example of the dictatorial origins of elites attempting to capture a democracy (Grossman and Helpman 1994; Ell-

⁵ Political connections are associated with rent extraction, the exchange of favors, and resource misallocation. See Faccio et al. (2006), Goldman et al. (2013), Colonelli and Prem (2017), and Faccio and Hsu (2017), among others.

man and Wantchekon 2000; Acemoglu and Robinson 2008; Acemoglu et al. 2011, among others). In addition, our results emphasize the importance of the “revolving door” in politics to explain the persistence of elites who acquire control of firms during privatization reforms, and provide one policy-related mechanism behind the “iron law of oligarchy” (Michels, 1915).

We also contribute to two additional literatures. First, our work contributes to the literature studying corrupt privatizations. Although work on privatizations is vast – see Megginson and Netter (2001) and Estrin et al. (2009) for excellent reviews – research studying *corrupt* privatizations is relatively scarce. There is evidence that corrupt privatizations have a negative effect on firm performance (Fisman and Wang, 2014) and some evidence that privatization reforms might be used as a tool to gain political support (Bel, 2010). However, there is very little empirical work outside of these contributions. We add to this literature by pointing towards how, in addition to the effects on firm performance, controversial privatizations may extract rents from the state using the credit market and avoiding taxes, and attempt to influence politics forming political connections and providing financial resources in electoral campaigns.

Our work also sheds light on mechanisms that authoritarian regimes may use to extract rents from the state. Earlier theoretical work has provided foundations for rationalizing the inefficiencies of rent extraction in order to provide stable political coalitions (Brough and Kimenyi, 1986). Recent empirical work has shown how ethnic and regional favoritism – two forms of rent extraction – are exacerbated in authoritarian regimes using targeted local policies (Hodler and Raschky, 2014; Burgess et al., 2015). More closely related to our work, Atanasov (2005) shows that as much as 85% of firm value was extracted during Bulgaria’s mass privatization process in the late 1990s. We contribute to this literature by showing evidence of rent extraction using state owned banks, political connections, electoral campaigns, and tax avoidance.

2 The Privatizations of the Pinochet Regime

The dictatorship led by Augusto Pinochet rose to power after a coup d’etat in 1973 against President Salvador Allende, and remained in power until March 1990, 17 months after citizens rejected Pinochet’s continuation in office in a referendum known as the “1988 plebiscite” (October 5, 1988). Following an agreement between the regime and the opposition, a presidential election with candidates from all parties was held in December 1989. Unsurprisingly, the opposition won that election and, after 17 years of dictatorship, Chile returned to democracy. Despite contentious debates about the legacies of the Pinochet regime, there is surprisingly little evidence testing if and how policies implemented by Pinochet persisted into democracy.⁶

⁶ Huneus (2006) provides a detailed analysis of the Pinochet regime, and Cavallo et al. (2011) provides detailed accounts of important events. According to data collected by Treisman (2017), the type of democratization experienced by Chile is a common one: elections have ended almost half of dictatorships in the last two-hundred years.

The main economic policies implemented by the Pinochet regime aimed to decrease government spending, control the high inflation experienced since the beginning of the 1970s, decrease tariffs to liberalize trade, and implement a mass privatization process. While creating these policies the regime followed recommendations of economists trained at the University of Chicago, popularly known as the “Chicago Boys.” The effects of these policies are now a source of controversy among supporters and critics of the regime. Supporters argue that the macroeconomic stability and high growth rates in the 1990s were a direct consequence of the regime’s economic policies in the 1970s and 1980s. Critics point to corruption during the Pinochet years and the currently high income inequality.⁷ One of the most important controversies lies around privatizations.

The privatization process was one of Pinochet’s most important policies. The sale of state owned assets had several objectives. First, and most importantly, the regime was strongly influenced by economists who believed in the efficiency of private property, a popular sentiment – especially among right-wing parties – after the economic instability of Allende’s socialist government (1970–1973). Unsurprisingly, one of the regime’s goals was to privatize firms that were previously nationalized by Allende. In addition to these economic reasons, there were also political ones, such as to unite businesspeople behind the government – particularly after the social turmoil generated by the 1982 economic crisis – and to gain their support before the 1988 plebiscite.⁸ There is limited evidence suggesting that privatizations were used as a financing tool.

Mass privatizations are difficult to implement. In an attempt to gain popular support, the regime used Margaret Thatcher’s framing of “popular capitalism” and justified the process as a “diffusion of property to make Chile a country of owners” (Huneus, 2006, p. 314).⁹ The regime privatized state owned firms in two different rounds. The first round was in the second half of the 1970s, was organized by the Production Development Corporation, and was primarily aimed at re-privatizing companies expropriated by Allende. The second round of privatizations used the “popular capitalism” strategy and began after the 1982 economic crisis, a period in which the state gained control of several firms that were privatized afterwards. Figure 2-A plots the number of privatizations per year, where these two waves of privatizations are clearly visible.

Although the regime’s privatization process is perceived as a relatively successful reform (Galal, 1994), some privatizations have generated significant controversy, permeating the debate about the legacies of the Pinochet regime. Given the vast amount of state resources that were privatized – approximately US \$3.6 billion according to Meller (1998, p. 268) – the controversy is understand-

⁷ Despite this controversy, researchers have found that some of these policies seem to have had positive impacts on local economies (e.g. Cuesta et al. 2015).

⁸ Huneus (2006, ch. 9) provides a nice summary of the privatization process. Other accounts include Hachette and Lüders (1992) and Hachette (2001). Bel (2010) shows a similar political use of privatizations in Nazi Germany.

⁹ The Ministry of Economics stated that “Private property is one of the pillars of a free society and one of the keys to success of advanced Western societies. For the right to property to really be effective, it must come with extensive, massive and indiscriminate access to property” (*Estrategia*, May 12-18, 1986).

able. On one hand, critics argue that some privatizations were used to transfer resources from the state to a handful of individuals who were close to the regime. On the other hand, supporters argue that these privatizations increased the performance of firms and benefited the economy. We gather the most comprehensive data on firm-level privatization processes in Chile in an attempt to shed light on this debate.

3 Data Construction

We use annual firm-level data that we digitized from administrative documents kept by Chile’s regulatory agency *Superintendencia de Valores y Seguros*, an independent institution equivalent to the Securities and Exchange Commission in the U.S. By law, all firms listed in the Chilean stock market have to submit yearly reports of their activities. Firms submitting reports are among the largest in the country and represent a sizable share of economic activity.

The reports reveal firms’ balance sheets, income statements, name of board members, name of firm owners, number of workers, and debts. The information required by the agency was standardized in 1985 and, as a consequence, all firms report the same variables from then onwards. Before that year, however, firms reported their balance sheets, income statements, and other scattered information, which restricts our ability to measure some firm dimensions before 1985. We extracted all available variables from the reports and standardized the monetary ones to 1998 Chilean pesos using the consumer price index constructed by Central Bank of Chile. An example of a report can be found in Figure 1. These reports are audited by international firms and are the main source of information used by the most well-known investigations of firms in this period.¹⁰

After digitizing reports, we matched the names of firms in our data with the list of 387 firms privatized by the Pinochet regime.¹¹ The name of the firms privatized is publicly available as documents produced by the Congress after Chile’s return to democracy (CEME, 2004). We found 50 firms in both our data and the Congress’ list. We later show that firms privatized by the regime were significantly larger, older, and had lower performance, but had similar debt compared to other firms with reports but without privatizations. Among the firms privatized by Pinochet we find popular companies that were sold underpriced to individuals who were socially close to the regime. For example, our data includes the Chemical and Mining Society of Chile (SQM), sold to Pinochet’s son-in-law and the focus of several corruption scandals in recent years; and the

¹⁰Examples of journalistic investigations using anecdotal data from the reports include Mönckeberg (2001), Tromben (2016), and Guzmán and Rojas (2017), among others. To the best of our knowledge the only papers using 1980s reports in an econometric framework are González and Prem (2017, 2018a,b), who study the role of political connections in Chile’s democratization. Academic articles using post 1990s reports include, for example, Khanna and Palepu (2000) and Martínez et al. (2007).

¹¹There were actually 725 firms privatized by Pinochet, but 338 of these were in the process of being nationalized and the regime returned them (re-privatized) immediately after the 1973 coup.

National Electricity Company (Endesa), sold to a former collaborator of the regime. Our data also includes the companies mentioned by Marcel (1989) and Mönckeberg (2001), the latter a popular journalistic investigation and best selling book in Chile that studies Pinochet’s privatizations. In an attempt to provide evidence of controversies in privatization processes, the next subsection constructs underpricing and closeness-to-the-regime variables for each privatization in our data.

3.1 Detecting controversial privatizations

We detect controversial privatizations using an empirical approach that relies on information about the sale process and a clustering algorithm, a quantization technique from signal processing. More precisely, we use a k -means cluster analysis with two variables that evaluate the privatization process of a firm. First, we collect information about individuals involved in the sale of a firm and construct a measure of “social distance” to the Pinochet regime. Second, we use multiple historical sources to recover sale prices for each privatization in our data and construct a measure of underpricing that can be compared across firms. We say a privatization process was controversial if a firm was sold relatively underpriced and the transaction involved individuals who were closed to the regime. We now provide more details about these variables and the clustering algorithm.

The first variable that characterizes a privatization is the social distance between individuals involved in the sale and the Pinochet regime. To construct this variable, we proceed in two steps. In the first step, we identify the buyer of the firm and study their relationship to the regime. We classify a buyer as linked to the regime if we find they have worked for the regime before the privatization. Similarly, in the second step we use the names of individuals on the board of directors, study their job history prior to the privatization, and identify all those who had previously worked for the Pinochet regime. Appendix A provides step by step details about this procedure and the historical sources used. Table 1 presents summary statistics for both of these variables. Overall 8% of directors and 42% of buyers had worked for Pinochet. When using the algorithm, we combine both measures linearly to create an unidimensional metric of “closeness to the Pinochet regime,” although results are robust to use different functional forms.

The second variable measures the relative extent of underpricing in the sale of a firm. In contrast to the privatizations studied by López-de-Silanes (1997) in Mexico, there are, to the best of our knowledge, no records of the auctions, participants, and bids in Chile. Therefore, to construct this variable we compare the price per share paid during the privatization process with the book value per share, which we obtained by dividing the book value of equity in the year before the privatization over the number of shares available, while ensuring all prices are in comparable currencies and taking inflation values into account. For companies that were returned by the state to their previous owners without payment, and for companies with negative equity (i.e. bankrupt), we assume that the price per share and book value per share coincide. Therefore, our underpricing variable is the ratio between the difference in privatization price and book value per share over the

book value per share. More than a cardinal value, we consider this underpricing measure to be ordinal in the sense that it allows us to compare sale prices across privatizations. Table 1 presents descriptive statistics for this variable, although the number itself has only a relative interpretation.

In the last step, we employ a k -means clustering algorithm (Steinhaus, 1957) using underpricing and closeness-to-the-regime as inputs to detect groups of firms. This algorithm is an unsupervised learning approach that classifies firms in our data, and we chose it due to its simplicity and relatively wide use in empirical research. Figure 3-A presents results graphically. The y-axis measures relative underpricing and the x-axis the closeness-to-the-regime of individuals involved in the sale. As can be seen in the figure – and confirmed statistically in Table 1 – there is a group of state owned firms that were sold underpriced to individuals who had close ties to the regime.¹² In particular, the algorithm finds 22 firms that had, under the previously discussed definition, controversial privatization processes. All of the privatizations the algorithm classifies as controversial have been mentioned by Marcel (1989) and Mönckeberg (2001) as “corrupt” due to underpricing, which serves as a partial check to the approach.¹³

3.2 Politics in democracy

To study how firms with controversial privatizations evolved, we first analyze firm-level economic outcomes available in the reports. We then look at the dynamic formation of political connections, campaign finance, and tax avoidance, three important dimensions that research has found can be potentially affected by firms (Fisman, 2001; Claessens et al., 2008; Zucman, 2013). We now explain in detail how we constructed all of these political variables.

