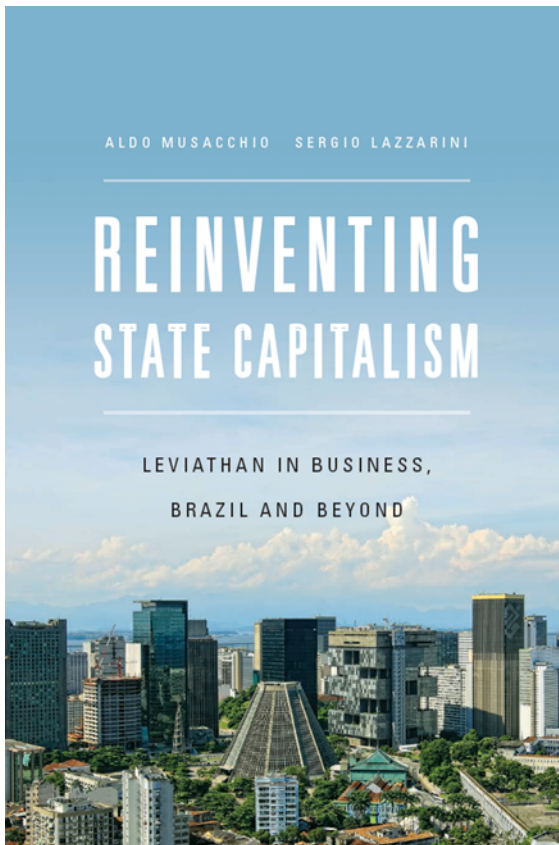
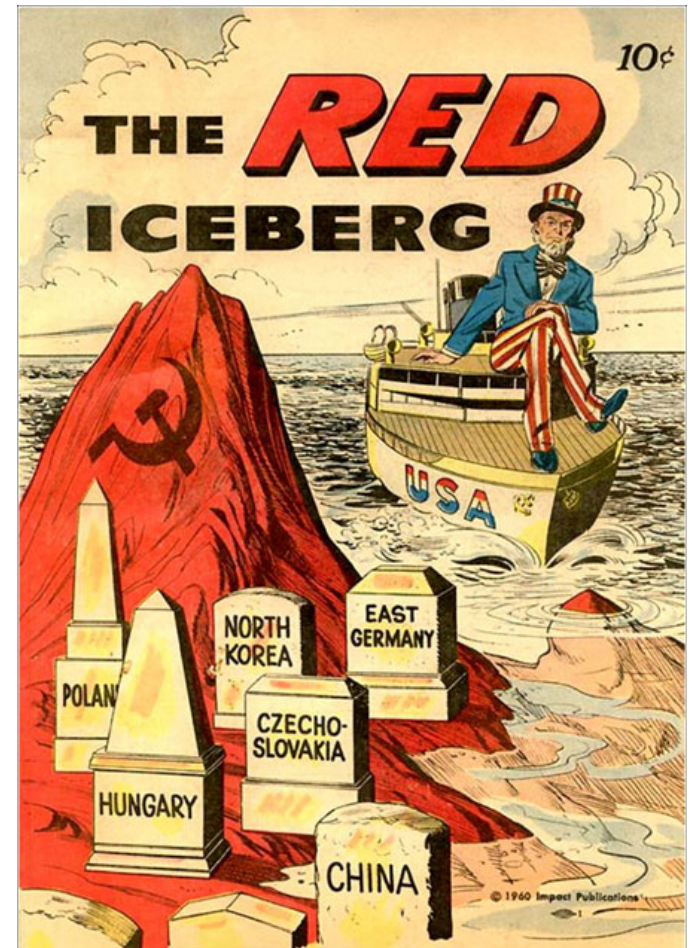
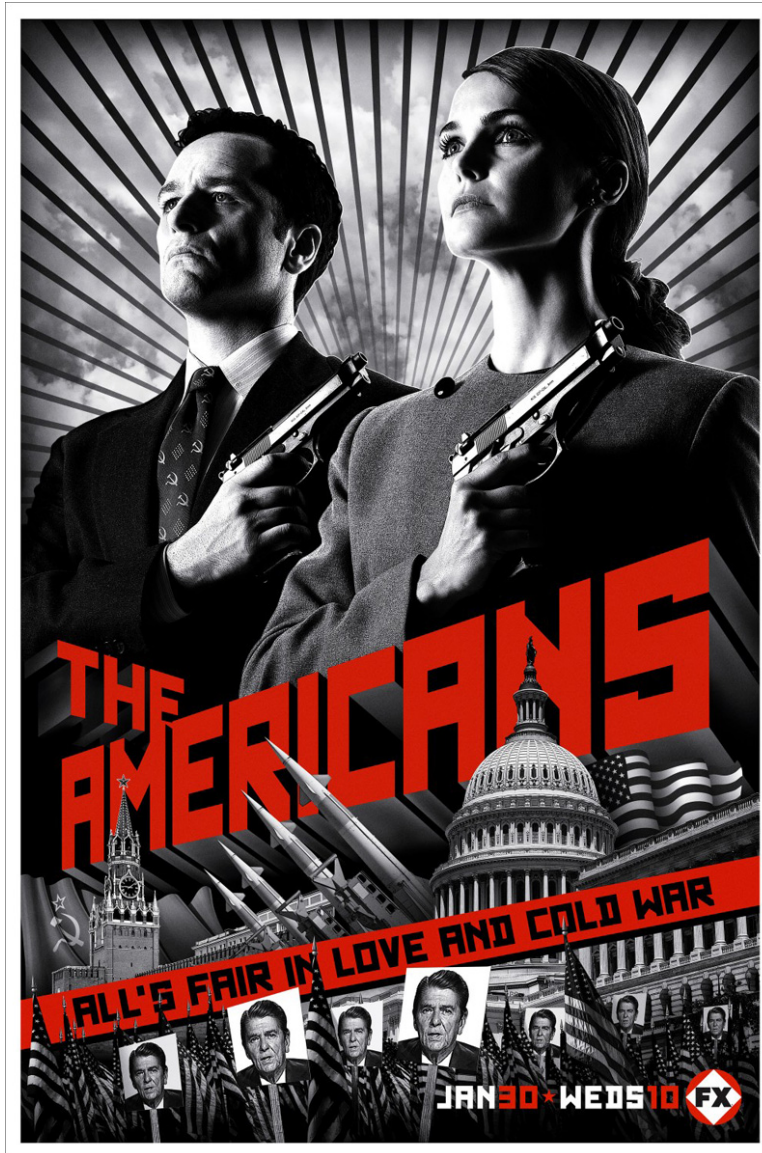


REINVENTING STATE CAPITALISM: STATE-OWNED ENTERPRISES IN LATIN AMERICA AND KOREA



Aldo Musacchio
Harvard Business School and
NBER

SOEs since the cold war...

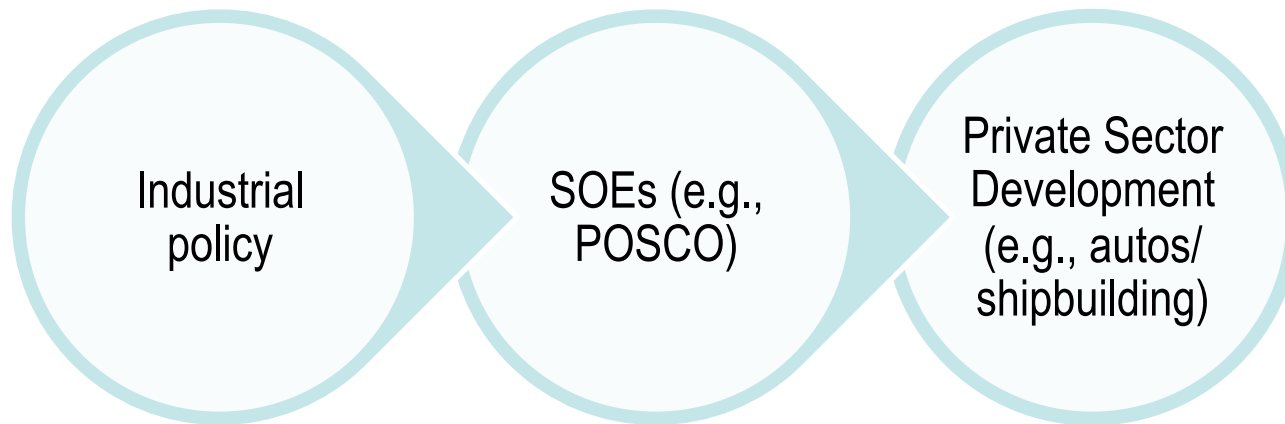


SOE Output to GDP in Mixed Economies (Mean), 1978-1985

| | SOE output as a percent of GDP, 1975-1985 | | SOE output as a percent of GDP, 1975-1985 |
|--------------------------------|---|-----------------------------|---|
| Developed countries | | Low income countries | |
| Austria | 6.5 | Bangladesh | 2.5 |
| Belgium | 2.6 | Bolivia | 13.0 |
| France | 10.7 | Burundi | 5.4 |
| Germany | 7.1 | Cameroon | 18.0 |
| Greece | 5.3 | Central African Rep. | 4.1 |
| Italy | 6.7 | Comoros | 5.6 |
| Portugal | 22.2 | Ivory Coast | 10.5 |
| Spain | 4.0 | Dominican Republic | 2.0 |
| United Kingdom | 5.9 | Egypt | 37.1 |
| United States | 1.3 | El Salvador | 2.4 |
| Mean (developed countries) | 7.2 | Gambia | 3.9 |
| | | Ghana | 5.8 |
| Middle Income Countries | | Guinea | 25.0 |
| Algeria | 69.9 | Guyana | 37.0 |
| Argentina | 4.7 | India | 10.8 |
| Botswana | 5.7 | Indonesia | 15.4 |
| Brazil | 5.0 | Jamaica | 21.0 |
| Chile | 13.6 | Kenya | 10.0 |
| Colombia | 6.9 | Madagascar | 2.3 |
| Congo | 10.4 | Malawi | 7.0 |
| Costa Rica | 6.7 | Mali | 13.6 |
| Dominica | 3.3 | Mauritania | 25.0 |
| Ecuador | 8.6 | Nepal | 2.3 |
| Guatemala | 1.1 | Niger | 4.8 |
| Honduras | 4.6 | Pakistan | 9.4 |
| Korea, Rep. of | 9.6 | Philippines | 1.5 |
| Mauritius | 2.1 | Senegal | 8.9 |
| Mexico | 12.0 | Sierra Leone | 20.0 |
| Morocco | 18.6 | Sudan | 48.2 |
| Nigeria | 13.5 | Tanzania | 10.8 |
| Panama | 7.3 | Togo | 11.8 |
| Paraguay | 3.8 | Dem. Rep. of Congo | 22.8 |
| Peru | 8.5 | Zambia | 31.7 |
| South Africa | 13.9 | | |
| Taiwan | 7.4 | | |
| Tunisia | 29.8 | | |
| Turkey | 6.3 | | |
| Uruguay | 4.0 | | |
| Venezuela | 23.1 | | |
| Mean (middle income countries) | 11.6 | Mean (low income) | 13.6 |

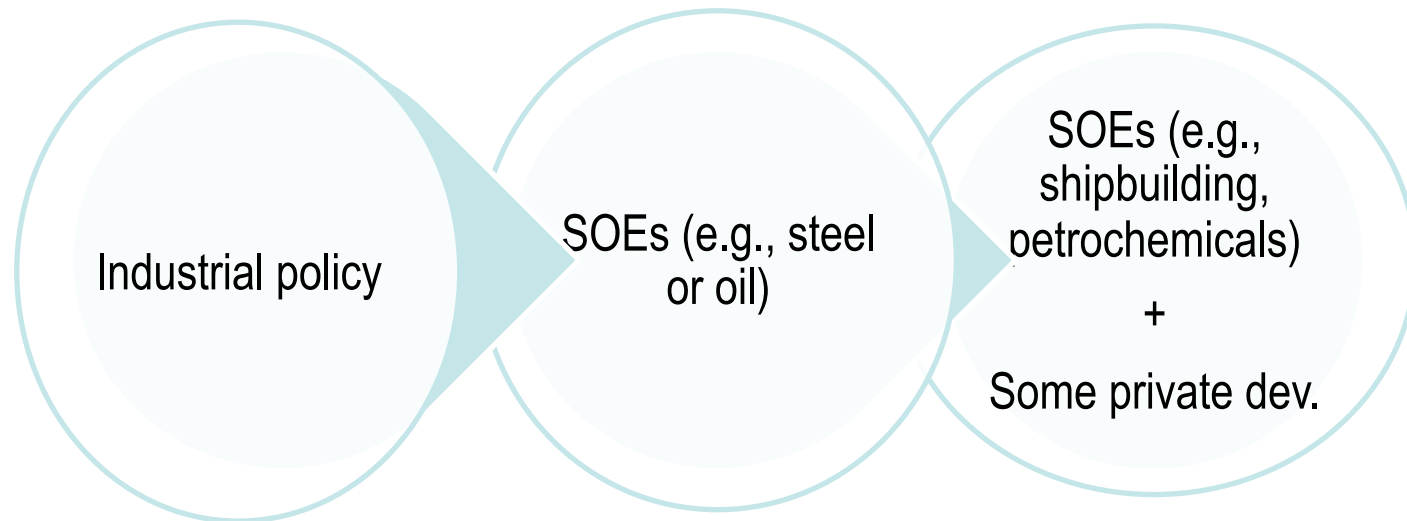
Source: Created from data in World Bank (1996), Table A.1.

