Insulating for Investment: Regulatory Institutions and the Multinational Firm in Infrastructure Industries

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Abstract

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Insulating for Investment: Regulatory Institutions and the Multinational Firm in Infrastructure Industries
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Why do some countries obtain more foreign direct investment (FDI) in infrastructure industries than others? Previous explanations for FDI have emphasized that host states must provide foreign investors with a credible commitment to alleviate concerns about political risks. Building on this insight, this project argues that countries' sectoral regulatory institutions – a frequently overlooked factor in FDI research – can help states produce this commitment.

The main argument is that sectoral regulatory agencies that are designed to be politically independent insulate foreign investors in the telecommunications and electricity industries from political risks, thereby increasing FDI into these sectors. I also identify that the two design features that enable these institutions to achieve political independence are legal separation from other government institutions and long, fixed terms for agency leadership. Additionally, I show that independent regulatory agencies (IRAs) influence the timing of FDI as well as moderate the relationship between regime type and government partisanship, respectively, and FDI.

To test these arguments, I utilize an original dataset that captures the degree of political independence embedded into countries' IRAs governing these two industries for 32 countries in Latin America and Asia. Statistical results support the notion that IRAs increase FDI into these sectors and that they influence investments in these three additional ways. Qualitative case evidence is also used to support the statistical findings. In demonstrating that bureaucratically centered regulatory institutions influence the investment decisions of multinational firms, these findings have implications for how reform-minded developing countries can increase their prospects for attracting FDI.

As a secondary focus, I examine if telecommunications and electricity FDI translates into improved services for populations in these 32 countries – an important question since infrastructure projects are prone to becoming wasteful "white elephants". I find that FDI in these industries does increase access to phones and power, but that there are different dynamics across sectors. In telecommunications – a sector that generates relatively few white elephants – FDI increases access to phones in a straightforward matter. However, in electricity – a sector that generates relatively many white elephants – foreign investments improve access to power when they become a larger share of GDP.

For TinaMarie and Olivia

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Table of Contents

Chapter:

List of Tables

List of Figures

Chapter 1:

Introduction

Economic globalization is now an inescapable feature of our world, as goods, services, and capital cross national borders at increasingly high rates. Historically, many of globalization's benefits have been unequally distributed. Indeed, for generations the industrialized democracies – today's "rich countries" - often benefitted the most from economic integration. However, over the past few decades the world has started to see a reversal of this trend. Since about 1990, developing countries as a whole have seen their share of global income grow dramatically (Baldwin 2016). At the same time, many lesser-developed countries (LDCs) have also made major strides in terms of infant mortality and life expectancy as well as made notable improvements in providing access to essential services like education, clean water, telephones, and electricity (Kenny 2012).

We know that an important reason for these gains involve LDCs' own institutional reforms. In recent years, one step that numerous developing countries have taken is to refashion their domestic "rules of the game" so that they are now better able to capture globalization's benefits, including by adopting institutions that help them make credible commitments to

economic actors. As a result, many LDCs have been participating more in international trade and attracting more foreign capital investments than was previously the case.

This dissertation focuses on one aspect of this broader process: explaining foreign direct investment (FDI) in infrastructure industries, particularly in telecommunications and electricity. In adopting this focus, it sheds some new light on the connection between recent domestic institutional reforms made by many LDCs since the mid-to-late 1980s and these countries' increased ability to obtain long-term capital investments. Rather than focusing on reform of electoral institutions or regime type dynamics – more typical domestic explanations for why and how some LDCs have successfully tapped into globalization - I highlight how many of these countries have embraced regulatory institutions that, like many modern central banks, are designed to be politically independent so that they insulate policymakers from unwanted domestic political pressures.

Of course, deepening our understanding of countries' regulatory institutions and their relationship to international investors is not the only reason I emphasize FDI in these two infrastructure industries. I also focus on FDI in telecommunications and electricity because we hope that foreign investments in these industries translates into improved access to phones and power, thereby increasing recipient countries' prospects for growth and development. Thus, because FDI in these industries illuminates interesting and important domestic institutional changes by LDCs while also offering insights into how many of these countries have managed to improve social welfare in recent decades, I ask: "Why do some countries obtain more foreign direct investment in infrastructure industries than other countries?

1.1: The Argument in Brief

To answer this question, I argue that what is needed is a focus on sectoral regulatory institutions. Put briefly, in this dissertation I argue that politically independent regulatory agencies (IRAs) help countries obtain FDI in the industries they regulate. This is because IRAs signal to foreign infrastructure firms that they are now more protected from political risks, thereby inducing investments from them.

Like a lot of recent research looking at the political determinants of FDI, this argument is premised on the notion that commitment problems make it hard for governments to convince foreign investors that invested assets are safe. Since foreign investors know that governments' promises not to expropriate their assets or implement other policies that harm their ability to profit from their investments abroad are often not credible, states must find ways to pre-commit to keeping the investment environment safe. The reason that this problem exists in the first place is because the bargaining dynamic between governments seeking FDI and global firms changes over time. Before investments are made, multinational firms can essentially "forum shop" among potential host countries, investing in places where governments offer them the best deal. However, after investments are sunk and cannot be easily liquidated, the dynamic switches: governments feel that they are now more able to take actions that harm foreign firms. In other words, the initial bargain obsolesces (Vernon 1971). Since multinational firms can see this problem ahead of time, states must look for ways to signal that they would not harm firms post-investment.

The reason that IRAs help recipient governments establish a reputation for being a low risk country to invest in is that foreign firms understand that IRAs effectively tie the hands of government policymakers who would at times be willing to take actions that would harm them.

For this to happen, however, IRAs must be separated and made formally independent from other government institutions, including executive branch institutions (like government ministries). Separated regulatory agencies have this effect for two reasons. First, this major institutional reform is something that states can really do only once for a given infrastructure sector. Policymakers in countries seeking FDI are especially leery about creating an IRA to help establish a credible commitment and then undercutting it because doing so drastically harms a state's reputation in the present while also making it incredibly hard to re-establish a positive reputation later on through future institutional reforms. Second, separated IRAs enable policymakers concerned about their public support to avoid blame for regulatory policies that are unpopular with publics. Leaders who are subject to public ire due to regulatory policies that are perceived to unduly favor foreign firms can deflect this anger onto regulatory officials who, because they are formally insulated, do not have to alter policies after public frustration materializes. This helps ensure a credible commitment.

I also argue that endowing their leadership with long, fixed terms is important for IRAs' ability to signal their political independence. Long, fixed terms do this by enabling regulatory officials working in IRAs to further resist any additional pressure that could still come from other government policymakers to alter regulatory policies, even after IRAs are made independent through by being formally separated from other parts of government.

Additionally, I make three other arguments that should be true if IRAs are an important way to signal a credible commitment and establish positive reputations. First, I argue that IRAs' FDI-inducing effects are strongest in the time periods just after their creation because this is when firms will perceive that a government's commitment to maintaining independence is strongest. Second, I argue that once countries have delegated regulatory policymaking to IRAs,

democratic political institutions will have a negative influence on FDI. Once countries have delegated regulatory policymaking to IRAs, democratic institutions that were previously responsible for protecting foreign firms' assets (i.e. their property rights) do not help nearly as much at the same time that they channel public discontent at foreign firms directly into policymaking processes. Finally, I argue that IRAs help leftist governments attract more FDI than they otherwise would. IRAs help states with leftist leadership signal to foreign infrastructure firms that these governments will not redistribute away their profits. This is because policymakers inclined to engage in redistribution no longer have control over key regulatory policies that are can be used for this purpose.

In this dissertation, I also look at whether FDI in telecommunications and electricity actually helps to improve domestic access to phones and power. While one might expect a natural translation here, I argue that consideration of "white elephants" is needed before simply assuming infrastructure FDI will help the economies it moves into. White elephants are politically motivated infrastructure projects that have little-to-no economic rationale. Rather, they exist to help the politicians who promote them survive politically, not improve societal welfare. White elephants, I show, are more common in electricity than in telecommunications. Ultimately, for electricity this means that FDI translates into better electricity access only when these investments become more economically important to a country receiving them – that is, as they become a larger share of gross domestic product (GDP). The reason for this is that when FDI becomes more economically important, numerous actors, including publics, will pay more attention to how this capital is used. Heightened attention makes it more difficult for policymakers who might support the creation of wasteful white elephants to actually do so. However, for telecommunications, an industry which is less prone to white elephants, FDI does

translate into better access to phones in a straightforward manner in which funds move into relatively well-designed, efficient projects.

1.2: The Significance of the Argument

There are a number of ways that this dissertation advances our understanding of the causes and consequences of economic globalization. Its primary contribution is to show that IRAs help countries attract FDI. As I will discuss later, others, including the international financial institutions (IFIs), have asserted this to be the case. However, prior thinking on IRAs has not to this point actually offered a clear or convincing argument for why or how they would be expected to alter the behaviors of policymakers who must overcome the commitment problem by explaining why political interference or regulatory meddling should not still be so pernicious as to effectively nullify the benefits that IRAs otherwise offer. That this has not been spelled out has led to some debate about IRAs, with some taking the view that, at least in the "Global South", it is unlikely that these institutions would really ever "take root". The theory presented helps address these concerns about IRAs.

By demonstrating that IRAs do enable states to obtain FDI by sending credible signals to foreign firms, the analysis thus helps to confirm their real-world importance. For scholars, this is a useful finding because it points to a different set of domestic institutions that are helpful for signaling credible commitments not previously emphasized in prior FDI research. Extant research has usually emphasized democratic institutions or international mechanisms like bilateral investment treaties (BITs), not narrower sectoral institutions existing in countries' executive branches. I show that, at least in telecommunications and electricity, there is more going on. The findings also suggest that looking at specific sectors within an economy can be a useful way to conduct research on FDI because doing so highlights some interesting and

important steps states are taking to capture foreign capital and benefit from economic globalization. Additionally, in order to carry out this dissertation's primary empirical test I created a quantitative data set of sample countries' IRAs in these two infrastructure sectors as well as annual measures of sectoral FDI that can be used for future research on this question, or related ones.

By highlighting formal, legal separation and long, fixed terms, the analysis also points out some specific design features of IRAs that help produce political independence. Practitioners may find this useful when thinking about how to adapt IRAs to specific contexts. Finally, by illustrating the conditions under which telecommunications and electricity FDI improves access to infrastructure-based services, we now know more about when developing countries are likely to be able to effectively harness international capital. Putting all of this together, then, this study offers some new insights about why and how many LDCs have made important economic and social welfare gains by successfully tapping into globalization in the past few decades.

1.3: Layout of the Dissertation

This dissertation proceeds with six additional chapters. In Chapter 2 I discuss the research question in-depth to establish that it is both interesting and unanswered. I consider the existing literature on the political determinants of FDI and discuss some of the key shortcomings that led me to examine infrastructure industries. I also establish that FDI in telecommunications and electricity is highly political, while also introducing IRAs and noting their key implications for FDI research.

In Chapter 3, I present my argument that explains why IRAs help countries obtain FDI in infrastructure industries. As noted, it fills in important gaps in previous thinking on IRAs by explaining why they should alter the behaviors of government actors who are periodically

incentivized to support policies that harm multinational firms in telecommunications and electricity. I also lay out the three additional hypotheses.

Chapter 4 conducts the empirical test of the hypotheses presented in the prior chapter using large-N statistical analysis. Here, I describe the data used to conduct this test. Before presenting the results, I discuss in detail both the dependent and independent variables that I constructed, and explain why a sample of 32 countries form Latin America and Asia, 1984-2008, is a useful one in which to test these hypotheses. The findings are supportive of my argument.

In Chapter 5, I attempt to further illustrate the accuracy of the argument using illustrative comparisons based on a "most-similar" design. Specifically, I compare Brazil and Mexico in telecommunications and Pakistan and Bangladesh in electricity. Although this chapter does not actually constitute an additional test of the argument, these comparisons are useful for illustrating some aspects of the theory that are hard to test statistically.

Chapter 6 looks for evidence that FDI moving into the telecommunications and electricity sectors translates into greater access to infrastructure-based services. After showing that "white elephants" complicate the electricity sector more so than in telecommunications, I present and statistically test an argument that explains when FDI in telecommunications and electricity is likely to increase access to phones and power. In Chapter 7, I conclude with a discussion of the project's contribution, implications, its shortcomings, and future research plans.

Chapter 2:

The Research Question

This dissertation asks: *Why do some countries obtain more FDI in public infrastructure industries than others*? This question is pertinent for those interested in the politics of economic globalization and, especially, cross-border capital flows. Foreign investment in public infrastructure has become an increasingly large share of overall FDI in recent years, especially in developing nations whose domestic infrastructure capacities tend to be lacking. LDCs' have turned to foreign corporations as a way to improve their infrastructure in the belief that doing so will enhance their long-term prospects for economic development and poverty alleviation. Thus, because of the links to development and poverty, explaining FDI in infrastructure industries may then yield important insights about why some countries have had more success than others in developing their economies and improving citizens' livelihoods.

Additionally, infrastructure FDI, theoretically speaking, is interesting. While, there is now a large body of work looking at FDI's political determinants, there are some important shortcomings to this research that makes focusing on infrastructure industries worthwhile. As will be discussed, it is common for scholars to work from the premise that host states must find ways to credibly signal to foreign investors that investments are insulated from political risks.

However, in adopting this perspective, they have frequently applied credible commitment reasoning to all industries within a domestic economy, even ones where the commitment problem is not really a central aspect of foreign firms' interactions with host nations (Jensen et al. 2012). That research has not focused on specific industries in which commitment issues clearly dominate FDI politics, such as in infrastructure, is problematic because it has led scholars to miss some important industry-specific features of these relationships. This includes the use of innovative institutional "commitment technologies" that states have utilized in order to signal to foreign investors that assets are safe.

For instance, beginning in the 1980s, many LDC governments began making significant reforms that altered how key infrastructure industries were regulated for the purpose of alleviating investors' concerns about political risks. Rather than leave regulatory policymaking to legislatures, chief executives, or government ministers, in some infrastructure industries such as telecommunications and electricity – this dissertation's theoretical and empirical focus – the responsibility for key policy decisions were delegated to regulators working inside politically independent regulatory agencies (IRAs). This was believed to help attract FDI by making it harder for governments to harm foreign investors in these sectors. FDI research, however, has yet to systematically examine the extent to which these institutional reforms have actually helped LDCs obtain more infrastructure FDI. Nor does a clear explanation exist for how or why IRAs would be expected to tie the hands of policymakers that will sometimes be resolved to enact policies that harm multinational firms. Thus, this project builds on previous research by explaining how IRAs are linked to national-level variation in infrastructure FDI. In doing so, it extends credible commitment theories to a set of domestic institutions that political economy scholarship has so far tended to overlook.

The rest of this chapter further establishes that this research question is important and unanswered. I begin by discussing why political risks are viewed as an important hindrance to FDI. In doing so, I emphasize two puzzles that have driven scholarly efforts to explain FDI and discuss how these puzzles have been addressed in prior research by applying the "obsolescence bargain" framework. Then, I consider why it is problematic for scholars to assume that commitment issues always dominate interactions between multinational firms and host nations, as FDI research has often done. This leads to a discussion about why focusing on the telecommunications and electricity infrastructure sectors is a useful way to advance the research agenda explaining variation in FDI inflows. Here, I establish that the commitment problem is severe in infrastructure industries and also note why IRAs are important for research on FDI (I save the discussion on how these institutions work for Chapter 3). I then conclude.

2.1.1: Political Risks and FDI in Developing Countries

Since World War II, multinational corporations have become an incredibly important part of the global economy. According to the United Nations, there are over 80,000 multinational parent companies controlling about 800,000 foreign subsidiaries (UNCTAD 2008). They also account for roughly 25% of global economic output and more than 33% of global trade (Jensen 2006). When internationally-oriented firms invest abroad they often bring with them new and better technology, improved managerial and organizational practices, other productivity spillovers, and additional access to foreign markets. For recipient economies, FDI thus offers a number of potential advantages, including employment gains, higher wages, more efficient outlets for domestic capital, reduced income inequality, and, of course, economic growth and development (Cohen 2007; Jensen and Rosas 2007; Jensen et al. 2012). FDI can also generate a number of political benefits, such as increases in democracy, improved labor practices, and

reductions in military conflicts (Gartzke, Li, and Boehmer 2001; Li and Reuveny 2009; Mosley 2011).[1]

One important feature of the global distribution of FDI since WWII is that developed economies have usually received the vast majority of these investments. In 1967, for instance, LDCs received slightly only over 30% of global FDI (Krasner 1985), a number that remained virtually the same in 2007 (Jensen et al. 2012). At some level, this discrepancy is unsurprising, given that efforts to deepen economic relationships after WWII have been most successful in the industrialized world, especially due to European integration. It can also be explained by the fact that, at least until the 1980s, most LDCs either remained closed to FDI or were vocal in asserting that it was their sovereign right to discriminate between domestic and foreign firms and expropriate the latter's assets when necessary. LDC governments that espoused these views scared off potential investors (Krasner 1985; Cohen 2007). By the 1980s, however, numerous developing countries came to the view that policies eschewing participation in the global economy were more likely to lead to economic decline or disaster than they were to generate growth and development. As a result, many started reversing course and seeking FDI. Unfortunately for the vast majority of these countries, they continued to receive far less FDI than the developed countries.

The ongoing existence of this gap, even after LDCs opened up to foreign investment, has constituted an important puzzle for FDI research. From the perspective of neoclassical economics it is puzzling because capital should flow from richer countries to poorer ones due to the higher returns that capital scarce economies promise investors. In theory, little FDI should be

[1] This is not to say that the outcomes of FDI are always uniformly good. For example, some have argued that multinational firms cause problems, such as by preventing LDCs from developing their economies on their own terms (Evans 1979; Moran 1974) and potentially increasing economic inequalities (Li and Reuveny 2009).

of the North➔North variety. This gap was dubbed the "Lucas paradox," after the author of the paper that first discussed it (Lucas 1990). This same paper also offered some possible reasons for this discrepancy. One explanation that animated a great deal of research concerned political risks – a term capturing the wide range of actions that governments sometimes take that harm the profitability of invested assets. Global firms perceived that relatively unstable LDC governments that heretofore had little experience with multinational firms would be likely to, at some point, take actions that would reduce or destroy the value of their investments, at least when doing so was politically expedient. This could happen through a number of channels, such as outright expropriation or nationalization of a private firm, contract renegotiations, or sudden regulatory policy changes, the latter of which have been dubbed "creeping expropriation" (Kobrin 1982).[2]

As political risks became better understood, political economy scholars began examining FDI politics through the lens of "obsolescence bargain theory" (OBT) (Vernon 1971). OBT describes how multinational firms maintain a high degree of bargaining power relative to potential host governments before they invest fixed capital abroad. This strong bargaining position comes from international firms' ability to pick from a variety of potential countries to invest in. In practice, this means that potential hosts, if they are to out compete others for FDI, must be able to offer foreign firms an investment environment that is more attractive and safer than what other states are willing or able to provide. OBT's key insight, however, is that the bargaining power between firms and host states switches after capital investments are made. Since foreign direct investments come in the form of physical assets that are hard to liquidate, firms cannot easily withdraw from the country. As a result, foreign firms' powerful bargaining position erodes after entry, leaving firms to be subject to the whims of governments that are

[2] Creeping expropriation usually involves states enacting a number of "smaller" policies that target foreign firms, unlike a nationalization, for example.

periodically incentivized to seize foreign firms' assets through expropriation. Firms can foresee this problem, however. Absent a credible commitment that a host country's investment environment will remain favorable after capital investments are made, they will reduce the amount of FDI they originally offer to host states, or will simply not invest at all.

The intellectual shift to OBT went a long way in explaining the Lucas paradox. However, the increased scholarly attention to FDI led to a second realization: that LDCs were varying greatly in terms of how much FDI they were actually receiving. Some developing countries were getting a much more attention from multinational firms (i.e. Brazil, China, Mexico, Singapore), than others (i.e. Bolivia, Sri Lanka, most African countries). As scholars have recently written, then, the "puzzle is that some countries have attracted great interest from foreign firms while others have gained little fanfare from prospective investors" (Jensen et al. 2012, p. 5). As more attention has been paid to this puzzle, FDI politics became much more central to the broader political economy research program on the causes and consequences of economic globalization. Research on the determinants of FDI has usually applied OBT, centering on the idea that host governments must credibly signal to international firms that assets will not be expropriated or profits otherwise harmed. As a result, FDI research has emphasized institutions and other factors that help states signal to foreign investors that assets are protected from political risks.

2.1.2: OBT-Based Explanations for FDI

The most commonly studied factor influencing governments' treatment of foreign firms is regime type. Scholars have reasoned that differences in how leaders are selected influences governments' propensity to harm foreign firms. Currently, there is a general consensus in the literature that foreign firms prefer to invest in democratic states, all else equal, because they offer some key benefits to multinational firms (Jensen 2003, 2006, and 2008; Jensen et at 2012; Li and

Resnick 2003; Li 2006). One benefit that democracies provide is transparency. Transparent political systems enable foreign investors to anticipate government actions, which reduces investors' uncertainty about the investment environment. When outsiders can anticipate governments' behavior it better enables them to build positive reputations with economic actors (Stasavage 2003). Critically, democracies also provide economic actors with the rule of law and offer better property rights protections than non-democracies, which reduces concerns about political risks (Jensen 2003 and 2006; Li and Resnick 2003).

Relatedly, scholars have also argued that democratic regimes generally offer foreign firms a more stable policy environment, in which sudden changes to the policy status-quo are relatively rare. This is because democratic institutions tend to produce a relatively high number of veto players.[3] Changing policy is hard in systems with many veto players because they enable a wider base of domestic actors preferences to influence policymaking. This helps foreign firms because most domestic groups do not usually hold preferences against foreign firms (Pandya 2014). Policymakers representing a group that does have preferences against the entry of multinational firms will likely confront resistance that makes shifting policies in their preferred direction difficult. Ultimately, this inhibits governments that would otherwise be more likely to renege on their agreements with foreign actors from doing so **(**Henisz 2000b and 2002; Jensen et al 2012; Li 2009).

It is worth pointing out, however, that some older FDI research actually made the opposite argument about regime type: that foreign firms do not prefer to invest in democracies because the pluralism embedded into these regimes can be threatening (Oneal 1994; O'Donnell

[3] Veto players are defined as "an individual or collective actor whose agreement is…required for a change in policy" (Tsebelis 1995, p. 301). Changing the policy status-quo becomes harder as the number of veto players increases.

1978). If, for example, a large number of citizens come to believe that foreign firms are taking advantage of host countries, perhaps obtaining inordinately high profits, then political risks may become severe due to public backlash. Democracies are also less able than autocracies to provide foreign firms with a low-cost labor force and are more subject to unwanted redistributionist pressures (Haggard 1990; Oneal 1994; Rodrik 1999). Additionally, electoral turnover can also exacerbate investment risks because it can sometimes lead to less desirable and predictable policy changes (Gilardi 2007). The key point about democracy, then, is that it has competing effects on FDI (Li and Resnick 2003). Some aspects of democratic systems help induce FDI, while others inhibit it.[4] That democracy appears not to be uniformly good for foreign firms provides some impetus to examine additional domestic institutional options for generating credible commitments.

Government partisanship is another factor that influences where FDI goes. The focus on partisanship emerged from previous political economy research showing that leftist governments often face especially high credibility problems with economic actors (Simmons 1994). Recent assessments of the relationship between government partisanship and FDI have concluded that leftist governments are more likely to attract foreign investments than rightist ones. This is because multinational firms will usually hire local workers, which raises demand for local labor, increasing this group's employment and wage prospects. The key insight for politics is that, because leftist politicians represent labor, they have an interest improving this group's welfare. This leads leftist governments to seek out multinational investments that make use of the

[4] One shortcoming in research looking at the democracy-FDI connection is that it has not offered a theoretical explanation for why the aspects of democracy that helps firms feel secure about investing tend to dominate the aspects of democracy that raise concerns about risks for firms. In other words, we do not have a good understanding of why, empirically speaking, the credibility enhancing aspects of democracy have, on average, dominated its credibility reducing aspects.

domestic labor force (Pinto 2013).[5]

Finally, FDI research has pointed out that states seeking foreign investments can sign bilateral investment treaties (BITs) with multinational firms' home governments in order to provide firms with a credible commitment (Buthe and Milner 2008; Kerner and Lawrence 2014; Neumayer and Specs 2005; Simmons 2000; Tobin and Rose-Ackerman 2011). BITs are known to be one important institutional innovation that developing countries have used to reduce investors' concerns about political risks. They promote FDI by sending signals about the quality of the domestic environment. BITs also provide foreign investors with options for international arbitration against states that violate their terms. That firms have legal recourse when they perceive that they have been slighted is important because having this ability raises the costs of infringing upon firms property rights.[6]

2.2: Problems in the Application of OBT

While this research has emphasized that LDCs can increase the amount of FDI they receive by providing firms with a credible commitment, it is also known that the intensity of the obsolescence bargain – and thus the severity of the commitment problem - varies significantly across industries (Frieden 1994; Levy and Spiller 1994; Wellhausen 2015). That political risks

[5] Older research exploring the partisanship-FDI link, interestingly, tended to argue that multinational firms preferred rightist governments because they represent capital interests that have free market preferences (Evans 1979; O'Donnell 1988).

[6] It is worth pointing out that research on BITS has also offered some important caveats about their effectiveness. First, they do not substitute for an otherwise poor institutional investment environment. That is, when developing states with particularly weak domestic institutions sign BITS, they will do little to actually promote FDI inflows. Instead, BITs serve as complements by helping LDC governments demonstrate to investors "that domestic institutions will work as claimed to protect FDI" (Tobin and Rose-Ackerman 2011, p. 2). Additionally, for a given state, BITs' effectiveness wears off the more that other states competing for FDI come to rely on them (Ibid). This is because BITS are a device that levels the playing field for FDI. The more BITs signed by LDCs, the less they serve as a way for investors to distinguish which hosts would be likely to protect foreign firms' property rights.

are not constant across all areas of a domestic economy was a point recognized by much early FDI scholarship (Frieden 1994; Jensen 2012; Vernon 1971). Indeed, Vernon's (1971) seminal book on the politics of multinational firms' relationships with host nations that coined the term "obsolescence bargain" did so based almost entirely on insights from the extractive sector, and was not ever intended to have a broader economy-wide application. This is why, in early research, "the obsolescence bargain has been operationalized in terms of industry, applied most often to investments in oil, natural resources, metals, as well as infrastructure investments and other site-specific investments that offer owners concentrated rents and are easily seized" (Wellhausen 2015, p. 242).

However, the reality that political risks are severe in some industries, but minimal in others has usually been ignored in more recent FDI research. Newer work applying OBT has used this framework to explain national-level variation in total (net) FDI inflows, a measure that aggregates all economic sectors into a single value. This is problematic insofar as OBT is not well suited to explain FDI in industries in which concerns about political risks do not actually weigh heavily for firms. The tendency to stretch OBT to a much broader set of industries than was originally intended is a weakness of this literature that has "handcuffed research on the political implications of investment flows" (Jensen et a. 2012, p. 16). The problem is that when OBT is applied economy-wide to industries where foreign firms' relationships with host governments are not nearly as fraught as this perspective suggests, it leads scholars to overlook dynamics, including industry-specific ones, that are a critical part of multinational firms' interactions with their host governments. For instance, for industries in which the commitment problem is not a major impediment to investment, applying OBT means that firms are not viewed as being able to influence host country policies because of their weakened bargaining

position after entry. However, in many sectors foreign firms frequently lobby governments or take other active steps to resist pressures to change business practices (Jensen et al. 2012, especially p. 119), making OBT less useful.[7] OBT has trouble explaining the why resistance would be tried in the first place, nor why it might succeed. Additionally, for the narrower set of industries where the commitment problem really does dominate interactions between foreign firms' and LDC governments, such as in infrastructure, applying OBT economy-wide has caused FDI research to overlook potentially critical, industry-specific institutional reforms that many states have made to alleviate firms' fears about political risks. In this dissertation I focus on how many LDC governments have redesigned their sectoral regulatory institutions for some infrastructure industries so that key policy decisions are made by independent agencies that are insulated from domestic politics.

Given these problems, I assert that a better way to apply OBT to FDI than what has typically been done is to focus theoretically and empirically on sectors where bargains do in fact obsolesce and political risks are indeed a serious and constant threat. Additionally, to the extent that OBT is usually applied to industries in which commitment problems are often not severe or even necessarily present, it becomes important for FDI researchers to establish that the firms whose investment behaviors they are explaining actually do worry about political risks. The next

[7] The dynamics of the manufacturing sector help to illustrate this point. Research that applies OBT economy-wide assumes that the commitment problem plays a meaningful role in determining where manufacturing FDI ends up cross-nationally. However, there is good reason believe OBT does not apply well to this sector (Kobrin 1987; Ramamurti and Doh 2004). This is because global manufacturing firms are more flexible in their mode of operations, product lines, and use of technology - the combination of which affords them options to resist unwanted government actions that are not typically available to firms in many other industries after entry. Additionally, domestic opposition to manufacturing FDI is frequently less common than OBT might predict because firms develop linkages with labor groups, members of their supply chain, and customers who benefit from their products - all of which help to protect firms from host governments that would otherwise turn hostile (Kobrin 1987).

section establishes that this is the case for the telecommunications and electricity infrastructure sectors. Doing so enables me to then highlight in more detail why refashioned institutional set-ups for regulating infrastructure industries is important to examine.

2.3.1: Political Risks and FDI in Telecommunications and Electricity

Public infrastructure, especially the telecommunications and electricity sectors, is an area of the economy in which political risks are understood to be quite severe. LDC governments have had considerable trouble providing investors in these two infrastructure industries with a credible commitment. Beyond more basic worries about investing in LDCs, heightened concerns about political risks arise in infrastructure because foreign infrastructure providers' actions tend to get politicized in ways that generate severe backlash against these firms (Brook and Irwin 2003; Crystal 2003; Levy and Spiller 1994; UNCTAD 2008; Victor and Heller 2007; World Bank 2006). The tendency for politicization to spark backlash is often due to the effects this FDI has had on citizens' disposable incomes.

To understand how this is the case it is necessary to know two things about FDI in the telecommunications and electricity sectors. First, it is market seeking insofar as the final product is sold to domestic consumers (Dunning 1981). Second, FDI in these sectors first occurred in the wake of large-scale economic reforms that many LDCs implemented in the 1980s and 1990s. As a result of these reforms – which usually included liberalization, privatization, and various regulatory changes – the prices that most citizens paid for these services increased, often dramatically (Brook and Irwin 2003; Thatcher 2005; Victor and Heller 2007). Indeed, in some instances, phone or electricity bills doubled (or more) virtually overnight. This happened at the same time that consumers' subsidies that held down prices were often reduced or removed – additional unpopular measures that further increased the prices that citizens paid to receive

access to phones and power. Additionally, it was also often made easier for providers to cut off services to delinquent bill payers, many of which included poorer and middle class individuals (Brook and Irwin 2003). These changes compounded to create an intense set of challenges for many policymakers. This was especially the case where LDC governments had previously established that access to these services was engrained into social contracts as a right, rather than a good whose provision should be left to market forces. The frequent result was negative domestic attitudes about key aspects of these reforms (Baker 2009; Kessides 2005; Victor and Heller 2007). Because many of these reforms that harmed consumers were meant to attract FDI, citizens have often thrown political support to policymakers that have threatened to break agreements with foreign infrastructure providers.

