

Managing to Keep the Lights On (and the Profits Flowing): Political Risk Identification, Mitigation and Analysis in Electricity Generation

Witold J. Hennisz and Bennet A. Zelner*

The Wharton School
University of Pennsylvania
hennisz@wharton.upenn.edu

and

McDonough School of Business
Georgetown University
zelnerb@georgetown.edu

Abstract:

This paper adds to the burgeoning literature on privatization by moving beyond the increasingly refined studies that have been done of privatization “triggers” and efficiency consequences to consider the ongoing challenges faced by private infrastructure investors as a result of the inherently political nature of the industries in which they operate. We draw our insights from interviews with over 150 managers, political officials, bureaucrats and consultants in the electricity sectors of 10 nations. We begin by examining the decision by politicians to open the sector to private participation in order to avert increasingly severe power shortages and public unrest. We then highlight politicians’ subsequent attempts to redistribute investor returns to consumers during episodes of broader economic or political crisis. We examine the set of precipitating factors that were responsible for the shift from “favorable” to “adverse” bargaining with political actors, and offer a detailed analysis of how country-level institutions, firm-level positions and actions, and commonly employed strategies at the project level affect investor fortunes during periods of adverse bargaining. We also suggest that a pattern of alternating favorable and adverse bargaining periods is an intrinsic feature of doing business in infrastructure industries. We refer to this pattern as the “infrastructure bargaining cycle.”

* We thank our anonymous interviewees for sharing their insights with us and the International Centre for the Study of East Asian Development, The Reginald H. Jones Center for Management Policy, Strategy, and Organization, The Management Department of The Wharton School, and the McDonough School of Business for their generous financial support. We also acknowledge the research assistance of Seth Abramowitz, Danielle Demianczyk, Eugene Kakaulin, Michele Konrad, Dan Matisoff, David Morales, Jack Sheu, Bartłomiej Szewczyk and Anna Yen.

1. Introduction

Private participation in industries that were previously owned and operated by the state has increased dramatically over the past two decades. According to Megginson and Netter (2001), cumulative privatization proceeds have surpassed \$1 trillion, while the ratio of state-owned enterprise output to GDP in low and lower-middle income countries has fallen by approximately 50 percent. Scholars in fields including economics, finance, management, organizations and political science have recognized the importance of this trend, examining such topics as the *ex ante* conditions leading to private participation, as well as the *ex post* efficiency consequences of such participation.¹

The current paper adds to this burgeoning literature by moving beyond these increasingly refined studies of privatization “triggers” and efficiency consequences to consider the ongoing challenges faced by private infrastructure investors as a result of the inherently political nature of the industries in which operate.² We focus specifically on electricity generation, an industry of substantial interest in its own right because of its enormous economic importance³ as well as recent high-profile political crises following supply shortages and price spikes in such varied locales as California, India, Brazil, Indonesia and the United Kingdom. The electricity sector also offers a broad range of experiences with private participation: approximately 67 countries with widely varying political institutions, regulatory systems and ideological orientations opened their electricity generation sectors to private participation between 1985 and 1995, and over 193 private firms with widely varying market and non-market positions and capabilities have

¹ See Megginson and Netter (2001) for a comprehensive literature review.

² Emmons (2000) undertakes a similar effort.

³ AES claims that electricity is the second largest industry in the world with \$800b in annual revenue.

invested in these countries using a diverse set of ownership structures and project designs. We exploit these differences to identify the country-, firm- and project-level factors that shape the fortunes of private investors in the years after they enter the sector.

The intense political scrutiny that infrastructure provision receives results from the wide consumption of infrastructure services and their role as a critical input to economic growth and development. In the words of Carlos Bastos, a chief architect of Argentina's electricity reforms, "All government administrations are always interested in public utilities, whether privately- or state-owned" (Bastos & Abdala, 1993:295). Another industry participant with whom we spoke affirmed Bastos' view, proclaiming that "Electricity is too big on the surface. Politics will intervene."

High political salience combines with economic and political volatility to trigger periodic rounds of bargaining between infrastructure firms and the government about the terms of service provision. Investors considering entry into a given market must therefore assess the likelihood of a trigger event, as well as the institutional determinants of the likely political response to such an event, their firm's ability to withstand the resulting renegotiations, and the effects of the project-level safeguards intended to minimize the costs of such a renegotiation.

Our analysis has its roots in an established interdisciplinary literature that focuses on the "bargaining power" of the multinational firm relative to a host country government (Biersteker, 1980; Encarnation & Vachani, 1985; Fagre & Wells, 1982; Kobrin, 1987; LeCraw, 1984; Poynter, 1985; Svejnar & Smith, 1984; Vernon, 1977). This literature argues that investors must recognize the costs and benefits to such a government of renegeing on an initial deal once a firm capital is sunk in the ground or technology has diffused locally. Managers are thus advised to

take *ex ante* hazard-mitigating actions that maintain their bargaining power over the life of the investment. Vernon summarizes the core argument as follows:

“As long as a foreign-owned goose can still lay golden eggs, ... the policy of most developing countries has been to squeeze the goose, not to destroy it or to have fly away. Accordingly, multinational enterprises that perform a unique function, such as providing access to some difficult technology or some otherwise inaccessible foreign market, have generally been less vulnerable to government pressures, while subsidiaries whose withdrawal is thought to entail very little national loss have been more vulnerable” (1977: 171-172).

Wells and Gleason (1995) extend this logic specifically to infrastructure industries. They argue that such characteristics as the small potential for technological upgrades, foreign exchange earnings and additional influxes of capital, combined with the immobile, capital-intensive nature of the assets and largely generic skills required to operate them, result in low investor bargaining power. They further argue that the costs of foreign ownership of infrastructure assets to a host country government are relatively high due to the indefinitely long dividend stream, the amount of foreign exchange required for dividends, the broad customer base, and the high political visibility and vulnerability of infrastructure deals (especially to opposition parties). Wells and Gleason thus suggest that in order to bolster their bargaining power, investors should take protective actions such as purchasing insurance, seeking government guarantees, minimizing equity and maximizing debt (because debt claims are more likely to be paid in event of bankruptcy), and avoiding improprieties, *inter alia*.

Although our analysis shares with this perspective a common emphasis on bargaining between investors and political actors, we extend the existing literature by identifying specific country-level political, regulatory and ideological factors that influence the severity of subsequent renegotiations; firm-level factors that shape a firm’s sensitivity to these country-level factors; and the feedback effects of project-level measures that are commonly employed to

safeguard an investment from renegotiation. We also move beyond the focus on *ex ante* leverage-enhancing and contracting measures to consider longer-term cycles of relative bargaining power. We argue that while investors should indeed prepare for a shift from a position of relative strength (resulting in “favorable bargaining”) prior to sinking capital to one of relative weakness (resulting in “adverse bargaining”) afterwards, those that survive the swing will again experience a shift in which they ascend to a strong bargaining position.

Sound business strategy requires firms to manage both parts of this “infrastructure bargaining cycle.” We therefore attempt in this paper to identify the tools necessary for managers to succeed over the full cycle: to keep the lights on and the profits flowing. That adverse bargaining will occur at some point is a near certainty in a politically charged, capital-intensive industry like electricity, only well-managed firms will survive the ensuing shakeout. One executive that we interviewed captured the strategic implications concisely, explaining that his company, “was in the first round of a back and forth. The opportunity will come during the coming power shortage. We will push them to the end and then they will have to do something.”