KOREA



SOEs as policy instruments in Korea and Lat Am

Latin America



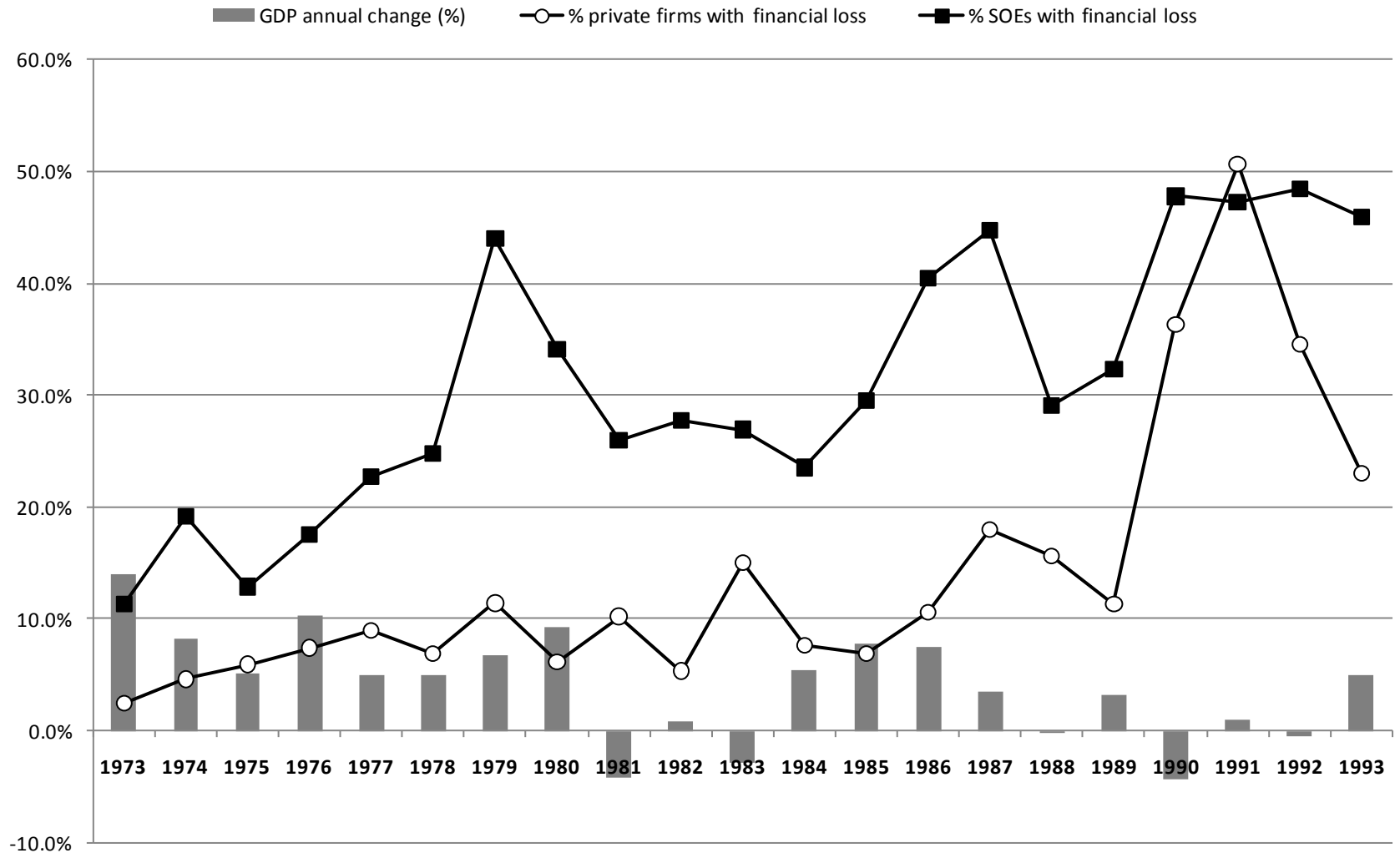
By the early 1990s we declared SOEs dead because of their intrinsic inefficiencies...

- **Agency view:** SOE managers have low-powered incentives, they are not transparent about their financials and strategy, and have poor monitoring by ministries and boards packed with politicians. (La Porta and Lopez-de-Silanes, 1999; Megginson, 2003).
- **Political view:** managers in SOEs are chosen for political reasons (i.e., not by merit); and usually governments bail out inefficient firms (soft-budget constraint hypothesis) (Kornai, 1979, Shleifer & Vishny, 1998).
- **Social view:** SOEs pursue a “double bottom line” – they have complex objectives that may be inconsistent with profitability (Ahroni, 1986; Bai & Xu, 2005; Shapiro & Willig, 1990; Shirley, 1989).

Expanding the social and political view

- SOEs have multiple objectives
 - SOEs as an exchange rate management tool → They are used to obtain foreign exchange and thus the objectives of the government (e.g., obtain more FX) can be at odds with that of the enterprise (e.g., keep a low debt/equity ratio).
 - SOEs as a fiscal tool → Governments tax these firms and get dividends from them. Therefore, the government's short term objectives may be at odds with the LT objectives of the firm (e.g., LT investment plans)
 - SO Banks and monetary policy...

LEVIATHAN AS AN ENTREPRENEUR AFTER THE OIL SHOCKS AND THE DEBT CRISIS (BRAZIL)



Source: Musacchio and Lazzarini (2014)

Latin America + World Bank: Contract PLANS

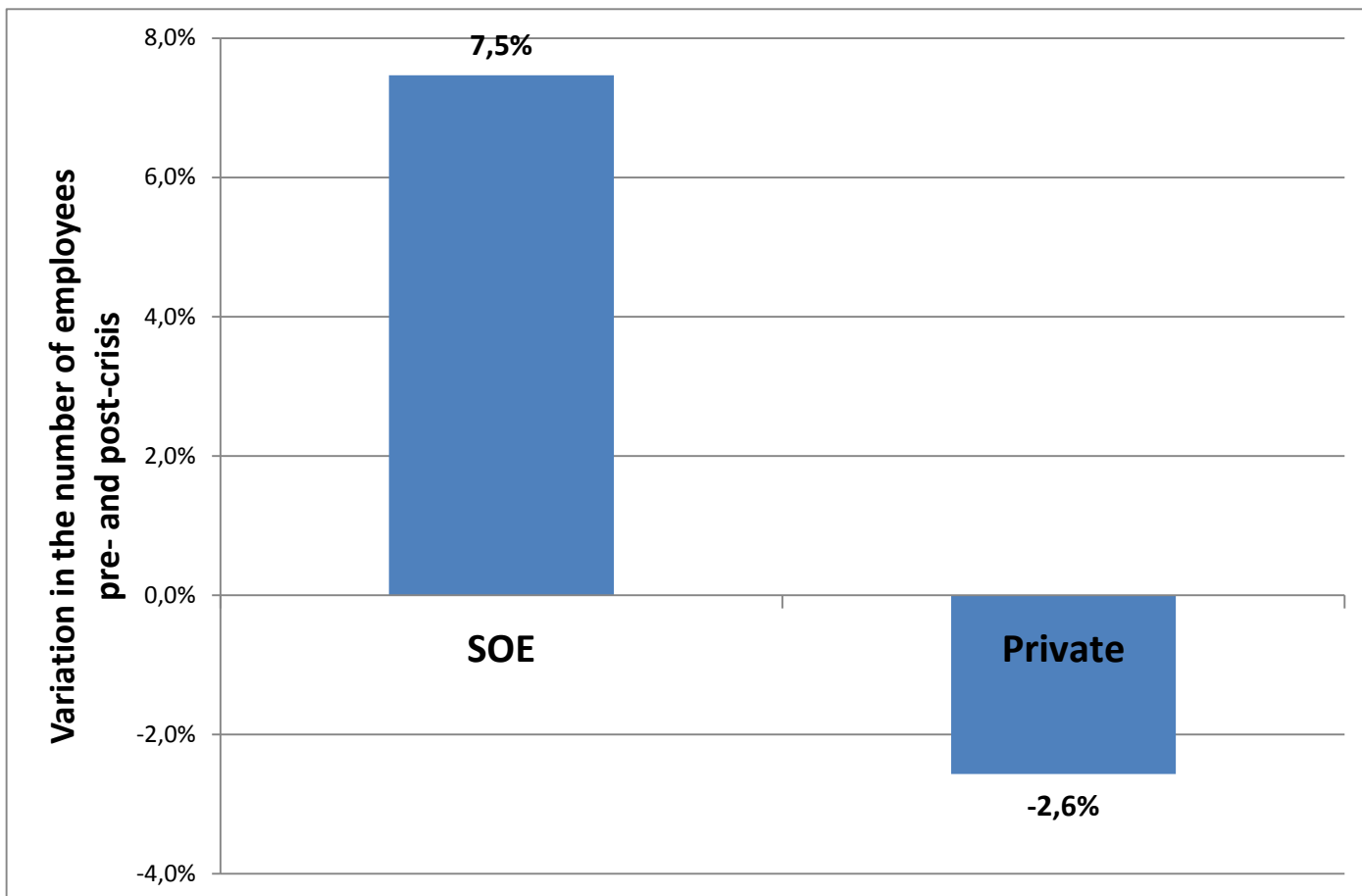
- Five year plans, with annual targets
- Evaluation by gov't using scorecards that included a variety of targets
- Some rewards for successful managers
- COMPLETE FAILURE...
- WB consultant told me “we gave up on contract plans around 1990 and started to promote privatization”

KOREA

- 1984 introduced contract plans w/ aggressive monitoring & big bonuses (e.g., 300% of salary for managers)
- Most SOE managers have met targets systematically since then...

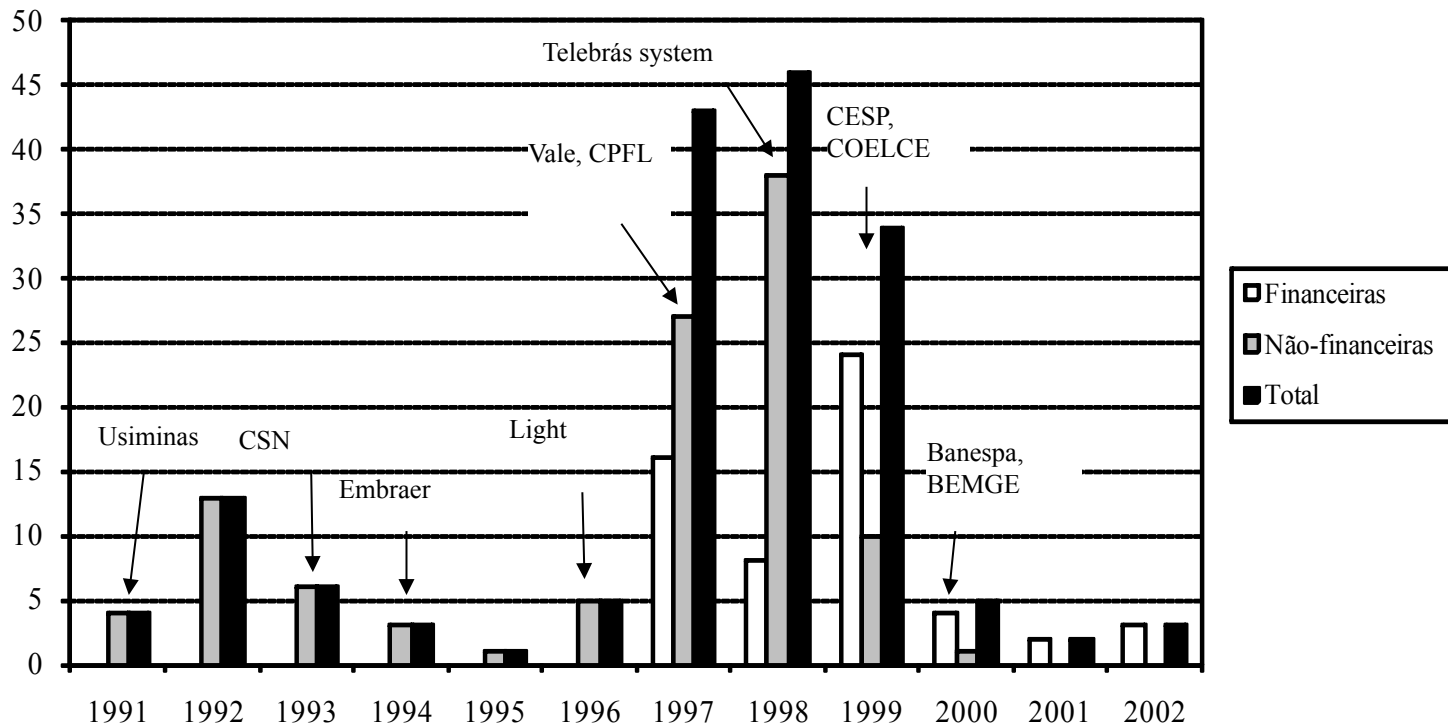
HOW SOEs and PRIVATE FIRMS RESPONDED TO THE CRISIS

How Brazilian SOEs versus private firms responded to the economic crisis of 1981-1983. Differences-in-differences adjusted with propensity score matching.



Source: Musacchio and Lazzarini (2014)

EVENTUALLY... PRIVATIZATIONS (Brazil)

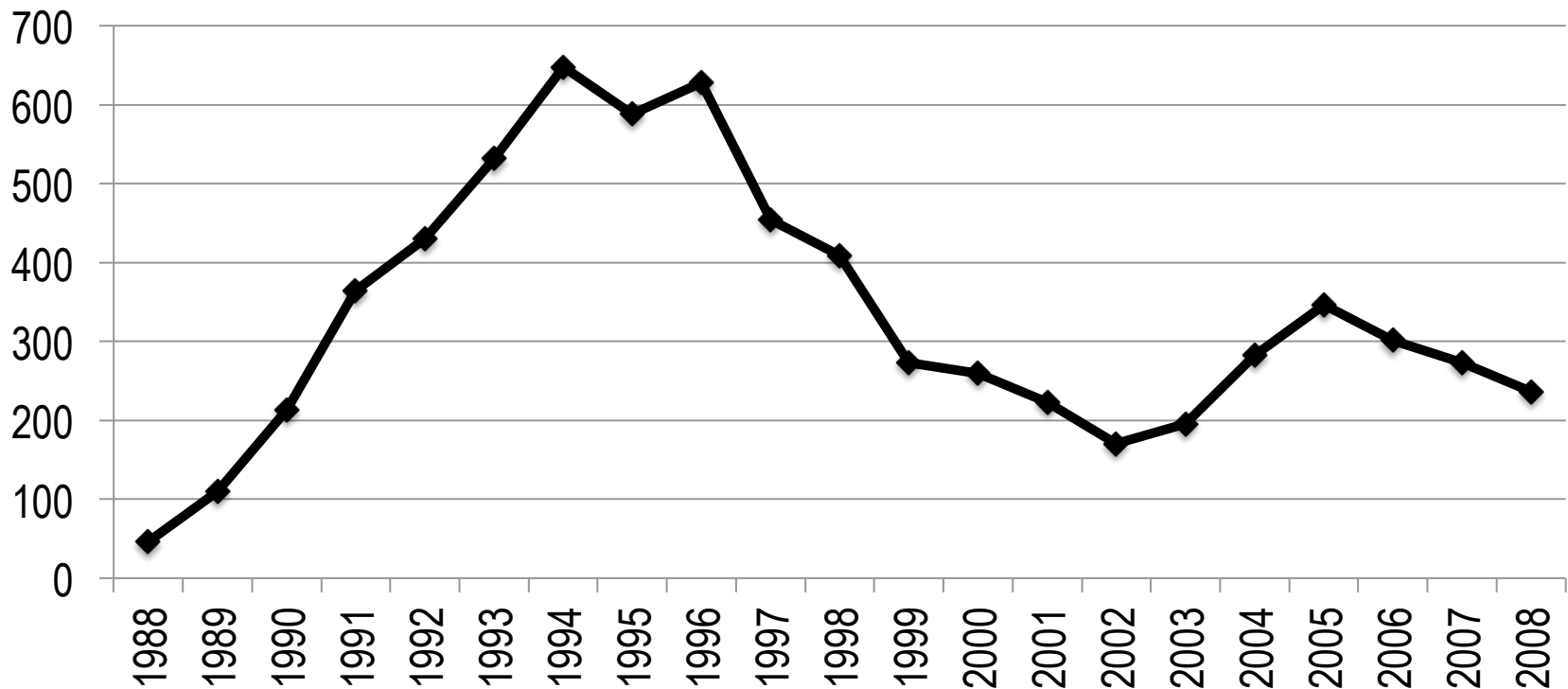


From 1990 to 2002, the government privatized 165 enterprises, obtaining total revenues of around 87 billion dollars (BNDES, 2002).

Privatization revenues helped reduce public debt by an amount equivalent to 8% of GDP (Carvalho, 2001) and improved the profitability of firms (Anuatti-Neto et al., 2005).