Political risks for foreign infrastructure firms do not always emanate only from publics, however. They can also come from powerful domestic firms that face the prospect of unwanted foreign competition (Gilardi 2007; Pinto 2013). This exacerbates credibility problems in potential host economies because foreign firms fear that the domestic firms will use their political influence to obtain preferential treatments from politicians and ministry officials that, in turn, lead to regulatory policy choices that will be harmful. As Gilardi (2007) has written, "prospective investors may be put off by the danger of collusion....and may thus renounce to enter the market altogether" (p. 308).

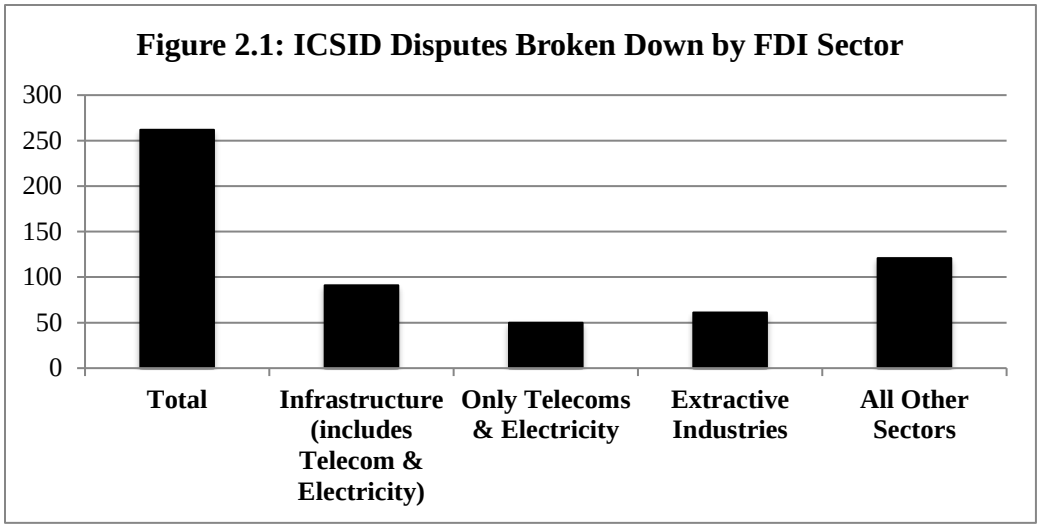
All together, these dynamics can generate strong incentives for policymakers that are dependent on domestic political support to harm foreign firms. Additionally, infrastructure industries tend to have a number of other features that make investment highly subject to political risks. One feature is that the economic value produced by infrastructure firms is usually site specific. This makes it relatively easy for governments to seize valuable assets from firms in

these industries (Frieden 1994, pp. 571-572).[8] Another feature is that infrastructure providers produce services that are frequently non-tradable. This means that foreign firms in industries like telecoms and electricity often cannot be disciplined using threats of import competition, as they usually can in manufacturing, for example (Ramamurti and Doh 2004). Governments thus become more likely to take actions that are, from the view of the multinational firm, extreme. Finally, because infrastructure sectors have a long history of being considered a natural monopoly, states have grown highly accustomed to intervening in the business practices of infrastructure firms (Levy and Spiller 1994; Ramamurti and Doh 2004).

Typically, in the telecommunications and electricity industries harmful actions materialize as new, unpredicted limits on how foreign firms can ensure cost recovery. Most often, additional and unexpected restrictions get placed on the prices that foreign firms may charge consumers, the rate at which firms may increase these prices over an agreed upon time period, and the conditions under which they may eliminate services to delinquent bill payers. Often, governments announce new restrictions suddenly through an executive decree or they compel firms to renegotiate the terms of their investment arrangements. These actions can be common. As has been written by one scholar of business governance, "history is full of examples of [government] attempts to gain political advantages by manipulating the prices of utility services" (Majone 1997, p.5).

One way to illustrate the severity of this problem in public infrastructure is by looking at the history of arbitration disputes between multinational firms and states. These are presented in Figure 2.1, using data from the International Centre for Settlement of Investment Disputes

[8] In his discussion of the politics of public utilities sectors, Frieden (1994) also points out that the act of expropriating a single firm is itself unlikely to affect the profits of other firms in the same sector. This reduces incentives for firms to try to collectively resist governments' efforts to expropriate assets.



(ICSID), 1972- 2012.[9] The reader should note that using arbitration data is imperfect because it does not capture the universe of disputes between foreign firms and governments - only those that rose to the point that parties use the ICSID. This means they undercount the actual number of disputes and should be taken with some reservation. Nonetheless, the picture presented is instructive. We can see from Figure 2.1 that of the 262 total cases that had been filed with the ICSID through 2012, 91 (about 35%) of them were in public infrastructure sectors.[10] Fifty (about 19%) of these public infrastructure disputes were in either in the telecommunications or electricity sectors. Also, when taken as a whole, infrastructure disputes are also more common than in extractive industries (61, or about 23% of total disputes). This picture suggests that public infrastructure FDI is fraught with political risks. It is therefore a useful area for extending and testing credible commitment theories premised on an obsolescence bargain.

[9] These data was compiled by Caddel and Jensen (2014).

[10] Public infrastructure industries were identified as being telecommunications, electricity, water, railroads, airports, highways, and other forms of public construction. Extractive industries include energy exploration (oil and gas) as well as mining of metals (i.e. steel, aluminum, or bauxite) or other natural resources. All others, such as in manufacturing or other services are included in the "other" category.

2.3.2: IRAs and Their Implications for FDI Research

FDI research has so far not explored if and why bureaucratic institutions in the executive branch that craft regulatory policies affect firms' willingness to invest abroad, including IRAs. This is despite it being well understood that regulations influence the profitability of foreign firms' investments. The main reason for this neglect, as discussed, is that these institutions' roles are often particular to certain industries or economic sectors. Because FDI research has focused on explaining aggregate FDI inflows in the belief that the FDI commitment problem remains constant across all areas of the domestic economy, there has been relatively little reason to investigate sector specific regulatory institutions.

Additionally, scholars may have some valid claims to have already captured important regulatory policymaking dynamics insofar as extant research has focused on democratic institutions and veto players as explanations for FDI. Indeed, regulatory policymaking in democracies with a relatively high number of veto players may play out differently than in non-democracies that have institutions that are less geared toward maintaining a policy status quo. And it is certainly the case that legislatures and chief executives still influence some regulatory policies for many areas of the economy. To the extent that this is still the case, there may then be little need to focus on other institutions that produce regulations.

The problem with such a view, however, is that it ignores the fact that, since the mid-1980s, many LDC governments have taken major steps to refashion their regulatory institutions for key infrastructure sectors, especially telecommunications and electricity. In the case of these two industries, their highly politicized nature, as outlined, was the main reason for refashioning the regulatory institutions that governing these industries in the first place. It was understood that, absent reform, domestic political pressures would eventually lead policymakers to take

actions that harm multinational firms, which, in turn, would depress LDCs' future ability to obtain the foreign capital that they desire. As will be discussed in more detail in the next chapter, what often occurred is that LDCs eventually adopted the independent regulatory agency model of governance. In brief, in this model, control over key regulatory policy decisions was removed from legislatures, heads of state, and ministry officials and placed into formally independent agencies that were now put in charge of sector governance. Because regulators were insulated from the whims of domestic politics, regulations could better ensure that foreign investments in the industries they were charged with governing were protected and profitable.

Ignoring the potential influence of IRAs on foreign infrastructure investments is problematic for FDI research because there are good reasons to think that IRAs help explain this project's research question. Although certainly not impossible, it would be quite strange if IRAs were actually little more than isomorphic paper tigers that could not actually prevent governments from backtracking on their promises to foreign firms, given that numerous governments adopted IRAs to do exactly this. In other words, if they do not work, then why would so many countries have adopted them? Given that institutional reforms in sectors like telecommunications and electricity were common during a time period in which many states did manage to increase the amount of FDI they were receiving from multinational firms in these industries, a causal relationship does seem possible. Thus, if this dissertation establishes this connection theoretically and empirically, then it will have shown that a set of executive branch institutions that have not typically been emphasized as important in politically economy research are crucial for LDCs' ability to take part in economic globalization.

2.4: Conclusion

The question of why some countries have been able to obtain more FDI in infrastructure

industries than others is an important one. This is not only because this FDI makes up a sizeable share of global FDI or because infrastructure FDI should have important implications for economic growth and development (although these are certainly good reasons). It is also an important question because, in focusing the question on a specific set of industries that are especially prone to political risks, it enables me extend credible commitment theories to a set of executive branch institutions that have not been focused on in mainstream political economy research. Taking this step is useful because it highlights additional ways that states may signal their future policy intentions to foreign economic actors that go beyond the typical explanations for FDI. Additionally, because previous applications of obsolescence bargain theory have been applied economy-wide to industries and sectors where firms are much less concerned about political risks, focusing on telecommunications and electricity FDI enables me to conduct a more accurate test of the OBT framework. In the next chapter I lay out a theory that explains how it is that IRAs in these sectors help LDCs attract FDI by reducing investors' concerns about political risks. It offers a set of hypotheses that will then be tested in the subsequent chapter.

Chapter 3

Insulating for Investment

3.1 Introduction

The previous chapter established that this project's research question (Why do some countries obtain more foreign direct investment (FDI) in infrastructure industries than other countries?) is worth investigating. This chapter presents my answer to this question. I argue that infrastructure FDI in the telecommunications and electricity industries can be explained by looking at how reform-minded LDCs have designed the regulatory institutions that govern policymaking in these industries in order to overcome multinational firms' concerns about political risks, especially those involving asset expropriations. Although my emphasis on regulatory institutions is not itself new, the logic for why and how they can influence FDI has not been spelled out in a way that identifies important mechanisms or makes clear connections between regulatory institutions' design features and countries' prospects for receiving foreign investments.

Specifically, I argue that when regulatory institutions are politically independent in terms of being formally separated from other government institutions and endowed with long, fixed terms for agency leadership, they make the FDI commitment problem less severe. This happens because government policymakers holding time-inconsistent preferences find that influencing

regulatory policymaking in ways that harm foreign firms is harder when regulatory policymaking has been delegated to politically independent regulatory agencies (IRAs). Since firms are now more insulated from political risks, they become more willing to invest. Before concluding, the chapter also offers three additional hypotheses that speak to IRAs' ability to send informational signals to multinational firms. Specifically, I hypothesize that IRAs' FDI-inducing effects are strongest in the time periods just after they were created**,** that when they are present democratic institutions will actually come to reduce countries' chances for obtaining FDI, and that they make it more likely that leftist governments attract FDI in the sectors that they regulate.

The rest of this chapter proceeds as follows: The next section briefly discusses how, in recent years, LDCs have sought FDI from foreign infrastructure firms, but have received fewer of these investments than they have aimed for. After that, I discuss in-depth how many LDCs have reformed how they regulate infrastructure industries. Then I present the theory and the primary hypothesis. Before concluding, I present the additional hypotheses. The final section concludes.

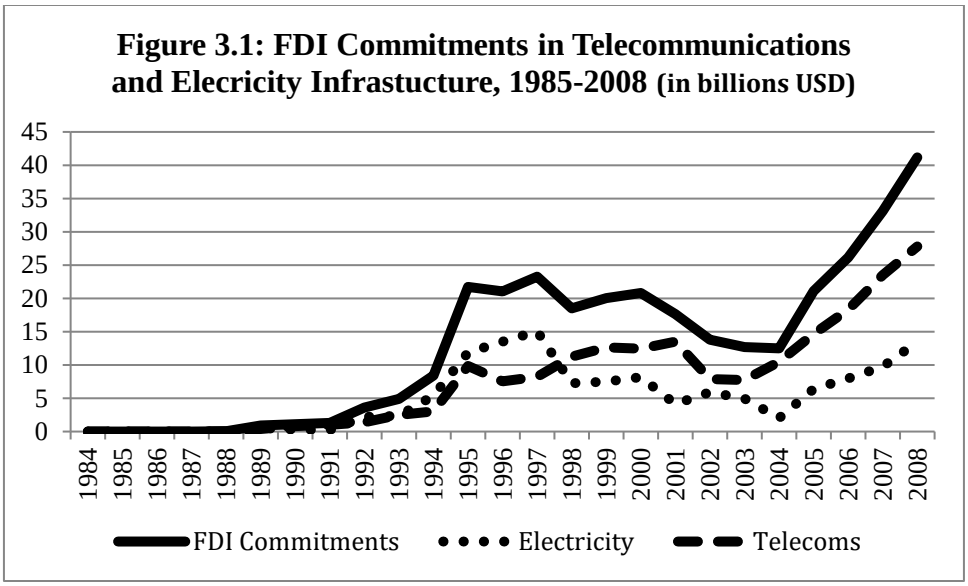
3.2 Investment Shortfalls in Infrastructure Industries

Before establishing why IRAs should have FDI-inducing effects it is useful to briefly illustrate that, while there are internationally-oriented infrastructure firms in the telecommunications and electricity infrastructure industries that are willing to invest in developing countries, the amounts being invested typically fall short of what most emerging economies have sought. Starting in the mid-1980s, LDCs began engaging in reforms in which they opened their economies to private investment in infrastructure sectors like telecommunications and electricity. This was especially the case among countries characterized as "developmental states" - states that in the second half of the twentieth century typically relied upon high-levels of government

planning and intervention in the economy to promote economic growth and development.[1] Multinational firms in these industries saw the potential gains from investing in capital scarce economies. For example, a recent survey of multinational infrastructure providers illustrated that "market-pull" factors in host countries were these firms' most frequently mentioned motive for investing in developing countries. Increased business and profit-making opportunities were the most cited specific reason (UNCTAD 2008). Additional evidence for foreign infrastructure providers' willingness to invest in LDCs can be seen in Figure 3.1, which shows the annual dollar sum of committed FDI in the telecommunications and electricity sectors in 32 Latin America and in developing countries in Asia between 1984 and 2008. The increase in FDI going into these countries during this time (despite dipping between 1997 and 2003, which coincided with the Asian Financial Crisis) helps illustrate that foreign firms in these sectors have been willing to sink assets into developing countries.

Although many LDCs that implemented reforms were pleased to find this happening, more often than not they found that the actual amounts being invested were not nearly large enough to satisfy domestic needs. These investment shortfalls are indicative of a broader financing gap in public infrastructure (Brinceno-Garmendia, Estache, and Shafik 2004; UNCTAD 2008). As has been written, "There is a significant though varying gap between actual and needed finance for infrastructure investment across all developing regions and infrastructure industries" (UNCTAD 2008b, pg. 92). For instance, in the electricity sector between 2000 and 2010, it has been estimated that LDCs, on average, received only about half of the annual investments they require to meet development goals (Ibid). Similar evidence is available for the telecommunications sector. Between 2015 and 2030, for fixed lines, mobile access, and internet, developing countries

[1] Numerous well-known analyses of the "developmental state" have emerged since Johnson (1982) coined the term, such as Dore (1986), Evans (1995), and Wade (1990).



as a whole are expected to face a total annual financing shortfall between 30% - 60% (UNCTAD 2014). As I will now discuss, one way that LDC governments have attempted to reduce this gap is by delegating regulatory policymaking to IRAs.

3.3 The Turn To IRAs

As discussed in Chapter 2, firms that engage in FDI face political risks. This includes the risk that governments will expropriate firms' assets. Foreign firms understand that states' promises that the policy environment will be stable and oriented to support market activities are not always credible. As outlined by the obsolescence bargain framework, this is because policymakers often have incentives to backtrack on these promises in order to appease politically powerful domestic actors, such as consumers, even if they also desire the longer-term benefits delivered by foreign capital. In other words, host governments must overcome a time-inconsistency problem in which their commitments to foreign firms are believed to obsolesce after investments are made (Vernon 1971). This is a problem that has plagued policymakers' interactions with a number of economic actors (Kydland and Prescott 1977; Rogoff 1985; Tomz 2007). To surmount it, states must find ways to pre-commit to providing stable investment environments. As was also explained in the

previous chapter, this problem has been particularly severe in infrastructure industries like telecommunications and electricity because the participation of private firms, especially foreign ones, in telecommunications and electricity led to vastly higher prices for phones and power. The resultant domestic backlash provides policymakers incentives to take actions that harm foreign firms in these industries.

As a response to the challenges posed by private firms' involvement in public infrastructure, many reform-minded LDCs made profound changes to how they regulate business activities in these industries. In telecommunications and electricity as well as some other industries, such as water, they have by-and-large moved away from governance models that rely strictly on government monopolies, where ministry officials or legislatures determine the regulations that firms pay the most attention to. Instead, they often adopted an alternative model in which politically independent regulatory agencies determine policies critical for infrastructure firms' ability to recover costs. IRAs are non-majoritarian institutions capable of exercising public authority, but which are also not managed by other government actors or elected by citizens (Thatcher and Stone Sweet 2002; Gilardi 2007 and 2008).

The principal reason that states originally relied upon government ownership models in these sectors is because they have natural monopoly characteristics. A natural monopoly occurs when it is most cost efficient for a single firm to serve a market (Sharkey 1982). They are characterized by economies of scale and scope as well as a high degree of asset immobility. This can inhibit market mechanisms from ensuring that suppliers speedily and effectively provide goods and services to consumers. When they are present, introducing competition increases cost inefficiencies and reduces outputs. To promote infrastructure services in telecommunications and electricity, the various business activities in these industries – from creation of physical infrastructure and service generation on the one hand, to distribution and retail, on the other – were

usually vertically integrated into one firm responsible for providing services to a distinct area. To avoid problems associated with private monopolies, governments usually took control of these firms.

Two factors, however, spurred a shift away from this model. The first was technological. In both telecommunications and electricity, recent advancements undercut the view that these industries were still, by the 1980s and 1990s, truly natural monopolies. In telecommunications, for example, digital switching technologies as well as the introduction of broadband and mobile phones meant that new entrants could bypass traditional barriers to market entry. This increased the possibilities that multiple firms could now compete in a market (Rodine-Hardy 2013). Similar technological changes have also altered how the electricity sector is governed. Whereas it had long been believed that services were best provided by a single, vertically integrated electricity provider, new technologies in this sector also emerged that cut against the idea that this set-up is still efficient. Technologies that enabled independent smaller units to produce larger amounts of electricity, such as by using wind, solar, or nuclear power have become much more common. More generally, distributed generation systems that use smaller-scale technologies to support energy usage closer to where it is actually produced have created openings for new market entrants - typically referred to as independent power producers (IPPs) - to compete with large incumbent firms.

The second impetus for moving away from the government monopoly model was that domestic service providers often did a poor job of ensuring that citizens' and industries' service needs were adequately met (Levy and Spiller 1994; Kessides 2005; Victor and Heller 2007; UNCTAD 2008; World Bank 1994). Through their close access to policymakers, incumbent firms were often able to ensure that they received heavy subsidies while they were also not incentivized to invest the assets necessary to ensure domestic demand was met. At the same time, during the

1980s and 1990s, many LDCs also came under severe financial strain, which compounded service delivery problems. For instance, many Latin American and Asian countries endured economic crises that made indefinite subsidization of infrastructure difficult to sustain. These problems frequently prompted a willingness to embrace an alternative governance model.

What ultimately happened was that reform-minded governments began promoting market activity and private investment, often targeting foreign capital. Creating an IRA was deemed essential for this new approach's success. Rather than allowing policymakers that will be responsive to domestic groups to craft the regulations that get politicized, these responsibilities would instead get delegated to an independent agency that was obligated by the terms of its charter to provide a market-based investment environment. Regulators would then use this charter as an agenda to guide policy choices (Wilson 1989), in which regulatory officials "measure their success by the amount of this agenda they accomplish" (Majone 2001b, p. 66). Delegating regulatory policymaking authority to this type of actor, it was asserted, would result in firms being more insulated from political risks, spurring investment.

The independent regulator model was not really a novel idea at this time, however. Nor had it been focused exclusively on regulating infrastructure providers. It was adopted first in the United States in the 1930s when agencies like the Securities and Exchange Commission and the Federal Communications Commission were created as part of a broader move toward a regulatory capitalism that constituted the New Deal (Levi-Faur 2005). However, it was not until the 1980s that these practices became more globally widespread (Gilardi 2005, 2007, and 2008; Levi-Faur 2005; Majone 1997). For many LDCs it was interactions with the World Bank and the International Monetary Fund (IMF) in the 1980s and 1990s that prompted the actual creation of IRAs (Jordana et al. 2011; Murillo 2009; Rodine-Hardy 2013). As positive ideas about politically independent regulation were diffused, the number of IRAs around the world that govern economic

(i.e. infrastructure as well as Banking and Finance) or even social issues (i.e. Environment, Food & Drugs, and Pensions) mushroomed. By the early 2000s virtually all countries had adopted IRAs in at least some of these areas (Jordana et al. 2013).

Intellectually, the independent regulator model is premised on the notion that markets are not usually self-adjusting and that efficient, long-lasting ones require strong, well-articulated regulatory frameworks (Levi-Faur 2005; Levy and Spiller 1994; Polanyi 1944). This reasoning is in line with previous research demonstrating that as governments reformed their economies during the 1980s and 1990s they did not so much engage in deregulation as they frequently partook in efforts to "reregulate" these industries in order to promote market competition. These efforts have been summed up by the term "freer markets, more rules" (Vogel 1996). IRAs' promoters were often animated by research in the new institutional economics that argued that scholarship and policy advice should emphasize institutions because they are fundamental to shaping how markets work (Levy and Spiller 1994; North 1981 and 1990; Williamson 2000). When countries adopted an IRA in the telecommunications or electricity sectors it was argued that they were "getting the institutions right" (Rodrik 2004).

3.4.1 IRAs and FDI in the Telecommunications and Electricity Sectors

Others have argued that for public infrastructure industries like telecommunications and electricity, IRAs induce inward FDI by helping states offer foreign firms credible commitments (Estache and Rossi 2008; Gilardi 2005, 2007 and 2008; Hart and Moore 1988; Kirkpatrick et al. 2006; Majone 1997,1998, 2001a, and 2001b; Parker 1999; Stern and Trillas 2003; World Bank 1993, 2006, and 2011). Thus, this chapter's primary contention is not itself novel. At the same time, those making the claim that IRAs serve as an effective "commitment technology" have not presented a clear political logic for why this outcome should be considered likely. Nor have these

arguments been explicated in ways that obviously connect IRAs' design features to their adopters' increased potential for receiving FDI in the industries they oversee. Instead, these connections have been tenuously made or simply been taken for granted.

What has specifically been left under-theorized is an explanation for why IRAs would be expected to alter the behaviors of policymakers incentivized to respond to domestic actors that favor policies that harm multinational firms, such as by placing new limits on the prices they may charge for services. Indeed, governmental and IGO officials as well as scholars have not made it clear why IRAs would increase investor confidence by changing the behaviors of policymakers who would otherwise be willing and able to interfere in regulatory policymaking after delegation to an IRA had taken place. Arguments about IRAs' credibility-enhancing effects have usually come in one of two forms. The first involve broad statements that political independence helps increase investor confidence (Estache and Rossi 2008; Gilardi 2005, 2007 and 2009; Hart and Moore 1988; Majone 1997, 1999, 2001a, and 2001b). While useful for laying out a general claim, many of these assessments do not do much more than to assert that delegating policy responsibility to IRAs keeps politicians at a safe or arms-length distance from regulators (Estache and Rossi 2008; Hart and Moore 1988), or that regulators must be shielded from political interference **(**Parker 1999; Kirkpatrick et al. 2006). The most developed of these arguments is Majone's (2001a and 2001b). His political transaction cost approach to independent regulation couches the logic of delegating policymaking to an IRA in the fiduciary principle, in which regulators are viewed as trustees that have the freedom of action needed to protect long-term interests identified by a government, rather than being an agent of policymakers making short-term political calculations.

The second involves an argument by analogy: that IRAs essentially work like independent central banks. These arguments also stress the importance of delegating policymaking to technical

experts in order to generate credible commitments (Curie et al. 1999**;** Gilardi 2007; Stern and Trillas 2003).[2] The reason that delegation works is because policymaking authority is granted to an actor with preferences that are different from the rest of the government. Governors of independent central banks must be more in favor of price stability than elected members of government (Rogoff 1985). For IRAs, their leadership must be more market-oriented and less interventionist than policymakers that have time-inconsistent preferences.

While these ideas resonate in a general way, they are still incomplete explanations for why IRAs would reassure foreign investors about political risks. They do not explain why policymakers that have trouble offering foreign firms credible commitments would interfere in regulatory policymaking less often or effectively than when these policy decisions are not made by IRAs. What is it about these institutions that actually constrain policymakers from interfering in regulatory affairs? Where do the incentives to exercise restraint come from? After all, executives or legislatures could still try to undercut an IRA's formal authority. For instance, when facing political or economic duress an executive could issue a decree or order that supersedes any previously agreed upon price increases for telecoms or electricity services that regulators have made with firms, or a legislature could suddenly pass new laws revoking an IRA's independence. Since governments have these options, it is not by itself enough to assert that because IRAs are on paper independent from other day-to-day government affairs they would necessarily prevent policymakers with time-inconsistent preferences from interfering in them, and that foreign firms

[2] Gilardi (2007), interestingly, points out a key difference between central banks and regulatory agencies – that central banks' ability to produce credible policies is dependent upon the degree of policy stability that other parts of government provide, per extant research (Bernhard 1998; Keefer and Stasavage 2003; Lohman 1998). IRAs would not be expected to exhibit this dynamic, however, because if other parts of government are able provide policy credibility to foreign firms then delegation is not needed (Gilardi 2007; Levy and Spiller 1994).

understand this to be the case. In other words, it is not clear why they would not simply be seen as institutional paper tigers.

This is an important point because LDCs are known to have problems that might call an IRA's ability to produce an acceptable policy environment for infrastructure firms into question. These include relatively weak domestic institutions, poverty, and sometimes restive populations. These difficulties have periodically led to unstable environments where political risks for foreign firms are severe. Additionally, research on central bank independence has determined that, for developing countries, it may not be a commitment institution's formal, *de jure* characteristics that indicate its policy outputs so much as it is its informal characteristics that matter. For instance, in LDCs, informal practices related to central bank governor turnover are a stronger predictor of inflation rates than central banks' formal institutional characteristics (Cukierman et al. 1992). Findings like this have recently led scholars studying developing nations to emphasize informal institutions on political behaviors and outcomes over formally defined ones (Helmke and Levitsky 2004 and 2006; Helmke and Rosenbluth 2009).

Furthermore, some recent research on IRAs in LDC contexts has also presented a pessimistic view of their ability to function as designed. Specifically, what is questioned is their ability to effectively "take root" in these societies. For example, Dubash and Morgan (2012) state that, for IRAs, "the institutional form of the independent regulatory agency is transplanted, but without common understanding across political actors or of its purpose or the viability of its implementation…regulatory agencies in the South are more likely to begin as hollow institutional shells…(p. 267). Similarly, Hochstetler (2012) argues that independent regulators are unlikely to be able to maintain independence in practice because their decisions affect politically important constituencies, such as consumers. Thus, arguments about why an IRA's formal, legal characteristics would in fact help produce a credible commitment in an LDC context must also

explain why what is written on "parchment" (Carey 2000) will be reflected in practice. It is not enough to assume that this connection exists.

The answer I propose involves extending a reputational theory of cooperation developed by Tomz (2007) to the FDI commitment problem. This argument was originally developed to explain the politics of debt contracting between international investors and borrowing governments. That so much cooperation historically occurs between these actors is puzzling because these transactions occur in an anarchic environment that makes contract enforcement hard, and where investors also have incomplete information about debtor nations' changing preferences toward repayment.

This argument posits that cooperation – that is, a willingness by lenders to lend and debtors to pay back their debts – emerges because debtors can take active steps to establish reputations as "stalwarts" – governments believed to always pay back their debts, even when under domestic political or economic duress. This is because they place a high value on the long-term benefits that international capital can provide. In contrast are governments that may be seen as either "fair-weathers" or "lemons" –actors perceived by creditors to have moderate or low likelihoods of repayment, respectively, because other domestic priorities limit politicians' willingness to repay. In this view, governments change their reputations by engaging in behaviors that are contrary to their established type. Those believed to be fair-weathers improve their reputations by servicing debt under difficult conditions, though not when times are good. Lemons move toward becoming stalwarts when they service debt under any conditions. Those viewed as stalwarts can only worsen their reputation, which happens whenever they take steps that harm foreign investors. These reputational changes are made possible because investors learn from states' previous behaviors, and do not hold innate punitive preferences toward past non-payers. Specifically, "they update

their beliefs about a government in response to new facts" (Tomz 2007). Investors act this way principally because profit motives are dominate their behavior.

I extend this line of reasoning by arguing that reform-minded LDCs that utilize IRAs in the telecommunications and electricity sectors have, in effect, generated a significant "new fact" for foreign investors that improves governments' reputations and induces foreign investments. This is because foreign firms understand that governments that delegate regulatory policymaking to IRAs have effectively tied their own hands. Thus, achieving political independence is related to a government's capacity to formally signal its ability to self-bind. Institutions' formal features are theoretically important for indicating political independence because firms are known to look to them in order to make assessments about investment hazards (Henisz 2000a; Henisz and Williamson 1999).[3] Formal institutional designs that signal that policymakers that have trouble making credible commitments are unlikely to interfere in regulatory policymaking improves states' reputations, becoming more likely to be seen by foreign infrastructure providers as stalwart actors that are unlikely to backtrack on commitments to produce a stable, pro-market policy environment. Of course, to make this contention convincing, the reasons for why these policymakers find reduced incentives to periodically interfere in regulatory policymaking must be spelled out. This requires an analysis of the formal design features that produce politically independence.

[3] Interestingly, Henisz (2000a) suggests that, relative to foreign firms, domestic firms probably have more options to obtain information about a government's future actions. For example, rather than being so reliant on the formal institutional environment to form expectations about how a government will act, it is relatively less difficult for them to initiate interactions with host government officials to advance their goals. In infrastructure industries specifically, recent research by Post (2014) also indicated that domestic investors are better equipped than foreign ones at navigating the risk environment because they can better utilize "informal bargaining strategies" (p. 77) when interacting with governments. To the extent that domestic businesses do in fact have these additional options, it might then suggest that the formal features of a country's institutional environment, including IRAs, matter more for foreign than domestic firms.

Identifying these formal design features can be challenging, however, because political independence is a multidimensional concept. Multiple features could potentially combine to produce an IRA that is insulated from political meddling while also signaling this to be the case to the foreign firms they regulate. Still, that formal political independence can emerge from commitment institutions' various components has been established elsewhere (Barkow 2010; Cukierman et al. 1992; Gilardi 2005 and 2008). For the purposes of this study, I emphasize two features that combine to produce political independence. The first is whether or not IRAs are granted formal, legal separation from all other policymaking institutions, including government ministries that are headed by political appointees or elected politicians. Formal separation, at least on paper, initially grants regulators the autonomous "space" needed to craft policies that support governments' long-term goals. The second is whether or not IRAs formally provide their leadership with long, fixed terms in office, which helps ensure that regulators' separate policy space exists for extended periods of time. This latter design feature is dependent upon the former already existing.