We begin our analysis by examining the original impetus for privatization, which resulted in a period of favorable bargaining from the perspective of private investors. During this period, political actors pursuing their own self-interest sought to avert increasingly severe power shortages and public unrest by offering attractive bargains in order to stimulate new construction. However, we also observe a subsequent transition to a period of adverse bargaining, during which politicians sought to redistribute investor returns to consumers during episodes of broader economic or political crisis. We next examine the set of precipitating factors that led to the shift from favorable to adverse bargaining and offer a detailed analysis of the country-level risks, the firm-level implications of those risks, and the consequences of project-level measures that are

commonly employed to safeguard the investor. We conclude with a look ahead to the next round of favorable bargaining. While the examples that we provide herein, drawn from interviews with over 150 managers, political officials, bureaucrats and consultants in 10 nations⁴ are specific to the electricity sector, we believe that the propositions we derive generalize to other infrastructure sectors, and to some degree to any emerging market setting in which an investor places substantial sunk capital, R&D or brand-name assets at risk.

2. Favorable Bargaining and the Impetus for Privatization

In this section, we describe the original impetus for the opening of electricity markets to private participation. Our objective in doing so is partly to provide general background for what follows. However, the adoption of privatization policies in the countries that we studied is also of interest because it provides an example of favorable bargaining. State ownership and operation of electricity systems led to persistent inefficiencies. These inefficiencies culminated in an operational or financial crisis when the state-owned provider was unable to adapt to exogenous shifts in demand or supply conditions. Political actors then turned to the private sector, offering highly favorable contracts in order to induce investors to enter uncertain new markets.

2.1. *White Elephants*

The roots of the inefficiencies associated with state ownership lay in political actors' use of SOEs to accomplish explicitly political objectives. Perhaps the most prominent symptom of this phenomenon was SOEs' construction of "white elephants," infrastructure projects that served the self-interest of political actors by delivering economic benefits—typically employment—to a narrow, politically salient constituency, but whose more widespread

⁴ Argentina, Brazil, Chile, the Czech Republic, Hungary, Indonesia, Malaysia, the Philippines, Poland and Thailand.

economic benefits such as improved service were dubious (Baron, 1991; Cadot, Roller & Stephan, 1999; Henisz & Zelner, 2001; Hird, 1991; Shepsle & Weingast, 1981). One interviewee described to us the quintessential white elephant, a power facility that he had just purchased from the government in a neighboring country that was full of useless marble and soaring atriums that were good for the filming of the movie *Highlander* but little else.

2.2. *Political Pricing*

A second source of inefficiency under state ownership was the price-setting mechanism. Instead of setting tariffs for different groups of consumers based on cost, political actors typically set tariffs to accomplish redistributive objectives. This pricing behavior was most evident in communist and socialist regimes, where residential prices were typically set much lower than cost and industrial prices much higher, despite the lower unit cost of serving industrial customers. For example, in Hungary, the Czech Republic and Poland, residential consumers received electricity 35 to 45 percent of the price charged to industrial users in 1989, as compared to 1997 averages of 169 percent for OECD countries and 109 percent for the world (International Energy Agency, 1999b). Such patterns were evident outside of the Eastern Bloc as well; according to Bastos and Abdala (1993), the Argentine system of pricing was explicitly employed to accomplish a multitude of political objectives including income redistribution and the reduction of costs for favored industries and geographic constituencies. Baer and McDonald make a similar claim regarding pricing in Brazil (1998).

Perhaps even more damaging to SOE's financial health than tariff imbalances was the practice of freezing prices to control inflation, which typically led to a drastic decrease in the real price of electricity often at a time of sharply increasing real input prices. The Allende government in Chile pursued such a policy during the hyperinflation of 1971 – 1973 (Soto,

1999). Similarly, as fuel costs in Argentina soared in the 1970s and early 1980s, the real price of electricity fell by almost one quarter (Bastos et al., 1993). In Brazil, the government used electricity prices as one of its primary inflation-fighting tools beginning with the first oil shock in 1973 (Baer et al., 1998).

2.3. *Symptoms of Inefficiency*

The inefficiencies associated with state ownership persisted for several decades. During this period, SOEs' inability to raise sufficient revenue to finance economically necessary new construction, or even maintain existing facilities properly, resulted in increasingly obsolete plants and equipment. For example, while network losses average 6.7 percent in the European Union and 7.2 percent in the U.S., line losses in the ten countries that we studied ranged in the 1980s from a low of eight percent in the Czech Republic, to between 10 and 14 percent in Argentina, Brazil, Chile, Hungary, Malaysia, the Philippines, Poland and Thailand, and as high as 19 percent in Indonesia (International Energy Agency, 1999a). We also repeatedly heard stories and saw evidence of state-owned generators employing decades-old technology with low thermal efficiency and high pollution output.

Beginning in the late 1980s, exogenous shifts in demand and supply conditions strained inefficient state-owned systems to the point of crisis. On the supply side, technological advances in generation and factor cost changes such as those associated with the oil crisis underscored the growing inadequacies of existing state-owned systems. On the demand side, events including the collapse of communism and the Asian miracle spurred demand growth, creating an even more pressing need for substantial capacity expansion. In Southeast Asia, for example, the Philippines and Malaysia exhibited respective average annual real GDP growth rates of 4.7 and 6.8 percent between 1985 and 1990; the corresponding figures for Thailand and Indonesia were 10.3 and

16.8 percent (Asian Development Bank, 1999). From 1984 to 1998, Chilean real per capita GDP increased an average of over 6 percent per annum and Argentina experienced real per capita growth of over 5 percent per annum in the 1991-98 period.

The combination of inefficient investment, noncompensatory pricing and, especially in Asia, soaring demand, created enormous debt burdens for SOEs. In Thailand, the debt held by the national electric utility, EGAT, had grown to more than US \$4 billion by 1990—equal to over one quarter of the total debt held or guaranteed by the government. Similarly, in the Philippines, the cost of meeting capacity forecasts would have meant additional government spending of US \$0.5 billion per annum for eight years—equivalent to seven percent of GDP—and as much as US \$35 billion over 22 years (Tiglao, 1993). In Malaysia, peak demand was forecast to rise from 4,545 MW in 1992 to 9,517 MW in 2000, and 35,428 MW in 2020 (Power Asia, 1993), requiring projected investment of more than US \$40 billion (Power Asia, 1992). Forecasts made in 1990 for Indonesia called for 12,000 MW of new capacity to come online by the year 2000, compared to existing infrastructure of 11,000 MW (Independent Power Report, 1990). Estimates of the amount of capital needed to finance the expansion ranged as high as \$20 billion (Australian Financial Review, 1992).

The situation was not much better in other regions. Badaraco et. al. (1996) estimate that unnecessary investment in Argentina during the 20 years preceding the Menem presidency amounted to US \$25 billion—equal to more than one-quarter of the government's total debt and one half of its foreign debt. In Brazil, the government was already supporting US \$20 billion of power sector debt in 1993, and was unwilling or unable to assume new liabilities to meet projected demand increases that were expected to cost between \$7 billion (Independent Power Report, 1993) and \$20 billion *per annum* for the next twenty years (Environment Watch Latin

America, 1993). In Hungary, proponents of privatization as early as 1990 highlighted the inability of the state, given its high debt levels, to finance the necessary US \$1.5 billion in new construction and refurbishments forecast for the following decade (Newbery, 1998).

