NONPROLIFERATION SANCTIONS: 
TAKING THE “PROFIT OUT OF PROLIFERATION?”

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Abstract

How do sanctions impact national decisions to go nuclear? Sanctions have emerged as a frequently employed tool of statecraft and as a go-to tool in U.S. nonproliferation policy. However, the outcomes of proliferation and nonproliferation in cases of sanction imposition beg a closer examination of their efficacy—when and how are sanctions effective?

This thesis finds that the efficacy of nonproliferation sanctions depends on their ability to impact domestic politics and change the calculus in the nuclear decision-making process. The causal mechanisms behind national decisions to go nuclear reveal that the efficacy of sanctions depends on domestic political conditions. These conditions include regime type, the structure of the economy, and domestic political coalitions.

In order to understand the causal mechanisms of sanctions, this thesis examines the empirical evidence of nonproliferation sanctions imposition. The cases are divided into two categories: North Korea, Pakistan, and India constitute the proliferation outcome cases, and South Africa, Argentina, Brazil, and Libya constitute the nonproliferation outcome cases. By analyzing the causal mechanisms of sanctions and applying the relevant theoretical frameworks of sanction efficacy in these cases, this thesis gleans insights on the conditions that render sanctions effective in dissuading states from proliferation. Ultimately, this thesis seeks to understand how sanctions can be effectively maximized as a tool of nonproliferation policy and to contribute to the literature on nonproliferation sanctions.
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PART ONE: THEORETICAL AND METHODOLOGICAL FRAMEWORK

CHAPTER ONE

INTRODUCTION

Why do we see cases of nonproliferation in some states and proliferation in other states? Nuclear technology has become ubiquitous in many parts of the world as nuclear energy has become a viable source of power for many countries. However, the spread of nuclear technology has not led to the rampant development of nuclear weapons, which begs the following questions: why are there so few states with nuclear weapons and how effective are nonproliferation policy tools? This thesis looks at one tool that has been used extensively in nonproliferation policy: economic sanctions. The aim of this thesis is to contribute to the existing understanding regarding if and how sanctions are effective in taking “the profit out of proliferation.”

The first part of this thesis bridges the gap between the literature on nuclear motivations and the literature on sanctions efficacy. The first chapter examines the literature on the leading theories of proliferation and nonproliferation in order to outline the prevalent reasons for why states choose or choose not to develop nuclear weapons programs. Understanding nuclear motivations is important in identifying how nonproliferation policy tools can address these motivations and influence the nuclear decision-making process. The following chapter focuses on the existing

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literature on the efficacy of sanctions in order to develop the theoretical frameworks that will illuminate the causal mechanisms of sanctions in national decisions regarding nuclear weapons development.

The second part of this thesis applies the theoretical frameworks of the first part against countries that have had sanctions levied against them for the explicit purpose of nuclear nonproliferation by the United States. The case studies include the following countries: North Korea, Pakistan, India, South Africa, Argentina, Brazil, and Libya.

**Hypothesis**

The theoretical frameworks will guide the analysis of the case studies and this thesis proposes that the efficacy of sanctions is dependent on the causal mechanisms of domestic politics. Although national decisions to go nuclear are influenced by a tangled web of motivations, drawing out the influence of sanctions is the goal of this thesis. The findings of this thesis highlights factors such as regime type, the structure of the economy, and domestic political coalitions, as key to understanding how sanctions fail or succeed in nonproliferation.
The quandary of why some states choose to pursue or eschew the development of nuclear weapons has been a conundrum since the invention of nukes. In 1963, President Kennedy predicted that by 1975, the number of states with nuclear weapons could increase to as many as fifteen or twenty states, yet the political reality is that the overwhelming majority of states with nuclear capabilities have remained on the path towards nonproliferation. Despite the fact that nuclear nonproliferation has remained a high priority for U.S. foreign policy long after the end of the Cold War, effective policy instruments to combat the spread of nuclear weapons and dissuade states with nuclear ambitions are surprisingly limited, given the gravity of nuclear weapons.

Thus the various factors that influence and drive the national decision to go nuclear are important in understanding which policy instruments are most effective in dissuading states from nuclear proliferation. The extensive literature on the motivations for why states seek nuclear weapons is heavily dominated by the cases resulting in the outcome of proliferation. The puzzle of nuclear restraint is often overshadowed by the more pressing dilemma of nuclear proliferation.

Although nuclear restraint and nuclear proliferation appear to be opposite sides of the same coin, there is a vast difference in empirical data between the two. Outside of the original nuclear powers (the U.S., the U.K., France, China, Russia), the number of states that have became nuclear weapons states can be counted on

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one hand: Israel, Pakistan, India, and North Korea. The extent of Iran’s development as of May 2015 is unknown. Yet, the number of states with both security motivations (defined as having one or more nuclear-armed neighbors) and nuclear capabilities (defined as having nuclear technology and engaging in nuclear activity) comes out to a total of forty states. The data clearly indicates that there is a different story on the side of nuclear restraint and understanding the factors contributing to the decision of nuclear restraint is the goal of this chapter.

**STRUCTURE OF LITERATURE REVIEW**

Due to the sheer amount of existing literature, this review will be a broad overview of the two sides to the nuclear question- what are the motivations for proliferation and what are the motivations for restraint? The literature will be classified according to Singh and Way’s method of technological, external, and internal determinants. The overview of the literature will provide the basis for understanding how sanctions can influence nuclear motivations and highlight the cases in which sanctions made significant contributions to the ultimate outcome of either proliferation or nonproliferation.

The literature on nuclear proliferation has become much more sophisticated since the end of the Cold War, and the schools of thought have expanded to include fields from social psychology and economics. This thesis will focus on the role of sanctions with regard to nuclear proliferation or nonproliferation and relate sanctions to the larger literature on proliferation.

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4 For a detail list of states see figure 1.1 and figure 1.2.
I. TECHNOLOGICAL DETERMINANTS

The ability to acquire nuclear weapons requires a certain threshold of economic development and capacity to implement nuclear technology. Singh and Way operationalize technological determinants into two categories: (1) level of development, measured by gross domestic product (GDP) per capita and energy consumption per capita; and (2) industrial capacity, measured by steel and electricity production, which are foundational elements of nuclear weapons production. The authors found that although a minimal level of industrial capacity is needed to enable nuclear weapons development, at a low level of development, “greater development renders the acquisition of nuclear weapons more feasible, allowing countries to act on their previously latent ambitions.”5 However, for countries that have already achieved a high level, “those that have not already initiated a program are unlikely to be swayed by the small marginal reduction in opportunity cost arising from further growth.”6

Another study examines the supply-side of nuclear weapons development and the likelihood of the transfer of sensitive technology and peaceful nuclear assistance resulting in the development of nuclear weapons. Alexander Montgomery finds that the “bargain of the nonproliferation regime seems to be holding, at least in part, since the net effect of increased peaceful assistance seems to be a decrease in the overall likelihood of the country acquiring a nuclear weapon.”7 This finding reinforces the objective of the Nuclear Nonproliferation Treaty (NPT) to foster the

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6 Ibid, 872.
transfer of civilian and peaceful nuclear technology while bridling nuclear weapons ambitions. In the last section of this chapter, the weaknesses of the NPT will be examined in further depth.

II. EXTERNAL DETERMINANTS

External determinants of proliferation are conceptualized as the following three variables in Singh and Way’s model: (1) the existence of an enduring rivalry; (2) frequency of dispute involvement; (3) a security guarantee in the form of a defense pact from a nuclear-armed great power. These three determinants address the security-driven reasons for why states would seek nuclear weapons. In the literature on nuclear proliferation, the security-driven motivation is encapsulated in the neorealism school of thought. In addition, the norms model, which accounts for the way international norms shape the way states view nuclear weapons, will be examined.

i.) Neorealism

Neorealism, also known as the “structural power” or in Scott Sagan’s terms, the “security model,” is the school of thought in international relations that proposes state insecurity and the balance of power and security dilemmas as the driving forces behind the desire to seek nuclear weapons. Neorealism focuses primarily on national security and places little importance on other potential factors motivating the search for nuclear programs, such as domestic politics, leadership structures, or individuals.

Kenneth Waltz and John Mearsheimer are two notable proponents of neorealism in the study of nonproliferation. Waltz has pushed the security-driven argument for nuclear proliferation and also convincingly pointed out that, “in the
past half century, no country has been able to prevent other countries from going nuclear if they are determined to do so.” Mearsheimer succinctly summarizes the core of the neorealism model:

The greater the military advantage one state has over other states, the more secure it is. Every state would like to be the most formidable military power in the system because this is the best way to guarantee survival in a world that can be very dangerous. The aim is to acquire more military power at the expense of potential rivals.

According to this model, the absence of security threats would be the driving reason why states would forgo pursuing nuclear weapons. However, neorealism has not fully provided an explanation for the contrasting paths of nuclearization in the Middle East and East Asia. Countries facing significant security threats, yet have chosen to not acquire nuclear weapons, such as South Korea and Japan, could conceivably fit under the neorealist argument that states would forgo nuclear weapons if their security needs could be guaranteed by an external protector such as the United States. Indeed, South Korea and Japan have signed military defense pacts with the nuclear-armed United States. However, the motivations of states faced with less prominent existential threats that have sought nuclear weapons programs, such as Libya, cannot be fully explained by the neorealist argument. There is growing consensus that, although the security argument is fundamental in nuclear proliferation, it cannot explain the current political reality, especially given the contrasting nuclear trajectories between East Asia and the Middle East. The security model will be further explored in the section on security assurances.

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ii.) Norms Model

The second external determinant of proliferation is the “norms” model. The norms model views nuclear weapons as important status symbols of state identity, as shaped by the norms of the international system. Prevailing international norms, notably the NPT, shape the desires and nuclear ambitions of countries. Therefore, international norms of proliferation would be able to influence states in their decision-making processes. According to this model, to curb nuclear programs nonproliferation norms should be advanced on the international level and therefore greater emphasis should be placed on the role of regional and international nonproliferation regimes.

III. INTERNAL DETERMINANTS

i.) Domestic Politics Model

The internal determinants of nuclear proliferation are encapsulated in the “domestic politics” model. Singh and Way focus on four domestic factors: democracy, liberalizing governments, an autonomous domestic elite, and symbolic/status motivations.

According to Sagan’s definition, the domestic politics model accounts for various domestic interest groups spearheading the pursuit of nuclear weapons, often under the guise of other external reasons, which can create “windows of opportunity through which parochial interests can jump.”

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Etel Solingen focuses on the motivations of domestic political groups and proposes economic liberalization as one of the primary considerations in domestic political decisions on nuclear programs. States with ruling coalitions that are more interested in economic liberalization, which she defines as including the benefits of “a reduction of state control over markets and of barriers to trade, and an [implied] expansion of private economic transactions and foreign investment, and the privatization of public sector enterprises,” are more likely to engage in nuclear restraint, as they value economic cooperation over nuclear development.\footnote{Etel Solingen, “The Political Economy of Nuclear Restraint,” In Going Nuclear: Nuclear Proliferation and International Security in the 21st Century, ed. Michael E. Brown, Owen R. Cote Jr., Sean M. Lynn-Jones, Steven E. Miller. Cambridge: MIT, 2010, 47.} On the other hand, inward-looking, nationalist, and radical confessional coalitions that are less favorable towards economic liberalization have more incentives to for nuclearization:

These inward-looking coalitions include popular sectors comprising unskilled blue-collar workers, white-collar and other state employees, and small businesses; firms that compete with imports and that have close ties to the state and domestic markets; underemployed intelligentsia, and politicians who fear the dismantling of state enterprises and the consequent erosion of their basis of political patronage. They may also include arms-importing military establishments, which are often adversely affected by adjustment programs.\footnote{Solingen, 49.}

Solingen’s argument of the political economy attempts to explain both sides- nuclear restraint and nuclear proliferation- through the lenses of market-oriented economic incentives to integrate into the global market and institutions or state-oriented economic incentives to look inward and reject competitive markets.