3.4.2: The Importance of Formal Separation for IRAs

I contend that when regulatory policymaking authority is, first and foremost, formally delegated to legally separate IRAs,[4] governments have taken a critical step in signaling that they have tied their own hands. Multinational firms in telecoms and electricity believe that states that have delegated regulatory policymaking to an entity that is formally separated are less likely to be a "lemon" that will at some point renege on commitments to foreign firms and more likely to be a "stalwart" that will refrain from interfering in regulatory policymaking in the future. This is because tying hands invokes a reputational mechanism (Fearon 1997). When regulatory

[4] Another way of saying this is that they are organizationally distinct or have obtained legal personhood.

institutions are designed to be politically independent through formally separation, firms worry relatively less about interference, lest these governmental actors incur an unwanted reputational penalty that depresses their country's future prospects for receiving FDI in these sectors.

A key reason that this form of hands tying invokes a state's reputation and signals that domestic policymakers have become less likely to interfere in regulatory policymaking is that creating an IRA is something that states can meaningfully do only once. If a government that is for the first time seeking infrastructure FDI creates a formally separate IRA, but then undercuts that IRA by later making it subservient to a government ministry or by overriding major policy decisions through legislation or executive decree, then reestablishing that state's reputation as a stalwart that keeps its commitments to foreign investors becomes exceedingly difficult, relative to contexts where formal separateness had not previously been granted to regulatory authorities. Indeed, if a government weakens or eliminates an IRA's formal separation, foreign firms would be expected to discount that agency's future ability to ensure a favorable policy environment because previous events have signaled to them that an IRA is less capable of achieving its mandate than previously thought. In other words, governments that create, but then undercut IRAs' ability to be seen as a distinct actor that has been given policy discretion reveals to foreign infrastructure firms that they are lemons or, at best, fair-weathers at the same time that they have also hindered their state's future ability to credibly signal stalwart preferences by engaging in institutional reforms. Thus, creating and then undercutting a formally separated IRA generates particularly high costs. Doing so not only injures a state's reputation at the time of interference, but also its ability to positively alter its reputation in the future by making other institutional changes that would signal that it has decided it maintains a long-term interest in attracting infrastructure FDI. Where governments have not made firm commitments to infrastructure providers through separated IRAs, implementing a regulatory policy that harms foreign investors is not as costly because these

actions do not necessarily hinder a government's ability to use institutional reforms to improve its reputation in the future. These relatively high costs lead officials who are periodically incentivized to interfere in regulatory policymaking to become more leery about meddling after separate IRAs have been created.

Additionally, politically separated regulatory institutions enable governmental actors that have trouble making credible commitments to engage in blame avoidance behavior – a useful strategy for when state officials believe they must take necessary, yet publically unpopular actions (Majone 1997; Pierson 1996; Thatcher 2002; Vreeland 2003; Weaver 1986). Policymakers that are dependent upon public support to remain in office must, in addition to being able to claim credit for policy successes, be concerned that unpopular policies will harm their political futures. This is due to voters' "negativity bias", or "their tendency to be more sensitive to real or potential losses than they are to gains" (Weaver 1986, p. 371).

For infrastructure regulation, policymakers' that will be sensitive to public opinion value the ability to engage in blame avoidance behavior because regulatory policies in sectors like telecommunications and electricity, as discussed, can generate significant public backlash in the short-term that heightens political risks for foreign investors, even if they also help states achieve longer-term goals. Separated IRAs help these policymakers manage this backlash by providing them with an entity to publically blame for the pain felt by politically salient domestic actors. After delegating regulatory policymaking to an IRA whose top officials do not have to conform to public opinion, politicians may then make public statements that deflect blame for unpopular regulatory policies onto agency officials (Majone 1997), while at the same time claiming that their hands remain legally tied. Being able to deflect public ire in this manner enables them to avoid intervening in regulatory affairs after certain policy choices have angered politically important

actors.[5] Because this type of behavior tends to occur in the public sphere it is also highly visible. That foreign infrastructure providers can see politicians' publically decrying these regulatory policies' effects, yet also maintaining that they do not have the authority to override painful policies helps provide reassurance that regulatory independence will be maintained. Ultimately, this helps states' to safeguard their reputations with foreign firms, thereby making foreign firms more willing to invest.

3.4.3 The Importance of Long, Fixed Terms for IRA Leadership

Now that the proposition that formally separated regulatory institutions should induce FDI by helping to insulate foreign infrastructure firms from political risks has been more firmly grounded in a political argument, it is necessary explain why long, fixed terms for agency leadership further enhance a separated IRAs political independence. IRAs' term features are important because, even when a separate policymaking space has been formally established, other governmental actors may still nevertheless perceive a short-term interest in contravening formal rules or overriding an IRA's formal authority, especially when they face intense political or economic duress. Exactly how often these behaviors are considered in an does remain an open question, however (Ennser-Jedenastik 2015). Some argue that they should be somewhat rare because politicians understand that respecting formal independence yields benefits that get forfeited when they interfere (Thatcher 2005). Others assert that incentives to engage in these behaviors should still be common because separation means that policymakers that are responsive to domestic actors will want to compensate for a loss of policy control **(**Ennser-Jedenastik 2015). Either way, the point is that domestic policymakers will still sometimes perceive that publics or

[5] Admittedly, government actors who rely on blame avoidance strategies do walk a fine line. They must be careful not to stoke public anger to the point that they feel compelled to override a regulatory agency's unpopular decision later on.

some other salient group would still hold them responsible for the undesirable effects of certain policies chosen by formally separated regulators. Thus, even though they increase a state's credibility, separated regulatory entities are still expected to periodically be subjected to intense pressures to make policy decisions that are in line with other policymakers' short-term goals, which can trigger attempts to interfere in IRAs. Interference, should still, however, be less pernicious than when regulatory officials are not granted a separate policymaking space.

In this section I argue that, in addition to organizational separateness, IRAs that also endow agency leadership with long, fixed terms enhance their independence because they further reduce incentives for electorally-dependent policymakers to pressure regulators about their policy choices, although they probably will still not eliminate it entirely because sometimes domestic pressures to intervene may be periodically intense.[6] Still, long, fixed terms should help keep regulatory officials more insulated from domestic politics than they otherwise would be, helping them to provide policy predictability over longer periods of time and safeguard their reputations with foreign firms. That independence is enhanced when term lengths for IRA leadership are

[6] To illustrate an example, this happened twice in Brazil after President Lula da Silva replaced the Cardoso government in January 2003 (da Silva 2011 (no relation); Prada 2014). Early in Lula's term members of his administration began intimating that they were going to try to halt previously decided upon electricity price increases due to their widespread unpopularity. Brazil's electricity IRA, which is formally separate and gives leadership long, fixed terms, Agência Nacional de Energia Elétrica (ANEEL), had favored these increases. Shortly thereafter in February 2003 these planned rate increases were stopped after President Lula issued two unilateral decrees as well as worked behind the scenes to influence ANEEL officials. Additionally, later that same year President Lula's administration also tried to subvert the telecommunications regulator, Agência Nacional de Telecomunicações (ANATEL), which is also legally distinct and grants leadership long, fixed terms, in order to reduce telephone charges by also using informal pressure tactics. Evidence suggests that political interference was probably more successful in the former instance than the latter. However, in this former instance it has been reported that Brazil, as this argument would expected, incurred heavy reputational costs that reduced the Brazilian government's credibility in the eyes of foreign investors (da Silva 2011). For instance, the American Chamber of Commerce in Brazil issued multiple reports after this event that indicated that foreign investors had now adopted quite negative attitudes about Brazil's regulatory apparatus in this sector (Prado 2014). I will discuss ANATEL in more detail in the next chapter.

longer and when they cannot easily be removed from office is not a new idea and the logic is straightforward. It has long been viewed as an important component of other commitment institutions, such as central banks (Grilli, Maciandaro, and Tabellini 1991; Cukierman et al. 1992) and the judiciary (Feld and Voigt 2003).

Long, fixed terms promote agency independence because they make it costlier for politicians who still have incentives to interfere in regulatory policymaking to effectively do so. When terms are fixed, multinational firms understand that regulators cannot be fired simply because they have produced unpopular policies. Although executives and legislatures usually appoint these officials, they do not serve merely at their request. This makes forcibly removing them costly because doing so often entails taking steps to publicly highlight that an unpopular regulator is no longer fit to serve. For example, beyond making statements to publics about how a disliked regulator is unfit, public hearings or trials may be required to achieve removal. Since these behaviors are visible to foreign firms, they become costly, as regulated firms are likely to see these actions as instances of regulatory interference. In such cases, foreign firms would become more likely to view the state as now being less willing to provide them the policy environment they require and, as a result, downgrade its reputation.

When terms are long they insulate regulatory officials from pressures to change unpopular policies because they create an expectation that turnover rates will be low. Should domestic policymakers try to remove unpopular regulatory officials they increase these turnover rates and undercut this expectation. This outcome, again, is made possible because removing officials is usually a visible action that harms a state's reputation with foreign infrastructure firms. Additionally, even if these policymakers do find ways to quietly remove unwanted regulators, such as by issuing private threats, they must be cautious about using these tactics too often. When agency leadership is frequently replaced firms are likely to infer that political interference has in

fact taken place.

Additionally, long, fixed terms should help regulators resist attempts to interfere because they are now less concerned about their own job security. When regulators are less concerned about their own career prospects they should be less willing to cave to pressures to change policies. This security helps ensure that policymakers are insulated, since interference becomes costlier than when IRA do not have this feature, enabling states to further safeguard their reputations as actors that are unlikely to be lemons that will eventually renege on commitments. Thus, after considering the influence of formal separation and long, fixed terms on regulatory policymaking I can now present the argument's primary hypothesis is:

> H1: *The more that countries regulate their telecommunications and electricity sectors with IRAs, the more FDI they will receive in these industries.*

3.5.1: IRAs and Signaling

The argument made about IRAs' FDI-inducing effects is premised on their being able to send important informational signals to foreign firms about the safety of the investment environment. Therefore, it is important to ensure, as best as possible, that IRAs are really sending these signals. One way to do this is to identify some additional implications that should be true if this idea is on target. Thus, this section offers three additional hypotheses that should find support in an empirical test if this argument is correct. The discussion leading to each of these hypotheses is designed to: (a) help ensure that IRAs do actually send important signals to foreign firms; (b) respond to some recent research on the political determinants of FDI, or (c) do both. I begin by explaining why IRAs' effect on FDI should be strongest in the time periods shortly after they have been created. Then I look at how, if IRAs do send signals to foreign firms, they should condition the effect of democratic political institutions as well as government partisanship on FDI in

industries regulated by IRAs. In the case of the former, I explain why, when IRAs are present, democratic political institutions will come to have a negative influence on FDI. In the latter, I explain why they should enhance leftist governments' ability to attract FDI.

3.5.2: IRAs and the Timing of FDI

If IRAs governing firms in the telecommunications and electricity industries do signal that the quality of the investment environment has improved, then they should influence not only the amounts of FDI that countries receive, but also when they receive it. As discussed, multinational firms respond to the institutional environments that they are seeking to enter. When domestic institutions like IRAs are seen as having the ability to protect foreign investors, they become more likely to induce capital investments from abroad.

One implication of this view of firm behavior is that, if they do believe that IRAs serve as an important signal of a host nation's regulatory commitment, then they should respond by investing the most in the time periods shortly after regulatory policy was delegated to IRAs. This is because it is in the time periods in which regulatory institutions have recently been refashioned to be independent that foreign firms are most likely to believe that investments will be safe from political risks. Two factors contribute to this belief. First, foreign firms understand that governments that have recently created IRAs will be relatively more likely than governments that have not made this commitment to respect the policymaking authority just granted to them. Governments that have just made the effort to establish IRAs will be more sensitive to the reputational costs of meddling than those that have not (Prado 2014). Heightened sensitivity to these costs leads them to be highly cautious about countermanding newly created IRA's regulatory

decisions. However, as time passes governments' sensitivity should recede somewhat, especially as new politicians that played no role in the initial move to IRAs enter the government.[7]

Second, in the time periods shortly after their creation, government actors that might still be resolved to interfere with IRAs' have not yet had much opportunity to do so. It is only after FDI has become willing to enter an economy post-reform that these policymakers would have the chance to try to override an IRAs' decisions. From foreign firms' standpoint, this would seem like a particularly propitious moment to invest. Host governments have just sent a strong signal to firms about their future behaviors by creating an IRA while also not having any history of challenging or overriding IRAs authority. However, as time passes the chance that at least some policymaker(s) will have meddled with IRAs' decisions will have grown larger. When this does happen, foreign firms in the telecommunications and electricity sectors will come to understand that, while formal delegation to IRAs is still preferred to non-politically independent policymaking processes, they do not necessarily eliminate all political risks that come with investing abroad. As a result, multinational firms in the industries they govern will downgrade a host government's reputation, but should still be more willing to invest in states like these than those that have not chosen to delegate policymaking to IRAs. Thus, this chapter's second hypothesis can be stated as:

> H2: *IRAs' FDI-inducing effects are strongest in time periods just after institutional reforms have been made.*

3.5.3: IRAs and Democratic Political Institutions

Another implication of this chapter's argument is that when IRAs are present, democratic institutions will actually come to reduce countries' chances for obtaining FDI in the sectors that

[7] Note that in fn. 6 I discussed how it was the Lula government in Brazil that was more willing to try to override the decisions of its regulatory agencies in these sectors a few years after they were created by the Cardoso government.

they regulate. This is a non-obvious contention that cuts against previous research indicating that democratic political institutions, in general, help states attract more FDI than they otherwise would (Jensen 2003 & 2005; Jensen et al. 2012). It is premised on the idea that moving regulatory policymaking responsibility away from heads of state and legislatures influences how firms in industries overseen by IRAs assess host countries' political institutions. I argue that what the move to IRAs effectively does for telecoms and electricity firms is lead them to believe that any subsequent move towards democracy by a host country would be more likely to increase political risks than reduce them.

To see why this would be the case, it is necessary to first recall that democratic institutions have competing effects on FDI insofar as the legal environment that democracies provide benefits foreign firms, but the popular discontent that occasionally arises against these enterprises is now especially harmful to them because democratic governments are more responsive to publics than non-democracies.[8] In other words, democracy channels this discontent into policymaking processes more directly than in non-democracies. It is also important to recall, as discussed in Chapter 2, that when telecoms and electricity firms have invested in LDC economies, it has usually been followed by occasional, yet still intense periods of public backlash against these firms because the promises that host governments have made to attract them have typically led to higher prices for consumers as well as other policies that reduce their disposable incomes. Indeed, this is likely an important reason why there have historically been so many investor-host government disputes in these industries. Ultimately, since firms understand that when host countries delegate regulatory policymaking to IRAs, it is now these institutions that determine the most important aspects of property rights protections, rather a host government's electoral

[8] I refer readers to the discussion of democracy and FDI in the previous chapter. I also point readers to Haggard (1990), especially pp. 256-261, and Li and Resnick (2003).

institutions, foreign firms will not believe that any subsequent movement towards democracy will yield additional protections to their investments. Instead, they are likely to perceive the opposite: that democratic institutions would risk channeling any public anger at them into policies that ultimately harm their ability to recover costs. Thus, this chapter's third hypothesis can be stated as:

> H3: *When countries delegate regulatory policymaking to IRAs, democratic institutions will reduce their ability to obtain FDI from firms in the telecommunications and electricity industries.*

3.5.4: Government Partisanship, IRAs, and FDI

Regarding the influence of government partisanship on infrastructure FDI, there are sound reasons to expect that IRAs help leftist governments attract FDI. To see why, recall that, as discussed in Chapter 2, recent research looking at how government partisanship influences FDI has argued that there is a mutually beneficial relationship between leftist governments and multinational firms that stems from leftist policymakers representing domestic labor, a group that makes up a large share of multinational firms' hiring pool (Pinto 2013). Since these firms employ these workers, leftist governments promote FDI more than non-leftist governments.[9]

However, in infrastructure industries a potential problem arises after recalling that one tool that leftist leaders have historically used to advance their political agendas is wealth redistribution (Alesina 1989; Alesina and Sachs 1988; Havrilesky 1987; Tufte 1978). For telecoms and electricity firms that operate in areas of the economy where political risks are intense, leftist governments may then heighten firms' concerns about becoming targets of redistributive policies. Ultimately, this would mean that leftists focused relatively more on promoting employment for domestic labor would be seen as a favorable partner for telecoms or electricity firms, but leftists

[9] The mechanism producing the political leftist-FDI connection is "mutual hold- up" (Williamson 1985). In this application, leftist governments understand that they risk their own political future if they choose policies that injure foreign investors because this would ultimately end up hurting labor as well (Pinto 2013).

who are relatively more focused on redistribution would be seen as less favorable partners. Since it is hard for foreign firms to know which of these policies any given leftist government is likely to focus more on, they will be more cautious about investing abroad than they otherwise would be if they were surer that leftist leaders would not emphasize redistribution.

One potential way that leftist governments can signal to telecommunications and electricity infrastructure firms that they will not redistribute away their profits is to delegate regulatory policymaking to IRAs. Putting IRAs in charge of key regulatory policies signals to these firms that leftist governments that have placed redistribution relatively higher on their policy agenda are unlikely to harm them, such as by taking steps like suddenly altering the caps that are placed on the prices these firms can charge consumers. This signal is made possible by IRAs' political independence. Thus, if IRAs are capable of sending meaningful signals to foreign firms, we would then expect that when they constrain leftist policymakers foreign investors would become less concerned about potential political risks that emanate from leftist governments. As a result, they become more willing to invest. Thus, this chapter's fourth and final hypothesis is:

> H4: *Leftist governments become more likely than non-leftist governments to receive FDI from firms in the telecommunications and electricity industries once they have delegated regulatory policymaking to IRAs.*

3.6 Conclusion

In this chapter I have elaborated a theory that links LDCs' ability to capture FDI in the telecommunications and electricity infrastructure industries to their choices about how to regulate firms in these industries. In doing so, I first illustrated that foreign infrastructure providers saw opportunities in LDCs, but that the amounts invested have generally not been enough to satisfy domestic demands. After that, I discussed how reform-minded LDCs altered how they regulated

these industries in order to overcome the FDI commitment problem by utilizing IRAs. Then, I explained why they help states attract FDI from firms in the industries they regulate.

One of the main goals of this chapter was to go beyond previous explanations for why IRAs would presumably induce FDI by highlighting which specific design features are most important for producing this outcome. I argued that formal institutional separateness and long, fixed terms for agency heads are the key features that signal to foreign investors that sunken assets are safer from political risks than when regulatory institutions that do not have these properties govern policymaking. Critical to this argument is the idea that IRAs help countries invoke a reputational mechanism that provides reassurance to foreign investors that policymakers holding time-inconsistent preferences will be relatively less likely to implement policies that would undercut firms property rights. IRAs, it was argued, reduce the likelihood of this happening, relative to situations in which regulation is not politically independent – defined in terms of these two institutional design features.

The argument also discussed three other observable implications of the theory that speak to IRAs' ability to send credible signals to foreign infrastructure firms. First, IRAs' effects on FDI should be strongest in the time periods shortly after they were created. Second, that, when present, democratic institutions reduce countries' chances for receiving FDI. Third, that they help leftist governments attract FDI.

In the next chapter I describe and then conduct empirical tests for the hypotheses proposed in this chapter. If these hypotheses are supported by the data, then this theory will have provided important insights about the steps that reform-minded developing states can take to attract FDI in these sectors. They also will have illustrated the importance for FDI scholars to pay attention to domestic executive branch institutions that influence policymaking.

Chapter 4:

Evidence of IRAs' Effects on FDI in the Telecommunications and Electricity Industries

4.1 Introduction

This chapter tests the four hypotheses presented in Chapter 3 using statistical analysis. It proceeds in three steps. First, I discuss the data used to measure FDI in the telecommunications and electricity sectors, including how I constructed a variable that captures the degree of political independence embedded into countries' regulatory institutions for these two infrastructure sectors. In this section I also discuss the control variables included in the models and explain the modeling approach used to conduct the empirical test. Second, I present the results and discuss the findings. The final section concludes.

4.2.1 Data and Methods

I test the four hypotheses on a panel of 32 developing countries from Latin America and Asia, 1984 – 2008.[1] This is a useful sample in which to test the four hypotheses for two reasons. First, as noted in the previous chapter, it was during this time that governments in these regions began actively seeking FDI in infrastructure industries like telecommunications and electricity at

[1] These countries are: Argentina, Bangladesh, Bolivia, Brazil, Cambodia, Chile, China, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, India, Indonesia, Jamaica, Laos, Malaysia, Mexico, Nicaragua, Pakistan, Panama, Papua New Guinea, Paraguay, Peru, Philippines, Sri Lanka, Thailand, Uruguay, Venezuela, and Vietnam.

the same time that global firms that provide these services were looking for new markets to serve. Second, these countries exhibit a high degree of cross-sectional and temporal variation in the dependent variable and the independent variable of primary interest. The sample used in this analysis includes countries that had extremely high as well as zero values in terms of the FDI that they received during this time in the telecommunications and electricity sectors. These countries also exhibited a full range of variation in the degree of political independence formally embedded into their regulatory institutions, as captured by the variable I discuss below. All together, these properties help to ensure that the sample is representative, which is critical if the inferences made are to generalize more broadly (Gerring 2011). I now explain how the main variables of interest were constructed.

4.2.2 The Dependent Variable

The dependent variable captures the total value (in millions, USD) of all FDI commitments on an annual basis made into sample countries' telecommunications and electricity sectors. Because the theory purports to explain investments into both sectors, these values are aggregated to create an overall measure of infrastructure FDI for each country in each year. These data come from the World Bank Private Participation in Infrastructure (PPI) database (World Bank 2016b). The PPI database records annual FDI commitments in the telecommunications and electricity sectors at the project level. This information includes which firms were investing in a project, which country these firms came from, and the amount of funds being committed. After examining this information for each project I tracked whether these commitments were domestic or foreign in nature and then aggregated the values of the latter into country-year measures. An FDI commitment is defined straightforwardly - as the amount that investors "commit to invest in facilities" (World Bank 2016b). The World Bank counts a commitment once a legally binding

agreement between investors and governments to provide a set amount of funding has been signed. Readers should note that this measure does not directly capture FDI inflows into these sectors, however. Inflows measures have been the most typically used measures in FDI research (Jensen 2003 and 2006; Li and Resnick 2003). Unfortunately, to my knowledge no direct measure of FDI inflows exists for these two sectors. To reduce concerns about the applicability of this measure I point out that commitment-based variables have previously been used in lieu of actual inflows variables to test hypotheses in political economy research, such as in foreign aid (Bueno de Mesquita and Smith 2009).

It is also worth noting an advantage provided by these data that is not afforded by typically used FDI inflows data. This is that the PPI database tracks investment commitments in "physical assets" that are by nature illiquid after investment has occurred. Having a measure that uniquely captures investments in physical, illiquid assets is necessary to accurately test hypotheses premised on an obsolescence bargain in FDI (Kerner 2014; Kerner and Lawrence 2014). Most previous studies of FDI's political determinants have not, however, been able to employ such a variable.[2] Instead, they have tended to use country-wide inflows variables that measure all capital movements between foreign firms and a host country. As has recently been pointed out, however, relying on these variables is problematic because OBT is based on the notion that political risk is a consequence of a specific type of (illiquid) asset, and not "a necessary consequence of an MNC owning a foreign affiliate" (Kerner and Lawrence 2014, p. 2). Thus, much previous research on the political determinants of FDI has not provided quite as strong a test of credible commitment arguments as is commonly assumed (Kerner 2014; Kerner and Lawrence 2014). By employing a measure that better captures a type of investment that generates political risks, I am able to offer a

[2] Kerner and Lawrence (2014), who looked at FDI inflows coming from only the USA, is a notable exception.

particularly credible test of credible commitment theories as they pertain to FDI politics. The variable is called *FDI*.

4.2.3 The Independent Variables

The independent variable of primary interest is an annual, country-level measure that I constructed that captures the degree of political independence formally embedded into sample countries' regulatory institutions in the telecommunications and electricity sectors. It is an original *de jure* measure that was coded after reading the charter or founding law that established each regulatory institution and then checking for subsequent laws and actions that would formally alter this set-up.[3] To code this variable, I started each country with a value of 0 for each of the two sectors - telecommunications and electricity. Once I had observed that a formally separated regulatory authority had been built in one of these sectors I then coded that sector's value as being 1. If or when that IRA was also endowed with long, fixed terms for agency leadership I again added 1 to this value. This was then done for the other sector as well. This coding scheme means that each of the two public infrastructure sectors for a country may take a value of 0 if no institutional regulatory reforms creating a politically independent regulator have ever been made, 1 if there is a regulatory authority that is legally separate, and 2 if this authority's leadership has been granted long, fixed terms. I then sum countries' scores for the two sectors, giving each country a total regulatory independence score between 0-4 for each year.[4] Higher values for these variables indicate that public infrastructure regulation is more politically independent.

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[3] Codings based on these documents were then cross-checked with country reports from the International Telecommunications Union (ITU) that described sample countries' regulatory institutions. For electricity, the check was done by examining country reports from reegle.info, an online energy information portal as well as numerous international news and government registrar searches.

[4] When adding these two components together I conducted a Cronbach's alpha test for internal consistency. The measure received a score of .82, surpassing the usual cut-off of .7.

To determine if the formal separation from ministries that is required for meaningful policy delegation had occurred I looked for text in IRAs' charters and founding laws that established that it was in fact legally separated and distinct using clear, unambiguous language. The key terms that I relied upon to capture formal delegation were phrases like "distinct entity", "legally separate", and "organizational personhood". These terms indicate that regulatory policies should not be decided by a regulatory department that it housed inside of an executive branch ministry or some other body that is formally subject to political control. To determine if regulatory leadership has been endowed with a long, fixed term I looked to see if the term length for agency leadership was at least four years long and also if leaders did not merely serve at the request or pleasure of the government. If this was the case, then I coded this part of the variable as being 1. Four years was chosen because that length is at least equal to most chief executives' legal tenures. However, I also created a second version of this variable as a check that codes this feature as being 1 (and 0 otherwise) if fixed term lengths are at least five years long. This means that there are two versions of the independent variable used in the empirical analysis. *IRA(4)* is the primary measure and captures IRAs with at least a four year fixed term. *IRA(5),* is the secondary version, which captures IRAs with at least a five year fixed term.[5] When testing the primary hypothesis I expect the results to return a positive sign on these variables. In order to test the second hypothesis I have also created a dummy variable that indicates whether a country has just created an IRA to regulate telecommunications or electricity firms that I interact with *IRA(4)* and *IRA(5)*. This variable, called *NewIRA* is coded 1 (and 0 otherwise) for years in which a telecommunications or electricity IRA was created as well as for the year following their creation. I include the following year since sometimes IRAs are built near the end of a calendar year. I expect the interaction term to be positively signed.

[5] These variables correlate at about .9.

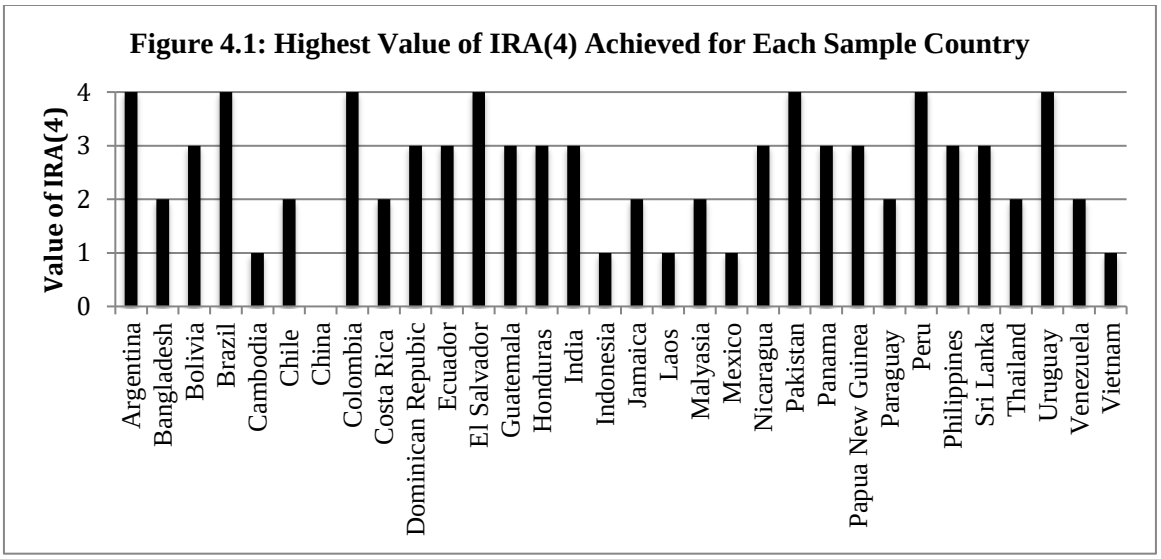
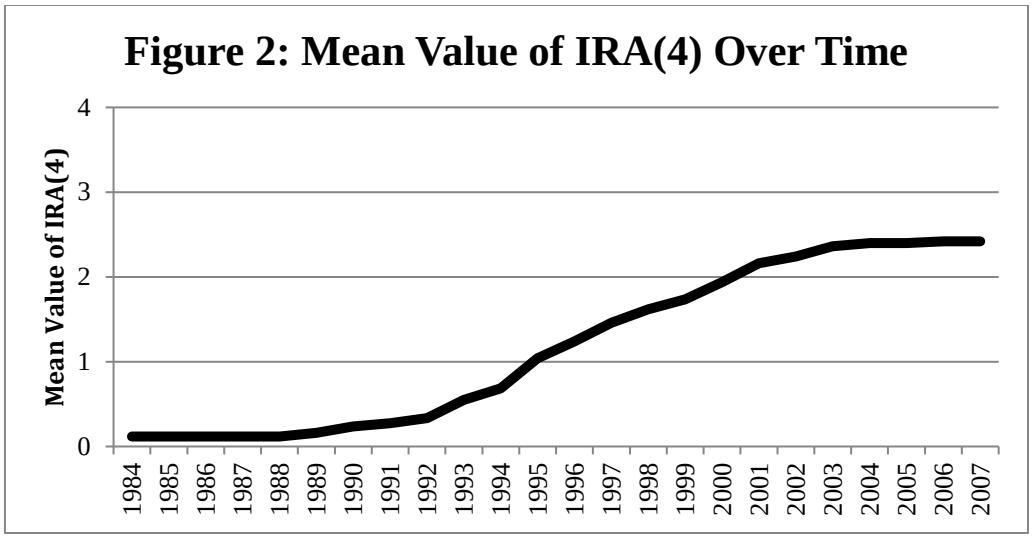


Figure 4.1 shows the highest value achieved of *IRA(4)* for each country in the sample. This picture illustrates that, except for China, all the countries in the sample did engage in some reform that made regulation of these industries more politically independent. It also shows that there is much potentially meaningful variation to leverage in order to explain FDI in the two industries being examined. Figure 4.2 presents the mean value of *IRA(4)* between 1984 – 2008. This picture illustrates that during these years countries were indeed increasingly engaging in institutional reforms that created more politically independent regulatory agencies, as discussed earlier.[6]

The models employ a number of control variables that are frequently used in the FDI literature. I first control for political factors previously established to have influenced countries' prospects for receiving FDI. I use the variable *Democracy* to account for whether or not countries are democratic according to the dichotomous coding provided by Cheibub et al. (2010).