2.4. Crisis

The inability of the state to meet the need for new capacity triggered power shortages. In Thailand, reserve margins fell from approximately 40 percent in 1985 to a low of just over 10 percent in 1989. In the Philippines, brownouts often ranged from four to 10 hours a day in 1989; in 1992, excess demand corresponded to 48 percent of total system capacity. The crisis eventually reached such heights that the government leased nuclear submarines and ice breakers from Russia and employed their reactors as floating generators (Macdonald, 1992).⁵ In Malaysia, the power supply shortage was as high as five percent of peak load, and in September 1992, 80 percent of the population on Peninsular Malaysia suffered a blackout for 33 hours. In Indonesia, sporadic blackouts occurred in both 1991 and 1997 as the rate of new capacity construction lagged demand growth. Argentina's 1989 power crisis resulted in rolling black-outs, restrictions on street, storefront and other public lighting, curtailment of state-owned enterprise output and voltage reductions of 10 percent in order to prevent systemic the collapse of the entire system (Bastos et al., 1993). In Central Europe, the crises were more systemic in nature and the sale of electricity generation was seen as an opportunity to raise capital to pay off unsustainable debt burdens (Hungary), provide a needed infusion of revenue prior to an election (the Czech Republic) and address the costs of meeting European Union pollution regulations (all three countries).

⁵ A similar plan has been proposed by the Bush administration for New York City and San Francisco in the summer of 2001 (Kahn, 2001).

2.5. *Favorable Bargains*

Political actors responded to power shortages, SOEs' growing debt burdens and the broader macroeconomic pressures that they faced by turning to the private sector. They offered investors lucrative long-term contracts in which the government, often through the incumbent SOE, assumed virtually every category of investment risk. Early private entrants often received the most attractive bargains.

The first IPP project in the Philippines, undertaken by Hopewell Pagbilao, provides a good example. The Philippine SOE, NAPOCOR, signed a power purchase agreement (PPA) with Hopewell Pagbilao in which NAPOCOR assumed the market risk through a "guaranteed offtake" clause (also known as a "take-or-pay" provision); exchange rate risk through dollar-indexed payments; currency conversion risk through dollar-denominated payments in an offshore account; fuel supply risk through the guaranteed free provision of coal; regulatory risk through an agreement to compensate Hopewell Pagbilao fully for any adverse changes or, at Hopewell Pagbilao's discretion, purchase the plant at dollar cost plus a minimum guaranteed return; and the risk of political force majeure through take-or-pay clauses that specifically accounted for changes in the political regime. Hopewell Pagbilao bore only the operating risk.

Another good example comes from Argentina, where the government offered ten-year guaranteed minimum contract prices to firms that purchased the first privatized generating companies (Bastos et al., 1993), despite the government's stated intention of a rapid transition to a functioning wholesale market for electricity. Similarly, in Hungary, the government offered early investor PowerGen a PPA with a specified price for output from its Csepel plant, in contrast to later PPAs that offered only a regulated price.

Reported rates of return on such projects are subject to considerable controversy based on the currency of reporting, the range of costs considered as part of the project's capital base and the like. Nevertheless, consistent reports of returns on equity in the 25 to 40 percent range for successful projects during the favorable bargaining period appear to have some validity.

To be sure, these deals were themselves often subject to adverse bargaining in subsequent years, as discussed in detail below. That such adverse bargaining later occurred despite the ostensibly strong *ex ante* safeguards in place underscores the need for investors to take a long-term view of the infrastructure bargaining cycle, rather than presume that sound strategy consists entirely (or mainly) of *ex ante* moves. A foreign private investor that we interviewed in Hungary put it well: "Hungary appeared to have quite a decent set of laws... [but] rolling forward to the application of these laws has been quite different."

3. Precipitating Factors for Adverse Bargaining

We now shift focus from the power crises that spurred privatization and the favorable bargains that political actors made with early investors to the broader economic and political crises that spurred subsequent adverse bargaining. In this section, we specifically consider the specific types of exogenous shocks that induce political actors to initiate adverse bargaining. In the following three sections, we discuss the country-, firm- and project-level factors that influenced the severity of the renegotiations triggered by these shocks.

3.1. Macroeconomic Shock

The first and perhaps most obvious form of exogenous shock is a macroeconomic crisis, which may reduce both expected power demand and the government's financial ability to honor its contractual commitments to private investors. The most prominent example of such a shock in the cases that we studied was the East Asian Financial crisis of 1997. In Thailand, where the

crisis started, the currency ultimately lost 40 percent of its value and the stock exchange 82 percent. Economic growth plunged from 8.6 percent in 1995 to -8.0 percent in 1998. The resultant decline in electricity demand was severe: in contrast to the double-digit-growth rates of the prior decade, power demand in Thailand actually declined by 2.4 percent in 1998. Moreover, the annual reserve margin for the electricity system, which had averaged 8.6 percent during the period 1990-97, was forecast to rise to 50 percent by the year 2000 (National Energy Policy Office, 1999). The other Southeast Asian countries that we studied suffered substantial declines as well. In Malaysia, the reduction in demand resulted in overcapacity as high as 55 percent in the year following the crisis (Global Power Report, 1998). In the Philippines, electricity consumption declined by 2.5 percent in 1998, as compared to previous growth rates of 12 percent per annum.

The reduction in demand strained existing PPAs. The guaranteed offtake clauses in the contracts left cash-strapped government entities with contractual obligations to pay private generators for unneeded electricity. To citizens and interest groups in the four countries, which were already experiencing social and political strife as a result of the severe economic downturn, the PPAs appeared simply to place added fiscal strain on struggling economies with little apparent near-term benefit. Political officials were thus left in the tenuous position of having to choose between honoring the contracts with the risk of a political backlash, or renegotiating the contracts in order to increase popular support.

Several of our interviewees captured the prevailing attitudes in the post-crisis years well. In Thailand, one commented that “economists always say that with competitive markets, consumers get the benefit. Not the case here. After the crisis, who pays? Consumers.” Another investor quipped, “Who pays for 40 percent overcapacity? The consumer....The problem is the

PPAs guarantee a return.” In Indonesia, one interviewee explained that since street protests had occurred in opposition to rate increases in May 1998, “tariff increases are now seen as a key factor that can lead to political change.” Another Indonesian interviewee elaborated: “Parliament will not accept using price increase to provide efficiency in electricity. You have to consider public sentiment... If we talk about private power, the only response from the public is anger.”

***Proposition 1.** Adverse bargaining is more likely to occur following a macroeconomic shock.*

3.2. Political Transitions

In addition to a macroeconomic shock, a political transition—either scheduled or unscheduled—may also lead to adverse bargaining. The end of the Suharto Administration in Indonesia and the Estrada regime in the Philippines, as well as the 2001 election in Thailand and the upcoming elections in Central Europe, put electricity reform efforts on hold as politicians sought to avoid angering key constituencies. In Hungary, the 1997 election campaign led to the postponement of a scheduled price increase. In 2001, with the election of 2002 looming and Hungary in danger of exceeding the inflation target set for EU accession due to a surge in the price of imported oil and gas, the new Minister of Industry and Trade disregarded the calculations of the Hungarian Energy Office showing a need for a 12 percent price increase and decreed that average end-user electricity prices could not increase by more than 6 percent. One investor commented, “the existing government just wants to be the good guys in the year before the election.”