We constructed datasets that measure: (i) which firms in our data formed political connections after the privatization process, (ii) which firms contributed to political campaigns, and (iii) which board members appeared in the Panama Papers. The first uncovers the employment of politicians as board members and their political affiliations in the dictatorship and democracy periods. We collected the names of all individuals working as Ministers and similar high-level positions during the Pinochet dictatorship, calling them “politicians of the *old* regime.” We also gathered the names of all Ministers and similar high-level positions of *La Concertación*, the new coalition in power in the 1990s, calling them “politicians of the *new* regime.” Then we looked at all individuals working as board members in the firms in our data and identified politicians using a probabilistic

¹²Figures 3-B and 3-C show that the classification of firms into groups is robust to the use of other clustering algorithms, in particular the spectral algorithm and the agglomeration algorithm. We also detect similar groups of firms when we use multi-clustering techniques. We chose to detect two groups for simplicity; techniques to estimate the number of clusters (Tibshirani et al., 2001) deliver a non-robust and large number of clusters.

¹³Importantly, note that the grouping of privatizations may be at first sight unnecessary, as we could have analyzed separately the effects that the underpricing and the closeness-to-the-regime variables have on an outcome of interest. However, due to our small sample of privatizations – which we take into account when making inference – we lack the statistical power to identify the effect of these variables separately. Section 6 explores these two separately.

record-matching algorithm that exploits the uniqueness of full names.¹⁴ Using this approach, we generated an indicator for firms with political connections to the old and new regimes.

The other two sources of information we use are recently declassified documents that identified which firms contributed to political campaigns and which firms avoided taxes using tax havens. We observe legal and illegal campaign contributions *separately*. The latter information takes the form of a list of firms that illegally financed the political campaigns of candidates in the 2013 presidential election. The Chilean tax authority made this list public in 2014 due to irregularities in campaign financing.¹⁵ The list reveals, for example, that SQM, firm with a controversial privatization, transferred resources to political candidates before the elections. Overall, the data show that 37% and 19% of firms in our data financed political campaigns legally and illegally respectively. For comparison, less than 1% of privatized firms outside of our data contributed to political campaigns legally and none contributed illegally. Finally, to measure tax avoidance, we matched the list of board members in democracy with the list of individuals who appeared in the Panama Papers using the previously described probabilistic record-matching algorithm. We found 13 board members who worked in 15 firms in our data, 10 controversial and 5 uncontroversial firms.

4 Corporations in Dictatorship

This section shows that firms with controversial privatizations were similar to firms with uncontroversial processes before they were privatized but received a differential treatment from the regime afterwards. The analysis is divided in two parts. The first part shows that there are few differences in balance sheets and income statements across firms with and without controversies *before* the privatization process, suggesting that controversies are unrelated to firms' potential outcomes. Additionally, we show that the stock market value of firms with controversies decreased temporarily after the announcement of the transition from dictatorship to democracy.

The second part of this section shows that firms with controversies obtained more loans at lower interest rates from state banks before the political transition took place. We interpret these results in light of the existing literature showing similar findings (Fisman, 2001; Khwaja and Mian, 2005) and conclude that firms with controversial privatizations had a somewhat differential – and probably preferential – treatment from the Pinochet regime *after* they were sold to individuals socially close to the regime.

¹⁴The algorithm produces a similarity index with support at the unit interval. We checked case by case manually among high index values and defined a match if: (i) there was an obvious misspelling, (ii) there was a missing name but the two last names were the same and in correct order, or (iii) there was a missing last name but the individual had the same two names in correct order. We identified 30 board members as former politicians.

¹⁵The illegality of these campaign contributions arises because firms bypassed the campaign contributions law and “hired” candidates for services that were never provided, a transfer of money that allowed firms to pay fewer taxes. Data on illegal financing of political campaigns is unfortunately only available for the 2013 presidential election.

4.1 Before privatization

How different were firms with different types of privatization processes before they were privatized? To answer this question, we compare variables in the reports before the privatization year of each firm. To gain statistical accuracy about firms' fundamentals, we take three-year averages for each of four variables. We chose these variables exclusively because they were available in the reports for all firms in our data. In addition, we collected the dates when firms were established. We compare these five variables and the year the process started.

Table 2 presents comparisons between types of firms before privatization. In addition to firms in our data, we also include descriptive statistics for two other groups: firms without privatization but with annual reports, and firms with privatization but without reports. For the former group we present summary statistics before the average privatization year in the firm's industry, but the patterns are similar if we take similar years. For the latter group there is unfortunately very little systematic information and, therefore, we can only observe their privatization year and industry. Figure A.1 plots the distribution of firms by industry in our data and for all privatizations. From this figure it is clear that privatizations in our data overrepresent the manufacturing industry and underrepresent the wholesale and retail trade industry. However, other industries such as electricity and mining are fairly well represented.

Each row in Table 2 presents the average and standard deviation of one of six variables. Columns 1 and 2 examine controversial and uncontroversial privatizations separately. Column 3 presents p -values for differences in means across groups, without and with correction for small sample inference.¹⁶ Columns 1-3 show little statistically significant differences in profitability, indebtedness, or firm age before privatization. The exception is firm size; we observe controversial firms were relatively smaller, although still large in absolute terms. Although our ability to detect differences across firms may be affected by the sample size, the majority of differences are also of relatively small economic magnitude.¹⁷ When compared to firms in our data, column 4 reveals that firms privatized by the regime were significantly larger, older, and had lower performance, but had similar debt compared to other firms with reports but without privatizations.

We interpret results in Table 2 as evidence that, although the privatization decision may have been driven by firm dynamics, the *type* of privatization – i.e. controversial versus uncontroversial – seems not to have been driven by firm behavior, potential outcomes, or strategic decisions by the regime. Section 6 presents several econometric exercises that support this interpretation.

¹⁶See Robinson and Robinson (2001) for details about permutation tests in regression models and Rossi (2014) for an application of it. We calculate p -values using Monte Carlo simulations with 1,000 random permutations.

¹⁷All of these differences are similar when we use within-industry comparisons. Table A.1 presents industries by privatization type and Table A.3 further confirms that there are few differences across firms using the subsample privatized in the 1980s, where we observe more variables due to report standardization (see section 3).

4.2 The stock market

We now use Fisman (2001) framework to provide evidence that firms with controversial processes were benefiting from the Pinochet regime. We statistically test for changes in the stock market value of controversial firms after an exogenous shock that increased the probability of political transition.¹⁸ The idea is that, if controversial firms were benefiting from the dictatorship, we should expect a decrease in their stock market value after the announcement of a democratization. In practice, we exploit the unexpected outcome of the referendum that ended the dictatorship as a source of variation. The referendum, popularly known as 1988 plebiscite, was held on October 5 of 1988 and had Pinochet running to remain in office for the next eight years (with yes or no votes). The regime wanted to validate themselves as a democratic form of government in front of the international community. Both the rejection of Pinochet's continuation in office and the regime's acknowledgement of negative results were unexpected.¹⁹ In contrast, we show that other important political events of the time did not affect the relative stock valuation of firms.

To measure changes in the stock market after the 1988 plebiscite, we digitized daily stock prices of listed firms from newspaper *El Mercurio*, available at Chile's National Library. We restrict attention to firms that were traded for at least four months before the plebiscite to analyze abnormal returns, i.e. the difference between returns and expected returns. We define abnormal returns of stock i on day t as:

$$AR_{it} \equiv R_{it} - (\hat{\alpha}_i + \hat{\beta}_i R_{mt}) \quad (1)$$

where R_{it} is the stock return of firm i on day t , R_{mt} is the market return on day t , and we estimate the parameters $\hat{\alpha}_i, \hat{\beta}_i$ using pre-plebiscite data. As for robustness, we also looked at cumulative abnormal returns, defined as $\sum_{t=0}^{t=j} AR_{it}$ (see Campbell et al. 1997 for more details). The usage of pre-plebiscite transaction data to construct abnormal returns leaves us with 41 privatized firms, 20 of which had controversial processes. We present the evolution of abnormal returns across firms graphically and as estimates of the following regression:

$$CAR_{ijt} = \beta_t \cdot \text{Controversial}_i + \delta_t X_i + \eta_{jt} + \epsilon_{ijt} \quad (2)$$

where $CAR_{ijt} \equiv \sum_{k=0}^t AR_{ik}$ is the cumulative abnormal return for firm i , which operates in industry j , from the day of the plebiscite up to t following days. The variable Controversial_i is an indicator for controversial firms, X_i represent pre-privatization controls, η_{jt} is a set of industry fixed effects,

¹⁸Fisman (2001) used negative health shocks suffered by Indonesia's dictator. Subsequent papers have used unexpected electoral outcomes or unexpected nominations of high-level politicians. See, for example, Ferguson and Voth (2008), Dube et al. (2011), Fisman et al. (2012), and Luechinger and Moser (2014) among many others.

¹⁹González and Prem (2017, 2018a) provide more details about the plebiscite, show the unexpectedness of the outcome by studying stock prices and show how televised political campaigns influenced electoral results.

and ϵ_{ijt} is a mean zero error term. The parameter of interest is β_t and measures the differential cumulative abnormal return for firms with controversial privatizations. All parameters in equation (2) are indexed by t because we estimate it separately for $t = 1, 3, 5, 8, 10$.

Figure 4-A presents daily abnormal returns graphically by type of privatization, and Table 3 presents the corresponding regression estimates, with and without pre-privatization controls. Consistent with the hypothesis that controversial firms were benefiting from the regime, we find a statistically significant decrease in abnormal returns among these firms the day after the plebiscite. The drop in abnormal returns corresponds to approximately 7.5 percentage points (Table 3-A, column 1, p -value <0.01), and is an economically large effect. As can be seen in Table 3, this negative effect lasts for at least ten days and is robust to the inclusion of pre-privatization controls.

Importantly, Figures 4-B through 4-D show that these patterns are particular to the announcement of the transition. Indeed, we observe *similar* abnormal returns across firms with different privatizations around other important political events, namely the day when Pinochet was nominated to be on the ballot at the plebiscite (August 30, 1988), the last constitutional reform in dictatorship (July 30, 1989), the 1989 presidential election (December 14, 1989), and when the new government took office (March 3, 1990). Following the literature, we say the behavior of financial investors is consistent with the idea that controversial firms received benefits from the regime. Now we turn to a direct empirical test of benefits in the credit market.

4.3 The credit market

We now turn to an empirical investigation of the credit market in dictatorship. The credit market is useful to study because it has the potential to reveal if firms with and without controversial privatizations were receiving a differential treatment from the regime. In this sense, when compared to the previous stock market analysis, it provides a complementary approach to test for potential benefits flowing from the regime to specific firms. To study this market, we make use of the reports, which contain information about firms' outstanding debt with *Banco del Estado* (Bank of the State), the only state owned bank in the country. The operations made by this bank before the transition have been a source of controversy, but there has not been a statistical analysis of them.²⁰ We study firm debt financing with this bank in the period between October 1988 and March 1990, when Pinochet was still in power but it was known he would be leaving.

