9-12-2014

ORDEM E PROGRESSO: THE PROGRAMA DE ACELERAÇÃO DO CRESCIMENTO, DEVELOPMENTALISM AND DEMOCRACY IN BRAZIL

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by

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DISSERTATION

Submitted in Partial Fulfillment of the
Requirements for the Degree of

Doctor of Philosophy
Political Science

The University of New Mexico
Albuquerque, New Mexico

July 2014

DEDICATION

To

Thomas Dean Spaccarelli

ACKNOWLEDGEMENTS

This dissertation was a long project in the making and I could not have finished it without love and support from several key people.

In Brazil, David Fleischer, Rebecca Abers and their colleagues at the Instituto de Ciência Política in the Universidade de Brasília helped facilitate field research and provide wonderful lodging in the Colina. I would like to thank all my interview subjects who took time from their busy schedules to patiently answer my questions. I would also like to thank Ricardo Maia, Tati Caminhante, Berta Herrera, Monica Martinez, Juci Ferreira, Júlio Pereira, Moises, and Philipp Ehrle for making my time in Brasília a distinct pleasure.

At UNM, I would like to express sincere gratitude to the Latin American Iberian Institute. By providing a PhD fellowship and two FRG grants, the Institute single-handedly turned my research proposal into a concrete reality. The Institute is an absolute asset to the University and staffed with some of the most considerate and helpful people I know. While many in the department of political science have proffered useful advice. I would like to explicitly thank Mark Peceny, Kathryn Hochstetler, and Juan Pablo Micozzi. Despite professional opportunities that took them from the department, each member spent countless hours reading over proposals and drafts. I am indebted to your advice and I have been fortunate to have you as mentors.

I would like to thank Ron Nikora, Phil Hultquist, Yann Kerevel, Lisa Bryant, Alex Adams, and Jess Jones for being fantastic friends. Each of you was a great sounding board that inspired new projects and helped refine ideas. I cannot wait for our next beer and political discussion. Mike Wolff and Ben Waddell have been absolute brothers and their complete love for Latin America is a continuing source of inspiration for me. I eagerly await our next projects, collaborations, and retreats!

Dissertations are not facile endeavors. First, they are the culmination of decades of work and experience. I would not be here today without the wonderful teaching and friendship of Patrick Smith and Charles Brockett. Additionally, several people have kept me motivated and proffered continual encouragement and good cheer. I would like to thank Ben Acree, Sanford McGee, Tyler Bodine, Laurel Coffey (and L.T.), Kevin and Rachel Hobbs, and my wonderful family. Brooks Ingram singlehandedly helped me stay positive and I cannot wait for our next stage together in Boston.

Finally, I would like to thank Thomas Spaccarelli. I have become the scholar and teacher I am today because of your fantastic example. You define the essential attributes of a teacher and you have been the best mentor a student could seek. Most importantly, you have become my best friend and I know our overseas adventures (and study abroad programs) will continue to push me to be the best scholar, teacher, and human I can be.

Author in front of bulb turbine (Jirau Dam)

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ABSTRACT

The dissertation analyzes the developmental state and public policy in Brazil, exploring the extent to which the policymaking process is rationalized or politicized. Specifically, I look at these issues in the multi-year infrastructure project, the Programa de Aceleração do Crescimento (PAC). Brazil has a long history of clientelism and pork barrel spending. At the same time, the rise of developmentalist leaders has undermined these historical legacies and encouraged the implementation of more rationalized economic policies. In order to function properly, a developmental state requires rationalization and most scholars have assumed that authoritarian, one party states would provide the necessary insulation. The democratic nature of contemporary Brazil means leaders and policymakers face greater scrutiny and embed themselves in civil society in a way that undermines traditional understandings of the developmental state. I provide a history of developmentalism in Brazil, identifying crucial actors and critical junctures that have

enabled or constrained developmental policy. I explore how infrastructure projects are allocated in a way that responds to economic imperatives. At the same time, politics matter. Democratic institutions make social and economic concerns more salient to policymakers and constrain their overall autonomy.

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1. Introduction:

In 2014, Brazil will host the largest international sporting event in the world for the second time, the FIFA World Cup and this time the tournament will be different. Back in 1950, Brazil hosted the Cup and matches were confined to six cities: Rio de Janeiro, São Paulo, Belo Horizonte, Curitiba, Porto Alegre, and Recife. Of the former host cities, only Recife is located outside the more industrialized south and southeast regions of Brazil. Recent World Cups in other countries have been hosted in eight or ten cities, yet for this World Cup, Brazil was allowed to spread the tournament across twelve cities. In addition to the six previous host cities, the 2014 Cup will be featured in Manuas, Fortaleza, Natal, Cuiabá, Salvador, and Brasília. In conversations with Guilherme Ramalho, the General Coordinator of World Cup Infrastructure in the Ministério de Planejamento, Orçamento, e Gestão (MPOG), he stressed that the selection of twelve cities reflected a conscious effort by the Lula da Silva administration (2003-2011) to increase the regional distribution of the games throughout the country. Host cities would receive new infrastructure projects and generate millions of dollars in tourist revenue during the month long festivities. As President Lula repeated on various occasions, Brazil cannot develop one region of the country while the rest fall behind.

At the same time, Brazilians have been justifiably wary of fully accepting World Cup “planning.” In June 2013, Brazilians of all ages flooded the streets with their fists and voices raised, representing the most significant and sustained

protests against the Brazilian government since the Diretas Já protests in 1984. While some scholars rightfully noted the "facebookization of protests" and the disparate multiplicity of individual demands (Saad Filho 2013), the substandard public provision of services was a consistent narrative throughout the protests. The target of particular ire was the estimated $3.68 billion dollars the Brazilian government has spent on twelve stadiums, in spite of government claims that stadiums only represent 17 percent of total infrastructure investments in preparation for the Cup (Ministerio de Fazenda 2013, 36).

Many stadiums, particularly those in Cuiabá, Manaus, and Natal, are located in cities that lack a local team with any reasonable chance at competing in the top division of the national soccer league, meaning the hulking edifices will sit largely vacant after the World Cup. Many Brazilians think they are being built solely to pad the pockets of politically connected individuals. In a Datafolha survey, 76 percent of respondents believed there was corruption involved in the stadium licensing and construction (Veja 12/25/2012). While all the stadiums will be finished on time, severe cost overruns particularly in Brasília and São Paulo fueled widespread discontent. Throughout the June protests, participants frequently noted the Cup money would be better spent on improving the provision of health, education, and transportation. Acknowledging public concern, current President Dilma Rousseff (2011-) declared the grievances legitimate, promising to increase public spending on social programs and infrastructure. Additionally, she pledged to crackdown on corruption.

World Cup preparations and the June protests simultaneously highlight both the positive and negative attributes of Brazil at this period in history. To many casual observers, these events encapsulate the same tired narrative of Brazilian politics: corruption, white elephant projects, and a venal political class prone to promising the world and providing little substance. At the same time, a new emphasis on equitable growth and poverty reduction coupled with a deepened democratization of Brazil's institutions and society suggest Brazil is headed in a better direction. While the situation is not perfect, I find the glass is three quarters full. Brazil has changed dramatically and too many critics have failed to appreciate the advances.

This dissertation will highlight these changes by focusing largely on developmentalism, infrastructure investments, and the Programa de Aceleração do Crescimento (PAC, Program of Accelerated Growth). Using theory, quantitative analysis, and qualitative interviews from field research, the dissertation will weave a methodologically diverse narrative that notes these improvements while illustrating the overall complexity of the policymaking process. I will explore the defining characteristics and structure of the developmental state in chapter two, but for the purpose of this dissertation, a developmental state *is led by a modernizing political elite that uses state resources and a technocratic, rationalized, and autonomous bureaucracy with strong ties to important economic actors in order to structure economic activity with the goal of spurring long term development.*

Long considered more amenable authoritarian tendencies, I examine developmentalism in its contemporary, democratic form, paying close attention to how the state engages the democratic process. How does democratic developmentalism affect the political calculations of the executive? How does the democratic developmental state engage civil society? Listening to the voices of politicians, bureaucrats, and academics, I explain the developmentalist policymaking process and logic that went into the creation of the PAC. I built an original dataset that includes all PAC funding at the municipal level and tests the extent to which infrastructure policy in Brazil reflects political or economic imperatives. I also provide insights into how democratic governance and a more pluralistic bureaucracy make the contemporary developmental state more responsive to environmental and social concerns, particularly on the contentious issue of hydroelectric power generation.

The PAC and the Developmental State in Brazil

The PAC was implemented in 2007 and analysis of this program will form the heart of this manuscript and will illustrate the dramatic changes in policymaking after a decade of neoliberalism. Launched under the administration of then-President Lula da Silva, the program sought to rebuild the nation's deteriorating infrastructure with over R$513 billion in investments. With the onset of the global economic crisis, da Silva expanded the program with an additional R$1.5 trillion reais. The multiyear PAC now totals over $817 billion US dollars, roughly equaling 30 percent of Brazil's gross domestic product.

Representing the largest infrastructure program in recent Brazilian history, the PAC includes three principal axes: logistics, energy, and social infrastructure. Logistical infrastructure consists of highways, railways, ports, waterways, and airports. Energy infrastructure includes projects that fund the generation and transmission of electricity, petroleum and natural gas extraction, pipelines, and refineries, petrochemical facilities, and also renewable fuel production (biodiesel, ethanol). In addition to more traditional forms of infrastructure, the PAC includes infrastructure that serves an explicitly social function. In the first official report of the program, social infrastructure was restricted to building water reservoirs and pipelines and improving sanitation; however the scope gradually expanded over time to include housing, urban transportation and a program designed to provide every house in Brazil with electricity and running water. The PAC2, the second phase of the program, continued to broaden the definition by including the construction of new schools, hospitals, sports, and cultural facilities.

Infrastructure investments are extremely important in boosting productivity and long-term growth, but only if they are done well (Aschauer 1989). A large and diverse program, the PAC offers a compelling look at a range of theoretical issues present in the contemporary developmental state in Brazil. Is policy sufficiently rationalized or is the policy process clearly politicized? Can the developmental state include public participation or accommodate environmental considerations given a primary concern with economic growth? Beyond theoretical contributions, analyzing these issues provide critical insights into the strength and health of developmentalism in Brazil. Additionally, to this point, no

scholar has analyzed the PAC at the national level and this manuscript offers an original contribution on a critical political program. While these issues are exclusively explored in the Brazilian context in this manuscript, many countries face similar predicaments of development and Brazil proffers insights that can be compared to different cases in future studies.

Since Chalmers Johnson's (1982) pioneering work on Japan, scholars have been interested in exploring developmentalism as an alternative to neoliberalism (Jenkins 1991; Leftwich 1995; Evans 1995; White 1998, 2006; Routley 2012). Instead of classical liberal orthodoxy, this newer state-driven approach to economic policy offers developing countries a potential exit from the chronic economic dependency and export of primary commodities. In the end, primary commodities have little added value and are prone to severe price volatility, making them suspect candidates for long-term sustainable development. To build more sophisticated economies, developmentalists advocate countries concentrate their scarce economic resources, targeting productive nodes of the economy in a rationalized fashion. Using developmentalist policy, countries like Japan and South Korea exploded respectively from a war torn, agrarian nations into dynamic, modern global economies.

While developmental impulses have waxed and waned since the 1950s in Brazil, a matter covered in chapter two, they have returned under the leadership of the leftist Partido dos Trabalhadores (PT). Two presidents, Luiz Inácio "Lula" da Silva (2003-2010) and Dilma Rousseff (2010-), have moved away from orthodox neoliberal prescriptions and re-oriented public policy in favor of a more state-

active approach to economic policy. While empowering national champions, the current iteration in Brazil includes a heavy emphasis on poverty alleviation through social programs. Yet, at this point, this unique example is understudied. With the exception of Evans (1995), studies on the developmental state in Brazil are relatively new and few (Bresser-Pereira 2006; Pereira 2009; Riesco 2009; Arbix and Martin 2010; Ban 2013; Hochstetler and Montero 2013).

For the curious researcher, Brazil represents a fascinating laboratory because developmental policies have occurred in differing political and economic periods. Developmentalist policies have spanned the ideological spectrum from left to right, appeared under democratic and authoritarian regimes, and included variation in levels of economic openness. In the current period, having returned to democratic governance, Brazil's leaders are currently attempting to balance popular demands with global economic exigencies. The way Brazil addresses these developmental issues carries sizable and global repercussions.

As stated previously, Brazil has indisputably improved over the past three decades. While maintaining its democracy, its economy has matured tremendously. With a diversified national economy of agriculture, manufacturing, and services, Brazil is the largest economy in Latin America and the 8th largest in the world. Since 2000, the Brazilian economy has outperformed the economy of United States, expanding on average at 3.6 percent per year in contrast with a slower 1.8 percent annual growth rate in the US. The government has reduced deficits and produced national budgets with mandated "rainy day" savings. External debt has decreased from a high of 53 percent of Gross National Income

to 20 percent while levels of foreign investment have grown. Between 1980 and 2012, gross domestic product (GDP) per capita has tripled from $3,613 to $11,640. Particularly in the last decade, there has been a dramatic drop in income inequality and the number of Brazilians living in poverty. Social spending has grown from 8 percent of GDP to 27 percent in 2009 (Burrier Forthcoming). Concurrently, social indicators have improved with mean schooling increased by 4.6 years and life expectancy at birth gaining 11.3 years (World Bank 2012).

Brazilian-based companies, both public and private, have been leading the economic surge. Brazil boasts 11 of the top 25 companies in Latin America, including Petrobras, the largest company in Latin America. At this point, the semi-public petroleum and gas company has active projects in 24 different countries including nearly every major South American country. Odebrecht, a private construction conglomerate, has nearly eleven percent of its shares owned by the state-owned development bank, the Banco Nacional de Desenvolvimento Econômico e Social (BNDES). Currently the construction company is involved in projects in 10 different Latin American countries, including several sites I have visited personally: the Mariel Port in Cuba and multiple highway construction sites in the Dominican Republic. The “national” development bank now boasts offices in South Africa, Uruguay, and the United Kingdom and loans more money annually than the World Bank. Privatized in 1997, Vale has expanded, taking over Canadian firms, to be the second largest mining company in the world. All the economic actors mentioned above: Petrobrás, Odebrecht, the BNDES, and Vale

have benefitted from Brazilian developmental policy and exemplify Brazil's growing international clout.

At the same time, there are clouds on the horizon. Severe infrastructure deficiencies are dragging down Brazil's competitiveness and slowing the potential for future growth. Between 1969 and 1984, the military regime allocated roughly 4 percent of gross domestic product annually for infrastructure. However after the return to democracy, from 1985 until the 2000s, the average fell to 1.85 percent (Ferreira and Araújo 2005, 2). A series of economic crises (debt, hyperinflation, currency) since the 1980s constrained government spending in the democratic period, meaning Brazil undertook few of the necessary infrastructure upgrades. The decades of declining investments mattered and the 2007 World Economic Forum Global Competitiveness Report ranked Brazil 78th out of 134 countries in terms of infrastructure. The ranking placed them behind several Latin American countries, but also dead last among BRIC nations. Particularly with regards to roads, ports, and airports, Brazil finished among the worst countries in the survey. For a country with global ambitions, the data are a reality check.

While Brazil has an expansive road system, only 13.5 percent of roads are paved. In an annual review of infrastructure, the magazine Exame derided the highway system as "more than 55,000 kms of potholes (2010, 214)". Personally, I have lost one tire to a bad stretch of the BR 101 in Bahia and one windshield on the decidedly nightmarish BR 163 outside Santarém. Ships regularly bypass Brazilian ports due to their lack of depth and relative dysfunction. In Santos, Brazil's largest port, it takes over 22 hours to unload a container ship, 11 times

the average for a country like Singapore (Financial Times 2013). With lines stretching over 15 kilometers, trucks carrying important exports must wait days to load ships. These deficiencies raise the overall cost of exports and reduce Brazil's global competitiveness. For the size of the Brazilian economy, in terms of dead tonnage or value, it handles less maritime trade than any other BRIC country and is comparable with Algeria or Vietnam despite boasting nearly 7,500 km of coastline (UNCTD 2010). For airports, the number of passengers has nearly tripled from 37.6 million passengers to 94.6 million in the last decade (World Bank 2012). Growth in domestic travel is 3.5 times greater than GDP growth and 14 times greater than the overall growth in population. Air cargo transport has grown 50 percent since 2003 (ANAC 2012, 8). Yet, while many Brazilians are getting the opportunity to explore their country for the first time, government investment in building new runways and improving airport facilities has failed to match this surge. Eleven percent of flights are delayed by more than 30 minutes (ANAC 2012,10). Visitors to international airports like São Paulo's Garulhos or Rio's Galeão are appalled by the lack of services. In the sweltering Amazonian city of Manaus, no air conditioning means passengers soak in sweat-stained clothes while they await their 3 AM departures.

Key Points

This dissertation makes several contributions to the literature on the democratic developmental state (White 1998, 2006; Fritz and Mencoal 2007; Sandbrook 2007; Arbix and Martin 2010; Routley 2012; Hochstetler and Montero 2013). The first involves the balance of power between elected figures in the

executive and legislative branches. Given the outsized focus on pleasing constituents and winning elections, many developmental scholars were initially doubtful that democratically-elected politicians could maintain a strategic, long-term commitment to enacting rationalized developmental policy (Johnson 1987, 1999; Jenkins 1991; Leftwich 1995). Outlined in chapter two, democracy in Brazil has generally undermined professionalizing the bureaucracy and rationalizing public policy as politicians have sought to utilize public resources for their own political gain. Executives have provided pork barrel projects to legislators in order to pass their preferred legislation or used bureaucratic positions for clientelistic, patronage-based appointments (Ames 1995,2001; Mainwaring 1993; Samuels 2002). In terms of infrastructure, I argue that the Brazilian executive has been the key developmental advocate with Congress deferring to executive initiative. In chapter 3, I provide interviews where politicians from across the political spectrum demonstrate an exceptional degree of consensus on the need for a large-scale infrastructure program. This elite consensus freed the executive to develop a long-term strategic vision that empowered the technocratic bureaucracy. Instead of auctioning off public works projects to secure legislative support through pork barrel spending, the executive is bypassing Congress and taking these public goods directly to core voting districts, where the PT has had electoral success.

The second contribution captures the changing "autonomy" of the bureaucracy. Arguably the most important actor in the developmental state, the bureaucracy is empowered to develop public policy on the basis of technical

merit. In chapter two, I detail how the quality of bureaucracy has improved dramatically and the PAC represents the culmination of these reforms. The Brazilian bureaucracy is sufficiently empowered and technically capable to engage in long-term strategic planning. The most intriguing development is a growing pluralism within the bureaucracy. Technocratic expertise is growing in a range of agencies with different concentrations. Instead of executive-legislative interactions shaping policy, competition on technocratic grounds between various agencies ultimately wields greater influence over the final policy results.

A final contribution illustrates how the democratic development state can better incorporate civil society into the policymaking process. Previous works stressed the embeddedness of bureaucrats with important economic actors (Johnson 1987, 1999; Jenkins 1991; Leftwich 1995; Evans 1995, 2010). In Brazil, the introduction of democracy has allowed the state to cast a broader net that incorporates other segments of civil society. In chapter four, I explain legal safeguards and an intensive licensing process that includes public audiences that have brought the concerns of humble Brazilians and indigenous groups into sharper focus. Stronger independent monitoring checks the state while providing citizens with greater avenues for redress. Throughout the manuscript, I describe how the developmental state is engaging democracy and producing rationalized projects that do not trample the rights of Brazilian citizens.

These aforementioned developments are important because when constructing their own initiatives, Brazil's neighbors are closely scrutinizing Brazil's example. Around the developing world, Brazil is seen as a model worth

emulating and these feelings were clearly evidenced in the recent election of the new director-general at the World Trade Organization (WTO). After seven candidates dropped out of the race, the final two candidates standing were Mexico's former trade minister, Herminio Blanco and Brazil's ambassador to the WTO, Roberto Azevedo. Blanco was assumed to prefer greater market liberalism and was supported by many leaders from the developed world. In spite of this crucial voting bloc, the Brazilian Azevedo was pronounced the winner with support from the numerically superior developing world. Many commentators noted the victory was attributable to the fact that most countries in the world were more attracted to Brazil's model of active, state-led development (the Economist 2013c)

Peter Evans (1995, 10) has rightly noted that "sterile" arguments about whether government should intervene in the economy or leave the market to its own recourse have been supplanted by conversations about the degree to which governments should intervene. Nevertheless, there is considerably less consensus about the appropriate type of state-driven economic policy and how developmentalism and democracy can improve each other in a symbiotic fashion. This study illustrates the precarious history of Brazilian developmental policy, yet reveals that current public policy is more effectively accommodating economic concerns and democratic imperatives while achieving greater rationalization through a technocratic bureaucracy. By appreciating the historical trajectory of developmentalism in Brazil, this study highlights the challenges of the model.

I will argue throughout this dissertation that for successful long-term outcomes, rationalization of policy is paramount. This theme is repeatedly stressed throughout this manuscript and is indisputably the most fundamental component of a healthy developmental state. At the same time, democratic governance obliges the developmental state to be responsive to the needs of civil society. The way these tensions are resolved is exceedingly complex, but this manuscript will begin to unpack and explain these relationships in greater detail.

Outline of the Manuscript

Having introduced the general themes, the developmental state and the PAC, the manuscript will proceed accordingly.

In chapter two, I discuss and refine our theoretical understanding of the developmental state, explaining the basic institutional structure of the state and establishing the roles of politicians, bureaucrats, and economic actors. I conclude that the developmental state demonstrates certain attributes that transcend specific historical time periods and partisan ideologies. In its barest essence, developmentalism is a rationalized economic strategy where political elites delegate power to a technocratic bureaucracy that is embedded in society. After discussing the role of the major actors, I engage the question of whether the developmental state can accommodate democracy, demonstrating that long-term economic strategies and an autonomous, powerful bureaucracy can still respect the basic premises of democratic governance. To illustrate these points more clearly, I provide a brief history of developmentalism in Brazil. Looking at the role of political elites and bureaucrats, I demonstrate the conditions that promote

successful developmental policy. Presidents have been critical actors initiating developmental policy and bureaucratic reform. At the same time, I document how bureaucratic capacity has improved over time.

Building on the theoretical and historical discussion in chapter two, the next two substantive chapters further analyze how the current developmental state under the PT handles two different aspects of democratic governance: the political calculations of politicians and state-civil society relations. In chapter three, I ask the question: to what extent are public infrastructure investments politicized or rationalized? Do these projects reflect a rationalized developmentalist strategy that upgrades economic productivity or do they demonstrate the political distribution of public goods, rewarding key constituents or political actors? Using municipal-level data and in-country interviews, I find that overall, the PAC reflects a complex mixture of impulses. To a certain extent, policy is strategically developed and selected by technocratic government agencies. A rationalized developmental strategy has emerged that targets larger, wealthier municipalities. While bureaucrats and politicians generally agree the PAC is a necessary program and it is highly technocratic, I find core voting still exerts an important influence, underlining the continued political power of the executive branch. Significantly, I document the struggle of smaller, newer municipalities in securing federal funding.

In chapter four, I explore the extent to which the developmental state addresses issues of environmental sustainability and human rights, given a predominant interest in generating long-term economic growth. In this chapter, I

look at the construction of large hydroelectric dams in environmentally and culturally sensitive locations since the 1970s. During the authoritarian developmental period, the military focused on the economic benefits of hydroelectric projects and effectively ignored the environmental and social consequences. In addition, military rule reduced constitutional protections and political space for civil society to contest official policy. Under the PT, the democratic developmental state has revealed greater complexity in the policy process. Counter-intuitively, for large-scale dam projects, the developmental state has opted for less efficient, run-of-the-river dams because of their smaller footprint. Constitutional and legal protections have served to protect the environment and indigenous groups from arbitrary destruction. Greater public consultation and stronger linkages between civil society and bureaucratic agencies have empowered citizens and made bureaucrats sensitive to their concerns. I also discuss the emergence of a pluralistic bureaucracy, where agencies compete on the basis of their technical expertise, revising and improving developmental policy. In the end, while the case studies still demonstrate room for improvement, the progress between authoritarian and democratic developmental periods is dramatic and illustrates how democratic politics can affect developmental outcomes without overly compromising the technical merit of public policy.

In my conclusion, I re-capitulate the primary findings and concerns on the Brazilian developmental state. Given the historic political and economic turmoil the country has encountered, my final reflections center on the state of the current developmental model in Brazil. While forecasting the Brazilian future is a risky

endeavor, I highlight several trends in the PAC that illustrate Brazil's current direction under the PT government. First, the PT has recaptured government initiative with regards to infrastructure investments and made this important issue salient to political elites and citizens alike. At the same time, the process of developing policy has improved with greater oversight and transparency. I conclude the chapter speaking on the PT's ideological commitments to social justice. While this finding has been well explored in terms of programs like Bolsa Familia, I underline the inclusion and impact of social projects within the PAC.

While a critical look to the future highlights important challenges, there has been significant progress of the Brazilian political system since the 1950s. While several World Cup stadiums resemble white elephant projects, the PAC demonstrates a positive side in Brazilian infrastructure investments. Policy is far more rationalized. While it varies between federal and municipal entities, bureaucratic capacity has improved dramatically. Developmental projects are also not steam-rolling civil society. In contrast with previous developmental cycles, the Brazilian state is making greater efforts to include citizen input and protect the environment and civil rights. In addition to explicit developmental strategies, Brazil has experienced a spate of presidents fundamentally committed to poverty alleviation. Public social spending has increased, while social indicators have slowly improved. These developments seem to foretell much greater political and economic inclusion and stability in the new Brazil.

Conclusion

Brazilians have been working on this new Brazil for some time. Despite being the first President of a democratic Brazil, Deodoro da Fonseca was an entirely forgettable historical figure. After two years in office, he was unceremoniously deposed in a military coup by his vice-president, Floriano Peixoto. Nevertheless, the marshal imparted an important legacy on his young nation. As president, he vetoed lawyer Rui Barbosa's proposal for the first flag of the new nation because it appeared too similar to the flag of the United States. Tasked with designing an alternative, Raimundo Teixeira Mendes developed a new banner combining the green background and yellow rhombus of Brazil's imperial past with a curious new addition, a blue celestial globe scattered with the stars of the Southern sky. Across the globe, the words "Order and Progress" were emblazoned, inspired by the positivist French thinker Augustine Comte. Fonseca quickly accepted the new flag and while politics, economics, and the social milieu have changed over the ensuing decades, the flag has remained constant.

Different groups throughout history have interpreted the national motto and arrived at divergent conclusions, however a kernel of truth remains. When Brazil has their political and economic house in order, there is progress. A frequent fate, failure entails stagnation or regression. A country with global ambition, Brazil faces daunting challenges, but ever the independent and adaptive nation, Brazil is willing to trod new paths and learn from past mistakes.

2. Developmentalism & Democracy: Theoretical and Historical Considerations

Introduction:

With the 2002 election of Lula da Silva, the Brazilian government changed economic policy directions. After a decade of neoliberalism, the state reemerged far more active, building infrastructure, augmenting levels of public investment and social programs, and even stimulating aggregate demand with counter-cyclical spending during the recent international economic crisis. But do these events herald a return to the developmental policy of the past? Does Brazil's contemporary economic policy represent something totally different? What are the key characteristics of the developmental state? Can developmentalism coexist with the expectations and institutions of a democratic society? This chapter will answer those questions while providing an historical background to developmentalism in Brazil.

At this point, scholars are analyzing developmentalism across Latin America but frequently differentiating between an "old" or "national" developmentalism and a contemporary "new" developmentalism. While illustrating the contextual differences is not unhelpful, scholars viewing these two periods as separate historical eras miss the intrinsic similarities, particularly the structure of the state. While public policies will change in response to different economic circumstances, the institutional structure of the developmental state remains more permanent. Key actors, namely the developmental political elites and the bureaucracy, play similar roles over time. By focusing on these critical attributes of developmentalism, we can better study the reappearance of

developmentalism at various historical moments, but we establish a clearer rubric of developmentalism that can be easily transferred to other cases.

In this chapter, I start with a theoretical look at the developmental state outlining the existing literature on the subject. I argue the developmental model is defined by a certain ideological orientation and an institutional structure. The state encourages national development with active public participation in economic activities and an emphasis on rationalizing public policy. Given this overarching orientation, there are three actors (politicians, bureaucrats, and economic elites) that play essential roles and a healthy developmental state has institutionalized these roles. I describe the roles of each actor, elaborating their precise positions within the political and social framework of the state.

In order to better illustrate these positions, I provide a case study of developmentalism in Brazil. As the case study demonstrates, because the developmental political elite endows the bureaucracy with significant policymaking power, developmentalism frequently is accompanied with and benefits from previous bureaucratic reform aimed at improving bureaucratic capacity. I close with a brief discussion of the case study, but I tackle the lingering issue of democracy. Since the developmental state empowers the bureaucracy at the expense of elected officials and makes bureaucrats autonomous from political pressures, there are real concerns that developmentalism cannot accommodate democracy. The conclusion introduces these empirical questions that will consume the remainder of the manuscript.

What is Developmentalism?

In the 1960s, scholars noted an active state industrial policy, particularly in the developing world, that was more complex phenomenon than simple statism. In contrast with previous decades, state officials and bureaucrats were using public policy to build long-term economic development and structure economic space in a way that encouraged industrialization . This intensive state involvement was necessary in order to overcome cultural and structural issues that created subpar levels of economic development (Huntington 1968; Baer 1972; O'Donnell 1973). Nevertheless, these early descriptions never explicitly utilized the term developmentalism. It was not until the publication of Chalmers Johnson's *MITI and the Japanese Miracle* (1982) that a scholar explicitly conceptualized the defining characteristics of the developmental state. While their interest in the topic has waned and waxed with the rise and fall of the Washington Consensus, scholars have yet to establish a consensus about a precise definition.

For many scholars, the developmental state is assumed to be synonymous with the period of import substitution industrialization (ISI), which differed from country to country, but ranged between the 1940s and late 1970s in Latin America (Sikkink 1991). Linking this concept to a particular historical period, many scholars erroneously conclude that the developmental state is inherently hostile towards the free market or democracy (Arbix and Martin 2010; Ban 2013). Frequently, the logical conclusion is that developmental economic policy is a synonym for protectionism, rent seeking, inefficiency, debt accumulation, and economic collapse (Bresser Pereira 2006). Viewed in this light, developmentalism becomes a derisive term and developmental policies are presumed to be an anachronistic or nostalgic return to a failed past.

For those scholars more sympathetic towards developmentalism, they conclude a new developmentalism must be imagined and proceed to layout out the new economic priorities in painstaking detail. Scholars have detailed specific "developmental" policies for salaries, inflation, productivity, taxes, and exchange rates (Bresser Pereira 2003, 2006; Oreiro and Paulo 2009; FGV 2010 Saad-Filho 2011). Additionally, the list includes the search for full employment and betterment of salaries, the reduction of inequality, increasing aggregate demand or savings, and inflation control. Some demand that the developmental state adopt a Keynesian counter-cyclical spending strategy. While all these prudent recommendations can orient new developmental policy, they do not explain how one arrives at a developmental state nor do they define developmental policy.

Subsequently in the literature, many scholars utilize the terms "old"[1] and "new" developmentalism, which separates the concept into distinct categories. The inclusive term "developmentalism" is rejected or complemented with a slew of other adjectives including "neo-" developmentalism[2], "liberal neo-developmentalist" (Ban 2013), "post-developmental" (Arbix and Martin 2010), "social developmentalism" (Mantega 2007), "social-democratic developmentalism" (Sandbrook et al 2007), "flexible developmentalism", "bureaucratic developmentalism" (O Riain 2000), and "developmental welfare state" (Riesco 2009). But, developmentalism does not have to be synonymous with economic collapse and the proliferation of adjectives overly burdens the concept with historical baggage. Cumulative definitions are reducing the utility of the

[1] Sometimes "old" developmentalism is referred to as "national developmentalism" (see Nunes 2010; Santos Pinho 2012). The "national" in this context strikes the reader as somewhat redundant as a developmental state is inherently concerned with spurring development of the *national* economy.

[2] Currently in Brazil, this "*novo desenvolvimentismo*" or "new developmentalism" is by far the most common phrase and originated with Bresser Pereira (2003) who has largely embraced the term for political reasons (see Bresser Pereira 2006, 9-10).

concept and missing the essential core of developmentalism. While there is certainly contextual variance between the developmentalism of today and yesterday, there are basic features of developmentalism that are shared across historical circumstances. By presupposing the historical or ideological content of the developmental state, scholars are prematurely discarding or amending a very useful concept.

At the base level, developmentalism is an economic strategy. Specifically, the principal concern of the state is economic development and a group of policies is designed to achieve this end. Therefore, developmentalism is not a static list of economic recipes. Just as the needs of every country are distinct, developmental policies will vary diachronically from country to country. While the import substitution industrialization of yesterday constituted a developmental response in the past, it will not necessarily be developmental policy today. In terms of regime types, there is similar variation. Developmetalism may emerge from the left or the right and within a democratic or authoritarian regime (Leftwich 1995). As we shall see later in this chapter, the varied developmental experience of Brazil including the democratic government of Jucelino Kubitscheck and the military dictatorship captures some of this diversity. Given this variation, how can we understand the institutional structure of the developmental state? How are institutions arranged that determine the economic policy?

In essence, I argue that the developmental state is: *led by a political elite that uses state resources and a technocratic, rationalized, and autonomous bureaucracy with strong ties to important economic actors to structure economic activity and spur long term development.* This definition represents a “radial” definition that focuses on a central subcategory, which corresponds to the “best case” or prototype (Collier and

Mahoney 1993, 848). Given a core understanding of what the developmental state entails, we can note the utility of the concept and apply the term across ideological, sociological, historical, and economic circumstances.

How is the Developmental State Structured?

