

## ONLINE APPENDIX

# *The Privatization Origins of Political Corporations: Evidence from the Pinochet Regime*

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## A VALIDATION AND ROBUSTNESS OF UNDERPRICING

For the analysis in the paper we constructed an underpricing measure for each privatization by comparing the price paid for a firm during the process with the book value of that firm (see the data section for details). To provide validity and robustness for this underpricing measure, we also compared the prices paid with two other benchmark estimates of firm value, namely the present value of cash flows and external valuations of firms. Figure A.4 shows that our underpricing measure is positively correlated with both alternative measures. We interpret these correlations as providing validity and robustness for the underpricing variable we use throughout the analysis. This section provides more details about how we constructed these additional measures of underpricing.

### A.1 *Present value of cash flows*

We created an underpricing measure that compares the price paid by buyers with the present value of future cash flows. To construct the latter we used the average cash flow of a firm in the years before privatization and extrapolated this number over time using the observed GDP growth and (risk free) interest rates, which we take from historical statistics of the Central Bank of Chile. Unfortunately we can only construct the present value of cash flows for a subset of 24 firms with available cash flow data in annual reports before privatization. Panel (a) in Figure A.4 shows that this underpricing measure based on expected cash flows is positively correlated with our underpricing measure: the  $y$ -axis is the measure used in the paper, the  $x$ -axis is the alternative measure using cash flows, the slope coefficient is 0.22, its standard error is 0.12, and the  $p$ -value is 0.08. We interpret this correlation as suggestive evidence to validate our measure.

### A.2 *External valuations*

The second measure combines the same prices paid for firms with contemporaneous estimates of firm value, which we were able to find for 11 firms in our data. These “external valuations” are calculations done by investment banks in the 1980s (Congress Report, 2004) or by other researchers (Hachette and Lüders, 1992). Using this data we constructed another underpricing measure by comparing the price paid by the buyers with external valuations. Panel (b) in Figure A.4 shows that this underpricing measure based on external valuations is positively correlated with our underpricing measure: the  $y$ -axis is the measure used in the paper, the  $x$ -axis is the alternative measure using external valuations, the slope coefficient is 0.55, its standard error is 0.11, and the  $p$ -value is  $<0.01$ . We interpret this correlation as suggestive evidence to validate our measure.

## B PROCEDURE TO DETECT POLITICAL 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.

### B.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:  
⇒ 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:  
⇒ Proceed to step 4.
  - 3.3 If we did not find links between “AAA BBB CCC” and “RRR”, then:  
⇒ 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:  
⇒ 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:  
⇒ 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).

## B.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.

## References

- Congress Report (2004). Transparencia y patrimonio público. In *Informe de la comisión investigadora encargada de analizar presuntas irregularidades en las privatizaciones de empresas del estado ocurridas con anterioridad al año 1990*, chapter 2.
- Hachette, D. and Lüders, R. (1992). *Privatización en Chile*. Centro Internacional para el Desarrollo Económico.

FIGURE A.1: Example of a firm report (1 of 2)

**Estados de Resultados Consolidados**

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

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

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

	1987	1986
	M.U.S\$	M.U.S\$
<b>Resultados Operacionales</b>		
Ingresos de explotación	173.692	154.265
Costo de explotación	(131.594)	(115.017)
Margen de explotación	42.098	39.248
Gastos de administración y ventas	( 9.805)	( 9.434)
<b>RESULTADO OPERACIONAL</b>	<b>32.293</b>	<b>29.814</b>
<b>Resultados No Operacionales</b>		
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)
<b>RESULTADO NO OPERACIONAL</b>	<b>5.362</b>	<b>3.869</b>
Utilidad antes de impuesto a la renta y partidas extraordinarias	37.655	33.683
Gasto tributario	( 2.878)	( 3.600)
<b>Utilidad antes de partidas extraordinarias</b>	<b>34.777</b>	<b>30.083</b>
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	--
<b>UTILIDAD DEL EJERCICIO</b>	<b>35.595</b>	<b>30.083</b>

(b) Income statement

	1987	1986
	M.U.S\$	M.U.S\$
<b>Activos</b>		
<b>Activo Circulante</b>		
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
<b>TOTAL ACTIVOS CIRCULANTES</b>	<b>109.081</b>	<b>114.400</b>
<b>Activo Fijo</b>		
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)
<b>TOTAL ACTIVOS FIJOS</b>	<b>36.035</b>	<b>34.504</b>