We use the announcement of the transition to study how debt financing and interest rates with the Banco del Estado differed between controversial and uncontroversial privatizations. In partic-

²⁰For example, Leon-Dermota (2003) argues that between October 1988 and March 1990, Banco del Estado lost a significant amount of wealth because of dubious financial operations. The president of this bank during this period was a "Chicago Boy" appointed directly by Pinochet in November 1988.

ular, we estimate the following regression before and after the plebiscite:

$$Y_{ijt} = \beta_t \cdot \text{Controversial}_{ij} + \delta_t X_{ij} + \eta_{jt} + \epsilon_{ijt} \quad (3)$$

where i indexes firms, j industries, and t periods. The dependent variable Y_{ijt} is an indicator for firms with outstanding debt with Banco del Estado in period t , the average interest rate with this bank, or their leverage. The considered period before the plebiscite is 1986-1987, and the one after the plebiscite is 1988-1990. All regressions include pre-privatization controls X_{ij} and industry fixed effects by period, η_{jt} . The coefficients of interest are β_t and they measure the within-industry differences among controversial privatizations in the outcome of interest while controlling for pre-privatization differences. Note that when estimating equation (3), we are allowing all coefficients of pre-privatization variables and industry fixed effects to differ by period.

Table 4-A presents estimates of equation (3) after the plebiscite. Column 1 shows that controversial privatizations were 30 percentage points more likely to have outstanding debt from Banco del Estado between 1988 and 1990 (p -value<0.05), when it was known Pinochet would be leaving. This result is consistent with the findings in Khwaja and Mian (2005) and suggests that the dictatorship used the credit market to benefit these firms; and it is also consistent with the evidence presented by González and Prem (2017), which finds that firms in the Pinochet’s social network obtained more loans from state owned banks between 1988 and 1990. Moreover, column 2 shows that the loans that controversial firms obtained from the Banco del Estado had, on average, 4 percentage points lower interest rates.²¹ Finally, column 3 shows that there are no statistically significant differences in leverage between privatizations, which suggests firms either substituted loans across banks or increased their equity in this period.

Although the reader might be concerned that controversial privatizations were potentially different in unobservable dimensions, and this is the reason why we observe a different credit market for these firms, the evidence suggests this was unlikely to be the case. Table 4-B presents estimates of equation (3) using reports *before* the plebiscite and we do not find statistically significant differences in state loans, interest rates, or leverage. Moreover, point estimates are economically smaller than in panel A. Section 6.1 discusses additional robustness checks in more detail.

5 Political Corporations in Democracy

This section studies firms with controversial privatizations after Chile’s return to democracy in 1990 using uncontroversial firms in the same industry as comparison. We first analyze firm-level

²¹The point estimate in the interest rate regression does not include pre-privatization controls and is imprecisely estimated due to missing observations, but it is statistically significant at conventional levels when we correct for small sample inference (p -value 0.04).

differences in balance sheets at the beginning of democracy. Then we investigate if controversial firms employed politicians as board members – i.e. formed political connections – contributed to political campaigns, or avoided taxes using tax havens. The two former variables have been associated with resource misallocation and political distortions (e.g. Claessens et al. 2008; Cingano and Pinotti 2013).

5.1 The beginning of democracy

As a starting point, we begin by showing how controversial privatizations differed from uncontroversial ones at the very beginning of democracy. To do this, we consider a version of equation (3) with time-invariant coefficients and measuring the dependent variable in 1990. To be consistent with our analysis of pre-privatization differences in section 4.1, we consider the same four firm-level outcomes: assets, sales, return over equity, and leverage. Note that we again control for pre-privatization observable variables and include industry fixed effects in our estimation.

Table 5 presents results. Columns 1 and 2 show that firms with controversial privatizations were significantly larger than other firms at the beginning of the democracy. In terms of magnitude, the coefficient implies that controversial firms were approximately 9% larger than uncontroversial firms. This is surprising given that controversial firms were 13% *smaller* before being privatized. Results using sales as dependent variable confirm this increase in size with a p -value < 0.01 when correcting for small sample. In contrast, columns 3 and 4 show that there continues to be little difference in indebtedness levels (i.e. leverage) and profitability (i.e. return over equity). Overall, results in this table reveal that firms with controversial privatizations grew significantly more in dictatorship when compared to other uncontroversial firms in the same industry.

5.2 Politics in democracy

Are controversial firms influencing politics in democracy? We focus on three dimensions that have been suggested as sources of distortions within democracies: the employment of politicians, the financing of political campaigns, and tax avoidance. We begin by studying employment of politicians as board members. Firms with political connections are associated with significant rent extraction (e.g., Khwaja and Mian 2005; Goldman et al. 2013) and are, therefore, an important source of misallocation in the economy (e.g., Cingano and Pinotti 2013; Colonelli and Prem 2017). Because the misallocation of resources is an important factor behind total factor productivity (Hsieh and Klenow, 2009), understanding the formation of political connections is critical.

We study the evolution of political connections in a dynamic fashion. We estimate equation (3) using as dependent variable an indicator for firms that employed at least one politician for their board. To capture the dynamic nature of these connections, we measure the employment of

politicians in different points in time and use three types of politicians: (i) former politicians of the Pinochet regime – who enjoyed significant political power at the beginning of democracy – who we call “politicians of the old regime”; (ii) politicians of the new democratic incumbent coalition called *Concertación*, who we call “politicians of the new regime”; and (iii) any of the previous politicians, who we call “any politician.”

Table 6 shows that controversial firms formed links with the political world. These firms were 25 percentage points more likely to employ any politician in the decades after the dictatorship, 25 percentage points more likely to employ a politician from the Pinochet regime at the beginning of democracy, and 40 percentage points more likely to employ politicians of the new regime after 15 years of democracy. These coefficients represent economically large magnitudes and the dynamic patterns are revealing. Indeed, a plausible interpretation is that controversial firms *substituted* political connections from the old to the new regime after a decade in democracy. These connections reverted almost perfectly and in 2005 we observe more than half of controversial firms in our data having connections to the new democratic coalition. In contrast, politicians of the old regime were no longer working in these firms by 2005. These results are consistent with controversial firms forming dynamic political connections that are usually associated with significant distortions.

Beyond the potential misallocation caused by politically connected firms in the market, controversial firms may also distort the political arena, via, for example financing political campaigns. This is the case studied in Claessens et al. (2008), which shows that Brazilian firms that contributed to political campaigns had higher stock returns because they benefited from preferential access to bank financing. Although perhaps intuitive, this type of analysis has been relatively scarce because data on campaign contributions is usually difficult to obtain. We study the relationship between controversial firms and campaign finance using recently declassified information.

The list of firms that *illegally* financed political campaigns was revealed after an extensive investigation by the Chilean tax authority. The motivation behind that investigation was accusations of illegal campaign financing before the presidential election of 2013. The illegality of these transfers took the form of monetary payments from firms to politicians for “services” that were never delivered. These interactions were summarized, and the list of firms participating was publicized in the press. Besides illegal campaign finance, we also observe the list of firms that contributed to campaigns in a legal way between 2005 and 2013. We matched these firms with our data of firms privatized by Pinochet to construct two indicator variables, one for illegal and another one for legal campaign finance. We observe that 46% of firms in our data legally contributed to political campaigns in the period between 2005 and 2013, and 22% contributed illegally in 2013. In contrast, less than 1% of privatized firms outside of our data contributed to political campaigns legally and none contributed illegally.

We follow the same econometric strategy as before and estimate equation (3) using and indicator for legal or illegal campaign finance as dependent variable including pre-privatization variables

and industry fixed effects as covariates. The last rows in Table 6 present results. Estimated coefficients show that controversial privatizations were 31 percentage points more likely to legally finance political campaigns (p -value <0.05) and 19 percentage points more likely to contribute illegally, although the latter result is not statistically significant at conventional levels (p -value 0.19). These differences are economically meaningful because, on one hand, only 37 and 19% of uncontroversial privatizations contributed legally and illegally (see column 3) while, on the other hand, more than 68 and 37% of controversial privatizations did. These results suggest that controversial firms indeed seem to have attempted to exert influence in the political arena.

The last row in Table 6 shows that firms with controversial privatizations employed board members in democracy who were 36 percentage points more likely to appear in the Panama Papers (p -value 0.02). The magnitude of this difference is large, as more than half of controversial firms employed at least one board member who appeared in these documents. In contrast, only 18 percent of uncontroversial firms employed a board member from the list. We highlight that this is a *legal* behavior, but it nevertheless decreases tax revenues and it is therefore important to study.

6 Discussion and Interpretation

The first part of this section discusses the results' robustness to additional controls, estimation techniques, methods to classify privatizations, and the effects of omitted variables. Then we provide empirical evidence suggesting both underpricing *and* buyer identities are behind the patterns we have documented.

6.1 Robustness and omitted variables

A variety of econometric exercises suggest our findings are robust and the effect of unobservables is minimal. We begin by showing similar estimates when we include additional control variables – besides pre-privatization controls and industry fixed effects – or exclude particular firms from estimation. Additionally, the effects of controversies are similar, and if anything are larger, if we use the processes studied by Marcel (1989) and Mönckeberg (2001) to define controversial privatizations. Finally, we show results are also robust to the use of modern matching estimators and econometric techniques that adjust for the effect of unobservables, suggesting omitted variables are not driving our results. Table 7 presents all additional results.

We begin showing robustness to additional controls. The Pinochet regime privatized firms in two waves, one in the 1970s and another in the 1980s (see Figure 2). Some scholars have argued these two waves are different from each other, as the former aimed to privatize firms nationalized by Salvador Allende during 1970–1973, and the latter aimed to privatize long-standing state owned firms. To check for this potential confounding factor, we constructed an indicator that identifies

the “privatization wave” of a firm and included it as an additional control. Column 4 shows that the results controlling by wave are similar. Another potential confounder could be a change in the controller of a firm. Although theoretically plausible, column 5 shows similar results if we eliminate the few firms that changed controllers between 1990 and 2005 from the estimation sample.²²

Two additional exercises, namely a different firm classification and the robustness of results to the exclusion of single firms from estimation provide complementary evidence. First, our clustering algorithm could have captured unobservable variables, so it is important to check if results are driven by the procedure we chose. Besides using two other clustering algorithms, we also classified firms as controversial if these were mentioned as “corrupt” by Marcel (1989) or Mönckeberg (2001), who argue 8 of our 50 firms were sold underpriced.²³ Column 7 in Table 7 shows results are larger using their classification. This finding suggests Marcel (1989) and Mönckeberg (2001) analyzed a selected sample of firms. Second, we checked if results changed when we exclude one firm at the time from the estimation. Results are presented in Figure A.3 and confirm that our estimates are not driven by single observations, a valid concern in small samples.

The main statistical threat to previous results is the omission of variables that could be correlated with controversies and explain the outcomes of interest. We use two econometric techniques that suggest the estimates are robust and the effect of omitted variables is minimal. First, we use matching procedures with the goal of performing improved comparisons. Operationally, we calculate the probability of controversies in a privatization using pre-privatization variables and industry fixed effects. Then we perform three estimations, one in which we follow Crump et al. (2009) and restrict the sample to firms that have similar probabilities of controversies (Table 7, column 1), another in which we simply control for the probability of controversies (column 2), and a last one in which we create a counterfactual for each firm using the k -nearest neighbors (column 3).²⁴ The second strategy uses the predictive power of observable variables to adjust the coefficient of interest by considering the effect of unobservables. This “coefficient stability approach” – first proposed by Altonji et al. (2005) and refined by Oster (2017) – again delivers similar estimates (Table 7, column 6). Hence, this additional econometric evidence suggests that our comparisons are appropriate and the effect of unobservables is minimal.