The domestic model highlights the importance of tailoring nonproliferation policy to the specific domestic interest groups and political climates of target states.
Sagan suggests modest success would be possible through a wider span of diplomatic efforts that would be “useful to help create and empower domestic coalitions that oppose the development or maintenance of nuclear arsenals.” Solingen emphasizes the importance of international institutions in influencing domestic coalitions, which in turn would influence their nuclear postures. She highlights the potential role of institutions, such as the IMF and World Bank, to provide “resources, compensatory payments, and relief from the pressures of international competition [that] can weaken domestic opposition to liberalization and pragmatism.” Solingen’s argument can explain the efficacy of sanctions in regards to the structure of the economy and her argument will be used as a theoretical framework in the cases of sanctions imposition.

**ii.) Social-Normative Framework**

An additional internal determinant is the role of individuals and political elites. The social-normative framework, proposed by Maria Rost Rublee, is centered on the role of political elites and policy-makers and seeks to understand the phenomenon of how social factors shape nuclear decision-making and nuclear forbearance by drawing on social psychology.

Rublee advances a new analytical framework to understand why some states have chosen nuclear restraint and focuses her research in the realm of social psychology to understand “whether, why, and how social-normative influences

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14 Solingen, 74.
affected policy decisions,” in order to garner new insights in solving the puzzle of nuclear nonproliferation.\textsuperscript{15}

Understanding proliferation decisions from a social psychology perspective departs from the existing literature that focuses on the traditional schools of realism and liberalism, which are primarily concerned with power structures, security dilemmas, and international institutions. She also finds the more recent and nuanced analyses that incorporate domestic politics and regional factors too diffuse to properly understand nuclear restraint.

Her decision to focus primarily on the behavior of state elites and policy-makers shifts the level of analysis from the state level to the individual level and she finds interesting insights from examining the social environments of states in addition to their security environments. She identities important mechanisms through which the social environment is able to influence leaders in the decision-making process and concludes: “not all nuclear forbearance is alike. Some state elites may be persuaded, others may be constrained by social conformity, and still others may identify with important allies.”\textsuperscript{16} She finds that her research points towards supporting a range of tools to discourage proliferation and essentially reiterates the need for the realist and constructivist tools to address security needs and strengthen the nuclear nonproliferation regime. Although the social environment is her focus, she circles back to the realist and international norms schools of thought and does not recommend policy tools outside of these traditional realms.

\textsuperscript{15} Rublee, 2.
\textsuperscript{16} Ibid, 221.
ADDITIONAL LITERATURE ON NUCLEAR RESTRAINT

On the opposite side of the coin, the literature on nuclear restraint is less abundant and often overshadowed by the more exciting theories of nuclear proliferation. In cases where states either abandoned or were dissuaded from their nuclear ambitions, two different theories and approaches will be included below.

The first approach stems from realist theory, and its proponents include T.V. Paul and James E. Doyle and Peter Engstrom. These authors advance the framework of the realist argument to emphasize the opportunity costs of nuclear development and propose the low utility of nuclear weapons as one of the explanations for nuclear restraint. The second theory, by Ariel Levite, focuses on nuclear reversals and introduces the idea of “nuclear hedging,” which he argues provides maneuver room for states to rapidly acquire nuclear weapons, usually for deterrence reasons.

i.) The Utility Question

Proponents of realist theory would argue that the declining practicality of nuclear weapons has led to nuclear nonproliferation. T.V. Paul proposes the theory of “prudential realism,” defined as bringing together the “prudential elements of realism” in which:

States are security-conscious entities, but their military policies are driven by ‘most-probable threat’ assessments, as opposed to the worst-case assessments offered by hard realism. Cautiousness and enlightened self-interests characterize states’ behavior in a matter such as nuclear weapons, possession of which could generate unanticipated negative consequences. States accordingly balance their interests and capabilities so as to minimize the security challenges they pose to others and in the expectation of reciprocal benign behavior in return.17

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According to this argument, we can observe the phenomenon of nonproliferation as the result of states’ desire for decreased security risks. By standing on the nonproliferation side of the fence, states expect that their nuclear restraint will encourage nonaggression from other states. However, there are gaps in the application of this theory and countries that have relied on the “worst-case assessments” include Israel and North Korea.

Doyle and Engstrom grapple with the puzzle of nuclear restraint “in an era when more and more states could develop nuclear arms due to the widespread knowledge of basic nuclear weapon design and the easy availability of delivery systems...” The authors find the answer to be two-fold. The first part of the answer “lies in a reassessment of the utility of nuclear weapons that has led to their de-emphasis in the strategies of the nuclear weapons states and to decisions to forgo their development in some non-nuclear weapons states.” This reflects the growing recognition of nuclear weapons as “inappropriate instruments for achieving tangible foreign and military policy objectives. Far from being a credible, rational, and reliable means of protecting citizens and property, nuclear deterrence is fraught with costs, risks, logical weaknesses, and moral dilemmas.” In essence, in re-evaluating nuclear weapons, states are finding less and less practical reasons for their acquisition.

The second part of the answer to why states have chosen nuclear restraint pertains to how “disincentives against nuclear proliferation outweighed the

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19 Doyle and Engstrom, 40.
20 Ibid, 41.
incentives for going nuclear in several states that have foresworn nuclear arms.”21

The authors advocate political, economic, and military policy tools that are aimed at increasing this gap between disincentives and incentives. However, the authors recognize that the individual decisions of states to abandon their nuclear weapons programs are unique to the regional security situation, historical and political ties to allies, and economic considerations.

ii.) “Hedging”

In Levite’s article, he explores how nuclear reversal and nuclear restraint have taken place and underscores their importance in understanding nuclear proliferation. Levite examines all the cases of nuclear reversal and compiles a list of twenty states that fall into the category of nuclear reversal, defined as “the phenomenon in which states embark on a path leading to nuclear weapons acquisition but subsequently reverse course, though not necessarily abandoning altogether their nuclear ambitions.”22

The terms nuclear reversal and nuclear restraint are similar in nature, with restraint being defined as “refraining from the construction of certain facilities; the production (of certain or all fissionable materials), testing, assembly, or deployment of weapons; or proclamations of nuclear status.”23 Given the sensitive nature of nuclear programs to state security, the combination of “extraordinary secrecy, intentional cover-up, and deliberate misinformation” often makes it difficult to find reliable and complete data on the rationale behind states’ nuclear reversal.

21 Ibid, 40.
23 Levite, 306.
decisions. He also examines previous studies that have attempted to explain the phenomenon of nuclear reversal and argues that the prominent explanations of (1) changes in a state’s external security dynamics, (2) the emergence of new norms, and (3) domestic regime change cannot fully explain nuclear reversal.

Instead, he proposes the concept of “nuclear hedging,” which he defines as “a national strategy of maintaining or at least appearing to maintain, a viable option for the relatively rapid acquisition of nuclear weapons.” Levite finds many examples of nuclear hedging, notably in the cases of Japan and Egypt, and observes that the greatest appeal of nuclear hedging is “the ‘latent’ or ‘virtual’ deterrence posture it generates towards nuclear weapons aspirants or potential aggressors and the leverage it provides in reinforcing a state’s coercive diplomacy strategy, particularly against the United States.”

He also finds countries such as Iran and Iraq being the most notable cases that have found it easier to hedge and develop their nuclear weapons programs as members of the NPT, which allows members to participate in fuel-cycle activities. The dual-use nature of the nuclear enrichment cycle facilitates the process of hedging: countries can easily hedge their nuclear programs from the civilian peaceful side to the military grade enrichment for weapons development by simply enriching above a certain level.

Although Levite does not find that any one theory can accurately explain all cases of nuclear reversal, he does observe that political factors, rather than economic and technical factors, have a much greater pull in restraining nuclear capable nations.

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24 Levite, 302.
26 Ibid, 310.
from developing weapons programs. Economic, technical, and bureaucratic factors do shape the nature, size, and scope of nuclear programs, yet the decision to go nuclear is mainly political and influenced in part by the regional security situation.

The United States, with its vast diplomatic, technological, and economic resources, has the unique ability to help move nuclear aspirants away from their nuclear ambitions and towards the path of nuclear reversal or restraint by using a range of unilateral, bilateral, and multilateral policy instruments. These instruments range from softer measures such as assurances and rewards to coercive measures of sanctions and military intervention. Levite lists the key elements of the overall U.S. approach to encouraging nuclear reversal as: “building a global norm against nuclear proliferation (using scarce resources to reinforce it), establishing comprehensive safeguards on nuclear facilities, developing restraints on the transfer of nuclear technology, and exercising restraint in its nuclear arsenal.” He is also much more optimistic on the efficacy of the U.S. effort to bolster the inspections regime and target illicit nuclear technology exports and exchanges. Ultimately, the policy approach he encourages involves a “conscious U.S.-led effort to complicate the road to nuclear weapons acquisition for those who embark on it” by using a wide range of policy tools, namely the ones listed above.

Levite’s introduction of nuclear hedging as one of the main concepts driving nuclear reversal and his encouragement of a comprehensive and multi-faceted U.S. policy to promote nuclear reversal both add to the understanding of the nuclear restraint side of nuclear weapons. His assessment of current U.S. nonproliferation

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27 Levite, 325.
28 Ibid.
policy is a tacit approval of the current status quo, yet he admits that the current policy is not effective: “even in the easiest of cases, merely placing obstacles in a state’s path to nuclear weapons acquisition cannot attain success.”

Nuclear reversal provides a unique viewpoint and useful framework for understanding the realities of nuclear restraint and reversal.

**Policy Instruments**

After examining the various theories of proliferation and nonproliferation, different schools of thought have advocated a range of policy instruments. “Without an adequate theory of proliferation, U.S. decision makers are limited in their ability to identify the policies most likely to deter other states from acquiring the bomb.”

Indeed, the wide range of theories does not necessarily translate into tangible policy instruments. A few of the leading tested and tried nonproliferation policy instruments are negative and positive inducements, which range from economic sanctions to security guarantees and assurances, and international norms, notably the NPT. Leaving sanctions for the end, the next section will delve into the counterarguments for security assurances and international norms as effective nonproliferation policy tools.

An important distinction to note is the difference between nonproliferation tools and counter-proliferation tools. Counter-proliferation policy instruments, which are designed to target and prevent the further development of existing nuclear programs, can include the use of military force, which can range from surgical air

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29 Levite, 325.
strikes targeted to destroy nuclear facilities to ground troop invasions. Other counter-proliferation policy instruments include export control regimes, which focus on the supply side of nuclear demand by tracking nuclear materials and technology. However, this thesis is focused on nonproliferation policy tools and the options of military force and export control regimes fall outside the scope of this thesis.

\textit{i). Security Assurances}

Security assurances are arguably the most direct policy tool used to address security dilemmas and fit under the security model of nuclear motivations. Security assurances are essentially defined as promises to respect or ensure the security of others and can take on a variety of forms, from extended deterrence commitments (more commonly known as nuclear umbrellas) to diplomatic reassurances, which seek to persuade other states that one harbors no aggressive intentions towards them.

The difficulty of aligning the security model with the current political reality has rendered security assurances a limited tool in U.S. nonproliferation policy. Security assurances, which have proven to be a useful explanation for nuclear restraint in cases such as Japan and South Korea, are less equipped to explain other cases of nuclear reversal. Although “an understanding with the United States is, in fact, a hallmark of many cases of nuclear slowdown or reversal,” ultimately, “there is no evidence to suggest, however, that U.S. influence has ever been a sufficient factor for inducing nuclear reversal.”\textsuperscript{31}

\textsuperscript{31} Levite, 320-321.
In addition, security assurances, especially in the form of alliances, have not been effective in dissuading states from nuclear proliferation. Solingen notes, “If alliances told the tale, Britain (and arguably France) should have never gone nuclear.”  