(a) Balance sheet

Notes: This is an example of a firm's annual report to Chile's regulatory agency. In this example, panels (a) and (b) 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 A.2: Example of a firm report (2 of 2)

Banco o Institución Financiera	1987		1986				
	M.U.S\$		M.U.S\$				
<b>Sociedad Matriz</b>							
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	---					
<b>Filial N.C.C.</b>							
Morgan Guaranty Trust	---	8,400					
First National Bank of Minneapolis	---	781					
<b>Totales</b>	<b>21,944</b>	<b>34,872</b>					
Monto capital adeudado	21,539	34,727					
Tasa interés promedio anual	8,63914%	7,28653%					
<b>b) Obligaciones a largo plazo con bancos e instituciones financieras. (Incluye porción corto plazo).</b>							
Al 31 de Diciembre de 1987 y 1986 son las siguientes:							
Bancos e Instituciones Financieras	Moneda o Índice de Reajuste	AÑOS AL VENCIMIENTO		Tasa de Interés		Monto de Capital	
		Desde 1 Corto Plazo	Desde 2 Hasta 3 Largo Plazo	Total al Promedio	Porción Corto Plazo	Porción Largo Plazo	Porción
Citibank	M.U.S\$	958	---	31,12,87	1,916	958	1,917
<b>Totales</b>		<b>958</b>	<b>---</b>	<b>1,916</b>	<b>1,916</b>	<b>958</b>	<b>1,917</b>

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

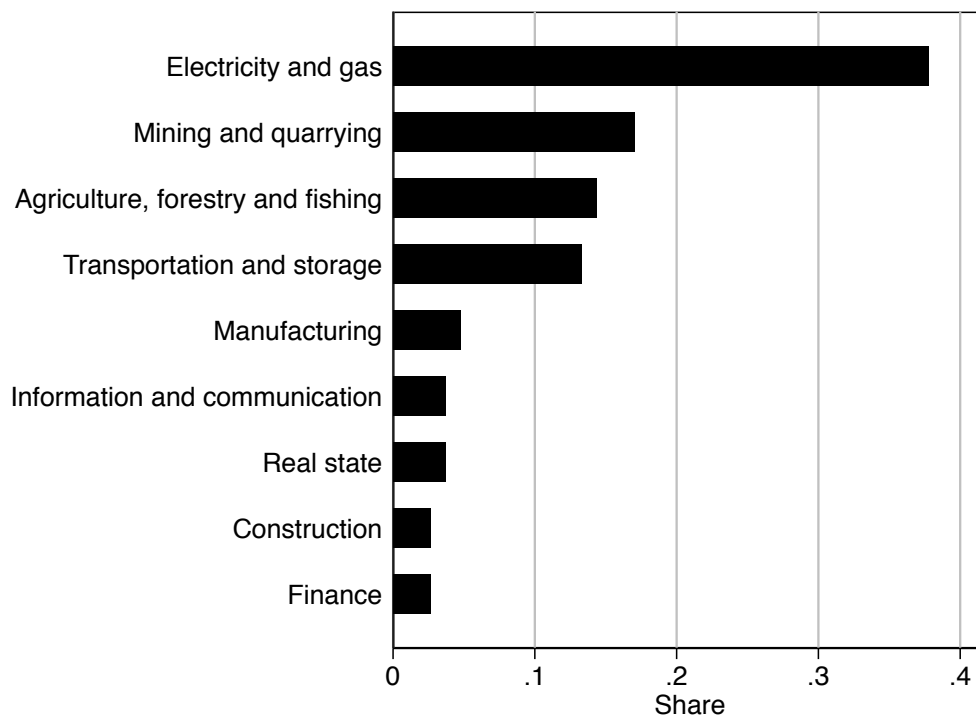
(a) Debt with banks

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 IOC 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.	2.010.000	1,63%	
A.F.P. Cuprum S.A. para Fondo de Pensiones	1.962.106	1,59%	
<b>Otros Accionistas</b>	<b>2.393</b>	<b>69,91%</b>	
<b>Total Accionistas</b>	<b>2.405</b>	<b>30,09%</b>	
	<b>86.322.255</b>	<b>100,00%</b>	
	<b>37.168.844</b>	<b>100,00%</b>	
	<b>123.491.099</b>	<b>100,00%</b>	