Overall, based on this evidence we conclude that, in dictatorship, the credit market patterns constitute evidence of a preferential treatment flowing from the regime to controversial privatizations and controversial privatizations evolved in a way that is consistent with these firms transforming into political corporations operating in democracy.

²²Donelli et al. (2013) show that changes in control are rather unusual in Chile, with most firms having the same controlling shareholder since 1990.

²³Hence, we classify these 8 firms as controversial and use the remaining 42 as uncontroversial. Importantly, we emphasize that the clustering algorithm in section 3.1 indeed defines these 8 firms as controversial.

²⁴The first matching technique omits six firms from estimation and the second and third techniques drop two firms without a counterfactual in the same industry (see Table A.1).

6.2 Unbundling controversies

Why are firms with a controversial privatization different after being privatized? What is the controversy that explains their differential behavior? The answer to these questions is important because it illuminates how privatization processes should be regulated in practice. The context of our study is – at least partially – well suited to shed some light on this issue because we can estimate the relative importance of underpricing and the identity of buyers. On one hand, if underpricing is more relevant, it would suggest that policies attempting to accurately price firms when they are sold are one way to minimize the negative consequences of privatizations. On the other hand, if the identity of buyers is relatively more important, it would suggest that privatization processes should restrict *who* is allowed to buy state owned firms by, for example, requiring minimal guarantees to participate in the sale process.

To estimate the relative importance of privatization characteristics, we estimate a version of equation (3) in which we unbundle controversies into their components:

$$Y_{ijt} = \beta_1 \cdot \text{Buyer}_i + \beta_2 \cdot \text{Underpricing}_i + \delta X_{ij} + \eta_j + \epsilon_{ijt} \quad (4)$$

where Y_{ijt} is one of the economic or political outcomes from previous sections, X_{ij} is a vector of pre-privatization controls, η_j are industry-specific fixed effects, and ϵ_{ijt} is a robust error term with a mean of zero. The variables that characterize privatizations are underpricing and buyer identity, the latter measured as the closeness-to-the-regime variable in the x -axis of Figure 3. When estimating equation (4) our goal is to gauge the relative importance of β_1 and β_2 . To accomplish this goal, we compare the statistical significance and magnitude of these estimates. For the former, we simply test if β_1 and β_2 are statistically different from zero. For the latter, we use standardized effects, i.e. we compare the response of each outcome to a change of one standard deviation in each of these variables. The standard deviation of underpricing is 0.45 and the standard deviation of the closeness-to-the-regime variable is 0.27.

Table 8 presents estimation results of β_1 (column 1) and β_2 (column 2) for all outcomes in the paper, the p -value testing if $\beta_1 = \beta_2$ (column 3), and the p -value for the hypothesis that both $\beta_1 = 0$ and $\beta_2 = 0$ (column 4). We observe that both underpricing and buyers with close ties are negatively associated with outcomes, both in the dictatorship and in the long-run in democracy. When trying to gauge their relative importance, however, a mixed picture emerges. On one hand, the parameter that measures the relative importance of privatization characteristics is generally larger in magnitude for underpricing. On the other hand, the coefficient associated with buyer identity is a more precise estimate, as we observe more statistically significant results at conventional levels for this variable. In sum, we conclude that the evidence suggests both privatization characteristics matter.

7 Conclusion

We have studied the privatization program implemented by the Pinochet dictatorship in Chile and found evidence of firms with crooked privatizations transforming into political corporations operating in democracy. While Pinochet was still in power, we found that firms with crooked or controversial privatizations had higher stock market valuation and had access to more loans from state banks. After Pinochet left power, controversial firms formed dynamic political connections, financed political campaigns, and decreased tax revenues by avoiding taxes. These findings are important because they reveal how authoritarian regimes can extract wealth from the state and influence the economy and politics even after a regime change.

These results have at least two implications. First, they suggest that benefits from regulating privatization processes may be greater than previously thought. There may be significant benefits from policies that increase competition among potential buyers or demand minimum requirements to buy state owned firms. Second, our findings suggest caution when interpreting the effects of democratizations. Indeed, a transition from dictatorship to democracy does not imply that distortions from dictatorships will disappear. Democratization effects depend on how dictatorial policies (endogenously) persist. We focused on privatizations but there could also be persistence of laws or regulations for example (Albertus and Menaldo, 2018).

We believe our findings open new and interesting questions about privatization. For example, although we have shown how privatizations implemented in dictatorship can influence politics even after democratization, it is still an open question if and when these effects will disappear. Recent scandals in campaign finance in Chile have made incumbent politicians design regulations that attempt to decrease the influence of firms in politics. In addition, we believe that by improving our understanding of how privatization programs are implemented “on the ground” we can potentially design allocation mechanisms among buyers to minimize negative consequences.

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Figure 1: Reports

**Balances Generales Consolidados
al 31 de Diciembre de 1987 y 1986**

(En miles de dólares estadounidenses - M.U.S\$)

	1987 M.U.S\$	1986 M.U.S\$
Activos		
Activo Circulante		
Disponible	6.003	2.969
Depósitos a plazo	21.146	47.135
Valores negociables (neto)	4	4
Deudores por venta (neto)	17.135	13.624
Documentos por cobrar (neto)	6.760	6.424
Deudores varios (neto)	5.513	2.860
Existencias (neto)	36.790	26.412
Impuestos por recuperar	1.152	808
Gastos pagados por anticipado	485	1.119
Impuestos diferidos	1.063	702
Otros activos circulantes	13.030	12.343
TOTAL ACTIVOS CIRCULANTES	109.081	114.400
Activo Fijo		
Terrenos	13.612	13.337
Construcciones y obras de infraestructura	69.293	66.598
Maquinarias y equipos	39.579	37.158
Otros activos fijos	4.065	3.409
Depreciación (menos)	(90.514)	(85.998)
TOTAL ACTIVOS FIJOS	36.035	34.504

(a) Balance sheet

Estados de Resultados Consolidados

Por los años terminados al 31 de Diciembre de 1987 y 1986
(En miles de dólares estadounidenses - M.U.S\$)

	1987 M.U.S\$	1986 M.U.S\$
Resultados Operacionales		
Ingresos de explotación	173.692	154.265
Costo de explotación	(131.594)	(115.017)
Otros ingresos fuera de explotación	42.698	39.248
Costo de explotación	(9.805)	(9.434)
RESULTADO OPERACIONAL	32.293	29.814
Resultados No Operacionales		
Ingresos financieros	3.916	3.698
Utilidad inversión empresas relacionadas	2	2
Otros ingresos fuera de explotación	9.449	5.763
Amortización mayor valor de inversiones	11	12
Gastos financieros	(2.609)	(2.114)
Otros egresos fuera de explotación	(5.407)	(3.492)
RESULTADO NO OPERACIONAL	5.362	3.869
Utilidad antes de impuesto a la renta y partidas extraordinarias	37.655	33.683
Gasto tributario	(2.978)	(3.600)
Utilidad antes de partidas extraordinarias	34.677	30.083
Partidas extraordinarias:		
Pago del seguro en exceso al valor libro de bienes dañados en incendio	774	--
Reconocimiento del beneficio tributario asociado con la realización de una pérdida tributaria acumulada	144	--
UTILIDAD DEL EJERCICIO	35.595	30.083

(b) Income statement

Banco o Institución Financiera	1987 M.U.S\$	1986 M.U.S\$
Sociedad Matriz		
Lloyds Bank Int. N. York	5.110	5.042
Irving Trust Co.	2.048	4.075
Australian & N. Zealand Bank	5.194	5.068
Morgan Guaranty Trust	1.000	3.000
Citibank New York	--	2.500
Bank of America	1.875	5.028
Banco do Brasil	613	604
Banco Español - Chile	--	21
Banco Santiago	1.044	--
First National Bank of Boston	--	353
Banco de Boston	43	--
Citibank N.A.	815	--
Bank American Express	450	--
Citibank Leasing	2.749	--
The Chase Manhattan Bank	1.003	--
Filial N.C.C.		
Morgan Guaranty Trust	--	8.400
First National Bank of Minneapolis	--	781
Totales	21.944	34.872
Monto capital adeudado	21.539	34.727
Tasa interés promedio anual	8,63914%	7,28863%

b) Obligaciones a largo plazo con bancos e instituciones financieras. (Incluye porción corto plazo).

Al 31 de Diciembre de 1987 y 1986 son las siguientes:

Bancos e Instituciones Financieras	Moneda o Realizaje	AÑOS AL VENCIMIENTO	Total	Tasa de Interés	Monto de Capital Adeudado	31.12.86	31.12.87	Porción Corto Plazo	Porción Largo Plazo
		Desde 1 Hasta 2	Desde 2 Hasta 3						
Citibank	M.U.S\$	958	958	--	1.916	Libor-1%	1.916	958	1.917
Totales		958	958	--	1.916		1.916	958	1.917

La amortización de los intereses de los créditos a largo plazo es efectuada semestralmente.

(c) Debt with banks

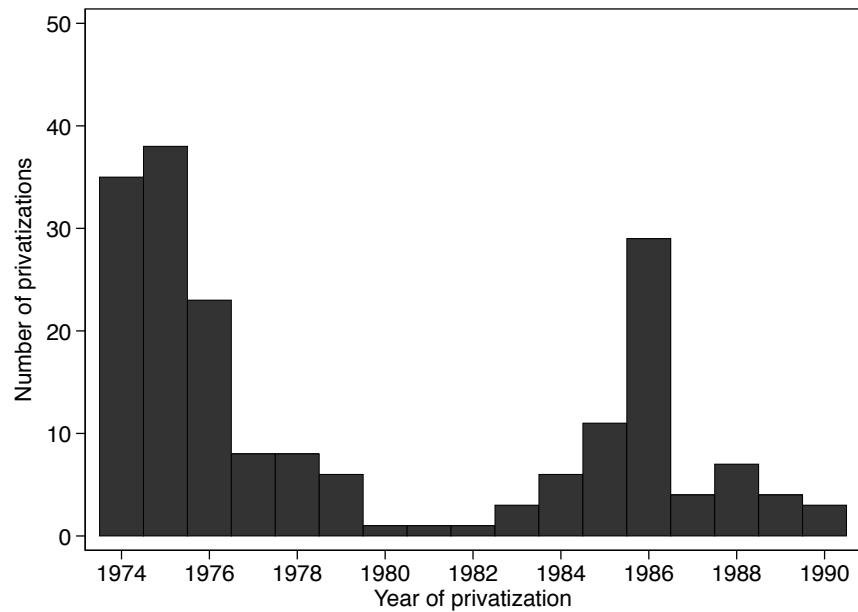
Propiedad al 31 de diciembre de 1987

Nombre	Nº de Acciones	Porcentaje
Corporación de Fomento de la Producción	22.210.907	17,99%
Soc. de Inversiones Pampa Calichera S.A.	15.233.481	12,34%
Inversiones ICC Chile Ltda.	7.574.291	6,13%
Capricorn Holding Inc. y Cia. Ltda.	7.445.000	6,03%
A.F.P. Provida S.A. para Fondo de Pensiones	6.231.288	5,05%
A.F.P. Santa María S.A. para Fondo de Pensiones	6.044.318	4,89%
A.F.P. Habitat S.A. para Fondo de Pensiones	5.946.343	4,82%
A.F.P. Unión S.A. para Fondo de Pensiones	4.876.280	3,95%
Cia. de Seguros de Vida Consorcio	3.920.713	3,17%
Nac. de Seg. S.A.	2.867.528	2,32%
Tanner y Cia. S.A.	--	--
A.F.P. Cuprum S.A. para	2.010.000	1,63%
Fondo de Pensiones	1.962.106	1,59%
A.F.P. Summa S.A. para Fondo de Pensiones	--	--
Otros Accionistas	2.393	0,002%
Total Accionistas	2.405	0,002%