Within the previous definition of developmentalism, there were three important actors (politicians, bureaucrats, and the economic elite) with a specific set of roles within the developmental state. In this next section, I will explain these positions.

1. Politicians

The base requisite of a developmental state is a group of political actors that demonstrate a long term, ideological and political commitment to economic development (Leftwich 1995; Fritz and Menocal 2007; Musamba 2010; Routley 2012). Without politicians making the important political decisions, creating the necessary political institutions, and forging the critical coalitions, it is impossible for a nascent developmental state to form. While the preferences of bureaucratic personnel and economic elites matter, they do not possess the political instruments to immediately transform the organization of the state.

In general, developmental politicians assert that the economy is underdeveloped or underperforming (Johnson 1982, 27; Evans 1995). In contrast with neoliberals who argue that issues of development are best left to the free market, developmentalists argue that state resources need to be concentrated in order to overcome structurally-based economic deficiencies. While demonstrating a more statist orientation, as previously mentioned, the political elite creating the developmental state may herald from the right- or left- wing. Additionally, they may embrace or remain ambivalent towards democracy,

an issue that will be explored in greater detail in the final section. In a similar vein, while policy is programmatic, the policies may reflect a potpourri of public investments, regulation, tariffs, quotas, subsidies, tax incentives, or credit subventions. Development policies can utilize some market mechanisms and may or may not rely on state companies. In contrast with the writings of some contemporary Brazilian scholars (Bresser Pereira 2003, 2006; Siscú et al 2007; Mattei 2011), the developmental state may or may not be Keynesian, include social welfare programming, or emphasize inclusive development. Most importantly, the actual mechanisms that the development state uses may change diachronically as structural economic factors change (Johnson 1982, 29; Jenkins 1991, 199; Gereffi 1992,91). In the end, political elites stress that long-term state intervention is the way to promote growth, build new industries, and increase economic activity. This approach can also be contrasted with the more passive "regulatory state" that solely governs the economy by focusing on establishing the "rules of the economic competition" (Johnson 1982, 19). While the exact policy mixture varies among developmental states, active and consistent state intervention is the crucial ingredient. Political elites rely on the state to initiate the economic transformation in order to enhance their political careers, not the market, with the critical policy objective is long-term economic development.

While politicians are key initiators of the developmental state, they must also choose to delegate substantial policymaking power to the bureaucracy. As I will explore in greater detail below, in the developmental state, the political elite play a critical role in empowering the bureaucracy. For Johnson (1982, 315), the political class in essence becomes a buffer, shielding the bureaucracy from political demands while articulating a

long-term political objective. Subsequently, political elites maintain a consistent political vision to increase long-term economic development and empower the bureaucracy, giving them the necessary space to create and implement policy. They also create the reforms and context that recruit capable, technocratic personnel into the civil service. While some scholars have noted that it is extremely difficult for the executive leadership to "just create space" and "play the role of the safety valve" for the bureaucracy (Moon and Prasad 1998,11), the lack of autonomy jeopardizes the efficacy of the developmental state by reducing the rationalization of public policy.

2. Bureaucrats:

A second critical actor in the developmental state is a technocratic bureaucratic corps. For both Evans (1995) and Johnson (1982), the bureaucracy plays a decisive role in the developmental state and demonstrates considerable economic power (see also Jenkins 1991; Leftwich 1995; Moon and Prasad 1998). Not merely regulatory, the bureaucracy becomes a central agent that actively participates in the design, implementation, and monitoring of developmental policies. This power is "authoritative" and "pivotal" in the policymaking process and "frequently comes at the expense of both political and legislative elites" (Leftwich 1995, 406).

Unlike political elites, the bureaucracy thrives on autonomy and is insulated from immediate political pressure from both politicians and interest groups (Johnson 1982; Geddes 1990; Jenkins 1991; Willis 1995; Oliveiri 2011). Instead of choosing the most politically expedient path, which may constantly shift, the bureaucracy develops a rationalized set of criteria, objectives, and policies that spur efficient economic development that is in the long-term public interest. As projects are implemented, they

are analyzed and ineffective or inefficient policies are changed or reformed. This inherently includes punishing some industrial sectors or companies, while rewarding others, making insularity a crucial component. While scholars have disputed the degree to which the bureaucracy is autonomous (Routley 2012), some basic provision of autonomy is intrinsic and Geddes explains precisely why:

> In order to preserve the resources and commitment needed to bring about changes in the status quo, bureaucratic agencies need to be insulated from customary political patronage networks. This contributes, first, to the concentration of expertise in bureaucratic expertise in bureaucratic agencies, since jobs are not traded for support; second, to a more efficient concentration of scarce resources on chosen development goals; and third to greater agency commitment to bringing about change, since the careers of individual bureaucrats depend on achieving goals rather than demonstrating party loyalties (1990, 218).

In the aggregate, these various factors combine to produce greater state capacity and Geddes concludes Brazilian bureaucrats have been most effective in achieving agency goals when they were insulated from partisan pressures (1990,221).

While the bureaucracy is at least somewhat autonomous from political pressure and interest groups, it is still embedded in society (Evans 1985; Johnson 1982; Routley 2012). Instead of being completely isolated from society, these social linkages prevent the bureaucracy from becoming predatory or parasitic. Additionally, these social ties linking the bureaucracy to society should become an institutionalized forum for the continual debate and negotiation of policies and goals (Evans 1995, 12). Strong ties allow the state and business to build a symbiotic relationship that concentrates economic forces of the national economy and improves the quality and relevance of state policy for the business community. At the same time, it is important to note that despite these

connections with the business community, the bureaucracy should not be captured by economic interests and the connectedness is designed to increase competence, not corruption.

As Evans notes (2010, 9), without a capable bureaucracy, it is impossible to imagine a state that would be able to enact effective developmental policies. Given the great importance placed in the hands of these bureaucratic officials, they should demonstrate several qualities beyond autonomy. While the actual ministers are obviously political appointments, the remaining cadre of officials is not appointed on the basis of their partisan affiliation. Given their prominent role in the construction, implementation, and monitoring of developmental policies, they must represent a professional, technocratic group (Leftwich 1995, 413-4; Evans 1995; Johnson 1982). Entrance to these bureaucratic posts is a highly selective and competitive process based on merit. Entrants must demonstrate a specific technical ability and competence. Dalhstrom et al (2012) show this type of meritocratic recruitment inherently reduces corruption. In order to compete with the private sector and further diminish the utility of corruption, the state creates specific perks and compensation, which attracts applicants into public sector careers and bureaucratic positions are transformed into highly desirable posts. Johnson argues that the bureaucracy becomes “talented and prestige-laden” (1982, 21). This process and position in society also creates an impressive *espirit de corps*, which encourages group cohesion and a shared sense of purpose (Jenkins 1991, 204; Evans 1995, 49). Again, this represents the ideal scenario. Moon and Prasad (1998,11) rightly note that bureaucracies can demonstrate shortcomings that promote inefficiencies and suboptimal policy. Nevertheless, as Johnson recognizes (1982, 23) these internal

bureaucratic disputes, particularly those between different agencies, and factional infighting can simultaneously produce more effective and responsive policy, an issue that will be witnessed in greater detail in chapter four. The key point is that bureaucratic fragmentation or competition does not paralyze the bureaucracy's ability to produce quality policy.

3. Economic Elite:

A final necessary component of the developmental state is strong, but balanced relations between economic and political elites (Evans 1995; Johnson 1982, 1987, 1999; Moon and Prasad 1998; Kohli 2004; Routley 2012; Hochstetler and Montero 2013). To a certain extent, the political legitimacy of developmental politicians rests on their ability to actually increase economic development. This outcome cannot occur if there are combative or antagonistic relations between the government and economic elites. Given their special ability to overcome collective action issues and exit (Offe and Wiesenthal 1980), economic elites are necessary allies for developmental politicians and the two groups form a national coalition that stabilizes the push for a developmental state and represents a national consensus or political settlement (Haggard 2004; Leftwich 2010; Routely 2012, 23). This consensus is usually based on a mutual overarching goal for society like economic growth (Johnson 1982, 22). In order to secure the support of business interests, the state possesses financial, regulatory, and legal tools that attract economic elites and structure the economic environment. Economic elites demonstrate a know-how, dynamism, and an ability to create employment opportunities, permitting them to contribute towards economic growth. In the end, both groups listen to each other and build on their mutual interests in a symbiotic fashion.

Institutionalization

My definition focuses on the central characteristics of the developmental state, concentrating on particular actors and their roles. In order for the aforementioned relationships to work, there needs to be a degree of institutionalization. Levistky and Murrilllo (2009) justly correct political scientists who prematurely assume there is a direct correlation between formal rules and political behavior, however for the health of the developmental state, it is critical that there is a fair degree of institutionalization.

For politicians, institutionalization matters for several reasons. For starters, I have argued political elites must articulate a long-term strategy for national development using the resources of the state. Policy displays a high degree of programmatic coherence and consistency (Leftwich 1995, 408). In order to enact any durable economic strategy, there must be considerable political stability. Policy is not reduced to the political whims of a single politician and there is a "broad agreement on economic goals and policies are coordinated to achieve those ends" (Jenkins 1991, 2000). Furthermore, as we shall see in the case study below, developmentalism does not work when governments or economies are collapsing. Under these circumstances, leaders lack the political capital or the economic resources to either adequately articulate or enact their policy preferences.

Institutionalization is extremely important in securing bureaucratic autonomy and reducing politicization of the policy process. Evans (1995, 49) asserts that the developmental state mirrors the Weberian model for bureaucracy where policymaking is "in accordance with established rules and norms". A Weberian model assumes principles of merit, clear hierarchies, impersonality, explicit rules with universal validity, and technical expertise (Torres 2004). Policymaking is institutionalized and spans

administrations; which allows bureaucrats to truly think long-term, conducting studies and developing the appropriate strategies. In order to achieve the public interest and rationalize public policy, developmental policies need to be highly selective and driven by a larger interest in generating economic development and inducing investment (Jenkins 1991, 200, see also Johnson 1982). For this reason, the developmental state delegates so much power to a technical, neutral bureaucracy. Since state resources are finite, the bureaucracy must choose winners and losers on the basis of which sectors or companies provide the greatest investment potential and returns. Bureaucrats need to have consistent financing for their activities and the security that their decisions will be respected. A clear, stable bureaucratic structure permits regularized ties with economic elites and discourages the bureaucratic fragmentation and personalism that can destroy the policymaking power of the bureaucracy (Schneider 1987, 27). In short, without a stable, institutionalized policymaking structure, the bureaucracy becomes:

> a utilitarian nightmare with the state as a collection of self-interested incumbents using their offices for purposes of individual maximization. Ineffective developmental states are characterized precisely by the lack of predictable, rule-bound bureaucratic norms and relations within the state apparatus (Evans 1995, 71).

As we shall see in the case study that follows, I am not arguing that the developmental model is always perfect and rationalized. Bureaucracies are not flawless and may misallocate public goods. Developmental policies may exacerbate regional, sectoral, and social inequalities. Additionally, corruption is a scourge that is difficult to eliminate. Nevertheless, if policy is politicized and not rationalized, if the developmental state lacks institutionalization, it undermines the foundations of the developmental state.

Developmental Policy and Bureaucratic Reform in Brazil:

Fleeing the Napoleonic Invasion of the Iberian Peninsula in 1808, Dom João VI, accompanied with the royal family and his 10,000 courtesans, arrived in the colony of Brazil (Andrew and Bariani 2010). For the first time, the Portuguese Crown moved beyond the perception of Brazil as a tributary province and initiated a series of reforms to build a functional national government. The most important step was the creation of a national bureaucracy that could administer the vast country. In 1808, public examinations were held for the selection of surgeons in the military and navy (Graham 1968,19). In 1824, the nation's first constitution promised that all public positions were open to citizens on the basis of their "talents and virtues" (Art. 179, XIV). In practice, the overwhelming majority of bureaucrats were selected because of their political loyalties with the crown (de Aragão 1951; Graham 1968; Andrew and Bariani 2010).

Over the next 120 years, under imperial and republican regimes, the principal role of the bureaucracy was to serve as a source of patronage politics. As Torres writes, the state was "great institutional guarantor of social and economic privilege for a rural elite that was aristocratic and parasitic" (2004,143). A weak central government let regional *coroneis*[3] run their state's affairs with little national interference. With the advent of the First Republic, national political power was largely monopolized by the *café e leite* (coffee and milk) coalition of São Paulo and Minas Gerais. When rising regional demands for greater representation and political patronage paralyzed the efficacy of national governance, a rising group of political elites realized that modernizing Brazil's economy required an active state centralizing and coordinating economic policy and a functional administrative system that was less patronage-laden.

[3] Regional oligarchs

Vargas & Kubitschek (1930-1964): Early Developmentalism

Virtually all scholars[4] view the arrival of Getúlio Vargas as a crucial first step in creating a modern, capable, and autonomous bureaucracy. Additionally, he is credited with the advent of industrial developmental policy in Brazil. During the Great Depression and WWII, manufactured imports became scarce causing shortages and acting as a catalyst for greater industrialization. A modernizing figure, Vargas started to implement minor policies to encourage industrialization, yet in his first administration, state-driven development was rather mild (Baer 2001). Nevertheless, if the state could ever aspire to a more active role, Vargas realized he needed to transform Brazil's politicized, incompetent bureaucracy. On assuming power, Vargas was flabbergasted to learn he could not determine how much money the government owed foreign creditors because officials could not find more than half of the loan agreements they had signed (Geddes 1990, 219). Thus, while Brazilian citizens were not clamoring civil service reforms, Vargas undertook these changes because "the corrupt and inefficient nature of the administrative machinery was a formidable obstacle to his new programs" (Siegel 1966, 46).

Centralization accompanied rationalization. As he consolidated his corporatist dictatorship called the Estado Novo (1930-46) concentrating power at the federal level, Vargas embarked on a civil service reform intended to universalize a basic standard of public administration. In order to facilitate the implementation of these reforms, Vargas created the Departamento Administrativo de Serviço Público (DASP), a bureaucratic

[4] Siegel 1966; Graham 1968, Wahrlich 1983; Geddes 1990; Sikkink 1991; Burns 1993; Nunes 2003; Torres 2004; Bresser-Pereira 2007; Cardoso Jr. 2011

"superministry" that responded only to the president (Siegel 1966; Graham 1968).[5] Because decrees issued by Vargas were often general and vague, the DASP frequently filled in the details of his policies and garnered serious policymaking power (Siegel 1966; Graham 1968). The DASP monitored other agencies in order to enforce compliance with new rules for hiring, promotion, and purchases. Career functionaries were to be selected on the basis of technical skill and civil service exams were introduced. Bureaucrats were socialized to norms of efficiency and public service. Importantly, departmental decisions were to be scrutinized and audited. The caliber of the personnel was considered comparable to their counterparts in the developed world and many were eventually drafted into managerial positions in important sectors of the economy (Siegel 1966).

Since the DASP was reasonably effective, it received a substantial amount of animosity (Siegel 1966; Geddes 1990). In the end, the organization was highly dependent on the Vargas' support to maintain their autonomy. Politicians wanted to neuter the organization for reducing their space for political patronage and clientelism. Other bureaucrats resisted the DASP at every turn, feeling the organization was interfering with traditional turf, agency objectives, and career paths. In particular, the DASP faced fierce resistance from the Minstério de Fazenda (MF, Ministry of Treasury) after the DASP received the responsibility of producing the national budget proposal (Siegel 1966). After Vargas was overthrown, the organization was immediately attacked and "became one of the first casualties of the return to democracy" (Geddes 1990,222).

While the DASP helped produce a more rationalized bureaucracy, they were unable to permanently end the political distribution of bureaucratic positions, particularly

[5]Decree law 579 (1938).

nonpermanent positions. Vargas himself continued to make politicized interim appointments and resisted efforts to curb these powers. Most of these appointments were described as positions that "combined the maximum of [job] security and the minimum of effort" (Graham 1958,32). Merit was undercut as a basis for recruitment and deadweight in various agencies carried on well after an administration's end since seniority was a determining factor in promotion. The return to democracy in 1945 only intensified the political distribution of bureaucratic positions. The return to democracy meant parties had to rebuild their organizational structure and using the bureaucracy for patronage purposes represented a traditional strategy for securing political support (Nunes 2010). During the Dutra administration (1945-50), many of the civil service reforms, like public exams, were rescinded and thousands of politically connected applicants were appointed to bureaucratic posts.

Vargas returned to the presidency democratically in 1951 and began an intensive developmental program with the international support of the UN's Economic Comission for Latin America and the Caribbean (ECLAC).[6] In his first term in office, he created important state companies in mining (Vale), steel (Comapanhia Siderúrgica Nacional), and automobiles (Fabrica Nacional de Motores). In his second term in office, he built on the nationalization of industry creating a national developmental bank (BNDE, Banco

[6] Against the will the United States and the Soviet Union, ECLAC was created in 1948 and became a staunch advocate within the UN for development and industrialization projects in the Third World. In Brazil in particular, ECLAC was far more respected and influential among politicians and policymakers (Sikkink 1991, 57). See Sikkink (1991) and Bresser-Pereira (2007) for more information on the relationship between CEPAL and Brazilian political elites.

Nacional de Desenvolvimento Econômico)[7] and a state petroleum and gas monopoly (Petrobras). Import substitution industrialization (ISI) was used to expand national production of manufactured goods and diminish imports.[8] While pursuing developmentalist policies, the bureaucracy was not rationalized or reformed greatly in this period. Although Vargas tried to resuscitate the DASP and the organization was revitalized, he continued patronage appointments. As Geddes describes,

> Vargas tried to insulate a segment of bureaucracy from patronage because he recognized his own interest in a competent administrative apparatus, but he continued to use the rest of the bureaucracy in the traditional manner as a reservoir of favors to be distributed (1990, 223).

After Vargas committed suicide in the Presidential Palace, Jucelino Kubitscheck, a Vargas-sympathetic former governor from Minas Gerais won the next presidential elections. Running on the slogan of "50 years of progress in 5", Kubitscheck revealed an ambitious infrastructure program called the Plan de Metas (Plan of Goals), which was designed to remove "bottlenecks" in the Brazilian economy. The project was successful because Kubitscheck built on unfinished projects drafted in previous administrations and coalesced them into a coherent long-term strategy (Lafer 1970; Sikkink 1991). After securing autonomous sources of funding, Kubitscheck used the BNDE to administer

[7] Created in 1952, the BNDE had weak finances and could not fulfill its general mission of providing credit for development projects. During this period it studied the Brazilian economy and started producing plans and projects that could encourage national development. Instituting an entrance exam in 1956, the BNDE quickly emerged as one of the most technically capable agencies in the bureaucracy while maintaining a distinctive penchant for developmental policy. By the 1960s, it was chief source of credit for all industries. The BNDE largely has been able to maintain its autonomy and independence without political interference. Over the years, it has repeatedly reappeared as an important tool during developmental periods. (Schneider 1991; Willis 1995; Hochstetler and Montero 2013). After the return to democracy, it added a 'S' at the end to demonstrate a greater commitment to social *and* economic development.

[8] For a good explanation of ISI policies in Latin America see Baer 1972 and Saad Filho 2010.

various government-sponsored projects and the bank actually developed many of the projects contained within the Plan de Metas. Given a technical expertise, the bank used a "global rationality", in contrast with a political rationality, that stressed long-term growth maximization (Geddes 1990,227; see also Willis 1995). Kubitscheck also created a think-tank in the executive branch (the Conselho de Desenvolvimento) that could develop long-term projects and strategies for various sectors in the economy, including a rapid construction of a new capital city in Brasília. In 1959, Kubitschek inaugurated SUDENE,[9] an agency charged with inducing greater development in the northeastern part of the country. Between 1956 and 1962, Brazil's economy hummed along with a 7.8 percent annual growth rate and industry overtook agriculture for the first time as a share of the gross domestic product. Import substitution had effectively reduced imports for consumer and intermediate goods (Baer 2001, 63-6; Burns 1993).[10] Bresser Pereira notes that by 1960:

> Brazil was a different country. Its economic development had been extraordinary, a sophisticated and integrated industrial infrastructure had been set up, and we could say the Industrial Revolution was complete. Brazil was no longer a mercantile, patriarchal, or oligarchic society, but a capitalist industrial society in which capital accumulation and the incorporation of technical progress were now an essential part of the economic process (2007, 14).

During this period, other pockets of rationalization emerged throughout the bureaucracy, including Petrobras, the Bank of Brasil, the Central Bank, and the foreign ministry among other groups and the state automobile company (FNM) experienced dramatic growth. With Kubitscheck's explicit protection,

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[9] Superintendência do Desenvolviemento do Nordeste

[10] At the same time, import substitution increased the imports of capital goods, which had a negative effect on the balance of payments accounts and produced higher levels of national debt and inflation (Baer 1972, 2001).

these agencies enjoyed autonomy to meet their objectives, recruit on a meritocratic basis, and rely on a stable pattern of financing that bypassed annual Congressional budgets (Geddes 1990). Long-term planning reached the apex of the democratic period and had a “present and permanent character” (Cardoso Jr. 2011). Additionally, there started to emerge a strong convergence of interests between government bureaucrats and industrial elites that were benefitting from the developmentalist policy (Sikkink 1991; Bresser-Pereira 2007).

In spite of some areas of autonomy, the bureaucracy was not fully rationalized and the developmental state represented a “political syncretism” of clientelism and bureaucratic autonomy (Nunes 2010). By 1952, only 9 percent of the bureaucracy had been chosen on the basis of merit (Lafer 1970). By 1960, this figure had not climbed significantly (Gaetani and Heredia 2002,7). In contrast with agencies charged with matters of economic concern, the most patrimonial and clientelistic agencies were the ones responsible for the provision of public policies like health, education, and public security (Torres 2004). Having won the presidential election in coalition with other parties, Kubitscheck replicated Vargas’ strategy of insulating and rationalizing certain bureaucratic agencies while using others for political patronage particularly the Social Security Institute (Geddes 1990; Sikkink 1991; Nunes 2010).

Among his democratic peers, his administration achieved the greatest level of rationalization (Lafer 1970, 85) and this initial bedrock would allow the military to pursue developmental policy in the late 1960s and 1970s. After Kubitscheck’s term, his democratic predecessors failed to demonstrate a coherent developmentalist strategy or push for greater rationalization in the bureaucracy. Severe economic turbulence and

inflation reduced the state's capacity to actively intervene in the economy. Furthermore, fearing a Cuban-style revolution in Brazil, the industrial economic elites would actively undermine the leftist administration of João Goulart (1961-4) (Payne 1993; Bresser-Pereira 2007).

In this initial experience with developmentalism, there was a clear bureaucratic dualism, which impeded the full implementation of developmental policy. While attempts were made to insulate and rationalize certain agencies that coordinated economic policy within the bureaucracy, the overall system was still highly politicized (Bresser Pereira 2007). Particularly when presidents faced less support (ex. Dutra, Goulart), they leaned heavily on political appointments as a way to reverse their falling political fortunes. Geddes writes, "with the return of democracy, the electoral benefits of exchanging insularity for political support were too tempting to resist" (1990, 225). In the end, the patronage was highly detrimental to the rationalization of the bureaucracy and even the most efficient agencies were not immune once a developmentalist president left office. In particular, several scholars point to the Goulart administration as a nadir that left places like Petrobras and BNDE with a sharp decline in morale and performance (Graham 1968; Geddes 1990). Ministries, particularly Labor, with little history of rationalization became cesspools of corruption and clientelism (Graham 1968; Bresser Pereira 2007).

Military Dictatorship (1964-84): The Institutionalization of Developmentalism

Compared with other cases of the Southern Cone in the 1960s and 1970s, Brazil endured the longest stint of military rule and served as the first bureaucratic authoritarian example to its neighbors (Stepan 1973; O'Donnell 1988; Burns 1993; Dominguez 1994). The basic premise of the bureaucratic authoritarian state was the de-politicization of the

political arena, monopolization of political power by the armed forces, and the rationalization of public policy using a technocratic bureaucracy. In chapter four, I will explore the relationship between the military and civil society. Subsequently, I will devote greater attention to the military's developmental policies and their relationship with the bureaucracy in this chapter.

After the chaotic political and economic instability between 1960-4, the rise of the military regime signaled a return to long-term developmental policy. While claiming they could manage the economy better than squabbling civilian politicians, the generals still opted for a developmentalist strategy not entirely dissimilar from their democratic predecessors. Albeit, the military claimed their policy was apolitical and therefore superior to the democratic period (Alves 1985,108).[11] Technocrats within the regime boasted the authoritarian nature of the administration facilitated tackling the unpopular economic issues traditional politicians had shirked, particularly with regards to inflation control (Skidmore 1973).

Much like Vargas, the military arrived in power and found state capacity too weak to meet the military's needs. Brazil could not conduct a "total war" or adequately defend its borders and suppress citizen revolts. More importantly, the generals found Brazil overly dependent on imported war materiel and lacking the necessary levels of industrialization or technological capacity to produce their own weapons (Dávila 2013, 21). In order to overcome these shortcomings, the military concluded the state needed an active industrial policy to encourage national development. Furthermore, several of the

[11] Schneider (1991) disputes the assertion policies were "apolitical" and sees many ministerial appointments demonstrating a distinct political logic.

leading military figures in the coup already had experience working with public-run companies and had been socialized to a developmentalist perspective (Dávila 2013,23).

Long-term development strategies were planned and elaborated in documents like the first and second National Development Plans (1971/ 1974).[12] Sympathetic relations with the United States facilitated multilateral aid from the World Bank, International Monetary Fund, and the Inter-American Development Bank providing temporary relief to public finances.[13] After 1967, the military government ramped up public spending, accounting for roughly 22.5 percent of GDP.[14] ISI policies were reinvigorated, export taxes were rescinded, and subsidies were generously extended (Baer 2001). SUDENE, whose mission now included the North, expanded tax incentives to investors. The BNDE increased lending and extended its lending practices to include financing for private industry (Dávila 2013). Furthermore, the military embarked on a concerted effort to build large-scale infrastructure works like the Trans-Amazonian Highway, Itaipu and Tucuruí dams and the Ferrovia de Aço with hopes these projects would spur greater territorial integration and economic expansion. In order to encourage this economic expansion, the military built stronger political linkages with the industrial elites (Payne 1993; Bresser-Pereira 1999).

The result was the Brazilian miracle where the economy experienced explosive growth rates. Between 1968 and 1973, the Brazilian economy expanded at an annual rate

[12] These plans, were legally required along with annual budgets according to the Decree 200 (1967), Article 7, which will be explained in greater detail below.
[13] While multilateral institutions shunned Goulart, in 1959, Kubitschek was denied a $300 million dollar loan from the United States government funding until he implemented an IMF austerity plan. Seeing the austerity as economically damaging and politically untenable, Kubitschek broke off negotiations with the IMF.
[14] Baer estimates in 1974, state enterprises controlled 74 percent of the combined assets of the 100 largest companies. Moreover, state banks were responsible for 56 percent of total deposits and 65 percent of total loans to the private sector (2001, 77).

of 11.3 percent, fueling consumption among middle and upper class Brazilians. Industry expanded at 12.6 percent annually. At the same time, inequality and poverty increased substantially among the lower class (Baer 2001; Dávila 2013).

Given the authoritarian nature of the military regime, in essence, the bureaucracy became the "chief articulator and aggregator of demands" (Daland 1972, 1). While policymaking power was centralized at the federal level, power was decentralized to insulated technocratic agencies, particularly the MF, Mines and Energy (MME), and Planning (MPOG) and bureaucratic autonomy returned (Wahrlich 1979; Bresser-Pereira 2007).[15] In particular, the MPOG and the MF became epicenters of developmental policy. The Institute of Applied Economic Research (IPEA) was founded to produce technical research the government could use for policy and program design. In keeping with developmentalist principles, state-sponsored projects were selected with rationalized criteria and developed by a meritocratic bureaucracy.

Immediately after the coup, the military purged the civil service.[16] The first institutional act (AI-1) permitted the government to fire any public servant considered dishonest or "against national security". While this understanding was rather vague and arbitrary, in future bureaucratic appointments, technical expertise was supposed to be the chief determinant. During the military period, it is worth noting 76 out of 90 appointed ministers came from civilian backgrounds (Pion-Berlin 2011, 8). Salaries were improved and promotion was made contingent on merit. At this point, the vast majority of bureaucrats working in important economic agencies were university-trained economists,

[15] The Ministry of Planning has changed names on multiple occasions and today is called the Ministry of Planning, Budget, and Management. For the sake of clarity, I will refer to organization by its contemporary acronym MPOG.

[16] Alves estimates some 1,400 officials were purged in the first year of the Castelo Branco government (1985,41).

engineers, accountants, and administrators (Schneider 1991). Given considerable autonomy, officials in the bureaucracy were instructed to pursue policies that would generate long-term growth. A key reform governing the relationship between politicians and the bureaucracy would be enshrined in Decree Law 200 (1967).

The law included a commitment to government planning, coordination, bureaucratic insulation, and monitoring (Art 6/7) that was "disciplined and hierarchical" (Cardoso Jr 2011, 17). Furthermore, the new law enshrined the concept of direct and indirect administration. Indirect administration included a series of public or semi-public enterprises (empresas públicas autarquias, empresas mistas, fundações públicas) and the number of public enterprises exploded. By 1976, there were 571 different public agencies or institutions under the government's control with 60 percent of the total created in the previous decade (Torres 2004,156). The differentiation between public enterprises was intended to promote greater autonomy. Ministries became responsible for the policy and the results in their area of expertise (Andrews and Bariani 2010,70). While there were greater provisions for autonomy in relation to hiring, most of these agencies chose to bypass competitive exams and relied on personalistic qualities (Bresser-Pereira 2007). This aspect lead several observers to conclude that while bureaucratic hiring was less politicized, it did not necessarily produce more competent or rationalized bureaucrats (Daland 1978; Schneider 1991). Frequently, high levels of bureaucratic turnover between agencies undermined bureaucratic cohesion. Additionally, constant "tinkering" with bureaucratic rules to achieve short-term goals undermined the military's ultimate goal of institutionalizing their administrative framework (Schneider 1991). Yet in comparison

with their democratic predecessors, progress in the degree of bureaucratic autonomy had been significant.

While the developmental state under the military managed to successfully ensure a fair degree of autonomy, Torres argues the bureaucracy was not significantly embedded in society, a topic that will be explored further in chapter four.

> It is important to clarify that the "sanitary isolation" of the bureaucracy was immensely facilitated by the closed nature of the authoritarian regime…The problem was not insulation from corrosive clientelism, but insulation from any type of control from organized society. There was not space for any questioning the need, effectiveness, or cost-benefit analysis of the public policies that determined state priorities. In this context, not the National Congress nor civil society exerted any type of control or influence over public administration and this assured bureaucrats an elevated, almost dictatorial, level of managerial autonomy (Torres 2004,159).

At the same time, scholars found particularly strong relations between the military and industrial elites (Schneider 1991, 2004; Payne 1993; Bresser Pereira 2007). Most industrialists[17] had supported the coup against Goulart as the political and economic instability mounted. By promising to consult with business, protect private property, pursue pro-industrial policies, stabilize the economy, and reduce the political opportunities for the radical left, the military was able to secure the support of the business community (Payne 1993; Schneider 2004). Even Torres concedes though the bureaucracy was not embedded more broadly in civil society, it maintained rather strong relations with business (2004, 159). Cardoso (1975) referred to these relationships as "bureaucratic rings" and insinuated these private interests were capturing the bureaucracy to the detriment of the long-term public

[17] In a survey of Brazilian industrialists, a shocking 44 percent of self-defined leftists supported the military coup against Goulart. For comparison, 79 percent of rightists and 68 percent of centrists supported the military intervention (Payne 1993, 25).

good. In the end, fewer linkages with business would not have improved the long-term health of the developmental state. The fact that some embeddedness was achieved with economic elites was crucial. However, as will be discussed in chapter 4, embeddedness provides a crucial base of legitimacy and broader ties to civil society could help sustain developmentalism over a longer period of time.

While the developmental state under the military suffered a lack of broad embeddedness, the more direct threat to the developmental state once again was economic instability. The oil shocks of 1973 and 1979 hit Brazil hard as the country relied on foreign countries for nearly 80 percent of their supply (Baer 2001, 87). Increasing oil prices led to burgeoning trade deficits and international debt.[18] Coupled with higher interest rates for international loans and shrinking amounts of available credit, inflation returned. Between 1981 and 1984, inflation grew from 106 percent annually to over 197 percent. Growth slowed and the end of the Miracle days was apparent. As the questionable economic expertise of the military regime came into sharper focus, some industrialists started to move against the regime, but many remained indifferent (Payne 1993,62)

Early Democratization (1985-2003): The Collapse of the Developmental Consensus

On returning to democratic governance, the collapsing economic situation rendered any developmental policy impossible. During the "Lost Decade" (1981-1990), Brazil averaged a meager 1.5 percent annual growth rate and 564 percent annual rate of inflation.[19] Reflecting the economic chaos, Brazil utilized six different currencies in an eight-year period of time. Exacerbating the economic instability, the first two presidents,

[18] Current account deficits exploded from roughly $1.6 billion in 1973 to $16.3 billion in 1982 (Baer 2001).
[19] Author's own calculations from Baer 2001.

José Sarney (1985-1990) and Fernando Collor de Mello (1990-2), were non-programmatic politicians. Neither expressed great interest in expansive developmental policy nor implementing bureaucratic reforms to improve the quality of the bureaucracy. Bresser Pereira writes during this period, the state "lost the capacity to coordinate the economic system in a manner complimentary to market forces" and experienced "bureaucratic backsliding" (1999,2-9). Non-programmatic presidents and economic instability conspired to reduce the capacity and coherence of the bureaucracy and the possibility for developmental policy.