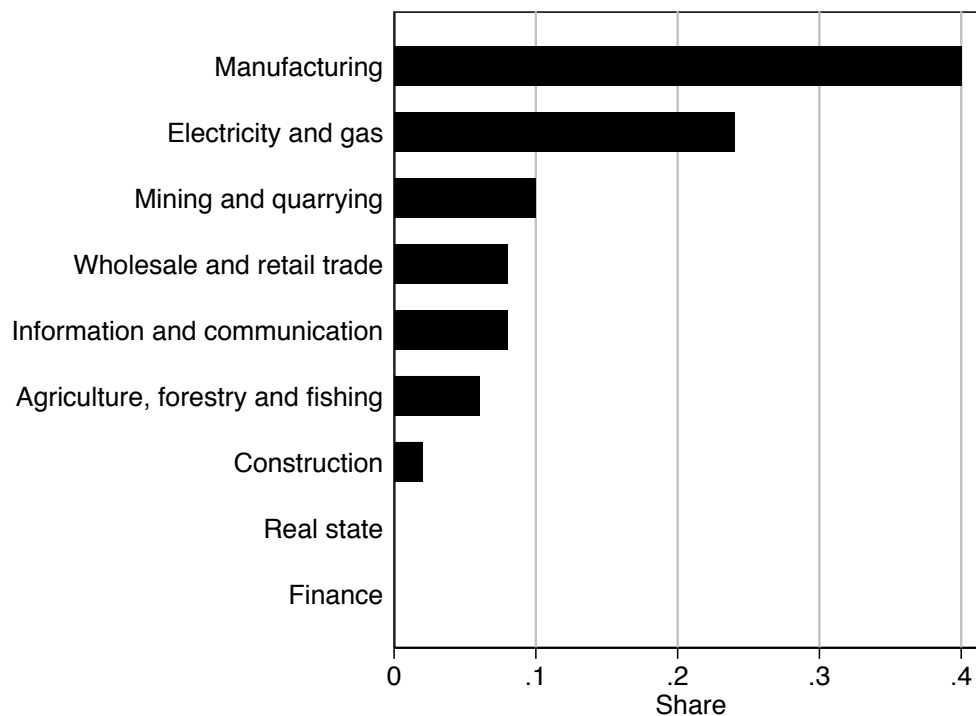
(b) Owners of the firm

Notes: This is an example of a firm's annual report to Chile's regulatory agency. In this example, panels (a) and (b) 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 A.3: Distribution of firms by industry