Before the fall of the Soviet Union, North Korea also pursued nuclear weapons, despite its alliance with the Soviet Union. On the other hand, states with no nuclear protectors have reversed their decision to pursue nuclear weapons, as in the cases of Brazil, Argentina, South Africa, Libya, and Egypt. Even within the realist security model, the availability of security assurances would not guarantee that states, given their mistrustful nature, would be willing to entrust their security to another state. Therefore, problems of credibility are another reason why security assurances would not be the decisive factor in nuclear restraint or reversal.

Solingen, in *Nuclear Logics: Contrasting Paths in East Asia and the Middle East*, reiterates that the dominance of the security model in the motivation for going nuclear can be partially explained by the inherent problems in evidence collection, as leaders and state officials may have more incentives to frame nuclear decisions as responses to security predicaments, which would bias the data. Instead, “in-depth analyses of North Korea, Iraq, Libya, and Iran after 1991 clearly suggest that nuclear weapons programs were driven more by regime than by state insecurity,” which provides the rationale for her focus on domestic coalitions and individual rulers.

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ii.) The NPT and the Nonproliferation Regime

Proponents of building the international norm and nonproliferation regime are correct in recognizing the need for a sophisticated inspections regime and code of conduct to keep states accountable and prevent backsliding, yet the treaties and norms themselves cannot prevent nuclear hedging.

The limitations of advancing international norms as a means of preventing proliferation are evident in the cases of North Korea and Iran. North Korea, having officially seceded from the NPT in 2003, illustrates the inability of the NPT to effectively bind states.

The case of Iran is another suitable illustration of the enforcement weaknesses of the NPT. Although accused of being in violation of the safeguards agreement of the NPT, Iran has maintained its nuclear program as peaceful and civilian, despite substantial IAEA evidence of nuclear activity linked to weaponization. Given this gap, the IAEA, as of May 2015, has not been able to reach an agreement with Iran regarding its nuclear program and ongoing talks have been slow in progress and have yet to yield a definitive agreement.

Therefore, although the norms model’s policy prescription of bolstering the international nonproliferation regime is important in the structure of the international system, the actual behavior of states will require a much more binding or coercive policy instrument to tie the hands of states. This reaffirms Paul’s observation that adherence to the NPT is more a manifestation of a commitment to
the idea of nuclear nonproliferation, and not necessarily a commitment to the practice of nonproliferation.35

Another weakness of the NPT is that those outside of the NPT are still able to enjoy the benefits of nuclear technology transfers. Although the transfer of sensitive nuclear material is seemingly bridled by the NPT, those who do not adhere to the NPT have still been able to receive nuclear assistance. Montgomery notes that “it is also worth reexamining the two states that had the highest levels of civilian nuclear assistance and still succeeded in developing nuclear weapons: Pakistan and India.”36 As outliers in the empirically supported notion that peaceful transfers of nuclear technology do not lead to a greater likelihood of proliferation, the cases of India and Pakistan will be examined in greater depth in second part of this thesis.

iii.) Sanctions

The existing literature on the impact of economic sanctions on nuclear decisions is surprisingly limited, given their prevalent use. Arthur A. Stein notes that sanction “use has exploded in the last half century.”37 David Baldwin departs from the usual “mired in a scholarly limbo”38 debate on the efficacy of sanctions by proposing that sanction use needs to be distinguished from its effectiveness. Given that “the basic paradox at the heart of the sanction is that policymakers continue to use sanctions with increasing frequency, while scholars continue to deny the utility of such tools of foreign policy,” Baldwin proposes that there is a fundamental

35 Paul, 57.
36 Montgomery, 196.
difference in the debate of whether sanctions “work” from “the question of whether sanctions should be used.” Baldwin’s main point is that sanction efficacy should be evaluated in the broader context of alternative policy options: “The wisdom of a decision to use sanctions is determined not by whether their expected utility is high or low, but by whether it is higher or lower than that of alternative courses of action.”

The role of sanctions in the cases of the “dogs that did not bark” is also not rigorously examined. The mere threat of sanctions can arguably deter states even before their actual imposition. This argument will be further examined in the next chapter.

Conclusion

The story of nuclear weapons, represented by the opposite outcomes of proliferation and nuclear restraint and reversal, has been analyzed by a number of authors through a variety of frameworks and lenses and at different levels of analysis, from the state to the institutional to the individual level. The tangled web of explanations and the complex and multi-dimensional nature of nuclear decisions render it extremely difficult to find a “one-fit-all” explanation and the most useful explanations are conditional. The field of nuclear proliferation literature, although well trod with various theories and probable explanations, still lacks adequate explanations on which nonproliferation tools are most reliable and effective.

39 Baldwin, 80-81.
40 Ibid, 106.
41 Solingen’s compilation of essays on nonproliferation sanctions in Sanctions, Statecraft, and Nuclear Nonproliferation, provides a great starting place in exploring the question of not only if sanctions work, but how, when, why, and to what degree they are successful or not.
The decision to focus on sanctions as opposed to other policy tools is due to the fact that despite their prevalent use in U.S. nonproliferation policy, there is no united consensus on their efficacy, and this thesis seeks to address this. Additional reasons to focus on sanctions are: firstly, their unique position of occupying a middle ground, as they go beyond mere diplomacy but stop short at military force, and secondly, the availability of the well-documented nuclear evidence of sanctioned states will make it easier to draw out the causal mechanisms of the nuclear decision-making process.

In the next chapter, the literature on sanctions efficacy will be examined to bridge the gap between the literature on nuclear motivations and establish the theoretical frameworks of how sanctions are able to coerce changes in the nuclear policy of target states. By developing a more nuanced definition of sanction success and considering other possible influences of sanctions in the nuclear decision-making process, the next chapter will offer a more complete picture of how sanctions contribute to achieving nuclear nonproliferation goals.
**Figure 1.1**

### Nuclear Potential States

| 1. Armenia | 12. Malaysia |
| 2. Austria | 13. Mexico |
| 4. Bangladesh | 15. Poland |
| 5. Czech Republic | 16. Portugal |
| 6. Denmark | 17. Slovak Republic |
| 7. Finland | 18. Spain |
| 9. Indonesia | 20. Turkey |
| 11. Lithuania |

### Nuclear Reversal

| 1. Australia | 9. Netherlands |
| 2. Argentina | 10. Norway |
| 3. Brazil | 11. South Korea |
| 5. Egypt | 13. Switzerland |
| 6. Germany | 14. Taiwan |
| 7. Italy | 15. Yugoslavia |
| 8. Japan |

### Attained but Gave Up

| 1. Belarus | 3. South Africa |
| 2. Kazakhstan | 4. Ukraine |

### Extent of Nuclear Development Undetermined

| 1. Algeria | 3. Syria |
| 2. Libya | 4. Iran |
### Figure 1.2

<table>
<thead>
<tr>
<th>Declared Nuclear States</th>
<th>Undeclared Nuclear States</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. China</td>
<td>1. Israel</td>
</tr>
<tr>
<td>2. France</td>
<td></td>
</tr>
<tr>
<td>3. India</td>
<td></td>
</tr>
<tr>
<td>4. Pakistan</td>
<td></td>
</tr>
<tr>
<td>5. Russia</td>
<td></td>
</tr>
<tr>
<td>6. U.K.</td>
<td></td>
</tr>
<tr>
<td>7. U.S</td>
<td></td>
</tr>
<tr>
<td>8. North Korea</td>
<td></td>
</tr>
</tbody>
</table>

Nuclear Potential States are defined as non-nuclear states with one or more nuclear-armed neighbors and possessing nuclear technology, which entails a nuclear power reactor(s), nuclear research reactor(s), and/or nuclear materials exporter.

Nuclear Reversal States are defined as non-nuclear states that have at one point demonstrated interest in nuclear weapons, as evidenced by a political decision to pursue or explore a nuclear weapons program and movement towards the acquisition of nuclear materials and technology for weaponization.

**Classification of states compiled from the following sources:**


CHAPTER TWO
Literature Review on The Efficacy of Sanctions

INTRODUCTION

This chapter reviews the literature on the efficacy of sanctions as a tool of statecraft. After examining the leading theories of sanctions efficacy, the theoretical frameworks will be applied to specific cases in the second part of this thesis. Before the literature review, a brief definition and historical overview of nonproliferation sanctions will be provided. The last part of this chapter will touch on the threat of sanctions, as the actual imposition of sanctions does not fully capture their power to pressure and induce policy change.

Economic sanctions occupy a unique space as “halfway instruments of national power- between ‘war and peace,’ between ‘war and commerce,’ and between ‘war and words.’” There are two main reasons for why sanctions are the centerpiece of this thesis. The first reason stems from their increased use and prevalence in U.S. foreign policy. Sanctions have become a fixture of U.S. foreign policy and “it is hard to imagine any serious foreign policy issue down the line in which financial tools would not be or should not be considered a part of a comprehensive strategy.” The United States has become the most visible and prolific employer of economic sanctions. The National Association of Manufacturers estimated that the sixty sanctions levied by the U.S. against thirty-five different countries between 1992-1996 resulted in $20 billion of lost

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42 Stein, 29.
exports. The use of sanctions continues to rise—between 2002 and 2006 the U.S. imposed unilateral sanctions against forty-seven countries. Yet the U.S. is not alone in its increasing reliance on sanctions—the United Nations has also embraced sanctions as an important tool of diplomacy and statecraft. Between 1991 and 1994, the UN Security Council imposed mandatory sanctions eight times—a stark contrast from the past: between 1945 and 1990, there were only two instances of sanctions imposed by the UN Security Council.

The second reason why sanctions are the centerpiece of this thesis is the need for more insight on their efficacy. Scholarly examinations on the efficacy of sanctions have led to polarizing conclusions. As Drezner points out, the various definitional and methodological flaws in the sanctions literature have created discrepancies: “most of the recent contributions on economic statecraft consist of well-crafted theories that lack empirical support, or well-crafted case studies that produce generalizations of dubious quality.” In light of this, the goal of this thesis is to bridge the gap between the literature on sanctions and nuclear proliferation by laying down a foundation that combines the empirical data of sanctions imposition with in-depth examination of the cases in point.

**Defining Economic Sanctions**

Economic statecraft consists of two main categories: (1) financial restrictions and (2) trade restrictions, which can be applied to nations or specific individuals or industry sectors. Economic pressure is employed through three main strategies:

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45 Stein, 30.
47 Drezner, 19.
economic sanctions, trade wars, and economic warfare.\textsuperscript{48} The latter two are not directly related to coercing political behavior. Trade wars are primarily employed in economic disputes in order to influence the target state’s economic policy, usually in order to procure more favorable terms of trade. Economic warfare is specific to weakening an adversary’s military capabilities by targeting its overall economic productive capacity.

Economic sanctions, known interchangeably as negative inducements, are instruments of statecraft explicitly employed to coerce, induce or influence the policy or political behavior of a target state. At its very core, the formula for sanction success is very simple: “the political and economic costs to the target from sanctions must be greater than the political and security costs of complying with the sender’s demands.”\textsuperscript{49} However, the costs of sanctions are twofold- the sender state must first assess whether the costs of restricting economic trade with the target state are worth bearing in the first place.

In measuring sanction efficacy, sanction success is defined as the achievement of the avowed foreign policy goals of the sender state- in other words, the capitulation of the target state to the demands of the sender state is a clear-cut definition of sanction success. Yet, the metrics of measuring sanction success are often complicated by the multiple objectives of sanctions, and it is often difficult to quantify efficacy. Sanctions may be imposed for the following purposes: (1) political purposes of demonstrating resolve both domestically and internationally; (2) in

\textsuperscript{48} Pape, 5.
order to shape current policies in the target country; (3) to punish and condemn behavior; (4) and to deter the behavior by the target or by other countries. In the framework of this thesis, only sanctions levied with the specific policy goal of nuclear nonproliferation will be examined.

**Nonproliferation Sanctions**

Nonproliferation sanctions have four definitive objectives, as outlined below:\(^5\)

1. **Domestic Pressure**: respond to domestic political interest groups that compel the U.S. government to address the issue of international proliferation and demonstrate American resolve and leadership regarding foreign misdeeds.

