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How Investor Portfolios Shape Regulatory Outcomes: Privatized Infrastructure After Crises

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ABSTRACT:

Many developing countries privatized utilities during the 1990s. Their weak institutional environments, however, make them prone to crises that generate incentives for governments to renege on contractual commitments to investors. To understand variation in post-crisis regulatory outcomes in such contexts, scholars must consider investors' prior choices regarding portfolio structure. High reputational costs from exit encourage investors to remain following expropriation, while investors' capacity to secure compensatory policies depends on whether they possess diverse assets in the contract jurisdiction. These factors account for significant unexplained within-sector and subnational variation, for which we provide qualitative and quantitative evidence from Argentina's water and electricity sectors for the post-crisis period.

KEYWORDS: regulation, utilities, infrastructure, political risk, crisis, privatization

Large literatures in comparative and international political economy examine the circumstances under which states are able to guarantee property rights and protect investors from political risks. Most analyses emphasize the importance of strong domestic institutions or international agreements that can serve as “substitutes” for such domestic institutions: scholars have argued that checks and balances (e.g. Henisz (2002), North and Weingast (1989)), regime type (e.g. Jensen (2003), Li and Resnick (2003)), and investment agreements (e.g., Büthe and Milner (2008), Elkins *et al.* (2006)), for instance, help governments provide “credible commitments” to protect property rights and thus are associated with higher levels of investment and economic growth.¹

This scholarly emphasis on institutions that provide credible commitments builds upon a more classic literature in political economy that highlights important non-institutional sources of variation in political risk and business leverage. Kindleberger and Vernon famously argue that investors in capital-intensive sectors face an “obsolescing bargain” in which governments can renege on original commitments once firms have invested in fixed capital (Kindleberger, 1969, pp. 149–151; Vernon, 1971, pp. 46–53). Similarly, political scientists suggest that investors whose assets are immobile and cannot credibly threaten to exit exert little policy influence (Bates & Donald Lien, 1985, p. 61; N. Jensen, 2006, p. 3; Lindblom, 1977, p. 180; Winters, 1996).²

In this paper, we argue that while the classic focus on asset immobility and more recent emphasis on institutions offer important insights, scholars must examine additional non-institutional sources of variation to understand political risk and business leverage in weak institutional environments, especially the impact of firms’ prior investment decisions on their subsequent bargaining power. This focus helps explain within-sector

and within-country variation that these dominant approaches cannot explain. The infrastructure and utilities sector illustrate why this is the case. During the 1990s, dozens of developing countries privatized utilities and infrastructure services, expecting that multinationals would bring much-needed funds and technology: 133 low- and middle-income countries privatized state enterprises in the telecommunications sector, 107 in the energy sector, 82 in transportation, and 61 in water and sanitation between 1990 and 2009 (PPIAF-World Bank, n.d.). Governments typically structured these privatizations as long-term contracts so as to allow investors sufficient time to recoup their significant upfront expenditures in system upgrades and expansion.

Institutionalist perspectives suggest that these infrastructure and utilities privatization contracts in weak institutional environments would be particularly vulnerable to the obsolescing bargain. Most developing countries have weak political institutions that accentuate economic volatility and susceptibility to crisis (Acemoglu, Johnson, Robinson, & Yunyong, 2003). Investors in utilities and infrastructure are particularly vulnerable to economic crises, which provide governments with incentives to renege on original contractual terms (Post, 2014). Because utility services are consumed by the majority of the population (Levy & Spiller, 1996), whose living conditions deteriorate as a result of crises, elected officials focusing on their political survival in the short run are sensitive to calls to revise contractual terms to the detriment of firms (Henisz & Zelner, 2005, p. 370); meanwhile, in weak institutional environments, governments face few barriers to responding to such immediate political pressures.

While standard political economy approaches rightly suggest infrastructure investments are particularly vulnerable in weak institutional contexts—to such an extent

that recent scholarship on the obsolescing bargain suggests all firm-government negotiations will take place prior to market entry (Jensen *et al.* (2012, p. 16))—there is significant variation in investor experiences following common shocks within single countries and sectors. For example, the Argentine government suspended all utility contracts and nullified the exchange rate guarantees they contained during the 2001-2002 crisis, thereby reducing investor earnings in dollars by *two-thirds*. The post-crisis status quo thus marked a decided setback. However, in the water and sanitation and electricity distribution sectors—both characterized by large sunk costs—investors varied in their willingness to continue operating in the country and subsequent ability to secure compensatory policies that helped them adjust to post-crisis realities. One-third of these investors remained in the market until the end of 2009. Meanwhile, one-quarter of the investors in both sectors eventually reached agreements with government authorities providing for rate increases, reductions in investment obligations, and state investment subsidies designed to compensate them for the devaluation and the government’s suspension of contracts during the crisis. Scholarship on investor-government negotiations following the Asian financial crisis suggests that the Argentine experience is by no means unique (Wells & Ahmed, 2007, pp. 267–9).

In light of this significant and unexplained variation, we argue that it is important to consider not only levels of capital-intensity and institutional configurations, but also how investor portfolios affect their probabilities of exiting the market and their success in negotiations with host governments following expropriation. We highlight the importance of two particular aspects of portfolio structure: *reputational exit costs* and *cross-sector diversification* within the contract jurisdiction. These portfolio characteristics vary across

contracts, rather than only across countries or sectors, and thus add significant analytic leverage to existing theories.

Consistent with existing theories, we expect that exit costs associated with investments in physical capital will increase investor willingness to stay in the market. However, we also highlight the importance of the *reputational costs of exit*, which can vary significantly within capital-intensive sectors. Investors should be less likely to exit when their reputations with other domestic political actors, other governments granting new contracts, and international markets would suffer following departure.

Reputational exit costs, however, do not mitigate the obsolescing bargain: to obtain policy concessions, firms must be diversified across sectors within the political jurisdiction that granted an infrastructure contract. *Cross-sector diversification* increases the probability of reaching pro-investor agreements by opening up a wider set of possible negotiation outcomes—including those involving compensation for firms' losses through side-payments that benefit other operations—that may be more feasible to implement politically. While such agreements reached between diversified investors and government officials may be technically legal, they may also involve crony capitalism. Sector diversification can also augment firm leverage by increasing the firm's access to information, relevant social and political ties, and opportunities to influence local economic conditions and the quality of other services.

We provide an initial test of our argument's explanatory power through case studies and quantitative analysis in Argentina following its 2001-2002 economic crisis. Drawing on an original dataset, we analyze the experiences of fifty-four investors holding majority stakes at some point in time in the thirty provincial and national contracts in the

electricity distribution and water and sanitation sector. Argentina represents an ideal case, but it enables us to employ a comparative, subnational research design that controls for the type of economic shock, privatization program design, and government concerns about its international market reputation. During Argentina's post-crisis period, it is straightforward to measure our dependent variables, investor exit and policy concessions to firms. The national and provincial governments' decision to suspend existing contracts following the crisis hurt all investors, who subsequently sought contract renegotiations to relieve them of some of the burden of post-crisis adjustment and considered exit when agreements were not quickly forthcoming. Because contract renegotiations followed a common template and, when reached, improved upon the post-crisis status quo for firms, they provide a rare opportunity to examine the conditions associated with agreements partially compensating investors for expropriation.

In the next section we present our theoretical framework. Section two explains our research design and data collection strategy. The following sections present our case studies and the quantitative analysis of the patterns of market exit and contract renegotiation for all provincial and national electricity distribution and water and sanitation concessions in Argentina. The last section discusses the broader implications of our findings.