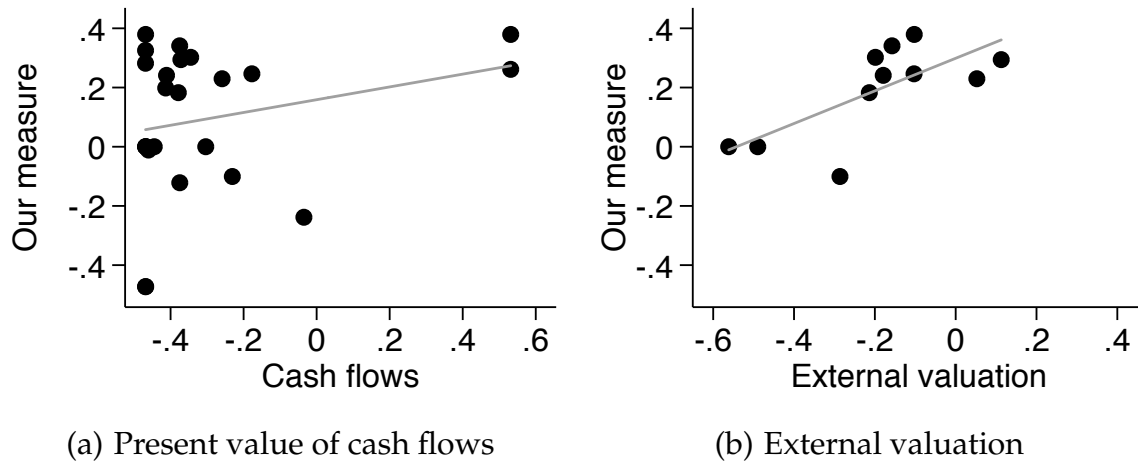


(a) All privatizations



(b) Firms in our data

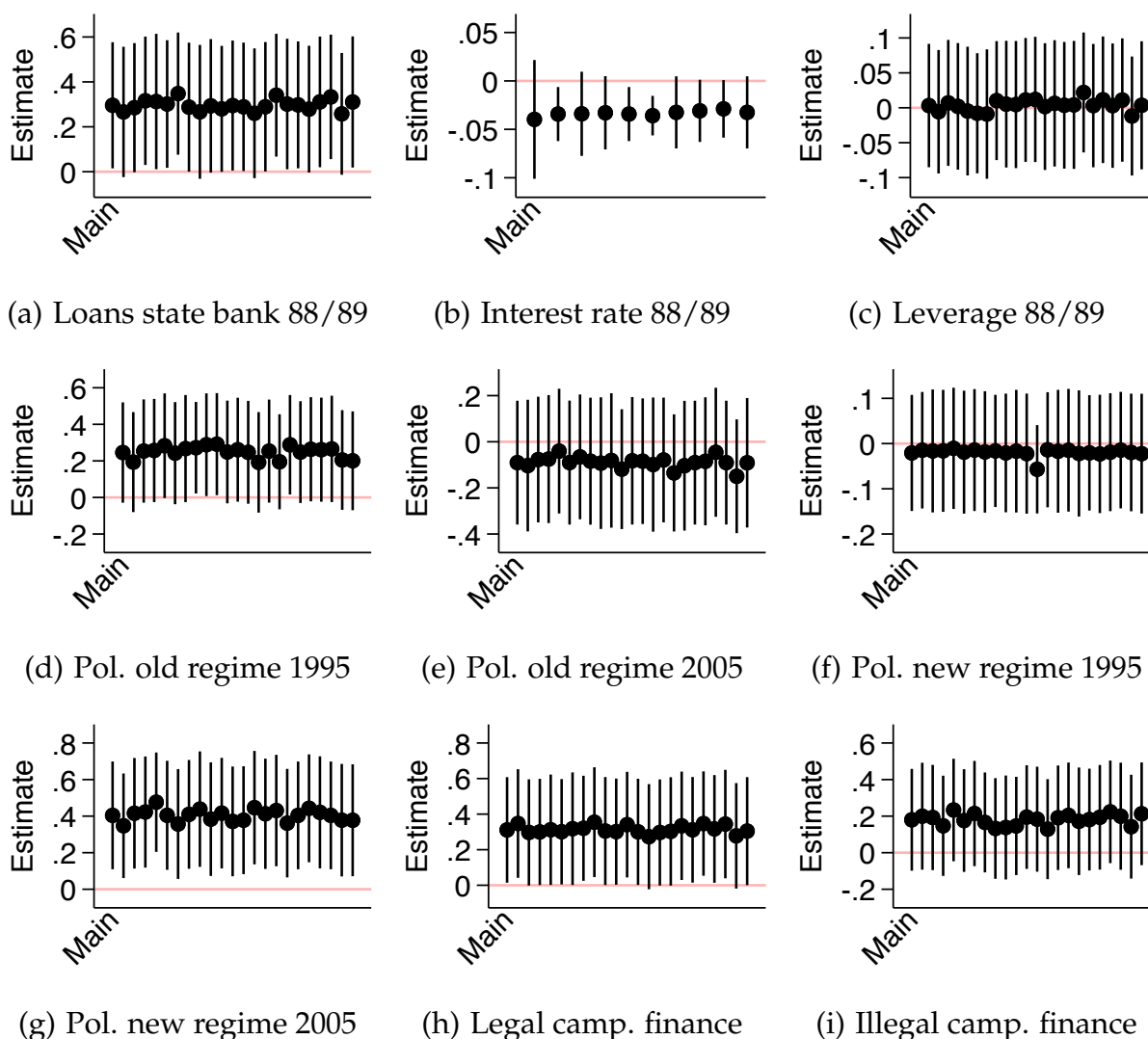
FIGURE A.4: Alternatives measures of underpricing



Notes: These figures plot the correlation between the underpricing measure used in the paper and an alternative measure calculated using the present value of cash flows in panel (a) and contemporaneous estimates of firm values in panel (b). Section A in this Online Appendix provides more details about the construction of these measures.



FIGURE A.5: 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  $\beta_t$  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  $\text{Controversial}_i$  is an indicator for controversial firms,  $X_i$  represent pre-privatization controls,  $\eta_{jt}$  is a set of industry fixed effects, and  $\epsilon_{ijt}$  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: Firms before privatization by privatization wave