In 1986, the DASP disappeared and reemerged a pale reflection of its former self.[20] Even the BNDE became more fragmented (Schneider 1991,37). This general phenomenon occurred despite the fact that many economic policymakers were the same personnel from the military period (Schneider 1991, 230).[21] Keys problems were decreasing financial resources and increasing politicization. As political tides turned against the unpopular presidents, lower level bureaucratic positions were used as a way to curry political support, particularly during Sarney's administration (Geddes 1994; Bresser Pereira 1999, 2007; Andrews and Bariani 2010; Monteiro 2013). Much like 1946, the return to democracy encouraged a return to clientelism. One positive development during Sarney's tenure was the creation of ENAP (Escola Nacional de Administração Pública), which in later years would do much to train and professionalize the next era of high-level bureaucrats.

[20] Secretaria de Administração Públic da Presidência (SEDAP)
[21] Schneider finds 12 of 21 civilian ministers and two-thirds of the top ministerial officials had served in high positions in one or more of the military administrations. This trend was most notable among appointees in the economic bureaucracy (1991, 231).

During Collor's administration, the bureaucracy was stigmatized as marajás (Maharaja) and undermined by a President who failed to articulate a clear solution to bureaucratic inefficiency (Bresser Pereira 1999; Torres 2004; Abrucio 2007).[22] While the bureaucratic tools of the developmental state generally decayed, the return of a programmatic president, Fernando Henrique Cardoso (1995-2002), would resuscitate the long-term fortunes of developmental policy. Ironically, developmentalism would receive a boost from a decade of neoliberal reforms. But after two presidents blindly flailed for a solution to resolve the economic crisis, it became evermore apparent a dramatic reform of the state was necessary (Bresser Perreira 1999).

Throughout the 1980s and 1990s, developmentalism faced an existential crisis due to the poor financial situation of the country. Neoliberalism emerged as a critique of the developmentalist logic. Instead of relying on the state to encourage national development, neoliberals advised political elites to step back and allow the private sector to generate growth. The policy prescriptions included opening trade, deregulation, cutting subsidies, privatizing state companies, and reducing government deficits. Cardoso adopted these policies with largely successful economic, if not social,[23] results (Amman

[22] During his presidential campaign, Collor had frequently criticized the bureaucracy "as antiquated, corrupt, parasitic, and too generously compensated" and defended the idea the bureaucracy was the "source of all society's problems". In office, Collor immediately dismissed 108,000 bureaucrats without "any planning, detailed study, or technical assessment". As corruption charges led to Collor's impeachment, the judiciary declared the public employees were illegally released and they were permitted to return to work. In a biting critique, Torres concludes that Collor's brief tenure in office provoked "widespread disaggregation and psychological damage to public workers" and Collor hypocritically "worked to annihilate bureaucratic capacity while institutionalizing corruption in the Presidential Palace" (2004, 168-171; see also Gaetani and Heredia 2002).

[23] After eight years in power, GDP per capita was still below 1995 levels, levels of inequality were still among the worst in the world, and poverty rates had not significantly changed (CEPAL 2014).

and Baer 2002; Saad Filho 2010). While growth rates were more modest than anticipated, runaway inflation was brought back to single digits by 1996. Trade openness[24] doubled from 14 percent to 28 percent (Burrier Forthcoming). Tariffs and subsidies to companies were reduced. Both the MF and BNDES were charged with developing the terms of the privatization campaign and during Cardoso's tenure, privatizing public companies generated $93 million dollars. Two-thirds of the private participation came in the electricity and telecommunications sectors (BNDES 2002).[25] Even though the privatization campaign reduced the overall size of the federal government, Eaton and Dockovick argue the economic crisis allowed Cardoso to re-centralize power at the federal level that had been devolved during the initial transition to democracy (2004).

Ultimately, Cardoso's neoliberalism may have saved developmentalism by privatizing several inefficient public companies and introducing laws like the Lei de Responsabilidade Fiscal (LFR)[26] which would curb future spending binges and place distinct limits on public spending. Contained within the law is a provision limiting federal expenditures on salaries and pensions to 50 percent of net revenue (Article 19).[27] By mandating fiscal surpluses in the LFR, Cardoso allowed subsequent governments to lower debt levels and build surpluses that could more selectively target projects with greater development potential. At the same time, private investment remained well below the necessary amount, a topic that will be revisited throughout this manuscript.

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[24] (Import +Exports)/GDP
[25] Privatizations in electricity and telecommunications sectors generated $29.7 million and $32.8 million respectively.
[26] Lei Complementar N101 (2000)
[27] Municipalities and States were allowed 60 percent of net revenue to be spent on salaries and pensions.

During the 1990s, Brazil's bureaucracy was comparatively smaller than other Latin American countries in terms of size and cost. Nevertheless, the cost of public sector payroll accounted for nearly 38 percent of total public expenditures, a figure three times higher than the average among developed countries (Gaetani and Heredia 2002,4). To address this situation, Cardoso passed the Reforma Gerencial (1995). A chief architect of the bill, Bresser Perreira described the reforms as installing a managerial bureaucratic style that treated citizens as individual clients much like the private sector. In keeping with the reform, bureaucratic practices were to be driven by results with bonuses awarded to those working on successful projects. There would be greater spaces for private sector involvement (Bresser Perreira 1999, 2007; Gaetani and Heredia 2002; Abrucio 2007). Independent regulatory agencies, particularly ANEEL (electricity) and ANATEL (telecommunications) were created to independently monitor their sectors and reduce potential space for government interference in determining prices (Mueller and Pereira 2002; Correa et al 2006).

While the reforms promoted greater strategic planning, rationalization of public policy, and transparency, the most successful legacy was improvements in the quality of bureaucratic personnel, particularly during his second term (Gaetani and Heredia 2002). ENAP was revitalized and professional civil service careers became clarified. Bureaucrats were increasingly recruited through highly competitive exams (*conscursos*) on the basis of technical skills or on short-term nonpermanent contracts. By 2001, 94 percent of new civil servants had university degrees (Gaetani and Heredia, 6). Greater compensation packages lured talented professionals into careers of public service enhancing prestige (Bresser Pereira 2007), however the LFR did set explicit salary caps

for public employees. Additionally, there would be greater flexibility in firing less productive bureaucrats and punishing inefficiency (Bresser Pereira 1999, 2010).

In the end, while improving the bureaucracy, Cardoso was not a committed developmentalist. Within the reform, there was a commitment to bureaucrats, particularly within MPOG, facilitating the construction of multiyear plans (PPAs) that integrated data and strategies to construct long-term objectives. But at the core, Cardoso was more interested in introducing neoliberal reforms that included privatizations and cuts in government spending. Construction contracts and bids for public works projects were opened to private competition[28] and competitive, public bids were legally required (Lei 8987). Thus, while improving the quality of the developmental state, Cardoso simultaneously reduced the space for it to operate. At the same time, his reforms opened the need for developmentalism. Neoliberalism failed to improve the social situation of most Brazilians, but private interests failed to actively invest in many necessary areas of the economy, particularly in infrastructure.

The Return to Developmentalism (2003-)

As will be demonstrated in greater detail in chapter three and four, the advent of neoliberal policy in Brazil did not alleviate the infrastructural shortcomings of the country and acted as a catalyst for a return to developmentalism. Terrible infrastructure deficits and blackouts acted as severe impediments to future economic growth and the private sector appeared less willing to shoulder the burden. Coupled with pervasive poverty and inequality, the political space was created for a politician advocating a more active state. The election of Brazil's first left-wing President since the return to democracy, Lula da Silva (2003-2010) marked Brazil's return to developmental policy

[28] Previous contracts had been dispersed as state or federal concessions.

and these policies have continued through the administration of his PT successor, Dilma Rousseff (2011-).

In the last decade, the state has re-emerged as an active stimulator of economic development (Sicsú et al 2005; Bresser Pereira 2006, 2011; Pietá 2010; Arbix and Martin 2010; Matthei 2011; Ban 2012; Hochstetler and Montero 2013). According to Ban (2012), the Brazilian state now directly or indirectly owns stake in 20 percent of all firms listed on the Brazilian stock market. 15 of the 100 largest firms are energy related and have been the recipients of substantial government aid through the PAC (Exame 2013). The largest of these companies (and the largest in Latin America) is Petrobras. Although its monopoly ended in 1997, Petrobras has increased in size due to its technological expertise in exploiting ultra-deep water fields. In late 1970s, Petrobras concluded the technology needed to exploit these reserves was not available on the international market and needed to be developed. Over the years, it has honed these skills to become a world leader (Dantas and Bell 2009). Since the arrival of Lula, Petrobras has experienced a dramatic expansion, largely financed through the PAC, building gas pipelines and refineries. Between 2003-2007, Petrobras invested roughly $R5.8 billion annually. By 2013, this figure skyrocketed to R$31.5 billion (Pietá 2010,26). Of the 100 largest companies, an additional 5 companies are involved in construction and mining and have received substantial support from the government: including Vale, Camargo Corrêa, and Odebrecht (Exame 2013).

One sector largely spared from privatization during the Cardoso years, public banks have become vital inducers of growth by expanding credit. BNDES has become a crucial actor in facilitating developmental policy, expanding to include loans to small-

and medium- size enterprises engaged in export activities and financing Brazilian ventures outside the country (Boschi 2008; Arbix and Martin 2010; Font and Randall 2011; Hochstetler and Montero 2013). Having doubled its investment portfolio during Lula's administration, the bank now lends more money then the World Bank and the Inter-American Development Bank combined and is responsible for one-fifth of all private sector finance (Hall and Branford 2012,856; Hochstetler and Montero 2013,10). In particular Petrobras, mining, and other energy related ventures take up a sizable portion of the loans (Hochstetler and Montero 2013). Other state-owned banks the Banco do Brasil and Caixa Economica Federal have also dramatically expanded credit. Since 2008, lending has increased at the BNDES and the Banco do Brasil by over 200 percent. Caixa, which has been largely responsible for providing the necessary credit to recipients of Minha Casa Minha Vida housing has increased loans by over 500 percent (Economist 2013b; see also Pietá 2010). Demonstrating a commitment to poorer Brazilians, 90 percent of Caixa's clients have monthly incomes between R$700 and R$3,000 (Pietá 2010)

Beyond the resurgence in public enterprises, long-term development plans have been articulated in PPAs and executives groups like the ABDI (Agencia Brasileira de Desenvolvimento Industrial) and the CNDI (Conselho Nacional de Desenvolvimento Industrial) have been created to foment strategic projects and industrial plans. The PAC is emblematic of this long-term planning and represents a multiyear, strategy to improve Brazil's infrastructure stock. Much similar to Kubitscheck's Plan de Metas, the program has coalesced strategic projects from previous administrations and united them to form a coherent program to address bottlenecks that inhibit economic expansion. Under the PT,

state intervention has included a Keynesian counter-cyclical element. In the midst of the financial crisis, the government enacted one of the most extensive counter-cyclical policies in Latin America[29] expanding the minimum wage and credit lines offered by public banks. Funding for infrastructure grew dramatically and the government expanded a subsidized housing program called Minha Casa, Minha Vida. In total, counter-cyclical spending summed 2 percent of GDP and increased growth by 7.8 percent in 2010 (CEPAL 2014).

At the same time, the current developmental state has differed from previous developmental cycles. There has been a firm commitment to maintaining the macro-economic stability (Sicsú et al 2005; Bresser Pereira 2006, 2011; Arbix and Martin 2010; Matthei 2011; Ban 2012; Hochstetler and Montero 2013). During his 2002 election campaign Lula published a letter to the Brazilian people promising to maintain fiscal responsibility and the majority of Cardoso's reforms. In office, the PT officials have respected the independence of the Central Bank, maintained a floating exchange rate, levels of trade openness, and reduced overall levels of public debt. In particular, the state has placed a greater emphasis on the competitiveness of the firms receiving aid (Ban 2012; Hochstetler and Montero 2013). As Ban writes, "the goal is using an open economic model complemented with an industrial policy that increases the share of medium and high value added products and services…so that these firms can compete internationally" (2012,4). Despite the emphasis on macroeconomic stability, the leftist PT has also made an effort to alleviate poverty, reduce inequality, and encourage inclusionary development (Riesco 2007; Arbix and Martin 2010). Conditional cash transfers like Bolsa Familia and other social programs have increased social spending

[29] Only Argentina, Chile, and Paraguay ran more vigorous counter-cyclical campaign.

from 22 percent to 27 percent of gross domestic product (Burrier Forthcoming). Since 2005, successive increases have allowed minimum wages to recuperate their real value and expand domestic consumption (Ban 2012).

Driving these developmental policies have been bureaucrats in the MF, the MPOG, and the MME. The number of civil servants working at these ministries has grown by at least 15 percent and the MF and the MPOG are the largest ministries in the federal government after health and education (MPOG 2014). In the opposition, Lula had opposed Cardoso's Reforma Gerencial in Congress. Nevertheless, in the presidency, he largely continued Cardoso's managerial type reforms. Currently under 17 percent, salaries have continued to shrink as an overall percentage of government spending (MPOG 2014). An "aggressive" policy of mandating public examinations has greatly improved bureaucratic capacity and while "hiring personnel (outside public examinations) can be framed legally in various ways, public examinations have eliminated a great deal of the clientelism in the civil service" (Vaitsman 2013, 22,41). Abrucio recommends the reduction of political appointments, which he estimates around 20,000 positions (2007,80), but D'Araújo (2007) notes career bureaucrats occupy the vast majority of these posts. Between 2003 and 2010, over 200,000 new bureaucrats were admitted into the civil service through public examinations (Vaitsman et al 2013, 42). According to one study, during the Lula administration, 97 percent of the new bureaucrats had university degrees and over 50 percent had some type of graduate degree (D'Araújo 2007).

For the first time, the increasing professionalization of the bureaucracy included ministries involved in key social policies including Bolsa Familia, Social Security

Reform, and the Ministry of Education (Bresser Pereira 2010; Vaitsman et al 2013). These social programs formed a critical component of the PT's political campaigns and da Silva needed a capable bureaucracy to assure their proper implementation. Particularly in the aforementioned areas, "it is indisputable that public resources are being used in an efficient manner and effectively attending to the needs of families that have been socially excluded" (Bresser Pereira 2010, 215). Practices governing auditing and institutions[30] that fight corruption were improved (Abrucio 2007; Vaitsman et al 2013). Dilma has continued to promote greater transparency passing a Lei de Transparência[31] in 2011 that allows citizens to freely petition the government for information.

Furthermore, the PT administrations have introduced new practices that embed bureaucrats and deepen state-civil society ties. Public consultations, public hearings, and popular initiatives are increasingly common (Avritzer 2011; Vaitsman et al 2013). The Conselho de Desenvolvimente Econômico e Social (CDES, Economic and Social Development Council) brings leaders from the private sector, academia, and civil society together to advise the executive branch on public policy. Diniz writes that the CDES is not a corporatist institution, but a legitimate consultative group that advises president "works by consensus and establishes directives for development" (Font and Randall 2011, 44). Abrucio concurs noting, "while the CDES did not actually formulate policy, it still served as good forum to hear suggestions from important economic and social actors while facilitating the coalescence of a group of reform-minded citizens" (2007, 79). In general terms, though scholars have had mixed reviews on the ultimate success of these

30 In particular reforms were undertaken to empower the Contraladoria Gerald a União (CGU), the Tribunal das Contas da União (TCU), and the Ministério Público (Vaitsman et al 2013)

31 Lei 12.527.

efforts to engage the public, they agree these measures have encouraged greater deliberation and public participation in policymaking (Cornwall 2008; Pogrebinschi and Santos 2011; Avritzer 2011; Vaistman et al 2013).

Developmentalism and Democracy

> The dictatorship was, over everything, a school of public administration. The promoters and executors of the revolutionary work understand that the greatest problem facing Brazil is finding (*bom encaminhamento*) the solution to the question of administration.
>
> ~President Getulio Vargas[32]

Illustrated in the case study above, developmental policy has emerged in an array of vastly different economic periods with a wide variation in the partisan orientation of the executive branch. I have underscored how developmental policy frequently accompanies bureaucratic reform, progressively creating greater levels of bureaucratic capacity and rationalization. At the same time, several of the most important bureaucratic reforms occurred in nondemocratic regimes. As Vargas asserts above the dictatorship was a school public administration, but does developmentalism or bureaucratic reform require authoritarianism? More pointedly, does democracy alter the way developmental policy is implemented? In this final section, I note several important aspects of developmentalism that may lead us to question the compatibility of democratic institutions and developmentalism. At the same time, when we consider the Cardoso and da Silva administrations, we can identify concrete instances where bureaucratic reform and developmental policy occurred within democratic contexts.

First, whether we are analyzing developmentalism or the bureaucratic reforms needed to implement this policy, executive interests are a crucial explanatory variable. Simultaneously, these developmental executives are difficult to pigeonhole, exhibiting a

[32] Quoted in Wahrlich 1983, 69.

great deal of individual variation. They have included populists like Vargas, democratically-elected presidents like Kubitschek or da Silva, and nationalist military dictators like Costa e Silva or Médici. Ideologically distinct, these executives prioritized national development and developed long-term strategies with active state intervention in order achieve their political objectives. Furthermore, these presidents empowered bureaucrats in order to make them the key actors formulating and implementing policy. To a large extent, by giving greater autonomy to bureaucrats, the executive sacrificed the policymaking power of the legislative branch. Frequently, legislators (as well as certain executives) viewed the bureaucracy as a place to dispense clientelistic favors. Rationalizing the bureaucracy inherently reduced the presence of clientelism, but it diminished the policymaking power of elected (usually) representatives. Not surprisingly, the legislature has consistently been the largest obstacle to bureaucratic reform (Abrucio 2007, 73). As Schneider writes, “insulation is a highly political process and contingent on the political leadership” (1991, 229). Successful presidents must wield it carefully in order to build bureaucratic capacity. Willis (1995) further notes ultimately, bureaucrats must also secure their own autonomy and independence and not just rely on the good intentions of the executive.

Since the 1930s, modernizing Presidents have enacted bureaucratic reforms that have gradually improved the bureaucratic capacity and quality. While there are periods of decay and neglect, there is tremendous continuity. Each successive administration can choose to build on the reforms of their predecessors in a virtuous cycle that promotes constant improvements and greater levels of rationalization (Sikkink 1991; Willis 1995; Abrucio 2007; Vaitsman 2013). Institutions like DASP may disappear or become less

relevant, but they exert a positive influence that can outlive the institution. Elite bureaucrats may be mobile, but they reappear in different governments and regimes carrying their skills and institutional knowhow (Schneider 1991,220; Martins 1985). In the current time period, the technical skills of bureaucrats have reached a historic high. Additionally, capacity is more fully spread throughout ministries and not solely concentrated in those that concern economic matters. At the same time, greater institutionalization can further magnify the positive effects of successive bureaucratic reforms.

Having explained the institutional framework of the developmental state, it is clear that a developmental state has several characteristics that may not be compatible with democratic governance. For precisely this reason, early scholars (Johnson 1987, 1999, Jenkins 1991; Leftwich 1995) concluded the developmental state entailed some degree of repression and authoritarianism that precluded pluralism or democracy. Historically speaking, for most developmental states, “democracy played a secondary role and it was subordinated to the demands of economic development” (Sikkink 1991, 34). Frequently, Presidents behaved dictatorially in the name of greater economic developments. Some scholars openly agreed political constraints impeded democratic governments from adequately address pressing concerns that would encourage modernization and a bureaucratic authoritarian regime could make the necessary, unsavory political decisions in a more institutionalized fashion (Skidmore 1973; O’Donnell 1979; Oszlak 1986). In the case of Brazil, bureaucratic reform and efficiency was most associated with authoritarian periods of governance when agencies were

insulated from the corrosive influence of politics. The rationalization of policy is necessary and democracy can threaten this rationalization when:

> people's increased democratic demands and the need of an increasingly effective state [blurs] the threshold between the tasks of the bureaucrat and politician. It becomes thinner and thinner until sometimes, there is a complete mix-up of those two functions (Loureiro and Abrucio 1999, 70).

When the state returned to democratic governance in both 1946 and 1985, the state returned to clientelistic allocation of bureaucratic positions. Ultimately, political patronage undermined the coherence and effectiveness of the bureaucracy, but authoritarianism is not a necessary component of developmentalism.

Particularly under the PT, Brazil has demonstrated elected officials can maintain the long-term strategies and rationalized programs amidst a normal electoral calendar. Both da Silva and Rousseff have refrained from inundating the bureaucracy with political appointments and even expanded the technical qualifications of ministries not charged with economic policy concerns. In chapter four, I will further demonstrate the democratic developmental state can also fulfill and respect legal and constitutional limits on its power. At the same time, executive must make important decisions about how to maintain a "winning coalition" that will ensure their political survival (Bueno de Mesquita 2003). In chapter three, I explore this decision in greater detail. To what extent will the executive target voters or other political actors while developing public policy?

Another question emerges with bureaucratic insulation. With executives reducing the role of the legislature and significant policymaking power devolved to autonomous insulated, bureaucrats, how is developmental public policy in any way accountable to citizens? While this autonomy can promote rationalized decisions, it does produce a democratic deficit where policymakers are less responsible to citizens (Melo 2001;

Loureiro et al 2011; Oliveiri 2011). While significant power may be delegated to a technocratic bureaucracy, this does not by definition preclude democratic legal protections or fair and free elections. Despite an emphasis on the technical aspects of policy, bureaucrats must also obey the law and are "obliged to uphold the democratic laws that sustain the political system" (Oliveiri 2011, 1338). As previously mentioned, institutionalized norms and procedures provide one source of greater predictability. However, since bureaucrats should not be completely beholden to political actors, one key way to increase accountability is to increase bureaucratic embeddedness in society. A topic explored in greater detail in chapter four.

Democracy and developmentalism can coexist and improve the other when certain conditions are met. Certain theoretical tensions have been laid out in closing this chapter, but the case study of Brazil provides coherent examples of democratic developmentalism, particularly in the current period. Similarly, a new wave of scholars has accepted that developmentalism and democracy are not antagonistic forces and scholars should no longer assume that developmentalism requires authoritarianism as a necessary condition (White 1998, 2006; Fritz and Mencoal 2007; Sandbrook 2007; Arbix and Martin 2010; Routley 2012; Hochstetler and Montero 2013).

In the next two empirical chapters, I will explore these tensions in greater detail. Chapter three looks at the political calculations of the executive branch as it relates to the PAC. Describing the process of project selection and developing a series of hypotheses, I will proceed to test the extent to which projects reflect rationalized or politicized considerations. Chapter four will explore in greater detail the issue of embeddedness. Looking at two distinct developmental periods (one authoritarian and the other

democratic) and their respective policies on hydroelectric dam construction, we can develop a better understanding of how democracy encourages the bureaucracy to embed itself more fully in society. Furthermore, it highlights how democratic rules, norms, and institutions constrain bureaucratic decisions in a way that increases accountability.

3. Politicized and Rationalized: The Programa de Aceleração do Crescimento (PAC)

> When high roads, bridges, canals, etc. are made, they can be made only where that commerce requires them, and consequently where it is proper to make them. Their expense, their grandeur and magnificence, must be suited to what that commerce can afford to pay. They must be made consequently as it is proper to make them. A magnificent high road cannot be made through a desert country where there is little or no commerce, or merely because it happens to lead to the country villa of the intendant of the province, or to that of some great lord to whom the intendant finds it convenient to make his court.
>
> Adam Smith, *The Wealth of Nations*, (1776, vol. III, pp. 95-96)

Introduction:

Writing in the 18th century, Adam Smith identifies a quandary that puzzles economists and political scientists to this day. Nearly two decades ago after Aschauer (1989) demonstrated that infrastructure investments wield significant explanatory power over economic productivity, scholars continue to argue over the utility of public infrastructure spending. While some investments increase efficiency, build capacity, improve productivity, and lay the foundation for a vibrant and dynamic economy, misplaced funds can create severe distortions in the economy, waste precious public resources, bury the state in unproductive debt, and stall economic development. Frequently, the quality of the investment is linked to the policymaking process. To what extent can we tell if infrastructure investments represent a rationalized developmental strategy or the politicized distribution of pork?

In the introduction, I laid out the severe deficiencies of Brazil's infrastructure: unpaved roads, overwhelmed airports and ports, deteriorating

electrical generators and transmissions lines, inadequate schools and hospitals. All these factors represent a serious roadblock for Brazil's future growth and development. In Chapter 2, I looked at the critical actors within the developmental state, outlining the basic characteristics of the contemporary developmental state. Given current economic stability, Brazil has the financial resources and the programmatic developmental leadership to rebuild after years of failing to invest. As will be explained below, there is also enough political capital for Brazil's leadership to develop an ambitious, long-term infrastructure program. More so than previous years, the world is paying great attention since Brazilian infrastructure projects will facilitate the hosting of the World Cup and Olympic games. An historical opportunity to improve has arrived, but how will Brazil meet these challenges?

In chapter two, I posited that the health of the developmental state rested firmly on the rationalization of public policy. Given the return to developmentalism in Brazil, the question remains: to what extent is public policy rationalized. In this chapter, I empirically answer this question looking at the Programa de Aceleração do Crescimento (PAC, Program of Accelerated Growth) in Brazil. At over 1 trillion dollars, the eight-year program constitutes the largest infrastructure investment in Brazilian history and has included projects in logistics, energy, and social infrastructure. Nevertheless, quantity is no substitute for quality and increased infrastructure expenditures are absolutely meaningless if they are haphazardly thrown at ill-conceived and developed projects.

The chapter starts with important considerations on how infrastructure investments are conceptualized in this manuscript. Next, I provide an overview of the PAC, detailing its history and explaining the bureaucratic process behind the selection of projects. After building the theoretical framework, I proceed to an empirical test of whether the PAC more closely reflects rationalized or politicized public policy, using an original dataset of PAC expenditures in all 5,565 Brazilian municipalities. I find that PAC expenditures reflect a complex mixture of political and economic impulses that mirror the role of bureaucrats and the executive branch in the selection process. To a certain extent, core-voting districts where the president received strong electoral support and states governed by PT-allies receive projects. At the same time, I provide ample evidence that suggests the PAC has prioritized infrastructure investments in the most productive nodes of the Brazilian economy, larger cities with higher levels of human capital and growth rates receive more funding. While this may not reflect the most egalitarian strategy, by targeting these areas, Brazil can efficiently build growth in productive areas of the country and successfully accomplish the stated program objective of "Accelerat(ing) Growth."

What constitutes "infrastructure"?

In an influential review, Gramlich (1994, 1176-77) argues that the literature commonly understands infrastructure to be large, capital-intensive, natural monopolies, like transportation facilities, water and sewage systems, energy, and communications systems. Due to high capital costs and the smaller returns on investments, these sectors have high barriers to entry and frequently

tend to represent natural monopolies for the public sector.[33] More recently, scholars have argued that non-material infrastructure (ex. knowledge networks, communications, education, healthcare, and culture) represents an equally valuable form of infrastructure investment that increases economic productivity (Hall and Jones 1999; Nijkamp 2000; Buhr 2003; Sachs 2005). While material and non-material factors represent a form of "infrastructure," as Gramlich noted (1994, 1177), if one broadens the definition of infrastructure to include human capital, it is increasingly difficult to separate investment spending from consumption.

Fortunately for the researcher, the PAC does not blur the lines between consumption and investment. The program consists of three principal categories: logistics, energy, and social infrastructure,[34] which will be explained in greater detail below. While the PAC includes social infrastructure, it is important to note that the money does not directly fund permanent salaries or programs. PAC expenditures only pay for the construction of the physical infrastructure. Hence, the PAC allocations can actually be considered investments, rather than consumption and avoid Gramlich's principal concern of conceptually stretching the term "infrastructure" to include virtually all government spending.

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[33] Obviously, there are plenty of cases of private ownership within the aforementioned sectors.

[34] One sector of infrastructure not covered by the PAC is telecommunications. Between 1997-2001, the government of Fernando Henrique Cardoso carried out a series of reforms and privatizations to state-run companies like Telebrás that vastly reduced public participation in telecommunications. In contrast with other sectors, the government has left the responsibility for improvements and expansion in the hands of the private sector.

Table 3.1: Infrastructure Investment in Brazil (% of GDP)				
Sector	1971-1980	1981-1989	1990-2000	2001-2006
Electricity	2.13	1.47	0.76	0.63
Telecommunications	0.80	0.43	0.73	0.73
Transport	2.03	1.48	0.63	0.48
Water and Sewage	0.46	0.24	0.15	0.28
Total	5.42	3.62	2.27	2.12
Source: Morgan Stanley (2010)				

The History of the PAC

The PAC is a necessary product of historical circumstances (see Table 3.1 above). Between 1969 and 1984, the government allocated roughly 4 percent of gross domestic product annually for infrastructure with the lion's share funneled towards the electrical and transportation sectors. During this developmental period, the state emerged as the principal agent that designed and implemented large-scale infrastructure projects, drawing heavily on financing from multilateral lending sources. In many cases, price controls reduced private sector interest, but the high startup costs and smaller profit margins inherent to infrastructure meant that private industry was already less attracted to investing in the sector. In order to realize future development and economic growth, successive governments recognized the importance of infrastructure and continued public investment. Between 1960 and 1980, the Federal and State highway network nearly doubled from 75,875 km to over 147,368 km. More impressive, thermo- and hydroelectric energy generation surged from 4,800 MW to over 33,474 MW (Ferreira and Malliagros 2010). In democratic and authoritarian periods alike, the government produced long-term development strategies with infrastructure investments

representing an integral component of the overall plan.[35] Ultimately, the growing dependence on the public sector worked until weak finances, encouraged by crippling levels of foreign debt, curtailed the government's ability to invest in new infrastructure projects.

Due to economic turbulence created by ballooning debt and subsequent hyperinflation, successive governments were compelled to introduce austerity measures and reduce deficits. The budget cuts directly affected infrastructure expenditures. As the current minister of the PAC noted, it was difficult to mobilize support around long-term infrastructure projects in the midst of immediate crisis and infrastructure "was just not a priority" (Muniz 2012). Politically speaking, other matters appeared to have greater urgency. Even when President Fernando Henrique Cardoso (1995-2002) developed two, multiyear development programs with larger infrastructure investment initiatives,[36] officials with intimate knowledge of the programs complained little of the promised money arrived (Muniz 2012; Bruto 2012). Nevertheless, these initial programs acted as the "technical embryo" of the PAC that led bureaucrats to identify important bottlenecks, re-develop long-term plans, and select strategic large-scale projects (Bruto 2012). Looking at Table 2, one can appreciate how infrastructure investments were cut in half and failed to rebound even as the macroeconomic outlook improved in the aughts. After 2002, infrastructure investments on average were still less than investments made in the 1980s.

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[35] In particular, the emphasis on infrastructure investments can be witnessed in Kubitschek's Plan de Metas (1957-1961) or the military's first and second Plano Nacional de Desenvolimento (1972-4; 1975-9).

[36] Brasil em Ação ("Brazil in Action" 1996-99) and Avança Brasil ("Brazil Advances" 2000-3)

While public funding retracted, private funding failed to fill the void and there was little investment interest among private actors. While deregulation and privatization increased opportunity in infrastructure sectors, private companies were more concerned with eliminating waste and reducing costs, not investing in new projects or expanding operations (Bielschowsky 2002). Among investment opportunities, the director of infrastructure at the IPEA[37], a public research foundation, noted that the private sector was only interested in the energy sector due to its comparatively higher returns. In the case of the recently privatized railroads and ports, private companies were more interested in "administering than amplifying"(Campos 2012). This lack of private investment helped usher a return to developmental policy because it became clear the private sector was unable to provide the necessary infrastructure for future economic growth and the government needed to become involved.

After 2002, the Brazilian economy stabilized with surging primary commodity promoting exports and economic expansion. Debt levels were responsibly reduced due to legal obligations that forced governments to produce fiscal surpluses. Nevertheless, as outlined in the introduction, the infrastructure weaknesses resulting from decades of declining investments are a severe constraint on future economic expansion. In terms of infrastructure, the 2007 World Economic Forum Global Competitiveness Report ranked Brazil 78th out of 134 countries. The McKinsey Global Institute finds that nations should have a minimum infrastructure stock value of 70 percent of their GDP. With an estimated value of a 16 percent, Brazil is an extreme laggard (2013, 12-13).

[37] Instituto de Pesquisa Econômica Aplicada (Institute of Applied Economic Research)

Businesses openly fretted about infrastructure bottlenecks throttling future growth and economic expansion. In 2005, the Confederação Nacional da Indústria (National Industry Confederation, CNI), released a "Minimum Agenda on Infrastructure" calling for a large-scale public works program that would build and recuperate crucial logistical infrastructure so that Brazilian industry and agriculture could better compete on the international market. The situation was ripe for a state-initiated developmental response to fix the sorry state of Brazil's infrastructure.

The first elected leftist President in Brazil after the return to democracy, Lula da Silva immediately faced skeptical international and domestic investors. To appease these concerns, Lula's first administration focused on maintaining macroeconomic stability while initiating important social programs like Bolsa Familia.[38] At the same time, having campaigned extensively throughout the country since his 1993-4 "Citizen Caravans," the president himself knew very well the dire state of the nation's infrastructure. During his 2006 re-election campaign, he started advocating for an infrastructure program to fuel economic growth. In his inaugural address after being re-elected, da Silva laid the groundwork for the PAC arguing that, "the Brazilian economy needs to grow, generate employment, and increase income equality, and we know that we need to unlock the state so it can happen " (da Silva 2007). Later in the speech, da Silva

[38] Bolsa Familia is a conditional cash transfer program that target Brazilians families under the poverty line. The program directly transfers $12-45 a month to these families on the condition that their children attend school at least 80 percent of the time and receive proper vaccinations. Having now enrolled over 12 million families, the program has received much acclaim for fighting trans-generational poverty, reducing corruption, and being highly cost effective (roughly 0.5 percent of GDP and 2.5 percent of government spending; see Soares et al 2010).

promised to create a government program specifically designed to encourage growth and reduce regional inequality. Within a month, Lula unveiled the PAC.