[6] The picture presented for these two figures using *IRA(5)* is quite similar.



Of the many democracy measures that exist, this one is particularly useful because it measures if citizens have political voice through contested elections, the hallmark of a democracy (Schumpeter 1944). Other FDI scholars have also recognized that, theoretically speaking, this is "the strongest measure of political regimes" (Jensen 2003 and 2006).[7] Robustness checks in the Appendix substitute this variable for the POLITY IV project's measure of democracy (Marshall and Jaggers 2014).[8] In order to test hypothesis three I interact this democracy measure with *IRA(4)* and *IRA(5).* I expect that the sign on the interaction will be negative.

To account for government partisanship I include a dummy indicator for whether or not a leftist executive is in power (*Leftist*). Data for this variable also comes from Beck et al. (2001). To test the project's fourth hypothesis, I interact the *Leftist* indicator with *IRA(4)* and *IRA(5).* Since IRAs help leftist governments attract FDI, I expect that the sign on the interaction will be positive. To capture governments' ability to provide generally stable policy environments I control for the number of *Veto Players* in the government (Beck et al. 2001; Keefer and Stasavage 2004). A count of the number of bilateral investment treaties a country has in force is used to account for the fact

[7] This quote is found on page 606 in Jensen (2003) and on page 88 in Jensen (2006).
[8] This measure is based on a -10 to +10 scale. The more positive a state's value, the more democratic it is.

that states also use BITS to overcome time inconsistency problems and attract FDI. Data used to construct this variable came from UNCTAD's Investment Policy Hub.[9] It is called *BITS*.

I also account for standard economic factors by including variables for *GDP* and GDP per capita (*GDPpc*). Data for these variables come from the World Development Indicators (World Bank 2016a).[10] I also control for countries' openness to capital inflows by using a variable called *Capital Openness*. These data come from Ito and Shinn (2006). Higher values indicate greater general openness to international capital flows. Including this measure helps control for countries' reliance on policies limiting capital flows, which affects multinational firms' ability to move assets across borders.

To ensure that any potential influence that IRAs may have on *FDI* commitments in these sectors cannot be reduced to the factors that generated them, I first employ a dummy variable called *World Bank* that measures whether or not a country is under a World Bank program in a year. I also include a dummy variable called *IMF* that indicates whether or not a country is under IMF conditionality in a year. Being under the influence of the international financial institutions has been an explanation for why countries built IRAs in public infrastructure sectors (Jordana et al. 2011; Murillo 2009; Rodine-Hardy 2013). It is also been used to explain FDI inflows more broadly as well (Jensen 2006). Data for the World Bank come from Brookman and Dreher (2003).[11] Data on IMF conditionality come from Dreher (2006).

The last variables that I include in some of the models account for general political stability and the total amount of telecommunications and electricity investment commitments

[9] Website where these data were obtained: http://investmentpolicyhub.unctad.org/
[10] In models not shown I also included a variable for the annual change in GDP. It did not change any results related to the three hypotheses, but did depress the influence of GDP and GDP per capita.
[11] These data on World Bank programs only go up to 2003. I used data from the World Bank's website to code the subsequent years.

made to a country's region (Latin America or Asia) in a given year. The former variable, called *Regime Stability* counts the years since a country's regime type last changed. Data for this measure comes from the Polity IV project (Marshall and Jaggers 2014). The latter variable, called *Regional FDI*, is included in some models to account for FDI's supply-side factors. Data comes from the World Bank's PPI database (World Bank 2016b).

4.2.4 Estimation Procedure

To estimate the models for the empirical test I use linear regression. The unit of analysis is country-year. This panel structure is useful for uncovering the relationships theorized about in the previous chapter because it enables me to make cross-sectional and temporal comparisons.

However, this design also involves potential violations of regression assumptions in terms heteroskedasticity, autocorrelation, and contemporaneous correlation. I take a number of steps to correct for these potential problems. Per the recommendations of Beck and Katz (1995) I employ panel-corrected standard errors.[12] Panel-corrected standard errors help to adjust for heteroskedastic as well as contemporaneously correlated disturbances. Per these authors' advice, I also include a lagged dependent variable (Beck and Katz 1996). Including lagged values of the dependent variable helps to alleviate concerns about serial correlation and enables me to better model the history of all right-hand-side variables. Readers should note that by including a lagged DV I am also basically measuring the change in annual FDI commitments received by countries. I include country dummies to control for time-invariant country-level factors that cannot otherwise be modeled that could confound the relationship between regulatory institutions and FDI. Finally, all right-hand-side variables are lagged one year to address potential problems involving reciprocal effects.

[12]I also show models in the appendix that use an error-correction model set-up to address potential problems involving non-stationary data. The appendix also includes additional robustness checks.

4.3.1 Primary Results and Discussion

Table 4.1 presents the results for the first hypothesis. Models 1 – 3 use *IRA(4*) while models 4 -6 use *IRA(5)*. We begin in Model 1, where I only include the lagged values for *IRA(4)*. The variable is statistically significant in the expected positive direction, with a coefficient of 208.1. However, this model does not provide much explanatory power, nor does it account for any potential confounders. Model 2 adds a lagged dependent variable, country dummies, and the controls for *Democracy, Leftism, Veto Players, BITS, GDP, GDP per capita, Capital Controls*, and being under *World Bank* and *IMF conditionality*. After adding these variables we see that *IRA(4)*'s coefficient shrinks to 79.13, but remains significant. Model 3 adds the two additional controls for *Regime Stability* and *Regional FDI*. Although these are important controls, they do not provide any additional explanatory power to the model. *IRA(4)*'s coefficient attenuates slightly to 78.78, but is still statistically significant. Thus, consistent with the expectations of the first hypothesis, the results indicate that when countries regulate these their telecommunications and electricity sectors with IRAs that are organizationally separate from other government institutions and agency leadership has been endowed with at least four year fixed terms, their prospects for receiving FDI commitments into these sectors increases. Substantively, a one point increase in the value of *IRA(4)* is associated with slightly less than 80 million additional dollars of FDI commitments received in telecommunications and electricity.

Models 4 - 6 repeat this procedure using *IRA(5)*. These three models return results that are exceedingly similar to those presented using *IRA(4). IRA(5)* is statistically significant and positive in all three models. Its substantive influence is also similar, albeit slightly higher than when using *IRA(4)* once the control variables are included. A one point increase in the value of *IRA(5)* is associated with about 84 million additional dollars of FDI commitments in telecommunications and electricity. These slightly higher values would be expected given that IRAs with fixed terms

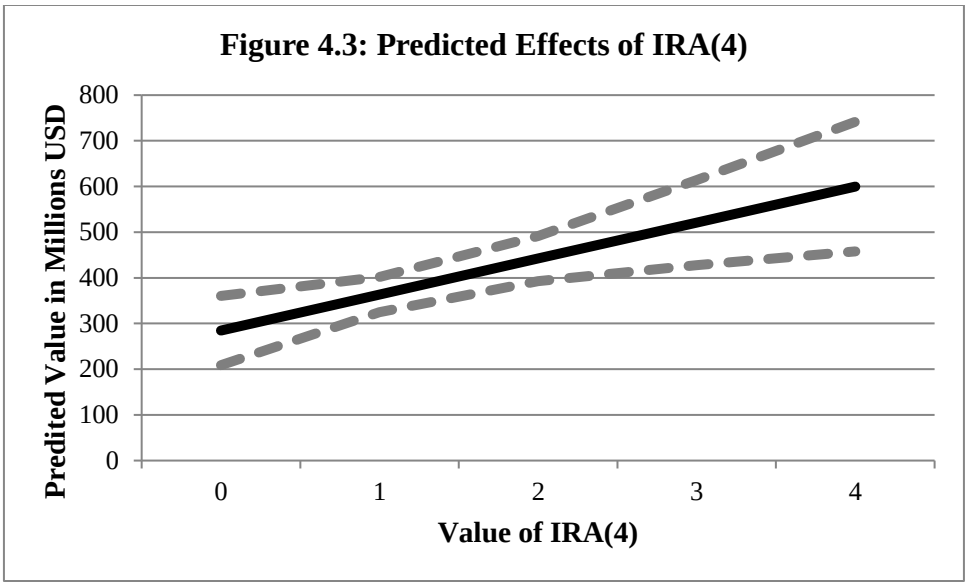
Table 4.1: Models of IRAs' Influence on FDI for 32 Countries

	Model1	Model 2	Model 3	Model 4	Model 5	Model 6
FDI $_{t-1}$	-	.76** (.07)	.76** (.07)	-	.76** (.07)	.76** (.07)
IRA(4) $_{t-1}$	208.1** (23.3)	79.13** (23.87)	78.78** (26.13)	-	-	-
IRA(5) $_{t-1}$	-	-	-	194.18** (24.07)	84.31** (23.11)	83.76** (25.46)
Democracy $_{t-1}$	-	-73.42 (98.91)	-81.89 (93.32)	-	-90.17 (98.3)	-99.85 (92.75)
Leftist $_{t-1}$	-	161.02** (62.04)	161.99** (61.94)	-	165.41** (62.75)	166.4** (62.67)
Veto Players $_{t-1}$	-	28.08** (14.07)	28.25** (14.14)	-	27.18* (14.06)	27.24* (14.07)
BITS $_{t-1}$	-	-9.09** (3.11)	-9.06** (3.3)	-	-9.33** (3.15)	-9.36** (3.12)
GDP $_{t-1}$	-	.0005 (.0003)	.0005* (.00029)	-	.0005* (.00029)	.0005* (.00028)
GDPpc $_{t-1}$	-	.07** (.03)	.07** (.03)	-	.08** (.03)	.07** (.03)
Capital Controls $_{t-1}$	-	4.21 (19.69)	3.7 (20.01)	-	3.64 (18.9)	2.64 (19.43)
World Bank $_{t-1}$	-	111.1** (55.64)	108.63* (57.41)	-	120.66** (54.73)	116.77** (57.08)
IMF$_{t-1}$	-	-69.56 (55.56)	-70.84 (55.51)	-	-70.46 (55.59)	-72.04 (55.56)
Regime Stability $_{t-1}$	-	-	-1.51 (3.85)	-	-	-1.97 (3.86)
Regional FDI$_{t-1}$	-	-	.001 (.004)	-	-	.001 (.004)
Constant	109.11** (49.05)	-423.02** (146.39)	-409.97** (142.04)	148.76** (50.76)	-399.02** (142.51)	-382.02** (138.04)
N	767	663	663	767	663	663
Country Dummies	N	Y	Y	N	Y	Y
R^2	.09	.75	.75	.07	.75	.75

Regression coefficients with panel-corrected standard errors in parentheses. Statistical significance: *p<0.1 **p<0.05 (two-tailed).

of five years, rather than four should be slightly better at insulating officials from political pressure to alter regulatory policies.

Figure 4.3 further illustrates that IRAs' substantive influence by showing the predicted levels of FDI commitments across all values of *IRA(4)*, using data from model 3. All controls are held at their mean values. This picture illustrates that a min-to-max change in *IRA(4)*; that is,



moving from having regulatory institutions that are not politically independent to ones in which key policy decisions in both of these two infrastructure sectors are made by officials operating in a formally separated institution that is endowed with long, fixed terms – increases the expected amounts of FDI commitments from about 284 million to 599 million. In other words, by creating politically independent regulatory institutions countries in this sample can, on average, more than double the amount of FDI they would be expected to receive in these sectors. That is a notable increase.

Ultimately, these results support the first hypothesis. Countries that design their regulatory policymaking institutions to be politically independent in terms of organizational separateness and long, fixed terms are more likely to attract FDI into sectors in which these institutions have policy jurisdiction. These results reaffirm that, if a country's goal is to attract long-term capital investments from foreign firms, then domestic institutions, generally speaking, should be designed to alleviate investors' concerns about political risks. For these two sectors at least, countries need to – to paraphrase others – "get their regulatory institutions right". This is also an important finding because FDI research has usually emphasized institutions that determine executive

selection and legislative processes more than the bureaucratic, regulatory side of policymaking. However, as these findings indicate, the design of policymaking processes in state bureaucracies is also important for influencing the foreign firms' investment choices. It is also a theoretically important finding because some recent research has called the notion that commitment institutions are essential for overcoming the FDI commitment problem into question (Pinto 2013). These results, however, indicate that, at least for these two infrastructure sectors, they do help obtain FDI.

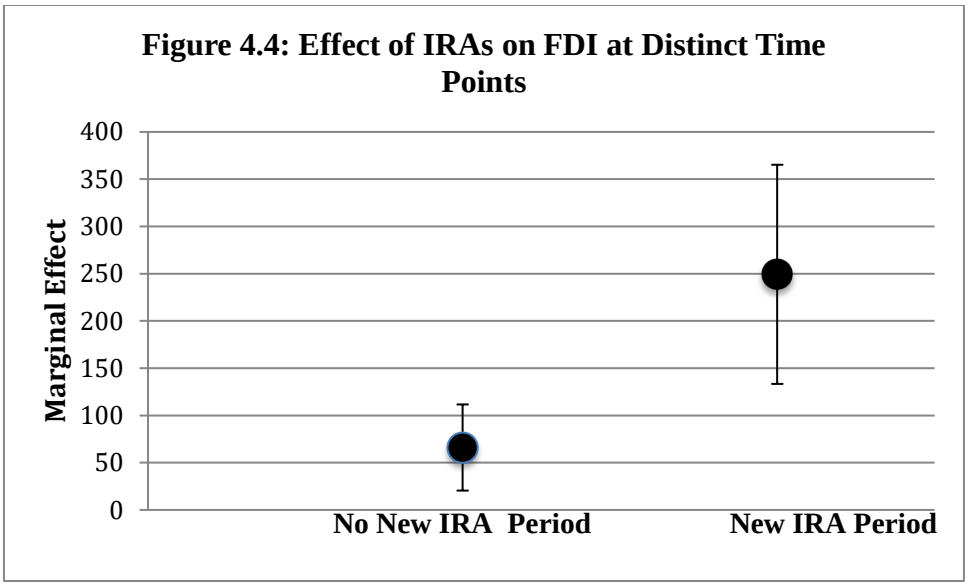
The tests for the other three hypotheses are presented in Table 4.2. Models 7 and 8 test Hypothesis 2 using IRA(4) and IRA(5), respectively. Starting with the coefficient on IRA(4) in this first model, we see that it is positively signed and statistically significant. This means that in time periods in which IRAs have not recently been created they have a significant and positive influence on FDI. This is a notable result because it suggests that IRAs' influence on FDI is not limited only to new IRAs, but continues to benefit states seeking FDI in later years as well. When looking at the interaction term, as expected, the coefficient is also positive and significant. This result is supportive of the idea that IRAs' FDI-inducing effects are strongest in the time periods just after their creation - an important finding if the signaling argument presented in the last chapter is correct. Model 8 shows virtually the same picture. IRA(5) is significant and positively signed, and so is the interaction term. This relationship is visible in Figure 4.4, using the data from model 7.

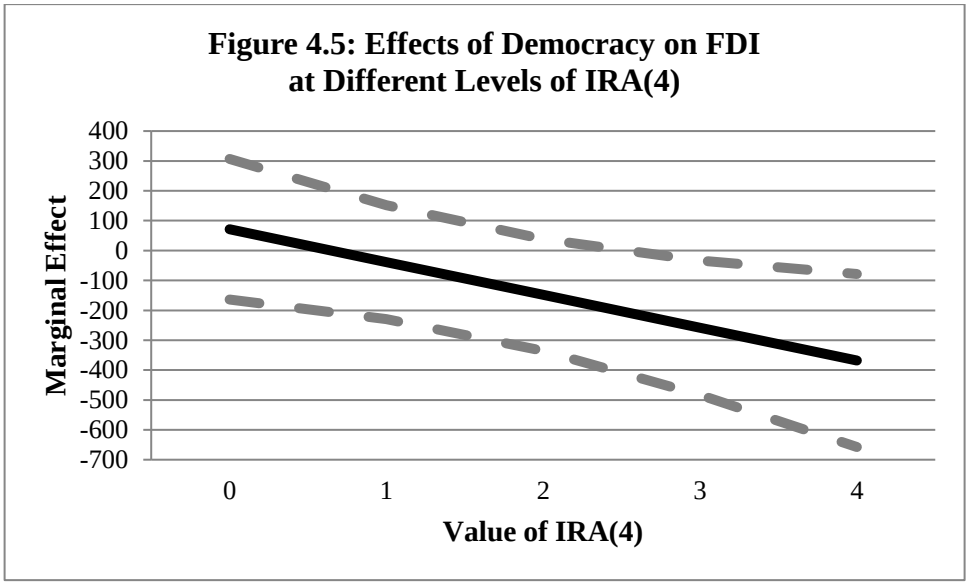
Models 9 and 10 test Hypothesis 3, again using IRA(4) and then substituting IRA(5). To begin, we see that *IRA(4)*'s coefficient is statistically significant and positive, a finding that indicates that IRAs assist non-democracies to attract FDI. Since the results indicate that IRAs' effects are not limited to democracies, our confidence that IRAs are generally useful for signaling

Table 2: Tests of H2-H4

	Model7	Model8	Model9	Model10	Model11	Model12
FDI_{t-1}	.75* (.07)	.76* (.07)	.75* (.07)	.76* (.07)	.74** (.06)	.75* (.07)
$IRA(4)_{t-1}$	66.05** (26.84)	-	174.01** (54.59)	-	49.78** (24.15)	-
$IRA(5)_{t-1}$	-	70.58** (26.85)	-	176.12** (53.09)	-	57.62** (23.61)
$NewIRA_{t-1}$	-462.19** (164.58)	-376.96** (165.92)	-	-	-	-
$Democracy_{t-1}$	-73.76 (92.8)	-85.48 (92.39)	74.26 (119.62)	14.71 (118.76)	-68.73 (90.71)	-87.97 (89.78)
$Leftist_{t-1}$	154.81** (60.24)	162.81** (61.59)	180.94** (61.26)	180.29** (63.63)	-48.06 (72.51)	-25.19 (78.68)
$IRA(4)*NewIRA_{t-1}$	183.25** (67.01)	-	-	-	-	-
$IRA(5)*NewIRA_{t-1}$	-	165.23** (66.79)	-	-	-	-
$IRA(4)*Democracy_{t-1}$	-	-	-111.17** (47.65)	-	-	-
$IRA(5)*Democracy_{t-1}$	-	-	-	-103.23** (47.23)	-	-
$IRA(4)_{t-1}*Leftist_{t-1}$	-	-	-	-	132.92** (35.64)	-
$IRA(5)_{t-1}*Leftist_{t-1}$	-	-	-	-	-	136.20** (36.03)
GDP_{t-1}	.00045 (.00029)	.0004 (.00029)	.0005* (.00029)	.0005* (.00029)	.0004 (.00028)	.0005* (.00029)
$GDPpc_{t-1}$	.071** (.03)	.07** (.03)	.06** (.03)	.07** (.03)	.07** (.03)	.08* (.029)
Veto $Players_{t-1}$	29.25** (13.84)	29.34** (13.79)	30.65** (14.300	29.02** (14.14)	19.89 (13.80)	21.12* (13.67)
$BITS_{t-1}$	-8.55** (3.30)	-8.91** (3.30)	-10.54** (3.44)	-10.36** (3.46)	-9.61 (3.36)	-10.14** (3.38)
Capital $Controls_{t-1}$	8.28 (19.56)	5.32 (18.64)	13.95** (20.64)	9.96 (20.17)	-.82 (20.56)	-.75 (19.82)
World $Bank_{t-1}$	102.01** (57.78)	106.85* (58.11)	101.82* (57.38)	113.46** (57.22)	104.23* (56.61)	115.01** (56.19)
IMF_{t-1}	-75.17 (54.67)	-79.24 (54.83)	-71.55 (55.21)	-75.54 (55.54)	-70.00 (55.16)	-72.54 (55.24)
Regime $Stability_{t-1}$	-1.5 (3.91)	-1.68 (3.87)	1.90 (4.03)	.45 (4.02)	-1.24 (3.96)	-1.84 (3.92)
Regional FDI_{t-1}	.001 (.004)	.002 (.004)	.0003 (.004)	.0008 (.004)	.001 (.003)	.002 (.003)
Constant	-396.75** (139.44)	-380.13** (136.56)	-548.42** (163.61)	-488.64** (158.02)	-370.51** (142.20)	-339.98** (138.10)
N	663	663	663	663	663	663
R^2	.76	.76	.76	.76	.76	.77

Regression coefficients with panel-corrected standard errors in parentheses. Statistical significance: *p<0.1 **p<0.05 (two-tailed). All models include country dummies.



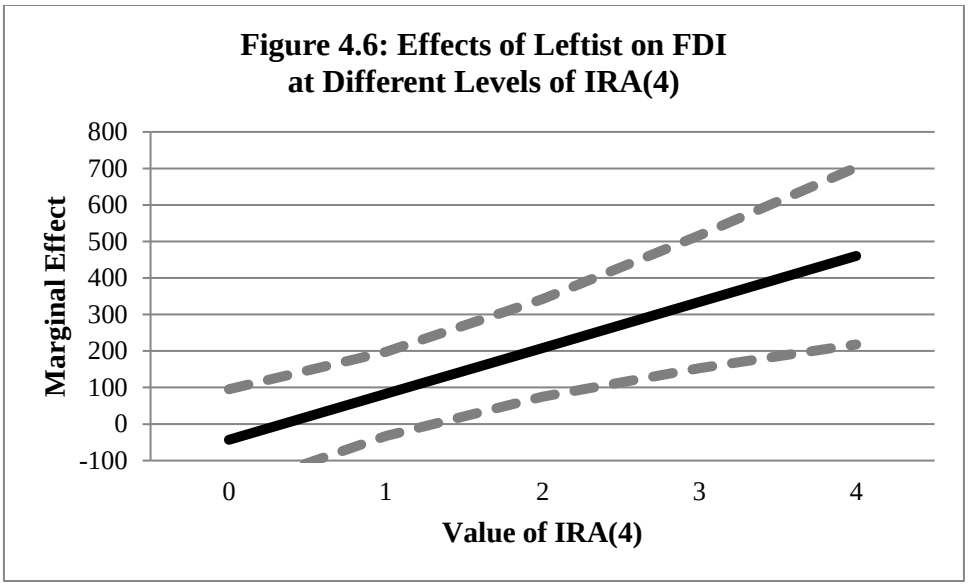


low political risks to foreign firms in industries they regulate should increase. Importantly, interaction term is, as expected, statistically significant and negatively signed. This result supports the notion that as states move to politically independent regulation in these industries, the potential benefits of democracy for attracting FDI dissipate. That their influence actually becomes negative, as expected when IRAs are present, is illustrated in Figure 4.5**.**

Before proceeding, it is worth briefly mentioning that these results might also indicate that IRAs' FDI-inducing effects are significantly stronger in non-democracies. However, a visual of IRAs' effects conditioned on regime, which is presented in Appendix 1, does not reveal a statistically significant difference. The evidence thus indicates that IRAs have a positive and significant influence on FDI in both democracies and non-democracies. Interestingly, this finding would also then indicate that non-democracies have domestic options for making credible commitments that do not involve democratization, at least to firms in these industries.

The tests for the fourth and final hypothesis are presented in Models 11 and 12. Model 11 uses IRA(4), interacting it with the leftist dummy indicator. The coefficient on IRA(4), which captures its influence on FDI when a non-leftist executive is in power, returns a positive and statistically significant coefficient. The coefficient on *Leftist*, which captures the influence of having a leftist executive when regulation for these two industries is not at all politically independent, is insignificant. This indicates that absent politically independent regulation, countries with leftist executives do not appear to do better than countries with non-leftists in power at attracting infrastructure FDI. This could perhaps be read as a surprising result given previous research asserting a tight connection between leftist governments and multinational firms (Pinto 2013). One potential reason for it might, however, be that foreign infrastructure firms remain highly concerned that leftists' will target them for redistribution, given how politicized these industries can get. Therefore, they require additional assurances that go beyond what leftist governments can usually offer.[13] The coefficient on the interaction term is positive and significant, which also supports the idea that IRAs help leftist leaders attract FDI. Model 12 repeats this

[13] Additionally, it is worth speculating that since some leftists governments in in this sample were less traditionally "left" than many previous leftist governments around the world, their ability to signal to firms a mutual connection through working classes may be relatively weak.



procedure using *IRA(5)*. Here, the sign and significance level on the interaction term and its component variables were the same.

More interesting is Figure 4.6, which presents the effects of having a leftist government across all levels of *IRA(4)*. It does indicate that the more extensive are countries' regulatory reforms, the better governments with leftist leaders will be at committing to foreign firms. However, the picture also shows that leftist governments do not actually promote additional FDI commitments into these industries until *IRA(4)* takes on a value of two. This suggests that the leftist-FDI connection is indeed conditional, not materializing absent some reform of regulatory institutions, at least for these two sectors. If leftist governments are going to induce FDI from foreign telecommunications and electricity firms, they will need to do more than build a separate regulatory authority to govern one of these sectors. Instead, reform efforts will need to go deeper in order to effectively signal to risk-averse investors that assets are safe.

4.3.2 Other Interesting Results

Before concluding, I briefly point out some other results that are worth discussing. First, it is worth noting that in Table 6.1 the coefficient on the democracy variable was always negative and insignificant – a finding that does not support previous research arguing that that democracies receive more FDI than non-democracies, on average. (Jensen 2003, 2006, and 2008; Li 2006 and 2009). This non-result can probably be explained by the fact that, as discussed, democratic institutions have competing effects on FDI (Haggard 1990; Li and Resnick 2003). In infrastructure, an area of the economy where FDI is particularly contentious, democratic institutions offer a political voice for consumers, a large domestic group that often were frustrated about increased prices for phones and power that resulted from governments' growing reliance on private firms to provide these services. Politicians in democratic states will be more likely than ones in non-democracies to respond to these upset consumers by taking actions that are contrary to infrastructure firms' preferences, potentially offsetting the gains in terms of rule of law and generally relatively stable environments that democracies are otherwise known to provide.[14]

Second, the *Veto Players* variable's performance was inconsistent. In models 2 and 3 its the coefficients were positive and significant, but when using *IRA(5)* in models 5 and 6 the coefficients were only weakly significant. In the interaction models presented in Table 4.2 they were significant in s were found to be significant in models 7-10 only. Ultimately, these results provide mixed support for the notion that firms in these sectors require a high number of veto players in order to convince multinational firms that policy environments will be stable.

Third, the coefficient on *BITS* is always statistically significant and negative. While this finding is perhaps surprising given recent research highlighting BITS' importance for attracting

[14] This possibility harkens back to a previous body of literature arguing that multinational firms generally preferred not to invest in democracies, instead favoring autocratic political environments (Evans 1979; Oneal 1994).

FDI (Buthe and Milner 2008; Kerner and Lawrence 2016), it might be explained by the fact that it is not clear that international investment law actually enables firms in the telecommunications and electricity industries to make consistently winnable claims against governments perceived as having engaged in actions that violate property rights. This is because governments frequently seek to include exceptions for these sectors in the BITS they sign (Elshihabi 2001). If arbitrators believe these exemptions to be licit, then BITS do not have the same utility for investors in these sectors as they do for investors in other industries. It could also be the case that BITS help to air countries' problems in a public forum, potentially sending negative signals to foreign firms. It is also possible that the coefficients reflect that states that get little FDI in these sectors may sign more BITS.

Ultimately, the models presented indicate that the typical political explanations for why countries obtain FDI more generally probably do not provide much of an explanation for FDI in telecommunications and electricity, specifically. Thus, in some of the most politically contentious industries, these explanations for FDI fair less well than they do when they purport to explain countries' overall levels of FDI.

4.4 Conclusion

The results presented in this chapter support all of the hypotheses offered in Chapter 3. The statistical tests showed that countries that adopt IRAs that are formally separate and have long, fixed terms to govern the telecommunications and electricity infrastructure sectors increase their prospects for receiving FDI in these industries. Additionally, IRAs were found to have the strongest influence on FDI in the time periods just after they were created. It was also shown that, when present, democratic political institutions come to have a negative influence on FDI. Finally,

IRAs were found to help leftist governments to make credible commitments to foreign infrastructure providers.

Overall, this chapter's findings have reaffirmed the importance of utilizing domestic commitment institutions in order to alleviate foreign firms' concerns about political risks. The chapter also identified key features that make IRAs politically independent. Beyond showing that IRAs are effective in a wide number of domestic conditions, this chapter has additionally highlighted one other notable point. This is that these results speak to the importance of analyzing how specifically bureaucratically-centered institutions and the policymaking processes they produce can influence the behavior of major economic actors like multinational firms. This is something that FDI scholars have not so far explored.

The next chapter presents two sets of qualitative comparisons that help to better illustrate the argument presented in this chapter and the preceding one. While these case studies do not actually provide another test of the hypotheses, they are still useful because statistically testing this argument's claims about political interference is difficult. It is, however, possible to illustrate that interference is less severe when IRAs are more politically independent through qualitative analysis.

Chapter 5

Illustrative Comparisons

5.1 Introduction

The previous two chapters presented and tested an explanation for FDI in infrastructure industries. Put briefly, the main finding is that IRAs help states obtain FDI in the telecommunications and electricity infrastructure industries. Although the statistical evidence offered in Chapter 4 is confirmatory, what the previous chapters do not include is a more in-depth illustration of specific cases that looks at some aspects of the theory that are hard to validate with large-N analysis. This chapter does this by making two comparisons, one in the telecommunications sector and one in electricity.[1]

Following Gerring's (2007) advice, I use a most-similar research design that helps me to better illustrate that differences in the FDI commitments that countries have received in these infrastructure industries map onto differences in their regulatory institutions. This design has a long history in political science (Przeworski and Tuene 1971). It is useful insofar as it "controls" for common characteristics while linking variation in the independent and outcome variables to

[1] It is necessary to point out that these comparisons are not meant to be an additional empirical test of the theory.

one another. Specifically, I compare Brazil and Mexico's experiences in telecommunications and Pakistan and Bangladesh in electricity. Although these comparisons do fall somewhat short of an ideal, or perfect most similar design, the approximations are close enough that they should further illustrate this dissertations core contention that IRAs help states attract FDI in the industries they regulate.

These comparisons follow a similar structure by beginning with an illustration of the ways in which the countries being compared are similar and different across a range of important variables. I first present the telecommunications comparison and then the electricity comparison. Each comparison then presents some background on the nature of the chosen country's regulatory changes. After that, I offer evidence about the amount of political interference occurring in the IRA being scrutinized. Then I do the same for the other country in the comparison. Each set of comparisons closes with an illustration of the differences in sectoral FDI commitments received over time. The evidence used in this chapter comes primarily from country assessments of IRAs conducted by IGOs like the OECD, World Bank, IMF, Asian Development Bank, and International Telecommunications Union (ITU), although evidence from newspapers, private sector reports, and academic case studies are also drawn upon.

It is worth pointing out that focusing this chapter on political interference is important because the theory from Chapter 3 explained that interference, even in functional IRAs, is likely to still periodically occur. Thus, linking evidence on the severity of interference in IRAs as part of a comparison of their formal design helps to better illustrate an important aspect of the argument as well as highlight the utility of long, fixed terms for agency leadership. Since politically motivated interference is indicative of political risks for firms, the key expectation is

that when IRAs are more politically independent interference should be less pernicious. Where interference is less pernicious, the amounts of FDI received should also be larger.