PRIVATIZATION WAS SUPPOSED TO CORRECT SOE PROBLEMS

Total privatization transactions



Number of Privatization Operations per Year (Generating Revenues of At Least US\$1 Million in 2005 Dollars), 1988-2008

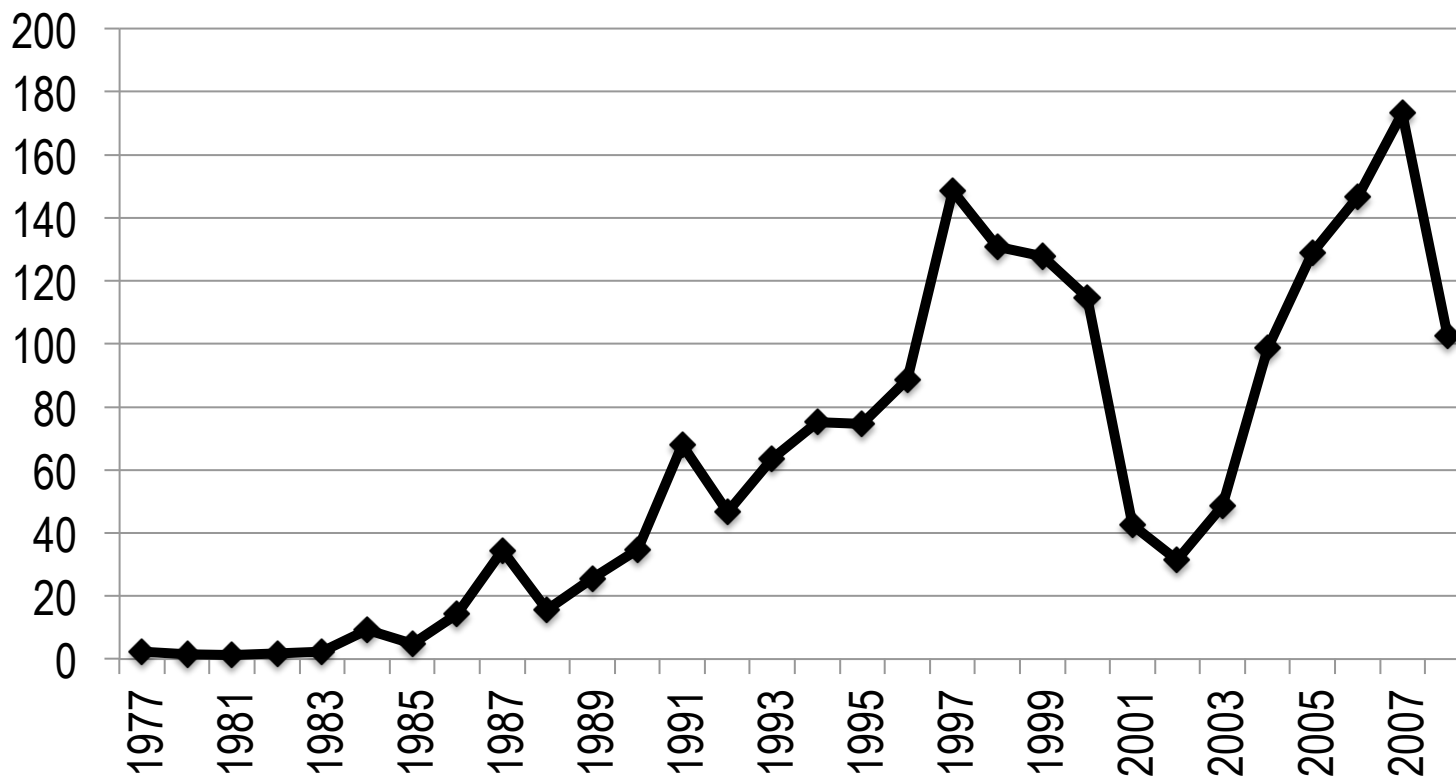
Sources: For Europe, we use the Privatization Barometer database, available at www.privatizationbarometer.net/. For other countries, we use the World Bank privatization databases (one from 1990 through 1999 and another from 2000 through 2008).

We then add observations from the World Bank database for privatization transactions under \$1 million for 2000-2008. All available at <http://go.worldbank.org/W1ET8RG1Q0>.

Note: Our data exclude Oceania because we did not have complete data for Australia and New Zealand. Also, information for the United States and Canada is missing.

PRIVATIZATION REVENUES

Privatization revenues in billions of US\$ of 2005

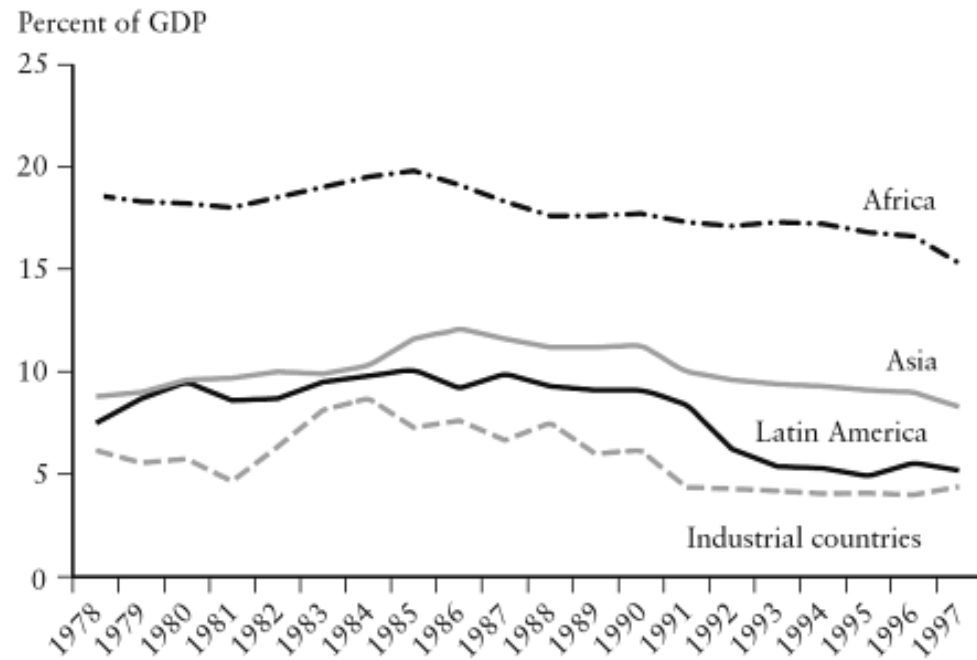


Privatization Revenues Worldwide (Billions of 2005 US\$), 1977-2008

Notes: Our data do not include privatization figures for Canada, the United States, Japan, Australia, New Zealand, or the Republic of Korea. The spike in revenues after 2005 is mostly driven by the following IPOs: Rosneft (\$10.7 billion), Bank of China (almost \$14 billion), and Industrial and Commercial Bank of China (almost \$22 billion) in 2006; PetroChina (\$9.15 billion), China Shenhua Energy (\$9.1 billion), Sberbank (\$8.8 billion), Vneshtorgbank (\$8 billion), China Construction Bank Corporation (\$7.95 billion), and China Pacific Insurance (\$7.7 billion) in 2007. The dates of the sales in our database may not coincide with the actual date on which the IPO took place because the database is based on official announcements of privatizations.

SOE Activity declined, but not that much...

Figure 1.1 Economic Activity of State-Owned Enterprises, 1978-97



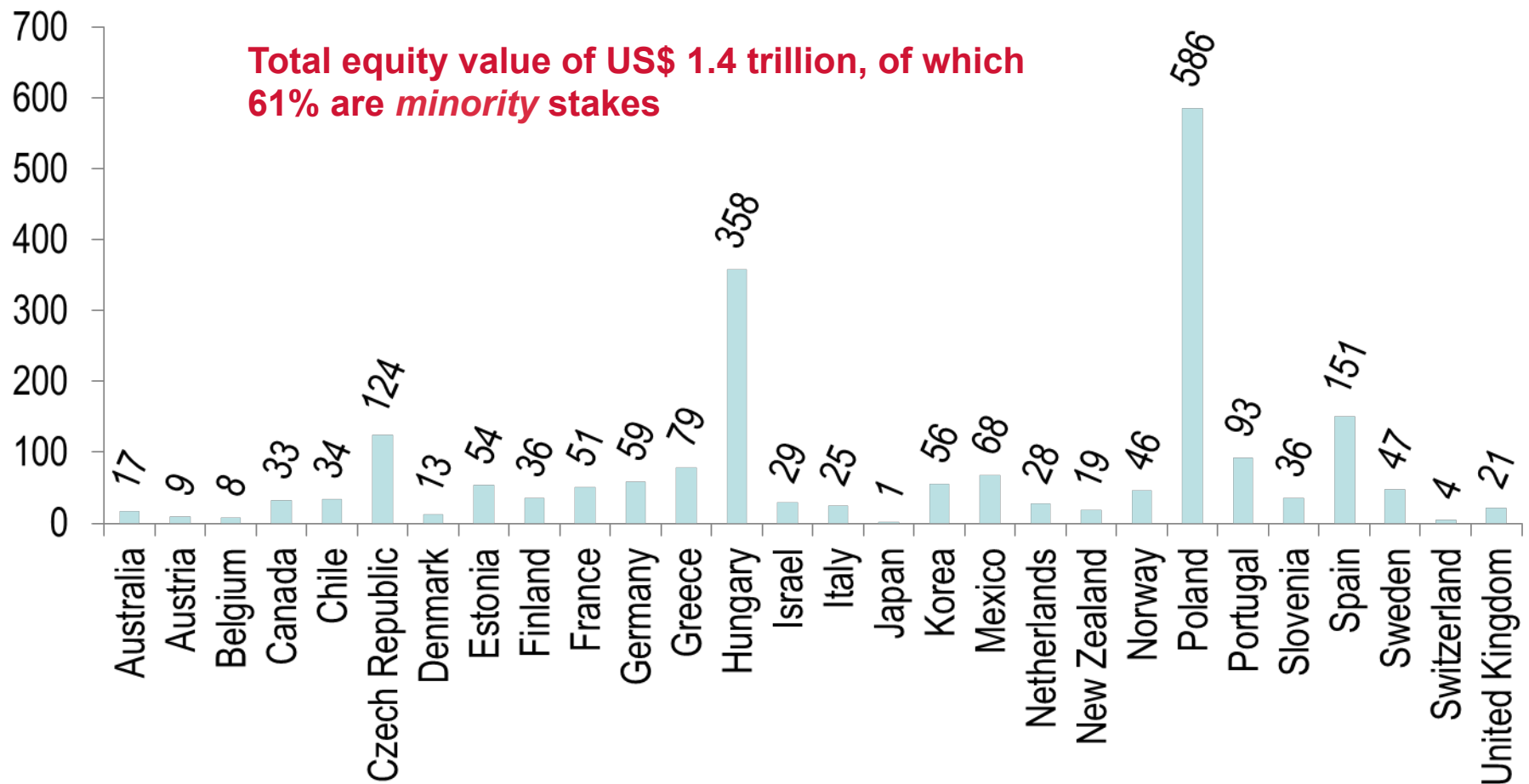
Note: Weighted average by country GDP.
Source: World Bank 2001.

Source: Chong
and Lopez-de-
Silanes

RECENTLY WE HAVE SEEN THE RISE OF NEW FORMS OF STATE OWNERSHIP

- Rise of large PUBLICLY-TRADED SOEs, from emerging markets to the center stage of the global economy.
- 4 of top-10 *Fortune 500* firms are SOEs, almost 1/5 of the top-100). These are big state-owned multinationals!
- SOEs represent a big share of publicly-traded firms (about 5% of global stock market capitalization).
- 9 out of the 15 largest IPOs in the world between 2005 and 2012 were SOEs selling minority positions to private investors.

OECD SURVEY (2011): SOEs WITH MAJORITY OR MINORITY STAKES BY THE STATE



Source: Christiansen, H. "The size and composition of the SOE sector in OECD countries", OECD Corporate Governance Working Papers, no 5, 2011.

IN EMERGING MARKETS...

| | SOE output (revenues) to (non-financial) GDP | Listed SOEs ^a | SOEs as % of market capitali- zation ^a | Number of SOEs with majority control | | Num. of firms in which the federal government has minority ownership |
|--------------|---|-----------------------------|--|---|-------------|--|
| | | | | Federal | State/local | |
| Brazil | 30% | 14 | 34% | 247 | | 397 |
| China | 29.7% | 942 | 70% | 17,000 | 150,000 | n.a. |
| Egypt | n.a. | | | 57 ^b | | 59 |
| India | 13.1% | 29 | 40% | 217 | 837 | 404 |
| Indonesia | 18% | 16 | 29.5% | 142 | | 21 |
| Malaysia | | 15 | 36% | 52 | | 28 |
| Mexico | 3% | | | 205 | | |
| Poland | 28% | | | 498 | | 691 |
| Russia | 20% | 12 | 40% | 7964 | 250 | 1418 |
| Singapore | 12% | 12 | 20% | 20 | | |
| South Africa | | | | 270 | | |
| Thailand | 26% | 6 | 21% | 60 | | |
| Turkey | 14% | | | 74 | 700 | 67 |
| Vietnam | 33.9% | 461 | | 1805 | 1559 | 1740 |

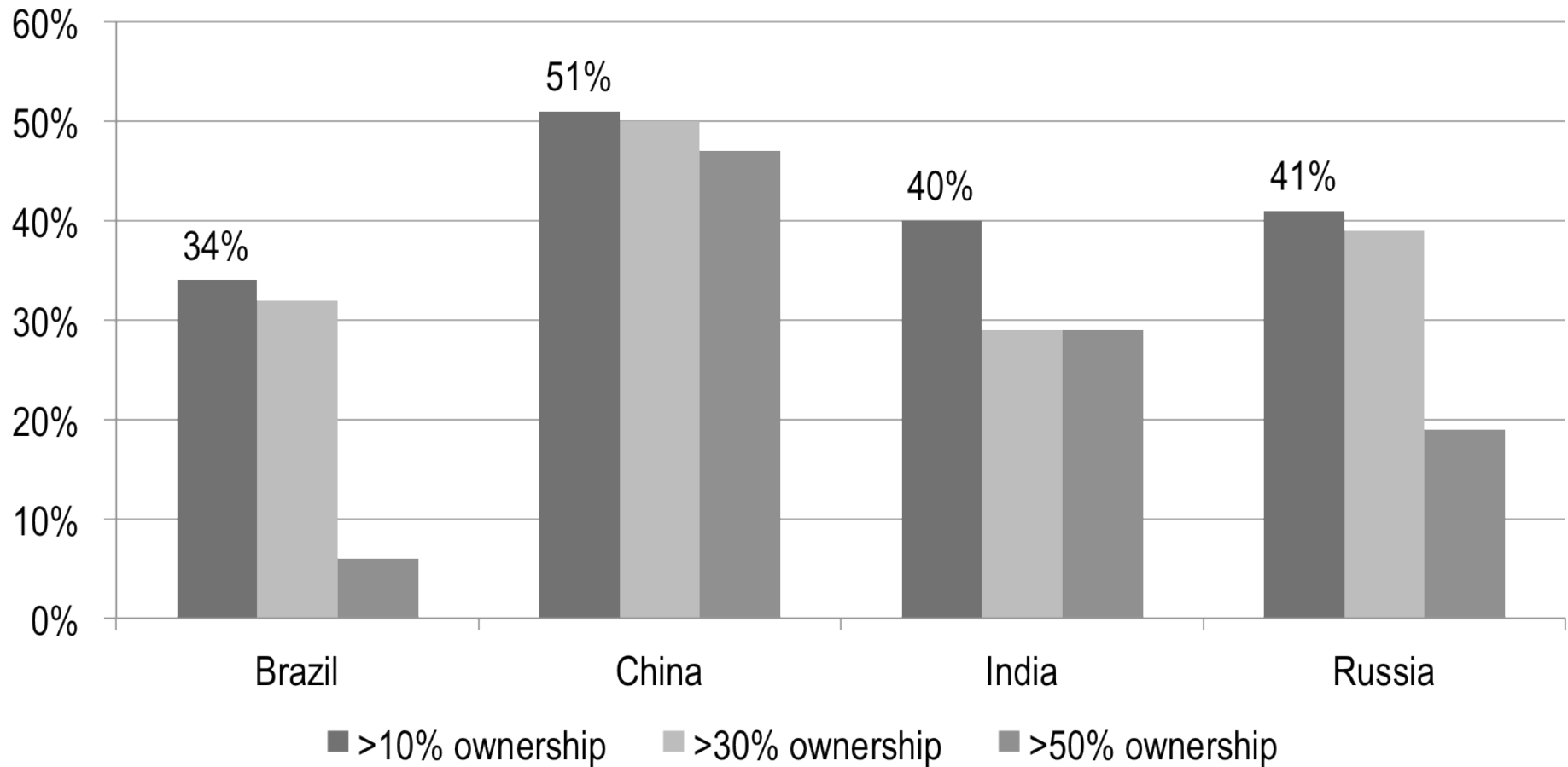
Source: Musacchio and Lazzarini (forthcoming). Notes:

^a These estimates include companies under government control and those with minority ownership.