According to government documents, the PAC has several stated objectives: promoting growth, augmenting employment, and bettering the living conditions of Brazilians. In order to accomplish these objectives, the PAC was supposed to increase private investment, increase public spending in infrastructure, and remove bureaucratic, administrative, and judicial barriers to growth (Ministerio de Fazenda 2007). By boosting public and private investment, officials believed they would remove logistical impediments, making Brazilian products more competitive and accelerating aggregate growth. For the purposes of this dissertation, I focus on the distribution of public resources, but the PAC includes an array of institutional measures designed to spur planning, facilitate investments, and improve Brazil's infrastructure deficit. At the same time, by emphasizing long term growth and the government as a central actor facilitating the process, the PAC partially fits within the developmental mold described earlier. The crucial bureaucratic component will be explained later in this chapter.

Initially conceived as a four-year program, the PAC was deepened and expanded in 2008 with the onset of the global financial crisis as a way to revitalize flagging aggregate demand using Keynesian counter-cyclical policy

(see Table 3.2 below).[39] The PAC2 extended the program for another four years, expanding investments. Both initiatives consist of three principal categories: logistics, energy, and social infrastructure. Logistical infrastructure represents highways, railways, ports, waterways, and airports. Energy infrastructure includes projects that fund the generation and transmission of electricity, petroleum and natural gas extraction, gas pipelines, refineries, petrochemical facilities, and renewable fuels production (biodiesel and ethanol). In terms of social infrastructure, PAC1 (2007-2010) was restricted to building water reservoirs, extending pipelines, and improving sanitation however, social infrastructure gradually expanded to include housing, urban transportation and a program designed to provide every household with electricity and running water.[40] The PAC2 (2010-14) further broadened the scope of social projects including the construction of new schools, hospitals, sports, and cultural facilities. In keeping with the progressive political ideology of the PT, it is important to note that previous infrastructure programs had not explicitly included these types of social projects. In the conclusion, I will examine social infrastructure projects in greater detail.

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[39] During an economic crisis, when unemployment is high, nations easily succumb to the Paradox of Thrift. While saving is generally healthy for an economy, during a crisis with heightened uncertainty, there tends to be too much savings and this ultimately depreciates income levels. Demand contracts, generating a vicious cycle where investors and consumers continue to save, the economy continues to contract, and unemployment increases. Subsequently, Keynes argued that aggregate demand was ultimately responsible for national macro-economic outcomes. In order to overcome the uncertainty and diminished demand, it is necessary for the government to stimulate the economy through increased public consumption and fiscal deficits. Once the economy returned to normal levels of growth, a government should stop counter-cyclical spending, pay off the accrued debt, and start saving for the next economic contraction.

[40] Água e Luz para Todos (“Water and Electricity for Everyone”)

Table 3.2: Projected PAC Spending by Category		
Axis	PAC 1 (2007-2010) Billions of *Reais*	PAC 2 (2011-2014) Billions of *Reais*
Logistics	232.49	270.08
Energy	1163.80	1263.03
Social Infrastructure	318.23	496.80
Total	1,714.52	2,029.91
Source: Ministerio de Planejamento. *Relatórios Regionais* 2011/2014; author's estimates		

Examining Table 3.2 (above), while earmarks for logistics and social infrastructure expanded between the PAC1 and PAC2, one can appreciate the outsized role of energy investments. Accounting for roughly 68 percent of total investments, a principal objective of the program is expanding energy production to match burgeoning demand. These energy investments, particularly the politics of hydroelectric power, will be analyzed in chapter four. Between 2007 and 2010, the PAC raised public infrastructure investments from 2.9 to 4.7 percent of GDP annually (Minstério de Fazenda 2013,12). Clearly, the PAC represents a serious financial commitment by the federal government and breaks with the paltry infrastructure outlays of the previous two decades.

In order be considered for a PAC project, a municipality submitted an application or *manifestação de interesse* to the relevant ministry.[41] Clear protocol instructions for applications were made available on each ministry's website. The particular ministry analyzed the applications for several months, prioritizing the projects on the extent to which the applications met the basic program requirements, the feasibility of the proposal, the likelihood of securing the appropriate licenses, sources of funding, and cost-benefit[42] analysis (Vianna 2012; Renato 2012; Vale 2012). Choosing from these shortlisted projects, the Comitê Gestor (Director Committee), which is comprised of the ministerial heads of the Ministério da Fazenda (MF, Treasury), Ministerio de Planejamento, Orçamento, e Gestão (MPOG, Planning, Budget, and Management), and the Casa Civil[43] took the ministerial recommendations, chose the final projects, and monitored their progress.

In this fashion, the structure of the PAC selection process mixed political and bureaucratic influences. Throughout the process, bureaucrats were instructed to choose the best projects on technical grounds. Nevertheless, partisan ministers and the Casa Civil ultimately approved the final projects. Generally, ministerial

[41] These include the Ministério da Cidade (MC, Cities), Minas e Energia (MME, Mines & Energy), Transportação (Transportation), Integração Nacional (National Integration), Aviação Civil e Portos (Civil Aviation, and Ports). Some large-scale projects (like hydroelectric dams, nuclear plants, etc) were not proposed by individual municipalities. In these cases, bureaucrats within the aforementioned agencies developed certain studies and projects within a long-term plan. After potential projects were debated and revised within the ministry, they could be proposed as a strategic priority for the ministry and selected for consideration by the Comitê Gestor (Garibe 2012; Bruto 2012).

[42] Ministries established clear cost rubrics for each project and would eliminate projects where costs were excessively inflated (Renato 2012). This represented a clear way in the application process to reduce potential corruption.

[43] The Casa Civil or "Civil House" is the Brazilian phrase for the non-security part of the executive branch.

positions are given to politicians so that the executive can maintain legislative support among the fractured Congress, a phenomenon that will be described in greater detail below. At the moment of choice, these individuals can be logically swayed by the political agenda of the PT executive or their political party. At the same time, they were choosing from the best-elaborated projects, selected by ministries on the basis of their technical merit. By coupling internal project development and monitoring with the political visibility of the Casa Civil, proponents of the PAC hoped to facilitate consistent funding and completion of the selected projects (Bruto 2012).

Given this policymaking framework, there are mixed opinions among politicians and bureaucrats on the technical efficacy of the program. Bureaucrats involved with the project stress its technocratic nature, most claiming that the rules guiding the selection process were too strict for much politicization (Caldas 2012; Garibe 2012; Vale 2012; Bruto 2012; Renato 2012). The comments of Celso Kniijnik, the PAC's Director of Electrical Energy, were typical of the responses from PAC-associated bureaucrats.

> The way things are done has a process. People design projects. Projects are debated. While politics can influence decisions, there are clearly defined criteria. If it doesn't meet standards, it doesn't matter the political stripes of the proponent. For example, the refinery is not placed in an area because the mayor is linked to the PT. The municipality receives the investment because it needs to develop and the project makes sense. If you're a mayor and you want a wind farm, that's great, but do you have wind? You want a hydroelectric dam. What are the characteristics of your river, the technical aspects? It is not the politics as much as the economic, technical aspects of the project that determines who gets funding (2012).

Other officials added that given a general need for infrastructural investment, while the specificities of the PAC may reflect certain political priorities for the

PT, any party in power would have to address the nation's infrastructural deficiencies with some type of large scale public works program (Ramalho 2012; Bruto 2012).

By and large, the bureaucrat's descriptions of the PAC generally match the opinions of the political elite. During field research in Brazil, I interviewed 24 high-level politicians from 14 different parties on the PAC.[44] Most of the interviews were conducted with party leaders within the House of Deputies and included all the major figures of the influential House Commission on Economic Development, Industry, and Commerce (CDEIC).

In general, nearly all politicians were supportive of the PAC and could identify key PAC projects within their districts or states. Among the *petistas* and parties aligned with the PT administrations, support was extremely high. A CDEIC member from the government-aligned Partido do Movimento Democrático Brasileiro (PMDB),[45] Osmar Terra declared,

> The PAC is a great project and strategic plan to improve infrastructure in Brazil and encourage development. The situation was precarious and the PAC addresses these issues and is a program that needs to be executed (2012).

A fellow, historic *peemedebista* and leader of the government bloc in the House, Henrique Eduardo Alves agreed, stating that the program was neither clientelist nor populist, representing the "most technical program possible…with a coherent

[44] Among those interviewed, notable Congressional and Party leaders included: Eduardo Suplicy (PT), Candido Vaccarezza (PT), Henrique Eduard Alves (PMDB), Bruno Araújo (PSDB), Luciana Santos (PCdoB), Inacio Arruda (PCdoB), Chico Alencar (PSOL), José Sarney Filho (PV) Esperidão Amin (PP), Antonio Balhmann (PSB), André Figueiredo (PDT), Cristovam Buarque (PDT), Guilherme Campos (PSD), Luiz Mandetta (DEM), and André Moura (PSC). Interviews were conducted between February and April 2012.

[45]

strategy and transparency". Rejecting the label "populist", another government-aligned deputy from the Partido da República and a CDEIC member, João Maia best summarized the general refrain.

> Governments will use programs for their benefit, but the PAC is a serious program. I would say it is a national program independent of the partisan power in office. The PT gets credit for implementing the program, but I do not know anyone in the opposition who in good conscience can say the PAC is not a good program. They can complain about the speed or marketing, and they are just playing their role as the opposition. None of them believe that projects for housing, sanitation, ports, highways, energy, etc. is something Brazil does not need."

The Former Leader of the House of Deputies (2010-2012) and PT leader, Cândido Vaccarezza, confirmed that there was a consensus among political elites in favor of the PAC. As he corralled votes on important PAC bills, he encountered little legislative resistance (in contrast with other important government programs like Bolsa Familia), even among opposition parties because the need for infrastructural improvements was so great, "legislators could not return home and justify their opposition to constituents" (2012). Within a year, all the important PAC legislation was approved (CGPAC 2007).[46] Furthermore, he hinted at a permanence of PAC- style projects saying, "look at [Jose] Serra,[47] when he was campaigning for the presidency, he campaigned for a larger and better PAC, not scrapping the program" (2012).

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[46] Medidas Provisórias: 340,346, 347, 348, 349, 350, 351,352, and 353. Additional important legislation approved alterations to the licensing law and a commission to look into minimum wage indexing.

[47] José Serra, former governor of São Paulo and a key party leader of the conservative PSDB (Partido da Social Democracia Brasileira, Social Democratic Brazilian Party), was the runner-up to Dilma Rousseff in the 2010 elections.

Interviews with the major opposition figures confirmed Vaccarezza's assertions. While criticizing the PAC for not spending or enacting projects quickly enough, the leader of the opposition bloc in the House, Bruno Araújo noted the program was a "necessary, fundamental" step towards addressing the bad state of infrastructure in the country and that a PSDB-led government would enact a "better" yet similar infrastructure program (2012).[48] While declaring that the program was populist, Partido Social Democrático's (PSD) Guilherme Campos conceded that the PAC had technical merit, although this was an unintentional "sub-product" (2012).

Beyond common complaints of slow implementation or demands for greater financial resources, the only party leaders that expressed deep reservations about the PAC were the environmentalists, Chico Alencar (PSOL, Partido Socialismo e Liberdade) and José Sarney Filho (PV, Partido Verde), and the far right-wing Luiz Mandetta (DEM, Democratas). While recognizing the need for a public infrastructure program, both Alencar and Sarney Filho advocated for smaller hydro-electric dams and a greater emphasis on wind and solar technology within PAC. Opposition leaders like the PSDB's Araújo and the PSD's Campos both criticized the intensive marketing of the program, however CDEIC member Luiz Mandetta from the right wing Democratas was the only opposition figure to offer a clear program alternative.

> All the historic bottlenecks in logistics, ports and highways were not resolved in the PAC1. When they arrived at the so-called PAC2, they gave

[48] According to Araujo (2012), while promising a "more accurate, more efficient, coherent" process, the PSDB program would consist of public funding for strategic infrastructure projects like energy and logistics.

> it a greater social connotation. They started speaking of daycare centers, schools, health clinics, vehicles that realize social policies. Once again, they neglected the infrastructure of economic production and they opted for urban visibility. This decision was a function of electoral concerns instead of tackling the serious issues that would help the country produce more (2012).

Throughout the interview, Mandetta criticized the PAC projects as an electoral ploy with PAC projects being preferentially allocated to political allies of the President going as far as to compare contemporary Brazil to Nazi Germany with an excessively centralized process of decision-making and allocation of financial resources. While the comparison with Nazi Germany is a clear stretch, allegations that the PAC is an electoral, political program have persisted in the public discourse of opposition leaders and certain media outlets.

In order to combat the accusations of electoral politicization, in 2011, President Rousseff transferred the formal ministerial positions associated with coordinating the PAC to the MPOG. With the move to a neutral agency, the program could recuperate its image as a technocratic, rationalized program while benefitting from the ministry's technical expertise in planning, monitoring, and project facilitation (Ramalho 2012; Bruto 2012). Additionally, entering year five, the PAC had institutionalized sufficiently that it could weather the institutional transition. Although by losing the direct link to the Casa Civil, the visibility of the program would be reduced. Despite the changes, talk has started to emerge in the press of a PAC3 that would be launched later this year and focus even more attention on social projects and urban transportation (Fariello et al 2014).

In sum, the PAC is viewed favorably by most observers, but there are sufficient questions in some quarters to justify operationalizing and measuring whether allocations reflect rationalized or politicized factors. In the next section, I will explain in greater detail competing hypotheses about the PAC regarding politicization or rationalization. Subsequent sections test these hypotheses.

Is the PAC Politicized or Rationalized?

While the developmental state rests on the assumption of rationalized public policy, infrastructure investments are often allocated in a fashion that reveals a politicized public policy process, particularly among countries in the global South. Generally among economists, politicization carries a negative connotation with frequent allusions to the proverbial "bridge to nowhere." Yet, it should be noted that distributing public goods for political reasons might increase the long-term stability of government by allowing the executive to build a durable governing coalition. Since several studies have concluded that political stability directly impacts economic performance with greater political stability positively correlated with higher levels of growth (Alesina et al 1992; Aisen and Veiga 2011), it makes sense to move beyond the normative rejection of politicization when considering how distributional politics affect public policy. We should focus our efforts on how politicization is affecting distribution and differentiate it from more technical or economic bases for resource allocation. In constructing a viable political coalition, an executive could distribute public goods towards two key political groups: voters and politicians. I will address voters first.

Voters

Since presidents are elected by the entire nation, they have a large constituency to represent, particularly in a federal system. Since the constituency is too large for private goods, the executive must create public goods like infrastructure projects (Carey 1997; Haggard and McCubbins 2001; Bueno de Mesquita et al. 2003). Particularly in the case of Brazil, executives have an incentive to produce programmatic policy (Alston and Mueller 2003). In this sense, the president has a distinct incentive to offer policies that appeal to voters. But the question remains: which type of voter? Within the literature on distributive politics and voters, there are two competing visions.[49]

Given multiparty competition and limited resources, the first group[50] argues the optimal strategy for risk-averse candidates is to reward districts that contain core electoral supporters. These core supporters represent a long-term political asset that will reliably provide volunteers, financial contributions, and other benefits to the politician. By offering material goods to devotees, candidates can maintain this important base. While targeting core voters is not nefarious, Stokes (2005) raises the issue of perverse accountability where politicians in power may distribute public goods towards core supporters and punish constituents that withdraw or do not provide support. In either case, the core voter theory of public goods distribution follows:

[49] For an extensive review of core versus swing voters, see Cox 2009.
[50] Levitt and Snyder 1995; Ansolabehere and Snyder 2006; Nichter 2008; Cox 2009; Magaloni et al 2013

> *Hypothesis 1: If the executive is rewarding core districts, PAC funds will target municipalities where he or she has previously experienced strong electoral support.*

Led by Linbeck and Weibull (1987), another group of scholars[51] offer a competing perspective on distributive politics and voters. This second camp maintains that instead of targeting core voters, whose support is more or less given, politicians should direct public goods towards swing voters. Given the uncertain nature of contested elections, candidates may feel compelled to lavish their scarce resources on districts that are crucial to winning the overall election. Swing voters can more credibly punish a politician for not providing patronage and thus, can force the candidate's cards. The swing voter hypothesis would lead us to believe the following:

> *Hypothesis 2: If the executive is targeting swing districts, PAC funds will target municipalities where he or she has previously experienced small vote margins and highly competitive elections.*

Other scholars attempting to empirically test these or related hypotheses have obtained mixed results (Schady 2000; Dalhberg and Johansson 2002; Calvo and Murillo 2004; Stokes 2005; Albertus 2012). These studies share a common finding that patronage follows a political logic with resources channeled to certain districts (core or swing). Nevertheless, these same scholars find patronage is not solely explained by a political logic, with non-political criteria (such as poverty) a salient explanatory variable.

Research on recent public spending in Brazi is similarly mixed. Scholars have written extensively on the presence of clientelism (Gay 1998; Mainwaring

[51] Schady 2000; Case 2001; Dalhberg and Johansson 2002; Stokes 2005

1999; Ames 2001; Epstein 2009). While this could potentially support the core voter hypothesis, the aforementioned scholars have not really crafted these arguments in terms of core and swing districts. In a field experiment, Spada and Guimarães (2013) conclude that while politicians will contact any individual voter, they prefer core supporters. Nevertheless, the authors' analysis is limited to voter-representative communications and does not systemically measure patronage politics. Looking at Brazil's well-regarded conditional cash transfer program, Bolsa Familia,[52] scholars have noted that the program has increased support for the governing Partido dos Trabalhadores (PT) (Hunter and Power 2007; Zucco 2011). However, the benefits of the program are universally distributed by objective criteria of poverty, without regard to partisan or electoral factors. Finally, some scholars have gone as far to argue that the PT has broken with core and swing voter models completely by actively targeting a third group: voters in opposition-controlled districts (Van Dyck and Montero 2014). Ultimately, these contradictory findings highlight a policy complexity in Brazil that is not easily reduced to core-swing voter models.

Politicians

Voters and certain municipal districts are crucial to winning elections, but once elections are over, an executive must govern. Rather than orienting all public policy towards voters, an executive may use infrastructure projects as a selective incentive to curry the political favor of important political figures. Within the Brazilian case, the executive could funnel public infrastructure projects towards

[52] Bolsa Familia is a conditional cash transfer program in which families considered under the poverty line are eligible for a monthly stipend provided their children attend school and receive the necessary vaccinations.

three important groups of political actors: national legislators, governors, and municipal-level allies.

Federalism, open-list proportional representation, and high district magnitude conspire to produce a permanently divided and fragmented legislature with 7-10 effective political parties. Legislators tend to be highly individualistic, ideologically inconsistent, and demonstrate weak party loyalty (Mainwaring 1993, Nicolau 1996, Desposato 2006). Progressive political ambition shows that politicians on the national stage desire to continue their political careers at the state and municipal levels (Samuels 2002).[53] During their tenure in national office, legislators focus on sub-national interests. Most frequently, legislators seek pork barrel projects that immediately impact their home districts and further their political ambitions (Ames 1995, 2001). At the same time, this electoral impulse for pork allows the executive to centralize legislative policymaking power in their hands (Alston and Mueller 2005). Therefore, an executive that wants to pass their preferred legislation through Congress can organize support by providing pork to pork-hungry legislators. In this light, PAC investments could be seen as a political strategy by the executive to generate political support in a fractious, divided legislature.

While noting the penchant for sub-national political ambition, several scholars have stressed that federalism and political decentralization in Brazil create powerful governors to the detriment of the national party system and

[53] Some contemporary Brazilian scholars have argued legislative ambition is far more nuanced with legislators not solely demonstrating subnational ambition (Leoni et al 2003) and the relationship between the Brazilian executive and legislative branches is a complex relationship with substantial give and take (Alston and Mueller 2005; Cheibub and Limongi 2011).

legislature (Desposato 2004). Governors are the most powerful sub-national actors and demonstrate significant power in determining the future political fate of ambitious national legislators. Brazilian governors have significant powers to distribute pork at the state level in a way that can reward or punish federal legislators (Abrúcio 1998; Desposato 2004, 2008). They also demonstrate significant control over access to state level positions in the government, facilitate campaigns, and enhance a legislator's political credentials when they cooperate with them. So powerful are governors that deputies have been known to argue over who stands closest to the governor in photos (Desposato 2004, 264). Politically ambitious, governors will want to demonstrate results and large infrastructure projects are immediately recognizable. A savvy federal executive could use infrastructure projects as a way to build strong political ties with powerful sub-national actors. Confirming this account, Deputy Luiz Mandetta (2012) alleged that PAC funds were intentionally funneled towards the gubernatorial allies of the executive.

A final potential sub-national target for politicized PAC investments could be allied mayors and councilors at the municipal level. While not as powerful as federal deputies or governors, municipal-level politicians have enjoyed a wider degree of political power since the 1988 Constitution permitted greater decentralization of political power. Local politicians frequently have a strong, direct link with their constituents and can offer crucial help mobilizing voters during elections. The recent proliferation of more participatory political institutions at the municipal level furthers this influence (Abers 2000; Nylen

2003; Baiocchi et al 2011). Additionally, municipal politicians wield significant powers in zoning, land use legislation, and the provision of social services (Baiocchi et al 2011). Finally, by targeting the municipal level, an executive could sidestep a less sympathetic governor or group of legislators to support allies and build greater party support at the local level.

From the following discussion, it is apparent in the search for a workable governing coalition, a Brazilian executive could effectively target three different political actors (legislators, governors, and mayors) for varying reasons. While targeting any specific group will reveal important political dynamics within the PT-governed Brazil, in any case, targeting political actors represents a politicization of public policy with infrastructure projects being selected on a political basis.

> *Hypothesis 3: If the executive is rewarding allied politicians, PAC funds will target PT- aligned legislators, governors, or municipal political leaders.*

The previous explanations have all rested on the premise that the distribution of public goods, like infrastructure, is explained by political variables. In this situation, bureaucrats are either not sufficiently empowered to make technical decisions or have been politicized themselves. In a developmental state, I have already argued that public policy must emphasize rationalization, not politicization. Consequently, infrastructure projects should reflect a programmatic policy response that is not highly correlated with political variables.

Institutionally speaking, the President may be sufficiently autonomous in developing infrastructure policy that prioritizes rationalization. In Brazil, the

president is endowed with "exceptionally strong proactive and some significant reactive powers" (Mainwaring 1997, 55; Figueiredo and Limongi 1995,2000; Alston and Mueller 2003, 2005; Eaton and Dickovick 2004) and can enact programmatic policy that bypasses fragmented and fractious political actors.[54] Presidents initiate most legislation in Brazil and their proposals are process more rapidly and approved than other types of bills. Recently, scholars have found particularly on the issues of bureaucratic reform and regulatory agencies, Congress has deferred to executive initiatives in these areas (Pereira, Costa, Giovanella 2001; Mueller and Pereira 2002). Within the scope of the PAC, there was clear executive initiative in proposing and publicizing the program. While bureaucrats had been developing strategic projects and long term plans, these potential projects "would remain on paper until they had a political advocate in the Casa Civil" (Bruto 2012). In Lula, the bureaucrats were empowered by "a cheerleader that would support [their] ideas and initiatives" (Ramalho 2012).

As previously mentioned, during his 2006 re-election campaign and his 2007 inaugural address, President Lula da Silva constantly argued for a new government infrastructure program that would increase employment, reduce inequality, and spur growth. After Lula's second term, he was succeeded in the presidency by a fellow PT colleague, Dilma Rousseff, a crucial actor in the Casa Civil during the development and implementation of the PAC. In office, she maintained executive-level support and interest in the program and it continues to

[54] For example some of these formal powers include: line item veto powers over legislation, broad presidential decree power particularly *medidas próvisorias* (temporary measures), exclusive bill initiation rights. This formal power is magnified by the fragmentary nature of the Brazilian legislature which finds it difficult achieve an absolute majority in the jointly assembled Congress.

be a “banner program” within her administration (Bruto 2012). As demonstrated in interviews among Congressional leaders across the political spectrum there was a general consensus that Brazil needed a new infrastructure program. Subsequently, institutional measures that expedited licensing and project selection, prioritized PAC projects, and relaxed tax codes sailed through Congress. In essence, members of Congress have deferred to executive initiative on the PAC. They have not represented a serious obstacle nor made their support for the PAC contingent on receiving projects in their own districts or states (Vaccarezza 2012).

Beyond executive power, the ideological slant of the governing party also makes the party particularly amenable to programmatic developmental policy. While the PT has transformed over the last three decades (Samuels 2004), it has remained an ideologically coherent and disciplined party (Meneguello 1989; Keck 1995; Samuels 1999; Figueira Leal 2005; Hunter 2009). The party still champions the role of the state in spurring economic activity and reducing inequality. While accepting the constraints of a globalized economy, PT leaders have criticized the negative effects of neoliberalism and deregulation and advocated for a more active role in the economy for the state and public enterprises.

Nevertheless, a mere ideological affinity with greater state presence is not the sole indicator of developmental policy. First, substantial power must be accorded to a technocratic bureaucracy with embedded autonomy. Since the Cardoso administration, presidents have increased bureaucratic autonomy and appointed more neutral candidates to head regulatory agencies in a bid to increase

the credibility of public policy (Mueller and Pereira 2002). As Loureiro et. al. (2011, 110) note the Brazilian bureaucracy is not merely a passive observer in implementing policy and it is an active participant in defining and constructing policy. Dahlstrom et. al. (2012) have demonstrated that a meritocratic bureaucracy can reduce corruption and as highlighted in Chapter 2, recent administrations have pursued measures to increase the efficiency and technical skill of the Brazilian bureaucracy (Bresser Perreira 1999). The highest ministerial positions are political appointments and answer to the executive branch; however, their nonpartisan subordinates have received their position through highly competitive entry exams (*concursos*). Salaries and perks have grown. Efforts have been made to expand recruitment of the best and brightest students in Brazilian universities.

These selected bureaucrats had significant control over the selection and prioritization of PAC projects. Throughout the selection process, bureaucrats were instructed to choose the best projects that could most efficiently improve infrastructural deficiencies and generate growth, balancing pros and cons (Viana 2012; Renato 2012). As Marcio Vale, the General Coordinator of Housing within the PAC, stressed repeatedly in an interview “the technical viability of the proposal was the guiding principal in selecting projects” (2012). Politics entered the equation at the end of the process, when cabinet ministers and the Casa Civil approved final project choices. While the ministers and the Casa Civil will likely reflect the political agenda of the PT executive, by the time proposals reached the Casa Civil, they represented the best-elaborated, technical projects.

In most industrial economies, the rationalization of state investment will frequently tend to concentrate resources in particular industrial hubs (Haddad 1999; Evans 2009). In comparison with rural areas, cities represent a natural magnet for capital with larger labor populations, higher levels of education, and higher income (Glaser 2011).[55] In addition, urban areas contain greater economies of scale and agglomeration, which increase their efficiency and attractiveness to capital (Levy 1985, 4-9). Indisputably, all these factors aid long-term economic growth. With higher levels of population density, urban infrastructure projects can be more efficient, impacting more citizens and providing immediate benefits to productive nodes of the national economy. Subsequently, many scholars[56] since Jacobs (1969, 1984) have argued that cities are the critical source of sustained economic growth that ultimately encourage innovation, efficiency, and growth in rural areas.

Table 3.3: Municipal Level Characteristics

Variable	Correlation with Population (*.05)
GDP per capita	.036*
Median Wages	.212*
Illiteracy	-.106*
Human Development	.107*
Businesses per capita	.963*

Source: IBGE *Cidades* 2010. Author's Calculations using pairwise correlations with total population. (n=5,565)

According to the 2010 census by the Instituto Brasileiro de Geografia e Estatístico (IBGE), nearly 90 percent of the Brazilian population is urban and Brazil boasts 17 cities with more than 1 million inhabitants. Among Latin

[55] CEPALSTAT (2014) confirms these trends in Latin America.
[56] Levy 1985; Warren 1998; Glaser 2011

American countries, Brazil ranks 5th in terms of urbanization.[57] Most importantly, the aforementioned urban characteristics hold. As municipal population increases, levels of education, median wages, literacy, human development, and businesses per capita are all positively and significantly correlated (Table 3.3 above). The Ministério das Cidades (MC, Ministry of Cities), which focuses its efforts on cities with more than 50,000 inhabitants and metropolitan areas,[58] took particular care to contact actors at the municipal level and make them aware of the various PAC programs available to their municipality (Renato 2012). At the same time, Brazilian officials posited urban areas had the greatest infrastructural deficiencies, especially with regards to social infrastructure like housing and sanitation. Given high population concentrations, projects in urban areas could immediately impact a greater number of people and actions in these municipalities were prioritized (Caldas 2012). Given the PAC's principal objective of national development, a rationalized development strategy could reasonably target larger, better-educated cities with the tacit assumption that "spread effects" will promote trickle-down development from urban to rural areas. Hence, the PAC prioritized investments in areas with larger agglomerations of people (Renato 2012).[59]

> *Hypothesis 4: If the PAC represents a rationalized developmental strategy, PAC funds will target large municipalities with high levels of human development.*

[57] Brazil trails Venezuela, Argentina, Uruguay, and Chile.
[58] In sum, this accounts for roughly 609 municipalities (IBGE 2010).
[59] By targeting large cities, one could argue PAC spending reflects another voter-oriented strategy, instead of an economic strategy. In this account, PAC funds are funneled towards the largest number of potential voters. Electorate and population are significantly correlated (.998). Inherently, large cities have more voters and infrastructure projects in these high-density areas will have the greatest aggregate impact in economic terms. I will discuss this issue after presenting the results.

Having explored the potential causal mechanisms by which public infrastructure investments in Brazil would be politicized or rationalized, I will now test these hypotheses on an original dataset of the largest infrastructure program in recent Brazilian history.

Data Analysis:

In order to test my hypotheses, I ran various statistical models of the distribution of PAC funding for all 5,565 Brazilian municipalities. My dependent variable, total PAC funds, represents all PAC expenditures made at the municipal level, by municipality, in Brazilian *reais*. On request, this data was generously furnished by the MPOG and includes expenditures in energy, logistics, and social infrastructure. In the model below, I use both the aggregate total of all PAC funding at the municipal level and PAC spending per capita, which divides all municipal PAC spending by population.

PAC investments at the municipal level represent roughly 40 percent of total PAC expenditures. The remaining funds have gone to inter-municipal or inter-state projects and the ministry could not further disaggregate these projects at the municipal level. If municipal-level investments are a smaller part of the total sample of PAC projects, most social infrastructure projects occur at the municipal levels and are proposed by the individual municipality. Generally, higher levels of the federal government are responsible for developing and proposing more technical energy and logistical projects. Therefore, if any PAC investments are politicized, it is most likely the social projects because municipalities themselves were largely responsible for proposing projects. Given

the data constraints the bias towards politicization should increase our confidence in the rationalization of policy if technical factors are still important explanatory variables. Of the total number of municipalities, 525 cases (9.43 percent of the total number of cases) received no project funding, creating a highly dispersed dependent variable.[60] In the analysis that follows, I look first at the characteristics of municipalities that did not receive municipal-level projects, before proceeding to analyze the determinants of which municipalities did receive municipal-level funding.

For the independent variables, data was collected from several different sources including the Instituto Brasileiro de Geografia e Estatística (IBGE) and the Tribunal Supremo Eleitoral (TSE). For a more detailed description, a full table describing the variables, sources, and correlation matrix is in the Appendix. My independent variables represent a mixture of economic and political data that test whether PAC funding is correlated with either developmental or political strategies. Political variables include 5 variables: PT councilor, PT-allied mayor, PT legislator, PT-allied governor, Core District, and Swing District. PT councilor is the percentage of municipal councilors that belonged to the PT party. PT mayor is a dummy variable that is coded as one if the mayor was the official candidate of the PT regardless whether they formally belonged to party or to another PT-aligned party. While belonging to different parties, some mayors formed an electoral alliance with the PT and received its official support in their election

[60] Unfortunately, Ministry officials could neither confirm nor deny that municipalities that had not received funding also did not submit an application, however multiple interviews suggested that these municipalities did not submit or turned in a woefully incomplete application (Vale 2012; Renato 2012).

campaign.[61] Due to Brazil's use of a mixed member electoral system, legislative districts traverse municipal boundaries and PT legislator represents the percent of PT legislators at the state level. PT governor is a dichotomous variable that codes whether the governor was the official PT candidate. Once again, the governor could be the officially endorsed candidate of the PT during the election and belong to a different party. Core Voter is a dichotomous variable that is coded one if the 2006 vote margin was greater than nine.[62] Swing Voter is a dichotomous variable that is coded one if the 2006 vote margin was between positive or negative nine percent. It is important to note that none of the aforementioned political variables are strongly correlated with each other.[63] If the PAC is politicized, one would expect some of the aforementioned variables to be significantly and positively correlated with PAC spending as they are clearly political, not economic criteria.

A developmental PAC can be influenced by a variety of considerations, but at the core, it should reflect an economic rationality. In order to maximize efficiency, I expect that funds will target larger, wealthier municipalities.

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[61]Further analysis demonstrated little substantive differences in the results if the candidate was a PT member or a member of another political party in coalition with the PT.

[62]Vote margins are usually coded as swing if the vote margin is less than ten. In Brazil, there is extreme variation with a mean of 23 and min/max values (-70-94). My coding of vote margins follows the literature, but it is a conservative estimate of "core" and should increase confidence in the results.

[63]Pairwise Correlations

	CD	PTC	PTAM	PTL	PTAG
Core District (CD)	1.00				
PT-Councilor (PTC)	-0.12	1.00			
PT-Allied Mayor (PTAM)	-0.01	-0.00	1.00		
PT Legislator (PTL)	-0.35	0.16	-0.01	1.00	
PT-Allied Gov (PTAG)	0.25	-0.03	-0.00	0.24	1.00

Population and GDP per capita are municipal-level data available from the IBGE. Since GDP per capita is highly correlated in Brazil with levels of human development, poverty, and illiteracy, I use GDP per capita as a proxy variable for levels of human capital. I also include a variable that measures inequality at the municipal level. To capture local economic factors, I constructed a variable that measured the average municipal growth rates from 2000 to 2006. Dynamic, growing municipalities would represent a strong target for PAC funding and investments in these local economies could maximize returns with continued solid growth. In order to avoid problems of heteroskedasticity, all economic variables have been logged. I also include variables for the percent of local GDP that is derived from the agricultural or industrial sectors in order to determine the extent to which the PAC preferences one sector over the other. In Brazil, industry is not highly correlated with population size (.04)[64] and these two variables capture important characteristics of the economy. Since agriculture demonstrated no significant relationship with PAC spending, I only present the results of industry.