Additionally, focusing on attempts to influence IRAs' regulatory policy choices by other government officials also enables me to respond to some recent research that, in my view, adopts an attitude about IRAs that is too pessimistic, focusing too much on their shortcomings. Particularly regarding IRAs in the Global South, some have pointed to evidence of their not entirely eliminating government interference as a clear failure of this type of institution - the broader implication being that IRAs that were first utilized in the industrialized democracies are unlikely to transplant well into LDC contexts (Dubash and Rao 2008; Dubash and Morgan 2013; Prado 2008; Pritchett 2013). This is probably true as far as it goes – when IRAs confront political interference despite being designed to be independent, it does indicate that the institution is not working as well as it perhaps should. But focusing predominantly on deviations from what a perfectly functioning IRA would achieve risks missing the point that the relevant comparison is not only between an actual IRA to its ideal-type – it is also to contexts in which regulatory policymaking processes are less independent.

Still, this literature makes insightful points. For instance, some analysis has pointed out that when IRAs produce credible commitments for foreign firms they may actually make it harder for governments to make commitments to help domestic consumers; thus, IRAs generate tensions that might undercut their own existence (Hochstetler 2012). Given that the argument made in Chapter 3 is premised on the notion that regulatory policies governing firms in telecoms and electricity can spark intense backlash that leads to interference in regulatory affairs, these critiques of IRAs cannot be summarily dismissed.

Table 5.1: Brazil and Mexico Comparison

	Percentage Democratic Post Reform	Avg. # of BITS	Avg. # Veto Players	Region	Avg. GDP Per Capita	Avg. GDP (in USD millions)	**Telecoms IRA Score**	**Avg. FDI (USD Mill)**	**Avg. FDI Per Capital**
Brazil (1997-2008)	100%	0	4.67	Latin America	$4,622.18	$834,591.67	**2**	**$4,334.4**	**.000024**
Mexico (1996-2008)	69%	12	4.5	Latin America	$7,646.97	$816,161.54	**1**	**$522.13**	**.000004**

5.2.1: Telecommunications: Brazil and Mexico

The comparison between Brazil and Mexico focuses on the years since each of these countries altered their regulatory institutions in the telecommunications sector, through 2008. Mexico made this institutional change in 1996 so as to attract more telecoms FDI, while Brazil made it in 1997. Mexico's reform, however, produced a less politically independent regulatory agency. While it is understood to have, at least formally, decision making autonomy over key regulatory policies, particularly tariffs (i.e. the prices that firms may change consumers), leadership was not granted long, fixed terms (of at least 4 years). Brazil, on the other hand, created an IRA that was given this autonomy *and* granted the agency's leadership with a fixed five-year term. The goal of this comparison is to illustrate that differences in this design feature help explain differences in the amounts of FDI that these two countries have received. To make this case, I highlight qualitative evidence indicating that political interference in Brazil's IRA has been less pernicious than in Mexico's sectoral regulatory agency.

Table 5.1 shows some important ways that Brazil and Mexico are similar and different across pertinent variables. From this picture we can first see that, while Mexico was the slightly less democratic of the two countries, both were broadly democratic over this time period. Additionally, Mexico has also signed more BITs, as Brazil has chosen not to utilize this type of

institution. While this does indicate a potentially important difference, it is worth pointing out that BITs were not found in the previous chapter to have a positive influence on infrastructure FDI. Beyond this, the two countries displayed similarities across other potentially relevant factors. Both were similar in terms of the number of veto players. They are also both middle-income Latin American countries that obtained their independence in the 1800s, having similar levels of economic development (as measured by GDP per capita) and reasonably similarly sized economies (as measured by GDP). They have, however, displayed some notable differences their ability to obtain telecommunications FDI, with Brazil attracting much more in terms of the total amount received as well as more FDI per capita. To better establish that an important part of this difference can be attributed to differences in the design of their respective sectoral IRAs, I now take a more in-depth look at each of their experiences, with the expectation being that political interference should be more pernicious in Mexico than in Brazil.

5.2.2: **Brief History of Telecoms Governance in Brazil**

Until the early 1960s, telephone services in Brazil were provided by federal or local governments, or by one of the nearly 1,200 private operators, many of which were foreign owned. There was little to no government oversight or regulation in this setup. As a result, networks were generally uncoordinated and integration rates low, leaving Brazil with one of the lowest telephone density rates in the region (Cuhna 2012).

Early reform efforts began in 1962 when the Brazilian government passed the Telecommunications Code, the first real attempt to promote the orderly expansion of cost-effective telephone services. This law had three effects. First, it called for the development of a National Telephone System (NTS) with integrated networks. Second, it established the National Telecommunications Council (CONTEL) to promote this goal. Third, it stated that the

government was to have a monopoly over long distance telephony. The next major step by the Brazilian government occurred in 1965, one year after a coup ushered a period of military rule, in which a state-owned company called Embratel was created. Embratel was handed responsibility for developing the country's fixed line long-distance services and furthering other aspects of the NTS. In 1967, the government established the Ministry of Communications. Both CONTEL and Embratel were placed under its jurisdiction.

Despite these moves, telephone services remained poor, especially in terms of local access. In 1972, in order to promote improvements, the government created Telebras, another state-owned company. It was put under the direction of the Ministry of Communications and was mandated to generate service expansions. This included assuming control of other operators in the country, including those that had been privately owned, solidifying the government's monopoly. This move meant that Telebras essentially served as a holding company for twenty-seven local carriers that had been under private control. Embratel, which was still mandated to promote long-distance service, was also now placed within Telebras (Cunha 2012). By 1988 telephone density had tripled (Telebrasil 2004). While this was a notable achievement, Telebras also found that by this time it was no longer able to keep up with demand, a problem compounded by the economic crises Brazil suffered through in the 1980s. Investments in telecoms infrastructure dried up as well (Cunha 2012).

By 1995, when new President Fernando Henrique Cardoso took office, this setup was essentially collapsing. Realizing that the Brazilian government was unable support the investments needed to meet increasing demand for telephone services, Cardoso sought to reorganize Brazil's telecommunications industry. Despite having had a long academic career as an advocate of dependency theory, his restructuring plan was based on the idea that a diversified

supply of private foreign capital was now needed to spur investment. But Cardoso also realized that it was untenable to do this without also developing an enhanced regulatory role for the Brazilian state (Fonseca 1996; Cunha 2012).

Shortly thereafter, the government signaled it was to end the public monopoly on electricity. In July 1997, the government offered a regulatory framework for electricity governance that recognized the benefits of politically independent regulation. To achieve this, Brazil established the National Telecommunications Agency (ANATEL) as an autonomous "separate autarchy" not subordinate to the ministry of communications that is mandated to regulate the industry. Critically, ANATEL was given responsibility to determine the prices that private power providers were to charge consumers. The new IRA was also given the ability to help determine which foreign investors may invest, manage conflicts between private operators, and assist in deciding on penalties for firms. Its leadership, a group of five commissioners, was given a fixed term of five years. Shortly after its creation, private foreign investors began entering the domestic electricity industry, especially after multinational firms were invited to take over Telebras.

5.2.3: Political Interference in ANATEL

To assess ANATEL's role in limiting political interference in Brazil's telecommunications industry it is worth starting by pointing out that the OECD, which periodically conducts reviews of LDCs' regulatory institutions, noted the reform process was "exemplary", enabling Brazil to offer investors a credible commitment (OECD 2008, p.142). Indeed, ANATEL was deemed to be "solid", with reforms following "international best practices" (Ibid). It was also reported to have obtained "significant independence" from other parts of the Brazilian government (Ibid, p. 216).

Despite these favorable views, ANATEL's independence has not gone untested. Its first test occurred in 1999 as the effects of the Asian Financial Crisis reached Brazil, harming its economy and increasing hardship for much of its citizenry. During this time ANATEL allowed prices for telephone services to increase to ensure that operators were able to recover investment costs, despite numerous assertions that these price rises were unjustified (Ibid. p. 149). However, the Cardoso government was unwilling to undercut ANATEL, preferring to respect its institutional independence.

The Brazilian government's attitude toward ANATEL's independence did change during the first Lula administration (2003-2006), however. As reported by Prado (2008), in early 2003 the President's Chief of Staff stated the government's desire to circumvent ANATEL, given the price hikes it had been implementing, by negotiating tariff rates directly with private firms. Later that spring, the Minister of Communications, Miro Texiera, announced a broad plan to adjust communication rates so that rises would occur more slowly than ANATEL had deemed desirable. Texiera also made the effort to publically criticize ANATEL on numerous occasions (BN Americas 2003a). ANATEL's leadership continued to resist the Lula government, however. It was also able to find allies in other parts of government who agreed that undercutting the IRA and breaching contracts with investors would have detrimental long-term effects (Prado 2008).

Lula's government continued to push, however, even seeking the removal of ANATEL's head, Luiz Guilherme Schymura, who was appointed by the Cardoso government in 2000 (BN Americas 2004a). This move was resisted publically, including by members of Lula's opposition, the Brazilian Social Democratic Party (PDSB) (Doyle 2009). Ultimately, Schymura did choose to leave his post in 2004, a year before his term expired, a move that concerned investors. Lula also made public threats to formally eliminate ANATEL's independence, due to

its unwillingness to acquiesce.

This battle ended somewhat abruptly, however. Although the details of what exactly convinced the Lula government to back off its attacks on ANATEL are unknown to outsiders, it ultimately chose to relent. The fight ended with the rate chosen ultimately reflecting ANATEL's preferences (Prado 2008). Additionally, Lula stopped pressing for reform of ANATEL, choosing instead to respect its institutional independence. Lula's statement about this did note that it was important for Brazil to respect arrangements with investors, presumably as a way to reassure them (BN Americas 2003b).

Lula did have one other, albeit more minor, dust up with ANATEL, in 2006, when the government attempted to postpone by executive decree a technical change that ANATEL had supported in how consumers' telephone line usage would be tracked (from pulse rates to minute rates). Here, ANATEL, did not make major efforts to protest the government's move, unlike before. While this might be indicative of ANATEL becoming more subservient, it has also been reported that ANATEL's own internal thinking on this matter appeared to still be a matter of debate, and that it ultimately changed its own course after realizing that implementing this change, at least at this time, might make it harder for consumers to access phone lines (Prado 2008).

The main effect of these government-IRA disputes was to reduce investors' confidence in ANATEL. As reported by regional business newspapers, a private report by the American Chamber of Commerce in Brazil from 2006 noted that for the first time more than half (61%) of foreign investor's perceived that there was political pressure on ANATEL. During the 2003-2006 period, investors also stated publically their concern that ANATEL needed to remain politically independent (BN Americas 2003b**;** BN Americas 2006). That telecommunications

investors became more concerned about investing in Brazil is not unexpected, given these quarrels. At the same time, however, ANATEL's resistance can be read as evidence that it has achieved a meaningful degree of independence, especially given that threats made about formally cancelling the IRA's independence came to naught. Indeed, foreign investors continued to increase the amounts invested into Brazil's telecommunications sector in the following years.

5.2.4: Brief History of Telecoms Governance in Mexico

Mexico's move to more modern telecommunications regulation involved fewer legal steps than in Brazil. The useful place to begin is in 1972, when Mexico established a public monopoly for telephone services after it nationalized Telmex, its largest provider to date. Before that, similar to Brazil, Mexico's telephone services were haphazardly regulated, if at all. Numerous foreign firms like AT&T, Ericsson, and ITT had also been intermittently present in Mexico, beginning in the early 1900s. Despite Telmex's nationalization, private companies were still allowed to invest in the state-run company, although this did not happen often.

The 1982 debt crisis and subsequent economic stagnation catalyzed major changes that led it to become much more active in the global economy during the 1990s, especially in international trade and investment. This included, in 1990, the Mexican government returning Telmex to private control (OECD 1999). After this move, a consortium of investors, which included Southwestern Bell Corporation from the US, France Telecom, and Mexican telecoms magnate Carlos Slim, bought the company. Investments by this group into Telmex increased over the next few years. Telmex essentially became a de facto private monopoly after this, and was charged with leading the development of the country's long-distance services. Other private firms were still able to invest in local services, however.

The next important shift occurred in 1995, when the Mexican government formally established a regulatory framework that stated that private firms, not the state, were to be relied upon to promote telephony (Gauch and Spiller 1999; OECD 1999). The move toward politically independent regulation occurred in the following year with the creation of the Federal Telecommunications Commission (Cofetel). This agency was dubbed a "deconcentrated authority" and was set up "as an agency with technical and operative autonomy" (OECD 2004, p. 108). At the same time, it is worth pointing out that the Sectretaria de Communicaciones y Transportes (SCT) continued to assert its own authority on telecommunications regulation, despite this setup with Cofetel, clouding the policy mandate of both entities. As will be discussed, this has caused some problems that have reduced Cofetel's political independence, leading to "inefficient division of powers and processes between line ministry and the regulator (Ibid.). In practice, this has meant that while Cofetel has asserted control over tariffs (although not without frequent contestation by the SCT), it has not been able to play a distinct role in resolving conflicts among operators or issue licenses to firms. Cofetel's leadership was also granted a term of 3 years and was not fixed.

5.2.5: Political Interference in Cofetel

OECD assessments of Mexican telecommunications regulation have not been nearly as positive as Brazil's. The first of these reports, published in 1999, noted that Mexico had made important progress in improving its telecoms regulation. Specifically, it discussed how "the establishment of Cofetel as a regulatory agency distinct from the SCT was an important step towards developing an independent and transparent regulatory framework in Mexico" (OECD 1999, p. 81). However, it also noted that Cofetel had not achieved high enough degrees of independence, leading to ongoing problems related to "day to day political pressures"

influencing Cofetel's regulatory policymaking" (Ibid). This report also discussed the need to "enhance the independence and role of Cofetel by appointing commissioners for…fixed terms, enhancing their tenure by making removal from office difficult" (Ibid, p. 222).

A follow up OECD review from 2004 also discussed that, because Mexico had not made any additional reforms to Cofetel's design, many of the previously identified problems continued (OECD 2004). In addition to discussing how key decisions made by Cofetel from 2000 and 2002 had been overturned, this report again pointed to the need to improve Cofetel's independence by giving its leadership fixed terms. The International Telecommunications Union ITU) has also echoed the problems of insufficient independence, noting that SCT's ongoing interference generates a pernicious "double window" problem, whereby firms become more uncertain about regulation because they cannot easily understand which policymaking actors, IRA or ministry are actually driving regulatory decisions (ITU 2014, p. 6).

Additionally, other expert assessments of Cofetel by academics have pointed to this problem as well, noting that it has made regulatory "decisions more political than is necessary or desirable" (Gausch and Spiller 1999, p. 150). Indeed, these authors pointed out that the SCT's periodic involvement in pricing decisions vitiated the quality of regulation. A review of Cofetel by Jacint Jordana, an expert on regulatory agencies in Europe and Latin America also discussed that because the agency's leaders are "not nominated for a fixed term, their autonomy was weaker than that of agencies with fixed-term mandates" (Jordana 2010, p. 766). His report also pointed out that this led to Cofetel having three heads within in its first five years of existence, a dynamic that has not led to enough policy stability.

Regional news reporting has further highlighted some of the problems associated with Cofetel being insufficiently independent. On numerous occasions government officials have put

pressure on Cofetel by openly questioning its decision-making and increasing the pressure on its officials (BN Americas 2004b; BN Americas 2004c). In some cases high-profile officials, such as the Finance Minister, have even stated that, absent the necessary political will to make Cofetel more independent, it would be better to eliminate it altogether in order to avoid further confusion about telecoms regulations (BN Americas 2004b). News reports have also emphasized that firms have found Cofetel's non-independence problematic, noting that industry associations believe it has led to undue "restrictions against foreign investment" (BN Americas 2002). Firms based in the US appear to have been particularly vocal in their expressing concern about Cofetel's lack of independence leading to "unfair practices" (PR Newswire 2011).[2]

5.2.6: **An Illustration of Differences in Telecommunications FDI**

Overall, the evidence marshaled indicates that Brazil should receive more FDI in the telecommunications sector than Mexico in the time period since both engaged in regulatory reforms. Brazil's IRA, ANATEL, is generally understood to be more independent than Mexico's, Cofetel, due to it providing its leadership a fixed term of 5 years. Table 5.1 illustrated this difference, showing that Brazil has, on average, received much more FDI per year.

[2] It is necessary to point out that there is one other factor that greatly complicates Mexico's regulatory agencies that is not present in Brazil that does not have to do with their institutional design: the "Amparo" system. This system is meant to protect the constitutional rights of citizens by enabling them a legal avenue to challenge and halt the implementation of unwanted laws if they can show harm. Telmex, the largest incumbent telephone provider has used this system to challenge regulatory decisions that would introduce unwanted foreign competition. As the OECD (2004) noted about this, "attempts by regulators to address the anticompetitive behavior of Telmex have been unsuccessful, partly because Telmex has consistently challenged and appealed the action and resolutions of….the Telecommunications Commission (Cofetel)" (p. 84).

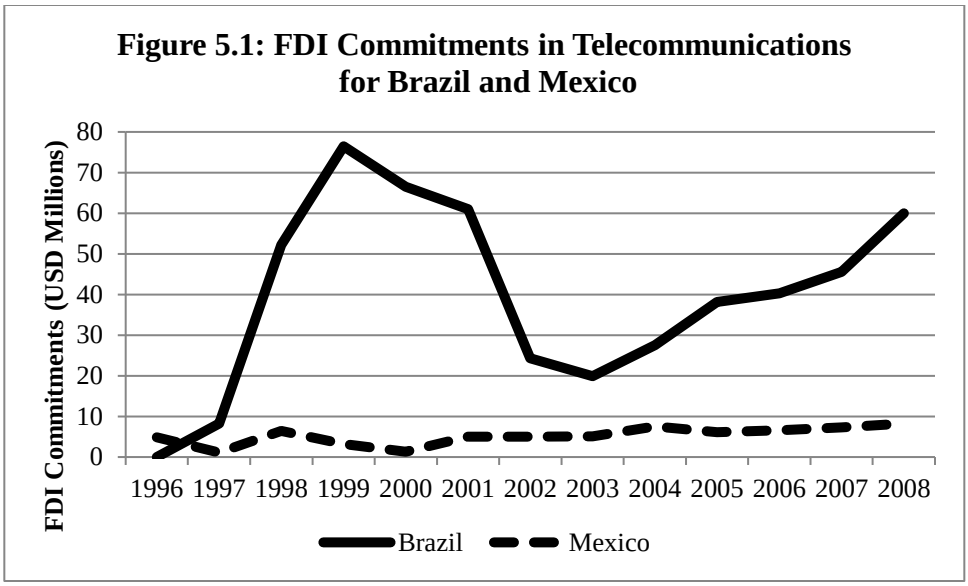


Figure 5.1 also confirms this to be the case by showing these differences over time. This visual also shows two interesting features. First, that the lowest amounts of FDI received by Brazil coincide with the years in which ANATEL dealt with interference, as one might expect. Second, that the FDI commitments that Mexico received did not vary much year to year, which might also be expected given that reports indicated that pernicious interference in Cofetel seemed to be fairy constant.

5.3.1: Pakistan and Bangladesh

The comparison between Pakistan and Bangladesh in the electricity sector also focuses on the years since each of these countries altered their regulatory institutions (1998 in Pakistan and 2003 in Bangladesh), using evidence coming as recently as 2017. Pakistan's reforms in the late 1990s led to an IRA that was granted formal autonomy and given a fixed term of four years, whereas in Bangladesh regulatory reforms led to an IRA where autonomy was granted, but terms for agency leadership is for three years and not fixed. Like above, the goal of this comparison is

Table 5.2: Pakistan and Bangladesh Comparison

	%Democratic in Post Reform	Avg. # of BITS	Avg. # Veto Players	Region	Avg. GDP PerCapita	Avg. GDP (in USD millions)	**Electricity IRA Score**	**Avg. FDI (USD Mill)**	**Avg. FDI Per Capital**
Pakistan (1998-2013)	53%	24.6	2.4	South Asia	$671.6	$106,223.1	**2**	**$411.49**	**.000002**
Bangladesh (2003-2013)	85%	21.25	2.6	South Asia	$482.9	$71,359	**1**	**$63.66**	**.0000004**

to illustrate that differences in this design feature help explain differences in the amounts of FDI that these two countries have received, using qualitative evidence indicating that political interference in Pakistan's IRA was less pernicious than it was in Bangladesh.

Table 5.2 shows some ways that these countries are similar and different. We first see that Bangladesh does display more democratic years than Pakistan, although both have been plagued by problems with political instability and ensuring civilian control of government. Both countries have signed a similar number of BITs while also having similar numbers of veto players, on average. Both countries are also in South Asia, previously being a single state from the late 1940 to the early 1970s. Both countries also display low levels of development and generally small economies overall. Like the comparison made above, they also displayed some notable differences their ability to obtain FDI, with Pakistan attracting much more in terms of the total amount received as well as more FDI per capita. Again, to better establish that some of this difference can be attributed to differences in the design of their respective sectoral IRAs, I take a more in-depth look at each of their recent experiences.

Before proceeding to the case illustrations, is necessary to briefly discuss some other notable features of these countries' experiences in the electricity sector that help make sense of the evidence that will be presented. The point to emphasize is that both of these countries have long had severe problems ensuring populations' access to electricity, much worse than many

other developing countries.[3] Blackouts are common, frequently occurring anywhere between 8-20 hours per day in some areas of each country, leading to the general view that these countries' power sectors are in a state of virtual perpetual crises (Asian Development Bank 2014 and 2016). The result has been that public anger has been especially high at times, which, in turn, has led both the Pakistani and Bangladeshi governments to intervene with an intensity unusual even for LDCs. For example, and as will be discussed in more detail, both still rely heavily on sectoral subsidies to help alleviate this anger by making electricity somewhat more affordable for consumers. Using data from the IMF (2013), I illustrate below in Table 5.3 the extent of these subsidies for the year 2011. What this picture indicates is that in terms of both share of GDP and government revenues, Pakistan's and Bangladesh's governments are more willing than their regional peers to intervene in the sector. What evidence of consistent intervention ultimately means for the comparison is that both countries can essentially be considered "hard cases" for IRAs since the amounts of political interference in both countries' IRAs' would be expected to be relatively high, although the expectation remains that it should still have more pernicious effects in Bangladesh than in Pakistan that can be attributed to differences in the design of these IRAs.

Table 5.3: Electricity Subsidies in Pakistan and Bangladesh in 2011

	% GDP	% Gov't Revenue
Pakistan	1.63	12.76%
Bangladesh	3.01	25.26%
Avg. of Developing Countries in Asia	0.25%	1.08%

Note: Regional averages do not include Pakistan and Bangladesh, using IMF data.

[3] For the sample countries used in the previous chapter's empirical analysis the mean number of kilowatt hours of electricity used per person per annum was a little over 1,000. In Pakistan during the case study years it was slightly over 400, and in Bangladesh this number was even lower, being slightly more than 200. Data comes from the World Bank (2016a).

5.3.2: **Brief History of Electricity Governance in Pakistan**

Recent efforts to liberalize Pakistan's electricity sector began in 1986 with the creation of the Hub Power Company (HUBCO), a large electricity generation entity reliant on independent power producers (IPPs). Before its creation, power plants in Pakistan were controlled exclusively by the government of Pakistan through the Water and Power Development Authority (WAPDA) as well as the Karachi Electricity Supply Corporation, both state-owned operations. By about 1985, however, these two entities were sorely lacking funds, which led the Pakistani government to turn to private firms to work alongside them as well as privatizing the latter service provider. The World Bank also began assisting Pakistan to develop its power sector (Ali and Beg 2007).

Because rampant power shortages continued, in 1993 the government established a task force to develop options for attracting private capital to fund power generation. The report of this task force undergirded the 1994 power sector policy reforms, entitled the "Policy Framework and Package of Incentives for Private Sector Power Generation Projects". These reforms specifically targeted foreign capital (Ali and Beg 2007). Key to this move were government attempts to signal favorable tariffs for private producers, with minimal restrictions on fuel sources or technologies that firms could use.[4] As a result, foreign investors a number of countries began investing in Pakistan.

However, shortly after entry, the Nawaz Sharif government targeted many of these independent power producers (IPPs) for unlawful practices in the wake of rises in consumer tariffs that some politicians argued were unduly high, even though prices were comparable to what consumers were paying in other Asian nations (Ali and Beg 2007). A key criticism levied by the government was that since private electricity providers were promised high tariff rates,

[4] In Pakistan, electricity is based entirely on a mix of furnace oil, high-speed diesel, or natural gas. Much less electricity is provided using domestic coal supplies.

they no longer had strong enough incentives to control production costs, increasing inefficiencies in the sector. IPPs responded by claiming that higher tariffs were warranted because the price of energy inputs were increasing. In 1997, some IPPs were officially charged with forcing the government to sign "deceitful and unaffordable contracts" (Ibid, p. 10). Government rulings forbade these IPPs from resorting to international arbitration to resolve these disputes, leading investors to become quite concerned about the Pakistani government.

The next institutional overhaul occurred in 1998 with the creation of the National Electric Power Regulatory Authority (NEPRA), Pakistan's sectoral IRA. It was established as an autonomous body to better regulate the sector given the rise in political problems in recent years. NEPRA is mandated to regulate all aspects of the electricity sector, including tariff setting and control over IPPs' licensing (World Bank 2011). NEPRA is run by a Chairman who works alongside four commissioners that represent different provinces. Each has been granted fixed terms of 4 years.

5.3.3: **Political Interference in NEPRA**

Although NEPRA is formally autonomous and has granted its leadership four year fixed terms assessments of this regulatory agency have noted that political interference in its decisions still occurs. For instance, two World Bank reports from 2001 stated that government meddling is common and problematic. One of these reports discussed that "political interference was rampant", certainly complicating NEPRA's ability to act independently from government (World Bank 2001a). The other report similarly discussed that "its [NEPRA's] independence and authority have frequently been encroached upon by the Government" (Quoted in Ali and Beg 2007, p. 15). A more recent assessment by the Asian Development bank took a similar view when it noted that "the government still intervenes in the setting of electricity tariffs by

mandating tariff rates that are below cost recovery levels" (Asian Development Bank 2014, p. 19).

Academic assessments of NEPRA have also questioned this IRAs ability to operate in a as autonomously as desired. One report noted that "undue interference and influence of the government hampers independent functioning", with the government sometimes seeking "control over it in matters of tariffs and pricing" **(**Malik 2007, p. 16). In this author's view, interference in NEPRA has created uncertainty with IPPs, which has made them leery about sinking capital into new projects or funding the needed upgrades. Importantly, investors have displayed some serious concern about these dynamics. Regarding IPPs' experiences in Pakistan, a recent study discussed how "the environment became highly politicized, eroding investor confidence and the perceived threat of political quasi-expropriation scared off foreign investment, especially in assets characterized by a high degree of sunkeness" (Kessides 2013, p. 273). The highest profile example of a foreign investor being scared off occurred in 2016 when the Abraaj Group, an international energy investment consortium, fully divested from Karachi Electric (Dawn 2016).

At the same time, there is other evidence that indicates that interference in NEPRA is not so pernicious that it does not enable its officials to operate in a generally independent fashion. In 2013, the United States Agency for International Development (USAID) was asked by the Government of Pakistan to conduct reviews of policymaking in the electricity sector. USAID produced two reports on Pakistani regulation that discussed NEPRA. Both of them highlighted that meddling did indeed occur, but also that it was not as severe as typically presumed and that other problems were larger contributors to electricity service delivery problems in Pakistan. One report highlighted that the more harmful issue was that NEPRA's appointees have too often been under-qualified for regulator positions that can be quite technically complex. Additionally,

USAID discussed how this problem often exacerbated severe time delays in issuing regulatory decisions about tariff changes. For example, decisions that should typically take only a few weeks to determine frequently take months to get announced. In 2012, for example, the process for announcing tariff rate changes for electricity distribution companies took ten months. This delay inhibited these companies from recouping investment costs because the prices charged were frozen at the same time that the cost of their inputs was rising (USAID 2013a).[5]

The second USAID report from 2013 analyzed NEPRA's policy decisions heavily based on a survey of NEPRA's officials, including its senior and mid-level management. This survey asked two important questions that spoke to this IRA's ability to operate autonomously. The first was if NEPRA can "issue decisions on tariffs or licenses without effective intervention from the ministries or Parliament?" The second focused more directly at whether the fixed nature of NEPRA's terms for appointed senior management tended to be respected, with these officials being "only dismissed by law"? USAID ultimately rated NEPRA's ability to avoid general interference as "Good", and its tendency to abide by laws fixing the terms of its senior management as "Very Good", concluding that NEPRA's autonomy was a "strong area" (USAID 2013b, p. 14). More severe problems with NEPRA involve lack of public participation as well as the general transparency of its decision-making processes. Another recent survey of Pakistani officials (including from NEPRA), conducted as part of an independent analysis by a group of academics also produced a similar finding. Again, this survey revealed that political interference in NEPRA is known to sometimes occur, but a myriad of other problems were found to be larger contributors to investment and service delivery problems in the Pakistani electricity sector (Ullah, Arentsen, and Lovett 2017).

[5] USAID is not the only entity assessing Pakistan's electricity sector to highlight that delays have had pernicious effects on firms. See Kugelman (2015) for additional analysis of this problem.

Assessments of NEPRA by private consulting firms echo the idea that NEPRA does, generally, have the ability to issue decisions that enable it to build a positive reputation with firms. For example, one recent report by Danish Consultancy Grue Hornstrup discussed how NEPRA had developed the capacity to issue "persuasive precedents" regarding its tariff setting policies. These are statements that NEPRA officials have made about tariff setting goals that the IRA is able to follow through on in practice, and which act as an indication of how NEPRA will rule in the future (Grue Hornstrup 2010, p .7). That NEPRA officials have demonstrated an ability to act autonomously from the Government of Pakistan is also visible in more recent efforts by the Pakistani government to consider formally cancelling NEPRA's legal independence by placing it under the authority of the Ministry of Water and Power. This move to effectively neuter NEPRA was reported to occur because it has "consistently refused to implement the policy guidelines designed by the government" (Express Tribune 2016). While the political battle over NEPRA's independence is still ongoing as of 2017, recent reports suggest that the Pakistani government is now backing off this change after legal rulings initially prevented this change (Dawn 2017). Ultimately, the picture presented of NEPRA is one in which the Pakistani electricity sector IRA is certainly flawed, being unable to totally withstand political meddling; however, it is also one in which the independence from government that it does have often allow it to produce meaningful regulatory decisions.

5.3.4: **Brief History of Electricity Governance in Bangladesh**

Bangladeshi reforms to its power sector began in the 1990s after domestic demand for electricity was perceived to have risen drastically while domestic supply capacity lagged. Until this time, electricity provision was controlled exclusively by the Bangladesh Power Development Board (for urban areas) and the Rural Electrification Board (for rural areas), both of which

established delivery systems through public monopoly in the 1970s. These institutions were housed within the Ministry of Power, Energy and Mineral Resources, being subject to explicit political control. Given drastic and ongoing power shortages, in 1996, the government formally turned to IPPs with its Private Sector Power Generation Policy. However, minimal IPP participation in Dhaka can be traced back to 1991 (Das Gupta et al. 2012).