^b For Egypt, the number of SOEs given here is for 2005 but the number of minority-owned firms is for 2002.

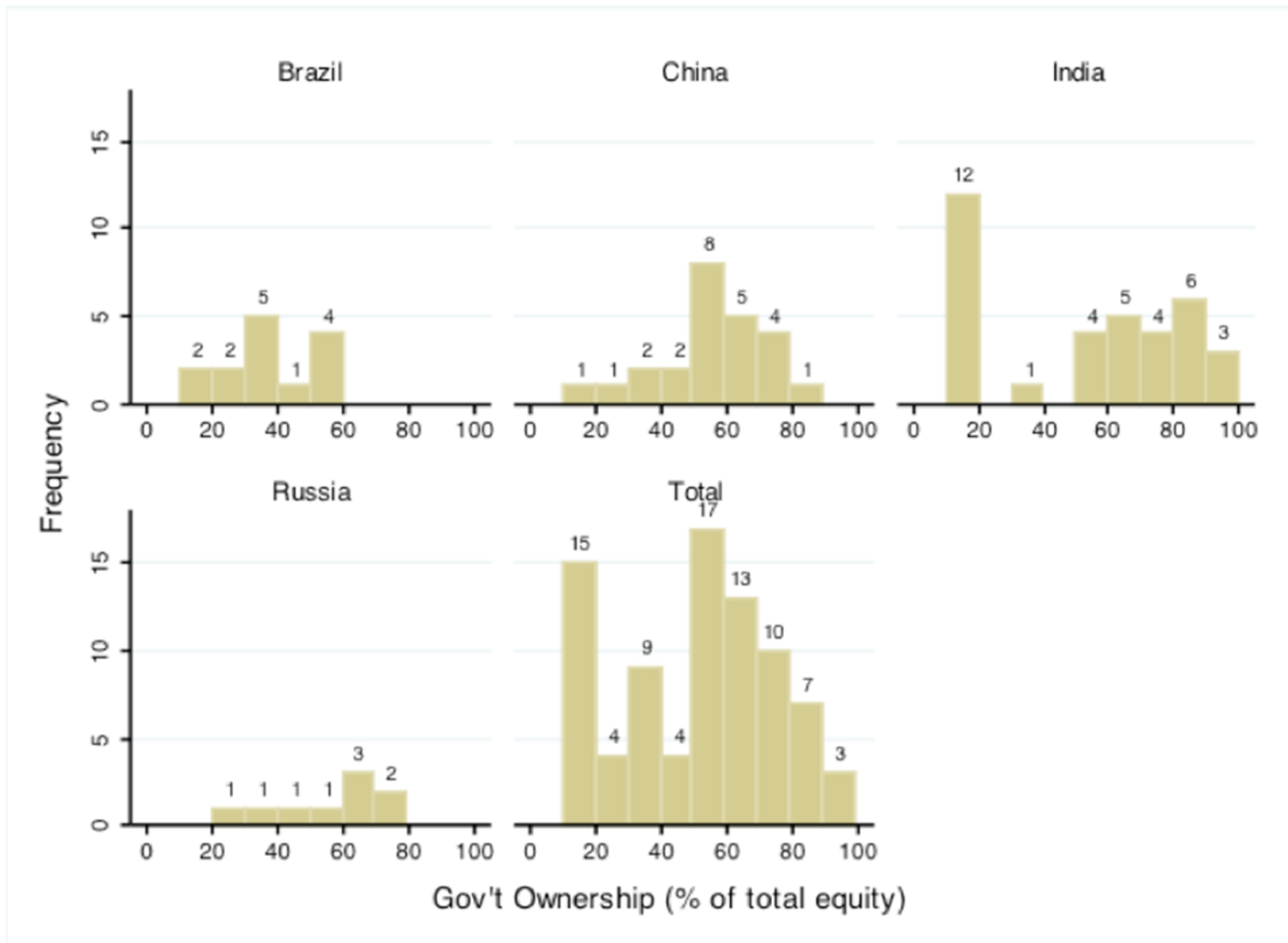
Source: See Appendix 2-1. We include firms with government ownership of over 10 percent of the votes (i.e., control) as minority shareholdings and those with government ownership of over 50 percent majority-controlled SOEs.

SOEs AS A % OF MARKET CAPITALIZATION IN BRIC COUNTRIES



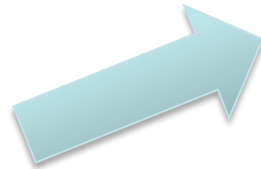
***Estimated from data from Capital IQ. SOE defined as companies with >10% of government ownership. Graph represents the market value of SOEs over the market value of the largest 125 companies (100 for Russia). For Russia other calculations put this figure at 40% of mkt cap.

DISTRIBUTION OF EQUITY HOLDINGS BY THE GOVERNMENT IN BRIC COUNTRIES



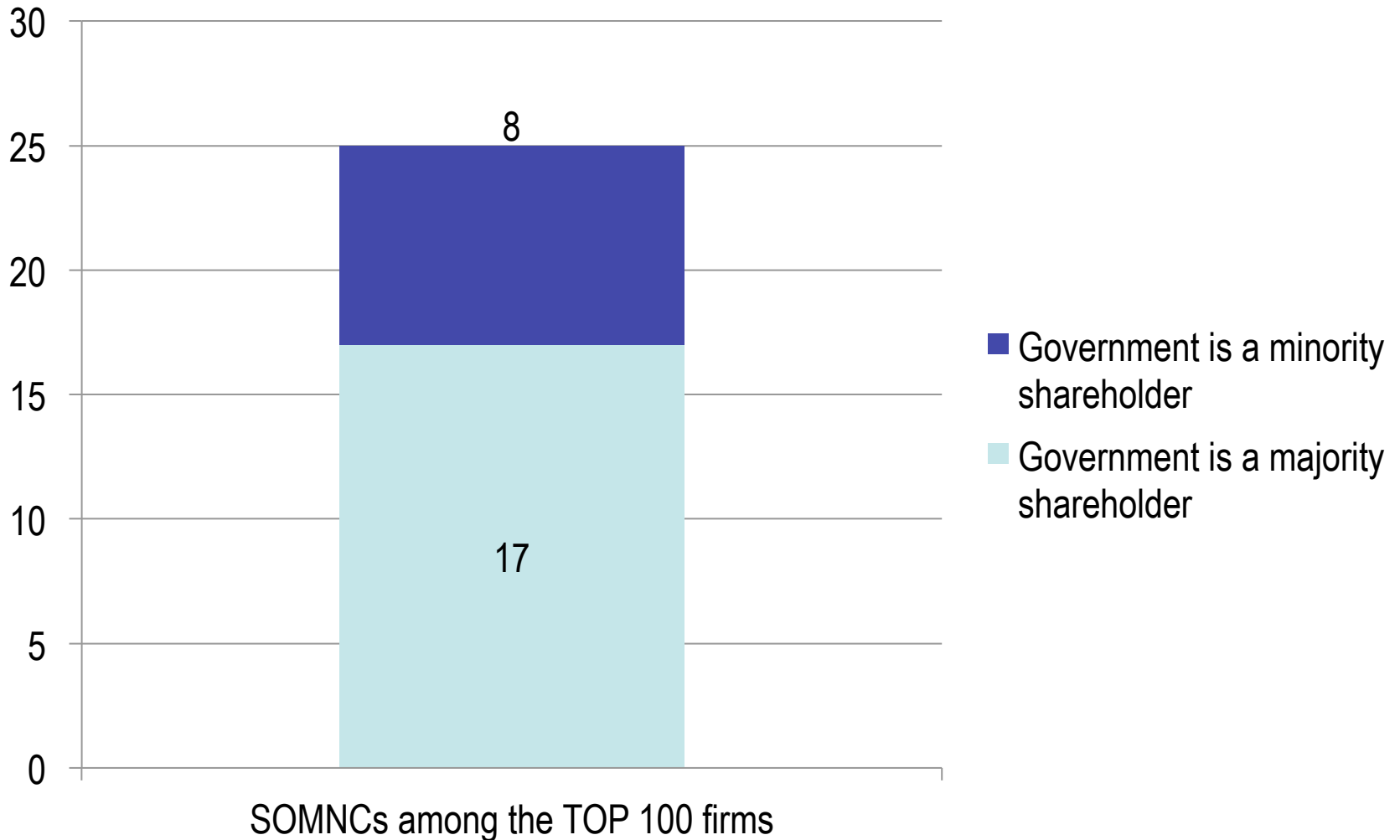
- Top firms in Fortune Global 500 in 2012

What do the firms in yellow have in common?

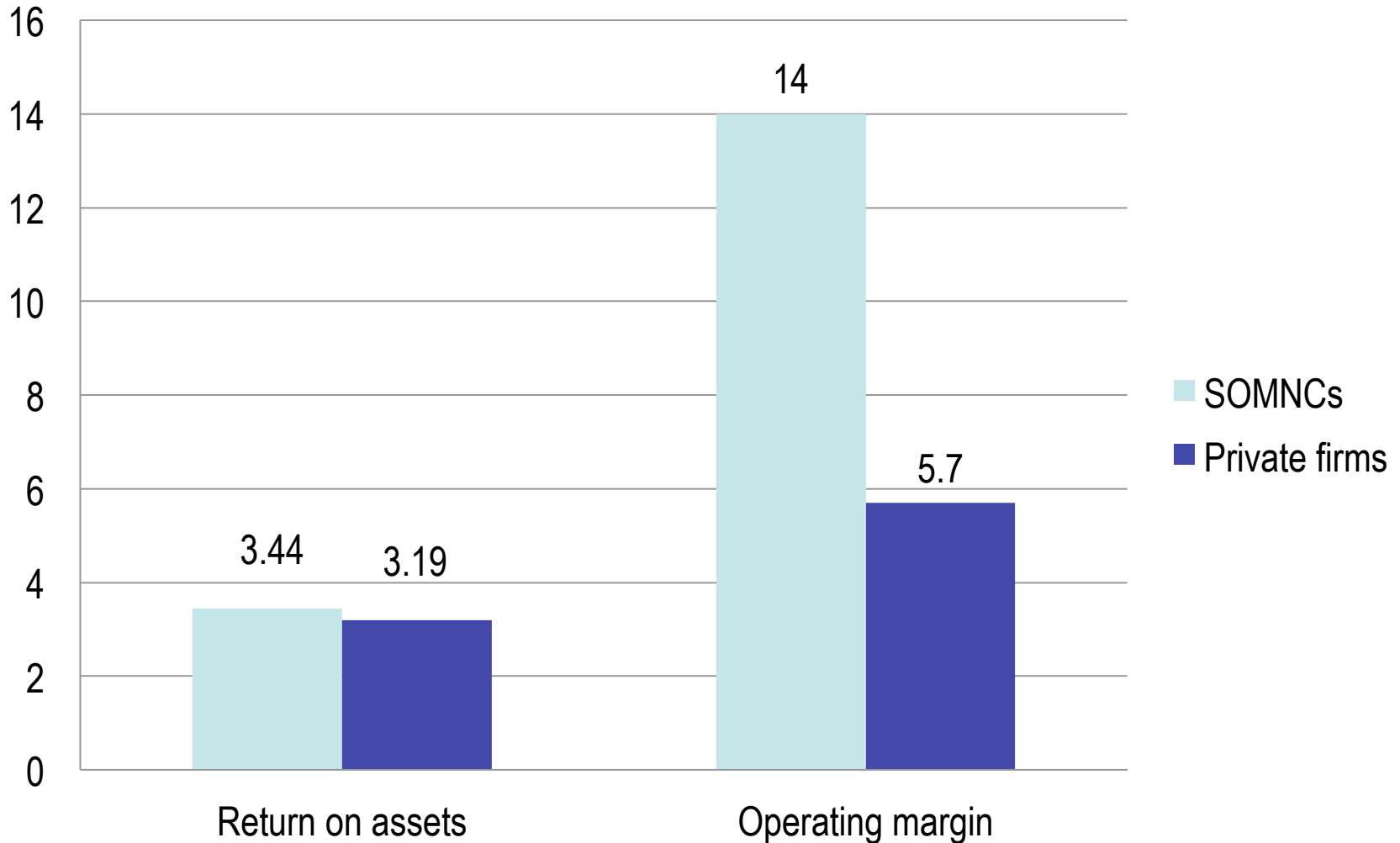


| Rank | Company | Revenues in US\$ millions |
|------|------------------------------|---------------------------|
| 1 | Royal Dutch Shell | 484,489 |
| 2 | Exxon Mobil | 452,926 |
| 3 | Wal-Mart Stores | 44,695 |
| 4 | BP | 386,463 |
| 5 | Sinopec Group | 375,214 |
| 6 | China National Petroleum | 352,338 |
| 7 | State Grid | 259,142 |
| 8 | Chevron | 245,621 |
| 9 | ConocoPhillips | 237,272 |
| 10 | Toyota Motor | 235,364 |
| 11 | Total | 23,158 |
| 12 | Volkswagen | 221,551 |
| 13 | Japan Post Holdings | 211,019 |
| 14 | Glencore International | 186,152 |
| 15 | Gazprom | 157,831 |
| 16 | E.ON | 157,057 |
| 17 | ENI | 153,676 |
| 18 | ING Group | 150,571 |
| 19 | General Motors | 150,276 |
| 20 | Samsung Electronics | 148,944 |
| 21 | Daimler | 148,139 |
| 22 | General Electric | 147,616 |
| 23 | Petrobras | 145,915 |
| 24 | Berkshire Hathaway | 143,688 |
| 25 | AXA | 142,712 |
| 26 | Fannie Mae | 137,451 |
| 27 | Ford Motor | 136,264 |
| 28 | Allianz | 134,168 |
| 29 | Nippon Telegraph & Telephone | 133,077 |
| 30 | BNP Paribas | 12,746 |
| 31 | Hewlett-Packard | 127,245 |
| 32 | AT&T | 126,723 |
| 33 | GDF Suez | 126,077 |
| 34 | Pemex | 125,344 |