Particularly, for the PAC there may be non-political and non-economic explanations for why municipalities submit applications for PAC funding. Scholars have alleged that professionalization of the bureaucracy has not been homogenous at the municipal level (Abrucio 2007; Osterkatz 2011; Vaitsman et al 2013). In order to control for these factors, I use a host of independent variables collected in IBGE's Survey of Basic Municipal Information (MUNIC, 2005).

[64]The unexpected relationship reflects a coding decision by the national statistical institute to include energy generation as industry. Thus, municipalities with hydroelectric dams or other sources of energy generation tend to be the municipalities with the highest percent of local GDP as industry even though they may represent smaller, more rural municipalities.

These variables include the year the municipality was founded, the number of active public functionaries, the presence of a written annual municipal plan or planning director, and if the municipality had a department of planning or public works. All these variables could impact a municipality's ability to plan and apply for federal funding and these variables are relatively good proxy variables for administrative capacity. A relatively new municipality with little bureaucratic capacity that lacked these characteristics would be unable to submit coherent, feasible project proposals in a timely fashion to the relevant authorities. Of these various control variables, the only one with a consistent, significant impact was the age of the municipality. Therefore, this variable is formally presented in the model below. If municipal age is a significant variable, it demonstrates that PAC funding is contingent less on political or economic factors, but is actually explained by municipal administrative capacity. Additionally, I created a dichotomous variable called Ministry of Cities (MC). If cities are over 50,000 inhabitants, they fall under the jurisdiction of the MC and according to interviews, the ministry worked with larger municipalities in the project development process (Renato 2012).

In table 3.4 (below), I present the results from the first data analysis. In these four models, I compare the 525 municipalities that did not receive funding with all municipalities to determine whether there is a systematic pattern explaining non-funding. For municipalities that did not receive funding, I created a dichotomous variable and coded observations one if the municipality did not receive any project funding. Since I am using a dichotomized dependent variable,

I tested my hypotheses using a Logit model estimated by maximum likelihood. Instead of presenting coefficients, which should not be interpreted, I report the odds ratios, which show the odds of one municipality receiving PAC funding relative to the odds of not being funded. Given a binary dependent variable, there is no need to test for hetroskedasticity as there are only two observable outcomes. A linktest for multicollinearity was negative as the linear predicted value squared was not statistically significant (.841) while the linear predicted value is significant (.085), demonstrating the model is correctly specified.

Table 3.4: Logistic Regression for PAC Non-Funding				
VARIABLES	(1) Political Model	(2) Full Model	(3) Full Model (No GINI)	(4) Full Model (Ministry of Cities)
Population	---	0.327**	0.349**	---
		(0.024)	(0.023)	
GDP per Capita	---	1.305**	1.283*	1.545**
		(0.127)	(0.123)	(0.136)
GINI	---	4.24*	---	0.007**
		(2.804)		(0.001)
Average Growth	---	0.764	0.758	0.702**
		(0.107)	(0.104)	(0.095)
% Industry	---	4.27*	4.17*	0.849
		(1.818)	(1.76)	(0.345)
% PT Councilors	0.189**	0.516	0.508	0.474
	(0.096)	(0.263)	(0.257)	(0.237)
PT-Allied Mayor	1.002	0.984	0.971	1.001
	(0.104)	(0.110)	(0.104)	(0.105)
% PT Legislator	4.514**	1.011	1.020	1.231
	(0.825)	(0.206)	(0.208)	(0.105)
PT-Allied Governor	0.171**	0.468**	0.444**	0.318**
	(0.039)	(0.110)	(0.104)	(0.073)
Core District	0.824	0.649**	0.650**	0.731*
	(0.129)	(0.086)	(0.084)	(0.093)
Swing District	0.980	0.843	0.819	1.147
	(0.678)	(0.116)	(0.111)	(0.112)
Municipal Age	---	0.621**	0.659**	0.864
		(0.171)	(0.167)	(0.112)
Ministry of Cities	---	---	---	0.028**
				(0.020)
Constant	2.224**	328.393**	51.922**	0.798*
	(0.678)	(492.33)	(60.518)	(0.873)
Observations	5,300	5,499	5552	5,499
	.0602	.1407	.1401	.0817
Odds ratios are presented with standard errors in parentheses: ** p<0.01, * p<0.05				

Several variables have a consistent impact throughout the four models. Less populated, newer municipalities are the least likely to receive PAC funding. Larger (67 percent) municipalities have much greater odds at receiving funding. A ttest shows the mean population size of municipalities receiving project funding is 37,000 people, roughly 30,000 more inhabitants than municipalities that do not receive any projects. Newer municipalities have 46 percent fewer odds at securing PAC allocations. A ttest shows the mean for receiving a project is 52, while the mean age of municipalities not receiving a project is 47. Most tellingly, these municipalities have 97 percent less odds with receiving help from the MC. Contrary to my initial expectations, municipalities with higher levels of GDP per capita are not more likely to receive project funding. This result could demonstrate less demand for new infrastructure projects in these municipalities. However, further investigation shows that the median municipal age is low in the relatively prosperous South (44.26 years).[65] In spite of greater economic affluence, these municipalities appear to have less bureaucratic capacity. With frequent contradictory results inequality does not provide a clear influence on the dependent variable. On the political side, areas with core voters and PT-allied governors were also more likely to receive funding. The odds ratio is particularly stronger for states with a PT-allied governor (54 percent) than core voting districts (46 percent).

[65] By comparison, the median municipal ages of other regions are: North (41.13), Northeast (52.38), Center-West (44.45), and Southeast (58.11).

Table 3.5: Multivariate Regression of PAC Funding					
VARIABLES	(1) Political Spending Per Capita	(2) Total PAC Spending	(3) Total PAC Spending	(4) PAC Spending Per Capita	(5) PAC Spending Per Capita
Population	---	1.201**	---	0.223**	---
		(0.027)		(0.029)	
GDP per Capita	---	0.384**	0.288**	0.397**	0.332**
		(0.056)	(0.057)	(0.060)	(0.060)
GINI	---	-0.046	1.175	0.0924	0.452
		(0.840)	(0.804)	(0.341)	(0.328)
Average Growth	---	0.209**	0.264**	0.205**	0.257**
		(0.072)	(0.073)	(0.076)	(0.076)
% Industry	---	-0.336	-0.010	-0.197	-0.110
		(0.267)	(0.259)	(0.277)	(0.265)
%PT Councilors	0.725**	0.472	0.465	0.525*	0.505*
	(0.251)	(0.243)	(0.240)	(0.246)	(0.245)
PT-Allied Mayor	0.0907	0.085	0.089	0.101	0.098
	(0.053)	(0.051)	(0.050)	(0.052)	(0.052)
% PT Deputies	0.005	.686	-0.126*	-0.153	-0.177*
	(0.077)	(0.238)	(0.062)	(0.080)	(0.078)
PT-Allied Governor	-0.0287	0.108	0.484**	0.174*	0.205**
	(0.065)	(0.062)	(0.075)	(0.073)	(0.072)
Core District	0.291**	0.515**	0.154**	0.497**	0.461**
	(0.070)	(0.076)	(0.081)	(0.080)	(0.079)
Swing District	0.114	0.145	-0.048	0.151	0.143
	(0.082)	(0.082)	(0.051)	(0.0832)	(0.083)
Municipal Age	---	0.119**	1.01**	0.099**	0.0580*
		(0.050)	(0.086)	(0.055)	(0.052)
Ministry of Cities	---	---	4.855**	---	1.015**
			(0.036)		(0.087)
Constant	4.745**	-0.825*	0.933**	-1.448**	1.155**
	(0.147)	(0.594)	(0.613)	(0.812)	(0.757)
Observations	5,300	5,552	5,499	5,244	5,244
R-squared	0.425	0.872	0.449	0.446	0.455
Control Variable: No project not reported. For the regressions, robust standard errors are in the parentheses ** p<0.01, * p<0.05					

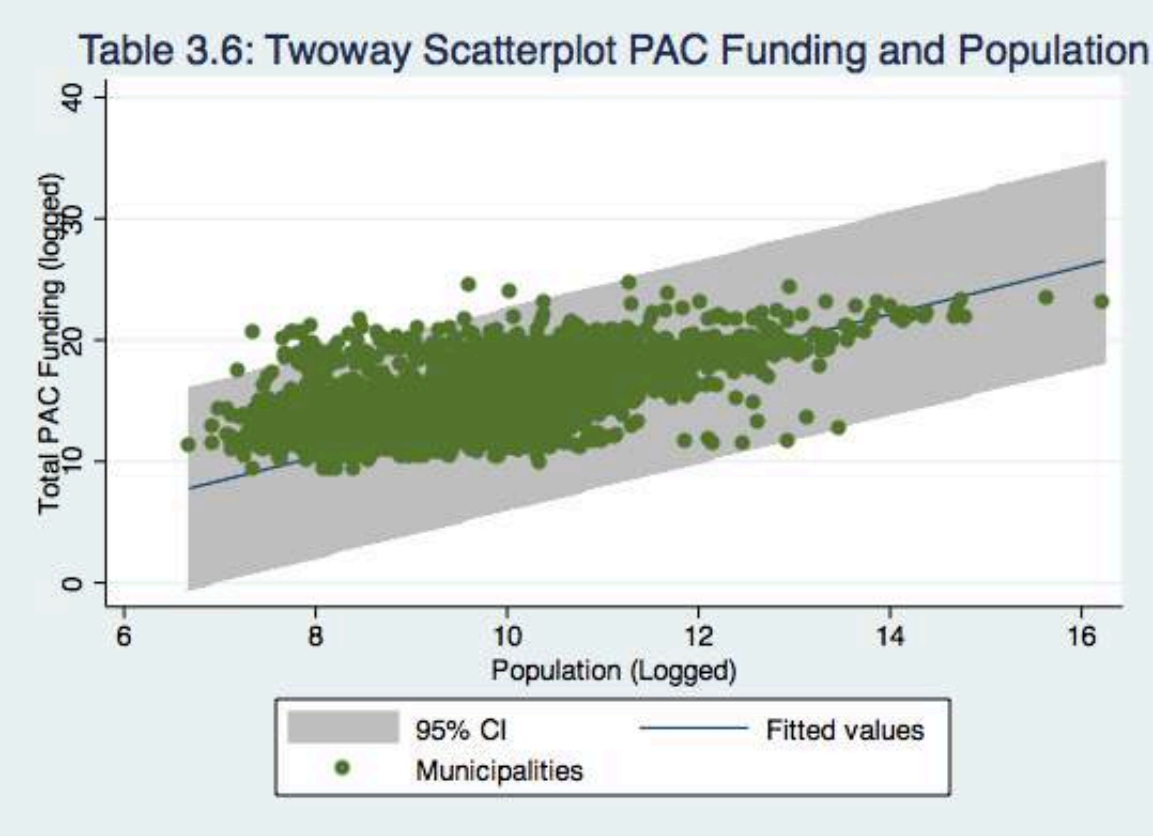
After explicitly testing the determinants of no PAC funding, I tested my hypotheses on municipalities that did receive PAC funding (Table 3.5, Models 1-5).[66] All multivariate regressions used robust standard errors. Following regression output, Breusch-Pagan test for heteroskedasticity (p>. 05) and variance inflation factor test for multi-collinearity for each model yielded negative results (VIF>10).

In my first regression, I solely analyze the political variables on municipal PAC spending per capita. Incidentally, the results for this model are the same if the dependent variable is switched to total municipal PAC spending. Core voting districts and PT councilors have a positive relationship with per capita PAC funding. While a PT-allied mayor, PT legislators, PT-allied governor, and swing voting districts have no significant impact. By initially, looking at political variables, we can develop a general understanding of the relationship between the PAC and political factors. As I have pointed throughout this text, the PAC likely reflects additional considerations that are not political. The remaining models (2-5) include economic factors and municipal age. In general, it is clear that while several political factors continue to play a role in PAC funding, there are large non-political factors at work.

In the full models, I find that several variables consistently matter when determining the presence of a PAC project or the extent of PAC funding. The consistency of these relationships across various models should add to our overall

[66] The control variable for those municipalities received no project remained in the model.

confidence in the validity of the results. In terms of political factors, PT-allied governors and core voting districts are the strongest political predictors of PAC spending. Of the significant non-political variables, the population size, wealth, average growth rates, and the age of the municipality are strong predictors of PAC spending. Whether the dependent variable is total municipal funds or program spending per capita, these variables yield significant predictive capacity. Specifically, larger, wealthier, economically dynamic, and older municipalities receive more PAC projects and funding. How do we understand these findings within theoretical framework proposed at the start of this article?

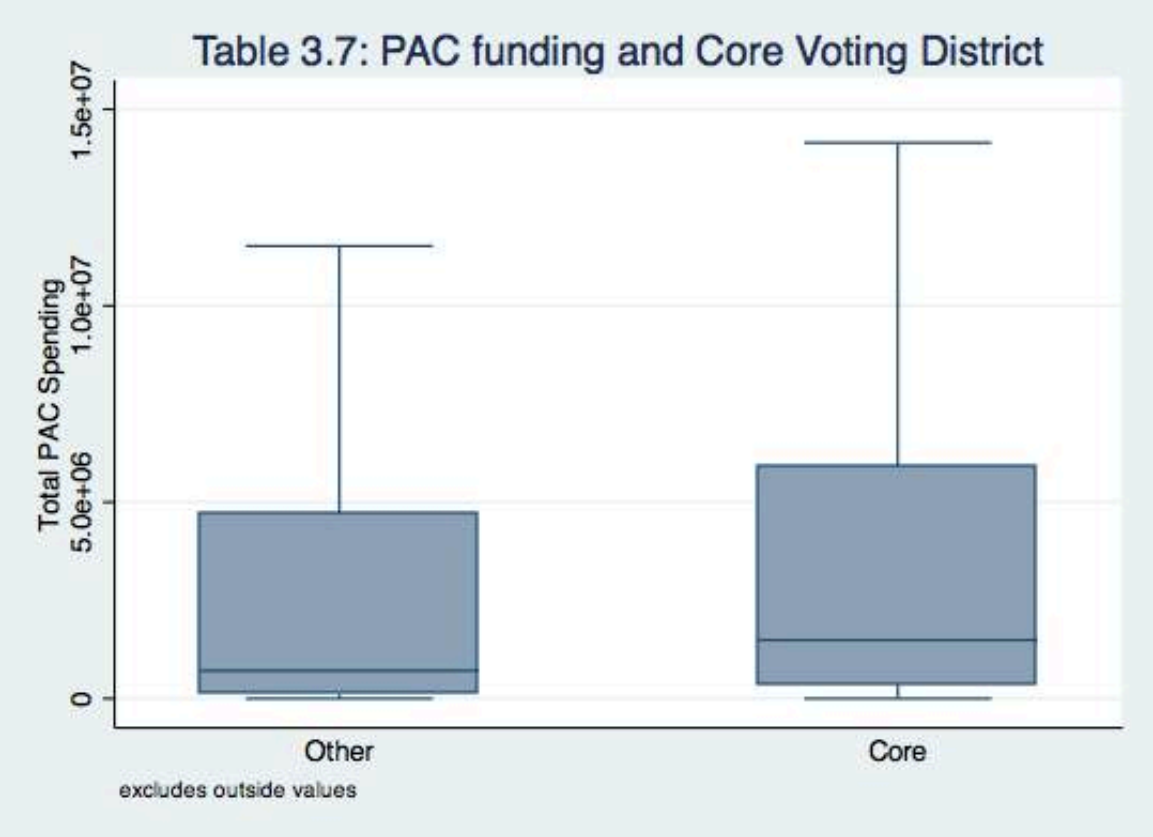


While one cannot say that the PAC is an entirely developmental program (the role of governors and core voting do play a role), it is exceedingly difficult to claim the program is just pork barrel politics or clientelism. Generally, the trend in the data is increasing the number of PT legislators actually decreases PAC funding. Looking at PAC funding, there is clear evidence the program represents a rational, development strategy. The Brazilian government is specifically targeting larger cities with higher levels of development (Table 3.6). Specifically, municipalities with more than 50,000 inhabitants, with a GDP per capita over $12,000, and growth rates above 14 percent were most likely to receive an above average amount of PAC allocations. It is not a coincidence that the MC worked specifically with cities over 50,000 people. According to officials at both the MC and the MPOG, the idea behind the PAC is to target more developed nodes of activity within the Brazilian economy. By boosting infrastructure in these municipalities, the government can immediately increase productivity and growth and remove infrastructural bottlenecks in dynamic economic zones. Correctly or incorrectly, the hope is the benefits generated by the economic engines will eventually trickle down to benefit smaller municipalities. Nevertheless, the data corroborates the argument that infrastructure programs within the PAC have a meritocratic, rational development strategy in mind. This dramatic finding contradicts a fair amount of the previous literature on Brazil, but it does provide additional support to recent findings noting a more rationalized Brazilian public policy that is not inherently pork barrel or clientelistic (Kingstone 2009; Zucco 2011).

While most political variables are insignificant, there are two important ways that political variables influence PAC spending. Many scholars have noted how federalism empowers governors in Brazil. In the case of the PAC, municipalities in non-PT governed states are less likely to receive funding. Given that governors have no direct influence on the overall selection of projects, there could be two explanations for this relationship. First, PT-allied governors could see the PAC as a showcase national project of the party and the executive branch and could be pressuring or encouraging municipalities to submit project proposals. These PT-aligned governors might support these projects with the hopes of securing more votes. Conversely, non-PT allied governors may be less motivated to politick for the PAC and may not do much to publicize or encourage municipalities to submit applications.

A second explanation is a darker and would suggest that somehow the PT is intentionally denying public resources to opposition-led states. At the same time, not one state that is governed by the PT is among the top six states[67] with the highest per capita funding rates. Among Brazil's 26 states and 1 federal district, traditional bastions of PT strength like São Paulo (12th), Rio Grande do Sul (21st), and Acre (26th) have received comparatively fewer PAC funds. The poor Amazonian state of Acre could particularly use increased infrastructure investment, but it is largely rural with only two municipalities (the state capital of Rio Branco and Cruzeiro do Sul) having more than 40,000 inhabitants. Thus, it does not seem as though having a non-PT governor is a significant impediment to receiving money.

[67]Rio de Janeiro, Espiritu Santo, Rondonia, Sergipe, Rio Grande do Norte, and Tocantins.



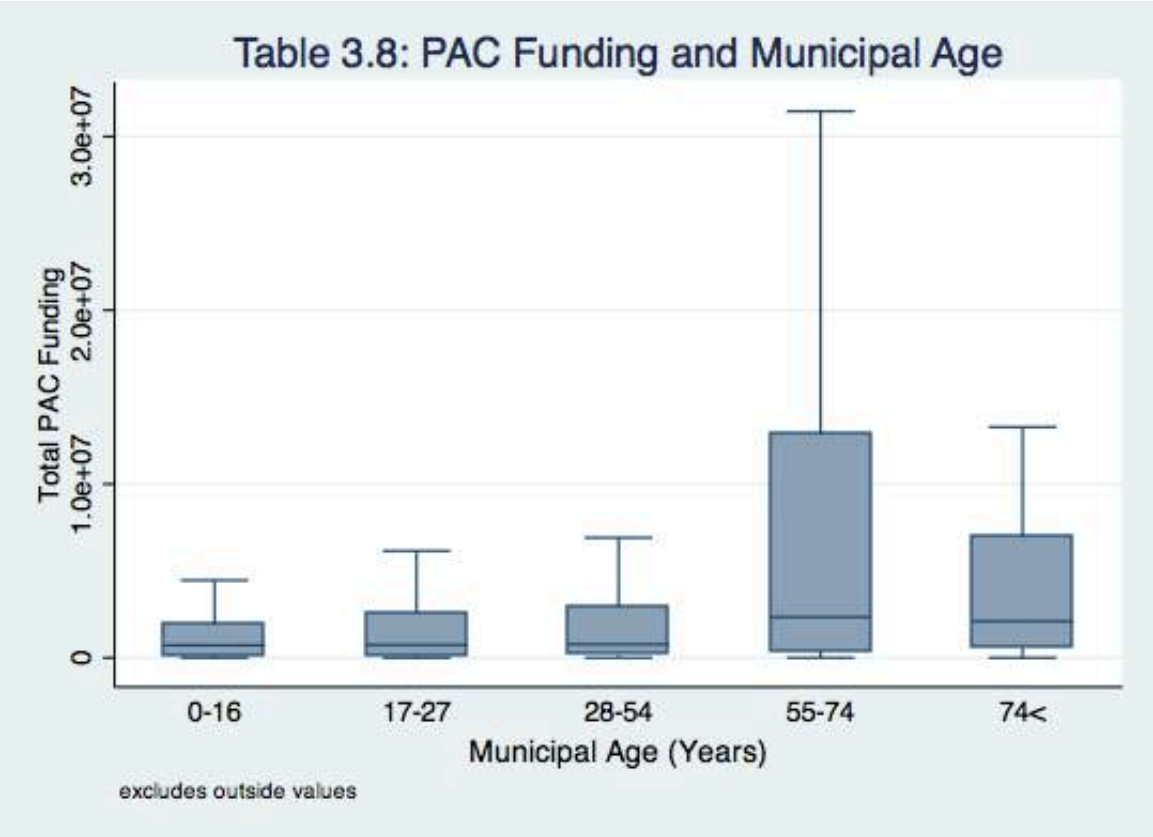
Another political factor that wields consistent predictive capacity is core-voting district (Table 7). A significant amount of PAC funding appears to be channeled towards districts that have supported the PT's presidential candidate. This could be an instance of the executive bypassing legislative actors to directly target voters with public goods. Since the executive has a large constituency and finite resources, large public works projects that are universally enjoyed by the general public are an effective way to curry favor with voters (Carey 1997; Haggard and McCubbins 2001; Bueno de Mesquita et al. 2003). Since the elections occurred in 2006, they preceded the formal declaration and implementation of the PAC and Lula could not personally have received a boost from the program although his party could benefit in subsequent elections.

Nevertheless, I cannot rule out that PAC projects were rewards for previous electoral behavior. PAC data shows that districts where the opposition is dominant are significantly less likely to receive PAC funds.

Some observers may say targeting large cities is a political calculation designed to increase votes. I found little evidence in interviews to support this claim. More importantly, if the PAC is an electoral ploy, it is exceptionally poorly designed. Abstention rates are higher in cities and in core PT voting districts.[68] Given the characteristics of Brazilian voting behavior, a more sensible vote maximization scheme would target smaller, swing or opposition districts where voting rates are higher. Similarly, PAC projects are not significantly increasing the PT's electoral chances. In 2010, the former director of the PAC and current President Dilma Rousseff received no electoral boost from the PAC despite being a key figure in the projects implementation. While still significantly correlated with municipal PAC spending (.042) and per capita spending (.047), in regression analysis with the proper control variables, there is no significant relationship between municipalities that voted for Dilma and PAC funding. This means that even after citizens saw PAC projects implemented in their communities, they were not inspired to go vote for the PT. Compared with other federal programs like Bolsa Familia (Hunter and Power 2007; Zucco 2011), the PAC is much less likely to generate large-scale electoral returns. In keeping with the literature, this finding demonstrates that the electoral benefits for the provision of a collective

[68] Significant pairwise correlations ($p<.05$) with voter participation: population (-0.06), swing voting districts (0.12), and opposition voting districts (0.19).

public good like infrastructure are less than the support generated by a targeted, selective incentive.



A secondary conclusion from the analysis highlights a crucial challenge for developmental policy in Brazil: administrative capacity. Since 1985, decentralization in Brazil has meant that municipal governments wield more power than ever before, but not all municipalities are adapting the new rules evenly (Abrucio 2007; Osterkatz 2011; Vaitsman et al 2013). In interviews, bureaucrats at the federal level routinely complained about the inability of certain municipalities to elaborate, contract, and implement projects in an adequate fashion (Vale 2012; Viana 2012; Vieira 2012; Bruto 2012; Renato 2012).

Referring to it as the "technical fragility" of some municipalities, one official within the MC noted the crux of the issue:

> Every municipality is in the condition to access the proper information. It is available on the Internet. The federal government engages in public acts and campaigns [that increase the program's visibility]. The media covers these programs and all municipal associations are invited to attend. But you always have someone who has not heard or cannot act on the relevant information. This is a big country. But this is largely due to a lack of interest or really, organization. These programs are not intentionally closing people out…they can seek out help from the relevant ministries throughout the process. They can call my analysts and tell them they are lost or confused. Again, we are not closed (Renato 2012).

In particular, newer municipalities are struggling to secure federal funding for projects that improve productivity. These younger municipalities tend to be in the South, North, and Center-West regions of the country. While they have higher average growth rates and lower economic inequality, they simultaneously have higher levels of poverty.[69] Further analysis of the data demonstrates an institutional tipping point is achieved around roughly 50 years (Table 3.8). Municipalities older than 50 years have a higher probability of securing PAC funds. As mentioned earlier, even younger municipalities with higher levels of GDP per capita were less likely to receive projects. Incidentally, this finding is not restricted to infrastructure programs like the PAC. Older municipalities receive more Bolsa Familia expenditures per capita even after one controls for factors like population, poverty, or levels of human development. Once municipalities have had time to build up the necessary bureaucratic institutions,

[69] Significant pair-wise correlations ($p<.05$) for younger municipalities were: population (-0.10) average growth (0.15), inequality (-0.40), human development (-0.14), Poverty (0.03)

they can more successfully compete for resources from the federal government. Therefore, if the Brazilian government is concerned with equitable growth and less inequality, it would be well served in trying to build greater institutional strength and capacity in these newer municipalities.

Conclusion:

This chapter has looked at the Program for Accelerated Growth in Brazil and asked the simple question: do these new infrastructure projects in Brazil reflect the politicization or rationalization of public policy? Unfortunately, the answer is not definitive and funding reflects a complex mixture of politicized and rationalized reasons. I have provided substantial evidence for the argument that the PAC is not a clientelistic, pork-ridden program and that it contains a rationalized, economic strategy. Of the political variables, only core voting behavior and government allied governors consistently affect the distribution of infrastructure funding. This could reflect a programmatic president distributing public goods to his or her constituency and an aspiring future presidential candidate aspiring to provide public goods. While previous studies on Brazil have tended to stress the pork barrel or clientelistic nature of public policy, I add to growing literature that is finding more programmatic, less clientelistic programs. While protestors in Brazil have mobilized against continued political corruption, we should note that the overall process of selecting infrastructure projects has improved dramatically compared to previous decades. Information flows more freely and decisions are more transparent and rationalized. While politics can influence project financing, bureaucrats maintain that there exists a “technical

base" for selecting projects (Renato 2012). Unlike previous eras, it is also important to note that increased government spending on infrastructure has not broken the bank. Brazil has reduced public debt, as a percentage of GDP, from a high of 77 percent in 2002 to a low of 53 percent in 2010. Since 1998, the government has averaged a fiscal surplus of 2.4 percent annually (World Bank 2014).

With regards to the PAC, there are clear and programmatic economic factors that explain why certain municipalities receive projects and funding. Specifically, Brazil appears to be targeting larger, wealthier, municipalities that have higher average growth rates. By concentrating on building infrastructure and human capital in the largest and most dynamic economic centers, policymakers are concentrating finite public resources in an efficient, rational manner. The question remains whether this development strategy will leave smaller, younger municipalities in a perpetual state of underdevelopment or whether there will be some spread effects and benefits from growth in the economic centers. Webb (2013) has recently demonstrated that access to basic infrastructure, particularly roads, can increase rural productivity and reduce poverty dramatically. Given the PT's overall concern with poverty reduction, concentrating infrastructure in urban areas may generate growth, but offer less benefits towards acute poverty alleviation.

In conclusion, this chapter empirically assesses the nature of infrastructure investments in Brazil. While policy may contain some political influences, the PAC is rationalized as much, if not more, than it is politicized.

4. Engagement or Evasion? The Developmental State, Civil Society, and Hydroelectric Dam Construction

> Belo Monte is a project of 30 years. It's not a project of right now. Belo Monte has been discussed for a long time, with a lot of people. We have given Belo Monte a quality assessment involving everyone from society and I am asking everyone to understand what is going on here. We have a huge hydraulic capacity. If we stop producing this to use thermoelectric generators, oil and diesel, it will be an insane movement against the global fight against climate change… Hydropower is still the cheapest [energy option]. What we need is to develop hydroelectric dams with great care to make sure they are done with the utmost care, causing the smallest environmental impact possible. For this reason, I am happy that after 30 years, Belo Monte is finally going to happen.
>
> ~Lula da Silva (2010)

> [Lula and Dilma] are just developmentalists and they do not take environmental concerns seriously. They just accuse us of being dreamers, fighting to save a catfish or a frog …In Brazil, the environment is central to the discourse, everyone claims they're environmentalist, but in practice, the environment is peripheral to the laws that are being developed. There has to be an environmental conscience that prevails over urban, industrial ideas of progress.
>
> ~Chico Alencar. Federal Deputy (2012)

Introduction:

Both Lula and Chico have vastly different perspectives on the state of environmental consciousness in Brazil. Issues of economic development, social justice, and environmental sustainability have been butting heads since before the 1972 United Nations Conference on the Human Environment in Stockholm and one wonders if anything changed. Currently, Brazil is building several large hydroelectric dams in the Amazon that use a "run-of-the-river" design. While these dams require a much smaller reservoir, they are not as efficient as traditional dams in terms of power generation. Fluctuating river levels can reduce their generating capacity. Droughts represent a serious threat to the productivity of the dam. Why is developmental Brazil pursuing infrastructure projects that do not prioritize solely economic efficiency? Are

environmental and social concerns affecting the political calculation behind these infrastructure projects?

Scholars on developmentalism have had very little to say on the subject of the environment since conceptually speaking, developmentalism adopts a rather agnostic view of the natural world. As mentioned in chapter two and three, the developmental state should prioritize economic rationalization and it primarily concerned with rationalized, long-term economic growth. Hence, developmentalism does not maintain a consistent political stance on the environment. State policies can either aid or destroy nature. As Alencar alleged, while the architects of the developmental state frequently demonstrate a rhetorical commitment to sustainable economic growth, they usually do not link economic growth with environmental sustainability. Which begs the question, can developmental policy accommodate environmental concerns or do economic factors invariably trump all other concerns? Can democratic rules and norms alter the existing equation?

A second major question about developmentalism and environmental performance concerns citizen participation. In chapter two, I outlined some of the new participatory possibilities in democratic Brazil, but this chapter will approach state-civil society relations and the legal implications of democratic governance in greater detail. Scholars of the developmental state frequently speak of the “embedded autonomy” of bureaucrats. Under these circumstances, the technocratic officials that help design and select public policies are embedded within the business community, but autonomous from political demands. For many theorists and activists, this institutional arrangement creates a shallow democracy that reduces the impact of non-wealthy citizens on official

state policy. Can embeddedness be broadened to include other members of society and are there substantive differences between the way authoritarian and democratic developmental states engage civil society?

How the developmental state accommodates environmental concerns and civil society are key issues explored in this chapter. Governments since Jucelino Kubitschek (1956-61) have demonstrated a varying degree of commitment to developmentalism and Brazil has pursued developmental policies in both authoritarian and democratic contexts. In this chapter, I will concentrate on the variation in state responsiveness to civil society during these distinct periods. At the same time, Brazil has been at the forefront of environmentalism with significant international and domestic mobilization around environmental issues dating back to the 1970s. Having discussed the issues of rationalization and politicization throughout the dissertation, I will now look at these issues by focusing on a series of hydroelectric dams included in the PAC. While other projects have come under heightened scrutiny for their environmental impact, a series of hydroelectric dams being constructed in the Amazon have garnered considerable domestic and international attention. Given the global trend towards an increasing number of large hydroelectric dams (Khagram 2004), it is important to understand the politics that accompany their construction and understand the degree to which these large dams respond to economic, social, and environmental pressures.

In this chapter, I look at developmental policies and hydroelectric dams in environmentally and culturally sensitive locations. The majority of these newer dams have been constructed in the Amazon, an area with great potential for hydropower generation, but also home to significant biodiversity and local indigenous communities. I

demonstrate that since the 1970s, large dams[70] have smaller social and environmental footprints. In spite of higher costs and less certainty in terms of power generation, Brazil is using run-of-the river dams because they require smaller reservoirs. While there is still a clear environmental and social impact to these dams, several trends have forced planners to increase energy production while mitigating the overall impact of the projects.

These differences in dam constructions are intricately related to the political regime type and political institutions available to activists. While traditional boomerang methods of mobilization were effective during the military dictatorship, which relied on international finance, activists wield less material leverage over a booming Brazilian economy. As Brazil increasingly relies on domestic capital to fund hydroelectric projects, it is able to resist pressure from abroad. However, pressure now comes internally is one of the country's most contentious political domains (Hochstetler 2011). The driving force behind the change in hydroelectric politics is domestic in origin and relates to the new constitutional protections and political institutions of the democratic developmental state. Laws protecting indigenous people and their territory, environmental licensing, and an increasingly assertive Ministerio Público (MP, Public Ministry) have made social and environmental concerns more salient to developmental policymakers.

I start by returning to review the literature on developmentalism, highlighting how the developmental state can accommodate democratic participation. After briefly outlining the basic profile and history of hydroelectric power in Brazil, I continue to an empirical analysis of six major hydroelectric projects in recent Brazilian history, comparing and contrasting dam construction during authoritarian and democratic periods

[70] Dams that produce over 100 megawatts of power.

of developmentalism. Throughout the case studies, I stress political institutions and legal frameworks that shape how the developmental state behaves. I conclude with a brief summary of descriptive statistics that complement the major findings from the cases studies and demonstrate that newer large dams have smaller environmental footprints.