I. Bargaining under Duress: Portfolio Structure and Regulatory Outcomes

In weak institutional environments, utilities and infrastructure contracts are necessarily incomplete; economic or political shocks provide prompts for renegotiation. Shocks such as economic crises often trigger shifts in economic fundamentals and prompt

governments to enact policies that are detrimental to investors. Post-shock contract renegotiations occur between two parties, a host government and the lead investor.³ We assume firms are interested in policies that improve their operating environment and profitability relative to the status quo. Host governments, in turn, prefer renegotiation agreements that are low visibility (e.g., that avoid immediate and large consumer price hikes), that are not reached during competitive elections that increase the salience of negotiation outcomes, and that avoid transferring responsibility for politically risky and/or deficit-ridden services back to the public sector.⁴ Standard political economy approaches suggest that investor patience and leverage in firm-government negotiations will vary with the institutional environment and degree of capital intensity. We offer a complementary emphasis on investor characteristics, following the international business literature. While the international business literature has focused on factors like joint venture ownership (e.g., Henisz, 2002), investor origin and longevity in the market (e.g., Zaheer & Mosakowski, 1997), and business association membership (Pyle, 2009), we examine how investor portfolios affect: a) investor willingness to stay in the market following expropriation; and b) how rapidly investors secure policy concessions.

A. Reputational Exit Costs

The political economy literature tends to assume that investors in capital-intensive industries have high exit costs due to the immobility of their investments.⁵ Exit costs in capital-intensive sectors, however, can actually vary significantly. Analytically, it is useful to distinguish between how prior organizational choices affect the *financial* and *reputational costs of exit*.⁶ The *financial cost of exit* refers to the immediate impact of

pulling out of a project on an investor's balance sheets. In a post-crisis context, investors cannot expect to obtain compensation from new buyers commensurate with what they paid to acquire a contract or subsequently spent on fixed capital to meet contractual obligations; exit involves accepting that these costs will not be recouped through future earnings. Such costs can, however, often be recouped through international arbitration proceedings or political risk insurance.

Reputational exit costs, in contrast, refer to the less immediate and diffuse costs of exit for a firm's reputation as a desirable partner for governments, as a competent operator, and as an attractive investment.⁷ While the international political economy literature has highlighted how governmental concerns about reputation affect expropriation decisions, the literature has largely neglected how investors' reputational concerns affect firm-government bargaining.⁸ Corporate reputations form when market participants observe firm behavior and draw inferences from their observations; given their intangible character, they are very sensitive to signaling processes (Basdeo, Smith, Grimm, Rindova, & Derfus, 2006, p. 1205).

In the context we analyze, an investor's reputation is affected by perceptions of its sector and geographic specialization. First, pulling out of projects in an investor's sectoral or geographic specialization can threaten its reputation as a desirable partner with domestic political authorities. Therefore, investors possessing regulated assets in other subnational jurisdictions, and who necessarily interact with other domestic authorities whose attitudes might be affected by their exit from the contract undergoing renegotiation, face higher reputational exit costs than those who do not. For example, investors holding multiple provincial-level water contracts in Argentina worried that

pulling out of one province would prompt provincial authorities to publicly blame them for a host of service problems and portray them as unsympathetic negotiating partners. This would have weakened their reputations as competent operators and desirable partners, and hence their bargaining power, with authorities in other provinces where they held contracts.⁹

An investor's reputation outside the country where the project is based is also likely to suffer if it abandons projects in its chosen market specialization, either geographic or sectoral. Pulling out may be perceived as admitting failure in one's area of core competence, which makes the investors less attractive to governments putting new projects out to tender, particularly in the same region. Exit can also signal incompetence to international markets. Sticking with a project in an investor's specialization suggests that management is capable of identifying good bets and that its specialization—sectoral and geographical—will offer returns.¹⁰ This tendency is particularly strong in infrastructure sectors because privatizations typically involve long-term, and hence incomplete, contracts with which neither governments nor firms completely comply. Similarly, complex contractual provisions can be easily misinterpreted or misrepresented. This means that host governments can attempt to shift blame for project failures by accusing the investors of contract noncompliance or being responsible for political controversies, with accusations gaining quick circulation through media and NGO campaigns. For example, the international press and environmental NGOs faulted US-based Bechtel for raising consumer water rates dramatically in Cochabamba, Bolivia following privatization, prompting social upheaval. However, government authorities actually approved the rate increase within the firm's original contract, a detail rarely

mentioned by the international press.¹¹ As a result, the effect of the NGO campaigns and press coverage was to worsen Bechtel's reputation among would-be grantors of new contracts throughout the developing world.

Considering reputational exit costs—i.e., investors' perceptions regarding how information about their actions will affect the decisions of actors with whom they are not yet interacting directly—thus allows us to improve our understanding of within-sector variation in investor decisions to exit privatization contracts following shocks. High reputational costs of exit increase investors' propensity to remain in their contracts following expropriation, even when they fail to obtain policy concessions that help them adjust to the new status quo.

B. Cross-Sector Diversification

While investor concerns regarding the reputational costs affect exit decisions, we must turn to another aspect of portfolio structure to understand variation in the extent to which investors are able to secure compensatory policies following crisis-inspired instances of expropriation. Cross-sector diversification within the contract jurisdiction ensures that firms interact with the governments that granted their privatization contracts not only within the context of a single contract, but in multiple spheres, which in turn affects both governmental and investor decision-making. Because utility and infrastructure contracts are typically structured as geographic monopolies, sector diversification is the main portfolio characteristic that allows such interactions.¹²

Why does cross-sector diversification make investors more successful in negotiations following expropriation? First, it increases investor *willingness to stay in the*

market. Sectorally-diversified investors will want to avoid having their remaining assets penalized should they exit from their infrastructure contract, particularly if they are earning well in other sectors, thus increasing their patience.¹³ Additionally, cross-sector diversification provides for *greater flexibility* in negotiations by increasing the range of settlements that investors can reach with governments—including deals that span multiple sectors and in areas that may be less salient for voters.¹⁴ In a politically contentious sector like infrastructure regulation, such flexibility increases the likelihood of an agreement because investor desires for improved revenue streams can be satisfied without granting politically risky increases in consumer rates or direct governmental subsidies, which may fuel anti-privatization sentiment. Instead, investors can be compensated through policies affecting work in other sectors, such as land use permissions or the granting of public works projects. Such unofficial deals, it should be emphasized, may involve cronyism. Finally, cross-sector diversification can *increase investor leverage* in negotiations for two reasons. Diversification increases the number of political and social ties an investor has in the local jurisdiction, thus improving its access to relevant information and its informal channels for affecting policy. It may also mean that host governments are dependent upon firms in multiple economic sectors for investment, employment and service provision, which in turn may increase firm leverage and constrain government actions.

In short, while both cross-sector diversification and reputational exit costs should encourage firms to remain in the market for longer periods, only cross-sector diversification increases the probability of obtaining compensatory policies at a given point in time that represent an improvement upon the status quo for investors. Despite

this, such concessions might not be sufficient to make the projects profitable to investors if they take a long time to secure. Accordingly, investors with high reputational exit costs alone will be most subject to the obsolescing bargain. These expectations are summarized in Table 1.