***Proposition 2.** Adverse bargaining is more likely to occur in anticipation of or following a political transition.*

3.3. Sector-Specific Shocks

Sector-specific shocks to demand or supply may also lead to adverse bargaining. Examples include a Christmas 1997 heat-wave in Brazil that led to unprecedented electricity demand; a hundred-year drought in Chile in 1998 (Basanes, Savvedra & Soto, 1999); a glut of natural gas in the Chilean market caused by the completion of two pipelines from Argentina in 1999; the current drought in Brazil; and the effect of 2000/2001 global spike in the price of natural gas on the price of electricity in Hungary. In each of these cases, a sudden, unanticipated change in demand or supply conditions led governments to violate their contracts with private power generators in order to soften a blow to consumers.

***Proposition 3.** Adverse bargaining is more likely to occur following a sudden, unanticipated change in supply or demand conditions.*

3.4. Level of Sectoral Development

Another set of precipitating factors stems from the evolution of sectoral reform in most countries. While policymakers generally claim support for a competitive electricity market that ensures reliable supply at low cost, competition means different things to different people at different times. Further, the transition from a state-owned monopoly model to a competitive market is a difficult one. As discussed above, initial investors often seek assurances regarding prices and risks that are inconsistent with a competitive market in which price is determined by supply and demand. Therefore, private participation generally begins with long-term power purchase agreements. Later, as the institutional supports for a competitive market develop, the government seeks to shift from a market of contracts to a hybrid market where some fraction of electricity is purchased on a wholesale or spot basis.

In countries lacking strong demand growth that allows contracts to diminish rapidly as a share of total electricity sales, the existence of long-term contracts that were necessary to attract private sector investors in the first place later serves to impede further liberalization.

Furthermore, the prices specified in these contracts are typically far higher than any spot market price and include risk premia based on the perceived level of risk faced by the investor at the onset of the reform effort. Especially in the presence of another precipitating factor, contracts that are seen as holding up additional reforms and paying unjustified dividends to overseas investors make particularly attractive targets for politicians.

***Proposition 4.** Adverse bargaining is more likely to occur as a market evolves from a market of contracts to a wholesale or hybrid market model.*

4. Country-Level Institutional Factors

The precipitating factors discussed in the previous section create incentives for political actors to initiate adverse bargaining with private infrastructure investors. However, country-level institutional factors also shape the infrastructure bargaining cycle. By conditioning political actors' behavior, institutions determine both how severe an economic or political crisis has to be to trigger a round of adverse bargaining, and also the likely severity of the adverse bargaining outcome.

4.1. National Political Institutions.

The institutions at the highest levels of government determine the relative ease with which political actors can respond to the varying incentives that they face at different points in time, thereby influencing the level of policy stability. Institutional arrangements that create more checks and balances impose stronger constraints on political actors, making it more difficult to change investment policies or violate contractual terms, and thereby providing better safeguards

to investors. In contrast, in countries with weak checks and balances, policy changes are easier for political actors to effect and contractual enforcement is weaker. A high concentration of political power in the hands of a single actor or party typically results in the latter sort of institutional environment. The specific hazard that investors face in this case is that, when the dominant political actor or party faces incentives to initiate a round of adverse bargaining, it will be able to do so with relative ease.

As an example, compare the treatment received by investors in Thailand and the Philippines to that received by investors in Indonesia and Malaysia following the 1997 financial crisis. At the time of the crisis, the 393-seat lower house of the Thai legislature was divided among 10 parties. This heterogeneity of partisan affiliations in the legislature ensured that any new policy proposal or change in the *status quo* policy required the approval of multiple parties with their own competing interests. Similarly, the Philippine post-crisis government faced a razor-thin majority that relied on the support of independents and other allies in both chambers, as the controlling party held 110 of 221 seats in the lower legislative chamber and 10 seats in the 22-seat senate.

The institutions in Malaysia and Indonesia looked quite different. The Prime Minister of Malaysia at the time of the crisis, Dr. Mahatir, had been in power since 1982, and his party, United Malays National Organization, had been in power since Malaysia gained its independence in 1965. Moreover, several of the ostensible opposition parties in the Parliament had been created by the United Malays National Organization and voted with it as members of the National Front Coalition. The situation in Indonesia was even more clear-cut: President Suharto was elected by a People's Consultative Assembly to which he had appointed 575 of 1000 members, and his Golkar Party controlled no less than 64 percent of the remaining elected

members who also constituted the lower legislative chamber. Moreover, in neither country was the judiciary considered truly independent.

Largely as a result of the stronger checks and balances created by partisan heterogeneity, investors in Thailand and the Philippines fared considerably better following the crisis than investors in Malaysia and Indonesia did. In Thailand, investors had assumed the exchange rate risk under their original contracts, but the Thai government willingly assumed a considerably larger fraction of the costs of the currency depreciation than it had to under the contracts. Our interviewees reinforced a notion of an orderly and “clean” renegotiation there: “Private investors appreciate the cooperation from NEPO and EGAT [the Thai regulator and incumbent SOE, respectively].” Similarly, in the Philippines, the government chose to absorb demand shortfalls by honoring its contractual commitments to various IPPs, despite the fact that this meant mothballing several state-owned generating facilities and procuring electricity at prices that were sometimes substantially higher than what it would have cost the SOE to generate the electricity itself. Later, after absorbing substantial losses as a result of this policy, the government did exert pressure on IPPs to accept reduced contractual commitments, but it was just pressure—not force.

Electricity investors in Malaysia and Indonesia experienced much less favorable treatment once the financial crisis began. In 1997, the Malaysian government announced the suspension of its largest IPP contract (the 2,400 Bakun hydroelectric project). The SOE requested assistance from the remaining IPPs to help meet its growing financial obligations to them, asked the government to place on hold all new IPP projects, including those with government approval and signed PPAs (Global Power Report, 1998) and requested a 90-day deferment for payments to IPPs and a 12 percent reduction in existing PPA payments. In Indonesia, the government announced in September 1997 that it would postpone or review

infrastructure projects worth a total of more than 50 trillion rupiah (US \$6 billion), leading to the postponement of 13 projects and the review of six more (out of a total of 26). In March 1998, PLN sent a letter to its IPPs informing them that, "...in light of the current monetary crisis... payment for purchase of geothermal steam and electric energy... will be in rupiah with an exchange rate of \$1 = 2,450 rupiah" (Far Eastern Economic Review, 1998). The actual exchange rate at the time was 10,000 rupiah / US \$1. It became increasingly clear that, in the words of one interviewee, "the government has the ability to make us healthy or unhealthy. It's a government decision."

***Proposition 5.** Adverse bargaining is more likely to occur in countries whose national political institutions provide weaker checks and balances on the behavior of political actors.*

4.2. Relationship between National and Sub-National Political Institutions

In addition to the structure of national-level political institutions, private investors also need to consider the relationship between the national government and state or provincial governments. Not all federal systems include both the power of the state to check the center and the power of the center to constrain the state, as in well-functioning federal systems like those of Germany, Switzerland and the United States. Instead, states in other countries often exist as sources of unchecked political power.

Argentina provides an example. The national market rules there included price adjustments to reflect capacity constraints on the transmission system, but provincial actors undermined these rules. Demand from Brazil and Uruguay had led to a growing electricity export market that placed strains on the existing transmission infrastructure in the provinces of Cordoba and Mesopotamia, which are among the poorest in Argentina. One provincial governor

affected by the Brazilian exports responded by rejecting the price increase designed to signal transmission congestion and unilaterally reducing the price to his constituents by 14 percent. While the Argentine Supreme Court eventually overturned his decision, such conflicts between provincial governments and the national government have undermined investor confidence in the sector.