Bangladesh's move to a sectoral IRA occurred in 2003 when it established the Bangladesh Energy Regulatory Commission (BERC) as a way to improve regulation and attract private foreign investment in the sector. Its core mandate includes establishing electricity tariffs, reviewing and approving long-term development plans for the sector, and managing disputes between firms. However, despite assistance from the US's Agency for International Development (USAID) and the Asian Development Bank (ADB), BERC was prevented from becoming fully operational until 2007, including the appointing of all five of its commissioners, in 2008, due domestic legal and administrative challenges by officials who did not prefer the establishment of an independent electricity regulator (USAID 2008; Asian Development Bank 2009). Despite BERC being granted regulatory policymaking autonomy, its leadership was also not granted fixed terms, with term lengths being only three years.

5.3.5: **Political Interference in BERC**

Politically motivated interference in Bangladesh's electricity regulator appears to be a worse problem than in Pakistan. Indeed, numerous agencies assessing BERC and/or the broader Bangladeshi sector report constant and severe meddling, including in key leadership and staffing issues. Worries about BERC's effectiveness emerged during the period after which BERC had been formally established (2003) and the time that it was able to become operational and appoint all of its commissions (2008). An early report by USAID (2008) indicated that government

interference was likely to be a serious problem inhibiting its ability to function. Another similarly timed assessment by Transparency International Bangladesh (2007) highlighted that interference in BERC from its outset seemed to portend future problems.

After it became operational in 2007/8, assessments of BERC's performance confirmed these early worries. While one report by the Asian Development Bank was cautiously hopeful that the government would allow BERC to make tariff increases and other independent decisions (Asian Development Bank 2009), another analysis by the World Bank from late 2009 presented a much more negative view. This report specifically highlighted that interference involved meddling with BERC's leadership – a dynamic that would be expected when an IRAs' terms are short and not fixed. As the World Bank wrote: "There has been backtracking on the effectiveness of BERC following the change of government, *with recent political interference in changing the leadership of the organization* [emphasis added], and a semblance of explicit political involvement in how BERC should respond to tariff applications" (World Bank 2009, p. 16). This World Bank assessment concluded that "BERC is currently in a difficult state, *as it is experiencing political interference in its staffing and scope of work* [emphasis added], which is compromising its ability to act as an independent, technocratic agency" (Ibid, p. 23).

Later assessments of the Bangladeshi IRA by private experts did not offer any evidence of improvement over time. For example, one report by academics from 2011 discussed how "political interference in organizational management, in bureaucratic activities, [and] in personnel management…are creating a huge problem for the development of this sector" (Ahmed 2011, p.12). Another report by a private consulting firm specifically noted that harmful interference appeared to come most often from officials in the Power Division of the Ministry of Power, Energy, and Mineral Resources (pi Strategic Consulting 2013).

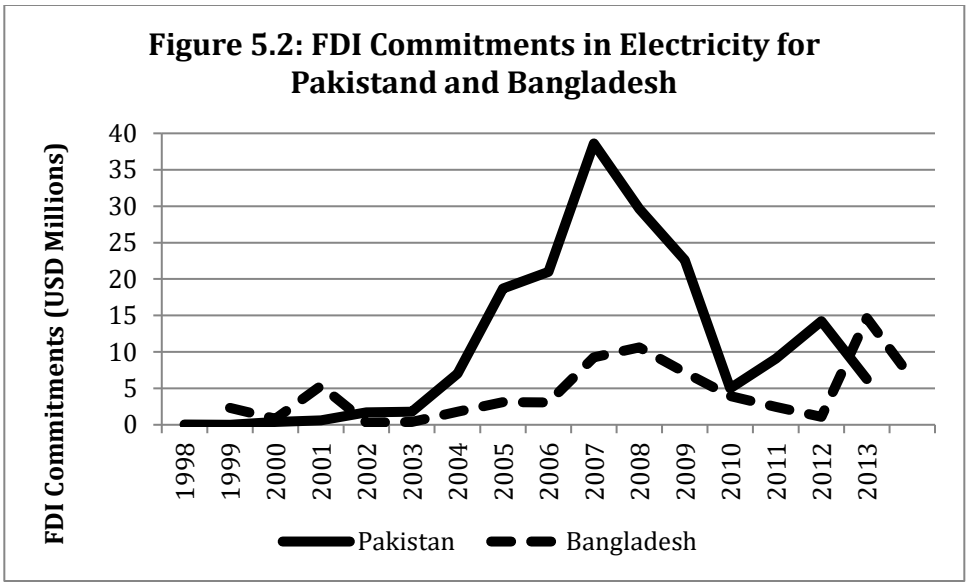
More recent reports by the IFIs have also not indicated that BERC has made any notable improvements in its ability to make decisions autonomously from government. In giving this IRA a generally unsatisfactory rating, in 2014 the World Bank again discussed the problem of interference. It stated that BERC is "constrained by undue political and bureaucratic interference in its staffing and decision-making" (World Bank 2014, p. xii), noted that "ongoing interference is limiting its [BERC's] scope for playing an objective role as regulator" (Ibid.).[6] This report also specifically discussed that a three year term BERC's leadership was problematically short. Another report by the Asian Development Bank from 2016 echoed this general view about BERC's weaknesses (Asian Development Bank 2016).

Thus, the common view is that BERC has not been able to act nearly as autonomously from government as desired. Political interference has continued been a serious problem throughout its existence, one that appears to affect staffing issues, including ones that involve leadership. While this would perhaps not be unexpected given that BERC's leadership have shorter time horizons given their shorter, non-fixed terms, it should indicate also indicate that BERC would be a less effective IRA than its Pakistani counterpart.

5.3.6: **An Illustration of Differences in Electricity FDI**

The evidence marshaled for this comparison indicates that Pakistan should receive more FDI in the electricity sector than Bangladesh because the former's sectoral IRA is more independent than the latter's. Table 5.2 indicated that, since the time period in which each had an

[6] Unfortunately, data on staffing turnover in BERC's leadership positions is not available.



IRA this was the case, on average. Figure 5.2 depicts this difference over time, further illustrating that Pakistan has had more success attracting these investments than Bangladesh.

However, before concluding it is worth pointing out two other aspects of this visual. First, I highlight that NEPRA did not appear to have a strong FDI-inducing effect in the year or two immediately following its creation. This is contrary to Hypothesis 2 from Chapter 3, and thus it is worth taking a moment to offer some informed speculation about why this might be the case in Pakistan. One likely reason involves a special case of internecine political competition for the Prime Minister's office between Nawaz Sharif on one side, and Benazir Bhutto and her husband Asif Ali Zandari on the other. The two Bhutto governments that ruled during the 1990s opened the country to FDI, including in infrastructure industries like electricity. Although it continued the Bhutto government's open policies toward FDI during its first term in office (1990-1993), it became hostile to infrastructure FDI during its second term (1997-1999) as part of a political calculation to undermine the Bhutto government's influence (Uchikawa 2000). In doing so, Sharif forced contract renegotiations with the IPPs that had invested earlier in the 1990s, claiming these contracts to be the products of bribes with Bhutto and Zandari. This move

is described to have effectively killed the country's chances of obtaining any meaningful attention from foreign electricity investors for the next few years (Ibid.). This atypical set of events occurred at the same time that NEPRA was established. Second, this was also, more generally, a politically unstable time for Pakistan (even for Pakistan). Competitive nuclear tests with India occurred in 1998, which led to economic sanctions and a suspension of loans from the World Bank and IMF. In 1999 there was a military coup d'état. It is hard to see how even a well-designed IRA could provide an attractive environment in this context. Foreign Investments did, however, start to increase notably a few years later.

Second, BERC in Bangladesh seemed to have followed a generally similar pattern as Pakistan. This could be because during its first few years of existence it was not, as noted earlier, fully operational. Once it began regularly issuing decisions and had its board in place in the 2007/8 period was when Bangladesh was drawing the most interest from foreign electricity investors, although the amounts received declined over the next few years.

5.4 Conclusion

This chapter offered two sets of comparisons that complemented the statistical analysis presented in the previous chapter. In both comparisons it was shown that differences in IRAs' design was linked to differences in interference in these IRAs', which mapped onto investments in the sector that they cover. Presenting evidence of political interference is important because the theory offered in Chapter 3 discussed how IRAs, even though they are helpful for inducing FDI, cannot not be expected to entirely eliminate meddling by government policymakers. Presenting this evidence helps to confirm that this is the case, even when the evidence marshaled to do so is indirect in nature.

Additionally, providing evidence of their effectiveness, despite political interference, helps address the larger concern that, as some have argued, these are institutions that simply cannot be expected to work in LDC contexts (Dubash and Rao 2008; Dubash & Morgan 2012; Pritchett 2013). This view is based on the idea that leaders and publics in developing nations with more limited state capacities would be unable to reduce interference and provide credible commitments (and thus attract investment). Authors adopting this position, as noted earlier, frequently look at instances of meddling in an IRA's to point out its deficiencies as part of an argument that they are, essentially a case of isomorphic institutions that do not match well with the local contexts they move into (Powell and DiMaggio 2012).

The evidence offered in this chapter, supports a more optimistic and, I believe, realistic view of IRAs. Combined with the statistical evidence from Chapter 4, the finding is that IRAs do have important FDI-inducing effects. And they do so not by eliminating political interference entirely, just by reducing its severity. Interference also appears to track with IRAs' degrees of formal independence in expected ways, that is, it is worse when IRAs are only made partially independent. All together, the implication is that countries seeking FDI in these infrastructure industries should strongly consider adopting IRAs, though they should also be aware that they will sometimes be put under stress.

Of course, to know if IRAs really are useful for citizens requires looking at whether the FDI they induce actually translates into better access to phones and power for people in host countries. That is the focus of the next chapter.

Chapter 6

White Elephants in the Room:
Understanding When FDI Improves Access to Infrastructure-Based Services

6.1: Introduction

In the preceding chapters of this dissertation I offered an institutional explanation for FDI in infrastructure industries that emphasized how the design of regulatory bodies helps developing country governments induce foreign investments by overcoming the commitment problem. In this final empirical chapter I ask the logical follow-up question: does FDI in the telecommunications and electricity sectors actually improve domestic access to phones and power?

This is an important question to ask, especially since recent FDI research tends to examine where it goes more often than it inquires about its effects (Jensen et al. 2012). For scholars of economic globalization, FDI is often assumed to be beneficial because it increases recipient countries' productive capacities and employment possibilities (Jensen et al. 2012; Pinto 2013). Additionally, infrastructure investments are often asserted to enhance countries' ability to achieve growth and development because infrastructure-based services support productive economic activities (Aschauer 1989; Easterly and Rebelo 1993; Canning, Fey, and Perotti 1994;

Sanchez-Robles 1998; World Bank 1994). Underpinning this belief is the assumption that infrastructure investments would increase access to infrastructure-based services in a straightforward manner in which investments simply move into projects that in turn help local populations.

There are, however, reasons to be cautious about accepting that foreign investments in infrastructure industries would necessarily yield these improvements, at least in this direct a way, without further examination. As will be discussed, an important issue than can hinder the ability of investments to generate service improvements is that infrastructure sectors have been known to produce "white elephants" – projects that make little, if any economic sense, but that nonetheless offer important political benefits for the policymakers that support them (Henisz and Zelner 2006; Peltzman 1989; Robinson and Torvik 2005). The problem is that when FDI moves into inefficient, if not wasteful white elephant projects it is less likely that these investments translate into improvements in infrastructure-based services.

In this chapter I will illustrate that white elephants are more common in electricity than in telecommunications. I will also show that this means that electricity FDI does not directly translate into better access to electricity for populations, although foreign investments in telecommunications projects do improve access to phones in a straightforward manner.

Additionally, to the extent that white elephants complicate the electricity sector it becomes important to examine if there are conditions under which foreign investments in this sector still enhance domestic access to power. I also take this step. In doing so, this chapter provides a more complete picture of the effects of FDI that speaks to LDCs' ability to effectively harness foreign capital. For the electricity sector, I argue that FDI translates into improved access to power when these investments become more important to a country's economy, that is, when

they become a larger share of GDP. When this happens, I contend that it is more difficult for policymakers who would otherwise be willing to support white elephant infrastructure projects to do so due to heightened public attention about how this capital is used. I also argue that this effect is stronger when these investments move into democratic political settings and places with free and open media.

The rest of this chapter proceeds in six parts. The section below discusses the problem of white elephant investment projects in public infrastructure. It explains why they are common and highlights why they would be expected to impede citizens' access to infrastructure-based services. Then, I show that white elephants are more common in electricity than in telecommunications. After that, I lay out the chapter's first hypothesis that, since white elephants are more common in electricity than telecommunications, foreign investments in the former are less likely than in the latter to improve infrastructure-based services. The next section confirms this empirically. After that, I lay out an argument for why electricity FDI, despite being prone to wasteful white elephant projects, should still increase populations' access to electricity when it becomes a larger share of GDP. The section after that outlines the empirical test for this part of the argument. Then I discuss the results. The final section concludes.

6.2.1: White Elephant Projects in Public Infrastructure Sectors

Plans to improve public infrastructure by obtaining foreign capital are often justified on the grounds that they improve public welfare. That this should be the case, at least in theory, is reasonably straightforward: foreign capital moves into projects that use these funds to generate infrastructure improvements. Increased access to roads and other facilitators of transport, telecommunications technology, electricity, and water all help by enabling economic actors to

better determine how to utilize their resources and engage in productive undertakings and exchanges that they otherwise could not have (World Bank 1994; Baldwin 2016).

At the same time, however, numerous countries have seen tremendous difficulties making sure that infrastructure investments actually generate these improvements. Beyond obtaining the capital needed to fund public infrastructure improvements, an important problem with infrastructure investments is ensuring that resources are not misallocated to projects that are unlikely, if not destined from their outset to fail to produce societal benefits. The problem of misallocated resources in infrastructure sectors can be quite common (Henisz and Zelner 2006; Peltzman 1989; World Bank 1994). In the developed world infamous examples include the $398 million dollar Gravina Island "bridge to nowhere" in Alaska, the much maligned Clem Jones Tunnel in Brisbane, Australia, and the €5.4 billion Brandenburg Airport in Berlin that, despite promises to be operational by 2011, has yet to open its doors. Perhaps unsurprisingly, developing countries appear to fair even worse in this regard. To list but a few, some known examples of poorly performing infrastructure projects are:

- Uganda's Bujagali Dam, built to produce hydro-electric power, but which cannot do so at levels affordable for local consumers
- Angola's Epupa Dam, which was built in an area inaccessible to most local power consumers
- A now cancelled 6.5 billion dollar petrochemical plant in Itaborai, Brazil
- The Bataan power plant in the Philippines, which has produced zero kilowatt-hours of power since construction finished in 1987
- The Dabhol power plant in Maharashtra, India, that produced too little power and has run into severe financial difficulties
- China's virtually uninhabited "Ghost Cities"
- Colombo, Sri Lanka's now suspended Port City Project
- The underperforming fixed line telephone grid network in Hyderabad, India
- Uganda's barely functional 106 million dollar national backbone telephone infrastructure project
- The numerous fixed line telephone booths that have been built in depopulated areas in many developing countries
- And on and on…

The point is that failed projects can likely be found in a wide variety of countries and infrastructure sectors. For years, however, researchers tended not to explore whether these failures were driven by a political logic that led to their systematic recurrence. Instead, these white elephant projects were understood from journalistic accounts or single case studies to result from informational deficiencies, unscrupulous firms, or, quite simply, inept policymakers (Robinson and Torvik 2005).[1]

What more recent research has pointed out is that white elephant infrastructure projects are essentially a form of clientelism, in which politicians build inefficient, wasteful projects in targeted localities in exchange for increased political support (Keck 1988; Robinson and Torvik 2005; Sanderson 2011). Although white elephants offer minimal or even negative returns to publics and often their funders (Briceño, Estache, and Shafik 2004; Easterly and Serven 2003; Estache and Fay 2010; Straub and Vellutini 2006), they increase political support for their political sponsors. This is because they can enhance employment opportunities in the areas they are placed into, with the costs of these projects being more widely distributed across society.[2] Since their benefits are concentrated while their costs are diffuse, the politics leading to the construction of white elephants can be considered an instance of what Wilson (1980) dubbed "client" politics.[3]

Building on this idea as well as on Bates' (1981) insight about how economically distortive policies can be politically rational despite being socially harmful, Robinson and Torvik

[1] The term white elephant comes from an old and possibly apocryphal tale in which Siamese kings would present a white elephant as a "gift" to unruly courtiers in order to ruin them financially due to the high costs of maintaining the elephant.
[2] Policymakers pushing these projects may also gain in popularity because they appear as if they are doing something beneficial for publics.
[3] This is a low-conflict type of politics in which an organized minority benefits at the expense of the larger, disorganized public.

(2005) provide a model of the construction of white elephants that clarifies why rational policymakers would use them as a means for redistribution. In this model, redistribution is provided through infrastructure projects because their fixed nature enables politicians to provide local communities with a credible commitment that they will follow through on political promises to redistribute resources, whereas other forms of redistribution that are more efficient (i.e. taxes or other types of transfers) do not afford policymakers the same signaling ability. The reason that inefficient, socially harmful projects get chosen is because efficient projects create longer-term jobs as well as raise incomes, of which the latter generates additional funds for government use. Because of the additional income received by the government, challengers are also incentivized to ensure that these socially efficient projects continue operating after taking power, even if they have been built in areas that offer the government little political support.

The model's key insight is that, because publics understand that all politicians would have an incentive to ensure that socially efficient projects continue operating, they do not lead citizens to increase their support for the politicians that choose to build them. However, a socially harmful white elephant project that provides jobs or business opportunities for a targeted group, but does not do much, if anything to raise incomes overall is likely to be cancelled by a new government (because they do not enable them to capture additional revenues), especially when built in proximities away from their base of support. Citizens and groups inhabiting areas that would be harmed by the cancelling of inefficient and projects fear this prospect, which induces them to increase their support to policymakers that build white elephants (Ibid, p. 201-

202).[4] Ultimately, this model elucidates why policymakers should be generally willing to promote white elephants.

6.2.2: White Elephants in Electricity

Although research has now provided a general explanation for white elephants, one thing that it has not explained is why these projects are more common in some infrastructure industries than in others. For instance, at least in developing countries, electricity projects appear especially likely to end up as a white elephant (Henisz and Zelner 2006). Indeed, it can be difficult to find an LDC government that has not promoted wasteful electricity projects. As has been written about this problem, governments often have:

> "constructed [power] plants whose investment or operating costs were too high to justify the economic benefits of the capacity that they added to the system. Such plants were built in uneconomic locations, such as a remote area far from the sources of demand; relied upon inappropriate technologies, such as a large coal-burning plant where a small gas-fired plant would have been more economic, or were 'gold-plated' through the use of lavish materials or architectural designs" (Henisz and Zelner 2006, p. 265).

The notion that electricity projects are more likely than many other infrastructure sectors to suffer from white elephants also looks evident given some empirical evidence. The World Bank's Private Participation in Infrastructure Database (which was discussed in Chapter 4) provides an indictor for whether an infrastructure project was deemed to be in distress or was cancelled in a given year. This is an admittedly rough, though still useful indicator for whether or not a project could be considered a white elephant because distressed and cancelled projects are likely offering low or negative returns – a key feature of white elephants (Easterly and Severn 2003; Estache and Fay 2010). These data indicate that for the 32 Latin American and Asian countries that made up the empirical analysis in Chapter 4, roughly 6% of project-years in

[4] This model's logic is similar to other models showing that politicians can use inefficient public sector employment as a way to redistribute resources to political supporters (Robinson and Verdier 2002).

telecommunications were indicated as being either cancelled or distressed at the time of data collection, whereas nearly 12% of project years in the electricity sectors had this status.[5] In Appendix 2, I also provide a brief statistical analysis that further establishes that this is the case using models that regress whether a project is distressed/cancelled on a dummy indicating whether a given project is meant to improve electricity infrastructure (plus controls). The results indicate that, on average, electricity projects are a little over 11% more likely to end up in a distressed or cancelled state than telecommunications projects.[6]

The reason this difference is important to highlight is that infrastructure sectors with higher rates of distortive white elephants should be less likely than sectors that are less prone to this problem to translate investments into better access to infrastructure-based services. This is because increasing societal welfare is simply not something that white elephant projects are designed to achieve (Robinson and Torvik 2005). As scholars of infrastructure policy have written, "Politically motivated projects are likely to exhibit low (or lower) rates of return as their objectives are to bring in the votes rather than maximize growth" (Estache and Fay 2010, p. 161), and they often produce a "negative social surplus" (Robinson 2005, p. 197). To the extent

[5] It is likely that the World Bank PPI data that indicate a project as distressed or cancelled in a given time period actually understate the presence of white elephants insofar as these types of projects may not be recognized as problematic until later points in time.

[6] Although the goal of this chapter is not to provide an explanation for why the electricity sector is especially likely produce white elephants, there should be reasons for this that are worth speculating about. One could be that electricity white elephants are simply an easy political sell to publics. Indeed, policymakers attempting to convince publics that building a new power plant or improving or expanding an underperforming one will be broadly beneficial, even if it is unlikely to, can often point to low electrification rates and unmet demand as a way to initially justify these projects. Critically, they may also highlight that many other aspects of economic and social life first require electricity. Businesses need it so that their offices and communications technology (i.e. phones and computers) can function. And individuals need electricity in daily life, whether power gets used for transportation, to support communications, by students to study at night, or for a myriad of other functions. That individuals are so highly dependent on electricity services, including as an input to other infrastructure-based services, may make them less likely to be suspicious of these projects or to protest against them.

that this is the case, it would mean that foreign investments in telecommunications, an infrastructure sector that is less prone to producing white elephants, should be more likely to generate better access to phones than electricity FDI would be likely to lead to improved electricity services. Thus, this chapter's first hypothesis can be stated as:

> Hypothesis 1: *FDI in the telecommunications infrastructure sector will be more strongly associated with increased access to infrastructure-based services than FDI in the electricity infrastructure sector.*

To the extent that this is the case, one implication might be that a different theory is required to explain if and when electricity FDI does increase access to power than would be used to explain increases in telephone services that should result from telecommunications FDI. In sectors like telecommunications that produce relatively few white elephants, a direct relationship between FDI and service improvements probably exists because the projects that these investments are attached to are more likely to be designed efficiently and with the purpose of enhancing citizen welfare. However, for sectors like electricity that are more prone to pernicious white elephants, if the evidence does not indicate that there is a significant relationship between FDI and increased electricity production, then a new explanation would be needed to understand if and when these investments would actually translate into improvements in electricity services.

6.3.1: Testing Hypothesis 1: Data and Method

To examine Hypothesis 1, I use a country-year unit of analysis, where the sample includes 32 countries in Asia and Latin America, 1984-2008 – the same sample used in Chapter 4. To measure access to infrastructure-based services, I use three dependent variables. Two of the measures relate to the telecommunications sector. The first of these captures the extent of fixed telephone line coverage, per 100 people, in a sample country-year. The second measures the extent of mobile telephone access in a country-year by counting the number of subscriptions,

per 100 people. Since mobile technology could not be feasibly obtained for many countries in this sample before the year 2000 (ITU 2003; World Bank 2007), in models where this is the dependent variable the sample begins in that year. The third operationalization captures access to electricity by measuring the number of kilowatt-hours of electricity produced per person in a sample country-year. All three dependent variable come from the World Development Indicators (World Bank 2016a).

The primary independent variable of interest, called *FDI*, measures the amount of FDI commitments made in the telecoms and electricity sectors, respectively. Once again, I rely on the World Bank's PPI data that was used to construct the dependent variable in Chapter 4. However, because the hypothesis raises questions about whether the effects of infrastructure FDI vary across sectors, I only aggregate this project level data to the industry, telecommunications or electricity.

The controls selected are similar for both infrastructure industries. I first control for standard economic factors by including measures of *GDP*, *GDP per capita*, and annual *GDP growth*. All three variables come from the World Development Indicators (World Bank 2016). I control for political factors by including measures for *Democracy* (Cheibub et al. 2010), and *Veto Players* (Beck et al. 2001; Keefer and Stasavage 2004). I also include a variable measuring countries' dependency on international trade (trade as % of GDP), called *Trade*, because infrastructure is an important determinant of transport costs (Limao and Venables 2001). Countries that are highly trade dependent might have relatively strong incentives to develop the infrastructure necessary to reduce these costs. To ensure that the influence of FDI does not reduce out to the factors that gave rise to it, per the analysis of Chapters 3 and 4, I control for

countries' sectoral regulatory institutions using a variable called *IRA*.[7] Finally, in models that examine the influence of FDI in the telecommunications sector, I include an additional control for fixed line and mobile coverage.[8] The presence of mobile phones might be expected reduce the need to build fixed line capacity. The presence of a high number of fixed telephone lines might also have this substitutive effect on mobile phone use, although it is also possible that broad fixed line coverage also promotes the use of mobile phones (ITU 2003).[9]

All models presented below use linear regression. Like the models used in chapter 4, I use panel-corrected standard errors to address heteroskedasticity and contemporaneous correlation. Lagged dependent variables enable me to address issues with serial correlation. Country dummies are included to control for time invariant country-level factors. Finally, all right-hand-side variables are lagged one period to alleviate concerns about reverse causality.

6.3.2: Results

The results for Hypothesis 1 are presented in two tables below. Table 6.1 presents the results for the measures of fixed line coverage and for mobile phone access. Table 6.2 shows the results for when the dependent variable is electricity production. We begin with Model 1 in Table 6.1. This model regresses fixed line coverage only on FDI commitments in the telecommunications sector. It returns a positive and significant coefficient on *FDI*, as expected. Model 2 adds the lagged dependent variable, country dummies, and the other control variables.

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[7] This variable can take on values of 1 (no independent regulation), 2 (formally separated regulatory agency), or 3 (formally separated regulatory agency with fixed terms of at least 4 years for agency leadership).

[8] To avoid any confusion, this means that in regressions in which fixed line coverage is the dependent variable I control for mobile coverage as well. In regressions in with mobile coverage is the dependent variable I control for fixed line coverage.

[9] This could happen for a number of reasons. For instance, firms that rely on fixed line technology for office buildings find that it preferable that staff have mobile phones as well, or perhaps because users rely on fixed lines to make long-distance international calls and mobile phones to make more local ones.

While the coefficient on *FDI* shrinks, it does remain positively signed and statistically significant. Model 3 repeats this procedure, but substitutes an AR1 correction for the lagged dependent variable. Although taking this step yields no inferential changes, it is useful since the previous model may suffer from Nickell bias due to it including a lagged dependent variable and country dummies. Substantively, a min-to-max change in telecommunications FDI, that is, going from a state that receives zero to a state receiving just over 9 billion USD in foreign investments, is predicted to increase the number of fixed lines per 100 people by a little more than 2 telephone lines in the following year. This is visible in Figure 6.1. Although this influence might not seem large at first, it is worth pointing out that in many LDCs, individuals within and across households often share access to fixed telephone lines.

Turning now to the models looking at mobile phone access, Model 4, which regresses the dependent variable only on FDI commitments in the telecommunications sector, returns a positive and statistically significant coefficient. However, when adding the lagged dependent variable, country dummies, and the other control variables in Model 5, the coefficient on *FDI* shrinks and falls slightly outside of the range of conventional significance ($P < 0.074$). Since it is possible that Nickell bias may be attenuating these coefficients, Model 6 again substitutes and AR1 correction for the lagged dependent variable. Taking this step results in the return of a positive and significant sign on the FDI commitments variable. The influence of *FDI* in this sector is also substantively meaningful. Using data from Model 6, Figure 6.2 illustrates that a min-to-max change is associated with an increase of slightly fewer than 43 additional mobile phone subscriptions per 100 individuals in the following year. Taken all together, the results presented in Table 1 indicate that FDI in the telecommunications sector does lead to

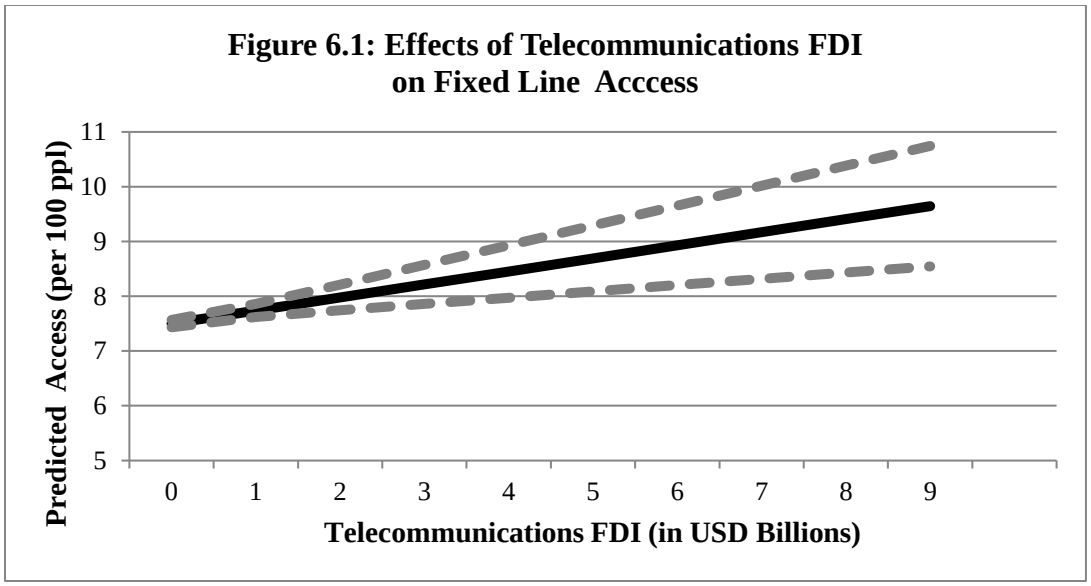
Table 6.1: Predictors of Fixed Line Telephone Coverage and Mobile Subscriptions

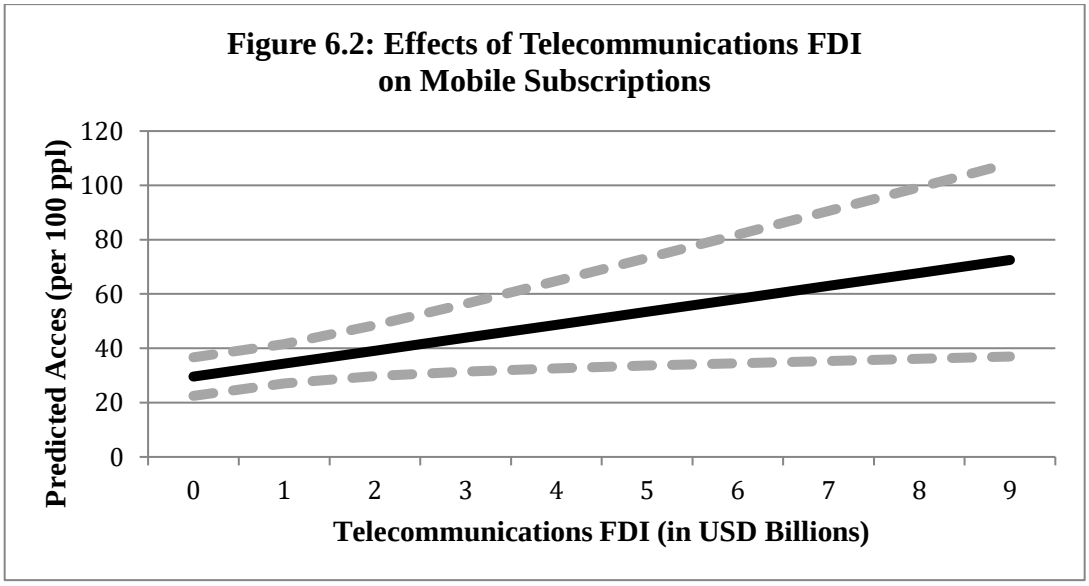
	Model 1 (Fixed Line)	Model 2 (Fixed Line)	Model 3 (Fixed Line)	Model 4 (Mobile)	Model 5 (Mobile)	Model 6 (Mobile)
Fixed Lines$_{t-1}$	-	1.02** (.02)	-	-	.874** (.192)	3.019** (.576)
Mobile $_{t-1}$	-	-.012** (.003)	.027** (.011)	-	1.16** (.051)	-
FDI $_{t-1}$	.003** (.0003)	.0002** (.00006)	.0004** (.0001)	.003** (.001)	.001** (.0001)	.005** (.002)
GDP $_{t-1}$	-	.00000004 (.0000003)	.000005** (.0000001)	-	-.00001** (.000003)	-.00004** (.000008)
GDPpc $_{t-1}$	-	-.0001 (.0001)	.003** (.0004)	-	-.003 (.003)	.052** (.006)
GDP Growth$_{t-1}$	-	.023** (.008)	-.031** (.012)	-	.565** (.143)	-.246 (.354)
Democracy $_{t-1}$	-	.314** (.115)	.346* (.18)	-	-.174 (1.451)	-5.04* (2.689)
Veto Players $_{t-1}$	-	.007 (.011)	-.001 (.022)	-	.179 (.16)	.204 (.346)
Trade $_{t-1}$	-	.007** (.002)	.025** (.005)	-	.123** (.043)	.413** (.125)
IRA $_{t-1}$	-	.031 (.04)	.483** (.125)	-	.615 (1.16)	5.164** (2.64)
Constant	6.876** (.62)	-.394 (.325)	-3.459** (1.381)	30.673** (7.05)	-6.6 (9.092)	-208.627** (23.138)
N	765	703	704	288	272	272
Country Dummies	No	Yes	Yes	No	Yes	Yes
R^2	.07	.98	.51	.01	.94	.57

Regression coefficients with panel-corrected standard errors in parentheses. Statistical significance: *p<0.1 **p<0.05 (two-tailed). Models 3 and 6 include an AR1 correction.

improvements in populations' access to phones in a direct manner in which investments are made into relatively efficient, societally beneficial projects.