2. **Dissuasion**: dissuade both the target state and onlookers from proliferation.

3. **Constraint**: target and constrain the ability of the target state to proliferate through economic or technological restrictions.

4. **Coercion**: shape the incentives of the target state to halt further contributions and ambitions to proliferate.

In the realm of nuclear nonproliferation, nonproliferation sanction success is defined as the nonexistence of a nuclear weapons program in the target state. Keeping in mind the interplay of internal, external, and technological factors that influence national decisions to go nuclear, the ability to single-handedly attribute a nonproliferation outcome to the success of sanctions is beyond the scope of this thesis. Nonetheless, given the centrality of sanctions in U.S. foreign policy and the need for more insight on their efficacy, this thesis will attempt to understand how sanctions influence national decisions to go nuclear.

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A Brief History of Nonproliferation Sanctions

The public record indicates that nonproliferation sanctions, employed against nuclear, missile, chemical, and biological proliferation concerns, have been used by the United States in 24 instances up until 2001.51

From 2001 onwards, the Iran, North Korea, and Syria Nonproliferation Act Sanctions (INKSNA) have imposed sanctions on the three countries for the “transfer or acquisition of equipment or technology controlled under multilateral control lists,” including the Nuclear Suppliers Group.52 Libya was also subject to nonproliferation sanctions from 1996 until it renounced its nuclear program in 2003.

The difficulty of amassing the data on nuclear nonproliferation sanctions is compounded at the individual and corporation level. Under the Nuclear Nonproliferation Act (NNPA), entities, notably those associated with the Pakistan-based A.Q. Khan network, have been increasingly sanctioned. However, it is rather surprising to discover that many of these sanctioned entities are not of the countries listed above. Individuals and companies in Germany, Switzerland, the United Kingdom, and other countries, are the subject of these targeted sanctions.53 The differences between comprehensive and targeted sanctions will be defined further in this literature review.

51 Speier, Chow, and Starr, 45.
The Sanctions Debate

The landmark empirical study *Economic Sanctions Reconsidered: History and Current Policy* by Gary Hufbauer, Jeffrey Schott, and Kimberly Ann Elliot (known hereafter as HSE) became the foundational study on the efficacy of sanctions. The HSE study examined 115 cases of sanction implementation during the period from 1914 to 1990 and found 40 cases (34 percent of the total) to have been categorized as sanction success. The HSE study has become widely influential and “has played a key role in significant U.S. foreign policy debates.” In December 1990, Hufbauer and Schott advocated for the use of sanctions against Iraq in order to induce Iraq’s withdrawal from Kuwait in a testimony before Congress.

However, Robert Pape found the HSE study to be inaccurate. Pape reexamined the HSE database and concluded:

> Practically none of the claimed 40 successes of economic sanctions stands up to examination. Eighteen were actually settled by direct or indirect use of force; in 8 cases there is no evidence that the target made the demanded concessions; 6 do not qualify as instances of economic sanctions; and 3 are indeterminate. Of HSE’s 115 cases, only 5 are appropriately considered successes.

Pape’s reexamination greatly undermines the case for sanction use in order to achieve foreign policy goals and opens the door for debate on what conditions render sanction success more likely.

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55 Pape, 92.


57 Pape, 93.
In 2007, Hufbauer, Schott, Elliot, and Oegg updated their dataset to include a total of 204 instances of sanction use and their results (see table below) once again support the utility of sanctions, with 34% of cases deemed as successes. Regarding the criticism in their measurements of efficacy, the authors defended the robustness of their measurements, arguing that: “...we believe a careful analysis of the factors contributing to the success of coercive sanctions is important and can provide insights to guide the use of sanctions in other circumstances as well.”

The authors, while recognizing that sanctions are often deployed simultaneously with other diplomatic or military forces, insist that even if sanctions did not contribute to inducing policy change in the target state, “...that does not mean that it was a mistake to impose them. It only means that, in similar episodes, presidents and publics should not count on sanctions alone to achieve the declared objectives.” The authors insists that the efficacy of sanctions stems largely from their ability to convey and express a triple signal: “To the target country it says the sender does not condone the target’s actions; to allies it says that words will be supported with deeds; and to the domestic audiences it says the sender government will act to safeguard the nation’s vital interests.” Thus the signal effects of sanctions should not be discounted in measuring their efficacy, which will be discussed later in this chapter.

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59 Ibid, 158.
60 Ibid, 7.
Table 2.1

Success by Policy Goal

<table>
<thead>
<tr>
<th>Policy goal</th>
<th>Success cases</th>
<th>Failure cases</th>
<th>Total</th>
<th>Success ratio (percent of total)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Modest policy changes</td>
<td>22</td>
<td>21</td>
<td>43</td>
<td>51</td>
</tr>
<tr>
<td>Regime change and democratization</td>
<td>25</td>
<td>55</td>
<td>80</td>
<td>31</td>
</tr>
<tr>
<td>Disruption of military adventures</td>
<td>4</td>
<td>15</td>
<td>19</td>
<td>21</td>
</tr>
<tr>
<td>Military impairment</td>
<td>9</td>
<td>20</td>
<td>29</td>
<td>31</td>
</tr>
<tr>
<td>Other major policy changes</td>
<td>10</td>
<td>23</td>
<td>33</td>
<td>30</td>
</tr>
<tr>
<td>All cases</td>
<td>70</td>
<td>134</td>
<td>204</td>
<td>34</td>
</tr>
</tbody>
</table>


Theoretical Frameworks of Sanction Success

Other notable studies have examined the efficacy of sanctions conditional on different factors. Stein finds that “since the results of sanctions depends critically on the relationship between state and society within the sanctioner and the sanctioned, regime type is a critical factor in assessing the prospects for, and the outcomes of, economic sanctions.”\(^{61}\) There are several studies examining the relationship between sanction success and regime type. For example, Nikolay Marinov finds that economic sanctions have a destabilizing effect on democratic leaders, and “leaders are more likely to compromise if pressure threatens their survival in office.”\(^{62}\) Therefore, leaders in democracies, whose grip on power is more susceptible to pressure from their respective publics, experience a far more destabilizing effect from sanctions.

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\(^{61}\) Stein, 55.

\(^{62}\) Nikolay Marinov, "Do Economic Sanctions Destabilize Country Leaders?" American Journal of Political Science 49.3 (2005), 564.
Marinov’s findings underscore that “domestic political institutions matter” in the imposition of sanctions.⁶³

Given the significance of domestic political institutions, regime type becomes an important factor. Abel Escriba-Folch and Joseph Wright examine the efficacy of sanctions dependent on authoritarian regime types, classified into personalist, military, and single-party state regimes, and find that personalist regimes are more vulnerable. Military and single-party regimes, due to their ability to “increase their revenues even when targeted by sanctions, by shifting fiscal pressure from one stream to an alternative one (specifically, taxes on goods and services),” are less likely to succumb to the pressure of sanctions.⁶⁴ The authors conclude: “if sanctions are to be effective in destabilizing dictators, they should strike at revenue sources the dictator needs to stay in power.”⁶⁵ This would support the case for targeted sanctions tailored specifically at the economic activities of individuals and entities engaging in the behavior the sender state wishes to change.

A final debate in the sanctions literature is on the efficacy of comprehensive versus targeted measures. Comprehensive measures are aimed at the macro-economy as a whole and indiscriminately affect wide swaths of the population. On the other hand, targeted measures are levied against political leaders, specific individuals, and/or specific industries and companies involved in the condemned behavior. As opposed to comprehensive sanctions, the broader population is not the intended recipient of the economic pressure and therefore targeted measures are seen as more humanitarian and effective.

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⁶³ Marinov, 573.
⁶⁵ Ibid.
Aside from humanitarian reasons of reducing suffering of the general population, proponents of targeted sanctions also highlight their ability to avoid the “rally-round-the-flag” effect of galvanizing domestic support for the target government. Comprehensive sanctions can further flame nationalistic tendencies and be used by the target government to galvanize domestic support. Targeted sanctions also enable economic activity unrelated to the policy in question to continue, which allows the sender country to maintain lucrative trade partnerships with target countries.

However, Drezner disputes the efficacy of targeted sanctions and argues that “smart sanctions” focus excessively on precise causal mechanisms, which can:

...bind researchers and policy-makers to the possibility that there can be sustainable causal processes at work. Multiple pathways can exist through which an independent policy variable affects the outcome. Smart sanctions offer only one causal pathway to success—elite dissatisfaction.66

Given the multiple pathways, comprehensive sanctions offer far greater opportunities to impose costs through multiple pathways, including “mass unrest, elite dissatisfaction, regime change—through which the target government must acquiesce.”67 The causal linkages between sanction type and outcome will be further explored in the next chapter when specific cases will be examined.

67 Ibid, 173.
Threat of Sanctions

As previously outlined in the definition of sanctions, nonproliferation sanctions are not only designed to change the existing policy of target states, but also deter future misdeeds. The signal effect of sanctions, or the threat component associated with sanctions, should not be discounted in measuring the efficacy of sanctions.

The literature on sanctions touches upon the demonstration effects of sanctions and although few studies focus solely on their demonstration effects, these effects are widely known. Stein notes: “They are expressive and thus constitute a signal, both of what has been done and of what may still lie ahead, and since they have material consequences and thus function as costly signals, as threats and punishments, but also as promises and rewards.” 68 Thus the effects of sanctions extend far beyond the realm of punishment for current misdeeds and into the realm of deterrence of future misdeeds.

However, empirical data on the efficacy of the threat of sanctions is plagued by several difficulties, notably the ability to “ascertain the precise universe of cases that should be taken into account” and the tangled web of factors, ranging from internal domestic politics to external security concerns, that make it impossible to measure the exact impact of potential sanctions. 69 Solingen notes, “Indeed, the causes for why some states abandoned nuclear ambitions have never been easy to determine, and can rarely be simply traced to the potential threat of sanctions.” 70

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68 Stein, 30.
69 Solingen, Sanctions, Statecraft, and Nuclear Proliferation, 9.
70 Ibid.
Following this vein, Nicholas Miller’s study on the efficacy of the threat of sanctions concludes that selection effects often obscure the efficacy of nonproliferation sanctions. Therefore sanctions have been an effective tool in deterring states from pursuing their nuclear ambitions and starting nuclear weapons programs in the first place. The logic of Miller’s argument is that “rational leaders assess the risk of sanctions before initiating a nuclear weapons program, which produces a selection effect whereby states highly vulnerable to sanctions are deterred from starting nuclear programs in the first place, so long as the threat is credible.”\textsuperscript{71}

Miller finds empirical evidence of a selection effect during the time period from the 1970s onward, during which U.S. nonproliferation sanctions became more credible. The selection effect demonstrates that states dependent on the United States are less likely to pursue nuclear weapons due to their dependency. Therefore states with low dependence on the United States would be more likely to pursue nuclear weapons and sanctions would have minimal success in deterring those countries because the “United States will not have the leverage necessary to succeed.”\textsuperscript{72} In this regard, Miller finds that the threat of sanctions worked in deterring South Korea and Taiwan, two countries that depend heavily on the United States.

Although Miller’s theory matches the demonstration effects of sanctions with empirical evidence, this thesis will instead look only towards the cases of actual sanction imposition, in order to maintain the empirical robustness in the examination of the efficacy of sanctions.


\textsuperscript{72} Miller, 928.
Conclusion: Looking Ahead

Examining Sanctions in Outcomes of Proliferation and Nonproliferation

The imposition of sanctions for the purposes of nuclear nonproliferation has led to outcomes of both proliferation and nonproliferation. This chapter reviewed the leading theoretical frameworks of sanctions success and established the definitional and historical groundwork of nonproliferation sanctions. In the next part of this thesis, the role of sanctions in the instances of proliferation and nonproliferation outcomes will be examined in the following cases: North Korea, Pakistan, India, South Africa, Argentina, Brazil, and Libya.