[INSERT TABLE 1 ABOUT HERE]

II. Research Design

This study compares the explanatory power of our framework with that of competing arguments by analyzing the relationship between investors and host governments in thirty privatization contracts in two sectors, electricity distribution and water and sanitation, in Argentina following its 2001-2 crisis. Focusing on investors' experiences in post-crisis Argentina offers a number of advantages, given the unusual breadth and subnational character of its utility privatization program. Following federal government efforts to privatize utilities servicing the Buenos Aires metropolitan area, fourteen of Argentina's twenty-four provinces privatized their electricity distribution systems and thirteen provinces privatized their urban water and sanitation systems. All privatizations followed a common policy template, the concession contract model, which kept infrastructure assets in state hands while assigning private sector operators investment and operational responsibilities for services. In all cases, privatization contracts for both electricity distribution and water and sanitation systems were designed as geographic monopolies. Provinces generally set up formally independent regulatory agencies to monitor the providers' compliance with contractual goals. Provincial governments adhered closely to

national contract templates, yielding an unusually large set of comparable contracts in both sectors. Focusing on varied investor experiences within the country allows one to hold constant cultural factors, the national political environment, privatization program design,¹⁵ the macroeconomic context, country concerns about the reputational consequences of its decisions, and foreign investor access to international arbitration, while still analyzing a large number of cases (30 contracts and 54 lead investors). Including both electricity distribution and water and sanitation in our analysis helps us ensure that our findings generalize beyond one infrastructure sector.

Just as importantly, the conceptualization, measurement and interpretation of our two outcomes of interest—policy concessions and market exit—are unusually straightforward in post-crisis Argentina because policies adopted immediately following the crisis provided a common prompt for renegotiation and exit. Most concession contracts included exchange rate guarantees that would have triggered large increases in consumer rates following the January 2002 devaluation, which effectively reduced the value of concessionaires’ revenue by two-thirds relative to the dollar.¹⁶ Following the crisis, rate increases of this magnitude were clearly politically impossible.¹⁷ In February 2002, 81% of the population opposed providers’ demands to “adapt” public service prices to reflect their increased costs following the devaluation. In response, the national government and provincial governments suspended existing contracts and froze consumer rates at levels existing prior to the 2002 devaluation. Subsequent contract renegotiations focused on compensating firms for this shock and represented improvements for investors relative to the new, post-crisis status quo as they permitted

consumer rate increases to partially compensate for inflation, and provided state subsidies for consumer rates or investments.

Our analysis triangulates between different types of evidence. We first present analyses of two cases of firm-government negotiations in the electricity distribution and water and sanitation sectors. Process tracing allows us to highlight the mechanisms outlined in our theory. These case studies also allow us, in combination with supplementary case material included in our online appendix, to address potential concerns regarding endogeneity and selection bias.

We then conduct duration analyses of the association between our main variables of interest and the timing of contract renegotiation accords and investor exit for the full set of contracts. This allows us to examine the extent to which our theory is consistent with general trends in both sectors and provide a preliminary assessment of alternative explanations derived from other theoretical perspectives.¹⁸ The economics literature on regulatory incentives, for instance, suggests that regulatory institution and policy design should affect expropriation incentives (Laffont & Tirole, 1993). Institutional approaches to regulatory credibility emphasize the importance of examining whether varying levels of checks and balances between contract jurisdictions explain variation in regulatory outcomes (Henisz, 2002; Levy & Spiller, 1994). In addition, scholars have argued that investor country of origin should matter. Developing country firms possess comparative advantages in infrastructure sectors in the developing world because they have context-appropriate “political capabilities” (Holburn & Zelner, 2010), rather than, as we argue, portfolio structures that position them to negotiate effectively. In addition, the Varieties of Capitalism literature implies that investors from coordinated market

economies (CMEs) should be better able to maintain incomplete and relational contracts involving renegotiation than investors from liberal market economies (LMEs) (Hall & Soskice, 2001, p. 8).¹⁹

III. Data and Coding

Our analysis rests on a significant amount of original data collection on the thirty provincial and national-level concession contracts in Argentina in both sectors in place after the 2001-2002 crisis. Because a number of investors sold their stakes to new entrants, we are able to code renegotiation outcomes and exit decisions for fifty-four consortia of investors in the post-crisis period (2002 – 2009). Here, we focus on the lead investors, or those possessing at least 50 percent stakes in the concessions, as they typically served as the technical operators and managers of the concessions.²⁰ The data itself, as well as coding information, is provided in the paper's online appendix.

Our dependent variables are investor persistence in the market (i.e., time until exit) following the Argentine crisis and the government's uniform suspension of existing contracts, and the amount of time taken to conclude a contract renegotiation providing compensatory policies. For investor persistence, we compiled annual data on the lead investor in place in each contract and whether or not it exited in that year. We group together exits via two avenues: a) sale of a lead investor's equity stake in a concession to another investor (a change that required the permission of governmental authorities); and b) contract cancellation by the host government, investor, or both parties, which culminated in government takeover of services. It is reasonable to group these together

because contract cancellation almost always followed a decision by the investor to leave and unsuccessful firm and government efforts to find a suitable replacement.

Our second dependent variable is the amount of time taken to conclude a contract renegotiation following the crisis. Negotiation processes between the provincial and national governments and concessionaires followed a common sequence. Discussions first focused on a set of easier, less controversial topics such as the reciprocal forgiveness of debts and state subsidies to finance reduced rates for poor consumers in ‘partial’ or ‘transitory’ accords, which required legislative ratification. Afterwards, negotiations proceeded to revisions to the formulae used to calculate consumer rates and investment commitments to adapt concessions to post-crisis realities. The resulting agreements were termed as “comprehensive” or “integral” in the legislation used for their ratification. We documented whether or not lead investors were able to achieve either (or both) types of accords in a given year, as well as the dates agreements were reached, based on regulatory documentation, ratifying legislation, provincial news coverage and Azpiazu *et al* (2008). We then created two dichotomous dependent variables. The first reflects whether or not investors and host governments were able to achieve a full accord in a given year. As a robustness check, we coded a second dependent variable capturing whether or not both parties achieved at least a partial accord in a given year.²¹

Based on primary source evidence, we scored each lead investor for the portfolio characteristics in our explanatory framework. We first coded lead investors’ reputational and financial exit costs prior to post-crisis negotiations. The *reputational*, or non-financial, cost of exit is coded as low, medium, or high based on an index that weights equally three factors. Domestic reputational costs—i.e., with politicians in other

jurisdictions—are proxied by whether or not the investor possessed other holdings in regulated industries somewhere in Argentina. Given the subnational nature of Argentina’s privatizations, and the fact we study sectors that were privatized through geographic monopolies, this measure captures the effects of reputation--whether or not *other* government entities might alter their actors based on information about investor behavior in other jurisdictions--rather than whether the *same* political actors would alter their behavior because of strategic calculations regarding interests in other sectors.²² Reputational costs with international markets and other country governments are measured based on whether or not the lead investor possessed a strong brand name in the sector and whether or not Argentine assets comprised at least 10% of the investor’s overall portfolio at the time of the crisis²³. Each of the components is weighted equally in the index.²⁴ In several cases, we adjust our score for the importance of Argentine assets for the investor based on case knowledge of additional reasons investors might value their Argentine holdings, such as an investment strategy centered on Latin America. We document the source materials used to score each component, as well as the rationale for adjustments, in the online appendix.

The *financial* costs of exit are coded as low, medium, or high based on the ratio of the investor’s sunk costs in a project relative to the size of its overall portfolio; the trichotomous coding best reflected clustering in the data. In contrast, the *diverse local holdings* variable is dichotomous, and reflects whether or not the lead investor possessed significant holdings in other sectors within the jurisdiction that granted their concession contract at the time of market entry. Because provinces granted most contracts, this means that many investors with sectorally diverse holdings in Argentina were not

necessarily diversified within the province in question; their water or electricity contract could be their only asset in a given province.