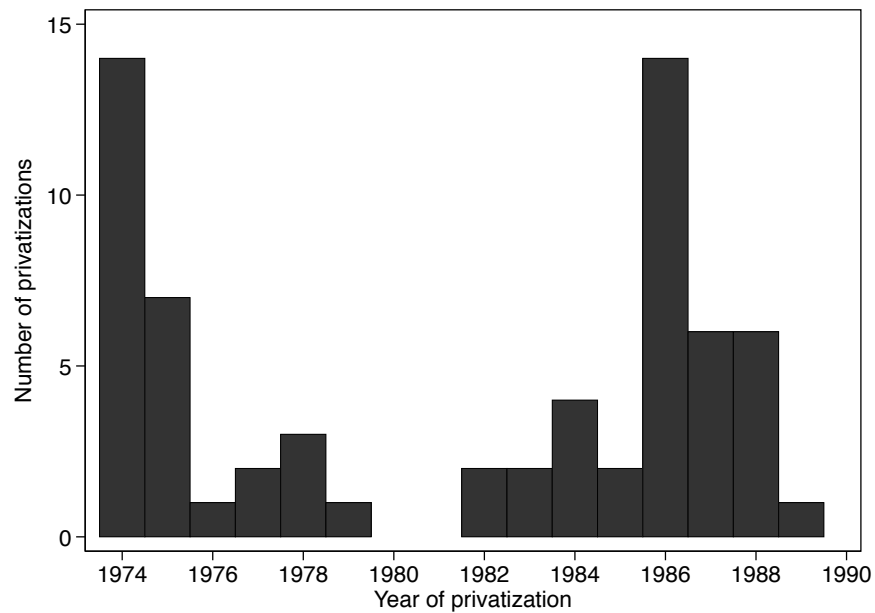
(d) Owners of the firm

Notes: This is an example of a firm's annual report to Chile's regulatory agency. In this example, panels (a) through (d) are part of the 1987 report submitted by the Chemical and Mining Society of Chile, firm sold underpriced to Pinochet's son-in-law.

Figure 2: Privatizations by year



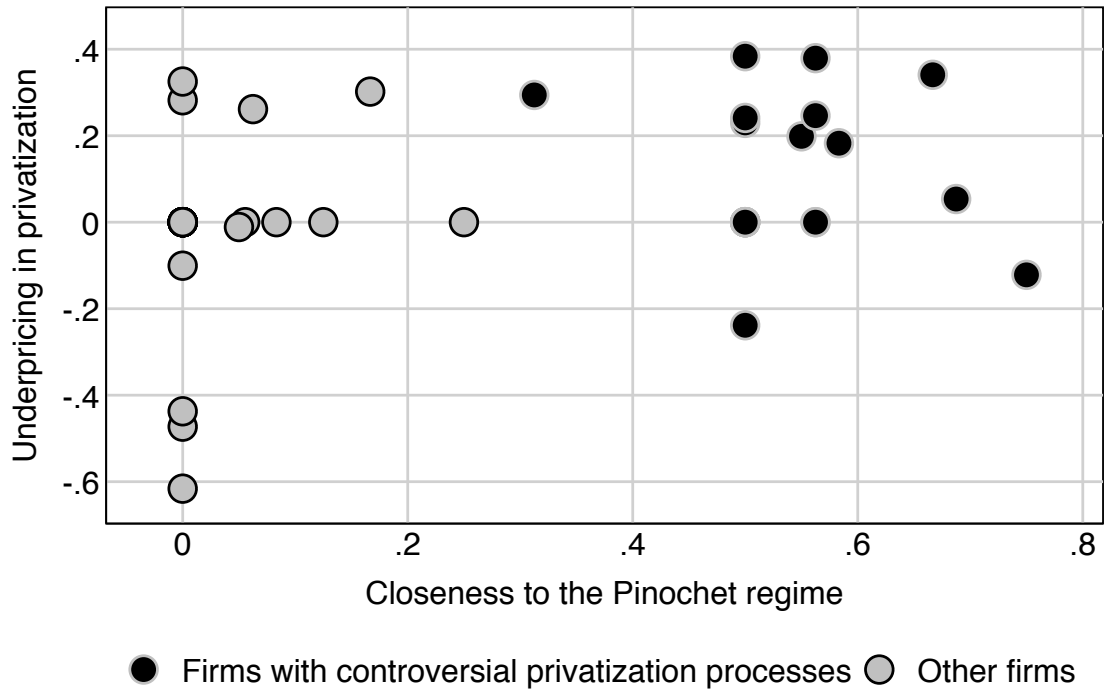
(a) All firms privatized by the Pinochet regime



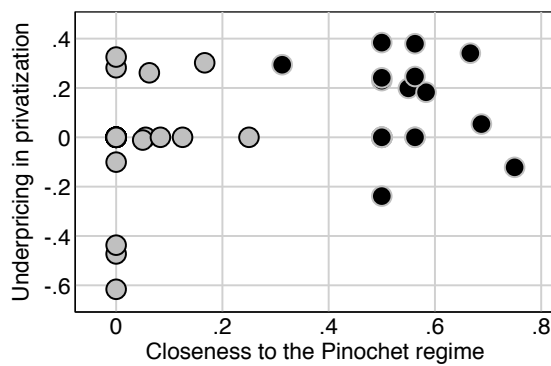
(b) Our data of privatized firms

Notes: This figure shows the distribution of privatizations by year during the Pinochet dictatorship (1973–1990). The upper panel shows all privatizations implemented by the regime as presented in CEME (2004). The lower panel shows the distribution of privatizations in our dataset.

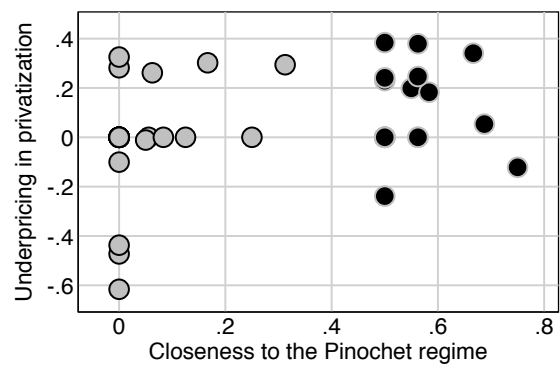
Figure 3: Detecting controversial privatization processes



(a) *k*-means clustering algorithm



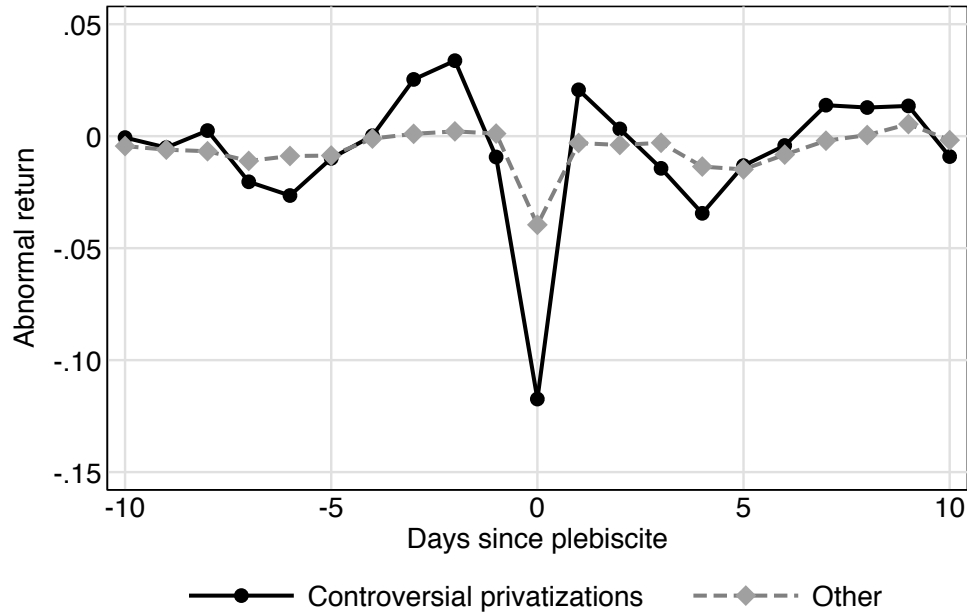
(b) Spectral clustering



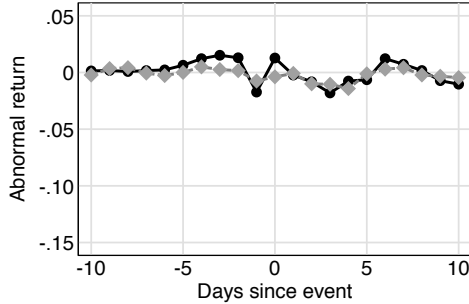
(c) Agglomeration clustering

Notes: We classify firms using different clustering algorithms. See section 3.1 for details.

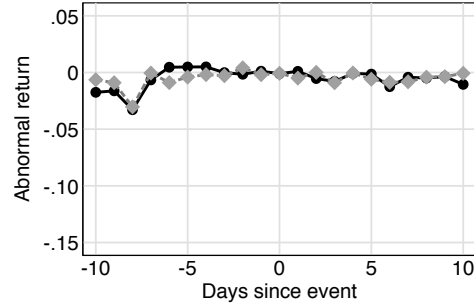
Figure 4: The stock market



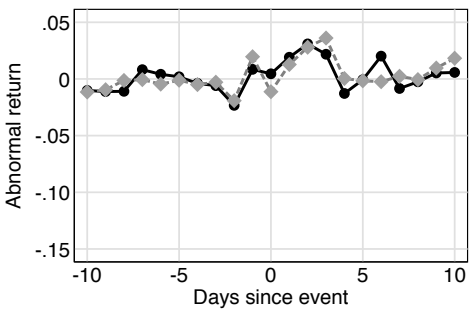
(a) Announcement of transition



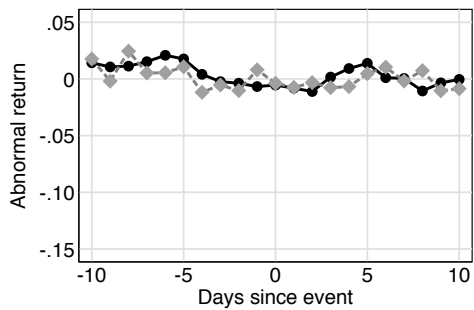
(b) Pinochet gets nominated



(c) Constitutional reform



(d) 1989 Presidential Election



(e) New government takes office

Notes: Own construction using stock price data hand-collected from contemporary newspaper El Mercurio, available at Chile's National Library. See section 4.1 for details.