THE LARGEST SOEs AMONG THE TOP 100 FORTUNE GLOBAL FIRMS ARE STATE-OWNED MULTINATIONALS



Profitability of state-owned multinationals vs. private firms among the TOP 100 *FORTUNE* GLOBAL FIRMS, 2012



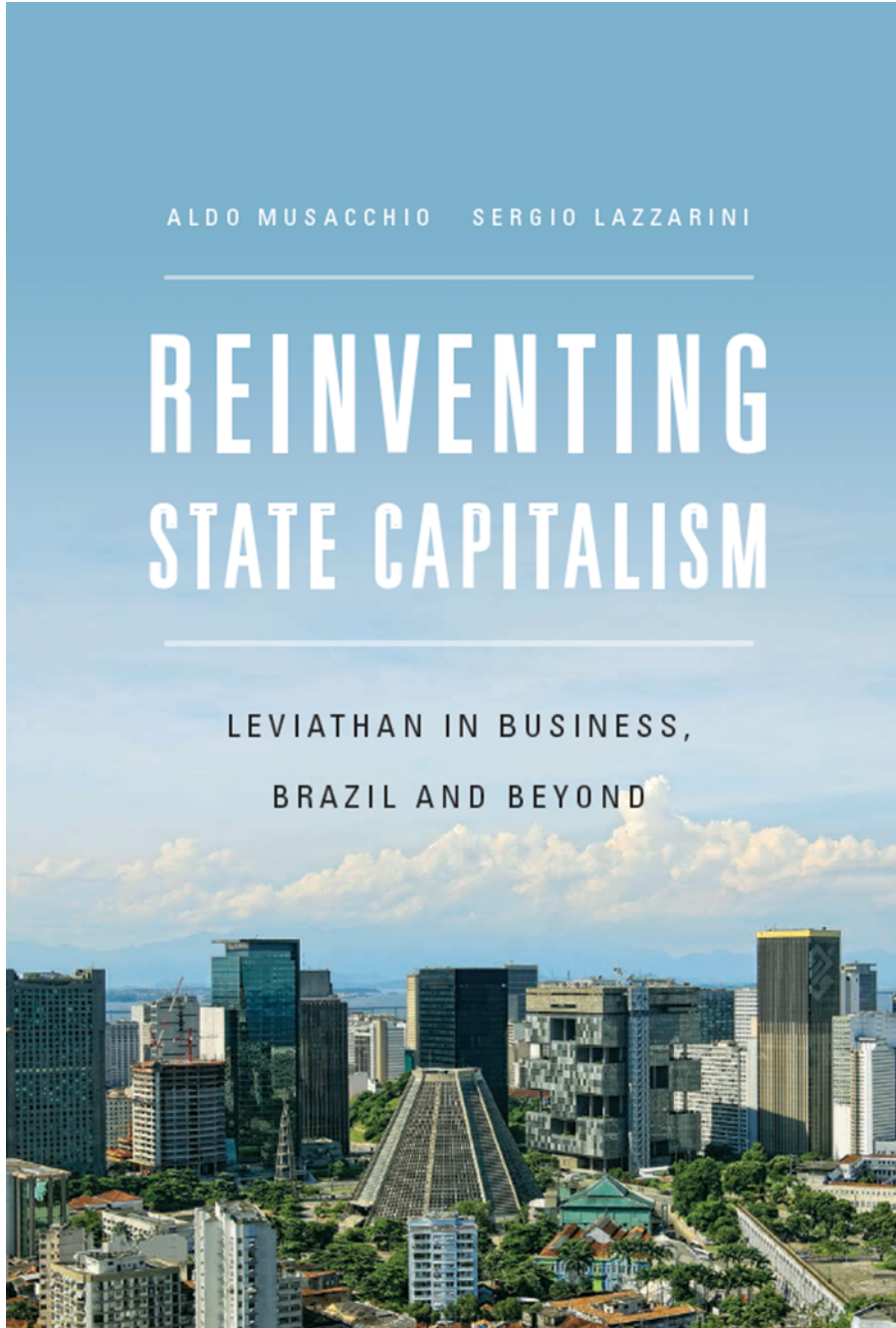
So, governance and ownership schemes have changed but not the theories we use to study SOEs

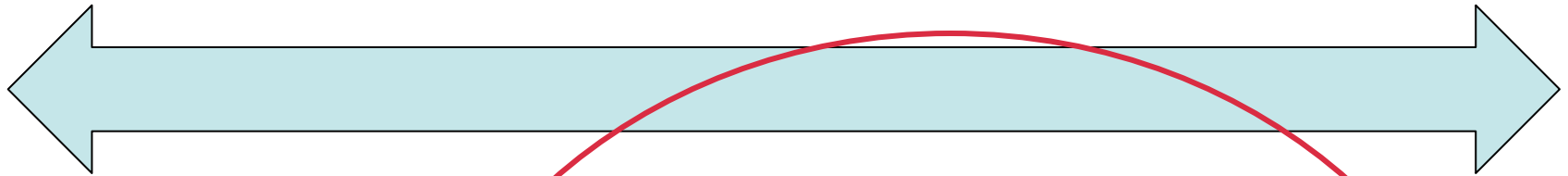
- We have theory and empirical work (mostly from 1990s) showing SOEs are, on avg., less efficient than private firms
- Except in competitive settings (Harrison & Bartel, 2005 vs. Goldeng et al. 2008)
- We expect partially-privatized firms to perform better than SOEs (Gupta 2005), but depends on regulatory/corporate governance framework (Ramamurti 2000)
- AND, PRIVATIZATIONS WERE NOT THE PANACEA WE EXPECTED so SOEs are probably here to stay (see Chong & Lopez-de-Silanes IDB book)

ALDO MUSACCHIO SERGIO LAZZARINI

REINVENTING STATE CAPITALISM

LEVIATHAN IN BUSINESS,
BRAZIL AND BEYOND





Leviathan as an entrepreneur (owner/manager)

- Full state control and ownership of SOEs, with limited autonomy and transparency

Leviathan as a majority investor

- Publicly traded SOEs with improved autonomy and transparency
- State-owned holding companies (SOHCs)

Leviathan as a minority investor

- Partially privatized firms (PPFs)
- Minority stakes under state-owned holding companies (SOHCs)
- Loans and equity from state-owned and development banks
- Sovereign wealth funds
- Other state-controlled funds (e.g. pension funds, life insurance companies).

Privately-owned firms

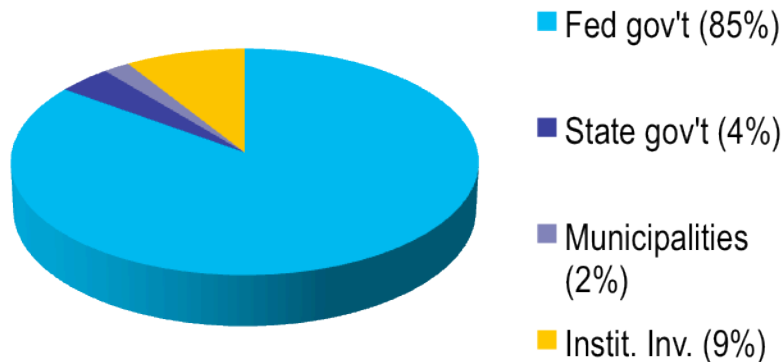
Privatization created new models of state capitalism

Leviathan as a majority shareholder

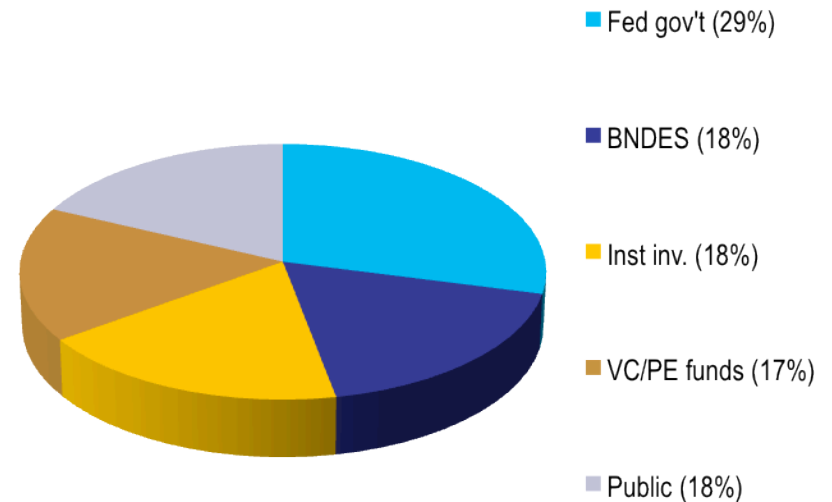
- Concentrated ownership can solve basic agency problems (Morck 2000), yet most governments are not good at monitoring
- What are governments doing?
 - Large state-owned enterprises around the world are listed in stock exchanges
 - They bring in active investors as monitors (pension and mutual funds), incentivize management, increase transparency
 - Have professional management and/or high-powered incentives (pay for performance)
 - Improved corporate governance (indep. board members, more separation between ownership and control)
 - Financial transparency (audited financials reported quarterly/semi-annually)
- Not all SOEs evolved into this model, but flagship firms have been migrating to this model to reduce agency problems, especially gov't intervention

PETROBRAS (BRAZIL): 1980 vs 2012

Equity (1980)
Government controlled 100%
of votes

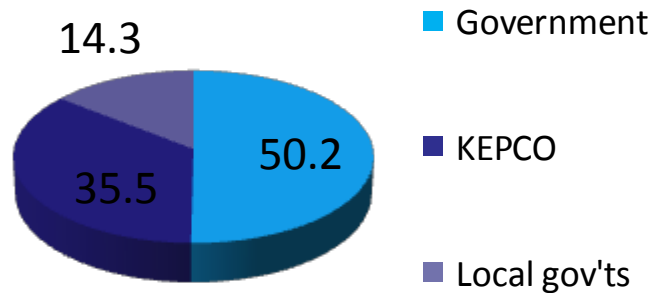


Total equity (2012)
Gov't controls 51% of votes

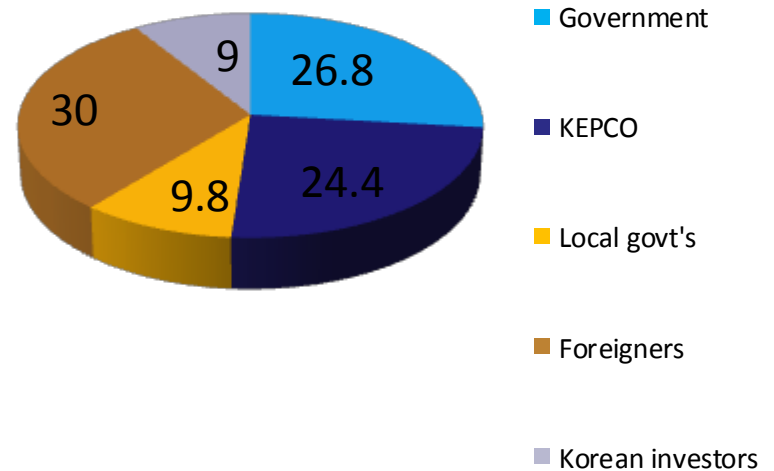


KOREAN GAS CO

Equity (1980s)
Government controlled
100% of votes



Total equity (2002)
Gov't controls 51% of votes



GOVERNANCE REFORMS IN BRAZIL

| | Federal level | State level |
|---------------------------------------|--|---|
| Number of SOEs | 47 | 49 |
| Number of listed SOEs | 6 | 16 |
| Total assets of SOEs (US\$ million) | \$625,356 | \$66,152 |
| % of total assets held by listed SOEs | 58.3% | 67.8% |
| Top listed SOEs, by assets | Banco do Brasil (banking) Petrobras (oil) Eletrobras (electricity) Banco do Nordeste (banking) Banco da Amazônia (banking) | Cesp (electricity) Banrisul (banking) Sabesp (water/ sewage) Cemig (electricity) Copel (electricity) |

Source: Compiled based on data from the Securities and Exchange Commission of Brazil and the Department of Coordination and Governance of State-owned Enterprises (DEST), Ministry of Planning. Total assets include only firms with direct stakes by the government.

THE LEVIATHAN AS A MAJORITY INVESTOR MODEL: SOME CASES OF NATIONAL OIL COMPANIES (NOCs)

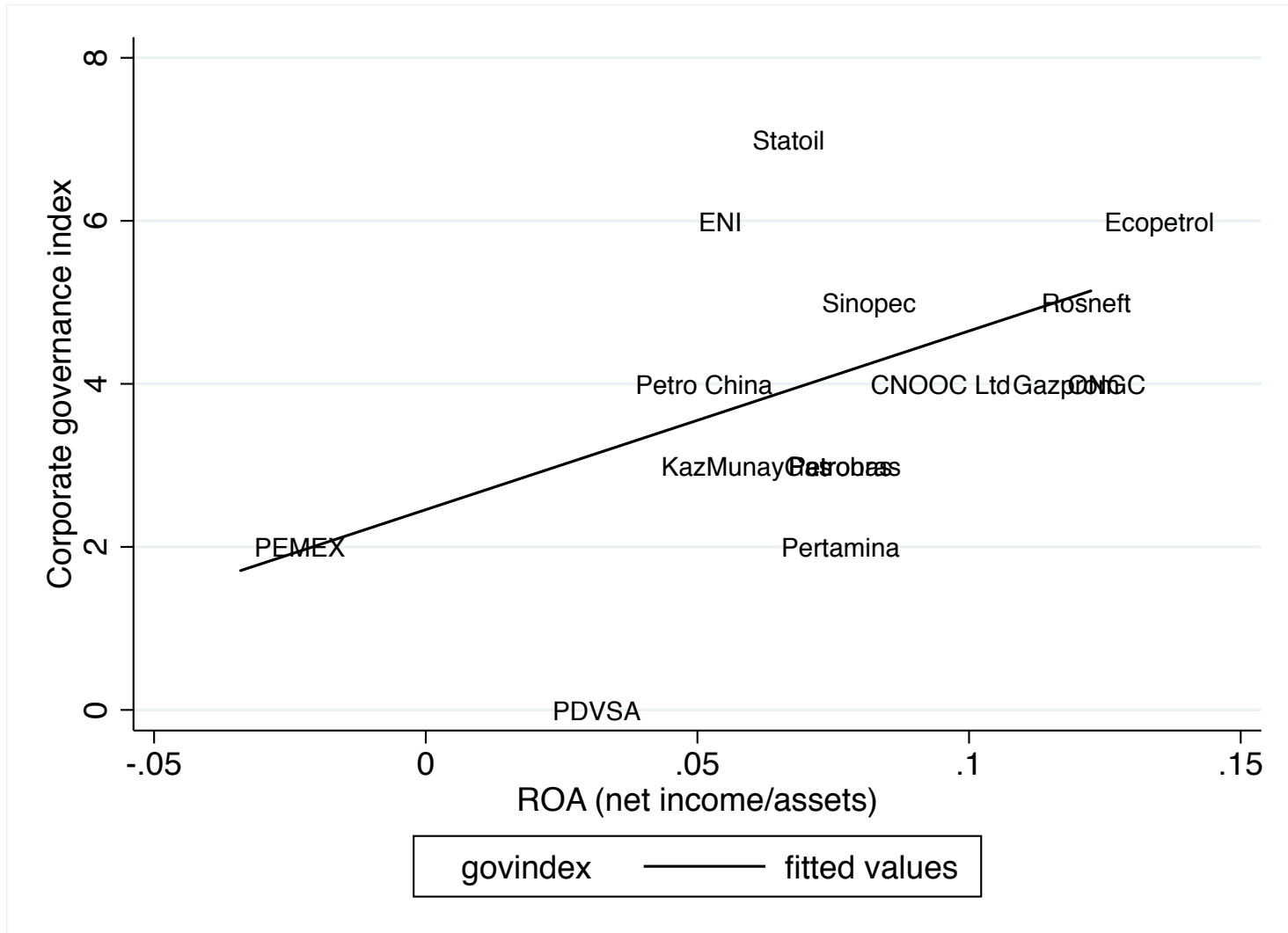
| | Statoil (Norway) | Petrobras (Brazil) | Pemex (Mexico) |
|---|---|--|---|
| <u>CEOs/incentives</u> | | | |
| CEO selected by | Board | Board (influenced by President of Brazil) | President of Mexico |
| Do CEOs usually change after presidential elections | No | In 3 out of 7 elections | Yes |
| CEO compensation has pay-for-performance component | Yes | Yes | No |
| <u>Financials/transparency</u> | | | |
| Autonomous budget | Yes | No, some investments need gov't approval | No, some investments need gov't approval |
| Listed? | Yes | Yes | No |
| Main institutional investors | Norwegian national insurance fund | Local pension funds, Black Rock | Bondholders & Ex-Im Bank |
| <u>Regulation</u> | Norwegian Petroleum Directorate (NPD), reporting to the Ministry of Petroleum and Energy, <i>de facto</i> independent | National Oil Agency (ANP), linked to the Ministry of Mines and Energy. However, influenced by the government | National Carbohydrates Commission (CNH in Spanish), a decentralized agency linked to the Ministry of Energy (SENER) |

Source: Adapted from Pargendler, Musacchio and Lazzarini (forthcoming). Compiled from the companies' websites and from questionnaires sent to Pemex.