These countries were selected based on the following two factors: (1) they are all cases of explicit nonproliferation sanctions imposition; (2) the sanctions imposition occurred after 1976, which is when U.S. nonproliferation sanctions became credible. Before the 1976 and 1977 passage of the Symington and Glenn amendments to the Foreign Assistance Act, the United States had never imposed sanctions in the context of nonproliferation. The Symington and Glenn amendments “banned all U.S. economic assistance, military aid, and export credits” to states that were involved in nuclear activities deemed to be outside the scope of a civilian nuclear program.73

With the theoretical frameworks of sanction success in mind, examining the causal mechanisms behind the nuclear decisions of these states will elucidate the factors that can explain the failure or success of sanctions in these countries. This thesis proposes that the success of nonproliferation sanctions lies in their ability to influence the causal mechanisms of domestic politics. By examining the regime type,

73 Miller, 919.
structure of the economy, and the domestic political coalitions of the cases, it is possible to succinctly understand how sanctions failed or succeeded in those states.
CHAPTER THREE

Joining the Nuclear Club: Proliferation Outcomes

Introduction

Although the overwhelming majority of states capable of nuclear weapons development ultimately chose the path of nonproliferation, the states that did develop weapons, despite sanctions by the United States and international community, are worth examining in the lenses of sanction efficacy. The three cases presented in this chapter—North Korea, Pakistan, and India—all represent cases of U.S. nonproliferation policy failures, but the question of how exactly sanctions failed in these cases is worth examining.

By mapping out the causal mechanisms and applying the theoretical frameworks from the sanctions literature, a deeper understanding of how sanctions failed in these cases will illuminate the conditions that render sanction success or failure more likely. However, it is important to keep in mind that single-handedly attributing the outcome of proliferation to the failure of sanctions is beyond the scope of this thesis. Nonetheless, identifying the causal mechanisms that contributed to the failure of sanctions in these cases will add to the literature on nonproliferation sanctions.
Figure 3.1

Map of Suspected North Korean Nuclear Sites

- **Yongbyon Nuclear Research Center**: Site of an operational 5-MWe nuclear reactor; an operational plutonium extraction facility; a fuel fabrication plant; a UF4 conversion facility; fuel storage facilities; and a Soviet-supplied 8-MWt IR1R research reactor and critical assembly. An unfinished 50-MWe power reactor, which was under construction prior to 1994, is also located here.

- **Partially completed 200-MWe nuclear power reactor**: Construction halted under the Agreed Framework. There is no evidence that it has resumed.

- **Hwaedae-Gun missile testing range and production facilities**.

- **Site of two planned 1,000-MWe light-water reactors financed by KEDO under the terms of the Agreed Framework. Construction suspended**.

- **Uranium mining, and uranium concentrate production plant**.

- **Subcritical assembly. Soviet-supplied laboratory-scale hot cells, which may have been used to extract small quantities of plutonium. (Similar cells may exist at other locations.)**

- **U.S. officials claim that North Korea has an active HEU production program. Location of facilities unknown.**

CASE STUDY 1: NORTH KOREA

Introduction:

Despite being one of the most heavily sanctioned states in the world, North Korea has remained resolute in its quest for nuclear weapons. This demands a reexamination of sanctions use in U.S. foreign policy towards North Korea and an answer to the question: what are the causal mechanisms that have rendered sanctions unable to deter North Korea’s nuclear ambitions?

North Korea is an interesting case study on the efficacy of sanctions due to its unique status as arguably the most closed-off and isolated country in the world, which also creates the problem of finding accurate data to analyze the Kim regime’s response to sanctions. However, by approaching the North Korean regime through a historical viewpoint in conjunction with the theoretical frameworks of sanctions efficacy, this case study hopes to garner relevant insights on sanction use against North Korea.

A Historical Perspective of North Korea

Regime and Leadership History

A unified peninsula until Japan’s surrender in World War II, Korea formed into two separate governments in the north and south, under the supervision of the Soviet Union and the United States in 1948. From 1950 until the signing of the Armistice Agreement in 1953, the Korean Peninsula was a battleground between the North, with supporting forces from China and the Soviet Union, and the South, which was supported by forces from the United States and other UN members. Although the Armistice did not officially end the Korean War, the two Koreas have maintained the 38th parallel as the demarcation between the two countries.
The foundations of the North Korean political system were laid down by Kim Il-Sung, a powerful political figure whose rise as a political leader came in the wake of Korean liberation from Japanese colonial rule at the end of World War II. Kim Il-Sung established the North Korean Branch Bureau of the Korean Communist Party in 1945 and quickly solidified his power after the North and the South established separate governments. Kim Il-Sung later became the head of the North Korean Worker’s party and his rise to power can be attributed to his personal popularity and the support he received from power elites, especially economic support from the Soviet Union and China.

In the late 1950s, Kim Il-Sung steered the North Korean economy towards its foundational “Juche” policy of economic self-reliance and socialism in order to consolidate his control over the economy and cement his monolithic grip on power. He also focused on building up his personal image in order to “further buttress the cult of personality surround Kim Il-Sung.”74 Kim sought to unify North Korean society by developing a cult of personality as the Suryeong, or “Supreme Leader.”

Kim Il-Sung established the foundations of the monolithic political system of governance in North Korea and the smooth transition of power to his son Kim Jong-il in 1994 and 2011 transition to Kim Jong-un demonstrate the stability of the leadership structure centered on the “Supreme Leader” or Suryeong. The Suryeong is an important element of the North Korean regime:

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As the monolithic system that grants the leader absolute power became firmly established, it began to function organically in North Korea on the partisan, military and political levels. In this Suryeong-based leadership structure, the Suryeong is not an individual in the natural sense but the head of an all-encompassing system that incorporates the entire populace, including the Suryeong, the Party, and the masses.\textsuperscript{75}

This observation links directly to Escribà-Folch and Wright’s categorization of authoritarian regimes and classifies the North Korean regime as a single-state party that maintains control over the military. Keeping this in mind, the causal mechanisms of how such a multi-dimensional authoritarian regime manages its revenue sources will be examined in a later section. In order to round out the historical background of North Korea, an overview on the history of its nuclear development program will be provided in the next section.

\textit{History of North Korean Nuclear Development}

As a country that has prioritized nuclear technology since the early 1950’s, North Korea’s nuclear development became rapidly interchangeable with its pursuit of nuclear weapons. Using gas graphite reactors, the North Koreans were able to take the plutonium route towards the bomb. Gas graphite reactors, which do not require enriched uranium, instead produce plutonium that can be extracted in a reprocessing facility.\textsuperscript{76} North Korea’s accession to the Nonproliferation Treaty in 1985 was in large part motivated by its desire to have U.S. nuclear weapons removed from South Korea. North Korea attempted to leverage the completion of the IAEA safeguards agreement, which is usually allotted a period of 18 months to complete


under Article III of the NPT, in order the negotiate the removal of U.S. nuclear weapons from the Korean Peninsula. After six years of negotiations, North Korea completed the safeguards agreement. By 1989, the international community caught on to North Korea’s plutonium production, which initiated a flurry of diplomatic negotiations that attempted to contain and deter North Korea’s nuclear weapons ambitions.

The 1994 Agreed Framework landmark agreement between the two countries paved the way for nuclear cooperation. In exchange for two U.S. supplied light water reactors, North Korea agreed to freeze its nuclear programs and begin cooperating with the U.S. in ensuring the security of the Northeast Asia region.

However, relations between the two countries rapidly deteriorated during the Bush administration and North Korea swiftly continued on its path towards proliferation. After being publicly accused by the United States of uranium enrichment, North Korea officially withdrew from both the Agreed Framework and the NPT in early 2003. Since then, North Korea has conducted three nuclear tests, in 2006, 2009, and 2013, which have elicited international responses in the form of three UNSC resolutions (UNSCR 1718, UNSCR 1874, and UNSCR 2094). The next section will examine the scope of the sanctions regime against North Korea and glean information on their impact through sources relying on satellite data and first-hand witness accounts of former officials within the North Korean state trading companies.
Impact of Sanctions on North Korea

Current Sanctions Regime Against North Korea

North Korea currently has numerous multilateral and unilateral sanctions by the United Nations, the EU, and individual countries levied against its economy. In 2006, UNSCR 1718 introduced financial sanctions; UNSCR 1874, passed in 2009, added robust implementation of the sanctions to give the resolution “teeth;” and in 2013, UNSCR 2094 strengthened and expanded the scope of prior UN sanctions by making key financial sanctions mandatory for member states.77

The United States has imposed a robust regimen of sanctions against North Korea and has targeted individuals, financial institutions, and businesses. President George W. Bush’s designation of North Korea as a threat to national security in Executive Order (E.O) 13466 due to “the current existence and risk of the proliferation of weapons-usable fissile material on the Korean Peninsula,” set the precedent for President Obama to continue in the same vein by signing E.O. 13570 in 2011, which expanded and toughened existing sanctions against North Korea.78 The United States Department of the Treasury has coordinated the implementation of financial sanctions with various U.S. government agencies, including the Department of State and Department of Commerce, in order to create a comprehensive policy against North Korea’s nuclear development. North Korea is also one of the subjects of the Iran, North Korea, and Syria Nonproliferation Act (INKSA). INKSA was passed in 2011 in order to directly target individuals and

entities deemed to be in violation of multilateral export control lists by trading with Iran, North Korea, or Syria.

Assessing the Impact of Sanctions

Given that North Korea became a self-declared nuclear state in late 2002, U.S. nonproliferation policy has not succeeded in dissuading North Korea’s weapons development. The impact of sanctions is difficult to infer due to the nature of the North Korean state. The usual indicator of the intensity of sanctions, which is measured by determining aggregate gross national product (GNP) loss over time, is difficult to measure in the case of North Korea, which tightly guards its true economic figures, but estimates of North Korea’s GDP in terms of purchasing parity settle around $40 billion. North Korea’s GDP in terms of per capita is estimated to be $1,300, ranking it the 208th country in comparison to the world.79

This lack of empirical data makes it difficult to accurately determine the causal mechanisms of sanctions on the North Korean leadership decision-making process. Nonetheless, two sources that shed light on this matter are Yong Suk Lee’s empirical study on light luminosity data gathered from satellite data and first-hand accounts from North Korean defectors involved in the North Korean state trading companies.

Yong Suk Lee examines the increase of sanctions on North Korea in the period between 1992 and 2010 using satellite night light data. His findings are revealing:

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“...an additional sanction increases the urban-rural luminosity gap by 1.07%...”

Lee concludes that the data provides evidence of the unequal impact of sanctions:

As sanctions increase the hinterland population becomes economically deprived, and more may be prompted to engage in underground market activities along the border or to migrate to China. Overall, the empirical results indicate that when external sanctions generate hardships in the domestic economy, the urban elites, whether by disproportionately promoting economic activity or diverting electricity, [are shielded] from the negative impact at a cost to the hinterland population. In short, sanctions that fail to change the behavior of leaders increase regional inequality and impose a higher cost on the more marginalized hinterlands.

His empirical findings fit with Escribà-Folch and Wright’s theory that single-party and military regimes are able to mitigate the damaging effects of sanctions by “shifting fiscal pressure from one stream to an alternative one...This allows them to maintain cooptation while they increase repression to thwart the domestic opposition that reduced economic performance and international support may generate.” By protecting and securing the economic livelihood of the urban elites, the Kim regime is able to deflect the damaging effects of sanctions onto the underdeveloped rural areas while using harshly repressing the rural population to prevent any uprising against the regime.

Additional evidence on the impact of sanctions comes in the form of witness accounts from former North Korean officials in North Korean state trading companies (STC). These former STC officials are able to provide a primary account of North Korea’s operational insights in the business relationships between STCs and private Chinese companies. John S. Park conducted 21 in-depth interviews with this

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81 Lee, 4.
82 Escribà-Folch and Wright, 355.
group of former managers and senior officials and found that “financial sanctions have had the unintended net effect of actually strengthening North Korean procurement networks.”