Table 1: Characterization of privatization processes

	All firms	Subsample of firms		Difference (2)-(3)
		With controversial processes	Without controversial processes	
	(1)	(2)	(3)	(4)
Share of board with links to regime	0.08 (0.15)	0.12 (0.18)	0.06 (0.12)	0.06 [0.16]
Buyer has links to the regime	0.42 (0.50)	0.96 (0.21)	0.00 (0.00)	0.96*** [0.00]
Closeness to the regime	0.25 (0.27)	0.54 (0.09)	0.03 (0.06)	0.51*** [0.00]
Underpricing in privatization	0.08 (0.45)	0.23 (0.39)	-0.03 (0.48)	0.26** [0.04]
Number of firms	50	22	28	

Notes: Averages and standard deviation (in parentheses) in columns 1-3 and p -values for a double size t -test in square brackets in column 4. Significance level: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 2: Firms before privatization

	Firms with controversial privatizations	Firms with uncontroversial privatizations	Difference (2) - (1) <i>p</i> -value [perm. test]	Firms without privatization but with reports	Firms with privatization but without reports
	(1)	(2)	(3)	(4)	(5)
Logarithm of total assets	20.8 (1.1)	23.9 (1.4)	0.10 [0.10]	16.2 (1.3)	–
Logarithm of sales	19.0 (1.4)	23.2 (1.4)	0.04 [0.04]	15.1 (1.8)	–
Return over equity	0.15 (0.05)	0.19 (0.03)	0.41 [0.40]	0.38 (0.62)	–
Leverage	0.42 (0.05)	0.42 (0.05)	0.99 [0.99]	0.36 (0.22)	–
Years since established	40 (5)	48 (7)	0.36 [0.99]	31 (21)	–
Year of privatization	1983 (1)	1981 (1)	0.09 [0.10]	–	1979 (5)
Number of firms	22	28		25	188

Notes: Are there observable differences between firms with controversial and uncontroversial privatization processes *before* privatization? This table provides evidence by presenting averages of variables in the reports before the year each firm was privatized. For reference, column 4 presents descriptive statistics for firms that were not privatized and have annual reports; we use the average privatization year in the firm's industry. Column 5 presents the privatization year for firms without reports. We present standard deviations in parenthesis and *p*-values with and without correction for inference in small sample. More details in sections 3.1 and 4.1.

Table 3: The stock market*Dependent variable is the cumulative abnormal stock return of a firm*

Days after the plebiscite:	1 day	3 days	5 days	8 days	10 days
	(1)	(2)	(3)	(4)	(5)
PANEL A: without controls					
Controversial privatization	-0.08*** (0.03) [0.00]	-0.06*** (0.02) [0.00]	-0.09*** (0.03) [0.01]	-0.06* (0.03) [0.08]	-0.06* (0.03) [0.09]
Number of firms	41	41	41	41	41
R-squared	0.18	0.16	0.17	0.08	0.08
Pre-privatization controls (X_i)	No	No	No	No	No
Industry fixed effects (η_j)	Yes	Yes	Yes	Yes	Yes
PANEL B: with controls					
Controversial privatization	-0.08*** (0.03) [0.01]	-0.07*** (0.02) [0.01]	-0.10*** (0.03) [0.00]	-0.06 (0.04) [0.07]	-0.06 (0.04) [0.09]
Number of firms	41	41	41	41	41
R-squared	0.29	0.31	0.28	0.16	0.15
Pre-privatization controls (X_i)	Yes	Yes	Yes	Yes	Yes
Industry fixed effects (η_j)	Yes	Yes	Yes	Yes	Yes

Notes: Does the value of firms with controversial privatization processes changes after the unexpected announcement of Chile's transition to democracy in October 5th of 1988? Each column in this table provides evidence by presenting OLS estimates of the following regression equation:

$$CAR_{ijt} = \beta_t \cdot Controversial_i + \delta_t X_i + \eta_{jt} + \epsilon_{ijt}$$

where $CAR_{it} \equiv \sum_{k=0}^t AR_{ik}$ is the cumulative abnormal return of firm i from the day of the plebiscite up to the t following days. The variable $Controversial_i$ is an indicator for controversial firms, X_i represent pre-privatization controls, η_{jt} is a set of industry fixed effects, and ϵ_{ijt} is a mean zero error term. Cumulative abnormal returns correspond to the sum of daily abnormal returns. We collected data on stock prices from newspaper *El Mercurio*. Our sample decreases from 50 to 41 firms because in order to calculate CAR_{it} we need to observe stock prices four months before the event we study, and we do not observe these for 9 firms. More details in section 4.1. Robust standard errors in parentheses and p -values correcting for small sample inference in square brackets. Significance level: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 4: The credit market during Chile's transition to democracy

	Indicator for loans with Banco del Estado	Average interest rate with Banco del Estado	Leverage
	(1)	(2)	(3)
PANEL A: years 1988–1990			
Controversial privatization	0.30** (0.14) [0.05]	-0.04 (0.02) [0.04]	0.00 (0.04) [0.93]
Number of firms	50	12	50
R-squared	0.44	0.38	0.47
Pre-privatization controls (X_i)	Yes	No	Yes
Industry fixed effects (η_j)	Yes	No	Yes
Avg. uncontroversial privatizations	0.19	0.13	0.33
PANEL B: years 1986–1987			
Controversial privatization	0.14 (0.11) [0.30]	-0.02 (0.01) [0.17]	-0.11 (0.11) [0.20]
Number of firms	50	20	50
R-squared	0.57	0.10	0.18
Pre-privatization controls (X_i)	Yes	No	Yes
Industry fixed effects (η_j)	Yes	No	Yes
Avg. uncontroversial privatizations	0.11	0.10	0.37
Avg. firms without privatization	0.10	0.06	0.46

Notes: Each column in this table presents OLS estimates of the following equation:

$$Y_{ijt} = \beta_t \cdot \text{Controversial}_i + \delta_t X_i + \eta_{jt} + \epsilon_{ijt}$$

where we measure Y_{ijt} in 1988-1990 (Panel A) or in 1986-1987 (Panel B). Dependent variables measuring loans and interest rates from Banco del Estado, and leverage (debt over assets) are own construction from firm-level reports. Banco del Estado is the main state owned bank in Chile. The variable Controversial_i is an indicator for controversial firms, X_i represent pre-privatization controls, η_{jt} is a set of industry fixed effects, and ϵ_{ijt} is a mean zero error term. More details in section 4.3. Robust standard errors in parentheses and p -values correcting for small sample inference in square brackets. Significance level: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 5: The beginning of democracy*Dependent variables are measured in 1990, the first year after Chile's return to democracy*

	Logarithm assets	Logarithm sales	Leverage	Return over equity
	(1)	(2)	(3)	(4)
Controversial privatization	1.62*** (0.35) [0.00]	0.92 (0.67) [0.00]	0.04 (0.05) [0.57]	0.01 (0.05) [0.87]
Number of firms	50	50	50	50
R-squared	0.48	0.44	0.45	0.34
Pre-privatization controls (X_i)	Yes	Yes	Yes	Yes
Industry fixed effects (η_j)	Yes	Yes	Yes	Yes
Avg. uncontroversial privatizations	17.77	17.21	0.32	0.16
Avg. firms without privatization	16.36	15.56	0.33	0.42

Notes: Each column in this table presents OLS estimates of the following equation:

$$Y_{ijt} = \beta_t \cdot \text{Controversial}_i + \delta_t X_i + \eta_{jt} + \epsilon_{ijt}$$

where Y_{ij} is an outcome variable for firm i in industry j at the beginning of democracy, i.e. at the end of year 1990. The variable Controversial_i is an indicator for controversial firms, X_i represent pre-privatization controls, η_{jt} is a set of industry fixed effects, and ϵ_{ijt} is a mean zero error term. More details in section 5. Robust standard errors in parentheses and p -values correcting for small sample inference in square brackets. Significance level: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 6: Politics in democracy

	Coefficient controversial privatization (β)	p -value permutation test	Average uncontroversial privatizations	R-squared
Dependent variable:	(1)	(2)	(3)	(4)
Employed any politician in 1995	0.25* (0.14)	[0.07]	0.15	0.25
Employed any politician in 2000	0.28* (0.15)	[0.05]	0.30	0.29
Employed any politician in 2005	0.27 (0.18)	[0.11]	0.27	0.24
Employed politician of the <i>old regime</i> in 1995	0.25* (0.14)	[0.03]	0.11	0.33
Employed politician of the <i>old regime</i> in 2000	0.23 (0.15)	[0.10]	0.22	0.27
Employed politician of the <i>old regime</i> in 2005	-0.09 (0.13)	[0.94]	0.23	0.29
Employed politician of the <i>new regime</i> in 1995	-0.02 (0.06)	[0.79]	0.07	0.05
Employed politician of the <i>new regime</i> in 2000	0.09 (0.11)	[0.43]	0.11	0.17
Employed politician of the <i>new regime</i> in 2005	0.40*** (0.15)	[0.00]	0.08	0.33
Legal campaign finance	0.31** (0.15)	[0.05]	0.37	0.37
Illegal campaign finance	0.18 (0.14)	[0.19]	0.19	0.21
Appeared in the Panama Papers	0.36** (0.15)	[0.02]	0.18	0.28
Number of firms	50			
Pre-privatization controls (X_i)	Yes			
Industry fixed effects (η_j)	Yes			

Notes: Each row in this table presents OLS estimates of β in the following equation:

$$Y_{ijt} = \beta_t \cdot \text{Controversial}_i + \delta_t X_i + \eta_{jt} + \epsilon_{ijt}$$

where Y_{ijt} is a binary outcome variable for firm i in industry j in year $t = \{1995, 2000, 2005\}$ of democracy. The variable Controversial_i is an indicator for controversial firms, X_i represent pre-privatization controls, η_{jt} is a set of industry fixed effects, and ϵ_{ijt} is a mean zero error term. The “old regime” corresponds to the Pinochet regime (1973–1990) and the “new regime” corresponds to the period after 1990. More details in section 5.2. Robust standard errors in parentheses and p -values correcting for small sample inference in square brackets. Significance level: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 7: Robustness of results and omitted variables

	Truncate matching (Crump et al. 2009)	Matching controls pscore controversial	Matching using k -nearest neighbor	Adds control for privatization wave	Drops firms with takeovers	Coefficient stability (Oster 2017)	Journalistic investig. (Mönckeberg 2001)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Dictatorship							
Cumulative abnormal returns (5 days)	-0.10*** (0.03)	-0.08** (0.03)	-0.11*** (0.04)	-0.09*** (0.03)	-0.11*** (0.04)	-0.03	-0.07* (0.04)
Indicator for loans with state bank	0.29** (0.14)	0.31** (0.14)	0.27 (0.20)	0.31** (0.15)	0.13 (0.15)	0.16	0.46** (0.17)
Leverage	0.01 (0.04)	0.01 (0.04)	0.09 (0.07)	0.00 (0.04)	0.01 (0.05)	-0.01	0.06 (0.04)
Democracy							
Employed any politician 1995	0.29** (0.13)	0.27** (0.13)	0.18 (0.18)	0.26* (0.14)	0.27* (0.14)	0.60	0.53** (0.23)
Employed any politician 2005	0.28 (0.17)	0.26* (0.15)	0.40*** (0.20)	0.27 (0.18)	0.23 (0.23)	0.40	0.40* (0.23)
Employed politician of <i>old</i> regime 1995	0.29** (0.12)	0.28** (0.13)	0.27** (0.12)	0.26* (0.14)	0.22* (0.13)	0.50	0.41* (0.21)
Employed politician of <i>old</i> regime 2005	-0.09 (0.13)	-0.09 (0.13)	0.05 (0.10)	-0.08 (0.14)	-0.11 (0.20)	-0.14	-0.02 (0.13)
Employed politician of <i>new</i> regime 1995	-0.02 (0.07)	-0.01 (0.06)	-0.09 (0.13)	-0.03 (0.06)	0.03 (0.07)	0.09	0.09 (0.17)
Employed politician of <i>new</i> regime 2005	0.41*** (0.14)	0.40*** (0.14)	0.40*** (0.13)	0.39*** (0.14)	0.41** (0.18)	0.70	0.52** (0.21)
Legal campaign finance	0.32** (0.15)	0.33** (0.15)	0.36** (0.18)	0.29* (0.15)	0.38** (0.17)	0.46	0.35* (0.19)
Illegal campaign finance	0.16 (0.13)	0.19 (0.13)	0.00 (0.16)	0.14 (0.13)	0.14 (0.13)	0.51	0.51*** (0.18)
Appeared in the Panama Papers	0.34** (0.16)	0.33** (0.15)	0.27 (0.19)	0.33** (0.16)	0.30 (0.19)	0.67	0.50** (0.21)
Number of firms	44	48	48	50	43	50	50