Another example comes from Brazil, where a dispute occurred between Itamar Franco, the former President of Brazil and newly-elected provincial governor of Minas Gerais; and Southern Corporation and AES, who purchased the local utility CEMIG in 1997. At issue was a shareholders agreement that required approval of eight of 11 board members to make major strategic decisions. AES and Southern together hold four board seats, effectively giving them veto power despite their minority shareholdings. Franco issued a temporary injunction suspending AES' and Southern's board seats. According to Luiz Fernando Rolla, CEMIG's investment relations manager, Franco wanted "to undermine the President's authority and to be selected as the Presidential candidate for the PMDB (an opposition political party) for the next election... He doesn't care if the state is damaged by his strategy." AES and Southern initially defeated the temporary injunction, then lost that case on appeal to a state court, and then finally had their board seats reinstated by a federal court but without the original blocking rights. The inability of the national government to check the arbitrary and populist actions of Franco were a primary factor in the decision by Duke and AES to suspend their participation in an auction for the state utility Cesp Tiete later that year.

Proposition 6. *Adverse bargaining is more likely to occur in countries whose state- or provincial-level political authorities are not constrained by national political institutions.*

4.3. Regulatory Independence from Political Authorities

The extent to which an independent regulator is part of the broader system of checks and balances also affects the treatment of investors. As one observer notes, “Renegotiations and disputes arise frequently when complete long-term contracts cannot be written at the moment of contracting and in the absence of institutions which can credibly enforce those contracts. The consequences of these problems are exacerbated when market design is inadequate or regulation is incomplete.” (Basanes et al., 1999:1)

A lack of regulatory independence that permits politicians to manipulate regulatory agencies for political ends can clearly be problematic for investors. The Hungarian experience provides a case in point. Legislation passed in 1994 created the Hungarian Energy Office (HEO), charged among other things with making pricing recommendations for the approval of its overseer, the Ministry of Industry and Trade (MIT). However, the independence of the HEO is limited by numerous design features including MIT’s authority to appoint directors with no fixed term and no specified appointment (or dismissal) criteria, HEO’s reliance on MIT for funding, HEO’s lack of authority to issue general decrees, the absence of any appeals mechanism, and a civil service pay scale (Stern, 1999). Additionally, new capacity (including that resulting from plant refurbishment, extensions to the life of a plant or capacity upgrades) must be approved by Parliament if over 600 MW or nuclear; by the cabinet if between 200 and 600 MW; and by MIT if less than 200 MW (Newbery, 1998). As a result, “it can reasonably be argued that the HEO is essentially a Ministry regulator masquerading as a UK style regulator” (Stern, 1999). Several of our public-sector interviewees reinforced this contention. According to one, “In real life, the Minister has never ratified an HEO recommendation. It always involved a political decision.”

Another investor with whom we spoke summarized the prevailing sentiment, commenting that there were “too many policy decisions being made instead of market decisions.”

To be sure, things could be worse from an investor perspective. In the Czech Republic, the Ministry of Finance (MOF) both retains final authority over pricing and explicitly balances cost considerations with broader concerns about income distribution, social welfare and macroeconomic stability. Attempts to increase residential prices to cover costs met with stiff political resistance and led to a bitter and highly publicized debate among the Prime Minister, the Minister of Finance and Minister of Industry and Trade. As a result of this politicized pricing process, while industrial prices have risen to levels comparable with those in France or Belgium, residential prices remain at less than 40 percent of those found in other EU countries.

On the other hand, a renegade regulator can create serious problems for regulators as well. For example, in Chile, generators have lost some confidence in the system as the result of the substantial degree of regulatory discretion: “We don’t trust the CNE [the regulator],” and “The discretion they have is enormous...It’s such a complex system, so easy to hide. If they want to do it, they can.” Quipped another, “After fourteen years of operation with two different governments, we expected that the unwritten rules would still be followed. We trusted them... Now, we want structural changes to the law that provide checks and balances to insure that the next regulator will not be like the last. We need to have the right guarantees that we won’t suffer again.”

Proposition 7. *Adverse bargaining is more likely to occur in countries whose regulatory institutions provide weaker checks and balances on the behavior of political and regulatory actors.*

4.4. *Buy-in*

A final country-level factor that influences the scope for adverse bargaining is the polity's level of "buy-in" to private power provision. Of particular importance in this connection is the original impetus for privatization. Even though a crisis was the precipitating event in every country that we studied, countries differed in their extent of ideological commitment to privatization. In countries where privatization was part of a more comprehensive program of market-oriented reform, rather than a stop-gap measure exclusively to avert political turmoil, political actors were less likely to act on short-term incentives to engage in adverse bargaining. In contrast, in countries without the requisite degree of popular support for private participation, even ostensibly superior institutional supports failed to offer the same degree of protection to investors.

The cases of Chile and Argentina provide a useful contrast in this regard. The Chilean reforms date back to the Pinochet regime in the mid-1970s. Although they continue to engender some discord, as discussed above, debate has centered mainly on the regulatory apparatus than on the market principles at the core of the whole system. That public sentiment favors a market-based system makes sense in a country whose guiding political principle for almost 30 years—since the issuance of the 1974 "Declaration of Principles"—has been that "the state should only assume direct responsibility for those functions which the [people] ... are unable to deal with adequately" (Edwards & Edwards, 1991: 93). Indeed, Chileans raised during this period have witnessed a wave of market-based reforms under the guidance of the "Chicago boys" and been indoctrinated accordingly. One typical thirty-something businessman with whom we spoke affirmed the allegiance to market principles, proclaiming proudly, "I am to the right of the right."

In Argentina, the terms of private participation in electricity generation actually look better on paper than they do in Chile. Indeed, in designing the 1992 Law, Argentinean reformers explicitly attempted to borrow from the successes of the Chilean and British models as well as to learn from their failings. The independent regulatory body that the law established has a complex appointment process designed to insulate its board of directors from political influence as well as a fee-based budgetary mechanism (Estache & Rodrigues-Pardina, 1998), while statutory restrictions on output and vertical integration reduce the potential for market power abuses by incumbents. The pricing mechanism seems particularly sound: price is determined in a wholesale market managed by an independent entity (CAMMESA) based on marginal cost pricing, with dispatch occurring in order or merit. Generators also receive a capacity payment that is purportedly set to maintain price at the level of long-run marginal costs (Estache et al., 1998). The idea is to “discourage the return to a policy of nationalization of politically set prices.” (Lagniappe Letter Latin American Information Services, 1993).

Despite this careful design, the Argentine pricing system is now regarded as highly politicized. Regulators responding to short-term political incentives have recently offered a minimal capacity charge of approximately 15 percent of the spot market price, preventing generators from covering their long-run marginal costs. As a result, the system has increasingly shifted away from merit dispatch to forced dispatch (under which generators are obligated to produce) as generators have been unwilling to participate in the noncompensatory spot market.