The North Korean STCs, tightly connected to the Korean People’s Army (KPA), the Worker’s Party of Korea (WPK), and the Cabinet, have evolved and adapted their business methods in the face of increasing sanctions and international isolation. Interviews with former officials have revealed the North Korean STCs to be a highly intricate “self-financed networked model of procurement” from which the Kim regime and WPK are able to glean the majority of profits through bribes and mandatory taxes in the form of “revolutionary funds.”

The increase of international sanctions have pushed North Korean STCs into closer business partnerships with private Chinese companies, often involving hwagyo middlemen, who are ethnic Han Chinese but possess dual Chinese and North Korean citizenship, which allows them to travel freely across the border. These hwagyo middlemen are also able to trade with international companies and evade sanctions because of their Chinese citizenship. As a result, North Korea is able to obtain materials needed for procurement and circumvent sanctions. North Korea’s ability to innovate its procurement networks to evade sanctions has allowed the Kim regime to secure its grip on power.

Another important element of the North Korean regime’s survival is the Kim regime’s system of using luxury goods to buy the loyalty of top officials. Returning to

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84 Park, 206.
Marinov’s focus on the individual leader, the Kim regime has been able to avoid the destabilizing impact of sanctions by relying on a system of bribery.

Soo Kim illuminates this bribery process, which relies heavily on luxury goods:

North Korea pursues illicit avenues to find the lavish lifestyle of its leader, develop its weapons programs, and strengthen the elite’s allegiance to the Kim regime. One such way the Kim Jong-un regime achieves these aims is through the acquisition of luxury goods. High-end items, such as liquor, jewelry, and automobiles are acquired through third-party countries to fulfill Kim’s penchant for luxury goods and buy the loyalty of North Korean elites.\(^{85}\)

In fact, Kim Jong-un appears to be much more reliant on the import of luxury items, as North Korea’s import of luxury goods surged to $645 million in 2012, more than double the average of $300 million per year under Kim Jong-il.\(^{86}\) The increase in import of luxury goods may be a result of Kim Jong-un’s attempts to stabilize his leadership in the first years of his rule by buying the loyalty of political elites.

After examining the existing sanctions and how the North Korean economy is structured to keep the Kim regime in power, it is clear that Escribà-Folch and Wright’s differentiation of different authoritarian regime types provides a framework for understanding the causal mechanism of the impact of sanctions on the North Korean leadership.

Escribà-Folch and Wright state that, “if sanctions are to be effective in destabilizing dictators, they should strike at revenue sources the dictator needs to stay in power.”\(^{87}\) This would support the case for targeted sanctions tailored


\(^{86}\) Ibid, 3.

\(^{87}\) Escribà-Folch and Wright, 355.
specifically to strike at the economic activities of individuals and entities engaging in
the behavior the sender state wishes to change.

*Evolution of U.S. Sanctions Towards North Korea*

The U.S. Department of Treasury, which bears the brunt of the responsibility
in the implementation of financial sanctions, has sought to adapt its policies in
response to the DPRK’s innovative tactics of sanctions evasion. Stuart Levey, former
Undersecretary for Terrorism and Financial Intelligence at the Department of
Treasury, spearheaded these efforts during his term from 2004 to 2011. The Office of
Terrorism and Financial Intelligence was formed in 2004 under President Bush to
directly combat the illicit activities and financial networks of terrorists and
proliferators of weapons of mass destruction.

In a speech given at the Center for Strategic and International Studies, Levey
revealed the challenges of his office and admitted that sanctions “don’t work— they’re
symbolic at best...they don’t change the behavior of intransient regimes.”88 Levey
described the process of refocusing sanctions to target illicit activity and utilizing the
intelligence community to dismantle the procurement networks of proliferating
countries, namely Iran and North Korea.

Levey’s work has reshaped the debate in Washington on how to best respond
to North Korea’s continuing proliferation. In March 2013, a congressional hearing
held before the Committee on Foreign Affairs on “North Korea’s Criminal Activities:
Financing the Regime” addressed the problem of how to “pressure North Korea’s

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88 Stuart Levey, Treasury Department Role in National Security, Stuart Levey Remarks. Center for
ruling elite by systematically restricting their access to hard currency on which they depend.” The hearing outlined North Korea’s illicit activity, ranging from meth trafficking to missile sales abroad to counterfeiting of U.S. currency. The committee underscored the importance of focusing on illicit activity:

It is important to realize that we have more options other than simply to rely on Beijing to do more. Disrupting North Korea’s illicit activities will place tremendous strain on that country’s ruling elite who have done so much harm to the people of North Korea. We must go after Kim Jong-un’s illicit activities like we went after organized crime in the United States—identify the network, interdict shipments, and disrupt the flow of money. This would sever a key subsidy for North Korea’s weapons of mass destruction program. For only when the North Korean leadership realizes that its criminal activities are untenable do prospects for peace and security in Northeast Asia improve.

The laser-focus of the Office of Terrorism and Financial Intelligence on illicit activity and procurement networks and the growing recognition within the government that sanctions need to be tailored in order to be effective has provided a viable alternative to the traditional U.S. policy of sanctions, which have failed to derail North Korea’s proliferation efforts.

Conclusion

U.S. nonproliferation policy towards North Korea has resulted in several failures, including the breakdown of the Agreed Framework agreement and the failure of comprehensive sanctions. The Kim regime’s lack of accountability to the general public rendered comprehensive sanctions futile, as “the regime responded to external constraints by passing the costs onto its citizenry, even to the extent of

90 Ibid.
allowing recurrent food shortages.” The bribery of elite officials, the Kim regime’s absolute control over the military, and the lack of opposition political parties, are the causal mechanisms that have led to the failure of sanctions to deter North Korean nuclear development. Sanctions have not deterred North Korean nuclear development because they have failed to effectively destabilize the Kim regime’s grip on power.

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Figure 3.2

Map of Pakistani Nuclear Sites

CASE STUDY 2: PAKISTAN

Introduction:

In the last days of May 1998, Pakistan detonated a series of nuclear devices and joined India for a spot in the nuclear weapons club. Prime Minister Nawaz Sharif declared, “No matter we are recognized as a nuclear weapons power or not, we are a nuclear power.” 92 Pakistan’s public unveiling of its nuclear weapons program, days after India’s own test, forced U.S. policymakers to scramble to defuse any further escalation in a highly volatile region. In the case of Pakistan, the failure of sanctions must be understood through the lenses of the regional security climate and domestic factors.

Historical Perspective on Pakistan

Leadership and Nuclear Development History

“Therefrom its inception, Pakistan’s nuclear policy has been India-centric, revolving around perceptions of threat from and hostility toward India.” 93 The nuclear development of Pakistan is impossible to disentangle from India’s nuclear development. The intense rivalry between the two nations was conceived after the 1947 partition of the British Indian Empire into the two independent states of Pakistan and India. The messy division resulted in armed hostilities and hundreds of thousands of casualties, notably in the Kashmir territory. From the onset of its independence, the Pakistani leadership struggled with a variety of political, economic, and strategic challenges. The weakness of the Muslim League ruling elite

93 Ahmed, 177.
gave the military the ability to control security policy. In order to counter the looming threat of India, the Pakistani military established ties with the U.S. and relied on U.S. military and economic assistance to expand its control over the state.

Pakistani policymakers pursued a policy of nuclear ambiguity in order to continue receiving assistance from the international community. The official nuclear policy rested on two main objectives: firstly, the “acquisition of a nuclear weapons capability, shrouded under the cover of ambiguity,” and secondly, expressing the “ostensible support for nonproliferation.”

This allowed Pakistan to simultaneously expand its nuclear program while engaging in nonproliferation debates and negotiations in the international arena.

After the 1971 India-Pakistan War, Pakistan’s defeat amplified the voices calling for the development of nuclear weapons. The key political Pakistani actor became Prime Minister Zulfikar Ali Bhutto, whose desire to rebuild and heal a traumatized nation led to the establishment of a nuclear weapons program. He famously declared that all Pakistani citizens would “eat grass or leaves, even go hungry,” in order to develop the bomb. By 1974, Pakistan had detonated a nuclear device and the U.S. in turn ramped up its nonproliferation policy, notably with the passage of 1976 Symington amendment and the 1977 Glen amendment to the Foreign Assistance Act, which denied U.S. military and economic assistance to nations that delivered or received nuclear equipment or technology or conducted

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nuclear explosions. However, these amendments did not apply retroactively to India or Pakistan.

By the summer of 1977, Bhutto was ousted in a military coup led by Mohammed Zia-ul-Huq and Bhutto was eventually hanged and executed in 1979. The military takeover led to the imposition of martial law and the nuclear weapons program “operated under the absolute control of the army”97 Under Zia’s leadership, the Pakistani nuclear weapons infrastructure rapidly grew and the Reagan administration, out of political convenience, turned a blind eye towards its alarming development and ignored intelligence reports of Pakistani-Chinese transfers of nuclear technologies in 1983 and 1984.98

The military continued to maintain its control over Pakistan’s nuclear weapons program, even after the assassination of Zia in 1988 and the subsequent transition to democracy. During the early 1990s, Army Chief General Mirza Aslam Beg strengthened the military’s control over the nuclear program to the extent that Prime Minister Nawaz Sharif admitted in a 1991 New York Times interview that Pakistan’s nuclear program could not be capped without the military’s consent.99

The Clinton administration recognized the Pakistani military’s role in its nuclear weapons program and negotiations on Pakistani nuclear policy included the military high command along with political leadership. Within Pakistan’s political leadership, there were divisions among those who opposed nuclear tests and those who were staunch supporters of Pakistan’s nuclear ambitions. However, the

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97 Ahmed, 184.
99 Hussain, 40.
combination of India’s rapid weaponization and the Pakistani military’s belief that a “nuclear stature less than India’s was unacceptable,” led to the late May 1998 nuclear tests and public demonstration of weapons capability.100

The Impact of Sanctions

Scope of Sanctions Regime Against Pakistan

The United States has actively attempted to influence Pakistan’s nuclear policy since its inception and Congress has passed several pieces of legislation that gave the U.S. the prerogative to make nuclear nonproliferation a foreign policy priority, including the 1976 Symington and 1977 Glen Amendments and later the 1978 Nuclear Nonproliferation Act (NNPA). However, the U.S. lacked consistency in its enforcement of nonproliferation sanctions towards Pakistan. As noted earlier, the Symington and Glen Amendments did not apply retroactively towards Pakistan and India. President Carter’s decision to impose sanctions in April 1979 was quickly retracted by December 1979 after Pakistan agreed to cooperate in pushing out the Soviets in Afghanistan.101

Nonetheless, the Soviet withdrawal of Afghanistan shifted Pakistan’s strategic significance and in 1990, the Pressler Amendment was finally applied against Pakistan. The 1985 Pressler Amendment to the Foreign Assistance Act of 1961 required the president to certify a nation’s non-nuclear status in order for that nation to receive economic and military assistance. The U.S. had turned a blind eye to Pakistan’s nuclear development up until 1990, with the imposition of the Pressler

100 Ahmed, 193.
101 LaMontagne.
Amendment. However, by 1995, the Brown Amendment once again resumed U.S. military aid to Pakistan, this time in the value of $368 million worth of military equipment. 102

The 1998 Indian and Pakistan nuclear tests elicited a swift response from the Clinton administration- within days the Glenn Amendment was imposed on both countries. Yet, mere months after the tests, the India-Pakistan Relief Act of 1998 (also known as Brownback I), granting the president the ability to sign a waiver on the Symington, Glenn, and Pressler Amendments, was signed into law by President Clinton. The waiver restored non-military aid and by 1999, Brownback II, which authorized the president to sign a permanent waiver, further eased sanctions.