Notes: Each estimate comes from a different estimation strategy. See section 6.1 for details. Robust standard errors in parentheses. Significance level: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 8: Unbundling the importance of privatization characteristics

	Closeness to the regime	Underpricing in sale	<i>p</i> -value (1) = (2)	<i>p</i> -value (1) = 0 & (2) = 0
	(1)	(2)	(3)	(4)
Dictatorship				
Cumulative abnormal returns (5 days)	-0.03** (0.02)	-0.03 (0.02)	0.86	0.02
Indicator for loans with state bank	0.12 (0.08)	0.11 (0.08)	0.95	0.03
Average interest rate with state bank	-0.01 (0.01)	-0.02 (0.01)	0.87	0.09
Leverage	0.00 (0.02)	0.01 (0.03)	0.77	0.92
Democracy				
Employed any politician 1995	0.09 (0.07)	0.17* (0.09)	0.51	0.05
Employed any politician 2005	0.14 (0.08)	-0.04 (0.11)	0.24	0.26
Employed politician of <i>old regime</i> 1995	0.08 (0.07)	0.15* (0.08)	0.58	0.04
Employed politician of <i>old regime</i> 2005	-0.02 (0.07)	-0.05 (0.09)	0.83	0.81
Employed politician of <i>new regime</i> 1995	-0.02 (0.03)	0.06 (0.06)	0.26	0.53
Employed politician of <i>new regime</i> 2005	0.17 (0.07)	0.07 (0.07)	0.36	0.02
Legal campaign finance	0.15** (0.07)	0.02 (0.10)	0.31	0.11
Illegal campaign finance	0.12* (0.07)	-0.07 (0.09)	0.12	0.20
Appeared in the Panama Papers	0.15* (0.08)	0.05 (0.07)	0.41	0.11

Notes: Each row in this table presents two OLS estimates from a single regression that includes pre-privatization controls and industry fixed effects. See section 6.2 for details. Robust standard errors in parentheses. Significance level: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Online Appendix

The Privatization Origins of Political Corporations

Felipe González, Mounu Prem, and Francisco Uzúa I.

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A Procedure to detect links

This section provides more details about how we detected links between individuals and regime “RRR,” i.e. the Pinochet regime or the new democratic regime.

A.1 Algorithm

Suppose we want to know if a person with the name of “AAA BBB CCC” (first name, first last name, second last name) had any links to regime “RRR” in year T . Then, we use the following procedure:

1. Open Chile’s version of Google (i.e. `www.google.cl`) in incognito mode, enabling replication.
2. Search for the query “AAA BBB CCC.”
3. Check all hits in the first page of results. Three possible paths arise:
 - 3.1 If we detect “AAA BBB CCC” worked for regime “RRR” *before* year T , then:
 $\Rightarrow$ Person is classified as having a link to the regime and we stop.
 - 3.2 If we detect “AAA BBB CCC” worked for regime “RRR” *after* year T , then:
 $\Rightarrow$ Proceed to step 4.
 - 3.3 If we did not find links between “AAA BBB CCC” and “RRR”, then:
 $\Rightarrow$ Proceed to step 4.
4. Search for the queries “AAA BBB CCC” and “RRR” at the same time.
5. Check all hits in the first page of results. Three possible paths arise:
 - 3.1 If we detect “AAA BBB CCC” worked for regime “RRR” *before* year T , then:
 $\Rightarrow$ Person is classified as having a link to the regime and we stop.
 - 3.2 If we detect “AAA BBB CCC” worked for regime “RRR” *after* year T , then:
 $\Rightarrow$ Person is classified as *not* having links to the regime and we stop.
 - 3.3 If we did not find links between “AAA BBB CCC” and “RRR”, then:

⇒ Person is classified as *not* having links to the regime and we stop.

We repeat these steps every time we want to detect links between a person and regime “RRR” in year T . In the case of the Pinochet regime, the queries return historical sources that document the identities of individuals who participated in the regime. In particular, we are able to detect militaries and the following “high-level” politicians: secretaries, sub-secretaries, and leaders of important state offices (e.g. Planning Office, Production Development Corporation).

A.2 Replicability

To ensure replicability we use Google in incognito mode and we make sure the URL only includes the country (i.e. “.cl” instead of “.com”) and the query (i.e. Julio Ponce Lerou). For example, when constructing the link between the Pinochet regime and Pinochet’s son-in-law Julio Ponce Lerou the URL looks like this:

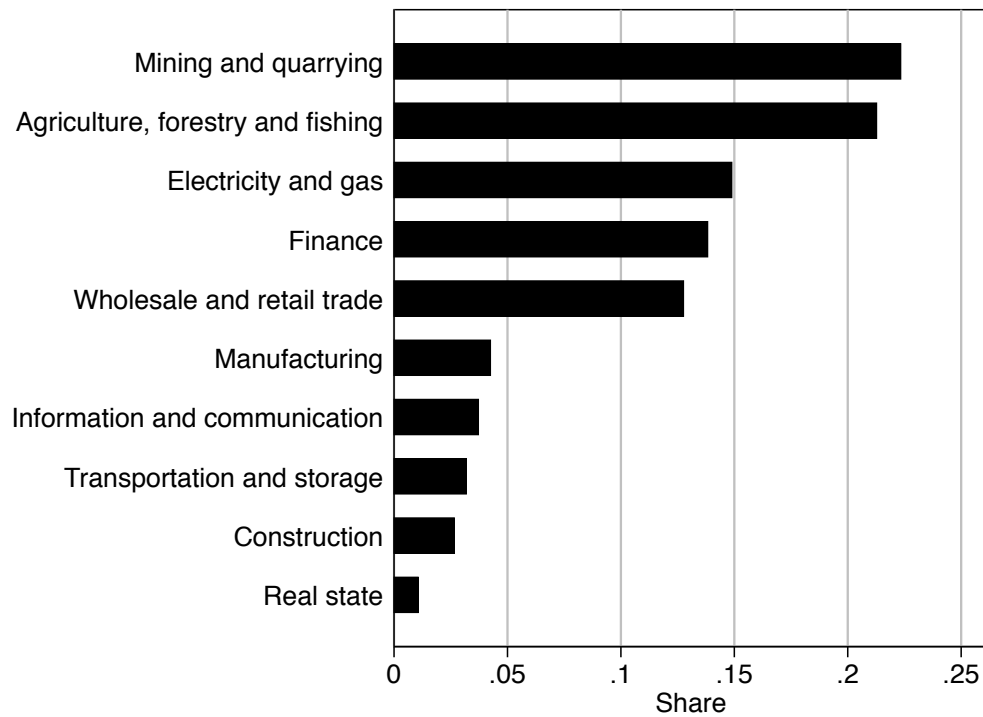
`www.google.cl/search?&q=julio+ponce+lerou`

If we did not clean the URL it would have look something like this:

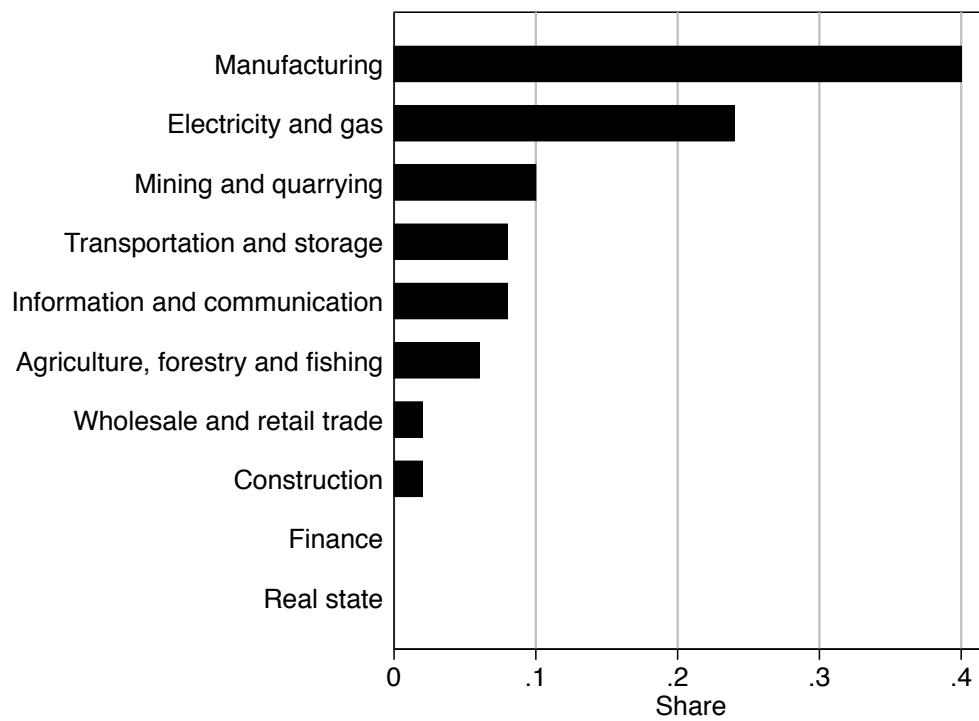
`www.google.cl/search?source=hp&ei=JJMIW7TfL7aYCA&q=julio+ponce+lerou&...`

which would have made replication impossible because the search returns computer-specific documents. The only threat to replication is the appearance of new documents that could make it into the first page of results. Given that the first page contains multiple hits and we are measuring historical links, we believe the appearance of new documents is unlikely to affect replication.