Although investors with whom we spoke noted several reasons for Argentina’s problems with private power provision, a recurring theme was the government’s lack of ideological commitment to—or even understanding of—market principles. One investor charged that, “The government lacks commitment to the market and to the private sector. It is always trying to solve

problems in a regulatory or administrative manner. The government is still trying to drive the economy as a central planning team. The new government hasn't accepted the change in the role of the market in Argentina." Another told us that, "The importance of property rights and the rule of law just is not that well understood. We have a tradition of statism. We have to overcome this weakness. When we are able to do this we will become a developed country." A third summarized: "They don't understand the system. They just don't like it. Even worse, instead of letting the rules and regulatory framework work and then change the rules when they don't like the outcome, the government gives the regulator the outcome that they want for political reasons and then force the regulatory rules and framework to produce that outcome."

***Proposition 8.** Adverse bargaining is more likely to occur in countries with weaker market traditions and more limited experience with private participation.*

5. Firm-Level Considerations

While proper evaluation of precipitating factors and the institutional environment is necessary to understand the probability and severity of adverse bargaining that an investing firm faces in a given market, we also observed tremendous variation across firms in the sophistication with which they evaluated country-level risks and the level of hazards that they were willing to tolerate when making investments. Of particular importance in this regard are a firm's market position and ownership structure; its ability to manage its non-market relationships; and the extent to which the firm has adopted appropriate safeguards to protect itself against the specific hazards present in a given market.

5.1. Market Position and Ownership Structure

The country-level factors discussed above do not affect all firms equally. An investor's bargaining position is affected by its market position relative to its competitors as well as the identity and motivation of its owners. Of particular importance to private investors is the status of the incumbent SOE or its privatized progeny, as such firms often have market power or do the bidding of political actors. A related difficulty for private investors is competing against a foreign-owned, state-sponsored firm that may have a lower threshold rate of return as the result of subsidies. Such a firm's willingness to accept lower returns reduces the bargaining power of its privately-owned competitors.

The experience of private investors in the Czech Republic is illustrative of the difficulty that private investors may encounter in competing against a largely state-owned incumbent, in this case "CEZ." All of the private investors with whom we spoke shared a substantial concern about a new pricing formula introduced in 2000 with the aim of allocating costs for "ancillary services" associated with private generators' use of the national transmission system. Investors are concerned that the formula was designed not with the aim of efficiently pricing these services, but rather, with the aim of maximizing the revenue from the privatization of CEZ. In the words of one interviewee, "The formula and the data are cooked to help CEZ. This makes us afraid for our future as a company." Another explained, "They created a fee that fits exactly what CEZ has. Their goal is to choke the independents (the fee would be 10% lower if self-generators had to pay)." The same interviewee explained that CEZ justifies the high cost for ancillary services based on the asset value of its subsidiary transmission company CEPS, which was artificially determined to match the excessive debt that CEZ unloaded onto the subsidiary. United Energy has filed a lawsuit regarding the ancillary service fee, charging that the fee was

calculated by a consultant hired under closed tender rather through open competition, as required by law. Even the Ministry of Finance attacked the lack of transparency in the design of the new formula (Johnstone, 2001).

Private investors' experiences in Chile demonstrate that private investors may encounter similar difficulties even after the privatization of a state-owned incumbent. The Chilean government placed no restrictions on cross-ownership of assets by the new firm known as Endesa, and over the course of several years Endesa amassed 60 percent of installed capacity, as well as control over the largest distributor and ownership of the national transmission grid (Britan & Serra, 1998:949). The need for other private investors to negotiate with the transmission company has been a persistent problem. The magnitude of this problem is best reflected in the decision of the private investor Colbun to build two parallel high-voltage transmission lines from its plant to Santiago rather than pay the rates charged by Endesa. Even with the construction of the redundant second line to ensure security, the \$11.5 million construction cost was still \$4.5 million below Endesa's final offer and almost \$10 million below Endesa's initial offer (Diaz & Soto, 1999).

Even state-sponsored competitors from other countries can affect the leverage of privately-owned competitors. Private investors' perception of the French state-owned electricity company EDF in the Central European electricity markets is a case in point. In each country that we visited, electricity market participants viewed EDF as having a lower risk-adjusted threshold rate of return: "EDF is paying astounding prices and bidding up the market. Their goal seems to be to build market share and worry about the rest later." In addition to EDF's receipt of subsidies, another possible rationale for its aggressive entry strategy in Poland and the Czech Republic is the firm's perception of an increasingly unified Central European market with strong economic

and physical ties (i.e., transmission lines and gas pipelines) to the European Union. One interviewee explained, “EdF’s grand scheme is to buy Czech nuclear capacity for use as baseload power and turn Polish coal into peak capacity.” A vertically integrated utility would be a powerhouse in Central Europe and would also strengthen its position in the European Union, as surplus electricity could be exported to Germany and other markets.

Proposition 9. *The effects of adverse bargaining on a given firm are a function of its market position and ownership structure relative to its competitors in the industry.*

5.2. *Non-market Capabilities*

Another firm-level characteristic that determines exposure to political hazards is a firm’s set of non-market capabilities. Some firms are better able than their competitors to secure favorable policy outcomes (or at least avoid adverse outcomes) due to their better understanding of the structure of the political and regulatory system. As one interviewee put it, “Governance is as important as value.”

One strategy that some investors have used is brinksmanship. One interviewee recounted a perilous 90 minutes in his project’s history: “[Our pricing dispute] came down to a final phone call with the Ministry where we threatened not to put our plant into operation, resulting in lawsuits from the contractor and offtaker which would result in a counter suit by us against the government. We promised them that this would be a very public and very dirty affair and asked them, what are you going to do? Less than two hours later we agreed on a price.”

Another negotiating strategy that some investors used was the pursuit of regulations that appeared to be impartial but actually favored them. Several interviewees in Thailand, for example, relayed their resentment that those few firms that had not hedged their foreign

exchange rate exposure still received compensation for the devaluation of the Thai currency on equal terms with those that had. They contended that, under the guise of expediency and simplicity, firms with foreign exchange rate hedges had designed a bailout system that clearly favored their interests by allowing them access to a government bailout designed to address the cost implications of a shift in the exchange rate regime.

Another negotiating strategy involved using outside parties to create leverage. One interviewee highlighted his company's willingness to threaten to alert the rating agencies of worsening relations between his firm and the government. Still other investors spoke of the leverage provided by international banking syndicates, government-sponsored political risk underwriters (OPIC, the Export-Import Bank, COFACE, ECGD, MITI etc.) and multilateral lending agencies such as the Asian Development Bank and International Finance Corporation. An investor in Chile cited the benefits of being publicly traded because shareholders, especially foreign and institutional ones, are an excellent source pressure on a government considering adverse policy changes. Investors in the Philippines assigned similar value to their association of foreign generators as a lobbying and educational tool. Along similar lines, an ex-regulator told us, "When I assessed a \$4 million penalty on the companies from [country x] and [country y], they claimed force majeure and put their embassies to work to lobby our government." Finally, Enron's hiring of Carlos Bastos, the architect of much of the nation's electricity reform, is universally seen as a coup in that company's management of its relationship with the government especially with regard to an ongoing taxation dispute in its gas business.