We create a basic index of corporate governance in 30 NOCs that measure both autonomy from government and the presence of external checks to possible abuses by managers

| NOC | Country | Has some of the equity been privatized (=1)? | Is the gov't a minority shareholder? (=1) | Are there independent or external board members? | Are independent members a majority? | No government officials on the board (=1) | Chairman is truly external (=1) | Budget autonomy (1) | External auditors (1) | Governance index |
|-----------|--------------|--|---|--|-------------------------------------|---|---------------------------------|---------------------|-----------------------|------------------|
| KPC | Kuwait | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 2 |
| PEMEX | Mexico | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 2 |
| Pertamina | Indonesia | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 2 |
| QP | Qatar | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 2 |
| Petro SA | South Africa | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| Sonatrach | Algeria | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| Adnoc | UAE | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| EGPC | Egypt | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| INOC | Iraq | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Libya NOC | Libya | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NIOC | Iran | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NNPC | Nigeria | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PDVSA | Venezuela | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Petrobras | Brazil | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 3 |

CORPORATE GOVERNANCE AND PERFORMANCE OF NOCs



Governance Index: Based on whether (1) some of the equity of the NOC has been privatized ; (2) the government is a minority shareholder ; (3) there are independent board members; (4) independent board members have a simple majority on the board of directors; (5) there are no government officials holding board seats; (6) the chairman is an external board member; (7) the firm has budgetary autonomy; (8) the company's financials are audited by a private auditing firm.



Leviathan as an entrepreneur (owner/manager)

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Leviathan as a *majority* investor

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Leviathan as a *minority* investor

- Partially privatized firms (PPFs)
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- Loans and equity from state-owned and development banks
- Sovereign wealth funds
- Other state-controlled funds (e.g. pension funds, life insurance companies).

Privately-owned firms

MINORITY INVESTMENTS BY THE STATE: VARIOUS FORMS AND SHAPES

| | Direct ownership (ministry) | Gov't through holding companies | Pension funds | SWFs | Life insurance companies | Development banks |
|----------------|-----------------------------|---------------------------------|---------------|------|--------------------------|-------------------|
| Brazil | X | | X | | | X |
| China | X | X | | X | | |
| Dubai | | X | | X | | |
| Egypt | X | | | | | |
| India | X | | | | X | |
| Indonesia | X | | | | | |
| Korea, Rep. of | | | | X | | X |
| Malaysia | | X | | X | | |
| Mexico | X | | | | | |
| Poland | X | | | | | |
| Russia | X | X | | | | |
| Singapore | | X | | X | | |
| South Africa | X | | | | | |
| Thailand | X | | | | | |
| Turkey | X | | | | | |
| Vietnam | X | X | | | | |

Leviathan as a minority investor

- Governments now have a large proportion of their investment in firms as minority equity positions
- Agency problems can be reduced because management and monitoring is outsourced to the private sector
- Government keeps cash flow rights and , often, a golden share to control big decisions (e.g., location, M&A's, etc.) (Bortolotti & Faccio, 2009; Boubakri et al. 2009)
- Also, minority capital can help firms solve capital constraints, especially in countries with shallow capital markets
- We know very little about this ownership scheme because much of the literature on SOEs has focused on cases in which gov't has **majority** stakes
- (Alchian, 1965; Cuervo & Villalonga, 2000; Dharwadkar, George, & Brandes, 2000; Shleifer, 1998; Shleifer & Vishny, 1994).

OUR THEORY OF LEVIATHAN AS A MINORITY SHAREHOLDER

- If **residual governmental interference is curtailed**, minority state capital can help promote firm-level performance and investment...especially in the case of firms with **constrained opportunity** (David et al., 2006; Fazzari, Hubbard, & Petersen, 1988).
- **Equity** will be more flexible than debt to accommodate long-term adjustments in high capital-intensive projects (Williamson, 1988).
- However, effect should be reduced when target firms belong to **business groups**: they already have “internal capital markets”; and there is risk of minority shareholder expropriation or “tunneling” (Bae, Kang, & Kim, 2002; Bertrand, et al., 2007; Gianneti and Laeven, 2009).

EVIDENCE ON MINORITY STAKES BY BNDES (1995-2009)

| | ROA is the dependent variable. | | | | | |
|---|---|---------------------------------|----------------------|----------------------|----------------------|----------------------|
| | Minority state equity is measured as... | | | | | |
| | Direct or indirect stakes (dummy) | Direct stakes only (percentage) | Stake > 0% | Stake ≥ 10% | | |
| | (1) | (2) | (3) | (4) | (5) | (6) |
| Hypothesized effects | | | | | | |
| Minority | 0.111** (0.055) | 0.003 (0.039) | 0.009** (0.004) | 0.004*** (0.002) | 0.003 (0.047) | 0.183*** (0.060) |
| Minority×Group | -0.131** (0.061) | -0.041 (0.045) | -0.012*** (0.005) | -0.007** (0.003) | -0.070 (0.057) | -0.233*** (0.080) |
| Controls | | | | | | |
| Group | 0.124** (0.051) | 0.101 (0.079) | 0.116** (0.050) | 0.096 (0.096) | 0.091 (0.092) | 0.091 (0.097) |
| Ln(Revenues) | 0.078*** (0.025) | 0.027** (0.013) | 0.079*** (0.025) | 0.032*** (0.011) | 0.030*** (0.011) | 0.034*** (0.012) |
| Leverage | -0.012 (0.008) | -0.387*** (0.057) | -0.012 (0.008) | -0.380*** (0.056) | -0.388*** (0.055) | -0.360*** (0.055) |
| Fixed assets | -0.280** (0.115) | -0.223** (0.090) | -0.281** (0.115) | -0.225** (0.091) | -0.200** (0.096) | -0.256*** (0.091) |
| Foreign control | 0.035 (0.033) | -0.029 (0.027) | 0.031 (0.034) | -0.038 (0.037) | -0.047 (0.039) | -0.018 (0.041) |
| State control | 0.01 (0.046) | -0.019 (0.063) | -0.003 (0.055) | -0.073 (0.078) | -0.070 (0.075) | -0.080 (0.079) |
| Merger | -0.019 (0.045) | -0.031 (0.051) | -0.007 (0.046) | -0.081 (0.060) | -0.090 (0.064) | -0.077 (0.064) |
| Year, firm, firm–industry fixed effects | Yes | Yes | Yes | Yes | Yes | Yes |
| With propensity score matching | No | Yes | No | Yes | Yes | Yes |
| N (total observations) | 2,920 | 1,169 | 2,919 | 1,194 | 2,919 | 1,194 |
| N (number of firms) | 367 | 128 | 367 | 130 | 130 | 130 |
| p (F-test) | < 0.001 | < 0.001 | < 0.001 | < 0.001 | < 0.001 | < 0.001 |

Source: Inoue, Musacchio and Lazzarini (forthcoming)

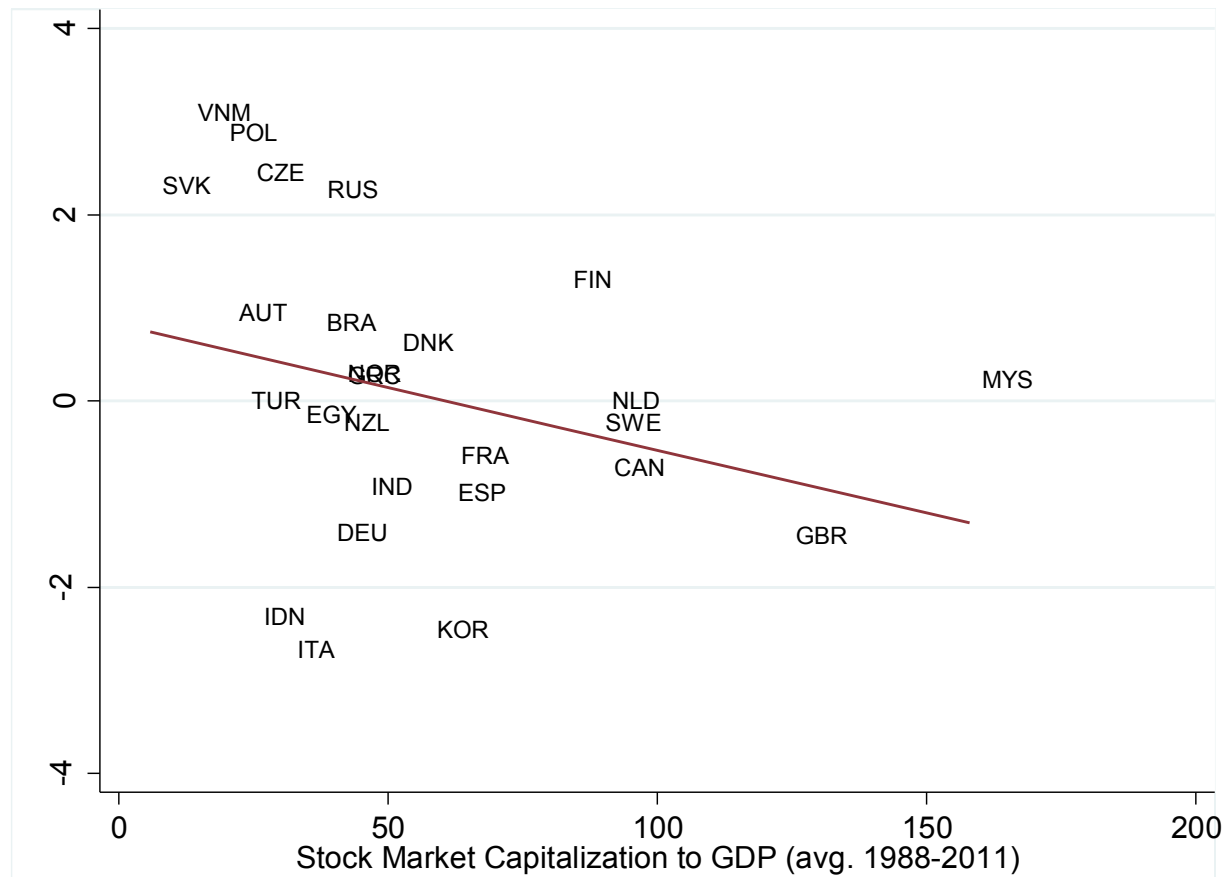
Fixed investment is the dependent variable.

Minority state equity is measured as...

| | Direct or indirect stakes (dummy) | | Direct stakes only (percentage) | |
|--|-----------------------------------|---------------------|---------------------------------|---------------------|
| | (1) | (2) | (3) | (4) |
| Hypothesized effects | | | | |
| Constrained opportunity ×Minority | 53.032 (48.268) | 21.657 (13.371) | 7.114*** (1.697) | 3.767** (1.641) |
| Constrained opportunity ×Minority×Group | -52.350 (48.084) | -18.091 (13.544) | -7.113*** (1.693) | -3.710** (1.659) |
| Controls | | | | |
| Minority | 5.732 (3.927) | 3.433 (3.603) | 0.502 (0.402) | 0.284 (0.381) |
| Minority×Group | -5.906 (3.889) | -5.079 (3.897) | -0.651 (0.401) | -0.438 (0.373) |
| Constrained opportunity | -1.968 (1.457) | -2.706 (1.657) | -2.452* (1.341) | -3.566* (1.875) |
| Group | -0.077 (1.008) | -3.133 (2.974) | -1.014 (1.008) | -5.859 (3.863) |
| Constrained opportunity ×Group | 1.48 (1.761) | 0.317 (2.372) | 1.591 (1.444) | 0.263 (2.890) |
| Ln(Revenues) | -0.768 (0.698) | -2.252** (1.106) | -1.207* (0.661) | -2.278** (0.954) |
| Leverage | -0.002 (0.031) | -6.641 (4.296) | -0.001 (0.029) | -1.387 (3.641) |
| Fixed assets | -4.689 (5.837) | 2.92 (8.051) | -1.477 (3.300) | 7.852 (12.527) |
| Foreign control | 2.677 (2.273) | 2.907 (2.214) | 3.882 (2.487) | 4.447* (2.599) |
| State control | -5.127 (6.091) | -6.810 (6.546) | -0.773 (1.498) | -4.805 (4.237) |
| Merger | 0.313 (1.411) | -5.968 (3.725) | 0.116 (1.453) | -5.649 (3.799) |
| Year, firm, firm–industry fixed effects | Yes | Yes | Yes | Yes |
| With propensity score matching | No | Yes | No | Yes |
| N (total observations) | 1,970 | 861 | 1,969 | 878 |
| N (number of firms) | 314 | 122 | 314 | 124 |
| p (F test) | < 0.001 | < 0.001 | < 0.001 | < 0.001 |

Source: Inoue, Musacchio and Lazzarini (forthcoming)

Leviathan as a minority investor model is more prevalent in countries with shallow financial markets (gov't equity as a substitute for capital markets?)





What can Latin America learn from Korea?