*Causal Mechanisms of Sanctions*

Despite their uneven application, the sanctions inflicted substantial damage on Pakistan’s economy:

According to Pakistan’s finance minister, Ishaq Dar, sanctions would cost Pakistan $1.5 billion annually in preferential loans and aid and $2.5 billion in foreign investment and remittances. The impact of sanctions was far more severe...On the first day of trading after the Pakistani tests, the Karachi stock market crashed and has since lost more than $4 billion in value.103

The sanctions were aimed at constraining Pakistan’s fiscal ability to develop nuclear weapons by withdrawing foreign assistance. As the recipient of about $19 billion of foreign aid since 1980, of which 14 percent were untied loans and grants, the withdrawal of aid to Pakistan would constrain its ability to fund its nuclear program.104

102 LaMontagne.
103 Ahmed, 195.
Although the impact of the sanctions led to an unmistakable downturn in the economy, the Pakistani government was able to capitalize on a brief rally-round-the-flag response and framed its nuclear weapons programs as essential for national security. Accordingly, analysis of public opinion polls revealed the India-centric nature of Pakistan’s nuclear program: “There is unanimity among nuclear advocates that Pakistan should have nuclear weapons because of the threat from India. Nearly all respondents saw a direct linkage between the nuclear weapons programs in the two countries.”\textsuperscript{105}

The military similarly weighed the costs of sanctions against its nuclear program and came to the conclusion that sanctions were a cost Pakistan was willing to bear for the following reasons: (1) In the post-Cold War environment, Pakistan’s strategic significance had waned substantially and U.S. military and economic assistance was expected to dwindle as a result; (2) The scope of the U.S. sanctions regime was limited to military and economic assistance and did not extend to foreign assistance from international institutions such as the International Monetary Fund (IMF) or World Bank; (3) The lack of an international consensus against nuclear proliferation in South Asia gave Pakistan the ability to maneuver around the U.S. sanctions and still be able to procure funds and loans.\textsuperscript{106}

Escribà-Folch and Wright’s framework of authoritarian regimes is an apt framework for understanding the case of Pakistan. Pakistan’s weak political control over its nuclear weapons program allowed the military, which was not susceptible to the same domestic political pressures, to pursue nuclear proliferation even at the


\textsuperscript{106} Mian, 188.
cost of a devastated economy. Although Pakistan endured several violent transitions of political leadership, the military was able to maintain its grip of power on nuclear policy. The deteriorating economic state did cause internal divisions within the political leadership between those in favor and those against the development of nuclear weapons, but the control over nuclear policy ultimately rested in the military, a publicly and internally known fact within the Pakistani government.

Another theoretical framework to consider is the impact of comprehensive sanctions versus targeted sanctions. Drezner argues that while “smart sanctions are likely to work via one of two causal mechanisms; comprehensive sanctions can work via five or six different causal mechanisms...the more causal mechanisms that are in play, however, the more difficult it becomes for the target regime to block the intended effect of sanctions.”

In the case of Pakistan, the sanctions were not comprehensive in the sense that the military and political elites thought that they would be able to mitigate the negative effects of sanctions by pursuing other sources of funding and economic assistance. Although the sanctions imposed against Pakistan were not targeted towards individuals or entities, the sanctions did not block off other sources of economic assistance. A more comprehensive sanctions regime arguably could have shifted the decision-making calculus of the political elite, yet with the military firmly in control of the final decisions on nuclear policy, it seems unlikely that the military would have changed its priorities.

Indeed, the fact that Pakistani nuclear policy was controlled by the military, and largely insulated from public opinion, is a more compelling reason for why

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sanctions failed in the case of Pakistan. Despite the uneven application of sanctions, the military was able to operate outside of the influence of public opinion and was not constrained by any mechanism of public accountability. Therefore, a more robust and comprehensive sanctions regime would have likely not have been able to influence the military’s nuclear decisions.

**Conclusion**

The intense regional security dynamics and loose political control over its nuclear policy were the driving factors that made Pakistan willing to develop nuclear weapons even in the face of sanctions. The military, far less susceptible to domestic and international pressure, was able to maintain its control over Pakistan’s nuclear program. In addition, the uneven nature of the sanctions, both in scope and temporal period, created an illusion of a loophole that allowed the political and military elites to believe that they would be able to circumvent some of the economic damage. Given that the United States has relied on Pakistan as a strategic partner to advance American national interests in the surrounding region, Pakistan enjoys an element of leverage in the U.S-Pakistan relationship.

An additional dimension is Pakistan’s “all weather” relationship with China. Pakistan has historically relied on China for economic and military aid and received much of its initial nuclear technology from China:
For decades, Beijing has been Pakistan’s only wholly reliable weapons supplier, and SIPRI’s most recent report shows that China has sold Pakistan over half the arms it imported in the last five years. The apogee of this relationship is the two sides’ cooperation on Pakistan’s nuclear and missile programs, where Chinese knowhow, technology and materials have played a vital role – but not one conducive to celebratory toasts in public.\textsuperscript{108}

Therefore, Pakistan’s close dependence on China limited the ability of the United States to financially pressure Pakistan’s nuclear program.

These two factors: the uneven application of sanctions and the close Sino-Pakistan relationship, undoubtedly contributed to the failure of nonproliferation sanctions, but it was ultimately the clout of the Pakistani military that drove the acquisition of weapons in the face of sanctions. Therefore, the primary mechanism of sanctions failure rested in the ability of the Pakistan military to deflect the pressure of sanctions.

Figure 3.3

Map of Indian Nuclear Sites

CASE STUDY 3: INDIA

Introduction

As the world’s largest democracy, India presents an interesting case of sanction failure. On May 11 and 13, 1998, India tested five nuclear devices and effectively abandoned its policy of nuclear ambiguity, which had been the status quo for decades since the initial 1974 nuclear explosion. The Indian decision to unveil its nuclear status has been explained through various arguments pertaining to domestic politics. The leading arguments assert that the (BJP Bharatiya Janata Party) decisively advanced India’s nuclear weapons program in order to boost its domestic popularity and also unite contentious factions within the Indian parliament.109 Another popular argument asserts changing perceptions of external security threats as the driving force behind the May 1998 tests. In order to more fully understand how sanctions failed, the salient reasons for India’s nuclearization will be drawn out, first by examining the historical context.

Historical Perspective on India

Leadership History and Phases of Nuclear Development

India’s nuclear program was first established for civilian purposes even before its 1947 independence from Britain. However, after India’s independence, the physicist Homi J. Baba was given generous free-rein to develop India’s nuclear program by the relatively pacifist Prime Minister Jawaharlal Nehru, who “despite his public opposition to nuclear weapons, granted Bhaba a free hand in the development

of India’s nuclear infrastructure.”\textsuperscript{110} External security threats, notably the border threat from China, accelerated the development of India’s nuclear weapons program and after China’s successful nuclear tests in 1964, the nuclear weapons increased in political and strategic importance for the Indian leadership.

The rise of the Bharatiya Jana Sangh party, (which would eventually morph into the BJP), was in part attributed to their vocal support for the development of nuclear weapons and their criticism of the Nehru government for appearing too passive against the Chinese threat. On the other side, factions within the government sought to remedy the Chinese security threat by obtaining a nuclear guarantee from the existing nuclear weapons states, but ultimately failed to elicit an explicit nuclear guarantee.\textsuperscript{111}

By 1974, the nuclear security threat shifted from China to Pakistan as India redirected its attention towards Pakistan, which was the recipient of both U.S. military aid and growing evidence of Chinese nuclear aid as well.\textsuperscript{112} In addition, the recurring wars in 1965 and 1971 with Pakistan had worsened relations and the forceful leadership of Prime Minister Indira Gandhi drove the decision to explode nuclear devices as a “peaceful nuclear explosion.” Other contributing factors were the lack of a nuclear guarantee and domestic support. Although the world powers, with the exception of France, reacted critically to India’s test, the U.S. was by far the most active and outspoken. From 1978-1982, the Carter administration severed nuclear cooperation ties with India under the Nuclear Nonproliferation Act.

\textsuperscript{110} Ganguly, 150.
\textsuperscript{111} Ibid, 155.
\textsuperscript{112} Ibid, 162.
The worsening security situation with Pakistan and the collapse of the Soviet Union, which had been a critical balancer against China, led to a decade of insecurity and political instability. By the end of 1997, the United Front, a coalition of fourteen political parties that ruled the government, unraveled after the Congress Party withdrew support. At the beginning of 1998, the Bharatiya Janata Party (BJP) emerged as the majority party with the mandate to elevate India’s nuclear status; the 1998 BJP election manifesto explicitly stated its objectives to: “Re-evaluate the country's nuclear policy and exercise the option to induct nuclear weapons; [and] Expedite the development of the Agni series of ballistic missiles with a view to increasing their range and accuracy.”

The BJP incorporated nuclear weapons into its brand of nationalism and won broad support for increasing the appeal of nuclear weapons: “Nuclearization has led to an explosion of jingoist triumphalism, rabid communalism, and war mongering over Kashmir...” Therefore, a nuclear India was an important component of the BJP’s electoral prospects as a nuclear India fit into its broader nationalist appeal of a “great India.” It was evident that by 1998, “the growing importance of militaristic nationalism [was] reflected in India’s public discourse.” By running on this nationalistic, nuclear weapons-embracing platform, the BJP was able to stake out a firm pro-nuclear position and this translated into electoral victory: the BJP won 182

115 Ibid.
Parliament seats in the 1998 election, an increase of 19 seats from the 1996 election, and thus remained the largest party in the Indian parliament.

In May 1998, the Indian leadership made the landmark decision to test five nuclear weapons and showcase its nuclear arsenal to the world. The factors that made this decision possible were (1) the technological capability of India’s nuclear program, which had been under the care of the scientific community for decades; (2) the political incentive to go nuclear, due to domestic pressure from the public and support from both the military and scientific community; (3) the external security environment created the urgency that ultimately pushed India over the brink of nuclear restraint. However, given that wars were a constant in Indian-Pakistani relations, there was no decisive change in the threat environment.

Under Prime Minister Vajpayee, the government reversed the decades-old policy of nuclear ambiguity, a policy that successive Indian governments retained more so out of convenience than by a conscience decision. Vajpayee’s rejection of falling “into accepting the nonweaponized status quo by default” was an assertion of Indian power:

The abandonment of restraint signals the Vajpayee government’s acceptance of the nuclear advocates’ view that India’s earlier adherence to ‘nonweaponized’ deterrence was nothing more than a strategic bluff. Nuclear advocates in New Delhi had long argued that the nonweaponized stance left India with a nuclear capability that was merely symbolic and existed only on paper.

This explains the thinking behind India’s decision to ultimately weaponize, despite the risks of triggering further insecurities on the part of Pakistan and China.

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117 Kampani, 245.
The Impact of Sanctions

Scope of Sanctions Regime Against India

The 1976 Symington and 1977 Glenn Amendments did not apply retroactively to India and Pakistan, but created the congressional legislative mechanism for sanctions after the May 1998 tests. The 1978-1982 sanctions enacted under the Nuclear Nonproliferation Act against India’s 1974 “peaceful” nuclear explosions, made it harder for India to acquire nuclear technology but ultimately increased India’s reliance on its own scientific community. After the May 1998 tests, the Clinton administration applied the Glenn Amendment against both Pakistan and India. In addition, the U.S. terminated all foreign assistance under the Foreign Assistance Act, stopped all loans to the Indian government (including loans from international institutions such as the International Money Fund (IMF) and World Bank), and cut off military sales under the Arms Export Control Act.118

Given that the United States was India’s largest trading partner (in 1995 bilateral trade was estimated to be $9 billion), the immediate effects of the sanctions reverberated throughout the economy, but their impact was brief and did not translate into policy change.119 “The rupee dropped sharply to a record low of 40-55 to the dollar, but the share market recovered considerably as a feeling of national pride spread through the country.”120 In short, economic pressure did not translate into any political ramifications.

118 LaMontagne.
120 Simons, 155.
Causal Mechanisms of Sanctions

As the world’s largest democracy, India’s political and strategic decision to pursue nuclear weapons was in the hands of the elected political leadership. Unlike Pakistan, India’s nuclear program was not maintained by the military. Instead, under the tutelage of scientists such as Bhava and his successors, the nuclear program infrastructure remained intact and advanced at critical political junctures, notably under Prime Minister Indira Gandhi in 1974 and under the leadership of the BJP in 1998.