Proposition 10. *The effects of adverse bargaining on a given firm are a function of its non-market capabilities and those of its allies in the renegotiation.*

6. Project-Level Considerations: The Limits of Strategic Safeguards

A range of contractual safeguards, all with associated costs, have been thoroughly outlined in the literature on political risk management (Moran, 2000; Wells et al., 1995). It is important to realize that not even the most cost-effective combination of these safeguards is a panacea. Each safeguard introduces its own new risk. Local partners, for example, may become liabilities if they exploit their ability to lobby or influence the government at the expense of the foreign investor; the front-loading of returns may invite excessive scrutiny of the project; the use of foreign partners may create a perception that the project is not “local” enough; government commitments are not necessarily credible; foreign lobbying is often perceived as meddling; international arbitration can be lengthy and works only when accepted by all sides; and political risk insurance is expensive, available for limited terms and rarely reaches beyond the replacement value of assets to encompass expected cash flows. Each potential safeguard must therefore be assessed not only with respect to the original hazards that it is intended to mitigate, but also with respect to the new risks it introduces.

One prominent example comes from the choice of strategic safeguards by investors in Malaysia and Indonesia. As described above, these countries had potential demand for new generation facilities that were far beyond the government’s capacity to pay. Unfortunately, the institutional supports for private investment in the sector were almost entirely lacking: the polity’s support of private power investment is tenuous, the regulatory system is nascent and the political system underdeveloped. Investors in these countries therefore placed—or were forced to place—a relatively large weight on relationships and family ties as contractual supports:

“Malaysia is a difficult place to understand. The electricity sector is closely interwoven with the political process. You can only try to get the tightest kind of contractual arrangements, then you

have to work on relationships.” Another interviewee reiterated this point: “You have to use the culture... a certain amount of patronage is necessary in any government project... there’s a price for everything.” Indeed, one foreign firm expressed confidence in the profitability of their operation because they believed that their Malay partner would not be allowed to fail. Another interviewee added, “Here, outlawyering is a waste of money. Ultimately it doesn’t protect you anyway. The key component is finding the right local partner.”

In Indonesia, the partners were “found” for the investors: “An Indonesian partner was suggested to us. There was no way to avoid that.” The experience appears to have been repeated in virtually every IPP contract there. Cikarang Listrando, the first major private power project in Indonesia and, later, the first to sell power back onto the national grid, was owned by President Suharto’s cousin. President Suharto’s son had a 10 percent stake in the next major project to be signed through his business concern the Humpuss Group. The infamous Paiton project passed from President Suharto’s second son to the brother of President Suharto’s son-in-law. Bambang, the second son, later resurfaced as a director for the company that took over East Asia Power in 1997. The three-phase Tanjung Jati plant included among its many investors Suharto’s second daughter (phase A); eldest daughter (phase C); and a close associate of the Minister of Planning who was brought into the venture by an adviser to the Minister of Mines Energy (phase B). Suharto’s eldest daughter also controlled a 20 percent stake in another project although this stake was subsequently reduced to five percent. Cal Energy shared ownership of its Dieng project with the Association of Retired Officers Businesspeople (Himpurna); and of its Patuha project with the son of the Minister of Mines and Energy. Additionally, Suharto’s oldest son was reputed to be a partner of CalEnergy, although the firm vigorously denied this link. Finally, presidential confidante Mohammed Bob Hasan owned 10 percent of another prominent IPP. In all, 26 IPP

projects were approved or, in the words of one interviewee, “shoved down the throats of PLN [the incumbent SOE] as all the kids and cronies elbowed in and demanded their own PPAs.”

The benefits of these relational strategies to investors following the 1997 crisis were mixed. As discussed above, investors in Thailand and the Philippines typically fared much better as the result of the better institutional environment in those countries. Still, relational strategies were of some help in Malaysia. One interviewee mapped out the surviving IPPs in the following fashion: “One furthers the interests of the BumiPatra and was supported by the ex-deputy Prime Minister who is now in jail, one furthers the interests of Mahatir, another supports Mahatir’s good friend who had difficulty in his other businesses, the remaining two are large diversified Bumipatra multinationals that are shrewd political operators...great at balancing...”

In Indonesia, however, the relational strategies adopted by investors ultimately backfired and magnified their exposure to the crisis. In May 1998, President Suharto was replaced with his longtime confidante, B.J. Habibie, and a systematic campaign was launched against the corruption, cronyism and nepotism (“KKN” in local parlance) that characterized the Suharto regime. Subsequently, the Indonesian state audit agency reported that it had “found indications of corruption, collusion and nepotism on all 27 [IPP] contracts” and thus believes that it has legal standing to terminate these agreements. Thus, the rational calculation to play by the rules of Suharto’s Indonesia created tremendous liabilities for private investors in the anti-KKN campaign that followed.

***Proposition 11.** The effects of adverse bargaining on a given firm depend on the extent on both the direct and “feedback” effects of the safeguards that it adopts.*

7. Conclusion: The Cycle Begins Again?

Coming full cycle, we conclude by noting that the recent power crises in Indonesia and Brazil and the threat of shortages in coming years in several other countries likely signal the approaching end of an “adverse bargaining” period. Some investors are planning for this shift, formulating proposals for or lobbying in favor of changes in the current policy regime that they feel will address its current weaknesses and benefit their firms relative to their competitors.

Others still fail to understand the nature of the industry in which they have invested. Compare the sentiment of the following pairs of interviewees from the same country:

“Our parent company and our banks all had the expectation that agreements struck here would stand the test of time given [Country X’s] self-professed reputation for sticking with its deals...Our illusion was backed by comfort letters supporting our contracts...Then we had a bucket of water thrown in our face... I don’t understand why anyone invests in electricity anymore. Who perpetuates the myth that this model can work?!?”

versus

“I try to treat the problem [that we are having with regulators] as one that needs to be managed. I am still objecting to the new price and trying to put it up but I know that the contracts are likely to be changed. If there is a regulated price, the price will be used for political purposes. If anyone assumes that there will be no changes it is naïve. It is more than naïve, it is stupid. Any kind of regulation should contain fundamental elements and changing elements...In any pattern of change, you have waves. Now, we are in a transient period. There will be times with disputes and discussions and times to focus on the market. It is possible in such a system to have investment.”

The former investor has left the country while the latter has recorded returns on equity approaching 30 percent and is optimistic regarding his firm’s future profitability.

Another pair of investors more succinctly express similar sentiments, this time with regard to Brazil:

“We never enter a country without a clear regulatory system. That is why we are not in Brazil.”

versus

“Once the lights start going out, a lot of the issues holding up new power plants in Brazil will get sorted out” (Davis, 2000).

It is not that making money in Brazil is impossible, but rather that it requires a sophisticated understanding of the nature of political, regulatory and social hazards in that country, as well as a strategy designed for minimizing those risks over the course of the full infrastructure bargaining cycle. We believe that the lessons that we have assembled herein offer some guidance for the design of such a strategy, and caution managers against a more broadbrush or scattershot approach that fails to respect the highly politicized nature of infrastructure. Selling infrastructure services is *not* like selling soda pop, as one Paine Webber analyst (among others) would suggest: “What do you think about Coca-Cola selling Cokes in China? Then Houston can sell electricity in Brazil. End of Story” [Boisseau, #3957]. It is perhaps of note that Houston’s successor firm, Reliant Energy, announced its intent to sell off its overseas investments in December 1999 (Electric Utility Week International, 1999).

A well-reasoned and far-sighted approach to infrastructure investment consists in the first instance of recognizing that that favorable bargaining periods do not last forever. Investors should therefore try to the extent possible to predict the likely timing of a shift to adverse bargaining, as well as the implications of such a shift for a project’s profitability given the country-, firm- and project-level factors discussed above. Firms should also take advantage of favorable bargaining periods by trying to influence the design of the system, locking in rules that favor their market position to the extent possible. As the market evolves, managerial attention should shift toward competing in the market as it has been designed, and securing competitive advantage through cost-reducing and revenue-enhancing strategies while recognizing that political pressures will eventually erode revenue and put upwards pressure on the cost structure.