We also coded an annual variable indicating whether or not the lead investor is publicly listed. Additionally, we categorized each concession contract as small, medium, or large based on the number of consumers, consumption levels, and the affluence of the concession areas, so that we could control for the attractiveness of contracts to investors. To assess alternative explanations emphasizing that institutional checks and balances can shield investors from expropriation, we utilize Giraudy's dataset on "dispersion of authority" in the Argentine provinces (Giraudy, 2010). We extend Gervasoni's dataset on gubernatorial alignment with the Argentine national executive, to control for the effect of partisanship and access to federal funds (Gervasoni, 2010). Sources for all variables, as well as descriptive statistics, are presented in Table A.I (appendix).

IV. Illustrating the Mechanisms through Case Studies

In this section, we use case studies to illustrate the causal process suggested by our theoretical framework. Our two sets of paired comparisons following a most similar systems design. We have selected primary and shadow cases in which our main independent variables vary, but which are similar with respect to sector, market size—which should affect the attractiveness of the market for investors—and domestic/foreign investor control, which in turn affects whether or not firms can resort to international arbitration (Table 2). In the water sector comparison, the investors vary with respect to diversification, and in the electricity sector comparison, with respect to reputational exit costs. The contrast between the two sets of sectoral cases speaks to the generalizability of

the argument. Because of space constraints, exposition focuses on the off-diagonal cases: a water case with both diversification and high reputational costs and an electricity case with neither. While we briefly review the shadow cases here, a full exposition is included in the online appendix.

A. Reputational Exit Costs, Local Diversification, and Regulatory Outcomes

The experience of the Chamas Group, lead investor in the water and sanitation concession in Corrientes province, illustrates how firm-government relations can proceed in the presence of *both* high reputational exit costs and sectoral diversification in the contract jurisdiction. The Chamas Group, a local, privately owned economic group that possessed diverse local operations in agriculture, construction, engineering, media, and real estate acquired a controlling stake in the concession in 1996.

Following the 2001-2 Argentine crisis, the provincial government, like other provinces, adhered to the national economic emergency law, suspending the firm's existing contract and launching renegotiation proceedings. Consumer rates were frozen, despite the devaluation and its impact on imported inputs and high rates of inflation.

The Chamas Group faced considerable domestic reputational costs were it to pull out of its contract in response to these dramatic changes. Possessing water and sanitation contracts in two other provinces, pulling out of the Corrientes contract—or even threatening to do so—would jeopardize its reputation as an attractive partner with officials in these other provinces. Actively seeking contracts in other Latin American countries, it also worried about international reputation costs: favorable depictions in an Inter-American Development Bank publication had increased the firm's visibility and

credibility despite the small size of its water portfolio, and a prominent “failure” would endanger this reputation.²⁵ As a result, the group did not make the sorts of public threats to exit the concession commonly made by firms in many other provinces. Instead, it focused on staying in the market and securing the best deal possible through contract renegotiations.

Although the group’s high reputational exit costs encouraged it to stay in the contract and keep negotiating, the group’s diverse local holdings in the provincial economy contributed further to its willingness to remain in the concession and increased its flexibility in negotiations. The group’s local ties offered access to local officials, but also forced them to moderate their requests.²⁶ With other investments and social relationships at stake in the province, the owners refrained from threats to exit and legal appeals to provincial courts, which would have heightened tensions with political authorities. Instead, discussions proceeded incrementally and informally, the firm pushing for—and finally obtaining—annual rate increases of roughly 10% following the crisis that were small enough for political authorities to approve without major political backlash. Importantly, the firm kept investing as negotiations proceeded.

The lead investor’s diverse holdings in the province also offered it opportunities to find mutually agreeable settlements. The 2005 legislation establishing a provincial fund for investments in water and sanitation did not prevent the concessionaire from contracting with related companies, and the province actively involved the firm in other state contracts. For example, the provincial government contracted directly, rather than via a public bidding process, with a Chamas group subsidiary to improve the management of the provincial electricity service in December 2007.²⁷ Government-

funded rate subsidies for low-income consumers also raised collections for the firm. Importantly, the Chamas Group managed to achieve these accords within a very difficult political context: they negotiated effectively with governors of different political parties and levels of alignment with President Kirchner. The Chamas Group remained in control of the concession until the end of this study.

A brief comparison with a similar-sized water and sanitation contract in the province of Formosa (documented in the online appendix)—held by domestic investors *without* diverse local holdings that faced similar domestic reputational concerns, is instructive. As anticipated by our theory, the Formosa concessionaire failed to conclude a contract renegotiation successfully and waited nine long, loss-making years before exiting because they were concerned about the reputational costs of exit: they held water concessions in other provinces and worried that political controversy and negative press coverage would affect these other operations. They waited to exit until provincial authorities found it opportune to let them do so: after the completion of a large, federally-funded treatment plant, when provincial officials could take over a much-improved system.

Meanwhile, a lack of cross-sector diversification, rather than factors stressed by alternative explanations, is responsible for the Formosa concessionaire's inability to secure the sorts of compensatory policies obtained in Corrientes. Regulatory agencies in both provinces lacked formal independence; decisions could be appealed to the executive branch. "Checks and balances" scores for both provinces are virtually identical. These divergent trajectories also do not reflect a selection process by which investors with diverse local holdings secured better contracts because of local knowledge and

connections. A domestic investor with diverse local holdings also bid for the Formosa contract originally, while the Corrientes concession was originally secured and managed by a domestic firm without significant local operations, and which eventually sold its shares to the Chamas group after failing to work well with the provincial government. Finally, the description of the sequence of events in the Corrientes case also alleviates concerns about endogeneity: the lead investor in the concession possessed diverse holdings *before* entering the contract and beginning post-crisis contract renegotiations, even if it did receive new business opportunities in other sectors during the negotiation process.

B. Reputational Exit Costs (or Lack Thereof) and Exit Decisions

US-based Public Service Enterprise Group (PSEG), which controlled the province of Entre Rios' electricity distribution company (Edeersa), in contrast, did not possess diverse local holdings or anticipate high reputational costs from exit. Four years after Edeersa was privatized by the Peronist governor of Entre Rios province, Jorge Busti, the lead investor—American firm CMS (Consumer Energy)—abandoned all of its regional holdings and sold its shares in Edeersa to PSEG. At the time, PSEG was trying to establish a position in Argentina while preparing bids for upcoming privatizations in neighboring Córdoba and Santa Fe provinces.

While PSEG perceived high reputational costs of exit at the time of market entry, its perceptions changed in the years immediately preceding the crisis. First, its plans to acquire contracts in Córdoba and Santa Fe were frustrated when the provinces chose not to privatize. It had also sold its shares in the three distribution companies of the province

of Buenos Aires and its minority shares in two generation plants (San Nicolas and Parana) to AES Corporation in 2001. Hence, by January 2002 the firm's Argentine holdings—comprised solely by Edeersa—were small relative to its overall portfolio, which was concentrated in the US.²⁸ It therefore did not worry about the likely domestic reputational effects of exit with other political actors in Argentina. Moreover, the company had shifted its focus to renewable energy in the US, further reducing the international reputational costs of abandoning its Edeersa concession.