Developmentalism and Civil Society

Scholars have long been interested in exploring whether the developmental state engages civil society or expands political participation. Furthermore, research has demonstrated political opportunity as a crucial variable constraining and shaping how civil society mobilizes (McAdam et al. 1996). Initially, the consensus maintained that bureaucratic autonomy was an essential component of developmentalism (Johnson 1982; Evans 1987, 1995; Leftwich 1995**)**. In the formulation of Johnson, "politicians reign, but bureaucrats rule" (1982, 315). These bureaucrats needed to be insulated and autonomous from political pressures as this would promote greater rationalization of policy. Beyond bureaucratic insulation, it was hypothesized the developmental state required a weak, subordinated civil society and some degree of repression. Common characteristics could include "internal security legislation and agencies, secret police…and [strictly controlled] media and labor organizations" (Leftwich 1995, 415).

As stated in chapter two, these generalizations reflected the initial research on the subject and it was assumed that fractious democratic procedures would politicize the bureaucracy, and undermine the long-term stability of economic policy. At the same time, the vast majority of early work on the subject focused squarely on the experience of East Asian countries where governments were largely authoritarian, one-party states insulated from popular demands and serious elections. Latin American nations were

considered less effective at implementing developmental policies precisely because they demonstrated weaker levels of autonomy between the state vis-à-vis major social interests (Evans 1987; Jenkins 1991). In summation, on the basis of early research, the developmental state appeared to be considerably hostile towards civil society organizations outside the business community and we would expect very little room for dialogue between the state and civil society organizations.

By the mid-90s and onwards, scholars advocated for a democratic developmental state or at least recognizing that the developmental state and authoritarianism were not synonymous (White 1995, 1998, 2006; Bresser Pereira 2006; Sandbrook et al 2007; Evans 2010; Hochstetler and Tranjan 2013). Reflecting an economic strategy, developmental policies are not inherently inimical to greater political participation or basic civil liberties. In the challenging context of Africa, both Botswana and Mauritius seemed to exhibit the essential components of a developmental state while maintaining a respect for basic democratic principles **(**Meisenhelder 1997; Mbabazi and Taylor 2005; Sandbrook 2005; Meyns and Musamba 2010**).** Yet how can policy that is decided and implemented by an autonomous bureaucracy include greater popular participation?

To return to Evans' (1995) original formulation, the key is embeddedness. While the bureaucracy is autonomous and empowered, it remains embedded in society with a "concrete set of social ties and institutionalized channels for the continual negotiation of goals and policies" (Evans 1995, 12). Democracy could enhance the long-term success of developmental policies by giving legitimacy to the entire process, but these social linkages between the bureaucracy and society are critical in reducing predatory, corrupt, and individualistic impulses in the bureaucracy. According to Evans' early work, a

"broadly defined" embeddedness could offer a more robust foundation for developmental policies (1995,17) a sentiment he echoes in subsequent work concluding the developmental state will have to "pursue collective goals" and recognizing that "embeddedness must focus on a broad cross-section of civil society rather than focusing simply on industrial elites" (2010, 10). In this vein, developmental states could accommodate citizen concerns and go as far as providing for basic citizen welfare (Riesco 2009).

These recent studies suggest that developmental states can be receptive to citizen participation. While still concerned with rationalization, public policy can accommodate broader citizen demands. The important point to establish is that developmentalism is an economic strategy that prioritizes rationalization and maintains no definitive political stance. While being ultimately concerned with generating growth, policies logically assume an array of different political forms in distinct historical periods or countries. It can emerge from the right- or left-wing in democratic or authoritarian regimes (Leftwich 1995). When it comes to democratic participation or citizen influence over developmental policies, developmental states will exhibit variation. However, a logical conclusion is that in contrast with their authoritarian counterparts, democratic developmental states will be much more amenable to fostering stronger linkages between the bureaucracy and civil society. Comparing two different periods in Brazilian history, I will illustrate concretely how a democratic developmental state, while not perfect, provides institutional spaces that can foster greater political inclusion and dialogue as it formulates economic policies. Democracy also provides an institutional framework that better safeguards the fundamental rights of the citizenry.

A General Overview of Hydro-Power in Brazil

Brazil is a country blessed with extensive hydraulic resources, indeed its renewable water and surface water resources are the largest reserves in the world and account for nearly 7 percent of the global total. While Brazil can be broken into eight distinct watersheds, the Amazon and Tocantins-Araguaia basins account for 56 percent of the entire national drainage area. At nearly 6,150 km^2, the Amazon basin alone is the largest river drainage basin in the world and roughly equivalent in area to the entire Gulf of Mexico and the Caribbean Sea. While the Amazon River represents the world's largest river in volume, scientists are now claiming that the river is 200 kilometers longer than the Nile (Jornal Nacional 2007). Including the Amazon, Brazil claims six of the twenty-five largest rivers in the world.[71] In terms of rainfall, Brazil records a national average of 1,934 millimeters per year. This figure is even more astounding when one considers the climatic variation of Brazil where regional averages fluctuate between the arid Northeast (250 mm/year) and the wetter Southeast (4,400 mm) (FAO 2013).

Given this abundant natural resource, it is not surprising that hydroelectric dams have formed a crucial axis within Brazil's energy matrix for over a century and will likely remain so for the foreseeable future. The first hydroelectric dam was built in 1883, in the beautiful colonial mining town of Diamantina, Minas Gerais. With a capacity of a mere 0.5 megawatts, the Usina do Ribeirão do Inferno on the Rio Jequitinhonha and was exclusively used to power water pumps inside a diamond mine. In 1889, a dam in Juiz de Fora, Minas Gerais (Marmelos) was the first hydroelectric power plant in South America to provide electricity to the general public. Gradually, the introduction of hydroelectric

[71] The Amazon, Paraná (8th) Araguaia (16th); Madeira (19th), Purús (20th), and São Francisco (23rd)

power spawned a boom in small dam construction and by 1915 hydroelectric power represented 84 percent of Brazil's energy matrix with 343 power stations producing nearly 350 MW of electricity (Leite 2009, 5). By 1940, output quadrupled and helped power Brazil's industrialization, providing public lighting and transportation while allowing for the consumption of basic electro-domestic products like fans and refrigerators (White 2010, 73).

Throughout this time period, two foreign companies, the Canadian Brazilian Traction Light and Power Company (Light)[72] and the American Foreign Power Company monopolized the electricity sector, accounting for roughly 70 percent of all electrical power production in 1930 (Saes and Loureiro 2012, 2). Lacking a unifying series of federal laws on the matter, contracts and terms were largely left to individual municipalities, which negotiated directly with the foreign companies. Energy started becoming politicized with liberals arguing foreign companies brought capital and technology and nationalist advocating a larger state presence (Oliveira 2007). In 1934, the state enacted the Water Code,[73] giving ownership rights of the nation's hydroelectric potential and regulatory power to the federal government. Subsequently, the government used this new power to regulate prices and set rates favorable to consumers, much to the chagrin of the private sector. Faced with decreasing profit margins, private companies

[72] The history of Light as a company is an intriguing case study that mirrors the changing political landscapes in dam politics. Light arrived in Brazil in 1904 and was responsible for powering the political capital of Rio de Janeiro, its iconic *bondes* (trams), and the industrial capital of São Paulo. The company constructed several of the first large dams in Brazil including the multi-dam Complexo de Laje (1904, 612MW) and Ilha dos Pombos (1924, 187 MW). In 1979, the company was nationalized with Elétrobras assuming a controlling interest. In 1996, Light was privatized and sold to a multinational consortia, however among other dams, the company still operates Complexo de Laje, Ilha dos Pombos, Santa Cecilia (1952), and Vigário (1952).

[73] Decree 24.643 (1934)

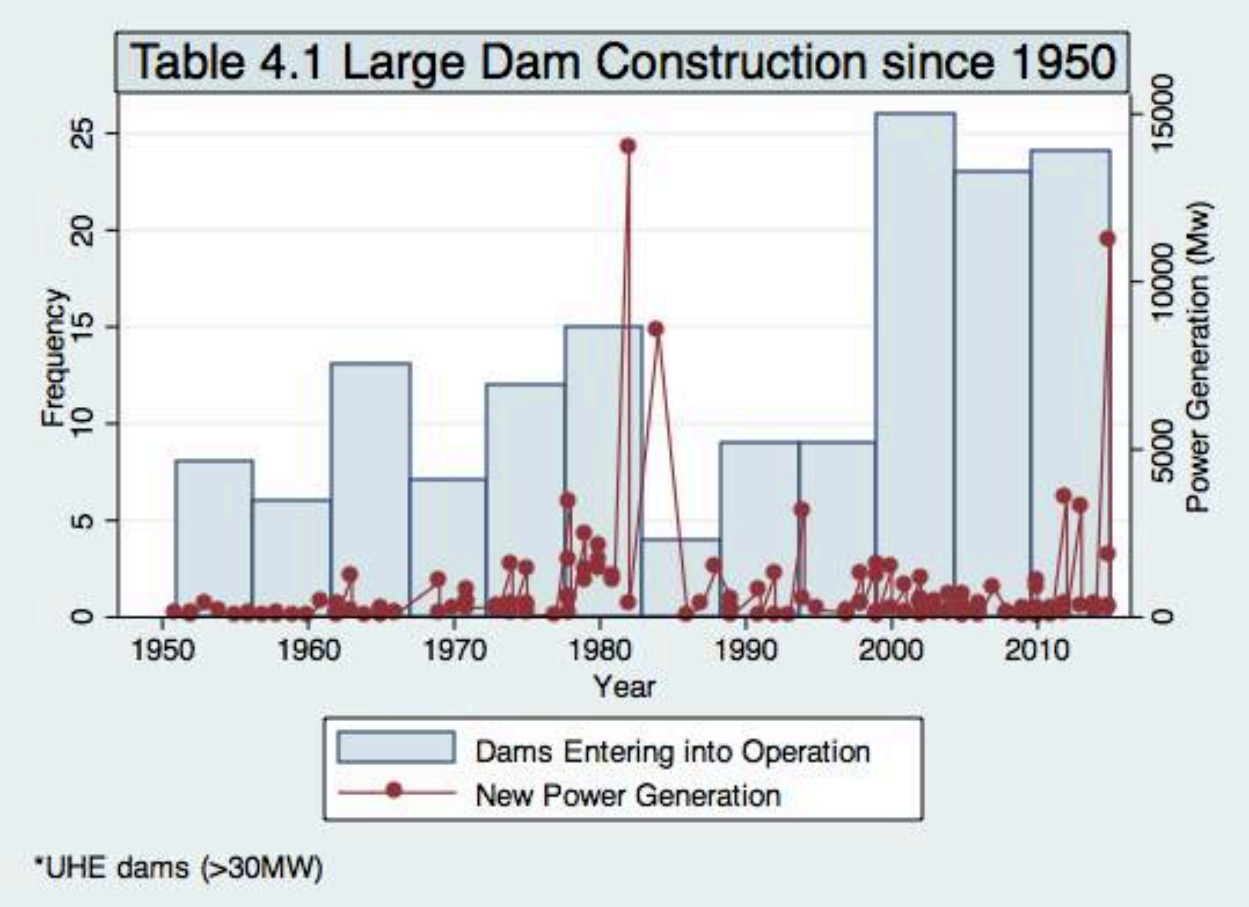
began to curtail investment (Oliveira 2007; Alvaro 2008; Leite 2009). Nevertheless, as the private sector retracted, the public sector began to expand.

During the 1950s and 1960s, Brazil would add nearly 100 larger dams[74] every decade (Khagram 2004, 142). The construction of larger dams increased in frequency to meet burgeoning demand. Most of these larger dams produced over 100 MW of power, which could reliably supply energy to roughly 10,000 houses. This upswing would last until the oil crisis dried up external financing for such projects in late 1970s (see table 4.1 below). During the boom period, important dams like Ilha Solteira, Marimbondo, Furnas, and Estreito were completed. Additionally, Eletrobras (Centrais Elétricas Brasileiras) was founded in 1962 as a state holding company that would help coordinate projects in the energy sector and consolidate an array of public subsidiaries operating in electric power generation. While Eletrobras played a role in investment, particularly in the case of Furnas, the lack of funds relegated the company to conducting inventories and surveys and dispensing international loans. An important landmark occurred in 1974, when Brazil completed the Eng. Sousa Dias (Jupiá) dam. Despite an arduous 14 years to complete, the 1500 MW dam was the first constructed entirely by Brazilian engineers and labor (Leite 2009).

The Jupiá dam mirrored an intensive effort during this period to nationalize construction, generation, and transmission in the electric power sector. While heavily reliant on imported technology and engineering, after the 1950s the federal government increasingly emerged as the crucial actor in the planning, constructing, and financing of hydroelectric projects. Starting with the Kubitschek administration (1956-61), private

[74] Usina Hidrelétricas (UHEs) are the largest dams in Brazil and are classified in this category if they produce more that 30 megawatts of power.

investment decreased in relation to the state presence and reliable hydroelectric generation became an issue of national security[75]. Between 1952 and 1965, the state raised its participation in terms of installed capacity from 6.8 percent to over 54 percent of the electric power sector (Saes and Loureiro 2012, 4). While much of the technology was imported, foreign multinational companies progressively produced more components within Brazil (White 2010,82).



[75] This nationalization of major hydroelectric dam construction was heavily encouraged during the administration of Kubitschek and his Plan de Metas (Plan of Objectives), which increased public hydroelectric generation by 2,408 watts. During his time in office, a British company failed to complete the Três Marias Usina along the Rio São Francisco in Minas Gerais. Camargo Correa, the oldest Brazilian firm in construction, engineering, and logistics, was contracted to complete the process. Shortly afterwards, Kubitschek banned the participation of foreign firms on massive public works projects (Leite 2009).

As can be appreciated in Table 4.1 (above), a hydroelectric boom lasted through the late 1970s. Between 1962 and 1980, installed generating capacity exploded from 4,000 MW to over 26,000 MW (Kolhepp 1987,9). Nevertheless, by the 1980s and 1990s, severe economic volatility and international bailouts reduced state spending across the board. In particular, infrastructure investments and hydroelectric projects suffered sharp cutbacks. Between 1969 and 1984, the government allocated roughly 4 percent of gross domestic product annually for infrastructure. From 1985 until the 2000s, the average fell to 1.85 percent (Ferreira and Araújo 2005, 2). A privatization campaign led by President Fernando Henrique Cardoso (1995-2003) allowed greater private participation in electricity sector. ANEEL (Agência Nacional de Energia Elétrica), an independent energy regulator was created and sufficiently empowered to set rates without government interference as a way to boast the agencies credibility among those in the private sector (Mueller and Pereira 2002; Correa et al 2006). In the end, neither independent regulators nor increased opportunities inspired great private sector participation, overall investment levels were still well below average rates of the 1970s and 1980s (Oliveira 2007, 45). Scholars have attributed this paltry private sector participation to the increasing social- and environmental costs of projects, which reduced profitability (Hocstetler 2011).

The decline in funding mattered. In 2001-2, a severe drought coupled with the deteriorating condition of power installations in the South created a national energy crisis and rolling blackouts (Rosa and Lomardo 2004; Oliveira 2007). The federal government was compelled to enact compulsory rationing and reduced national electricity consumption by roughly 20 percent. While the crisis temporarily diminished demand and improved overall efficiency in the sector (Rosa and Lomardo 2004; Oliveira 2007), it

simultaneously exposed the woeful state of Brazilian infrastructure and the consequences of two decades of neglect. Politically, the crisis led to falling approval ratings for center-right Cardoso and contributed to a loss for his party[76] in the next presidential election to the leftist Lula da Silva of the PT.

By 2003, the economic situation had improved and government officials fretted about the continual growth in demand for cheap energy and the rising level of external energy dependence (MME 2012). Da Silva wanted to improve the dilapidated state of the Brazilian power generation matrix and the lack of private initiative in the sector created space for greater public participation. In comparison with logistics or social infrastructure, energy investments represent the largest outlays within the PAC and the construction of large hydroelectric dams has surged. The PAC includes alternatives energy projects to diversify Brazil's energy matrix, but officials in the Ministry of Planning stress that hydroelectric generation remains the cheapest option among renewable sources of energy (Garibe 2012). In total, the PAC includes plans for 55 new dams, representing some R$116 billion in investments. Among the PAC dams, three dams are among the ten most expensive projects included within the program and once finished, four of the dams will be among the ten largest dams in the country including: Belo Monte (2nd), Santo Antônio (4th), Jirau (6th), and Teles Pires (10th). At the end of 2013, 27 PAC dams are operational with another 6 close to completion.

[76] Partido da Social Democrâcia Brasiliera (Brazilian Social Democracy Party, PSDB)

Table 4.2 Select Data on Brazilian Hydroelectric Power				
Type of Dam	***# In Operation***	***Power Generated (MW)***	***# Under Construction***	***Anticipated Power (MW)***
CGH (<1MW)	430	262.58	1	0.85
PCH (1.1-30 MW)	462	4,634.37	32	4,595.35
UHE (>30MW)	194	86,713.26	7	80,797.12
Total	1086	91,610.21	40	85,393.32
Source: ANEEL. 2013. *Banco de Informações de Geração*				

Why Should We Care About Hydro-Politics?

Despite the declining investments of the previous two decades, annually hydroelectric power still supplies Brazil with approximately 80 percent of its electricity, a figure that is unmatched by any industrialized nation except Norway.[77] Currently, Brazil generates electricity from 1086 different hydroelectric sources and ANEEL classifies hydroelectric dams into three categories: Central Hydroelectric Generators (CGH; up to 1 MW), Small Hydroelectric Plants (PCH: between 1.1 and 30 MWs), and Hydroelectric Energy Plants (UHE; more than 30 MW).

In this study, I focus solely on UHEs. Looking at the data above (Table 4.2), it is clear that UHEs are the largest suppliers of energy and the 7 plants currently under construction will nearly double Brazil's total hydroelectric output. Brazilian government officials posit another 261 gigawatts of power remain to be exploited and claim Brazil is only taking advantage of 30 percent of its total potential (MME 2006, 18). Among the new potential sources for large-scale hydroelectric energy, 65 percent of the cost

[77] Other renewable sources (biomass, nuclear, and wind) constitute another 11.5 percent. This means renewable sources equal nearly 90 percent of total electricity generation.

effective projects are located in the North,[78] mostly within Amazonian territory. Officials claim that a mere 9 percent of the total potential power generation in this region is being harnessed. At the same time, it is worth noting that officials also posit only 34 percent of potential PCH power is being utilized and over 60 percent of these projects would be located in the power-hungry South and Southeast.[79]

All things considered, hydroelectric power promotes several positive environmental outcomes. It is renewable, largely reliable, and emits little greenhouse gases[80]. By adjusting the flow of water over the course of the day, energy can be generated to efficiently parallel fluctuating demand. By emphasizing hydroelectric power so heavily, Brazil is indisputably the greenest BRIC country in terms of power generation. Compared globally, only China generates more hydroelectric power, yet its overall electricity matrix is still dominated by coal (US Department of Energy 2013). According to the Yale Environmental Performance Index (2012), Brazil is ranked 30th out 132 countries, well ahead of the United States.[81] At the same time, hydroelectric power carries significant environmental costs by changing the natural flow and quality of water and flooding natural habitat. Indeed, more than deforestation, researchers for the

[78] These states include: Amazonas, Acre, Rondonia, Roraima, Macapá, Pará, Tocantins, and Maranhão.
[79] These states include: Espíritu Santo, Rio de Janeiro, Minas Gerais, São Paulo, Paraná, Santa Catarina, and Rio Grande do Sul.
[80] An active scholarly debate exists around the amount of greenhouse gas emissions produced by reservoirs (see Fearnside 1995, 2002; Rosa et al 2004; Santos et al 2006). While flooding forested areas does appear to cause gas emissions (particularly methane), if dams reduce inundation of forested areas and responsibly clear biomass before flooding, emissions are comparatively lower. By having smaller reservoirs, run-of-the-river dams can produce comparatively smaller emissions compared with more traditional dams.
[81] With regards to the size of economy, Brazil environmental performance did trail Japan, France (6th), the UK(9th), Germany (11th), and Japan (23rd). Compared with other Latin American countries, Brazil was bested only by Costa Rica (5th) and Colombia (27th).

Environmental Performance Index list the eco-systemic effects of water resource policy, specifically hydroelectric dam construction, as the primary concern for future Brazilian environmental performance.

Several factors, both environmental and social, complicate the politics of hydroelectric dams. Considering reservoir construction and basic dam management, hydroelectric dams increase floodplains, reducing forest cover, and negatively impact fragile riparian ecosystems by disrupting migration patterns, reproduction cycles, and water quality. Contextually, these costs are multiplied given Brazil is the most bio-diverse country on the planet.[82] Purely environmental concerns aside, large dams disrupt the social dynamic of their local environs. As rivers become less navigable, traditional forms of transportation and commercial activity are disrupted. *Caboclo*[83] communities that have evolved around river traffic must adapt. Since dams alter normal fish migration patterns, the lives of fisherman and their customers are immediately impacted. In addition to these social concerns, indigenous communities and protected areas occupy a significant portion of the Amazonian landscape slated for hydroelectric development.

FUNAI, the national foundation for indigenous peoples in Brazil, estimates that nationally there are some 896,000 indigenous people, representing some 220 different groups. Of these figures, an astounding 82 groups are still considered isolated and have not had significant contact with Western civilization. According to the 2010 census, the national statistical agency (IBGE) concludes that roughly 40 percent of Brazil's counted

[82] Using a composite index for relative biodiversity, the World Bank's World Development Indicators use Brazil as a reference for the rest of the world. Scored at 100, no country in the world claims a similar level of biodiversity.

[83] While originally conceived as term for the mixed race descendants of Europeans and indigenous people, in Amazonia the term has become synonymous with the forest people who derive their living from the sustainable harvesting of the forests' vast resources or fishing.

indigenous population is located in the Amazon with the vast majority living in designated indigenous territory. State protected indigenous territories comprise some 1.2 million km^2 or nearly 15 percent of the entire territory of Brazil. Most of these communities are situated along the various Amazonian rivers and tributaries, which constitute a critical source of food and transportation for inhabitants. The construction of hydroelectric dams in their territory can adversely affect this segment of the population. As will be explored in greater detail below, the Brazilian state is constitutionally responsible for the protection of these people, their land, and their resources.

Thus, hydroelectric power is a contentious issue within the Brazilian political system and mobilizes citizens and political across the political spectrum. Mobilizing both for and against construction projects, campaigns have become heated as larger dams are increasingly constructed in sensitive environmental and social locations. In the remainder of this chapter, I will analyze how the politics of hydroelectric power have changed since the 1970s. Specifically, I will explore the process of dam construction during two distinct developmentalist periods in Brazilian history: the military dictatorship (1964-85) and the two PT administrations of Lula da Silva (2003-2011) and Dilma Rouseff (2011-). While both time periods share a similar commitment to developmentalism, the differences in regime type, institutions, and policy processes have altered the characteristics of these projects. Comparing the two periods permits us to appreciate policy variation and environmental considerations within developmental regimes, while better contextualize the interaction between the state and civil society.

Hydroelectric Dams in the Authoritarian Developmental State (1964-84):

Compared with other cases of the Southern Cone in the 1960s and 1970s, Brazil endured the longest stint of military rule and served as the first bureaucratic authoritarian example to its neighbors. Before the military coup in 1964, Brazilian politics had deteriorated considerably. A series of democratically elected presidents appeared unable to meet the growing demands of society. As concerns of a Cuban-style revolution crescendoed in 1964, the military intervened creating a bureaucratic authoritarian system that would restore balance in the political sphere (O'Donnell 1988; Burns 1993; Dominguez 1994). The basic premise of the bureaucratic authoritarian state was to de-politicize the political arena, monopolize political power, and rationalize public policy.

Blaming politicians for the crisis, the military argued that the quickest route to stability demanded reducing political space for citizens. Since the 1930s, populism had emerged as the dominant force orienting Brazilian politics with presidents largely elected on the basis of personal charisma (Burns 1993; Bethell 2013). There was little regard for building political institutions or parties that would outlive their founders. Extreme polarization and little elite consensus created a fractionalized and paralyzed political system. To change this dynamic, the Brazilian military manipulated and created new political institutions, albeit within an authoritarian framework. In an attempt to limit party fragmentation, two political parties, ARENA and the MDB, were established and competed in controlled elections, a unique feature in comparison with other bureaucratic authoritarian regimes. Politicians linked to former presidents were ineligible to compete in elections and presidents would be selected consensually from within the armed forces for fixed terms. In order to reduce executive power and inhibit the emergence of one charismatic leader, authority was also dispersed to a national security council and the

legislature. At the same time, the military promulgated a series of seventeen institutional acts and a new constitution providing a legal framework for their unconstitutional assumption of power.

For civil society, previous freedoms and individual liberties were abrogated. Habeas Corpus was suspended. Censorship was enacted and freedoms of speech, belief, and organization were curtailed. National banishment and the loss of citizenship became acceptable legal practice. Arbitrary arrest, torture, and political execution further intimidated activists. While the aggregate figures were lower in per capita terms than the Argentine or Chilean cases, human rights were systemically and habitually violated. Estimates posit that 50,000 were imprisoned, 20,000 suffered torture, 10,000 were exiled, and 500 were murdered (Pion-Berlin 2011, 10). Under these conditions, the developmental state excluded society and discouraged public participation.

At this point, it is worth mentioning the role of foreign investment and loans, particularly with regards to financing energy projects. Warmer relations with the United States, facilitated loan agreements with the World Bank and Inter-American Development Bank. Between 1965 and 1985, the World Bank invested more than $3 billion in the sector, which constituted more than 25 percent of all loan money to Brazil and 10 percent of all loans made to Latin America (Khagram 2004,143). This included funding for ten different hydroelectric projects[84] while another eleven projects received

[84] Chavantes, Estreito, Mirimbondo, Volta Grande, São Simão, Salto Osório, Paulo Afonso IV, Itumbiara, Porto Colombia, and Jaguara.

financing from the IADB[85]. While the loans did help important projects reach completion, debt accumulation would later encourage economic crisis and currency collapse in the 1980s.

As outlined in chapter two, the military marked an important developmentalist period in Brazilian history. Policy was rationalized and placed in the hands of a technocratic and autonomous bureaucracy. Long-term strategies were developed to encourage national development, but the developmental state did not demonstrate great levels of embeddedness. Given the authoritarian nature of the military, linkages with civil society were few. Periodic controlled elections while political opponents were being jailed, banished, and murdered did little to promote accountability or encourage broad civic participation in the policy process. Furthermore, authoritarian policies limited civil society mobilization. Looking at three brief case studies of hydroelectric dams developed during the military dictatorship: Itaipu, Tucururí, and Balbina, we will notice the general exclusion of civil society in the elaboration of public policy and the lack of institutional safeguards for basic citizens rights or welfare.

Itaípu

No analysis of hydroelectric dams in Brazil would be complete without discussing Itaipu. Named after the Guaraní word for "talking stone," Itaipu is the second largest dam in the world and the most productive in terms of energy generation. A mammoth project, company officials estimate the concrete used in the construction process was enough to construct 210 Maracana Stadiums, the famous soccer stadium of Rio de Janeiro, and

[85] Archival research shows that the IADB funded eleven hydroelectric projects during the military period: Jupiá (1963, $13.25 million), Capivari/ Cachoeira (1965, 5.45 million), Ilha Solteira (1970, $34 Million), Passo Fundo (1969, $21.3 million), Moxoto (1973, $55.3 million), Paulo Afonso IV/Sobradinho (1973, $84.80 million), Foz de Areia (1975, $74 million), Eborcação (1977, $69.80 million), and Segredo (1982, $100 million).

claim that earth excavations were 8.5 times the Eurotunnel that links France and the UK (Itaipu Binational 1980). To date, Itaipu supplies 17 percent of Brazil's and 72 percent of Paraguay's total electricity needs.

As far back as the 1920s, researchers and technicians were exploring the possibility of hydroelectric power generation along Paraná River, frequently concluding Guaíra Falls (or Sete Quedas) would represent the most efficient location for any project (Barclay 1932). Nevertheless, the construction was postponed for some time due to boundary disputes with neighboring Paraguay. In 1966, the Brazilian military government was able to strike a deal with the military dictator of Paraguay, Alfredo Stroessner. In a later agreement, the Treaty of Itaipu, Brazil agreed to finance Paraguay's construction costs and the two nations would share ownership and the electricity generated by the dam. Tellingly, the agreement was explicitly concerned with costs with virtually no references to the social or environmental impact of the dam.[86] With the diplomatic issues resolved, planning for the Itaipu Binational dam began in earnest.

While governors-friendly to the regime[87] would control the state of Paraná during all stages of the project, the rationale for the dam's construction was based on technical merit. In 1970, a scientific study proposed 10 alternative sites and 50 different types of project. The final project was selected as the site with the cheapest energy production and the best location for creating the reservoir (Kohlhepp 1987, 21). Relatively constant water levels assured good hydroelectric power generation (Fearnside 2013). The dam took less than a decade of construction to begin operating, however the last planned generators

[86] Only Article 17 Paragraph 2 promises compensation for expropriated land (Itaipu Binacional 1973).
[87] Between 1971 and 1982, the military leadership appointed all governors and mayors of large cities.

were not installed until 2007.[88] The final price tag stood at a whopping $19.6 billion US dollars with Brazil funding 78 percent of the construction and. international loans funding the remaining 22 percent (Kohlhepp 1987, 25). In spite of the cost, Brazil could claim the world's first 14 GW dam.

In the name of "progress" and "development", the military and the dam management overlooked environmental issues (Germani 2003; Ziober 2009). However, the sheer size and capabilities of the dam implied sizable environmental footprint.[89] There were over 63.8 million m^3 of excavations and 1,350 km^2 were flooded to create the reservoir. While acres of cultivated land was submerged, particularly on the Brazilian side many kilometers of endangered semi-deciduous forest and key migratory routes disappeared (WWF 2014). Included in the flooded areas, the stunning National Park of Guíara Falls (Sete Quedas) was buried some 190 kilometers upstream. According to company documents, four years into construction, a rudimentary "Basic Plan of Environmental Conservation" was outlined. While the document listed basic principles, there were few details of concrete actions or programs and a lack of time and financial resources[90] vastly reduced the scope of any ensuing project (Koehlepp 1987, 79). Inventories of flora and fauna local occurred only after construction started. After the 1980s, several projects have been launched that create marine and forest sanctuaries, reforest certain areas, encourage scientific study, and build community outreach. An "Ecomuseum" was inaugurated in 1987. Nevertheless, it is important to reiterate the

[88] Fearnside (1989, 19) argues it would have caused much less environmental destruction to add the projected generators to dams like Itaipu and Tucuruí before building new dams.

[89] For further information on the precise environmental impact, one can appreciate a range of environmental studies cited in OSAP's (2013) summary.

[90] Koehlepp (1987, 81) estimates financing for environmental projects was less than 0.1 of total construction costs.

programs were designed and implemented only after major construction had finished, giving the projects the general feel of a marketing afterthought. Additionally, the return to democracy allowed for greater space for citizen mobilization to air grievances and increased pressure on dam authorities to enact some compensation projects (Germani 2003; White 2010).

The social impact of the dam was equally significant. While estimates vary, the general consensus is that the dam displaced some 42-43,000 people (Germani 2003; Khagram 2004; OSAB 2013). Eight municipalities were inundated including land of the Ava Guaraní Ocoi people. Only Bahia's disastrous Sobradinho dam, similarly constructed during the military period (1973-9), displaced more people (between 60-70,000). According to the Treaty of Itaipu (Article 17), all displaced people were entitled to fair recompense for their lost land and property. Annual reports published by Itaipu between 1974 and 80 praise the expropriations as "made on good terms, friendly transactions, without judicial intervention" and those facing expropriation were treated in "cordial, human manner with just offers" (1974, 16). The 1979 report details new housing (some 9,500 units), education, food, and healthcare, yet these were only offered to employees. While the situation of land deeds in Latin America has always been complicated, in a frontier area like Iguaçu, complexity flourished with many inhabitants lacking the necessary documentation to claim legal ownership of their land. To make matters worse, poor planning by dam management, delays, secrecy, undervalued property, and extensive bureaucratic and financial hurdles, brought economic ruin on many families that did have the proper paperwork (Kohlepp 1987 55-78; Germani 2003). By 1978, only 700 expropriation agreements had been formally signed (Kohlepp 1987,

58). Only after substantial mobilization encouraged by progressive priests within the Catholic Church did Itaipu begin to seriously attempt to resolve the issue and by 1982, the dam management agreed to settler demands and compensation packages.

While most scholars acknowledge by that point, the imminent return to democracy reduced the political space for a violent crackdown against protesters, White (2010) notes that the visibility of the project led the regime to closely monitor workers and settlers and limit their attempts to mobilize. Indeed, only after the return to democracy did large-scale worker strikes break out in 1987 (White 2010, 310). Still under military rule, many opponents of the dam like investigative journalist Juvêncio Mazzarello, found themselves among the last political prisoners summarily rounded up and imprisoned by the authorities.