Table 6.2, which examines the influence of FDI in the electricity sector on populations' access to electricity, shows a different dynamic. None of the models indicate that electricity FDI improves access to electricity, at least not in a straightforward manner similar to FDI in telecommunications. The only model that provides any evidence of a significant and positive relationship is Model 7, a bivariate regression in which the FDI coefficient attains statistical





significance only at p< 0.1. However, once country dummies and a lagged dependent variable are added (in Model 8) this weakly significant result disappears. Adding a full set of control variables in Model 9 does not change the result, nor does substituting an AR1 correction for the lagged dependent variable (Model 10). Using a logged version of the FDI commitments variable also does not produce a significant result (Model 11).

Ultimately, the models presented across Tables 6.1 and 6.2 offer support for this first hypothesis. Putting these models together, they indicate that FDI in the telecommunications

sector is indeed more strongly associated with increased access to infrastructure-based services than FDI in the electricity sector. What is perhaps most notable from these models, however, is the evident non-relationship between FDI in electricity and populations' access to electricity in this sample. This is an interesting finding because it suggests that, if electricity FDI is in fact in some way related to improvements in electricity access – at least under some as of yet unspecified conditions, then a different explanation is required to uncover this relationship. The rest of this chapter focuses on this issue.

Table 6.2: Predictors of Electricity Consumption

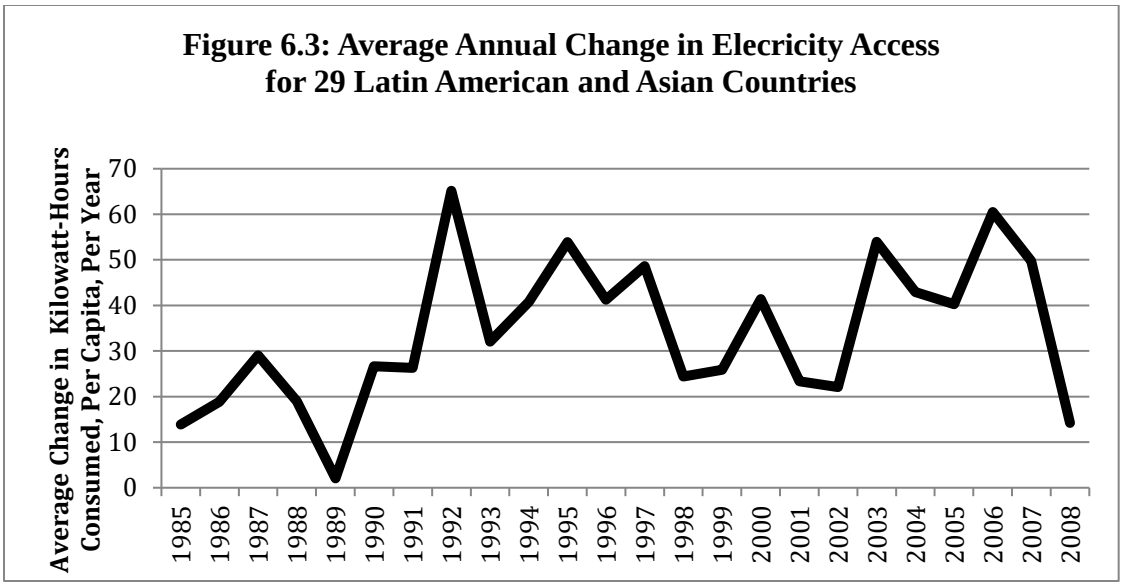
	Model 7	Model 8	Model 9	Model 10	Model 11
Electricity Consumption$_{t-1}$	-	1.004**	.913**	-	.914**
		(.016)	(.025)		(.025)
FDI $_{t-1}$	.13*	.0003	.006	.00002	-
	(.07)	(.005)	(.004)	(.006)	
(log) FDI $_{t-1}$	-	-	-	-	.778
					(.929)
GDP $_{t-1}$	-	-	.0001**	.0005**	9.20e-11**
			(.00001)	(.00004)	(1.34e-11)
GDPpc $_{t-1}$	-	-	.047**	.391**	.045**
			(.013)	(.029)	(.013)
GDP Growth$_{t-1}$	-	-	1.635**	-4.785**	1.682**
			(.741)	(1.208)	(.738)
Democracy $_{t-1}$	-	-	3.712	3.88	3.304
			(5.811)	(13.33)	(5.822)
Veto Players $_{t-1}$	-	-	-2.915**	-1.726	-3.285**
			(1.336)	(2.185)	(1.34)
Trade $_{t-1}$	-	-	.591**	2.70**	.592**
			(.134)	(.388)	(.132)
IRA $_{t-1}$	-	-	6.203**	31.54**	5.278*
			(2.676)	(8.36)	(2.773)
Constant	917.174**	34.745	-81.978**	-568.61**	-77.167**
	(48.81)	(31.771)	(38.18)	(133.48)	(37.84)
N	726	709	666	666	666
Country Dummies	No	Yes	Yes	Yes	Yes
R^2	.01	.68	.94	.90	.94

Regression coefficients with panel-corrected standard errors in parentheses. Statistical significance: *p<0.1 **p<0.05 (two-tailed).

6.4.1: When Does Electricity FDI Increase Access to Phones?

The analysis above indicates that electricity FDI might not be linked to improvements in electricity provision for countries receiving these investments, at least not in the straightforward manner it is for telecommunications FDI. Can it really be the case, however, that electricity FDI is not meaningfully related to increased domestic access to power? Alternatively, could there be certain conditions under which these investments do translate into more electricity usage by populations? These are important questions to ask because, at some level, it is difficult to believe that no relationship would exist, given the vast improvements in electricity access that many LDCs have made in recent decades at the same time that these countries have targeted foreign capital for precisely this purpose. Figure 6.3 illustrates these improvements by showing the annual change in electricity consumption per capita. All 32 countries in this sample saw their electricity consumption per capita rise during the sample period. While the presence of white elephants projects would be expected to have a pernicious influence on electricity provision, it is difficult to comprehend how this problem could be so prevalent that it entirely nullifies the primary benefit that foreign electricity investments would be expected to provide recipient countries.

To attempt to address this puzzle, the section below offers an explanation that highlights when electricity FDI would be expected to translate into improved electricity access that is based on the notion that when FDI becomes more important to a country's economy it reduces the extent to which the electricity sector is subject "client politics" that generate high numbers of white elephant projects (Wilson 1980).



6.4.2: FDI/GDP and Electricity Production

FDI research has argued that when foreign capital crosses national borders it affects recipient countries' domestic politics (Evans 1979; Jensen et al. 2014; Li and Reuveny 2009; Malesky 2009; Moran 1974; Mosley 2011). I build on this insight by arguing that when FDI becomes a larger share of GDP, that is, when it becomes more economically important to a country, it alters how the politics of this issue-area gets structured. Specifically, I contend that it changes the "type" of politics that occurs, based on Wilson's (1980) political economy framework, such that when electricity FDI is less economically important it is more likely to produce "client" politics, but as it grows more important it creates a style of politics in which publics have relatively stronger influence over governments' infrastructure decisions. When publics have this influence, white elephant electricity projects are less common and FDI is more likely to translate into better access to power. The notion that international factor flows can transform the domestic politics of an issue in this way has not yet been applied to FDI, although it has been important to some recent research on international immigration (Givens and Leudtke 2005, Joppke 1999).

The key feature of client politics is a collective action problem in which unorganized groups that bear diffuse costs lose politically to organized groups that seek concentrated benefits (Wilson 1980). When this is how infrastructure politics is structured white elephants become relatively common. This is because this issue structure provides politicians and domestic groups that benefit from white elephants strong incentives to coordinate with one another in order to ensure their construction. At the same, because their costs are widely dispersed, those harmed by white elephants, especially the general public, do not face strong incentives to increase their awareness of the problem or organize against their creation. The result is that the politics of infrastructure sectors like electricity can be dominated by a limited number of policymakers and interest groups. As long as there is little outside pressure to alter this dynamic, these actors can effectively monopolize this area of public policy.

However, when outside political pressures that do not favor white elephants materialize, this client politics structure gets disrupted. Specifically, when the general public pays more attention to how infrastructure investments are used, it becomes harder for those benefitting from white elephants to coordinate for their production. This is because, in settings where public attention is high, their promoters perceive that they are more likely to be identified and punished. Fear of punishment deters politicians that might promote white elephants from actually doing so.

One way to understand this dynamic is through Baumgartner and Jones's (1993) issue change framework. These authors explain that the political structure of an issue often changes "during periods of heightened general attention to the policy" (Ibid, p. 20). Key to this change process is that, during high attention periods, additional actors will try to influence government decisions, including other policymakers and political parties. Media attention also increases. For infrastructure projects, the increased media focus is critical because the press transmits

information about the costs of white elephants' to publics, which, in turn, heightens public concerns about white elephants.[10] The increased public involvement that results essentially alters how infrastructure decisions get made, pulling them out of so-called "smoke filled rooms" and putting them more into the public eye. This change compels government policymakers to be relatively more responsive to publics that prefer that foreign capital not be funneled into white elephants.

The move from client politics to a style of politics in which public preferences are influential for policymaking becomes more likely in infrastructure sectors that are prone to white elephants, like electricity, when the amounts being invested are economically important. When investments are more important to an economy; that is, when they become a larger share of GDP, government officials and media outlets are incentivized to pay more attention to them because they will be seen as more consequential sums.[11] This heightens public scrutiny, which transforms infrastructure politics so that it becomes less likely that wasteful white elephants are built and more likely that foreign investments will improve electricity access because they fund more efficient and viable projects. However, when this does not happen, the incentives for

[10] These authors note that this dynamic specifically applies to "investment decisions by utility companies" (Baumgartner and Jones 1993, p. 108).

[11] An analogy to immigration politics may help to illustrate this dynamic. In the industrialized democracies that traditionally receive high numbers of immigrants, immigration policy was historically structured as client politics in which firms coordinated with policymakers to import labor and little public attention was given to the matter. However, it was when relatively high numbers of immigrants combined with these countries' declining economies in the 1970s that immigration policy was pushed into the public arena. This left firms and policymakers with less control over policy. As has been written, it was during this time that "the client politics connection became less important, and the strident demands of anti-immigrant electorates became dominant" (Givens and Leudtke 2005, p. 7). A key reason that electorates began paying attention is because immigrants' increased economic role was now seen as consequential for native citizens.

policymakers, the media, and the public to pay attention to how these investments are used are smaller, which permits client politics. Thus, the chapter's third hypothesis:

> Hypothesis 2: *FDI will lead to increased electricity production when it becomes a larger share of GDP*.

Underpinning Hypothesis 2 is the idea that public attention to infrastructure matters will increase when FDI becomes more economically important to a country. It is important to be as sure as possible that this is the case. As discussed in Chapter 3, one way to better ensure that an argument is on target is to test additional implications that logically follow if this is the case. Thus, before moving on to test Hypothesis 2, I briefly lay out two additional hypotheses that serve this purpose. They emphasize why democratic political institutions and open media environments, respectively, should moderate the influence of FDI's economic importance on electricity access.

Hypothesis 2 is premised on the idea that the general public has the potential to sway policy decisions. If the public could not influence policymaking (and did not generally hold anti-white elephant preferences), there would be little reason to expect that infrastructure politics would not continue to be structured as client politics. Thus, if this argument is on target, it should apply much more strongly to democratic states that are relatively more responsive to public demands. Non-democratic political systems, in which policymakers are much less responsive to publics, should be less subject to these dynamics. Indeed, to the extent that non-democracies are "limited access societies" (North, Wallis, and Weingast 2009) that promote rent seeking and other forms of privileged access at the expense of the wider public's interest, then this reasoning may not apply at all to them. Thus, this chapter's fourth hypothesis:

> Hypothesis 3: *The relationship between FDI/GDP and electricity production is stronger in democracies than in non-democracies.*

This argument should also be most applicable to states that have free and open media environments. Media is important for informing publics about whether or not foreign investments are being harnessed to improve public infrastructure. In places where media outlets cannot operate freely and openly, citizens will have less access to this information. As a result, they will find it difficult to punish policymakers and governments that support the creation of white elephants. When this is the case, actors that would otherwise be concerned about public censure do not have to worry nearly as much about getting punished. However, when media outlets can report this information, publics are more likely to have the information necessary to assign blame for failed projects, which facilitates the transition away from a client politics issue structure.[12] Thus, this chapter's fourth (and final) hypothesis:

> Hypothesis 4: *The relationship between FDI/GDP and electricity production grows stronger as media institutions become more free and open.*

6.5: Methods and Data

I test Hypotheses 2-4 using the same data, sample, and estimation technique that were used to produce the results in Table 6.2. I also rely on the same set of control variables. The dependent variable, which measures the number of kilowatt-hours of electricity produced per person in a sample country-year, also remains the same. The key difference is that, to capture the economic importance of electricity FDI, I now divide FDI commitments in the electricity sector by GDP. This variable, called *FDI/GDP*, is scaled so that it ranges from 0-100. It is worth briefly pointing out that previous FDI research argues that dividing FDI by GDP enables the investigator to capture "the relative importance of FDI for countries' economies" (Li 2009, p.174). It is also

[12] Anderson's (2000) offers insights about how information that enables citizens to assign political credit and blame promotes economic voting inform this line of reasoning.

worth pointing out that electricity FDI can become more economically important to a country due either to increases in the numerator or decreases in the denominator. Since higher values indicate greater importance, I expect that the sign on this variable will be positive.

Hypothesis 3 is tested by interacting *FDI/GDP* with the democracy indicator (Chiebub et al. 2010).[13] I expect that the interaction term will be positively signed. Hypothesis 4 is tested by *FDI/GDP* with a measure of countries' press freedoms, called *Free Media*. This latter variable comes from comes from Freedom House. It captures the influence of the formal legal environment, political pressures, and economic influences on the press. The variable is scaled from 0-100, with lower values indicating more press freedoms. This means that I expect that the interaction term will be negatively signed. It also means that I expect the component term measuring electricity FDI's importance to be positively signed.

6.6: Results

Table 6.3 presents the results for these three hypotheses. To test Hypothesis 2, I begin with Model 12. It includes a lagged dependent variable, country dummies, and controls for GDP per capita and GDP growth. In this model, *FDI/GDP* is positively signed and significant, as expected. Model 13 adds additional control variables for *Democracy*, *Veto players*, *Trade*, and *IRA*. *FDI/GDP* continues to have a significant and positive sign, this time with a notably larger coefficient. Model 14 adds a measure of GDP to better control for economic size. This was not explicitly included in previous models because GDP does enter the regression equation as the denominator of the primary independent variable as well as the international trade control. Including this variable on its own does not change the results in any meaningful way. Figure 6.4,

[13] The results to be presented do not change when using the Polity IV variable to measure democracy.

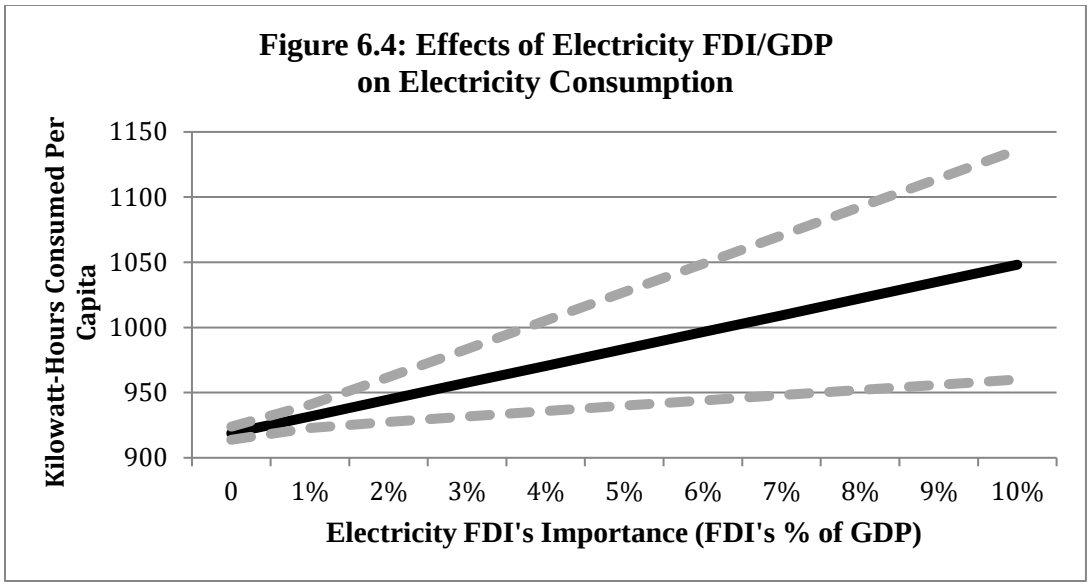
Table: 6.3: Electricity FDI/GDP and Electricity Consumption

	Model 12	Model 13	Model 14	Model 15	Model 16
Electricity Consumption$_{t-1}$	.986** (.02)	.956** (.024)	.916** (.025)	.916** (.025)	.581** (.176)
FDI/GDP$_{t-1}$	.155** (5.935)	12.49** (45.602)	12.928** (4.551)	-7.155* (3.663)	96.07** (37.784)
GDP $_{t-1}$	-	-	.0001** (.00001)	.0001** (.00001)	.0003** (.0001)
GDPpc $_{t-1}$	.025** (.012)	.031** (.013)	.044** (.013)	.04** (.012)	.083 (.053)
GDP Growth$_{t-1}$	2.445** (.706)	2.028** (.745)	1.634** (.737)	1.663** (.731)	4.09* (2.433)
Democracy $_{t-1}$	-	2.847 (5.945)	3.394 (5.943)	.741 (6.011)	21.407 (22.712)
FDI/GDP* Democracy$_{t-1}$	-	-	-	26.891** (7.173)	-
Veto Players $_{t-1}$	-	-2.129* (1.195)	-3.474** (1.33)	-3.705** (1.331)	-4.853** (3.07)
Trade $_{t-1}$	-	.531** (.132)	.598** (.131)	.599** (.132)	1.76** (.132)
IRA $_{t-1}$	-	4.349 (2.76)	5.447** (2.77)	5.484** (2.792)	5.484** (.87)
Free Media$_{t-1}$	-	-	-	-	1.28 (1.261)
FDI/GDP* Free Media$_{t-1}$	-	-	-	-	-1.843** (.631)
Constant	-34.83 (36.87)	-67.996** (38.063)	-76.428** (37.159)	-74.274* (36.774)	-1.694 (137.24)
N	683	666	666	666	200
R^2	.9	.94	.94	.94	.98

Regression Coefficients with Panel-Corrected Standard Errors in Parenthesis. Statistical Significance: *p<0.1 **p<0.05 (two-tailed). All models include country dummies.

which uses data from Model 14, displays the substantive influence of electricity FDI's importance on the number of kilowatt-hours produced per capita. It shows that going from a state that receives no electricity FDI to one in which electricity FDI makes up 10% of GDP[14] yields a predicted increase in electricity output of about 130 kilowatt hours per person, per annum. Given that in this sample the average number of kilowatt-hours produced per capita is slightly over

[14] Moving from 0 to this value uses just over 98% of the data from the regression.



1,000, this can be read as an important increase. Ultimately, these results support the second hypothesis.

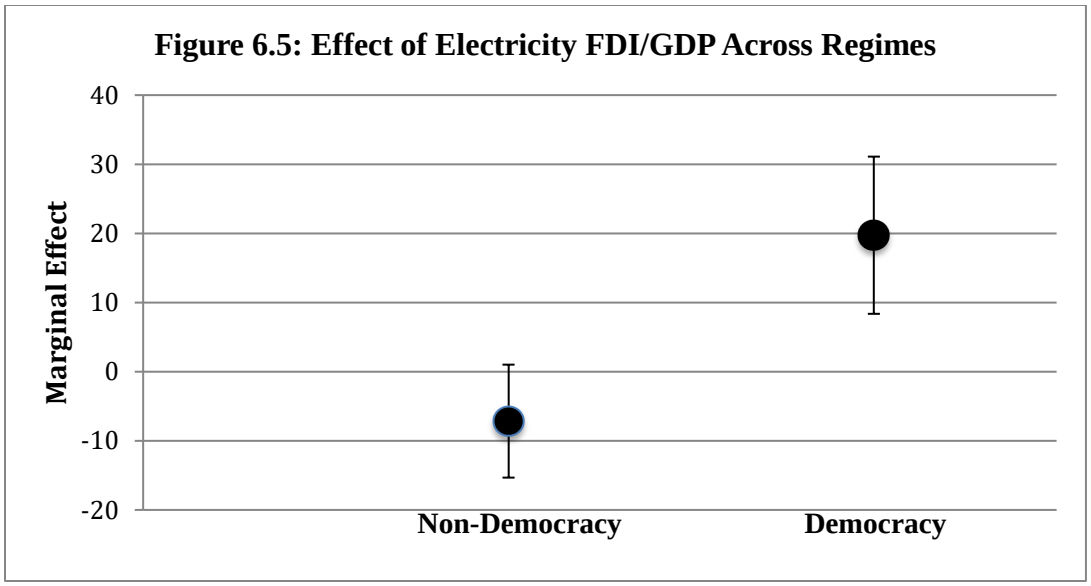
Empirical support for Hypothesis 3 is visible in Model 15. I start by looking at the coefficient on *FDI/GDP*, which captures the effect of FDI becoming more economically important in non-democratic settings. This variable returns a negative sign that is just outside standard statistical significance. This result does not suggest that electricity FDI's importance has any clear influence on electricity access in non-democratic political systems, perhaps an unsurprising finding given that these are contexts where the general public has relatively little influence on political decisions. The coefficient on the democracy variable is positive, but not significant. Most importantly, the coefficient on the interaction term is positive and significant. This indicates that, as expected, the effect of electricity FDI becoming more economically important on electricity access turns positive in democratic settings. Figure 5 illustrates this relationship.

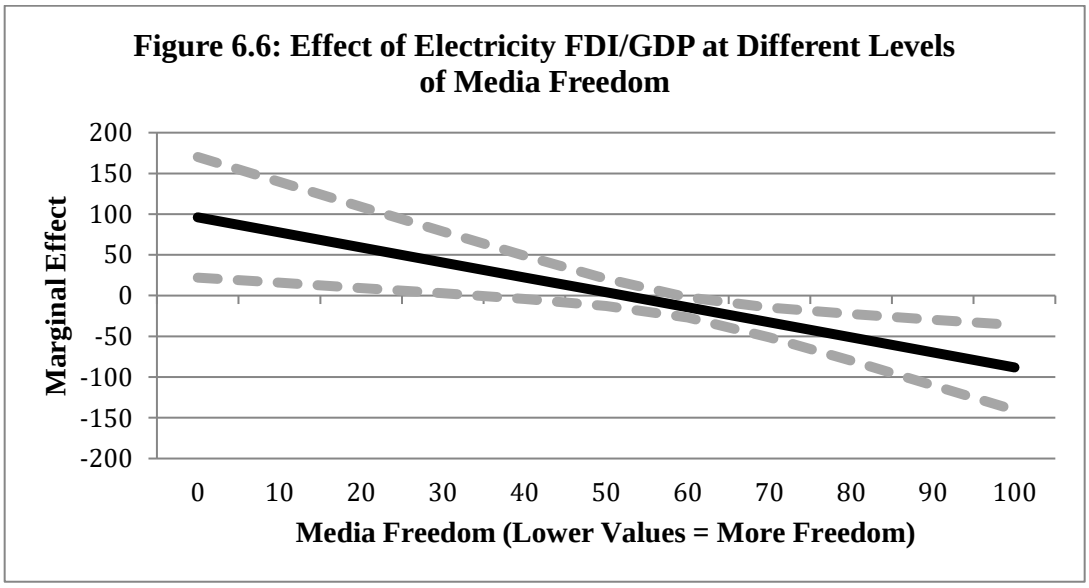
Empirical support for Hypothesis 4 is presented in Model 16. I begin, once again, by looking at the coefficient on *FDI/GDP*, which captures its influence when media has the most

freedom. As would be expected, it is positive and significant. The interaction term returns a statistically significant negative sign, in line with the prediction. This finding supports the idea that the influence of *FDI/GDP* declines as media becomes less free to report. This relationship is also visible in Figure 6.6.

Before concluding it is worth briefly pointing out two other noteworthy findings from Table 6.3. The first is that *Veto Players* was always negative and statistically significant - albeit only weakly so in Model 13. This finding is in line with the idea that as the number of veto players increases, changing government actions that would lead to improvements in electricity infrastructure becomes harder. Given that veto points can also serve as access points for special interest groups (Ehrlich 2011), it is also possible that this variable is picking up on some of the pernicious influences that lobby groups favoring wasteful white elephants would be expected to have on electricity access.

The second finding of note is that the coefficient on the *IRA* is positive and statistically significant in most of the models, including Models 9 and 10 from Table 6.2**.** These models control for the indirect effect that politically independent regulation would have on electricity access that works through the relatively higher amounts of foreign investment these institutions generate. This means that IRA's coefficients might be read as evidence of a more direct effect that materializes because the quality of regulation improves when it is determined by politically independent regulators than when by other policymakers. Since political meddling in regulatory affairs is less pernicious when regulation is independent (see Chapter 3), these officials should have more space to determine policies, such as tariff rates, that provide incentives for firms to expand access to electricity. When regulation is independent, officials are also freer to provide





advice to other officials and firms on how to better ensure that investments do translate into increased access to electricity.[15]

[15] The reader may have noticed that when looking at IRA's influence in telecommunications the results are more mixed (see Table 6.1). Only in Models 3 and 6 is the coefficient on IRA significant and positive. That IRAs in telecommunications do not clearly seem to influence access to phones in a direct manner could be because providing high quality regulation is more difficult in the telecommunications sector, at least compared to electricity. This might be because, in telecommunications, technological changes have occurred "at relentless speed"

6.7: Conclusion

This chapter examined whether foreign investments in public infrastructure sectors improve access to infrastructure-based services. It showed that FDI's influence on access to services was different for telecommunications and electricity infrastructure sectors. In the telecommunications sector, for sample countries, foreign investments translate into increases in access to fixed telephone lines and mobile phones in a straightforward, direct manner. However, in the electricity sector the story is more complicated. For this sector, this chapter argued that it is necessary to account for how economically important these investments are to a recipient country, that is, by dividing the amount by GDP, in order to uncover the relationship between foreign investments and improved access to power.

This chapter also argued that an important source of this heterogeneity is the relatively higher presence of wasteful white elephant infrastructure projects in the electricity sector. White elephants can be common in infrastructure sectors because they serve as a tool for targeted redistribution that enables government policymakers to increase political support from salient domestic groups. They were shown more common in the electricity sector than in telecommunications. Electricity sector white elephants, however, become less common as electricity FDI becomes more economically important. Under this condition foreign investments do improve electricity access. It was argued that this is because, as FDI grows more economically important, policymakers that would otherwise favor the construction of these harmful projects find it politically more difficult to support them, because of the heightened public attention that gets paid to how these investments get used. What essentially occurs is a

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during the sample period (Bilbao-Osorio, Dutta, and Lanvin 2013, p. xi). Because technology is relatively less stable in this sector, regulators find it more difficult to keep up with how these dynamics affect market dynamics and business practices, which, in turn, makes crafting effective regulation harder.

shift in the domestic political dynamic whereby the increased economic importance of foreign investments reduces the extent to which the electricity sector is structured as client politics that, in turn, generates higher numbers of electricity white elephants. Instead, heightened public attention helps direct FDI into efficient projects that do improve access to electricity. This, however, only occurs in democratic contexts and in settings in which media is free to report.

Finally, it is worth noting three reasons why these findings are useful. First, for the purposes of this dissertation, they affirm that infrastructure FDI does have beneficial effects, which was not a forgone conclusion due to the possible presence of white elephants. Knowing this is important because, if infrastructure FDI had no influence on infrastructure-based services, then it would mean that there would be little point to examining whether or not IRAs have FDI-inducing effects. These findings also help affirm that policymakers' efforts to attract FDI using IRAs have in fact yielded benefits for populations. For policymakers, this is important to know because, as discussed earlier, some research has called the utility of IRAs into question. Second, this chapter builds on some previous FDI scholarship that argues that the political dynamics surrounding FDI differ depending upon the economic sector they flow into (Alfaro 2003; Chakraborty and Nunnenkamp 2008; Mihalache-O'keef and Li 2009). The findings here indicate that this is also the case within public infrastructure sectors. Third, this chapter has also built on previous research arguing that FDI meaningfully affects the domestic politics of recipient states. However, unlike some older FDI research that asserts that the increased presence of foreign capital leads to a more exclusive and elite-driven form of politics (Evans 1979; Moran 1974), this chapter argued that when important amounts of FDI enter an economy it can promote a style of politics in which publics have relatively greater influence on how these investments are used.

While this idea has underpinned some recent work on immigration politics, it had not previously been applied to FDI.