PSEG's Edeersa assets were severely affected by the crisis because the concessionaire possessed a US\$78 million, dollar-denominated debt. After the devaluation and suspension of the Edeersa contract, interest rates skyrocketed relative to revenues, especially because the province required Edeersa to accept payment from consumers in provincial bonds not accepted by Edeersa suppliers. Facing low reputational exit costs, PSEG sought to exit Edeersa rather than focus on contract negotiations, starting to seek buyers in October 2002. Failing to find any, PSEG transferred its Edeersa shares and the concessionaire's large debt to a trust and handed over ownership of the trust to the company's workers in 2003. The provincial regulator rejected the transfer, the labor union lodged a legal complaint against the firm, and a judge issued an injunction against PSEG's action because the workers did not possess the capital or technical skills required of system operators under the concession contract. PSEG then persisted in its efforts to leave, despite the fact that doing so would involve recognizing significant financial losses.²⁹ Following an unsuccessful search for private investors with sufficient technical expertise, the province finally took over the company in 2005.

Comparing the Entre Rios concession with a similarly-sized electricity concession in Buenos Aires province—controlled by a different US company with *high* reputational exit costs—addresses concerns about alternative explanations and endogeneity. Whereas PSEG in Entre Rios saw few reasons to stay after the crisis, high reputational exit costs encouraged AES to remain in the Edelap (Buenos Aires) concession (see case study in the online appendix). Importantly, the factors emphasized by alternative theories do not appear to explain differences between the two cases. Both consortia were controlled by American firms without domestic joint venture partners. The regulatory agency in Entre Rios enjoyed greater formal autonomy than the agency regulating Edelap, but this clearly did not yield better outcomes; PSEG decided to pull out even before contract negotiations with the executive branch got underway. The results also do not appear to stem from a selection process in which investors with a larger portion of their portfolio in Argentina (and thus higher reputational costs of exit) obtained more favorable contracts given the similar characteristics among the original investors, and number and country origin of the original bidders. PSEG actually was pursuing a wider strategy of investment in Argentina at the time of entry and its reputational exit cost declined before the crisis when it failed to acquire other distribution companies, sold other assets, and abandoned its international focus.

IV. Patterns of Investor Exit from Argentina

To what extent are the dynamics highlighted in these cases visible in the broader set of contracts in Argentina? Our first quantitative analysis of the full set of contracts examines the association between investors' prior choices regarding portfolio structure and the

length of time they are willing to wait before exiting their contracts, if they chose to exit at all, using repeated events Cox proportional hazard models.³⁰ Repeated events models accommodate cases in which multiple “failures” occur for a given unit—in our case, a concession contract. This approach allows us to capture the fact that when investors exit via a share sale, another investor can enter the same contract, and can in turn also exit during the study period. We utilize a “conditional gap time” version of the repeated events model, in which the counter re-sets following each failure and units are only at risk of a second failure after experiencing a first (Box-Steffensmeier & Jones, 2004; Box-Steffensmeier & Zorn, 2002). We employ this particular version of the repeated events approach because one set of majority investors cannot enter a given contract until the previous set of investors has left. Observations correspond to an investor-year in a given concession contract.

Table 3 presents results from a number of specifications, all of which cluster standard errors by province and contract and stratify by utilities sector.³¹ The first specification, Model 1, examines the association between investors’ prior choices about their portfolios and their willingness to persist in their concession contracts. High reputational costs of exit are associated with longer durations in the market.³² The model suggests that the association between reputational exit costs and persistence is very strong in substantive terms: a one-unit increase in the exit cost score (e.g. from “low” to “medium”) is associated with an approximate 68% decrease in the probability of exit in a given year.³³ Similar patterns are evident in raw data on exit rates conditional on reputational exit costs (Table A.I, online appendix). While diversification in the contract jurisdiction has a negative coefficient, as expected, it is insignificant, suggesting that it

may have an inconsistent effect on investor exit. Financial exit costs, on the other hand, are associated with higher rates of exit, suggesting that many investors are able to cope with such costs through political risk insurance and international arbitration. We obtain similar results when we run this same model using our simple additive index, rather than final measure, for reputational exit costs (Table A.III, online appendix). Results are very similar when a conditional frailty model is used instead of the conditional gap time variance correction model.

[INSERT TABLE 3 ABOUT HERE]

The effect of reputational exit costs remains large and significant even after adding variables capturing investor origin (CME, LME or the baseline category, developing country origin) and whether or not investors are publicly listed (Model 2). While private ownership is associated with lower probabilities of exit, as the literature suggests, investors from different types of home markets do not exhibit strong differences.³⁴

Our results are robust to the inclusion of other control variables. When we include our measure of the size and attractiveness of the market, the coefficients for reputational exit costs remains large and significant (Model 3). The association between reputational exit costs and longer durations in the market persists when we include our measures of formal regulatory independence—no formal provisions for appeals of regulatory decisions—and local institutional checks and balances (Giraudy’s “dispersion of authority” index) as well (Model 4 and 5).

Models 6 and 7 examine the association between time-varying factors (i.e., post-treatment variables) and investor persistence. The coefficient for gubernatorial alignment

with the national government is insignificant. The effective number of parties, our proxy for electoral contestation, also appears to be unrelated to investors' exit decisions. Finally, contract renegotiation is not a strong predictor of investors' willingness to stay in the market.³⁵ This last result suggests that the full accords reached in Argentina, though significant, were not sufficiently generous to sway investors' decisions regarding whether or not to leave the market. Thus, even though renegotiation agreements mitigated the effects of the crisis, they did not fully counteract the obsolescing bargain.

V. Contract Renegotiation in Argentina

This section examines the respective explanatory power of our portfolio-based approach and alternative theoretical perspectives for understanding overall patterns of contract renegotiation. Because achieving an agreement earlier rather than later is preferable to investors, and renegotiation processes were still underway by the end of our study period in some cases, we model the length of time taken to conclude an agreement using a Cox proportional hazard model. Results for Cox proportional hazard models predicting full accords are presented in Table 4. Regressions are stratified by sector, allowing hazard rates for each variable to differ by sector.³⁶

Model 1 shows that cross-sector diversification in the contract jurisdiction is strongly associated with the achievement of full renegotiation accords. According to the model, an investor with diverse local holdings is about six times more likely to conclude a full accord in a given year than an investor without local holdings.³⁷ This is consistent with the higher rates of contract renegotiation observed among diversified investors in both sectors in the raw data (Table A.II, online appendix).

[INSERT TABLE 4 ABOUT HERE]

Model 2 and 3 add variables reflecting private ownership and investor home market characteristics (CME, LME, or developing country origin, the baseline category). The coefficient for local diversification remains significant when these variables are included. The conditional relationship between private ownership (i.e. not allowing one's stock to be publicly traded) and duration in the market is insignificant (Model 2), while control by a CME investor is significant. While the literature suggests that developing country firms would be more likely to negotiate effectively with host governments than firms from the developed world, we would not expect CME firms to be at a disadvantage relative to LME firms. The strong, negative effect observed here reflects the fact that no CME investor achieved a full renegotiation agreement in either sector in Argentina during our study period.

The positive association between local diversification and the achievement of full accords is robust to the inclusion of a number of environmental controls. Model 4 includes a variable capturing the size of the local market, which is insignificant. Our proxy for institutional checks and balances in the contract jurisdiction is also not associated with renegotiation, suggesting that the sorts of arguments used to understand cross-country variation in the enforcement of property rights are less useful here (Model 5). Meanwhile, our indicator of formal regulatory independence is not associated with the achievement of a full accord (Model 6). A measure of the competitiveness of the provincial party system, the effective number of parties competing in elections to represent the province in Congress, is also insignificant (Model 7).