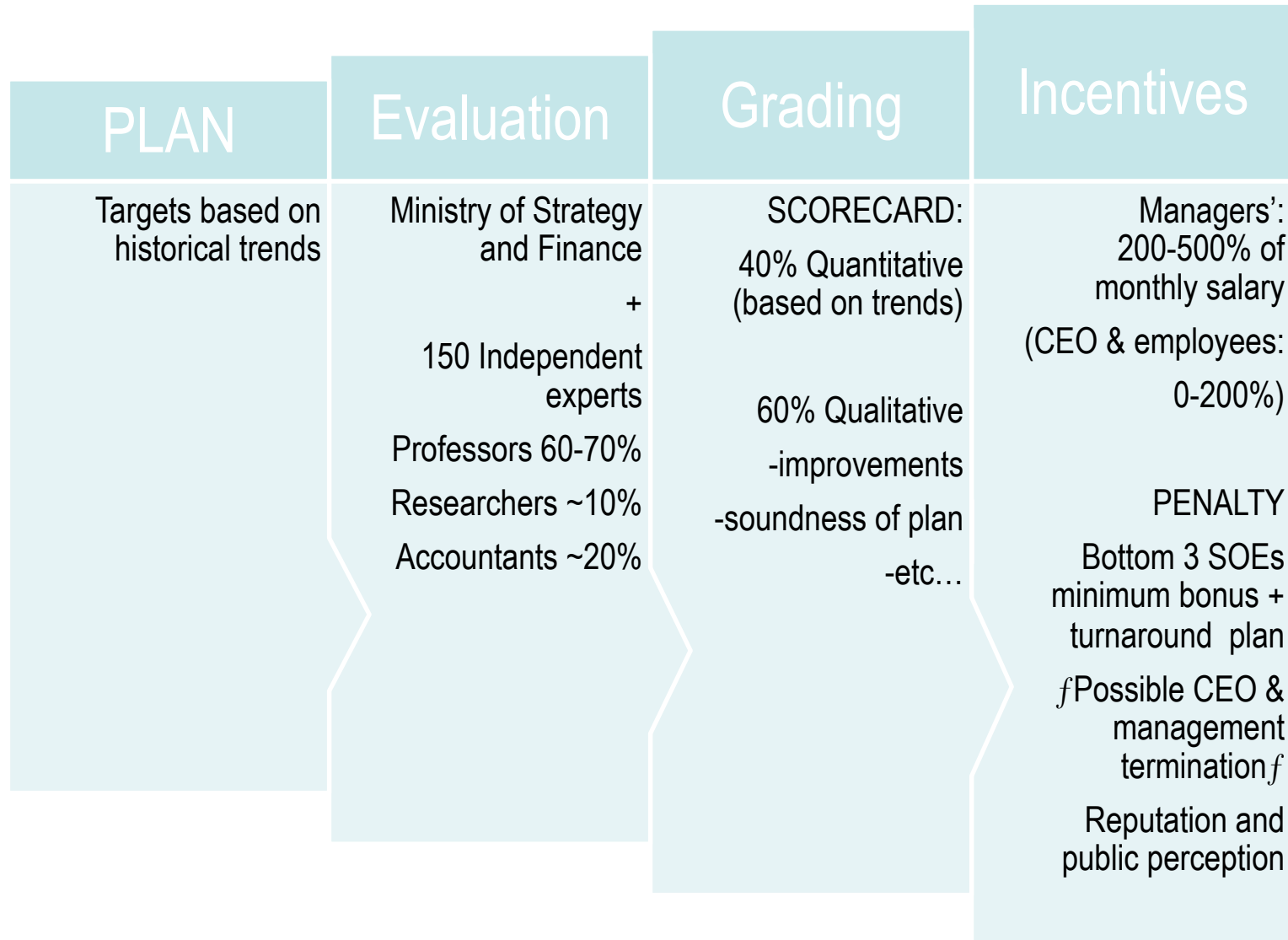
Privatization was also gradual, but more mechanisms for SOE and management accountability

| Year | SOE REFORM |
|-------------|---|
| Pre-1980s | SOEs as policy instruments, run by ministries. BoD packed w/ gov't officials. |
| 1984 | <u>Management Performance Evaluations are introduced</u> (25 SOEs reformed)→ LAT AM + WB tried and failed (contract plans) |
| 1987 | Minor privatization. Korean Electric sells 21% of equity to outsiders. |
| 1993 | Gov't announces new round of privatizations (considering 57 of the 130 SOEs) ... but actual plan is very slow. Korean Telecom sold 20% of equity |
| 1998 | GRADUAL PRIVATIZATION PLAN again <ul style="list-style-type: none"> • Privatization (5 SOEs)- POSCO, Korea Heavy, Korea Chemical, KTB & Textbooks • Gradual Privatization (6 firms)→ KT, KT&G, KEPCO, KOGAS, Oil Pipelin & KD Heating b/c privatization needed regulatory reform • Restructuring of remaining firms (13 firms + 14 subsidiaries) |
| 2004 & 2007 | IMPROVEMENTS IN ACCOUNTABILITY→ Managers and auditing board are accountable to Ministry of Strategy and Finance & the Committee for Management of Public Institutions (academics & private sector experts) + CUSTOMER SATISFACTION SURVEYS |

What is really different in Korea?

- Who manages SOEs for the government? The Committee for Management of Public Institutions → 20 members, including a majority of private sector members
- SOE evaluation mechanisms for:
 - CEOs, autonomous directors, Independent auditors
 - Management's Financial Plans (medium and LT)
 - Customer Satisfaction Survey (Public-service Customer Satisfaction Index) → standardized to allow comparison of SOEs

Performance Evaluation System for SOEs in Korea



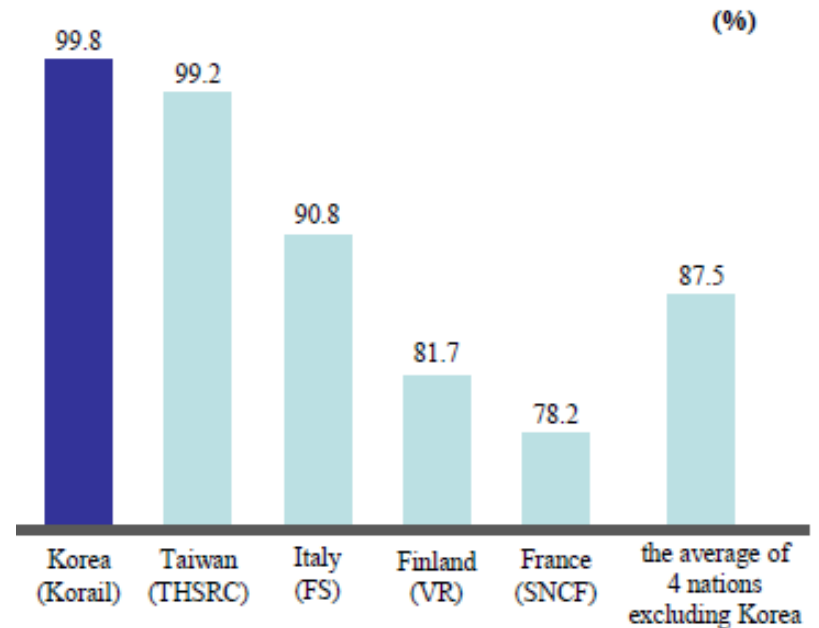
| Year of Evaluation | Bonus Rates as Proportions of Monthly Salaries | | Range of Bonus Rate (actual bonus rate) | | | |
|--------------------|---|--|---|--------------|--------------|--------------|
| | Formulas for determining bonus rates | Important facts | Average | Highest | Lowest | Difference |
| 2001 | 300% + [(Evaluation points - 40) / 20] × 400% | bonus rate. | 282 | 500 (343) | 100 (186) | 400 (157) |
| 2002 | | | 307 | 500 (376) | 100 (234) | 400 (142) |
| 2003 | 180% + [(Evaluation points - 62.5) / 25] × 320% | <ul style="list-style-type: none"> Each point counts for 3.2% increase in the bonus rate Increase in the basic bonus rate(80%) | 342 | 500 (500) | 180 (218) | 320 (282) |
| 2004 | 200% + [(Evaluation points - The lowest point) / (The highest point - The lowest point)] × 300% | Bonus rates depend on the relative scores of the highest and the lowest performers | 378 | 500 (500) | 200 (200) | 300 (300) |
| 2005 | | | 352 | 500 (500) | 200 (200) | 300 (300) |
| 2006 | | | 380 | 500 (500) | 200 (200) | 300 (300) |

Global airport service quality

| | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 |
|-----|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| 1st | Hong Kong | Korea (ICN) | Korea (ICN) | Korea (ICN) | Korea (ICN) | Korea (ICN) | Korea (ICN) | Korea (ICN) |
| 2nd | Korea (ICN) | Singapore | Hong Kong | Malaysia | Singapore | Singapore | Singapore | Singapore |
| 3rd | Singapore | Hong Kong | Malaysia | Singapore | Hong Kong | Hong Kong | Hong Kong | Beijing |

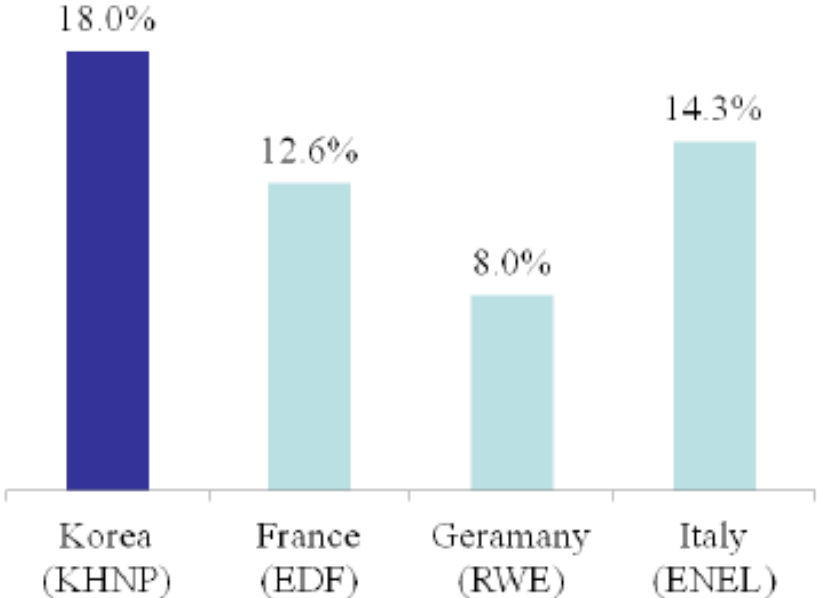
(Data: Airports Council International)

Punctuality of railroad operation



Profitability of the hydro & nuclear power

(* Operating profit / sales)



< Survey Examples [Korea Express way corps, 2011] >

(1) Overall satisfaction index : overall evaluation

- point : 92.7

(2) Service satisfaction index : evaluation for individual factors

- point : 98.8

| Production | Delivery | Facilities |
|------------|----------|------------|
| 91.0 | 93.4 | 94.6 |

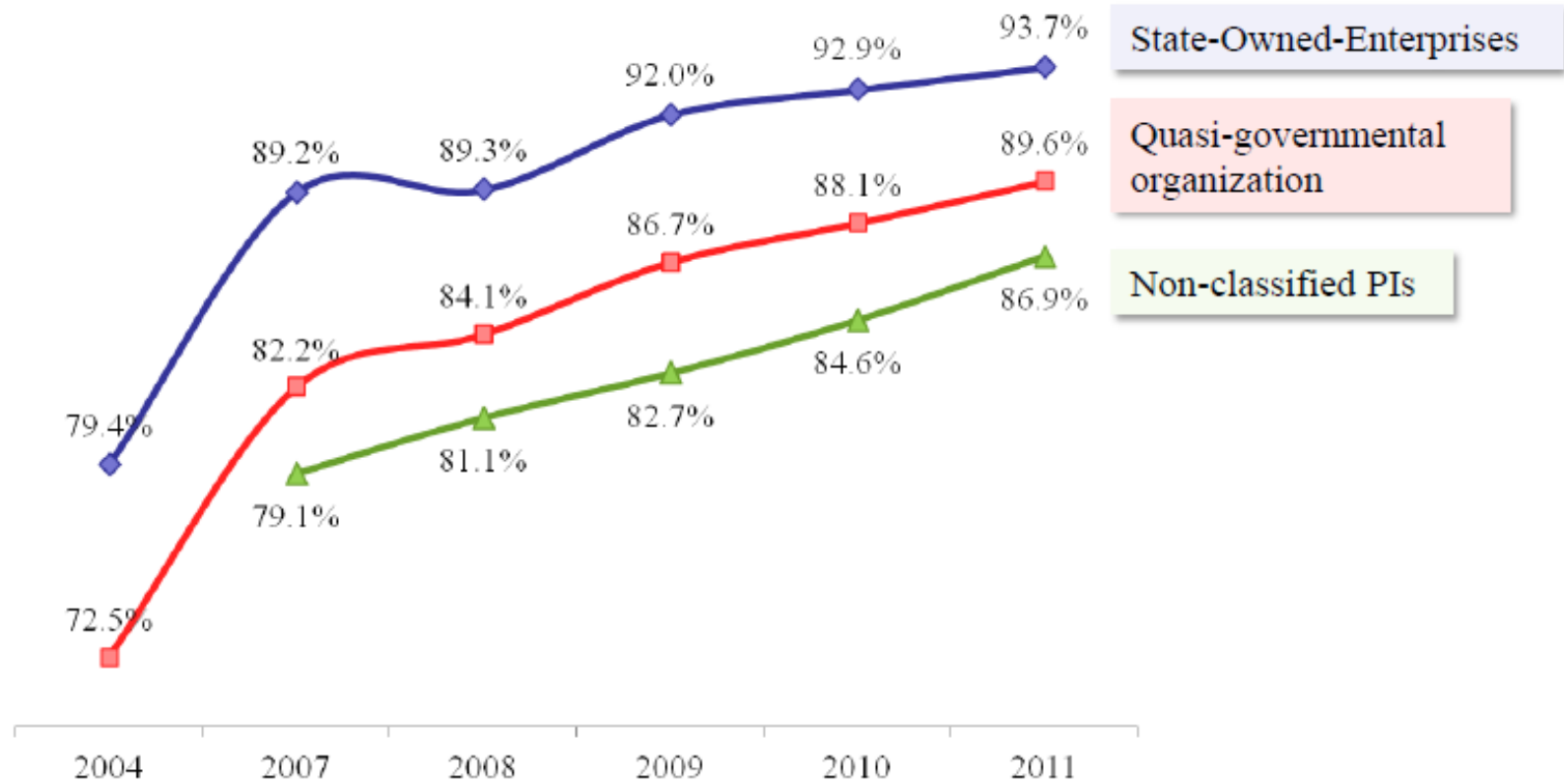
(3) Social responsibility satisfaction index : evaluation for CSR

- point : 92.9



Total points : 94.8

③ Satisfaction of the customers



Conclusion

- State ownership is more resilient than what we thought in the 1990s
- Thus, SOE REFORM CANNOT BE AVOIDED
- Partial privatization resolves many of the evils of the Soviet-style SOEs, yet there is still some political intervention that needs to be curbed
- Korean alternative: market mechanisms are not perfect or absent, then bureaucratic mechanisms to evaluate SOEs (the Performance Evaluation System) could be an option in Latin American countries in which privatization is too costly politically. Yet it requires sophisticated evaluation mechanisms and skilled human capital to perform the evaluations.
- My concern is that some of these reforms were tried in the 1980s in Lat Am and failed b/c of lack of state capacity



Scorecard to evaluate CEO performance

[Table 11] Institution Heads' Evaluation sector and Indicator system

| Sector | Leadership & accountable management | Management efficiency | Major businesses |
|----------------------|--|---|---|
| Weight | 20 | 40 | 40 |
| Evaluation indicator | <ul style="list-style-type: none"> - Leadership (10) - Accountable management(3) - Evaluation by the citizen (2) - Social contribution (5) | <ul style="list-style-type: none"> - Organization and human resources management (10) - Compensation and performance management (10) - Labor-management relations (20) | <ul style="list-style-type: none"> - Major businesses (30) - Continuous development businesses (10) |