Figure A.1: Distribution of firms by industry

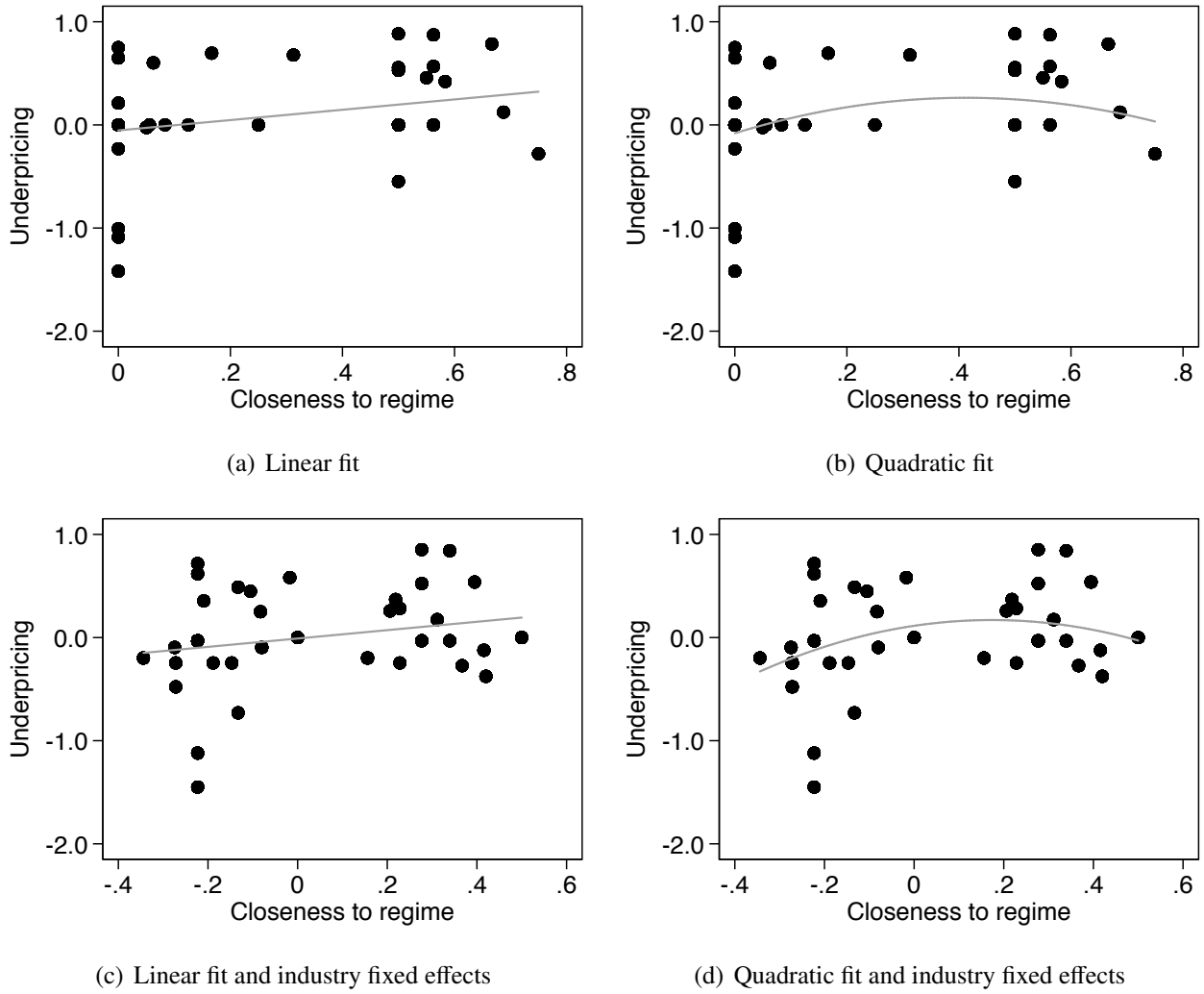


(a) All privatizations



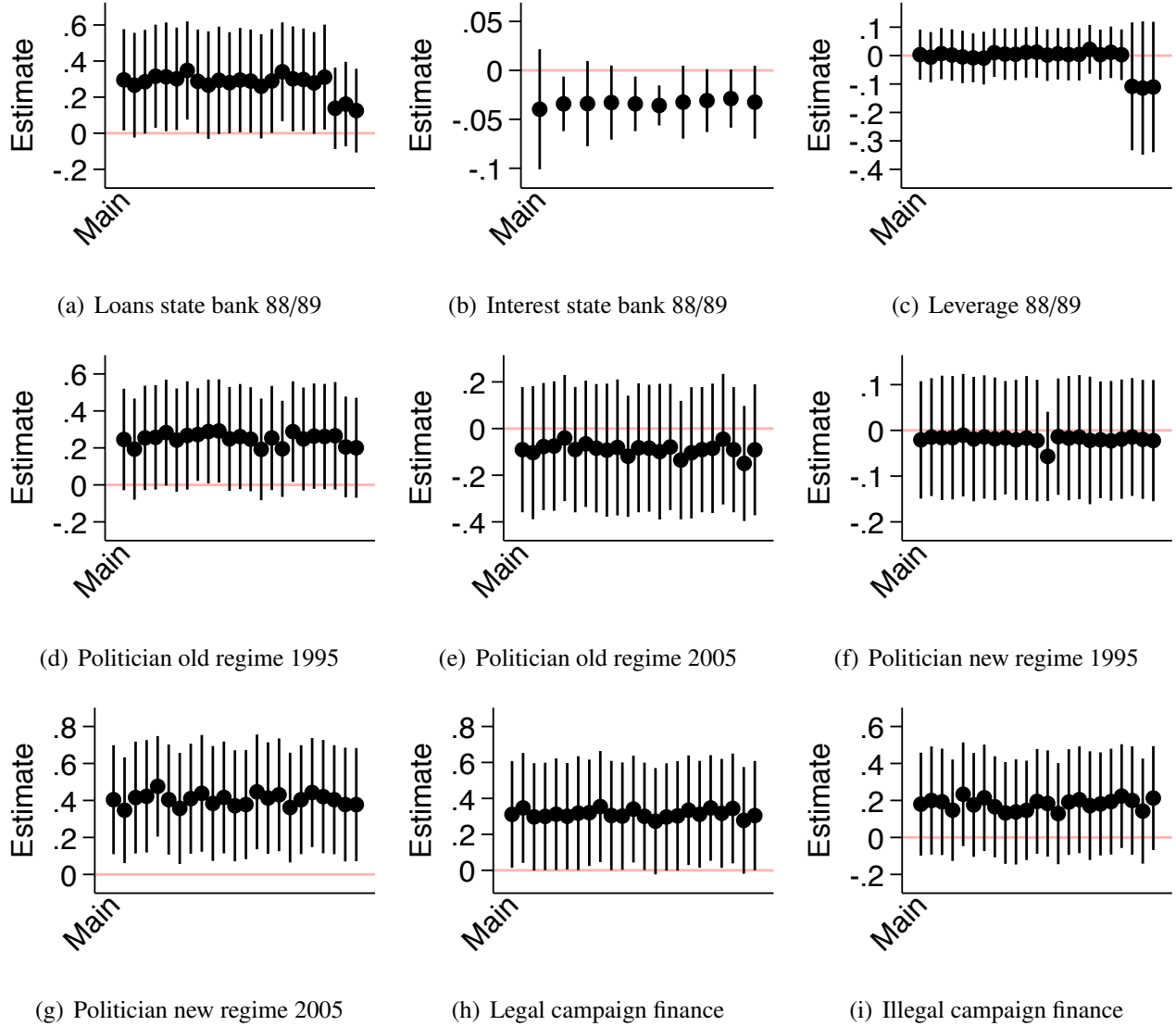
(b) Firms in our data

Figure A.2: Relationship between privatization characteristics



Notes: This figure presents different scatter plots to understand the empirical relationship between our two privatization characteristics, underpricing and closeness-to-the-regime (see section 3.1 for details). Panels (a) and (b) present bivariate linear and quadratic fits. Panels (c) and (d) present linear and quadratic fits but accounting for industry fixed effects. The linear bivariate correlation in panel (a) is 0.21 (s.e. 0.12, p -value<0.10) and 0.20 (s.e. 0.13, p -value>0.10) in panel (b).

Figure A.3: Robustness of results to excluding single firms



Notes: Each black dot is an estimate and each black line is the corresponding 95% confidence interval. Estimates in all panels are calculated using OLS and represent the β_t in the following equation:

$$Y_{ijt} = \beta_t \cdot \text{Controversial}_i + \delta_t X_i + \eta_{jt} + \epsilon_{ijt}$$

where Y_{ijt} is an outcome variable for firm i in industry j in year t . The variable Controversial_i is an indicator for controversial firms, X_i represent pre-privatization controls, η_{jt} is a set of industry fixed effects, and ϵ_{ijt} is a mean zero error term. Confidence intervals were calculated using robust standard errors. In all panels, the y-axis measures the estimated coefficient and the x-axis identifies the estimate using our full sample (“Main”) and 22 additional estimates in which we exclude a single controversial privatization at the time.

Table A.1: Privatizations by industry

Industry	All firms	Firms with controversial processes
	(1)	(2)
Agriculture, forestry and fishing	3	2
Construction	1	0
Electricity and gas	12	5
Information and communication	4	2
Manufacturing	20	9
Mining and quarrying	5	3
Transportation and storage	4	1
Wholesale and retail trade	1	0
Number of firms:	50	22

Notes: Number of privatizations in our dataset by industry. We classify privatized firms into industries using Standard Industry Classification (four-digit SIC) codes.

Table A.2: What pre-privatization variables predict privatization characteristics?

Dep. variable:	Underpricing			Closeness-to-the-regime		
	(1)	(2)	(3)	(4)	(5)	(6)
Log assets	0.00 (0.02)	-0.01 (0.02)	0.03 (0.02)	0.01 (0.01)	0.01 (0.01)	0.02 (0.02)
Leverage	0.07 (0.20)	0.25 (0.28)	0.04 (0.28)	-0.08 (0.13)	-0.21 (0.17)	-0.27 (0.18)
Log sales	0.00 (0.01)	0.00 (0.01)	0.00 (0.01)	-0.02*** (0.01)	-0.03*** (0.01)	-0.02*** (0.01)
Return over equity	-0.06 (0.20)	0.06 (0.33)	0.19 (0.33)	-0.06 (0.18)	-0.21 (0.23)	-0.162 (0.23)
Privatization in 80s wave			0.67** (0.30)			0.21 (0.23)
Firms	50	50	50	50	50	50
Industry fixed effects	No	Yes	Yes	No	Yes	Yes
Mean of dep. variable	0.07	0.07	0.07	0.24	0.24	0.24
St. deviation of dep. variable	0.46	0.46	0.46	0.26	0.26	0.26
R ²	0.02	0.13	0.21	0.15	0.22	0.25

Notes: Cross-sectional regressions using privatization characteristics as dependent variable and pre-privatization variables as predictors. Robust standard errors in parentheses. Significance level: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table A.3: Firm differences before privatization, subsample of firms in second wave

	Controversial privatizations	Uncontroversial privatizations	Difference	
			<i>p</i> -value	<i>p</i> -value (perm. test)
	(1)	(2)	(3)	(4)
Capital investment	-0.02 (0.09)	0.04 (0.04)	0.51	0.56
Short-term leverage	0.17 (0.03)	0.18 (0.04)	0.92	0.92
Long-term leverage	0.25 (0.04)	0.29 (0.07)	0.64	0.62
Liquidity	0.27 (0.04)	0.21 (0.03)	0.26	0.27
Cash-flow	0.04 (0.03)	0.08 (0.02)	0.38	0.37
Number of firms	16	15		

Notes: This table compares averages across firms with different types of privatization using additional observable variables that are available for the 31 firms privatized in the second wave (1980s). We present standard deviations in parentheses and *p*-values with and without correction for inference in small samples. These additional variables are defined as follows. *Capital investment* is defined as the change in fixed capital assets between $t + 1$ and t over fixed capital assets in t , *Short-term leverage* is defined as short-term debt over total assets, *Long-term leverage* is defined as long term debt over total assets, *Liquidity* is defined as short-term assets over total assets, and *Cash-flow* is defined as EBITDA over total assets. More details in sections 3.1 and 4.1.