Models 8 assesses whether two post-treatment control variables, political alignment between the sitting governor and the president and whether or not elections are taking place that year, are associated with the achievement of accords. The coefficient for alignment is large, significant, and negative, suggesting that aligned governors were far less likely to conclude full accords with investors. Contrary to expectations, there is not a significant negative relationship between elections and the conclusion of contract renegotiations—though the coefficient has the expected sign.

In summary, our aggregate analysis of post-crisis contract renegotiation in Argentina suggests that investors with diversified holdings in their contract jurisdiction secured compensatory policies more rapidly. Agreements were more difficult to reach when governors were aligned with the national government. As a robustness check, we ran our models with partial accords as the dependent variable and obtain very similar results (online appendix).

Overall, the results of both analyses provide support for our argument. First, we found that diversification within the local jurisdiction is strongly associated with higher probabilities of contract renegotiation at a given point in time in both sectors. Second, we find that reputational exit costs are associated with lower rates of investor exit across both sectors. Our theory thus complements prior insights about the importance of institutions and asset immobility by focusing on investor-specific characteristics that vary within sectors and within countries and are especially influential for investor-government relations in weak institutional environments.

VI. Conclusion

This article introduces a new explanation of variation in the regulatory experience of infrastructure investors facing obsolescing bargains that emphasizes the impact of investors' prior choices regarding portfolio structure on their subsequent regulatory experience. Higher reputational exit costs induce "forced loyalty" among investors, which discourages them from leaving the market, even in the absence of compensatory policies. Investors' ability to secure favorable policies under such circumstances in turn depends upon whether or not they possess diverse operations in their contract jurisdiction.

Our empirical assessment of the argument focuses on two utilities sectors in Argentina following its 2001-2 macroeconomic crisis, which allowed us to control for capital intensity and national institutional environment. It also permitted us to collect, code, and analyze granular data about firm characteristics and contract renegotiation outcomes for a set of fifty-four investors in thirty contracts. We expect future research on other cases to assess its broader comparative scope.

This study makes a number of contributions to the existing literature on property rights and development, with its emphasis on asset immobility and institutional effects. Most importantly, we examine the effects of investors' prior organizational choices on regulatory outcomes, an approach that is particularly useful when examining variation within or across countries with weak institutions. In presenting this argument, we join a small but growing group of scholars outlining investor strategies that affect corporate fortunes in contexts of weak property rights, and thus point to substitutes for formal property rights, including some that might be considered forms of crony capitalism.³⁸

Our study also contributes to growing literature on corporate risk management strategies in developing countries. As others have noted, the diversified economic groups that dominated developing country economies prior to liberalization efforts in the 1990s adapted readily to their new context (Schneider, 2008, 2009). Scholars have shown that business groups seized upon privatization programs as an opportunity to further diversify their holdings (Guillén, 2001; Manzetti, 1999). Other research suggests that during the same time period, developing country business groups also expanded into other developing country markets, sometimes retaining their diverse operations at home (Ramamurti & Singh, 2009; Schneider, 2009). There is, however, little scholarship examining how cross-sector diversification and reputation costs affect firms' regulatory experience, especially following economic shocks.

More broadly, our work suggests that theoretical work on the obsolescing bargain should devote more attention to reputational costs. While “policy substitutes” for strong property rights protections, such as provisions for international arbitration, may help investors cope with financial losses incurred following policy changes after crisis, they will not compensate firms for reputational costs. Further research should examine whether reputational exit costs affect investment decisions in less capital-intensive sectors and more generally patterns of comparative advantage in emerging markets.

The implications of our findings for infrastructure investment in developing countries, and consumer interests more specifically, are less clear. Our analysis has focused on explaining variation in extent to which investors were compensated for the Argentine government's decision to renege on the contracts it originally signed during the 1990s privatization wave. If we were to instead examine each of the scenarios we outline in the

paper—investor stays with no compensation, investor stays with compensation, and investor exit—from a consumer perspective, the results are unclear. First, cases in which investors stayed without compensation were associated with major decreases in the real value of consumer rates, but also disinvestment and, in most cases, major erosions in service quality.³⁹ The second scenario—renegotiation agreements reached by more flexible locally diversified investors with host governments—were more likely to include rate increases for consumers, albeit phased in over time and not large enough to return rates to pre-crisis levels or even keep up with inflation. They also typically included subsidies. Such renegotiation agreements with locally diversified investors may also have involved side payments at the public’s expense. Yet investors were more likely to maintain and even invest in systems. Finally, investor exit led to government takeover of services, which in some cases was associated with steep price increases and in other cases not, and in some cases with major increases in investment and in other cases not. Future research should evaluate systematically how consumers (network insiders) and taxpayers fared under each of these scenarios.

While the net benefits to consumers under the three scenarios we examine is unclear, most analysts do concur that the overall policy approach Argentina adopted during the post-crisis period—which emphasized freezing or severely limiting consumer rate increases, while awarding public subsidies tied to consumption volume to public and private providers—has yielded major problems.⁴⁰ Subsidies have not always been administered in a transparent fashion, and have certainly weakened incentives for providers to make investments in response to consumer pressure. Meanwhile, freezing or granting rate increases well below inflation has artificially stimulated demand for utility

services, leading to rapid increases in consumption. As consumption has increased, the fiscal cost of subsidies for taxpayers has grown astronomically, especially in sectors where the government has explicitly agreed to compensate providers for the difference between the international prices of key inputs and domestic prices. Consuming 10% of government expenditure by 2010, these subsidies have contributed enormously to Argentina's current fiscal difficulties.

Table 1. Predicted Effects of Portfolio Characteristics on Dependent Variables

	Duration in Market	Time Until Policy Concessions to Investors
Reputational Exit Costs	+	No effect
Cross-Sector Diversification in Contract Jurisdiction	+	+

Table 2. Values for Main Independent Variables in Case Studies

	Reputational Costs HIGH	Reputational costs LOW
Cross-Sector Diversification in Contract Jurisdiction	Corrientes (water)	
Not diversified in Contract Jurisdiction	Formosa (water) Buenos Aires/ Edelap (electricity)	Entre Rios (electricity)

Table 3. Conditional Gap Time Cox Proportional Hazard Analysis of Investor Exit from Electricity and W&S Contracts, 2003 – 2009

	Core model (portfolio variables)	Core + additional investor traits	+ environmental controls				+ time varying covariates
	<u>Model 1</u>	<u>Model 2</u>	<u>Model 3</u>	<u>Model 4</u>	<u>Model 5</u>	<u>Model 6</u>	<u>Model 7</u>
Reputational exit costs	-1.17*** (0.24)	-0.82** (0.33)	-1.24*** (0.21)	-1.23*** (0.21)	-1.05*** (0.31)	-1.16*** (0.22)	-0.88*** (0.33)
Financial exit costs	0.26 (0.28)	0.87*** (0.34)	0.63** (0.25)	0.71** (0.26)	0.89*** (0.31)	0.71** (0.33)	0.78*** (0.25)
Investor diversified in contract jurisdiction	-0.84 (0.51)	-0.79 (0.51)	-0.98 (0.63)	-0.85 (0.64)	-1.30** (0.56)	-1.35* (0.72)	-1.31** (0.55)
CME Investor		0.01 (0.95)					
LME Investor		0.76 (0.66)					
Privately- owned investor		-1.08** (0.47)	-14.58*** (5.59)	-13.76*** (5.04)	-1.14*** (0.43)	- 13.94*** (4.78)	-1.05** (0.47)
Log(Years since Crisis)			-4.98** (2.35)	-4.11** (1.90)		-4.47** (2.18)	
Private * log (Years since Crisis)			8.64*** (3.32)	7.94*** (2.89)		8.19*** (2.80)	
Market size			0.37 (0.24)			0.11 (0.35)	
Formal regulatory independence				0.16 (0.27)			
Checks and balances					-0.78 (0.64)		
Governor aligned							-0.53 (0.34)
Effective number of parties						0.12 (0.17)	-0.30 (0.29)
Contract renegotiation concluded							0.22 (0.23)
N	235	235	235	235	192	210	203
Wald test	28534 on 3 df, p=2.811e-06	51.92 on 6 df, p=1.933e- 09	49.3 on 7 df, p=1.98e-08	61.72 on 7 df, p=6.827e- 11	52.4 on 5 df, p=4.469e- 10	45.47 on 8 df, p=2.997e -07	30.2 on 7 df, p=8.714e- 05
AIC	95.30	96.39	86.97	87.81	73.92	78.60	85.35