Scorecard to evaluate independent directors

[Table 13] Independent Auditor Evaluation and Indicators System

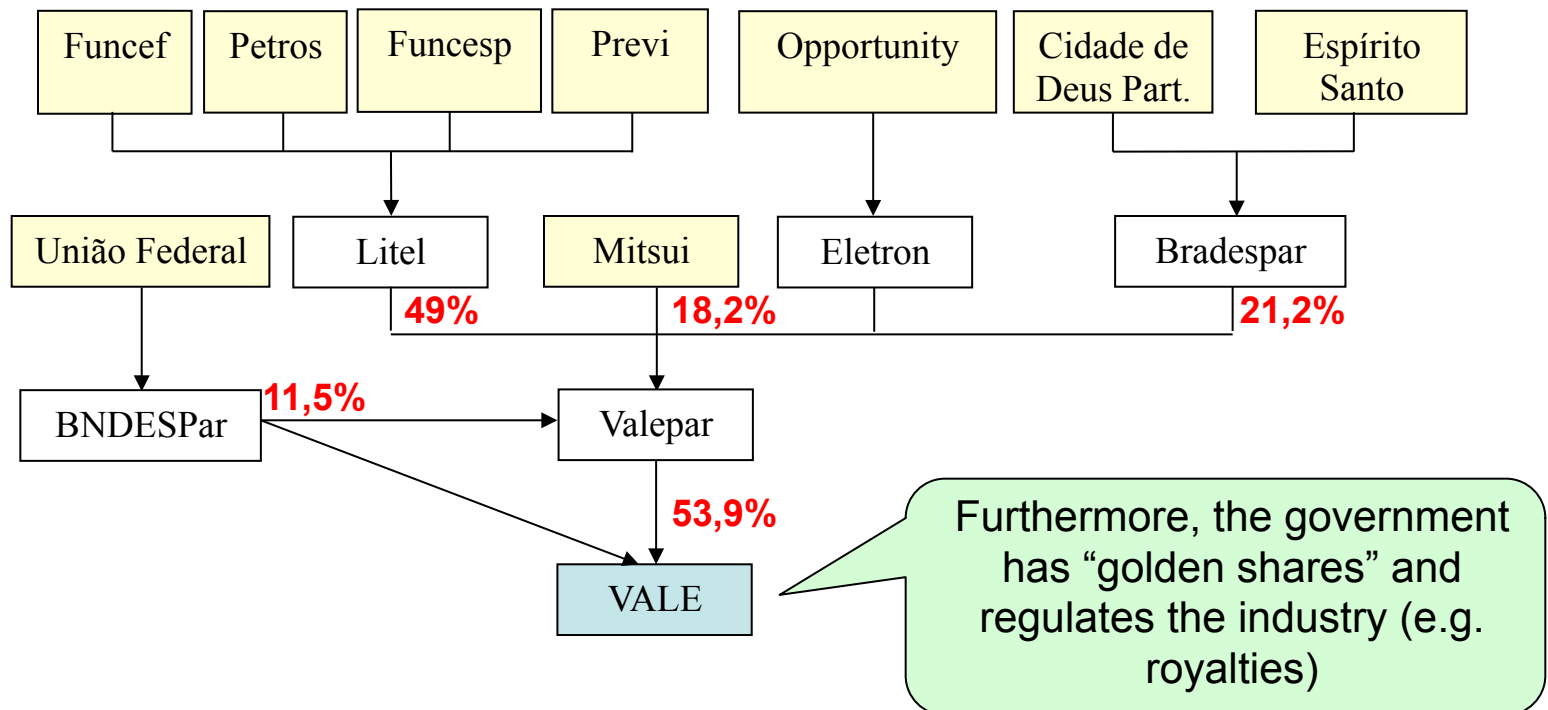
| Evaluation sector | Evaluation indicator | Weight |
|--|--|--------|
| Appropriateness of audit activities & duty fulfillment | - Efforts and results to ensure professionalism, independence, and ethicality of an independent auditor | 12 |
| | - Efforts and results to enhance internal control functions | 12 |
| | - Operation results of an internal auditor and appropriateness of ex-post management | 25 |
| | - Efforts to prevent profligate management in advance and its recurrence | 10 |
| | - Appropriateness of audit activities on compliance with the management guideline and the ex-post management | 10 |
| | - Efforts to ensure transparent and ethic management | 15 |
| Management performance | • Results of the institution management performance evaluation | 10 |

Source: Republic of Korea. Ministry of Strategy and Finance. “Public Institutions in Korea.”

RESIDUAL INTERFERENCE IN VALE (BRAZILIAN MINING FIRM)



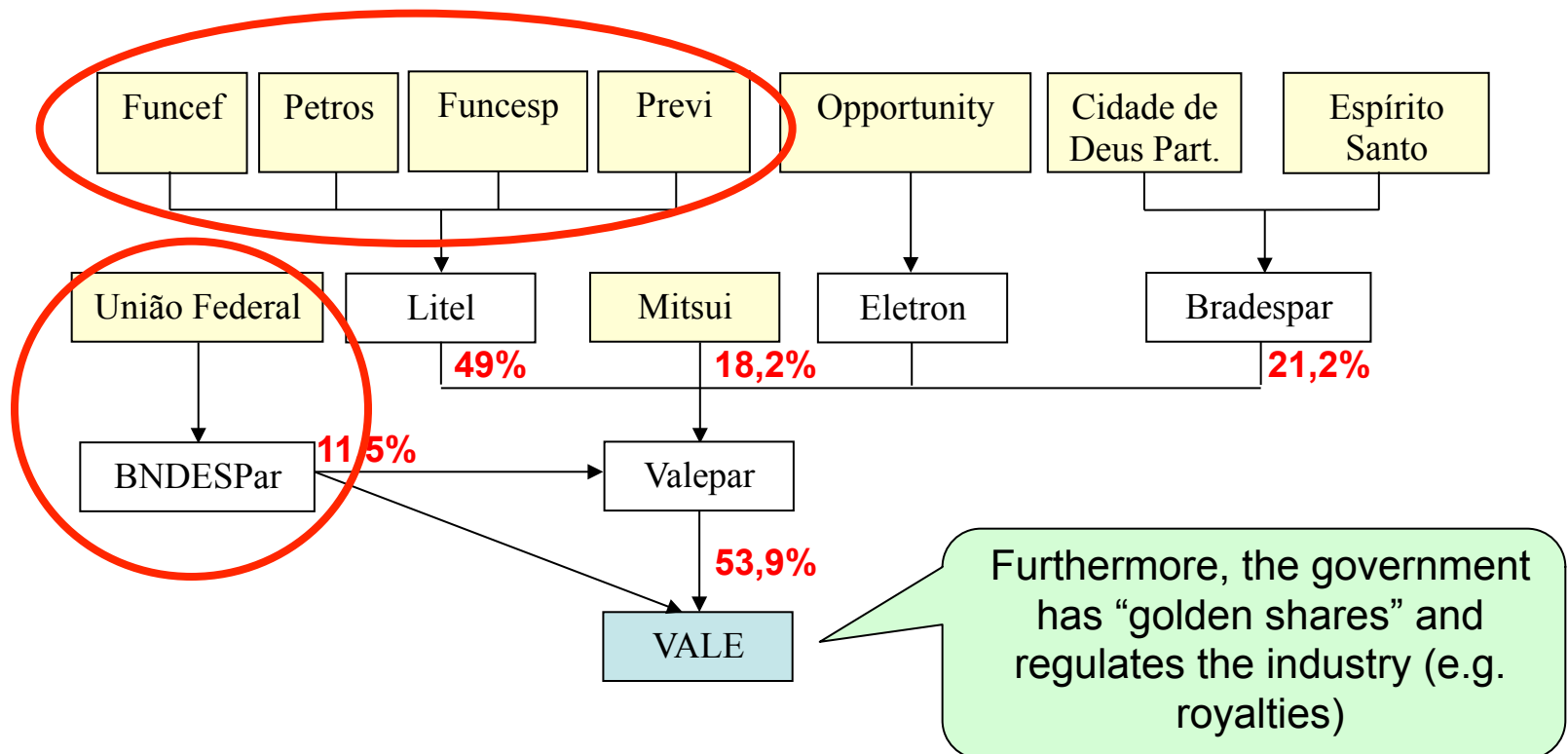
Vale's pyramid in 2009. Percentages refer to voting shares.



RESIDUAL INTERFERENCE



Vale's pyramid in 2009. Percentages refer to voting shares.



THE PROBLEM OF *RESIDUAL INTERFERENCE*



- In 2009, Lula's government pushed Vale to invest in steel mills, avoid layoffs, purchase Brazilian ships...
- President Lula: "I told comrade Roger [Roger Agnelli, then CEO of Vale [pictured above], we need to think about Brazil... Vale cannot simply dig holes and export..."
- Roger Agnelli fired in May 2011 despite announced profits 292% higher than in the first trimester of 2010.
- Agnelli, May 2011: "The mission of the [private] company is to generate results to foster capacity and investments. The mission of the government is different. Completely different" (*Folha de São Paulo*, May 6, 2011).
- Our theory: Residual interference more likely when there are **rents to be exploited (e.g. from natural resources)** and when there is **collusion among state-connected minority shareholders**.

DIFFERENT MODELS WILL LIKELY COEXIST. HOWEVER, SOME CONDITIONS SHOULD IMPROVE THE PERFORMANCE OF EACH MODEL

| | Leviathan as an entrepreneur | Leviathan as a majority investor | Leviathan as a minority investor | Private ownership |
|--|---|---|---|---|
| Externalities requiring economic coordination | Pervasive market failure; difficult to coordinate | High to moderate | Moderate | Low |
| Development of local capital markets | Extremely shallow | Medium to high development of stock market with protections for minority shareholders | Moderately shallow, yet with the presence of firms with good governance practices that could become targets | Highly developed with strong investor protections |
| Additional institutional features | Technical bureaucracy running SOEs (restrained patronage) | Checks and balances against governmental interference in SOEs (effective regulation and some degree of within-sector competition) | Technical bureaucracy running bureaus responsible for industrial policy (restrained cronyism) | Effective government regulation |

What is different about Korea's SOE reform?

Variation in ownership forms in Korea as well

[Table 6] Public Institutions Designation Requirements

| Reference | Contents | Examples |
|-----------|---|--|
| Class 1 | Institutions invested by the government and established in accordance with laws | Credit Guarantee Fund, Korea Transportation Safety Authority |
| Class 2 | Direct and indirect supports by the government exceed the half of the total revenue | Korea Gas Corporation Korea Horse Racing Association |
| Class 3 | Government stake $\geq 50\%$ or $30\% \leq \text{stake} < 50\%$ and de-facto control | Incheon Port Authority Korea Tourism Organization |
| Class 4 | Government + stakes of 1-4 class institutions $\geq 50\%$ or $30\% \leq \text{stake} < 50\%$ and de-facto control | Korea Electricity Power Corporation, Korea District Heating Corporation |
| Class 5 | stakes of 1-4 class institutions $\geq 50\%$ or $30\% \leq \text{stake} < 50\%$ and de-facto control | Korail Distribution, Korea Southern Power |
| Class 6 | Established by 1-4 class institutions and invested by the government or the mother institutions that established the institutions | Korea Electrical Engineering & Science Research Institute |

Evaluation systems

- SCORECARD...



Problems in Latin America

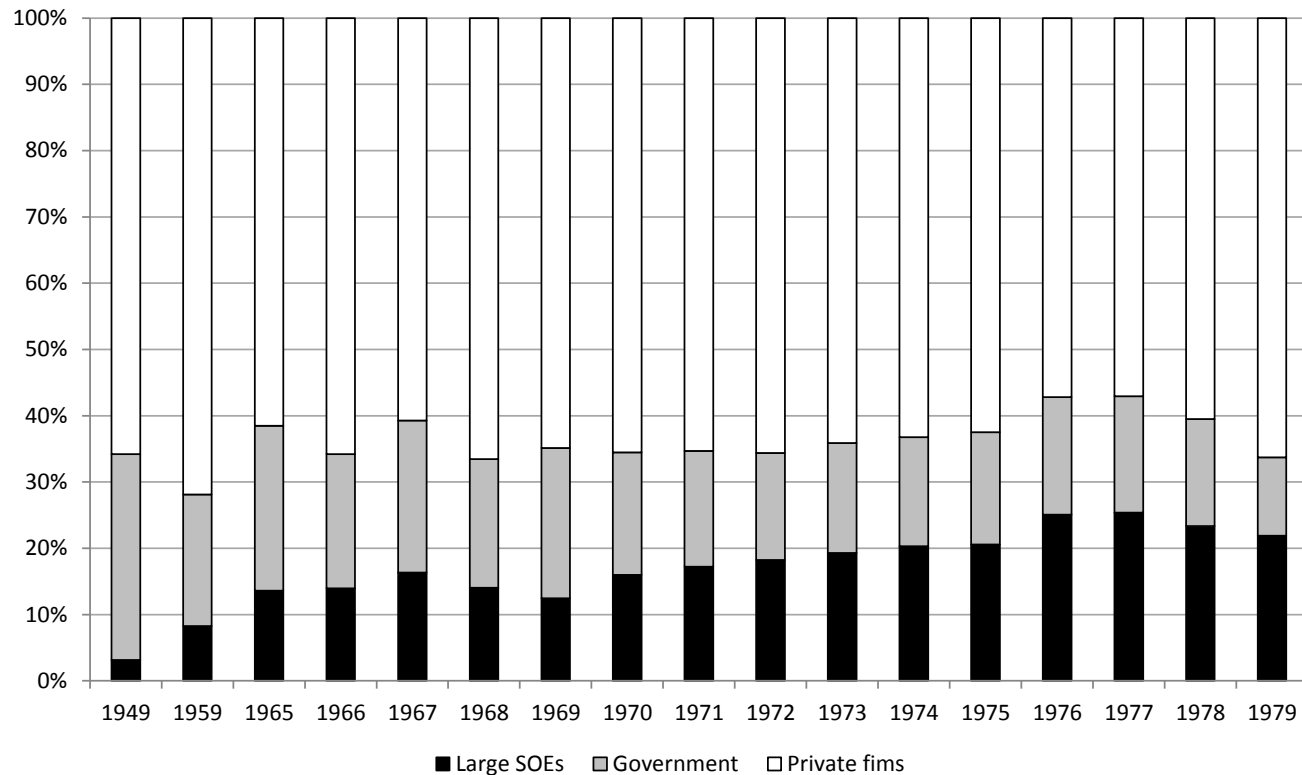
- Not all countries have adopted new models of state ownership. There is enormous variation in the governance of SOEs
- Many countries thought the solution was to privatize public services and did not build the regulatory infrastructure that goes with it, thus creating rents for private parties, under-provision of public services and/or overpricing.
- Variation in governance: Examples... Petro vs. Pemex... then political intervention
- Variation in relations with government: ALSO SHOW TABLE OF RELS with government for three companies
- Table with NOCs

THANK YOU!

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SOEs AND FIXED CAPITAL FORMATION

Fixed capital formation in Brazil originated from large SOEs, government units and private firms



Source: Original data from Trebat (1083)