Tucuruí

Located on the Tocantins River, the UHE Tucuruí represented the first large-scale dam in the Amazon and was heralded as a major development project for the northern state of Pará. The Belém-Brasília highway had been paved in 1974 and the construction of the dam would power aluminum smelters and spur economic activity in the region by encouraging aluminum exports to Japan, the United State, and Britain (Fearnside 1999; WCB 2000). After a series of studies including a 1964 survey conducted by the U.S. Bureau of Reclamation, a site seven kilometers outside Tucuruí was selected for development due to its strategic location and relatively cost efficient generating potential.[91] In addition, the federal government added a series of locks to make the river navigable where previous rapids and falls disrupted boat travel. After nine years of

[91] Original plans called for a dam within city limits, however the extensive relocation costs scuttled the feasibility of this plan.

construction, the first phase of the dam entered into operation with a generating capacity of some 4,000 MW of power with a second phase addition of 4,000 MW. Costing 9.5 billion, the project was largely financed by the Brazilian government and Elétronorte, with international credit agencies providing roughly 14 percent of the financing (WCB 2000, ix).[92]

The environmental impact assessment of the dam was developed concurrently with construction (Fearnside 2001). In 1977, Elétrobras commissioned ecologist Robert Goodland to produce a report on the environmental impact of the dam. In the report, he advocated for a foresting project to preserve water quality and reduce flooding in forested areas. Goodland also advocated better accommodation of local indigenous groups (Goodland 1978). In total, the ecologist was allotted one month to conduct his study, a woefully inadequate amount of time for such a complex project. To make matters worse, the study was not conducted until after construction began and the river had been diverted. Two years later, Eletronorte invited a group of researchers from the Instituto Nacional de Pesquisas da Amazônia to conduct studies on the local flora and fauna. While the resulting studies provided much new information to the scientific community, since the studies were produced after dam construction had commenced, they offered little insights into the impact of the dam and were conducted too late to suggest remedial actions. Nevertheless, subsequent studies confirmed a progressive reduction in fish stocks by almost 83 percent and the disappearance of at least 12 species of fish (WCD 2000, 71-8). Unlike succeeding dam projects, Tucuruí never included a fish ladder to facilitate the continued movement of migratory fish species as it was seen as not cost-effective.

[92] While the project was largely cost-effective, subsidized electricity rates for large industrial consumers undermined the ultimate profitability and operation of the dam (WCB 2000,x).

Another culprit in the diminishing fish stocks was unfinished forestry clearing projects that left the reservoir littered with decomposing biomass, reducing overall water quality and oxygen levels.

Similar to environment, the social costs of the project wielded little influence over the planning of Tucuruí, despite posing serious questions. Above all, resettlement and the resolution of displaced people have hounded the project for decades with the matter still not fully resolved (Mougeot 1990; Magalhães 1990; Fearnside 1999; WCB 2000). While initial estimates were 1,630 km^2, the dam eventually flooded some 3,014 km^2 creating the second largest reservoir in Brazil after Sobradinho (WCD 2000, IX; Fearnside 2001), Topographic errors in the initial studies left officials reactively drawing up new resettlement projects as the rising waters progressively inundated new lands. In total, the dam displaced an estimated 32,000 people, two-thirds of which would have no claim to compensation as they lacked the appropriate legal documentation (Magalhães 1990).

Issued in 1971, the Decree 68.913 declared Tucuruí to be in the national interest and permitted Elétronorte to forcibly remove and relocate groups with virtually no or little previous consultation. Furthering empowering the company, through a presidential Decree 78.659 (1976), Elétronorte was granted legal rights to freely expropriate land (Treece 1987, 102). While the company was charged with resettling displaced citizens and remunerating their losses, it was primarily interested in maintaining low costs. The compensation process left many "[to] suffer compulsory relocation with arbitrary indemnification…resettlement that was too late and limited" (WCD 2000,121-2; see also Fearnside 1999). Haphazard planning and cost cutting measures meant newly created resettlements frequently lacked important urban infrastructure and services.

Environmental disruption coupled with poor sanitation and services led to an outbreak of malaria and water-borne parasites, forcing Eléctronorte to relocate settlers on multiple occasions.[93]

After the return to democracy, the dam became a political issue and President José Sarney (1985-90) created an inter-ministerial commission to resolve continued issues of compensation and resettlement. The added pressure led Eletronorte to meet with community leaders to resolve outstanding claims and provide new infrastructure projects in the settlement areas. While the company claimed to have resettled 4,400 families by 1992, over 1,500 still remained homeless. If they arrived at all, legal land titles for the new properties were painfully slow for property owners to acquire. In many of the cases, settlements were abandoned due to lack of services or "inappropriate" resettlement. Fishermen were settled far from water, while farmers were moved to unproductive agricultural areas. Many locals have still not received compensation and have organized protests and sit-ins some thirty years later to resolve these basic issues (MAB 29/04/2011).

While local fishermen and farmers suffered, the treatment of the local indigenous people was even more egregious. The construction of the dam directly affected three indigenous reserves: Parakanã, Pucuruí (Asurini), and Parkatêje (Gavião da Montanha). During the authoritarian period, the Parakanã suffered continually under the developmental projects of the military (Goodland 1978; Fearnside 1999; WCD 2000). First, the Trans-Amazonian highway split the reserve and brought many native Parakanã into constant contact with Brazilians for the first time. Epidemics of flu and venereal

[93] Malaria jumped from 8 cases in 1969 to over 10,126 in 1984, while cases of parasites jumped from 251 to 4,612 (WCB 2000, 138-9)

disease convulsed the community leading to extensive group fragmentation. As survivors were located, most were moved to the Parakanã Indian Reserve in 1971.

The introduction of Tucuruí further disrupted local communities. Dams inundated roughly ten percent of the Parakanã reserve (some 20,000 hectares) and more than half of the Purcuruí lands (over 14,000 hecatres) (Goodland 1978, 12-3). Waters encroached on indigenous territory forcing constant moves, disrupting traditional agricultural practices and social relations. As the reservoir filled, masonia mosquitos swarmed local indigenous communities, spreading malaria. Observers noted peak period bite rates of 500 bites an hour and within one decade 1,227 families, fell to 678 (WCD 2000, 99). Poorly designed harvesting plans further deforested the Parakanã Reserve, exposing inhabitants to increased contact, disease, and noise (Treece 1987). Finally, other settlers displaced by the dams began invading and occupying what had previously constituted indigenous land.

After much consultation and haggling Eléctronorte, FUNAI, and local leaders agreed on a new reservation, yet adequate financial compensation for the disruption was not quickly forthcoming. In 1986, after the Parakanã threatened to block the Trans-Amazonian Highway and blow up a vital bridge, Eléctronorte agreed to create the Programa Parakanã which provided some agricultural assistance and the basic provision of education and healthcare services. By 2000, other groups including the Ausurini and Gaviões were still struggling to receive adequate compensation for their losses (WCD 2000, 16-7).

To conclude, the lengthy WCD report found that “ in accordance with a logic of developing the economy, [Tucuruí] was unable to realize the ecological, social, economic, and cultural consequences of the process” (2000,121). Fearnside places blame

more squarely on the military's shoulders writing, "Since Tucuruí was planned and built under Brazil's military regime, it is unsurprising that little importance was attached to negative effects on local residents (1999,13)". Ultimately, the Brazilian military prioritized economic development and citizen wellbeing was not a primary concern.

Balbina

With planning started in the 1970s, Balbina represents one of the last military dams and this case study illustrates the worst aspects of dam planning during this time period. At the same time, Balbina is an interesting transitional case that highlights the development policy tensions that emerged as Brazil moved towards democracy. As Brazil slowly transitioned towards greater political opening (1974-1985), military officials became concerned with the public's perceptions of the regime. Although elections were controlled, they were important barometers of public opinion and the officials did not wish to lose. In the case of Balbina, the concerns with political performance ultimately undermined the rationalization of policy, lending additional evidence to the concerns that open political systems, overly politicize public policy.

Fearnside concludes, the dam was a "pyramid to folly" that was "particularly unfortunate because it was unnecessary" (1989, 16). So poor was the design of the project that an increasingly skeptical World Bank refused to finance the dam on environmental and economic grounds. Intended to generate power for the burgeoning Amazonian capital and free trade zone, Manaus, Balbina was very difficult to justify in technical terms and did little to satiate the capital's energy needs (Fearnside 1989, 2001). According to my tabulations, Balbina is the least environmentally efficient dam in Brazilian history (.06) in terms of the amount of land inundated versus the dam's peak capacity, flooding some

4,437km^2 for a modest capacity of 250 MW.[94] Located on a small river (Utumã) with flat topography, the dam had less power generating capabilities and economic utility than alternative dams located downstream. A much better option, Pará's Cachoeira Porteira could have been built at half the cost with a substantially reduced environmental impact (Fearnside 1989; Rodrigues and Oliveira 2012). In the absence of a "rationalized" developmental reason, why was the dam constructed?

Viability studies were conducted in 1975, but according to Fearnside (1989, 4; 2013) military made decision to build Balbina to "give" Amazonas and the military-allied PDS governor a concrete project. The government was initiating a cautious political opening and in the face of elections in 1982, the regime needed to improve its electoral chances. Voters were apparently not impressed and despite of the government largesse, the PDS still lost the governorship. In spite of severe financial shortages, the project would continue during the Sarney administration. As Balbina came under increasing attack from the media, researchers, and those affected by the dam, Elétronorte developed an expansive media blitz questioning the patriotism of their critics. In another series of ads, the narrator adopted the voice of Curupira, a mythological indigenous Amazonian claiming that if the dam were so bad for the environment, Curupira, himself protector of the forest, would never let it be built. Usually, ads finished with the phrase "whoever is against Balbina is against you." The first public meeting about the dam occurred only one month before the gates were closed and the reservoir began to fill. Fearnside (2013) credits the propaganda effort with creating a social environment where few people were

[94] Fearnside (1988) argues that the actual production is closer to half the installed capacity. While initially the dam was considered to have flooded 2,360 km^2, ANEEL has recently revised that figure to over 4,000 km^2 so that the 1,500 artificial islands created by the dam are included in the figure.

aware of the dam and its potential impact. Instead of using police batons and overt violence, the state manipulated citizens through misinformation.

While the Tucuruí effort placed too little emphasis on debris removal, virtually no effort was made to clear biomass and Balbina has become a stagnant "methane factory" (Fearnside 2013). Coupled with an extremely shallow reservoir, water degradation was even more significant. Eletronorte justified the inaction by interpreting Brazil's obligatory de-stumping law to only apply to reservoirs intended for water supply. The blatant disregard for biomass removal increased water acidity, which beyond a deleterious ecological impact ultimately undermines the investment in the dam by more quickly eroding the turbines. Additionally, Rodrigues and Oliveira (2012,42) note the absolute absence of any concerted effort to rescue wildlife fleeing inundation or stranded on the thousands of artificial islands created by the rising water levels.

One final note on Balbina concerns the dam's impact on the local Waimiri-Atroari people. Although the flooded area was sparsely populated,[95] the reservoir inundated two indigenous villages and 30,000 hectares of indigenous land. In a continued display of indifference to indigenous territories, on three separate occasions[96] presidential decrees reduced and arbitrarily redrew reserve boundaries. In the early 1970s, the military was sent in to pacify indigenous people resisting the increasing incursions of non-indigenous and the construction of the Trans-Amazonian highway. Within a two-year period (1972-4) disease and violence reduced the Waimiri-Atroari to one-third its original population (Cummings 1995, 153). Road construction and mineral exploration placed further

[95] Fearnside (1989) and Rodrigues (2013) present different estimates from several dozen to 3,000. In either case, the reservoir of Balbina displaced far fewer people than Tucuruí or Itaipu. At the same time, compensation efforts for the displaced were faulty and halting (Rodrigues and Oliveira 2012).

[96] Decrees 69.907/71 (1971), 74.463/74 (1974), and Decree 75.310/75 (1975)

tensions on the community. After the return to democracy, Elétronorte implemented programs to help and aide the Waimiri-Atroari, however many scholars have found the efforts lackluster (Bain 1994; Rodrigues and Oliveira 2012; Rodrigues 2013).

Considering the last three, the introduction of democracy would dramatically change the politics behind hydroelectric policy. Even the state-run Eletrobrás found that "the transition from an authoritarian regime to democracy contributed to greater questioning of the social and environmental impacts inherent to the construction of hydroelectric dams and transmission lines" (Eletrobrás 2010). In the next section, we will see that during the democratic period, hydro- politics have broken with the paradigms of dam design and construction of the military period.

Hydroelectric Dams in the Democratic Developmental State (2003--):

Between 1985 and 2003, Brazil was democratic, but was not a developmental state. In the executive branch, the first presidents were populists and ideologically incoherent politicians that lacked a clear policy vision. The exception would be the two administrations of Fernando Henrique Cardoso, who combined programmatic policies with political astuteness.

Chapter two outlined the bureaucratic reforms of the Cardoso administration. In terms of economic policy, Cardoso was not a committed developmentalist, introducing neoliberal reforms that included privatizations and cuts in government spending. In the energy sector, construction contracts were opened to private competition[97] and competitive, public bids were now required (Lei 8987). Eletrobrás and its subsidiaries[98]

[97] Previous contracts had been dispersed as state or federal concessions.
[98] CHESF, Furnas, Eletrosul, and Eletronorte

were streamlined along lines of generation, transmission, and distribution. In the end, the privatization campaign failed to generate substantial private interest.

There was greater bureaucratic capacity and financial order, but the return to democracy heralded a return to accountability, checks and balances, and a basic respect of human rights. Democratization led to a series of institutional reforms that subsequently altered the political calculus involved in developing new hydroelectric dams. Social and environmental protections rendered hydro-power less profitable and fewer private investors were attracted to the sector, despite the overwhelming demand for greater power generation (Hochstetler 2011). These consolidating protections included three major constitutional modifications with regards to indigenous rights, environmental regulation, and the transformation of the Public Prosecutor (Minstério Público, MP).

Given the abuses and arbitrary relocation that typified the military period, the constitution enshrined additional protections for indigenous people (Title VIII, Chapter VIII, Article 231). Now considered legal adults as opposed to “minors”, indigenous peoples have rights to the lands they occupy and the state is charged with protecting those boundaries and preserving all environmental resources within those territories, including flora and fauna. Exploration or exploitation of hydraulic resources on indigenous soil can only by authorized by Congress and only after the affected communities have been heard and allowed to participate in the design of any project (Paragraph 3). Additionally, judicial procedures can be initiated to ensure proper indemnification or contest state actions (Paragraph 6). While skeptical of their ultimate transformative power, most observers acknowledge these regulations have afforded greater institutional possibilities to pursue legal and political assistance. Accordingly indigenous group, linked with

transnational and sympathetic domestic actors, have increasingly taken advantage of the new institutional opportunities to protect and preserve their rights (Rodrigues 2002).

Largely in response to the environmental disasters of the 1960s and 1970s, the return to democracy encouraged greater codification of environmental protections (Hochstetler and Keck 2007; McAllister 2008).[99] Within the constitution, the state is explicitly charged with protecting the environment and biodiversity (Title VIII, Chapter VI). Any activity that significantly degrades the environment is required to obtain a license after conducting an environmental impact assessment (Paragraph 4)[100]. Since 1986, a national environmental council CONAMA has been charged with developing environmental standards at the federal level, which set a procedural minimum for all states. Although companies may apply for assessments the state or federal level, hydroelectric dams over 10 MWs must obtain three licenses[101].

The first is a *licença previa* (preliminary license, LP) with requires two environmental impact assessments (EIA/RIMA) produced by an independent consultant.[102] Afterwards, competitive bidding can be held for the contract. After elaborating resettlement and impact mitigation plans, the company can receive a *licença*

[99] In mids-1970s, several agencies were created to monitor the environment at the federal and some state levels (SEMA, CETESB (São Paulo), and FEEMA (Rio de Janeiro) among others). It was not until the introduction of the Programa Nacional do Meio Ambiente (National Environemental Program, PNMA) that a basic codification environmental started to emerge.

[100] Generally, IBAMA, a federal environmental agency, has been responsible for emitting licenses when prospective dams impact state borders, indigenous territories, or conservation zones. In other circumstances, companies can solicit a license from state environmental ministries. However, the case can always be referred to IBAMA if there is substantial public pressure or the state agency appears unable to offer an unbiased assessment (Hochstetler and Tranjan 2013,31).

[101] Thus, CGHs are exempt from environmental impact assessments.

[102] Fearnside (2013) notes these consultants have an economic incentive to produce favorable studies in order to secure future contracts.

de instalação (installation license, LI) and begin construction. Finally, a *licença de operação* (operation license, LO) permits operation and is only issued after the concerns raised in previous stages are fully resolved. While they can be held at any stage if a judge determines it is necessary or if it is requested by the MP or a group of 50 citizens, public hearing or *audiências púlblicas* are generally held after the submission of the EIA/RIMA.

In general, scholars have been mixed on the impact of new environmental regulations (Hochstetler 2002; Hochstetler and Keck 2007; McAllister 2008; Fearnside 2013). While laws are stronger and are officially codified, the ability of agencies to adequately enact the legislation varies. Too frequently, corruption and political interference comprise the neutrality of the regulatory agencies. As we shall see in the case studies, environmental agencies in Brazil tend to be weak with fewer resources, less prestige, and less political capital. As McAllister notes,

> Environmental agencies have difficulty defending policies and administrative actions that run contrary to the priorities of political leaders and other government agencies (2008,41).

The last major political change involves the Ministério Público (MP). The MP is a special autonomous branch of the judiciary is charged with protecting the collective interest, which includes indigenous and environmental rights (Tit. IV, Cap IV, Sec 1[103]). Granted proactive and reactive powers, the MP can initiate cases and is obliged to investigate citizen complaints. Strengthening the institutional protection of the environment and indigenous groups while making agencies more accountable for their decisions, the proactive aspect of the MP has permitted a prosecutorial enforcement that goes well beyond the administrative enforcement of most bureaucratic agencies. The MP can more effectively challenge larger political and economic actors. In fact, some

[103] See also Lei de Difusos (Lei 7.347)

scholars allege that it is the most independent actor in the Brazilian system (McAllister 2008,65). As we shall see in the case studies, this new actor has altered the political dynamic of hydroelectric construction. For the first time, Brazilians have a public defender that can halt projects and force companies to change their behavior.

As stated throughout this dissertation, since 2003, Brazil has returned to a developmental path. On assuming office, Lula increased public participation in the energy sector in order to jumpstart new projects. Signaling a shift back to greater state leadership, he created the Empresa de Pesquisa Energética[104] to pursue long-term energy planning, analyzing data, developing objectives, and recommending new projects to the government. A highly trained and technocratic group of researchers, the EPE helped further optimize and rationalize of public energy policy (Hochstetler and Tranjan 2013). In conjunction with highly trained bureaucrats in other ministries, principally the MPOG and the MME, Lula and Dilma have developed the PAC and used the public development bank, the BNDES, to help finance the projects (Hochstetler and Tranjan 2013).[105] It is worth noting many of these projects involve power generation, however an additional

[104] Lei 10.847

[105] Much of the turn towards domestic financing for hydropower reflects the stability of the Brazil's economy, but also belies changes in international environmentalism. With the creation of an environment department in 1987, the World Bank has cooled to financing large-scale hydroelectric projects after being targeted by transnational advocacy networks in the 1980s. Nevertheless, in 2009, it announced it would renew funding for these types of projects, particularly in Africa and Asia. Interestingly enough, the Inter-American Development Bank has continued funding for these projects and made loans for the following dams: Itá (1997, $75 million), Dona Fransisca (1999/2000, $16.27 million), Cana Brava (2000, $75 million), and Campos Novos (2004, $75 million).

component within the PAC's energy axis is Água e Luz para Todos, a program attempting to universalize access to electricity and potable water.[106]

In the next section, I will explore the politics behind three large PAC dams constructed during democratic developmental period. While still a developmental state, we will note a greater degree of state embeddedness in society with greater levels of popular participation. While there is a technical basis for each project, environmental and social concerns are included. At the same time, a study of Belo Monte, Jirau, and Santo Antônio reveals there remains room to improve the way the state engages civil society. Finally, we will witness the rise of a more pluralist bureaucracy that competes within the government over policy. Bureaucratic preferences over critical policy decisions vary considerably between agencies and bureaucratic competition is much more visible than under the military regime.

Belo Monte

Despite the significant number of hydroelectric projects in Brazil, without a doubt the construction of the Belo Monte has received more attention and generated greater levels of political mobilization than any other dam. The attention is due to the confluence of several factors. First, with 11,233 MW of installed capacity, Belo Monte will be the largest dam in Brazil after Itaipu. The dam dwarfs all other recent hydroelectric investments while representing a relative bargain at $1,600 per KW. Flooding 516 km^2, Belo Monte will be the sixth most efficient large dam in Brazilian history in terms of the land flooded to power capacity. At the same time, the project will displace an estimated

[106] Although the sample is not representative, for an interesting survey on the impact of Água e Luz in one municipality, see Cardoso et al (2013).

16,000 people and fluctuating water levels could compromise the overall generation capacity.

Plans for Belo Monte[107] have been circulating around Brazil's ministries for some time. Since 1975, inventory studies have suggested that the Xingu River was a natural candidate for a hydroelectric complex with Belo Monte representing the first in a series of dams. Given a quick drop in elevation and a strong average stream flow, engineers have claimed "God built the place to be a dam" (Fearnside 2013b). The plans immediately set off a furor when it was revealed that it would flood some 1,225 km^2, inundating thirteen indigenous territories. As international pressure mounted against the project, a 1989 public meeting was held in Altamira between Eletronorte officials and the indigenous people of the region. Called the 1st Encounter of the Indigenous People of Xingu, the conference would forever be immortalized when Tuíra, a female indigenous leader, threateningly brandished a machete in the face of the president of Eletronorte. After the fiasco and resulting international attention, the plan was indefinitely shelved as funding evaporated.

In the wake of the 2001 blackouts, Cardoso restarted the project, claiming that environmental concerns were holding the country back. Once in office, the newly elected Lula declared Belo Monte to be one of the most crucial projects within the PAC and politicked heavily in favor of the dam (da Silva 2010). It is worth noting that while then-governor of Amazonas, Edward Braga, belonged to the PMDB and supported Lula's re-election campaign, the PT ran their own candidate in the 2006 election. Consequently, the project is not a political favor to the governor. While the MP attempted on various

[107] Early on, Belo Monte was called the Altamira Hydroelectric Complex and it consisted of two dams Babaquara and Kararaô. Belo Monte was renamed in a nod to indigenous objections to using indigenous names for the project.

attempts to block construction and significant transnational mobilization has occurred, the project continues during the Rousseff administration. Led by a consortium of Brazilian businesses with a sizable public presence, the BNDES has approved loans of R$22.5 billion reais, which accounts for 78 percent of total financing (some R$26 billion). Included in this loan is R$3.2 billion that is to be used for social and environmental compensation (BNDES 2012). When the Inter-American Commission on Human Rights demanded that Brazil halt construction until indigenous group were fully consulted, Brazil angrily rejected the court's decision and that threatened to withdraw from the organization. In 2010, IBAMA granted the LP and the competitive auction was held. One year later, after elaborating a more extensive social and environmental compensation package, IBAMA granted the LI and formal construction started.

Supporters of the dam point to the overall improvements in design in comparison with the original plan. After 36 years of planning and ten years of environmental impact assessment, the current project is a run-of-the-river model. While critics focus on the fact these dams are less effective at power generation (Economist 2013a), they yield a smaller environmental footprint and Belo Monte's potential reservoir has been reduced by more than half. While it will cost an estimated R$2 billion extra to construct, according to officials the proposed reservoir would no longer flood any indigenous land, nor would it dry out riverbeds downstream (Lyons 2012). Given these changes, Congress has claimed it is no longer legally required to consult with indigenous groups, as the dam would not flood protected areas. At the same, critics point out that the dam will disrupt the local flora and fauna and promote a massive migration of workers. Even without extensive flooding, the dam will affect indigenous territories and the Brazilian government has a

legal obligation[108] to secure the free, prior, and informed consent of affected indigenous groups (Jaichand and Sampiao 2013). Some have used this situation to claim that the government is "authoritarian" and "imposing decisions in a top-down fashion" (Hall and Branford 2012). Fearnside concludes, "the environmental and licensing process for Belo Monte are merely bureaucratic rubber stamps to legalize a decision that has already been made" (2006, 9).

The contentious politics surrounding the dam have made it a hot button issue (Hochstetler 2011). In the acrimony and vitriol, it has been too easy for some observers to conflate the actions of the current democratic government with those of the military period. Several significant differences are apparent. First, the project has been redesigned to reduce its impact and this is because of greater economic savings. Furthermore, ANEEL and the EPE (2011) estimate that roughly 15 percent (R$3.3 billion) of the total cost of dam will be spent on social and environmental programs and included in these costs are fish ladders, boatlifts to maintain river navigability, homes, new schools, and hospitals for the affected communities. These programs have been developed and resettlement programs have been elaborated before formal construction began. Nevertheless, community members have complained that this information could be divulged in a more transparent and timely fashion. While time will tell, it is difficult to fathom that three decades from now, people will still be homeless or seeking indemnification for their losses.

While dams will certainly have an indirect impact on the flora and fauna around indigenous territories affecting hunting and fishing, the situation is not Tucuruí and

[108] Through the environmental impact assessment process and the requirements of the ILO's Convention No. 169 on the right of indigenous peoples. Signed in 2002, Brazil was one of twenty countries to ratify the treaty.

indigenous people are not being continually forced from their protected land and arbitrarily relocated. Celso Knijnik (2012), the director of PAC dams within the Ministry of Planning, reiterated various times that due to legal restrictions (and a basic respect for their culture), the government will not build any future dams that flood indigenous territories. These were not the prevailing ideas of planners during the military period where respect for indigenous territories was routinely violated.

While there is significant room for disseminating more information and future plans (Fearnside 2013b), the government has attempted to improve participation and information flows within the community. Since 2007, there have been 5 public meetings, 12 public consultations, and 30 visits to indigenous reservations (OSAB 2013; Economist 2013a). New legislation is being developed that will better institutionalize indigenous consultations, but there has been more effort to inform the public. Social movements are becoming more complex and more willing to use newly afforded institutional levers to demand changes (Hochstetler 2011). On separate occasions, spurred by social movement mobilization, the MP halted construction. After IBAMA issued the LP, the MP canceled the auction by declaring that IBAMA had not fully accounted for the impact of the dam on indigenous land. After IBAMA granted an installation license, the MP again attempted to halt construction only to be overturned by a regional federal judge. While the MP has not stopped the project, officials maintain that it has improved dam design and resettlement projects (Knijik 2012). While the mere fact that institutional levers exist is a substantial improvement, they have fostered greater dialogue between the government and civil society.

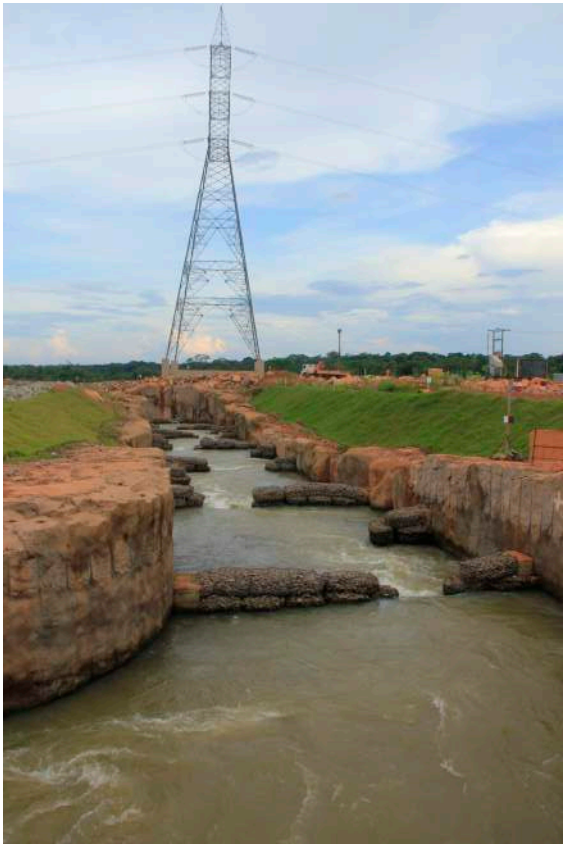
In the final case study, we witness a similar dynamic. The last two case studies are dams constructed around the state capital of Porto Velho on the Rio Madeira. Although operated by different companies, the planning and challenges of the two dams are similar and subsequently, these case studies will be presented together.

Jirau & Santo Antônio

According to ANEEL (2008), the state of Rondônia has one of the most expensive electricity rates in the country. The Jirau and Santo Antônio dams were planned in order to lower costs and spur greater regional development despite the state governor belonging to an opposition party.[109] Respectively, they will both generate over 3,000 MW and represent the fourth and sixth largest dams in Brazil. Like Belo Monte, both Jirau and Santo Antônio are "run-of-the-river dams" and do not require large reservoirs or flooding vast swaths of land. On the negative side, levels of energy generation fluctuate more dramatically with river levels and the dam will seldom generate at full installation capacity. Of the two, Jirau has greater environmental efficiency dam with 3,300 MW generated and only 108 km^2 of flooding. With 3,580 MW of generating capabilities, Santo Antônio will flood a comparatively larger 271 km^2. The small reservoirs will displace fewer people (between 1,000-1,700) in both cases with Santo Antônio experiencing slightly more dislocations due to its closer proximity to the state capital of Porto Velho.

[109] In public office, former Governor Ivo Cassol demonstrated the notorious Brazilian proclivity for party switching. In 18 years, he has belonged to 5 different parties (PDT, PFL, PSDB, PPS, and PP). After 2 consecutive terms as governor, in 2013, the Federal Supreme Court sentenced Cassol to jail for fraud.

Picture 4.1 Construction Site (Santo Antônio)



Picture 4.2 Construction Site (Jirau)

Picture 4.3 Fish Ladder (Jirau)

While studies date back to the 1970s, the two dams gained traction in 2001 after ANEEL authorized a new inventory of the river. After studying several previous options and considering alternatives, Furnas and Odbrecht decided that by building both Jirau and Santo Antônio at their current specifications, they should avoid causing flooding in neighboring Bolivia. Given the dams' strategic position on the Peruvian, Bolivian, and Brazilian borders and close proximity to the soybean fields of the Center West, an associated project with dam construction has been the creation of two more dams and two navigation locks that would make the Madeira fully navigable to ports on the Atlantic Ocean (Rezende 2009). The dam project was included in the PAC and received funding from BNDES. In sum, these loans reach nearly $6 million dollars and account for roughly 60 percent of the total cost of Jirau and 45 percent for Santo Antônio (BNDES 2008, 2012a). According to company spokesmen, Jirau estimated roughly eight percent of its total budget would be spent on social projects and Santo Antônio estimated total expenditures around ten percent (Lira 2012; Alves 2012).

In terms of the environment, the Rio Madeira is second largest tributary of the Amazon area and a particularly biodiverse river that exhibits higher levels of sedimentation. With 50 percent of the sedimentation loads of the Amazon, the characteristics of the river may compromise the long-term viability of the dams and negatively affect the backwaters in Bolivia (Fearnside 2013b). Additionally, great concerns have been raised about the dams' impact on migratory fish species like the giant catfish in spite of the addition of a fish ladder. Similar to Belo Monte, while the dams

would not flood any indigenous land, it has been estimated that indirect effects could impact four different groups.[110]

The most troubling events associated Jirau and Santo Antônio revolve around the apparent politicization of environmental agencies and the licensing process.[111] In 2005, Furnas submitted their environmental impact assessments. Around the same time, Dilma Rousseff, then Minister of Mines and Energy, moved to the Casa Civil. After the PAC was announced, the Rio Madeira dams were considered high-priority projects within the program. Inside the government, the Casa Civil, MME, and MPOG emerged as fierce defenders of the projects that would pressure the Ministry of Environment (MMA) and IBAMA to green light the project.

In spite of the political pressure, IBAMA initially blocked the projects until a series of social compensation projects were developed and greater mitigation efforts were undertaken to reduce the environmental impact. In addition, the agency criticized the poor quality of the initial EIA/RIMA. At this point, political pressure against IBAMA intensified within the government and the media sponsored by leading economic actors in the area. After a meeting with Lula and his leading ministers, the new head of IBAMA, Roberto Messias Franco, overruled the recommendations of his subordinates and issued the preliminary license (Fearnside 2013b). In 2008, Marina Silva, an important leader within the environmentalist faction of the PT and Minister of the Environment, resigned her post. Most analysts have attributed her resignation to continued pressure from her PT

[110] These groups include: the Karipuna, Karitiana, Oro Win, Uru-eu-wau-wau, Amondawa, and Wari, totaling some 2000 people.
[111] José Lucio disputed that the licensing process was politicized stating that it was a "technical" process and that politicians could "slow you down", but not "speed up the approval process" (2012).

colleagues to support large dam projects. Shortly after her resignation, both installation licenses were issued authorizing construction.

While there was intense politicking within the government for the projects, demonstrating a divided bureaucracy, it is worth briefly discussing the way in which the architects of the project engaged the general public. For social movements, the audiences represent a focal point of mobilization campaigns, particularly for the MAB and allowed the impacted residents to articulate their concerns to the responsible actors (Rezende 2009; Benites and Maghini 2011) Santo Anotônio held at least six public audiences, while Jirau had four. During the public audiences, Odebrecht and Furnas paid to facilitate transportation of local residents to the meetings. Furthermore, a question and answer session allotted each resident the opportunity for a 3 minute question and an additional 3 minutes for follow up question to be answered by the company representatives, IBAMA, or the government (Rezende 2009). While Rezende finds in a survey that no one was entirely satisfied with the participatory nature of the audiences, given the intense polarization, the fact that there was dialogue between groups is extremely important. Most importantly, denunciation and citizen concern forced company representatives to create social programs and better compensation packages. During the public audiences, the majority of the questions concerned relocation and compensation. Rezende (2009, 60-1) was skeptical about the utility of these questions and criticizes the vagueness and evasion of explicit details on the part of the company representatives. Nevertheless, later studies and interviews have contradicted this initial impression. Beyond mere resettlement and indemnization, citizens forced Furnas and Odebrecht to develop

programs including the construction of new hospitals, schools, and community centers (Benites and Maghini 2011).