* p < 0.10, ** p < 0.05, *** p < 0.01

Notes: Positive coefficients indicate that an increase in risk, or a decrease in duration, is associated with a particular variable. All models are stratified by sector. (Sector is insignificant if included in the models.) Robust standard errors

are clustered by concession and province. For cases in which ownership is split 50/50 between two main investors, observations are created for each investor and weighted by 0.5 in the analysis. (In R, the weight function applies sampling weights (Therneau and Grambsch 2000: 163).) Results are similar without weighting and without clustered standard errors. The ENP score in models 6 and 7 is a time series variable corresponding to the effective number of competing parties in provincial elections for national legislative representatives. The private variable is interacted with the log of years since the crisis in several models in order to address nonproportionality. Model 4 includes fewer observations because the Giraudy dataset is missing the province of Catamarca and the national government, which regulated a W&S concession and three electricity concessions for the Buenos Aires Metropolitan Area. Similarly, Models 6 and 7 contain fewer observations because the Effective Number of Parties score is calculated based on provincial elections for national legislators, and thus does not include observations for the cases regulated by the national government. Results are similar with the pure additive version of our additive reputational exit cost measure, which does not incorporate case-specific considerations affecting the importance of Argentine assets for a firm's portfolio (see the online appendix).

Table 4. Cox Proportional Hazard Analysis of Contract Renegotiation (Full Accords) for Electricity and W&S Contracts, 2003 – 2009

	Base Model (portfolio variables)	Base + other Investor traits		+ environmental controls				+ time varying covariates
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Investor diversified in contract jurisdiction	1.73*** (0.57)	1.89*** (0.58)	2.21*** (0.81)	3.51*** (1.11)	3.11*** (1.15)	2.18** (0.85)	3.93*** (1.20)	3.05*** (0.64)
Reputational exit costs	-0.06 (0.53)	-0.04 (0.51)	-0.48 (0.39)	0.31 (0.54)	0.27 (0.64)	-0.58* (0.41)	0.54 (0.51)	
Financial exit costs	0.52 (0.37)	-0.02 (0.47)	0.05 (0.43)					
CME investor			-20.07*** (0.80)	-19.11*** (0.98)	-17.76*** (2.00)	-20.82*** (0.61)	-17.41*** (1.36)	-19.35*** (0.65)
LME investor			-0.04 (0.93)	1.37 (1.18)	-0.70 (1.09)	-0.54* (0.84)	0.95 (1.14)	
Privately-owned investor		1.17 (0.86)						
Market Size Score				-1.32 (0.59)			-0.31 (0.71)	-1.03*** (0.46)
Formal regulatory independence						0.81 (0.59)		
Checks and balances					-2.51 (2.69)			
Governor aligned								-1.64*** (0.62)
Effective number of parties							-0.74 (0.66)	
Election Year								-0.54 (0.74)
N	188	188	188	188	145	188	163	188
Likelihood ratio test	8.38 on 3 df, p=0.0387	9.91 on 4 df, p=0.0419	15.22 on 5 df, p=0.009468	18.26 on 5 df, p=0.00264	15.68 on 5 df, p=0.007828	16.14 on 5 df, p=0.006456	17.43 on 6 df, p=0.007838	21.68 on 5 df, p=0.0006024
AIC	43.52	43.99	40.69	37.65	34.95	39.77	37.03	34.23

* p < 0.10, ** p < 0.05, *** p < 0.01

Notes: See the Table 3 notes regarding stratification, standard errors, and weighting. Likelihood ratio, rather than Wald Test statistics are presented because for models containing the investor nationality variable, Wald test statistics are invalid because there are no positive cases of renegotiation for cases involving CME investors. Coefficient estimates

and standard errors are similar without clustered standard errors, except that the coefficient for CME investors becomes insignificant in most cases. Model 1 involves nonproportionality for the reputational exit cost variable, but results are comparable and proportionality attained when it is interacted with the log of the number of years an investor has been in the market post-crisis. Model 5 includes fewer observations because the Giraudy dataset is missing scores for the province of Catamarca and the national government, which regulated a W&S concession and three electricity concessions for the Buenos Aires Metropolitan Area. Similarly, Model 7 contains fewer observations because the ENP score is calculated based on provincial elections for national legislators, and thus does not include observations for the cases regulated by the national government. Model 8 drops the reputational exit cost variable because including it results in un-correctable problems of nonproportionality. Including that variable, however, yields a similar coefficient for diversification but makes alignment insignificant. A dummy variable for CME investor is included rather than the categorical variable for all three investor types (LDC, LME, CME) in order to address nonproportionality as well.

Table A.I. Variables Used in the Exit and Renegotiation Analysis

Variable	Definition	Source	Min.	Max.	Mean	St. Dev.
Investor Exit (DV)	Dichotomous variable reflecting whether or not lead investor exits market in given year (2003 – 2009)	Coded by authors*	0	1	0.14	0.35
Full Contractual Renegotiation Concluded (DV)	Dichotomous variable reflecting whether or not lead investor concludes full accord with host government in given year (2003 – 2009)	Coded by authors*	0	1	0.06	0.25
Market Size	Low(1)/ Medium(2)/ High(3) score. For water, based on population served in 2001 and provincial GDP per capita; for electricity, based on Gwh of consumption in 2004.	Coded by authors*	1	3	1.63	0.77
Investor Locally Diversified	Dichotomous variable reflecting whether prior to concession award lead investor possessed holdings in other sectors in contract jurisdiction	Coded by authors*	0	1	0.29	0.46
Reputational Exit Costs	Low(1) /Medium(2) /High(3): additive score reflecting: a) whether at least 10% of holdings in AR; b) whether or not lead investor possesses brand name in sector; c) and whether or not lead investor holds other regulated assets in the country.	Coded by authors*	1	3	2.26	0.79
Financial Exit Costs	Low(1) /Medium(2)/ High(3) score reflecting size of lead investors' liabilities for contract relative to size of overall portfolio	Coded by authors*	1	3	1.82	0.76
LDC/CME/LME Investor	Categorical variable reflecting investor home market type	Coded by authors*	NA	NA	NA	NA
Privately-owned Investor	Dichotomous variable reflecting whether or not lead investor	Coded by authors*	0	1	0.44	0.50

	publicly listed					
Formal Regulatory Independence	Dichotomous variable reflecting whether regulatory decisions could be formally appealed to executive branch	Azpiazu et al. 2008	0	1	0.33	0.47
Checks and Balances	Dispersion of authority score, based on average tenure of provincial supreme court justices, a measure of government patronage, and a measure of the governor's level of fiscal discretion. Average for 1983 – 2006.	Giraudy 2010	0.22	0.67	0.49	0.12
Governor Aligned	Dichotomous variable reflecting whether governor of province was aligned with the Kirchners (2003 - 2009)	Author extension of Gervasoni (2010) coding*	0	1	0.78	0.41
Effective Number of Parties	Laakso-Taagepera index for number of parties competing in Argentine provincial elections for national deputies in given year. (Score for previous year applied to following if no election.)	Ministry of Interior, Argentina	1.65	10.85	3.75	1.72
Election Year	Dummy variable reflecting whether or not jurisdiction that granted contract (national or provincial government) held elections for the executive or legislative branch, or a constitutional convention	Andy Tow electoral database (www.andytow.com/blog)	0	1	0.50	0.50

*Further documentation in online appendix. Note that minimums, maximums, and standard deviations were calculated for the full dataset (annual observations 2003 – 2009) except for contract renegotiations. While the investor exit analyses utilize all of this data, the contract renegotiation analyses use a subset because contracts leave the analysis once a renegotiation is concluded.