Chapter 7

Concluding Remarks

7.1 Contributions

I began this dissertation by making the observation that over the past few decades countries in the developing world have made major strides in terms of growing their economies, improving infant mortality and life expectancy rates, and generating better access to essential services, including in telecommunications and electricity. It also noted that an important reason for these gains is that many LDCs have made domestic institutional reforms that have enabled them to better capture economic globalization's benefits. By focusing on FDI in telecommunications and electricity infrastructure industries, this dissertation has made several contributions that help explain one aspect of this broader process.

First, I have shown that domestic reforms enabling LDCs to offer credible commitments to foreign firms include the refashioning of sectoral regulatory institutions. Specifically, I have shown that when countries design the sectoral regulatory institutions that govern infrastructure industries to be politically independent they increase their prospects for attracting FDI, thus helping to answer this dissertation's research question. Sectoral IRAs that govern industries like telecommunications and electricity induce FDI because they insulate regulatory officials from political pressures that would otherwise hinder countries' ability to offer foreign firms the credible

commitments that they desire. Additionally, I have pointed out IRAs' design features that are crucial for producing political independence (and thus credible commitments): (a) legal separation from other parts of government and (b) long, fixed terms for agency leadership. Empirically demonstrating that IRA's with these design features help states obtain FDI also points to some practical steps that FDI-seeking countries should consider taking if they want to attract more foreign capital.

Second, I have provided an explanation for how IRAs function that speaks to these institutions' ability to alter the incentives and behaviors of domestic policymakers who are sometimes inclined to backtrack on promises to foreign firms to keep invested assets safe. Although it has previously been asserted that IRAs should help produce credible commitments, I pointed out that the reasons for why this should be the case had not been made clear. That their logic was not sufficiently explained has meant that the utility of adopting IRAs in LDC contexts has been questioned. Specifically, I explained why even well-functioning IRAs should not be expected to fully eliminate political interference in regulatory affairs, although they should certainly help address this problem so that credible commitments become easier to make. The theory, statistical evidence, and qualitative comparisons illustrating this to be the case thus provide a view of IRAs that is more politically realistic that what had been previously offered.

Third, I have shown that foreign capital matters domestically. Specifically, I have shown that FDI in telecommunications and electricity does lead to better access to phones and power for domestic populations, albeit in a more complicated way in the electricity sector than in telecommunications. In doing so, I made the point that, although FDI scholarship has spent more time looking at where it goes than what it does, that is, on why firms in invest in some places and not others rather than on its domestic effects, it is important to focus on the latter as well. For infrastructure, this is important because of the tendency for capital to move into wasteful white

elephant projects. Here, I argued that since the electricity sector is more prone to suffering from this problem it meant that one could not necessarily expect capital investments to straightforwardly translate into improved power services; instead, it is when FDI becomes a larger share of GDP, that is, when they become more economically important, that FDI generates these improvements. This occurs because the increased attention that gets paid to how these investments are used when they become a larger share of GDP makes it harder policymakers to get away with creating white elephants. In telecommunications, a sector in which white elephants are relatively less common, FDI's ability to improve access to telephony is straightforward.

Fourth, I have provided two datasets that other scholars can use in their own research to further study LDCs' experiences with economic globalization and the institutional reforms they have made in order to harness its benefits. First, for sample countries, I have provided measures that annually track FDI into these two infrastructure industries that may be useful for scholars interested in the causes and consequences of foreign capital in these sectors. Second, scholars interested in FDI or in regulatory politics in the developing world can use my measure of these sectoral IRAs' political independence. Both measures offer the ability to compare countries over time.

7.2 Implications

A key implication of this study is to reaffirm the importance of institutional mechanisms for providing foreign firms with credible commitments. At some level, this may seem obvious since so much research on FDI from the past two decades has worked from this premise. At the same time, this may not actually be quite so apparent today, given that major asset expropriations, such as outright nationalizations, are now exceedingly uncommon. Much more problematic right now for multinational firms are concerns about "creeping expropriations", which happen when

states use a variety of "smaller" policies, often from the regulatory sphere, to gradually harm firms. This study speaks to the importance of this problem, but also points to the ongoing utility of institutions that enable states to pre-commit to particular policies in order to overcome it. In this dissertation I have reaffirmed this general view by showing that bureaucratic institutions in the executive branch can be designed for credible commitment purposes, something that prior FDI research had not highlighted. To uncover IRA's influence it was necessary to focus on specific industries, not FDI in the aggregate, as most FDI research has done.

Emphasizing the role that commitment institutions can play is also important given that a growing number of studies have been looking into how multinational firms protect themselves that explicitly downplay the need for institutional credible commitments (such as Pinto 2013). Instead, scholars have been looking at other non-institutional factors that might protect foreign firms' investments, such as the degree of national diversity across investing firms (Wellhausen 2015) or the nature of domestic supply chains (Johns and Wellhausen 2016). Without questioning the value of this new work, I point out the ongoing usefulness of studying how institutional commitments are produced, especially since these non-institutional factors are things that FDI-seeking states may have difficulty manipulating.

A second implication worth highlighting is that by showing that IRAs do have FDI-inducing effects, even in LDC contexts with relatively weak institutions and more unstable politics, we can be more confident about IGOs' ability to help developing nations engage in domestic reforms. As noted earlier, LDCs have often adopted IRAs while under the tutelage of an IFI. However, as also discussed, some researchers have questioned the appropriateness of transplanting IRAs that were first used in the industrialized democracies into LDC contexts on the grounds that they would not "take root". Additionally, some research has questioned the IFIs' record of helping developing nations more generally (Easterly 2001 & 2003; Jensen 2006;

Vreeland 2003; Woods 2007). The findings presented here suggest otherwise, that the IFIs have promoted successful reforms, at least in this one area. Researchers focusing on states' interactions with the IFIs should find these results interesting.

Finally, this dissertation highlights that foreign capital does not necessarily generate benefits in receiving countries in a straightforward manner. Instead, political problems - white elephants, in this case - can impede this translation. The evidence presented in Chapter 6 indicated that whether FDI does help recipients is a function of the industry it moves into as well as a host nation's domestic institutions. More generally, however, the findings reinforce the importance of studying FDI's effects in receiving countries in order to better understand when it is broadly helpful, when it is not, and why this is the case. Although some extant FDI research does examine what happens to foreign capital after entry, most does not. More research on this front, however, might point to some interesting ways that economic globalization can reshape states' domestic politics.

7.3 Looking Ahead

I intend for this dissertation to form the core of a book-length manuscript that I plan to shop after taking additional steps to strengthen it. Key to this will be addressing some of this study's limitations. I point to three areas that could be improved. First, given that the sample was made up of countries in Latin America and Asia, it would be useful to broaden it. This could be achieved by expanding the sample used in the statistical analysis to include some additional countries, or by including additional qualitative comparisons from countries in other regions. Doing so would better ensure that the dynamics posited in this study are in fact widely present.

Second, it would be helpful if primary evidence from firms in the two infrastructure industries could be marshaled, either through interviews or questionnaire, to further confirm that

they believe that IRA's produce credible commitments. This evidence then could be included as part of the qualitative comparisons. Having this firm-level evidence would be especially useful since few researchers have ben able to use this type of evidence to illuminate how firms address political risks (Biglaiser and Staats 2010 and 2012). Unfortunately, resource constraints inhibited me from including this data in this dissertation.

Third, the argument in Chapter 6 could be improved if a more in-depth explanation of why the electricity sector is highly prone to producing white elephants could be provided that would then be tested using statistical analysis. Although this dissertation does show this to be the case descriptively, it is really only able to briefly speculate on why this occurs. Taking the next step by pinpointing the mechanisms producing this outcome that would then inform an empirical test would help strengthen this part of the argument.

Additionally, this dissertation will also inform a follow-up project that examines if and how IRAs may also serve as access points that allow the firms they regulate to achieve political voice in host countries. Although it is known that firms in infrastructure industries sometimes try to influence regulatory policies by lobbying regulatory officials, the institutional conditions that determine if firms make these attempts or when they perceive they will be more or less successful are not well-understood. Relying mostly on firm-level evidence, the project would examine how IRAs' design features can make firms more confident about their ability to lobby governments. In doing so, the project would help illuminate the dynamics of corporate political activity and hopefully provide new insights about how foreign firms shape the policy choices of host countries.

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Appendix 1

This appendix provides robustness checks for the models presented in Chapter 4. Table A1.1 reruns the tests for Hypothesis 1, this time using an error-correction model (ECM) set-up. This is a particularly useful robustness check because of both the FDI variable and *IRA(4)* and *IRA(5)* trend upward over time, heightening concerns about a potentially spurious relationship. ECMs help address this problem (De Boef and Keele 2008). Implementing this technique requires adding a change (Δ) variable for each right-hand-side variable (except for the lagged dependent variable) and also differencing the dependent variable. With this specification the short-term influence of the independent variables comes through the (Δ) change variable. An independent variable's long-run multiplier (LRM) comes from taking its coefficient and dividing it by the absolute value of the lagged dependent variable. To save space, I only report the LRM for *IRA(4)* and *IRA(5)*. Model 1 presents the results for *IRA(4)* and Model 2 does the same for *IRA(5)*. In both cases the sign and significance of the LRM for these variables is positive and significant.[1] The LRM in these models suggest that a one point increase in *IRA(4)* or *IRA(5)* will generate a little more than 300 million dollars in FDI in the time periods following.

Table A1.2 also provides seven additional tests to better ensure Hypothesis 1's robustness using IRA(4). In all cases the sign and significance on IRA(4) remains positive and statistically significant across these models. Model 3 uses the Polity IV measure of democracy, rather than the dichotomous measure used earlier. Model 4 takes the natural logarithm (+1) of the dependent variable. Model 5 tests this only on states that have made some move toward establishing IRAs – meaning that the sample includes only observations in which IRA(4) is >= 1. Model 6 tests Hypothesis 1 using clustered standard errors, rather than panel-corrected standard errors. Model 7

[1] I do not calculate the LRM for H2 because the interpretation is not straightforward. However, the LRM does return a positive and significant result when interacting IRA(4) and IRA(5) with the dummy capturing the presence of a leftist executive.

adds year dummies. Model 8 begins the sample in 1990, rather than 1984. Finally, Model 9 adds three additional control variables to the main models presented in Chapter 4. The first is the annual change in GDP. The second is a measure of judicial independence, which comes from Linzer & Staton (2015). Higher values indicate more independence. The final additional control is a dummy variable indicating whether a sample country was in the process of privatizing either the telecommunications or electricity sector. The results reveal that the GDP change variable is positively signed, but not significant. The judicial independence variable is significant, but takes on a negative sign, which was unexpected. Finally, the variable capturing privatization processes is significant and positive. Table A1.3 reruns all of these models using IRA(5). There are no meaningful changes when making this substitution.

Table A1.4 reports additional tests of Hypotheses 2-4. Models 17 and 18 test of all three of these hypothesis simultaneously using *IRA(4)* and *IRA(5)*, respectively. In these two models, the interactions take on the same sign and significance level as what was presented in Table 2. Models 19 and 20 repeat this procedure, but substitute the Polity variable for the dichotomous measure used in the main analysis to better ensure the results are not dependent upon how democracy was measured. Once again, the sign and significance levels for all interaction terms were the same as what was depicted in Table 4.2.

Finally, Figure A1.1 presents the influence of IRAs across regime types. This visual indicates that IRAs' effects do appear stronger non-democracies, but that this difference is not significant.

Table A1.1: Tests of H1 Using an Error-Correction Model

	Model 1	Model 2
FDI_{t-1}	-.23**	-.24**
	(.07)	(.07)
(Δ) IRA(4)	-36.6	-
	(53.01)	
$IRA(4)_{t-1}$	71.60**	-
	(24.32)	
LRM IRA(4)	306.62**	-
	(147.99)	
(Δ) IRA(5)	-	-43.76
		(54.61)
$IRA(5)_{t-1}$	-	73.75**
		(23.60)
LRM IRA(5)	-	319.99**
		(152.13)
(Δ) Democracy	120.73	102.93
	(160.45)	(161.98)
$Democracy_{t-1}$	-149.15	-174.21*
	(102.99)	(104.36)
(Δ) Leftist	92.21	96.75
	(84.35)	(84.69)
$Leftist_{t-1}$	196.63**	201.38**
	(71.80)	(72.61)
(Δ) Veto Players	27.37	27.07
	(19.02)	(18.98)
Veto $Players_{t-1}$	39.97**	39.50
	(15.59)	(15.52)
(Δ) BITS	15.29	14.21
	(12.10)	(12.08)
$BITS_{t-1}$	-7.46**	-7.68**
	(2.96)	(2.99)
(Δ) GDP	3.87e-10	2.36e-10
	(5.13e-09	(5.15e-09)
GDP_{t-1}	3.02e-10	3.28e-10
	(6.55e-10)	(6.59e-10)
(Δ) GDPpc	.13	.13
	(.17)	(.17)
$GDPpc_{t-1}$	.04	.04
	(.03)	(.03)
(Δ) Capital Controls	-14.11	-10.41
	(37.98)	(37.86)
Capital $Controls_{t-1}$	-16.20	-16.24
	(20.71)	(20.15)
(Δ) World Bank	-44.84	-39.61
	(71.86)	(71.29)
World $Bank_{t-1}$	48.25	57.69
	(61.42)	(60.80)
(Δ) IMF	-34.21	-35.84
	(53.78)	(53.96)
IMF_{t-1}	-115.41	-118.36
	(83.99)	(84.16)
(Δ) Regime Stability	14.94*	15.17
	(7.96)	(7.97)
Regime $Stability_{t-1}$	-1.68	-2.03

	(3.77)	(3.79)
(Δ) Regional FDI	.023**	.02**
	(.002)	(.00)
Regional FDI_{t-1}	.003	.004*
	(.002)	(.003)
Constant	-335.92**	-305.14**
	(139.57)	(136.66)
N	650	650
R^2	.19	.19

Regression Coefficients with Panel Corrected Standard Errors in Parenthesis. Statistical Significance: *p<0.1 **p<0.05 (two-tailed). All models include country dummies.

Table A1.2: Additional Models Testing H1 using IRA(4)

	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9
FDI_{t-1}	.76** (.07)	.43** (.07)	.64** (.11)	.76** (.06)	.76** (.07)	.71** (.08)	.76** (.07)
$IRA(4)_{t-1}$	78.30** (26.14)	.78** (.17)	90.97** (40.67)	77.16** (36.61)	78.35** (35.78)	77.81** (31.27)	68.89** (25.48)
$Democracy_{t-1}$	-	.49 (.60)	-263.03** (122.3)	-80.43 (51.54)	-75.52 (55.42)	-98.38 (139.75)	22.07 (110.59)
$Polity_{t-1}$	-4.93 (9.04)	-	-	-	-	-	-
$Leftist_{t-1}$	156.40** (60.49)	.23 (.33)	159.52** (86.19)	159.6 (110.99)	150.56 (113.99)	153.16** (81.74)	159.49** (60.00)
Veto $Players_{t-1}$	26.35* (14.06)	.22** (.10)	11.73 (22.47)	27.49* (14.29)	25.57* (13.97)	27.65** (17.13)	28.40** (13.00)
$BITS_{t-1}$	-9.17** (3.29)	.007 (.02)	-19.62** (6.77)	-9.049* (5.12)	-8.18 (5.19)	-10.52 (4.18)	-7.50** (3.19)
GDP_{t-1}	.0004* (.00029)	9.88e-06** (3.22e-06)	.005** (.002)	.0005 (.0003)	.0004 (.0004)	.0005 (.0004)	.0004* (.00029)
$GDPpc_{t-1}$	.07** (.03)	-.0006** (.0003)	.08 (.06)	.07* (.04)	.07* (.04)	.10** (.05)	.10** (.03)
Capital $Controls_{t-1}$	4.97 (20.52)	.03 (.12)	44.49 (44.19)	4.14 (16.18)	-1.65 (19.16)	13.81 (24.00)	13.95 (21.85)
World $Bank_{t-1}$	109.51* (57.478)	.51 (.35)	147.16* (75.62)	107.91** (52.53)	79.68 (56.36)	130.45** (65.80)	111.99* (57.64)
IMF_{t-1}	-69.32 (55.57)	.11 (.29)	-76.62 (74.49)	-70.64 (47.69)	-64.78 (46.84)	-81.22 (65.70)	-63.95 (54.33)
Regime $Stability_{t-1}$	-1.56 (3.83)	-.03 (.02)	-2.66 (5.41)	-1.40 (2.13)	-3.58 (2.53)	-1.32 (6.47)	-3.98 (3.91)
$RegionalFDI_{t-1}$	.001 (.004)	.0001** (.00003)	.005 (.005)	.001 (.002)	-	.002 (.004)	.001 (.003)
GDP $Growth_{t-1}$	-	-	-	-	-	-	5.09 (5.38)
Judicial $Quality_{t-1}$	-	-	-	-	-	-	-690.7** (297.93)
Privatization $Year_{t-1}$	-	-	-	-	-	-	242.48* (161.82)
Constant	-437.66** (128.85)	-1.35 (.952)	-530.51** (264.25)	-209.82 (155.81)	-293.19 (1341.64)	-554.13** (215.28)	-275.06* (141.71)
N	663	663	486	663	663	539	661
R^2	.75	.78	.83	.71	.73	.76	.76

Regression coefficients with panel-corrected standard errors in parentheses, except where indicated below. Statistical significance: *p<0.1 **p<0.05 (two-tailed). All models include country dummies. Model 3 uses the Polity measure of democracy. Model 4 uses the natural logarithm (+1) of the dependent variable. Model 5 tests H1 only on reformers (i.e. IRA(4) >= 1). Model 6 clusters the standard errors by country. Model 7 adds year dummies to Model 6. Model 8 begins the sample in 1990. Model 9 adds the three additional control variables.

Table A1.3: Additional Models Testing H1 using IRA(5)

	Model 10	Model 11	Model 12	Model 13	Model 14	Model 15	Model 16
FDI_{t-1}	.76**	.44**	.64**	.76**	.76**	.72**	.76**
	(.07)	(.07)	(.11)	(.07)	(.07)	(.08)	(.07)
$IRA(5)_{t-1}$	85.31**	.80**	108.54**	83.75**	77.89**	85.14**	77.10**
	(25.47)	(.19)	(40.44)	(38.95)	(35.56)	(30.68)	(24.98)
$Democracy_{t-1}$	-	.41	-282.64**	-99.85	-100.47*	-121.74	17.98
		(.61)	(118.97)	(59.02)	(58.61)	(138.69)	(110.45)
$Polity_{t-1}$	-7.10	-	-	-	-	-	-
	(9.00)						
$Leftist_{t-1}$	162.83**	.35	151.74*	166.40	158.91	157.58*	166.32**
	(61.29)	(.33)	(84.99)	(117.07)	(119.40)	(82.82)	(60.86)
Veto	26.37*	.23	15.76	27.24*	25.56*	27.55	28.59**
$Players_{t-1}$	(13.97)	(.10)	(24.24)	(14.92)	(14.79)	(16.98)	(13.94)
$BITS_{t-1}$	-9.49**	.001	-19.40	-9.36*	-9.09	-10.61**	-7.87**
	(3.31)	(.02)	(6.73)	(5.24)	(5.39)	(4.17)	(3.21)
GDP_{t-1}	.0005*	.00001**	.005**	.0005*	.0004	.0005	.0004
	(.00029)	(.000003)	(.002)	(.0003)	(.0004)	(.0004)	(.00029)
$GDPpc_{t-1}$	.07**	-.0006	.08	.07**	.08	.10**	.10**
	(.03)	(.0003)	(.06)	(.03)	(.05)	(.04)	(.03)
Capital	4.02	.019	43.44	2.64	-4.38	13.05	13.7
$Controls_{t-1}$	(19.82)	(.12)	(43.49)	(15.99)	(19.46)	(23.49)	(21.08)
World $Bank_{t-1}$	118.63**	.58*	153.94**	116.76**	90.83	138.24**	121.27**
	(57.26)	(.35)	(74.72)	(55.05)	(58.04)	(66.09)	(57.34)
IMF_{t-1}	-70.28	.12**	-75.01	-72.04	-66.67	-82.53	-64.60
	(55.61)	(.29)	(74.64)	(47.7)	(47.31)	(65.85)	(-54.33)
Regime	-2.21	-.03	-3.97	-1.79	-4.30*	-1.87	-4.65
$Stability_{t-1}$	(3.84)	(.02)	(5.22)	(2.13)	(2.51)	(6.53)	(3.96)
Regional	.002	.0001**	.005	.001	-	.002	.001
FDI_{t-1}	(.004)	(.00003)	(.005)	(.002)		(.004)	(.003)
GDP	-	-	-	-	-	-	4.77
$Growth_{t-1}$							(5.37)
Judicial	-	-	-	-	-	-	-774.65**
$Quality_{t-1}$							(305.47)
Privatization	-	-	-	-	-	-	240.40**
$Year_{t-1}$							(117.57)
Constant	-419.63**	-1.24	-485.24**	-203.38	-243.82	-516.32**	-238.57*
	(126.16)	(.96)	(247.55)	(155.87)	(1347.88)	(211.13)	(138.76)
N	663	663	484	663	663	538	660
R^2	.75	.78	.84	.71	.73	.75	.76

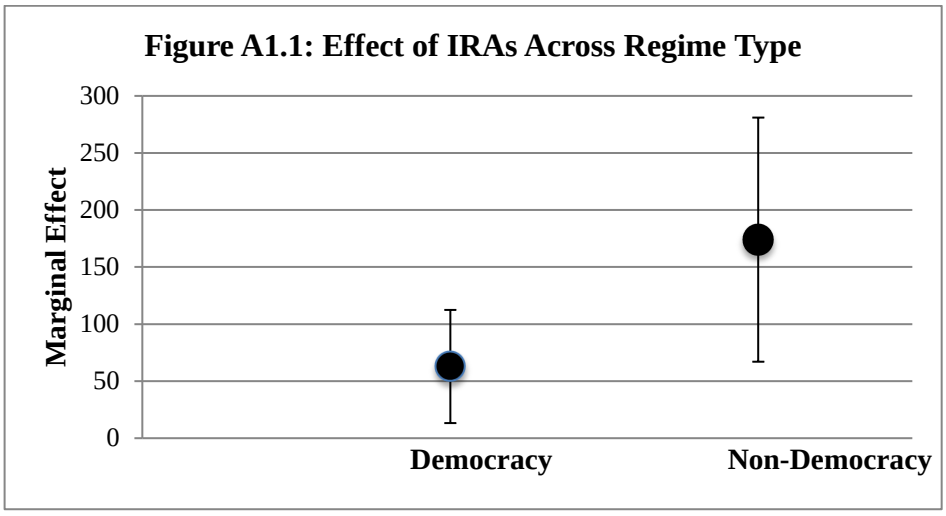
Regression coefficients with panel-corrected standard errors in parentheses. Statistical significance: *p<0.1 **p<0.05 (two-tailed). All models include country dummies. Model 10 uses the Polity measure of democracy. Model 1 uses the natural logarithm (+1) of the dependent variable. Model 12 tests H1 only on reformers (i.e. IRA(5) >= 1). Model 13 uses clustered standard errors. Model 14 adds year dummies to Model 6. Model 15 begins the sample in 1990. Model 16 adds three additional control variables.

Table A1.4: Additional Tests of H2-H4

	Model 17	Model 18	Model 19	Model 20
FDI_{t-1}	.73**	.74**	.74**	.74**
	(.07)	(.07)	(.07)	(.07)
$IRA(4)_{t-1}$	150.82**	-	110.55**	-
	(53.61)		(46.61)	
$IRA(5)_{t-1}$	-	151.41**	-	120.96**
		(54.33)		(49.9)
NewIRA	-503.15**	-387.29**	-505.15**	-390.91**
	(164.58)	(164.1)	(163.54)	(164.28)
$Democracy_{t-1}$	120.74	57.41	-	-
	(116.07)	(116.25)		
$Polity_{t-1}$	-	-	12.51	6.16
			(11.08)	(11.22)
$Leftist_{t-1}$	-40.12**	-17.72	-56.48	-30.81
	(70.78)	(77.67)	(70.7)	(76.46)
IRA(4)*NewIRA	195.80**		198.69**	-
	(66.92)		(66.34)	
IRA(5)*NewIRA	-	162.27**	-	165.09**
		(66.59)		(66.38)
IRA(4)* $Democracy_{t-1}$	-130.34**		-	-
	(46.99)			
IRA(5)* $Democracy_{t-1}$	-	-117.8**	-	-
		(47.87)		
IRA(4)*$Polity_{t-1}$	-	-	-12.03**	-
			(5.10)	
IRA(5)*$Polity_{t-1}$	-	-	-	-11.29**
				(5.52)
$IRA(4)_{t-1}$*$Leftist_{t-1}$	140.62**	-	146.88**	-
	(35.53)		(35.73)	
$IRA(5)_{t-1}$*$Leftist_{t-1}$	-	-117.8**	-	144.03**
		(47.86)		(36.40)
GDP_{t-1}	.0005*	.0005*	.0004	.0005*
	(.0003)	(.0003)	(.0003)	(.0003)
$GDPpc_{t-1}$	.06**	.07**	.08**	.08
	(.03)	(.03)	(.03)	(.03)
Veto $Players_{t-1}$	25.26**	25.45**	24.82*	25.64*
	(13.54)	(13.43)	(13.60)	(13.45)
$BITS_{t-1}$	-10.92**	-10.99**	-10.08**	-10.29**
	(3.52)	(3.53)	(3.34)	(3.37)
Capital $Controls_{t-1}$	14.20	8.93	8.58	5.34
	(20.47)	(19.58)	(20.34)	(19.29)
World $Bank_{t-1}$	90.78*	101.97**	98.56**	109.3*
	(56.94)	(57.11)	(57.46)	(57.75)
IMF_{t-1}	-75.94	-83.76	-72.01	-79.32
	(53.82)	(54.37)	(53.67)	(54.18)
Regime $Stability_{t-1}$	2.49	.77	2.68	.46*
	(4.2)	(4.09)	(3.83)	(3.77)
Regional FDI_{t-1}	.0007	.002	-.0001	.001
	(.004)	(.003)	(.004)	(.003)
Constant	-526.15**	-459.9**	-523.04**	-479.31**
	(161.93)	(158.07)	(147.48)	(146.99)
N	663	663	663	663
R^2	.76	.76	.76	.76

Regression coefficients with panel-corrected standard errors in parentheses. Statistical

significance: *p<0.1 **p<0.05 (two-tailed). All models include country dummies.



Appendix 2

This appendix provides an additional statistical analysis to help confirm that the electricity sector is more likely to generate white elephant projects than the telecommunications sector. To examine this contention, I use data from the World Bank's PPI database, which as discussed in chapter 4, collects project level data on private investments in infrastructure in LDCs over time. Like chapter 4, the analysis includes data from 32 countries in Asia and Latin America, 1984-2008. Unlike the analysis in chapter 4, where I aggregated project-level information into a country-level measure, I do not do so here because determining if a given infrastructure project is a white elephant requires project-level data. Since I am looking at projects within countries over time, the unit of analysis is the project-country-year. The PPI is useful for identifying whether a given project may be a white elephant because identifies if an infrastructure project was cancelled or deemed to be in a distressed state in a given year - the dependent variable in the analysis below. As noted, this is a useful (although imperfect) proxy indicator for a white elephant project because cancelled and distressed projects are more likely to be white elephants than ones that are not cancelled or distressed. However, there are many additional factors that can contribute to a project having this status. Thus, it is important to control for these variables as well as other confounders as best as possible.

The primary independent variable, called *Electricity Project,* is a dummy variable indicating whether a given project is in the electricity sector. At the project level, the variable *Greenfield Project* controls for whether FDI is flowing into a "Greenfield" infrastructure project – meaning it involves the construction of an entirely new facility. A variable called *Age* counts the age of the project in years is included because older projects may be more prone becoming cancelled or distressed. The last project-level variable captures the amount of foreign

investments (in USD millions) committed to a project in a given year. It is called *FDI Amount*. At the country level, controls are included for whether or not a country is a democracy, GDP per capita, population, and veto players. The variable *Democracy* is binary and comes from Chiebub et al. (2010). The *GDP* per capita (*GDPpc*) and *Population* variables come from the World Development Indicators (World Bank 2016a) while the *Veto Players* variable comes from the Database of Political Institutions (Beck et al. 2001; Keefer and Stasavage 2004).

Since the infrastructure projects in this dataset are nested within countries I utilize multi-level random intercept models. These models are ideal when relying on nested data because they enable the researcher to decompose the variance in whether a project is cancelled or distressed between the two levels in the data (i.e. into project-level and country-level variances) by estimating a random intercept, which allows the intercept to vary across countries. Thus, I am able to explain the variance in the intercepts with predictors at the project as well as country level. Because the dependent variable is binary, I use multilevel logit models. With respect to the models shown below, 13% of the variance in the dependent variable is found at the country level.

Table A2.1 presents the results. In Model 1, in which only the only right-hand-side variable entering the regression is the dummy *Electricity Project*, we see the expected positive and significant coefficient. While this result provides some important evidence, this model does not include any potential confounders. Model 2 adds the project level covariates. In this model the coefficient on *Electricity Project* increases slightly and remains statistically significant. Model 3 adds a set of country level predictors. Once again, the variable returns a positive and significant result, although the coefficient does attenuate slightly from Model 2. Finally, Model 4 adds the *Veto Players* variable as the final country level control. Doing so yields no meaningful change in the sign or significance of the electricity project dummy variable. Substantively, the

results from Model 3 indicate that being in the electricity sector leads to a about an 11.3% predicted increase in the probability that a project will be a white elephant, relative to telecommunications sector projects. Ultimately, these results do help illustrate that electricity infrastructure projects are more likely than telecommunications projects to be white elephants, as indicated by them being distressed or cancelled.

Results for the control variables do not yield any notable surprises. At the project level, these models indicate that Greenfield investment projects are relatively less likely to become white elephants, but also that as projects age they become more likely to become distressed or cancelled. The amount invested into a project does not appear to influence this outcome. At the country level, the results suggest that projects in democratic states are less likely to be white elephants. The other two statistically significant country level predictors were GDP per capital and the population measure, both of which returned negatively signed coefficients, suggesting that as countries grow richer and larger white elephants become less of a problem.

Table A2.1: Predictors of White Elephant Projects

Project Level Variables	Model 1	Model 2	Model 3	Model 4
Electricity Project	.308**	.484**	.451**	.453**
	(.143)	(.173)	(.175)	(.175)
Greenfield Project	-	-.801**	-.87**	-.869**
		(.167)	(.169)	(.170)
Age	-	.108**	.094**	.094**
		(.022)	(.022)	(.022)
FDI Amount	-	-.0001	-.0002	-.0002
		(.0002)	(.0003)	(.0003)
Country Level Variables				
Democracy	-	-	-1.16**	-1.144**
			(2.73)	(.295)
GDPpc	-	-	-.0004**	-.0004**
			(.0001)	(.0001)
Population	-	-	-2.11e-09**	-2.09e-09*
			(1.24e-09)	(1.24e-09)
Veto Players	-	-	-	-.006
				(.043)
Constant	-3.477**	-4.423**	-1.87**	-1.869**
	(.393)	(.537)	(.704)	(.705)
N	4,065	3,967	3,932	3,932
BIC	1739.666	1596.454	1580.153	1588.407

Multi-level logistic regression coefficients with standard errors in parentheses. Statistical significance: *p<0.1, **p<0.05.