Table 4.3 Summary Statistics of Hydroelectric Case Studies

	Itaipú	***Tucuruí***	***Balbina***	***Santo Antonio***	***Jirau***	***Belo Monte***
Years of Construction	1975-1982	1976-1984	1981-1989	2008-2012	2008-2013?	2011-2015?
Cost ($US dollars)	$19.6 billion	$9.5 billion	$750 million	13.5 billion	$9.5 billion	$18.5[112] billion
Displaced People	42,000[113]	32,000	1,000	1,762	953	16,000
Floods Indigenous Land	Yes	Yes	Yes	No	No	No
Public Audiences	No	No	No	6	4	5
Licensing Time (Initial License- Operating License)	None	None	None	1,528 days	1,929 days	Pending
Power Generated (MW)	14,000	8,340	250	3,580	3,300	11,233
Flooded Area (km^2)	1,350	2,850	2,360	271	108	516
Environmental Efficiency[114]	10.4	2.9	.11	13.21	30.56	21.8
Economic Value ($ per KW)	$1400	$1113	$3000	$3771	$2879	$1647

[112] Estimated
[113] Khagram, 2004,145
[114] Following Gama et al (2011) the efficiency rate is tabulated using the power generated by flooded area. Efficiency rate assumes full power generation.

Summary of Case Studies

Table 11 (above) summarizes the major characteristics of the six case studies analyzed in this study. Three of the cases (Itaipu, Tucuruí, and Balbina) occurred during the military dictatorship under a period of authoritarian developmentalism. During this period, I highlighted the general characteristics of dam construction. With the clear exception of Balbina, projects were generally developed in a rationalized fashion. While perhaps Pharaonic in grandiosity, the projects still served a plausible economic objective that built necessary infrastructure to meet rising demand for electricity. In short, these dams helped Brazil industrialize and power its rising economy.

Focusing on the economic merit of the dams, the military was oblivious to the environmental and social impacts of the large dams. Tens of thousands of people were displaced and struggled for decades to receive compensation. Thousands of square kilometers of land were inundated with little concern for responsibly clearing biomass or making efforts to protect the local flora and fauna. Indigenous groups were displaced and relocated with little regard for their historic lands. To make matters worse, there were few avenues to contest public policy within or outside the government.

With curtailed civil liberties and rights, authoritarian governance reduced the political space for civil society to articulate concerns and improve the overall development of projects. Affected populations were rarely consulted for input and then only after formal construction started. Indirectly elected subnational authorities were supportive of the federal government and technocrats in the bureaucracy generally agreed on major policies, meaning there was less debate inside the government. The lack of

accountability and arbitrary nature of rules allowed the government in collusion with electrical companies to run roughshod over citizen's rights.

The democratic period reveals greater complexity in the dam process. The 1988 constitution has provided formal protections for the environment and indigenous groups that makes policymakers consider these aspects as they develop plans for hydroelectric dams (Knijnik 2012). On a monthly basis, officials from the MME, Ibama, MPOG, FUNAI, and the Casa Civil came together to discuss important projects, address potential concerns, and revise plans in "situation meetings"[115] (Bruto 2012). Most importantly, these factors must be considered before formal construction begins. Institutionalizing these rights, expectations, and processes, the constitution places distinct limits on what the developmental state can and cannot do. Beyond formal protections, the developmental state has created participatory features that make bureaucrats more embedded in society. Public audiences serve to increase dialogue and flows of information between all the relevant actors. All the major PAC dams reviewed in the study have held multiple meetings where community members were freely permitted to air grievances and seek redress. While audiences can be improved and made more efficacious, they frequently yield tangible results including greater mitigation efforts and compensation.

Without a doubt, in Brazil, environmental licensing has emerged as the most polemic facet of democratic developmental state. Declaring it the most difficult bottleneck for increasing investment in the energy sector, politicians and investors frequently complain that licensing is too slow and cumbersome. Complaining about the cumbersome process of licensing, José Lucio the Institutional Director of Jirau declared

[115] Sala de Situação

that the company had to be approved at least one hundred times by different agencies at the municipal, state, and federal level to ensure compliance.

> It is an enormous investment that requires an enormous licensing process. Before the constitution, during the military dictatorship, it was much easier to handle these [social and environmental] issues because you did not have to respect the environment or indigenous communities. I participated on a variety of projects and saw this firsthand. But in a society that is organized democratically, a state of rights and laws, you have to act differently. It is a lot of work. It is tiring and expensive. You have to show society that you're doing the best thing possible and this long process is absolutely necessary (2012).

Environmentalists argue that political pressures are excessively accelerating the process and reducing the technical merit of decisions (Fearnside 2013). While choosing sides in this debate is beyond the scope of this present study, it demonstrates the pluralism within Brazil's developmental state. The MME, ANEEL, and MPOG act as an "enabling coalition" that supports the private industry and public enterprises pursuing the hydroelectric investments. IBAMA, the MMA, and the MP form a "blocking coalition" in conjunction with environmentalists in civil society and compete against hydroelectric proponents during the environmental licensing process (Hochstetler 2011). The competition between these technocratic agencies is crucial in shaping the ultimate policy outcomes. This transformation from a more monolithic to pluralistic bureaucracy does not inherently compromise the fundamentals of developmentalism. At the same time, it should be reiterated that agencies should be able to freely make decisions on the basis of their technical expertise. If political pressure unduly influences decisions, it will ultimately undermine the foundations of the developmental state.

Table 4.4 Environmental Efficiency of Large Dams (>1 GW)	
	Avg. Efficiency (MW/Km^2 Flooded)
Authoritarian Dams[116] (1964-1984; n=16)	5.54
Democratic Dams (1985-2014; n=12)	15.47

In keeping with the case studies, Table 12 offers descriptive statistics on large dams constructed during the military dictatorship and the subsequent democratic period. The table presents larger UHEs that generate over 100 MW of power. In total, there are 28 cases with a roughly even distribution of cases. Unfortunately, data on the topic is highly fragmented and had to be assembled compiling data from a mixture of websites including the Observatório de Barragens, ANEEL, and the websites of the individual dams. Building this original dataset does provide the opportunity to note the general trends within hydroelectric power. In particular, it is noteworthy that large dams are nearly three times more environmentally efficient than their authoritarian counterparts and there is little evidence that these trends will decrease in the near future. An engineer described the changes in this way

> Dams are an enormous investment and they require an enormous licensing process. Before the constitution, during the military dictatorship, you could do things with much greater ease, but without respecting the environment or indigenous communities. I participated on a lot of projects and I saw how easy it was first hand. Now, in a society that is organized democratically, a state of laws and rights, you cannot do that. You have to show society that you are doing the best possible project possible and it is hard work. It is tiring and expensive. You have to contract all these people

[116] Excludes Paulo Afonso

> to assess your project and that raises the overall costs, which are passed on to the consumer. But, it is necessary (Lucio 2012).

Conclusion:

In *Damocracy*, a documentary that covers the dam construction of Belo Monte, one easily arrives at the conclusion that over the past two and a half decades, little has changed in politics of Brazilian dam construction. Dams are being built in a way that runs roughshod over local *caboclos* and indigenous groups. Politicians are indifferent and once again, developmental priorities overshadow environmental concerns. The social-environmental impact of PAC dams is indisputable, but this chapter clearly demonstrates the changing politics behind their construction. If your view is that Brazil should never build these dams, then environmental laws and the return to democracy have failed to constrain the impulses of the developmental state in Brazil. Nevertheless, this view is reductionist and fails to appreciate the overall improvements in the way the contemporary developmental state engages society and the environment.

In this chapter, I have showed the cold, calculating decisions on dams in the military period. Human rights were routinely violated, whether those of indigenous people or local river people. The environmental impact of projects was largely irrelevant in project formulation. Most importantly, there were few political avenues for redress. In the current context, the legal rights of the environment, the indigenous, and normal Brazilians are far more extensive. Despite room for improvement, projects must complete an environmental impact assessment and go through an extensive licensing process to construct and operate a large dam. A vital new force, MPs act as public defenders that bring more information into the public view and have consistently improved projects by

making companies more accountable for problems and compelling them to institute greater mitigating measures.

In the end, humanity faces a predicament. No one can dispute the earth's exploding number of inhabitants. While increasing energy efficiency and conservation represent temporary measures, every new human being places new demands on an already taxed earth. Conversations about population growth, let alone control, are politically taboo and most tax codes are still geared to benefit larger families. In the developing world, economies are growing and income is rising. These newly empowered citizens of the Global South are justly demanding the sophisticated electronics and personal transportation that are already widely enjoyed in the Global North. As a species, our demand for energy appears to be growing insatiably yet our production of sustainable energy is halting at best. Exactly where hydroelectric energy fits into this equation is clearly a contentious issue. Hydroelectric dams reduce dependence on fossil fuels and their associated emissions. At same time, dams leave a notable environmental footprint, particularly in sensitive, biodiverse ecosystems and social settings. In either case, hydroelectric energy will form a crucial component of Brazil's energy matrix for the foreseeable future.

In closing, Brazil's government and state agencies are engaging, not evading, the contentious political issues that surround hydroelectric construction. More efforts can be made to reduce the environmental footprints of hydroelectric projects. Greater transparency and access to information would increase the public's faith in the current environmental licensing process. Quicker compensation and aid to those affected and dislocated by dams should be a government priority. Yet, there has been progress and to

miss these improvements paints an overly inaccurate, binary view. Frequently, developmentalists and environmentalists are pitted as competing rivals. When the situation is framed in this manner no one seems to win. Greater dialogue between these two camps will continue to improve and refine existing policy and create a better Brazil and a better world.

5. Conclusion:

Deodoro Fonseca vetoed the first proposal for the new Brazilian Republic's flag for appearing too similar to its American counterpart. At the time, he purportedly proclaimed, "We changed regimes, not homelands!" (de Moura 2011). Fonseca conceived of Brazil as a leader in its own right and believed that the country should chart an independent course. Throughout history, politicians, writers, and academics have pronounced Brazil to be the country of the future, only to see the nation stumble before their eyes. In November of 2009, *the Economist* depicted Rio's iconic Cristo Rendentor blasting off into the clouds. Four years later, the cover changed from take-off to a face-first tailspin. This author does not wish repeat those follies. While only time will confirm if these trends are permanent, what I have found in my research and travels is that the country is moving in the right direction and my understanding of the Brazilian political and economic system generally contradicts the pessimism of the Economist's second edition.

Picture 5.1: Recent Economist Front Covers (*Source:* Veja 2013)

In this dissertation, I have focused on developmentalism in Brazil and made theoretical and empirical contributions to an ongoing debate on the democratic developmental state that is relevant to countries across the developing world. In particular, I have analyzed how the contemporary developmental state under the PT is engaging democratic governance in Brazil, looking at the way policies are developed, how politics influence the process, and the extent to which legal obligations and citizen concerns affect policy outcomes. Building on Evans' (1995) original work, I find that the Brazilian government demonstrates a complex mixture of "embedded autonomy." Writing on the issue, Evans' describes the developmental state:

> …as coming much closer to approximating a Weberian bureaucracy. Highly selective, meritocratic recruitment and long-term career rewards create commitment and a sense of corporate coherence. Corporate coherence gives these apparatuses a certain kind of "autonomy." They are not, however, insulated from society as Weber suggested they should be. To the contrary, they are embedded in a concrete set of social ties that binds the state to society and provides institutionalized channels for the continual negotiation and re-negotiation of goals and policies. Either side of the combination by itself would not work (1995, 12).

In researching the PAC and writing this manuscript, it appears to me as though present-day Brazil is much closer to the ideal that Evans described in 1985. Looking at the PAC, autonomy has clearly increased. As mentioned in chapter two, since the 1930s, the quality of bureaucratic personnel has continuously improved. Competitive examinations and salaries attract talented and well-educated Brazilians into public sector careers. Most importantly, a consistent narrative throughout my research on the PAC has been the increasing rationalization of public policy. Core voting plays a role, however infrastructure investments do not appear to be distributed on the basis of pork barrel. While legislators have opinions on the infrastructure program, they are not picking the

winners. Bureaucrats at the municipal, state, and federal levels have been the real drivers of the program, proposing and developing projects. Projects are constantly debated and closely examined by different agencies, promoting continual refinement and improvement to the original plans. Politically-appointed ministers may make the final decisions, but they are choosing from a pile of technocratic projects developed by a non-partisan bureaucracy.

Given that autonomy has improved, on the issue of embeddedness, it would be difficult to argue that any developmental state has been more embedded in civil society. Perhaps a contentious claim, in order to test the extent to which the Brazilian model is unique on the matter, in the future, the author would like to compare hydroelectric policy among countries in potentially similar developmental situations (such as Turkey, India, Russia, Norway, China, etc.). In the Brazilian case, clear institutions and legal safeguards exist that protect citizen rights and provide an electoral means to hold officials accountable. Yet beyond a procedural minimum, I have highlighted how *audiências públicas* and the Ministério Público provide new institutional avenues to redress or halt government projects. Advisory groups like the CDES provide policymakers with institutionalized linkages with private actors and facilitate greater information sharing and transparency. While maintaining their autonomy, bureaucrats boast significantly greater social linkages with civil society and are more responsive to public needs. Pluralism in the bureaucracy means specialists compete over economic, environmental, and social impacts of projects in a way that promotes a more balanced and nuanced decision-making process. In the end, economic interests may dominate, but they cannot

run roughshod over environmental and social concerns and this is making the developmental state more responsive to civil society.

From the description above, it is clear that Brazil is moving closer to Evans' ideal developmental state, but I wish to close with several observations on the PAC. Beyond furthering our understanding of abstract theoretical concepts, the PAC proffers several observations on Brazil and the successive PT administrations that portend a great deal about the future direction of the country.

First, infrastructure matters to the economy and now the government. After decades of neglect due to indifference or inability, the PT governments are actively working with leaders across the political spectrum to resolve the massive infrastructure deficit in the country. Government spending on infrastructure now ranges between 3-4 percent of GDP (CGPAC 2010). In the words of the PAC's World Cup coordinator, Guilherme Ramalho:

> The PAC made infrastructure central to the agenda of the government. It may seem like a minor thing, but to me this is central. More than the quantity of financial resources, there had been an utter lack of attention paid to infrastructure. Now infrastructure is a priority and it shows the retaking of national capacity to invest in infrastructure. This will have a cascading effect that produces better, more capable bureaucrats, better planners, better engineers, and a better society (2012).

Without improvements in infrastructure, Brazilian goods would struggle to compete on the international market. Infrastructure directly impacts productivity and performance. Infrastructure becomes a more pressing matter since Brazil expects to receive hundreds of thousands of tourists and fans for the World Cup and wishes to facilitate their movement around the country.

According to government documents at the end of 2010, Brazil had spent R$619 billion on PAC projects (CGPAC 2010), superseding original government estimates of R$503 billion (CGPAC 2007). After the PAC1, Brazil had two massive hydroelectric dams entering into operation (Santo Antônio, Jirau) with two more projects (Belo Monte, Tele Pires) being developed. 6,377 kilometers of highway and 909 kilometers of railway were built or improved. Twelve new gas fields and platforms entered into operation. 3,776 kilometers of gas pipelines were constructed. Over 5,000 housing and sanitation projects were finished or in execution (CGPAC 2010). By its third year, PAC2 spending had reached R$773 billion. Additionally, 3,080 kilometers of highway, 639 kilometers of railway, 9,828 kilometers of transmission lines, and 1,500 houses were completed. Several smaller PAC dams started generating power including: Mauá (361 MW), Simplício (333 MW), and Garibaldi (189MW) and 1.8 million people were connected to the power grid (CGPAC 2014). While the list of completed projects continually grows between each report, it is worth noting that some politicians wish the government would spend more and not be so "fiscally timid" (Balhman 2012).

Beyond merely addressing pressing concerns, the PAC has improved the way policies are developed and enacted. The PAC shows a government that is thinking long term about serious national problems. The government acts in a strategic fashion, prioritizing important projects and maintaining fiscal discipline. In chapter three, I detailed a selection process that has substantially empowered technocratic bureaucrats, promoting a greater rationalization of public policy. *Salas de situação* are increasingly used to bring different ministries together to encourage greater inter-ministerial dialogue and coordination (Bruto 2012; Muniz 2012). While the state is still "driving infrastructure

projects by inducing investment and prioritizing certain projects" (Vaccarezza 2012), many PAC projects are carried out mixed private-public investment schemes (PPPs). While this appears to make projects more efficient and does inspire the rational self interest of capital, an interesting avenue for future research would build on the work of Kissler and Heideman (2006) and DiPietro (2011) to better understand how the public-private dynamic affects the timeline and completion rate of projects.

While the PAC demonstrates a coherent long-term strategy, it also demonstrates much greater levels of transparency. One official in the Ministério das Cidades (MC) whole heatedly agrees, stating

> Beyond long term planning, the most important development of the PAC is transparency in the selection of projects, which gives more credibility to the entire process. The selection process is public with the criteria clearly listed on the internet. Municipalities have to propose projects and the selection is made public. Projects can be audited and investigated. We rank the projects on their merit and they are arranged in a hierarchical fashion. Those projects that meet the necessary criteria get funding. Those that do not, do not receive federal funding. This has changed the previous politics of clientelism (Vale 2012).

Improved monitoring mechanisms and closer scrutiny from independent, monitoring agencies like the Tribunal de Contas da União (TCU) have made it harder to misappropriate funds or engage in corruption (Ramalho 2012). Another PAC official agrees, describing the TCU's scope and power:

> The TCU is extremely developed and active in the fiscalization of contracts and public auctions. They have the double vision, correctly, of guaranteeing the process was competitive and the prices were correct. In either case, irregularities can lead to work on a project being halted (Bruto 2012).

Beyond the investigative powers of the TCU, more information is publicly available. Semi-annual reports at the national and regional level are disseminated on government websites, albeit financial figures can often be contradictory and difficult to match with other government publications. In the same vein, while important steps have been made, chapter four noted that there could be greater transparency with environmental licensing. Specifically, the government can better assuage citizen concerns about future projects and ensure that licenses are approved on technical, not political grounds. On the other hand, a new Access to Information law (Lei 12.527) promulgated by Dilma has made information more readily available. According to the International Budget Partnership (2012), Brazil ranks twelfth in the globe in terms of budgetary openness and first in Latin America having leapfrogged Chile, Costa Rica, and Mexico.[117] While preparing this manuscript, this author has used this process three times (with varying degrees of success) to secure data that was otherwise not readily available.

A final insight of the PAC is social in nature. Since the PT came to power in 2003, gross national income has risen from $7,840 dollars to $11,530 dollars in spite of the global recession. Social spending has maintained itself around roughly 24 percent of GDP (Burrier Forthcoming). Income inequality has fallen 10 percent. The number of people subsisting on less than one and two US dollars has fallen respectively by 54 and 53 percent (CEPALSTAT 2014). More than just government slogans, succeeding PT administrations have claimed that Brazil is “a country for everyone” and “a country without poverty” while making poverty alleviation a crucial component of their government program.

[117] Uruguay was not included in the sample.

This ideological commitment to social justice and "virtuous circles of development" is evidenced within the PAC, in particular the PAC2. Previous programs in Brazil have placed a much smaller emphasis on the social component of infrastructure. Providing electricity and potable water, subsidized housing, new schools, and hospitals, the PAC superseded previous programs and complemented the social welfare policies of the PT government. PAC documents state an explicit objective of "turning favelas into popular neighborhoods" (CGPAC 2011). Explaining this commitment, the PAC's director of social and urban infrastructure, Maria Caldas stated:

> In truth, the PAC is really a program of accelerated development. Development cannot be conceived only in terms of economic infrastructure. This is the classical model, that segregates, that does not include, that is not for all Brazilians. For this reason, there is a heavy emphasis on social infrastructure. The PAC thinks of development in an integrated way that supersedes a baseline and attempts to improve the lives of all Brazilians. This means basic sanitation, housing, urbanization of favelas, new preschools, health clinics, football pitches, etc. (2012)

During its release, the PAC2 promised R$388.9 billion in social infrastructure investments (see table below). According to initial estimates, these expenditures would cover 500 UPAs,[118] 8,694 UBSs, 6,000 preschools, 6,116 covered playgrounds, with cover being added to another 4,000 playgrounds, and 800 PAC plazas. The PAC plazas provide community residents with a social center that integrates fitness and cultural activities. In essence, the centers merged football pitches, tracks, and workout equipment with libraries, cinemas, and theaters in a way that "improves general wellbeing" and "builds happier citizens" (Caldas 2012).

[118] Unidades de Pronto Atendimento (UPAs) are smaller hospitals designed to handle emergencies of small and medium complexity, reducing the congestion at larger hospitals. Unidades Básicas de Saúde (UBSs) are similar to health clinics that offer basic, integrated services.

Table 5.1: PAC 2 Estimated Social Infrastructure Expenditures		
Program	Sub-Program	Billions of Reais
Cidade Melhor	·Sanitation (treatment and disposal)	22.1
	·Disaster Prevention (drainage/containment)	11.0
	·Urban Transportation	18.0
	·Paving	6.0
Comunidade Cidadã	·UPAs (Smaller Hospitals)	2.6
	·UBSs (Health Clinics)	5.5
	·Creches and Pre-schools	7.6
	·School Sports Fields	4.1
	·PAC Plazas (Community Centers)	1.6
	·Police Stations	1.6
Minha Casa, Minha Vida	·Minha Casa, Minha Vida	71.7
	·SBPE (state financing for housing fund)	176.0
	·Urbanization of Dangerous Housing (refurbishment/resettlement)	30.5
Água e Luz para Todos	·Electrification	5.5
	·Urban Water Storage/ Distribution	13.0
	·Water Resource Management (Irrigation)	12.1
Source: CGPAC 2011		

In terms of social infrastructure, the largest investment in the PAC is Minha Casa, Minha Vida. The program was designed to improve the national housing stock, but had a progressive focus on generating better housing for the poorest members in society (Cesar 2012). Containing an urban and rural component, the program has two phases with the ultimate goal of contracting 2 million houses. Among the new houses, 60 percent were reserved for those Brazilian making less than R$1,395 with the remainder saved for families with an annual income below R4,650 (CGPAC 2011). According to the Director of Housing within the Ministério das Cidades, Paulo Cesar, families that qualify for the subsidized housing pay ten percent of their income on a ten-year monthly mortgage. After ten years, the homeowners will be allowed to sell their houses or claim

Picture 5.2 Future Minha Casa, Minha Vida Neighborhood (Santarém, PA)

full ownership of their current house (2012). Once again, clear criteria and priorities for program enrollment reduced the potential for clientelism. In particular, the program prioritizes households headed by single women, families with members with disabilities, and people living in precarious, hazardous conditions (Cesar 2012). In municipal terms, projects were selected on the basis of technical studies with preference going to the municipalities with higher housing deficits (Cesar 2012).

In the favelas of Pavão/Pavãozinho, I had the opportunity to informally interview residents on a new housing complex and community center built with PAC money. While some residents complained that their new apartments were smaller than their previous dwellings, they were proud to show off their running water and electrical outlets. Furthermore, several noted that their houses were no longer precariously situated on the

side of the *morro*, one strong rain from sliding down the mountain. In interviews, residents consistently mentioned their pride in their community center and in the fact that their children were reading and learning how to use computers. The constant refrain was that afforded these opportunities, the children of the neighborhood would be much better positioned in life than their struggling parents.

Picture 5.3 Teleférico in Complexo de Alemão (Rio de Janeiro, RJ)

In the Complexo de Alemão, a particularly dangerous favela, among a series of community centers, housing projects, and sanitation projects, lays one of the more remarkable works of the PAC.[119] Stretching 3.5 kilometers, a *teleférico* (cable car) was constructed, facilitating travel through the favela. With six stations and 152 gondolas, the cable cars can transport up to 3,000 people an hour. Where previously it was a grueling 55-minute crawl in automobile to traverse the labyrinthine Complexo, the *teleférico* has reduced that time to an inspiring 19 minutes, soaring above the neighborhood with a fantastic view of the most marvelous city on the planet. Residents receive two free trips a day and praised the time saved and efficiency of their new *teleférico*. A young couple remarked that they were proud to live in neighborhood that was now attracting curious tourists and *cariocas* eager to witness firsthand this new work. Most importantly, word had gotten out that the *teleférico* would soon be featured in an upcoming *telenovela*. What impressed this author was the singular ability of the project to make life a little better for the poorest Brazilians, while giving them a sense of dignity and civic pride in their neighborhood. I cannot wait to re-visit this project and gain a better sense of its impact over time.

The PAC is not flawless and does face challenges. Frequently, licensing has slowed project completion and many politicians and bureaucrats alike criticized the slow speed of PAC projects. Former leader of the House of Deputies, Cândido Vaccarezza summarizes the general critique well, stating:

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[119] Data from this section comes from EMOP (2012), two site-visits, and interviews with José Carlos Pelosi and Juliana Ferreira, directors of communication at the Empresa de Obras Públicas do Estado do Rio de Janeiro.

> Bureaucratic restrictions, legal restrictions slow down the PAC. In terms of environmental licensing, Brazil has stricter regulations than any other country in the world. It is too strict. The monitoring and review process is extremely rigorous. You have an engineer making 10,000 reais and four people making 26,000 reais keep an eye on him. The power of the TCU is exaggerated. The role of the Ministério Público…all these issues make it difficult to complete projects and it makes them more expensive. They should not be raising the costs so much on projects that will generate national development (Vaccarezza 2012).

Similarly declaring it is easier to criticize than create, some bureaucrats have alleged the agencies in charge of controlling works are stronger than the agencies executing works (Ramalho 2012). Yet while criticizing delays, people still recognize that environmental licenses and explicit bidding processes are necessary to curb previous excesses. Longer time horizons are a direct function of greater oversight. As Ramalho, confirmed later in the interview, the challenge is to "improve speed without sacrificing quality" (2012). A technical, coordinator in the MC posits that the bureaucracy is learning to expedite policy by demanding licenses earlier in the proposal phase.

> You have an environmental license? Great, bring it to me and prove it. This is another characteristic of the Brazilian and you just cannot trust them. Unhappily, they say one thing and you need to prove it. PAC1 was based on the trust that the appropriate licenses would materialize. That did not work. Now, we have learned to give preference to municipalities that already have their environmental licenses in hand. We are becoming much more demanding (Renato 2012).

Looking at the data, the rate of PAC disbursement is improving (Minsterio de Fazenda 2013,11), adding some credence to the suggestion. As officials become more comfortable with each stage on the process, it is easier to carry projects from paper into reality.

A key issue that merits greater scholarly attention is bureaucratic capacity. Particularly in a developmental state that is devolving greater decision-making power to

the bureaucracy, skills and resources are neither evenly distributed between the federal government and sub-national entities, nor among municipalities. As demonstrated in chapter three, newer municipalities have fewer resources to write applications and secure federal funding. Bureaucrats have made similar observation stating, “everyone is not sufficiently capable, particularly at the municipal level…the problem is complex and is not resolved from day to night” (Renato 2012). In the future, this author would like to compare several programs to the PAC in order to better assess the generalizablility of the findings in the manuscript. While quantitative analysis can illustrate the overall trends, the next project will include field research visits to some of these newer municipalities, interviewing their political and administrative officials. Greater scholarship on bureaucratic capacity may yield exciting policy prescriptions that can improve the creation and implementation of public policy and positively impact the daily lives of Brazilians.

Appendix

Appendix 1.1: Correlation Matrix of Major Variables

	NO project	Total PAC (ln)	PAC percap (ln)	Population (ln)	GDP percap (ln)	GINI	Avg. Growth (ln)	%Industry
NO project	1.000							
Total PAC	0.889	1.000						
PAC Spending (pc)	0.646	0.878	1.000					
Population	0.223	0.473	0.259	1.000				
GDP per Capita	0.113	0.046	0.003	0.060	1.000			
GINI	0.090	0.212	0.115	0.481	0.030	1.000		
Avg. Growth	0.021	0.040	0.067	0.008	0.172	0.042	1.000	
%Industry	0.008	0.090	0.058	0.290	0.454	0.084	0.204	1.000
PT Councilor	0.013	0.031	0.037	0.031	0.116	0.015	0.019	0.001
PT- Allied Mayor	0.000	0.002	0.015	0.021	0.006	0.001	0.000	0.016
PT Deputy	0.111	0.095	0.084	0.009	0.260	0.019	0.067	0.106
PT-Allied Gov.	0.103	0.110	0.074	0.088	0.365	0.053	0.039	0.083
Core District	0.112	0.130	0.115	0.069	0.516	0.071	0.005	0.089
Swing District	0.046	0.054	0.043	0.036	0.267	0.014	0.016	0.038
Municipal Age	0.029	0.124	0.034	0.406	0.002	0.382	0.171	0.141
Ministry of Cities	0.109	0.330	0.225	0.690	0.174	0.276	0.016	0.237

	PT Councilor	PT- Allied Mayor	PT Deputy	PT-Allied Governor	Core District	Swing District	Municipal Age	Ministry of Cities
PT- Allied Mayor	0.016	0.001	1.000					
PT Deputy	0.106	0.170	0.009	1.000				
PT-Allied Gov.	0.083	0.033	0.002	0.229	1.000			
Core District	0.089	0.119	0.013	0.329	0.250	1.000		
Swing District	0.038	0.096	0.008	0.124	0.128	0.609	1.000	
Municipal Age	0.141	0.028	0.030	0.044	0.001	0.004	0.021	0.206
Ministry of Cities	0.237	0.050	0.012	0.050	0.001	0.001	0.003	1.000

(ln)= logged

Variables	Definition	Source
PAC Spending	All PAC expenditures at municipal level. Per Capita levels were made using total expenditures divided by municipal population. Both variables were logged.	MPOG (2012)
Population	Total municipal population (logged)	IBGE 2014
GDP per Capita	Municipal Gross Domestic Product divided by population.	IBGE 2014
GINI	Municipal level inequality coefficient (logged)	IBGE 2014
Average Growth	Average municipal growth rate 2000-6 (logged)	IBGE 2014
% Industry	% Municipal GDP that is industry	IBGE 2014
% PT Councilors	% PT members on municipal city council	TSE 2014
%PT Deputy	% PT members in national legislature, by state.	TSE 2014
PT-Allied Governor	Dichotomous variable that is coded 1 gov= is PT official candidate	TSE 2014
Core District	Dichotomous variable that is coded 1 if the 2006 vote margin > nine	TSE 2014
Swing District	Dichotomous variable that is coded 1 if the 2006 vote margin>-9 and <9.	TSE 2014
Municipal Age	Years since official foundation as municipality (logged)	IBGE 2014
Ministry of Cities	Dichotomous variable coded 1 if population> 50,000	

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LIST OF INTERVIEWS

Interviews were conducted between March–October 2012 and August 2013

Politicians:

Partido dos Trabalhadores (PT)

- Senador Eduardo Suplicy (SP)- PT Founder
- Deputado Candido Vaccarezza (SP)- House Leader of PT (2009-10); Leader of House (2010-2)
- Deputado Ronaldo Zulke (RS)- Member of CDEIC
- Deputado Newton Lima (SP)
- Raul Pont- PT Founder
- Olívio Dutra- PT Founder
- Raimundo Barros- PT Founder

Partido do Movimento Democrático Brasileiro (PMDB)

- Henrique Eduardo Alves (RN)- Party Leader in House
- Mário Feitoza (CE)- Member CDEIC
- Osmar Terra (RS)- Member CDEIC

Partido da Social Democracia Brasileira (PSDB)

- Bruno Araújo (PE)- Party Leader in House

Democratas (DEM)

- Luiz Mandetta (MS)- Member CDEIC

Partido Socialismo e Liberdade (PSOL)

- Deputado Chico Alencar (RJ)- Party Leader in House

Partido da República (PR)

- João Maia (RN)- Party Leader in House

Partido Progresista (PP)

- Esperidão Amin (SC)- Member of CDEIC

Partido Socialista Brasileiro (PSB)

- Antonio Balhmann (CE)- Party Leader in House; Member of CDEIC

Partido Comunista do Brasil (PCdoB)

- Senador Inacio Arruda (CE)
- Luciana Santos (PE) - Party Leader in House

Partido Verde (PV)

- Jose Sarney Filho (MA) - Party Leader in House

Partido Democratico Trabalhista (PDT)

- André Figueiredo (CE) - Party Leader in House
- Senador Cristovam Buarque (DF) - Founder of Bolsa Escola

Partido Social Democrático (PSD)

- Guilherme Campos (SP)- Party Leader in House, Member of CDEIC

Partido Social Cristiano (PSC)

- Deputado André Moura (BA) - Party Leader in House

Partido Social Liberal (PSL)

- Deputado Dr Rodrigo Grilo (MG) - Party Leader in House

Bureaucrats:

Ministerio de Planejamento, Oraçamento e Gestão: Secretaria do Programa de Aceleração do Crescimento

- Maurício Caravalho (Ministro do PAC)
- Marcelo Bruto (Assesor do Gabinete)
- Maria Caldas (Director- Infraestrutura Social e Urbana)
- Roberto Garibe (Director- Infraestrutura de Logística e de Energia)
- Carlos Vieira (Director- Rodovias e Ferrovias)
- Celso Knijnik (Director- Energia Elétrica)
- Rafael Almeida (General Coordinator- Saúde e Justiça)
- Marcio Vale (General Coordinator- Programa de Habitação)
- Guilherme Ramalho (General Coordinator- Infraestrutura para a Copa

Palacio de Planalto

- José Lopez Feijóo (Assessor Especial- Ex Secretário da CUT)
- Ricardo Maia (Assessor- Secretaria Geral do Presidenta)

Ministério das Cidades

- Manoel Renato (Director- Department of Development and Technical Cooperation)
- Johnny Santos (Diretor- Agua e Esgotos)
- Luiza Vianna (Director- Mobilidade Urbana)
- Alessandra Vieira (Director- PAC Urbanização)
- Paulo Cesar (Director- Produção Habitacional)

Departamento Nacional de Infraestrutura de Transportes (DNIT)

- João Bautista Carvalho

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- Roberto Santos Victer (Assessor- Secretaria de Macroavaliação Governmental)

Empresa de Obras Públicas do Estado do Rio de Janeiro

- José Carlos Pelosi (Assessoria de Comunicação)
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Confederação Nacional da Industria

- Dr. Flávio Castelo Branco (Executive Director- Unidade de Política Económico)

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