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¹ See Jensen *et al.* (2012) for a review.

² Wellhausen (n.d.) generalizes this argument to the economy as a whole, finding that expropriation rates are lower for contracts held by firms from nations comprising a large fraction of overall FDI to a country. Policy leverage, in other words, stems from states' anticipation that a large number of firms would leave in response to an expropriation incident affecting a co-national.

³ We assume that heads of government or their political appointees will take the lead with negotiations given the scope and salience of utility rates for the general population and the weak de facto independence exercised by regulatory agencies in weak institutional environments.

⁴ Note that governments would face stronger incentives to nationalize in sectors that generate rents, such as oil, or if they had strong Communist or Socialist leanings.

⁵ The obsolescing bargain literature starts from this assumption. See also (Frieden, 1991; Shafer, 1994).

⁶ On firms' intangible reputational assets, and their importance for capital markets, see (Clark & Wrigley, 1997; Eccles, Newquist, & Schatz, 2007).

⁷ Roberts and Dowling (2002) show that firms' reputations have an effect independent from financial performance on their subsequent earnings.

⁸ On IPE scholarship on country reputational concerns, see Jensen *et al.* (2012, p. 10). The concept of investor reputational costs has been applied more frequently to concerns to avoid corruption allegations (e.g., Wells & Ahmed, 2007, p. 264) and develop reputations for responsibility and good behavior (see Jackson & Brammer, 2014 for a review).

⁹ For an illustration, see the Formosa case study in the online appendix.

¹⁰ While international capital markets may want to see firms exiting projects or markets that have not panned out as anticipated, the larger concern will be why management entered such projects or markets in the first place. So while there may be a short-run benefit of cutting one's losses and exiting, these should be outweighed by sticking with projects or markets that management assumes will work out in the long run. Additionally, psychological research on escalation costs suggests that business managers often "throw good money after bad" (e.g., Staw, Barsade, & Koput, 1997).

¹¹ This is not to say that Bechtel did not share equal responsibility for the political failure of the contract. For a balanced account, see Nickson and Vargas (2002).

¹² A more general version of this argument, applicable to other industries, would also focus on whether or not investors had other types of significant investment in the contract jurisdiction.

¹³ Chan and Levitt (2011, pp. 317–319) and Wells and Ahmed (2007, p. 267) argue that lead investors possessing other significant interests in a country are more likely to accede to contract renegotiations rather than pursue international arbitration, but do not explore cross-sector diversification explicitly.

¹⁴ For a fuller treatment, see (2014). For reviews of theories of "issue linkage" within the field of international relations, see (Alt & Eichengreen, 1989; Davis, 2004; Eichengreen & Frieden, 1993; Lohmann, 1995).

¹⁵ See (Murillo, 2009) regarding the divergent features of national privatization programs.

¹⁶ The Argentine peso had been pegged to the U.S. dollar since 1991.

¹⁷ In 2002, electricity consumption dropped by 6.8% and pay arrears reached 60%. See (Foster, 2004).

¹⁸ This analysis can only provide us with a preliminary assessment because we do not have enough cases to utilize standard statistical techniques to address selection problems or non-equivalence of treatment and control groups, such as matching or selection models.

¹⁹ While this argument is typically used to examine firm behavior in the home market, analysts have begun to examine the extent to which they apply to behavior in foreign markets (see Geppert, Matten, & Walgenbach, 2006).

²⁰ When ownership was split 50/50 between two lead investors, we collected data for each lead investor and weighted each by 0.5.

²¹ Because partial accords were always achieved prior to full accords, this includes cases in which full accords were subsequently reached.

²² Second party enforcement is captured through the diversification variable, as is explained below.

²³ This cut-off reflects clustering in the data.

²⁴ As a robustness check, we also run our models with the index components included separately.

²⁵ E.g. Saltiel (2003).

²⁶ Interview with Pablo Chamas, President of Aguas de Corrientes, June 2010.

²⁷ The group was first granted a consulting contract, which was converted into a management contract, which gave them 30% of the returns earned by the provincial electricity company (Corrientes al Día, 2008).

²⁸ According to Business Week, PSEG is a publicly traded diversified energy company (NYSE: PEG), with 2008 annual revenues of \$13.3 billion. PSEG ranks 101 on Forbes magazine's 400 Best Big Companies list for 2008. (<http://investing.businessweek.com/research/stocks/private/snapshot.asp?privcapId=1049561>). Accessed April 2, 2010.

²⁹ PSEG originally paid US\$ 200 million to acquire the concession. See: http://www.bnamericas.com/news/electricpower/Entre_Rios_considers_taking_back_Edeersa.

³⁰ Duration models model the time until an event, and can accommodate censoring. The advantage of the Cox over other types of duration analysis is that one need make fewer assumptions regarding the functional form of duration dependence. In cases where an investor exit culminates in a contract cancellation rather than sale to a new investor before the end of our study period and no renegotiation agreement has been reached, cases are treated as censored, following (King, Alt, Burns, & Laver, 1990).

³¹ Conditional gap survival models by definition involve clustering standard errors by the units containing multiple “failures,” individual concession contracts in our case. Following Primo, Jacobsmeier, & Milyo (2007), we also cluster standard errors by province because we expect provincial observations to exhibit interdependence and also include provincial-level variables in the analysis. When the province-clustered standard errors are dropped from the specification, however, the results are almost identical. Sector is not statistically significant if included as an independent variable. Tests for nonproportionality of hazards examining the correlation between the scaled Schoenfeld residuals and each covariate do not suggest problems for any of these specifications.

³² If the individual components of the index are substituted for the index, they also yield negative coefficients, suggesting that they are all contributing to the effect.

³³ First difference calculated using the `simPH` package in R (Gandrud, Forthcoming); the standard deviation for the estimate is 7.06.

³⁴ Private is interacted with the log of the years since the Argentine crisis to ensure that hazards are proportional, following Box-Steffenmeier and Zorn (2002).

³⁵ In Model 7, this variable measures whether or not a full accord has been reached by a given year. Another model including the achievement of partial, instead of full, accords yields similar results.

³⁶ Sector is insignificant when included as an independent variable, and worsens model fit when included.

³⁷ The estimated hazard ratio is 6.54 (s.d. 3.47).

³⁸ See for example (Frye, 2006; Markus, 2012). Relatedly, Pinto (2013) argues that investors choose forms of production that will benefit key coalition members of the party in power.

³⁹ See Post (2014) regarding concessions in the water sector.

⁴⁰ For a review, see Bril-Mascarenhas and Post (n.d.).