	First wave of privatizations in the 1970s			Second wave of privatizations in the 1980s		
	Firms with controversial privatizations (1)	Firms with uncontroversial privatizations (2)	Difference (2) - (1) <i>p</i> -value [perm. test] (3)	Firms with controversial privatizations (4)	Firms with uncontroversial privatizations (5)	Difference (5) - (4) <i>p</i> -value [perm. test] (6)
Logarithm of assets	25.2 (3.3)	31.1 (1.0)	0.04 [0.04]	19.1 (0.31)	17.6 (0.52)	0.02 [0.03]
Logarithm of sales	24.4 (3.3)	30.4 (1.1)	0.05 [0.03]	17.0 (1.2)	17.0 (0.5)	0.99 [0.99]
Return over equity	0.31 (0.13)	0.26 (0.06)	0.70 [0.69]	0.09 (0.05)	0.13 (0.02)	0.35 [0.36]
Leverage	0.40 (0.11)	0.40 (0.05)	0.99 [0.98]	0.43 (0.06)	0.44 (0.09)	0.92 [0.92]
Years since established	37.3 (10.6)	53.8 (7.7)	0.24 [0.25]	41.1 (6.5)	43.8 (10.9)	0.83 [0.83]
Year of privatization	1976.2 (0.87)	1974.9 (0.42)	0.16 [0.20]	1986.0 (0.27)	1985.7 (0.59)	0.68 [0.69]
Number of firms	6	13		16	15	

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. Columns 1-3 present differences in the first wave of privatizations and columns 4-6 present the same differences in the second wave. We present standard deviations in parenthesis and *p*-values with and without correction for inference in small sample. More details in the data and results sections.

TABLE A.3: Differences before privatization, subsample in second wave

	Controversial privatizations	Uncontroversial privatizations	Difference	
			$p$ -value	$p$ -value (perm. test)
	(1)	(2)	(3)	(4)
Capital investment	-0.02 (0.09)	0.04 (0.04)	0.51	0.51
Short-term leverage	0.17 (0.03)	0.18 (0.04)	0.92	0.93
Long-term leverage	0.25 (0.04)	0.29 (0.07)	0.64	0.63
Liquidity	0.27 (0.04)	0.21 (0.03)	0.26	0.25
Cash-flow	0.04 (0.03)	0.08 (0.02)	0.38	0.39
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 assets, *Long-term leverage* is defined as long term debt over assets, *Liquidity* is defined as short-term assets over assets, and *Cash-flow* is defined as EBITDA over assets. More details in the data and results sections.

TABLE A.4: Differences before privatization, by connected *buyer*

	Buyer was politically connected to Pinochet	Buyer was unconnected to Pinochet	Difference	
			<i>p</i> -value	<i>p</i> -value (perm. test)
	(1)	(2)	(3)	(4)
Logarithm of assets	20.8 (1.1)	23.8 (1.4)	0.12	0.13
Logarithm of sales	19.0 (1.5)	23.0 (1.4)	0.05	0.05
Return over equity	0.15 (0.05)	0.20 (0.03)	0.39	0.37
Leverage	0.42 (0.06)	0.42 (0.05)	0.98	0.99
Years since established	39 (6)	49 (7)	0.30	0.30
Year of privatization	1983 (1)	1981 (1)	0.18	0.18
Indicator politically connected <i>firm</i>	0.43 (0.11)	0.31 (0.09)	0.40	0.56
Number of firms	21	29		

Notes: Are there observable differences between firms bought by politically connected buyers *before* privatization? This table provides evidence by presenting averages of variables in the reports before the year each firm was privatized. We present standard deviations in parenthesis and *p*-values with and without correction for inference in small sample. More details in the data and results section.

TABLE A.5: Differences before privatization, by connected *firm*

	Firm was politically connected to Pinochet	Firm was unconnected to Pinochet	Difference	
			<i>p</i> -value	<i>p</i> -value (perm. test)
	(1)	(2)	(3)	(4)
Logarithm of assets	19.5 (0.8)	24.2 (1.3)	0.01	0.01
Logarithm of sales	17.9 (1.3)	23.2 (1.3)	0.01	0.01
Return over equity	0.16 (0.03)	0.18 (0.04)	0.80	0.80
Leverage	0.34 (0.04)	0.47 (0.05)	0.08	0.08
Years since established	36 (7)	50 (6)	0.16	0.16
Year of privatization	1985 (1)	1980 (1)	<0.01	<0.01
Indicator politically connected <i>buyer</i>	0.50 (0.12)	0.38 (0.09)	0.40	0.54
Number of firms	18	32		

Notes: Are there observable differences between firms with and without political connections *before* privatization? This table provides evidence by presenting averages of variables in the reports before the year each firm was privatized. We present standard deviations in parenthesis and *p*-values with and without correction for inference in small sample. More details in the data and results section.