As an “adverse bargaining” period begins, firms should make their calculations about whether to remain in or leave a country based not only on the current policy, but also on expected competitive positions during future bargaining cycles. Specifically, in projecting future revenue, firms should take into account the possible returns from (once again) influencing the shape of the policy environment during the subsequent stage of favorable bargaining. The favorable bargains granted to early private investors illustrate the sort of future payoff that should be available to firms that survive a round of adverse bargaining to ascend to a strong bargaining position during the next power crisis.

REFERENCES

- Asian Development Bank. 1999. *Key Indicators or Developing Asian and Pacific Countries, 1999*. New York: Oxford University Press.
- Australian Financial Review. 1992. June 15.
- Badaraco, E. P., Scholand, L. F., Erize, L. A., Perrone, D. & Werning, P. 1996. *Proposed Supplement to the Regulatory Framework of the Argentine Electricity Industry*. Paper presented at the Presented at the "First Gas and Electricity Congress for Latin America and the Caribbean" organized by the Argentine Oil and Gas Institute, the American Gas Association and the Society of Petroleum Engineers.
- Baer, W. & McDonald, C. 1998. A Return to the Past? Brazil's Privatization of Public Utilities: The Case of the Electric Power Sector. *Quarterly Review of Economics and Finance*(September 22): 503-.
- Baron, D. P. 1991. Majoritarian Incentives, Pork Barrel Programs and Procedural Control. *American Journal of Political Science*, 35(1): 57-90.
- Basanes, C. F., Savvedra, E. & Soto, R. 1999. Post-Privatization Renegotiation and Disputes in Chile. *Interamerican Development Bank Working Paper*, Infrastructure and Financial Market Series (IFM)(116).
- Bastos, C. M. & Abdala, M. A. 1993. *Reform of the Electric Power Sector in Argentina*. Buenos Aires: World Bank and the Secretary of Energy of Argentina.
- Biersteker, T. J. 1980. The Illusion of State Power: Transnational corporations and the neutralization of host-country legislation. *Journal of Peace Research*, 17(3): 207-221.
- Britan, E. & Serra, P. 1998. Regulation of Privatized Utilities: The Chilean Experience. *World Development*, 26(6): 945-962.
- Cadot, O., Roller, L.-H. & Stephan, A. 1999. A Political Economy Model of Infrastructure Allocation: An empirical assessment. *Social Science Research Center, Berlin Discussion Paper*, 99(15).
- Davis, H. 2000. Energy's New Generation. *Latin Finance*, November 1: 64.
- Diaz, C. & Soto, R. 1999. Open-Access Issues in the Chilean Telecommunications and Electricity Sectors. *InterAmerican Development Bank Working Paper*.
- Edwards, S. & Edwards, A. C. 1991. *Monetarism and Liberalization*. Chicago: University of Chicago Press.
- Electric Utility Week International. 1999. Investors May Face Improved Acquisition Opportunities In South America In 2000, December 27: 1.
- Emmons, W. 2000. *The Evolving Bargain: Strategic Implications of Deregulation and Privatization*. Boston: Harvard Business School Press.
- Encarnation, D. J. & Vachani, S. 1985. Foreign Ownership: when hosts change the rules. *Harvard Business Review*(September-October): 153-160.
- Environment Watch Latin America. 1993. December 1.

- Estache, A. & Rodrigues-Pardina, M. 1998. Light and Lightning at the End of the Public Tunnel: Reform of the Electricity Sector in the Southern Cone. *Economic Development Institute, The World Bank*.
- Fagre, N. & Wells, L. T. 1982. Bargaining Power of Multinational and Host Governments. *Journal of International Business Studies*, 13(2): 9-23.
- Far Eastern Economic Review. 1998. March 19: 42.
- Global Power Report. 1998. September 4: 9.
- Henisz, W. J. & Zelner, B. A. 2001. Interest Groups, Political Institutions and Electricity Investment. *Mimeo*, 2001.
- Hird, J. A. 1991. The Political Economy of Pork: Project Selection at the U.S. Army Corps of Engineers. *American Political Science Review*, 85(2): 429-456.
- Independent Power Report. 1990. November 2: 13.
- Independent Power Report. 1993. International Power Brazil to Privatize Part of 1,457-MW Sao Paulo Utility, March 12: 12.
- International Energy Agency. 1999a. Energy Statistics. Paris, France: Organization for Economic Cooperation and Development.
- International Energy Agency. 1999b. Internal Data Provided to Author. Paris, France: Organization for Economic Cooperation and Development.
- Johnstone, C. 2001. United Energy Threatening New Energy Regulator with Legal Action. *Prague Business Journal*.
- Kahn, J. 2001. Nuclear-powered Submarine May Help Provide Peak Power Supplies for the California Grid. *Environmental Defense Web Site*.
- Kobrin, S. J. 1987. Testing the Bargaining Hypothesis in the Manufacturing Sector in Developing Countries. *International Organization*, 41(1): 609-638.
- Lagniappe Letter Latin American Information Services. 1993. Power Privatization Established Argentina on Innovative Path, July 23.
- LeCraw, D. 1984. Bargaining Power, Ownership and Profitability of Transnational Corporations in Developing Countries. *Journal of International Business Studies*, 15(1): 27-42.
- Macdonald, L. 1992. Manila Seeks Russian Subs to Ease Power Shortage. *Asian Wall Street Journal*, February 11: 1.
- Meggison, W. L. & Netter, J. M. 2001. From State to Market: A survey of empirical studies on privatization. *Journal of Economic Literature*, 39: 321-389.
- Moran, T. H. 2000. Political and Regulatory Risk in Infrastructure Investment in Developing Countries: Introduction and Overview, *Private Infrastructure for Development: Confronting political and regulatory risks*. Washington D.C.: The World Bank.
- National Energy Policy Office. 1999. Energy and Development Report. Bangkok.
- Newbery, D. 1998. The Hungarian Electricity Sector. *Mimeo*.
- Power Asia. 1992. November 2: 10.

Power Asia. 1993. June 7: 1.

Poynter, T. A. 1985. *Multinational Enterprises and Government Intervention*. New York: St. Martin's Press.

Shepsle, K. & Weingast, B. R. 1981. Political Preferences for the Pork Barrel: A generalization. *American Journal of Political Science*, 25: 96-111.

Soto, R. 1999. Institutional Reforms in the Electricity Sector. *Manuscript*.

Stern, J. 1999. Styles of Regulation: The Choice of Approach to Utility Regulation in Central and Eastern Europe. *Mimeo*.

Svejnar, J. & Smith, S. C. 1984. The Economics of Joint Ventures in Less Developed Countries. *Quarterly Journal of Economics*(Feb): 149-167.

Tiglao, R. 1993. Bent Over Backwards. *Far Eastern Economic Review*.

Vernon, R. 1977. The strain on national objectives: The developing countries, *Storm over the Multinationals: The Real Issues*: 139-173. Cambridge, MA: Harvard University.

Wells, L. T. & Gleason, E. S. 1995. Is foreign infrastructure investment still risky? *Harvard Business Review*, 73:5(September-October): 44-55.