Ultimately, sanctions did not dissuade India from developing its nuclear program:

For three decades, successive administrations have tried unsuccessfully to persuade, badger, and browbeat India into abandoning or at least limiting its nuclear option. Washington has employed political cajolery, embargoes, and sanctions in pursuit of those objectives. The positive result of that policy is that India still faces formidable economic, technological, and organizational challenges on the path to an operational nuclear force. But the United States has nearly no leverage over India’s nuclear coalition.\footnote{Kampani, 253.}

However, sanctions did play an important role in slowing down nuclear development by implementing technological and economic barriers. Sanctions had a significant effect on India’s stance in the aftermath of the May 1998 tests. In August 1998, Prime Minister Atal Bihari Vajpayee announced to the lower house of the India parliament that India had decided to impose a voluntary moratorium on nuclear testing and was engaging in dialogue with the United States on the issue of accepting the Comprehensive Test Ban Treaty (CTBT), with the expectation that the “American quid pro quo to their signing the CTBT to take the form not only of the lifting of
sanctions imposed in the wake of the May tests, but also, more importantly, of the easing, if not the total removal, of international restrictions imposed on the sale of dual-use technology to India.”

Therefore, although sanctions were not effective in deterring the May 1998 nuclear tests, they played a crucial role in the aftermath. The Indian leadership recognized that the continued imposition of economic sanctions and technological transfer bans would undercut India’s economy and adversely impact its development, but the more pressing consequence was the deterioration of U.S.-Indian relations, which explains why Vajpayee made diplomatic overtures to the U.S. regarding the CTBT weeks after the nuclear tests.

Solingen’s argument that “ruling coalitions pursuing economic liberalization are more likely to embrace regional nuclear regimes than their inward-looking, nationalist, and radical-confessional counterparts,” does not explain the case of India. According to this theoretical framework, states weigh the costs of nuclear weapons against the economic trade-offs, namely “access to international markets, capital, technology, and investments...” In the case of India, the economy was undergoing liberal reforms. Although the Indian economy was originally forged with the makings of a “classical import-substitution model of industrialization, aimed at avoiding vulnerability to international markets and economic institutions,” by the time the BJP became the ruling party in 1998, the BJP had shifted its policies in favor of globalization. Although India’s economy was periodically infused with

124 Ibid, 46.
125 Ibid, 54.
economically liberal policies, the nationalistic BJP, despite being in favor of these policies, ultimately prioritized the development of nuclear weapons over integration into the world economy.

**Conclusion**

*The U.S.-India Civil Nuclear Deal*

The case of India does not fit into the theoretical frameworks that worked for North Korea. India and Pakistan require a far more flexible approach to understand the causal mechanisms of how sanctions failed in its national decision to go nuclear. In the case of India, Marinov’s theory of democratic leaders being more susceptible to sanctions does not hold. Despite being the world’s largest democracy, India’s nuclear weapons acquisition was driven by domestic politics, which trumped economic pressure.

It is also important to note that U.S. sanctions were similarly unevenly applied against both India and Pakistan, which can support Drezner’s argument that comprehensive sanctions are far more effective because of their broad-based economic effects, that “might offer multiple pathways- mass unrest, elite dissatisfaction, regime change- through which the target government must acquiesce.” Drezner, “An Analytically Eclectic Approach to Sanctions,” 173. Although it is difficult to measure the impact of sanctions after the 1998 test because of their brevity (Brownback II allowed Clinton to waive sanctions by June 1999), the fact that Prime Minister Vajpayee publicly announced India’s moratorium on further testing in August 1998 and opened dialogue with the United States on the CTBT in exchange for the lifting of sanctions demonstrate that sanctions weren’t completely inconsequential against India.

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American nonproliferation policy towards India has shifted since its sanctions failure. In 2008, the U.S.-India civilian nuclear energy cooperation agreement was concluded. By “bringing India into the larger nonproliferation framework as a responsible nuclear state with advanced technological base,” the United States was able to bridle further Indian nuclear development and advance nonproliferation in the South Asia region.\textsuperscript{127}

Ultimately, sanctions were not the most effective nonproliferation policy tool in the case of India, but they did contribute to shaping India’s nuclear policy in the aftermath of the 1998 tests. Sanctions signaled the U.S. commitment to nuclear nonproliferation and despite their brief and half-hearted imposition, they did effectively open the Indian-U.S. nuclear dialogue, leading to the U.S.-Indian nuclear pact. With a nuclear cooperation agreement, the U.S. was finally able to bring India into the fold of the international nonproliferation regime and curb India’s nuclear weapons expansion.

CHAPTER FOUR

“The Dogs That Did Not Bark:” Nonproliferation Outcomes

Introduction

Given the disparate number of states capable of developing nuclear weapons, having both the technological infrastructure and/or the incentive to weaponize, the overwhelming outcome of nuclear nonproliferation deserves further scrutiny. The focus of this thesis has been to examine the impact of sanctions by mapping the causal mechanisms in order to understand how sanctions could have influenced the decision-making process. This chapter will examine the impact of sanctions in cases of nuclear reversal.

The cases that will be examined in this chapter share two things in common: firstly, all these cases have had sanctions imposed against them by the United States due to their nuclear programs, and secondly, these countries have possessed both the technological capability and expressed one or more of the following: “[a] political decision by cabinet-level officials, movement towards weaponization, or development of single-use dedicated technology.”128 In the case of the South African nuclear weapons program, the final stage of acquisition was reached, defined as the status of having tested or possessing a “functional nuclear weapon.”129 South Africa’s decision to dismantle its nuclear program will be examined first, followed by in-depth examinations of nuclear restraint by Argentina, Brazil, and lastly Libya.

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128 Singh and Way, 866.
129 Ibid.
Argentina, Brazil, and Libya were classified under Singh and Way as nuclear “pursuit” states, as there was no definitive evidence of a functional nuclear weapon.
CASE STUDY 1: SOUTH AFRICA

Introduction

South Africa is the only historical nuclear rollback state in its decision to abandon its completed nuclear weapons program after its initial decision to acquire nuclear weapons. It is important to note that Belarus, Kazakhstan, and Ukraine inherited their nuclear weapons after the collapse of the Soviet Union but were not involved in the initial decision to pursue nuclear weapons. After gaining their independence in 1991, Belarus, Kazakhstan, and Ukraine ultimately did decide to renounce and remove the nuclear weapons left over from the Soviet era.

South Africa’s nuclear history spans two decades, from the initial stages of nuclear development starting in the early 1970s to its ultimate decision to scrap its weapons program in 1990-91. On July 10, 1991, South Africa formally joined the NPT. The evolution of South Africa’s nuclear policy will be examined in the next section.

Historical Perspective on South Africa

Leadership and Nuclear Development History

South Africa’s nuclear programs were initially developed for commercial uses, but during the early 1970s, the decision to weaponize its nuclear program was made. The worsening security environment, due to external threats from the Soviet Union and conflicts in the southern Africa region, ramped up the development of the program. By 1977, South Africa’s nuclear weapons program was confirmed by the discovery of the Kalahari test site, which prompted international outcry.
Aside from external security motivations, organizational politics played a major role in the national decision to go nuclear. The South African Atomic Energy Board (AEB) was the main organization driving the development of nuclear weapons and had the greatest stake in the continued funding and expansion of a nuclear weapons weapon. In addition, the AEB had organizational mechanisms in place: “The AEB had the advantage of tight secrecy in managing internal debate, as well as direct access to the prime minister.”130

The South African leadership also played a crucial role and Prime Minister B.J. Vorster was the key actor who ultimately gave the AEB the green light to continue its nuclear explosives research and development. On the other hand, the military had little influence over South Africa’s nuclear policy and was “excluded and uninformed” in the nuclear decision-making process.131

After the 1977 discovery of the Kalahik nuclear test site, Prime Minister Vorster publicly ordered the test site to be shut down, but privately ordered the AEB to continue researching and developing weapons. Vorster’s successor, P.W. Botha, wholeheartedly supported the further development of the program and by 1989, the South African nuclear arsenal expanded to six operational weapons.132

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131 Liberman, 259.
Nuclear Rollback

In 1990, the decision to dismantle and scrap its weapons program made South Africa the only state to do so.\(^\text{133}\) The three main factors that can explain the nuclear rollback decision are: (1) the election of President F.W. de Klerk and his new vision for South Africa; (2) the dwindling external security threat due to the end of the Cold War and the resolution of security conflicts in the region; (3) international pressure from the sanctions regime.

President de Klerk’s election in 1989 ushered in a new era for South Africa. His decision to abolish apartheid and create a new domestic settlement policy in order to ease the Western anti-apartheid sanctions was also the first step in his economic reform policies. De Klerk viewed South Africa’s nuclear weapons as the next barrier blocking South Africa’s integration into the world economy. Immediately after his election to office, he formed an ad hoc committee dedicated to reevaluating South Africa’s nuclear policy, with accession to the NPT a key agenda goal. De Klerk was a crucial player in South African nuclear rollback and “in his vision, nuclear weapons had no constructive role, and their abandonment could bring important rewards.”\(^\text{134}\)

De Klerk’s election to office coincided with an improved security environment. The resolution of security conflicts in southern Africa and the dwindling power of the Soviet Union allowed de Klerk to take office with a far more optimistic view of South Africa’s threat environment. In late 1988, South Africa

\(^{133}\) Belarus, Kazakhstan, and Ukraine did give up the remaining Soviet nuclear weapons after gaining independence.

signed a *de facto* cease-fire agreement with Cuba and Angola and in 1990, Namibia was granted independence from South Africa. The withdrawal of Cuban and Angolan troops from Namibia defused the threat environment.

In addition, the waning power of the Soviet Union and the evaporation of the fear of Communist rule in the region also contributed to the improved security environment, which diminished the strategic and military importance of nuclear weapons.

International pressure and the sanctions regime also played a significant role in de Klerk’s calculation of the utility of nuclear weapons. In the next section, the sanctions regime against South Africa will be examined in further depth.

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**The Impact of Sanctions**

*Scope of Sanctions Regimes Against South Africa*

The United States levied sanctions against South Africa starting in 1975. The sanctions were aimed against a combination of South Africa’s apartheid and nuclear policy and the dual-edged meaning of sanctions influenced their efficacy:

Extensive nuclear embargoes and boycotts were imposed on South Africa from the mid 1970s. But they were not highly costly in economic terms, and they were seen by Pretoria as anti-apartheid bullying rather than as being selectively targeted against the nuclear weapons program...this linkage blunted the sanctions’ coercive potential, as did possibly the leadership’s nationalist-statist predisposition.\(^{135}\)

By the late 1980’s South Africa’s leadership could no longer justify its choice of nuclear weapons in light of its deteriorating economy:

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\(^{135}\) Liberman, 279.
In the case of South Africa, changes in state sensitivity to international sanctions and norms did correlate roughly with changes in nuclear policy. In the 1970s and 1980s, South Africa was subjected to an escalating battery of nuclear sanctions culminating in near-excommunication from Western nuclear suppliers, markets, and scientific forums.\textsuperscript{136}

By 1986, the U.S. instituted a complete ban on nuclear cooperation, which limited South Africa’s ability to procure nuclear technology.\textsuperscript{137} South Africa increasingly relied on its own indigenous technology to develop its nuclear program and sanctions were able to slow down the pace of nuclear development.

The South African economy in the mid to late 1980s faced a huge debt crisis and in 1990 was scheduled to pay back an estimated $9 billion to international banks.\textsuperscript{138} The South African economy had been deteriorating since the 1980s due to inefficient economic policies that stemmed largely from the costs of maintaining apartheid rule (which required high military and police expenditures), and the isolated economic impact of sanctions was minimal. Even though sanctions were not able to single-handedly pressure the economy, they crucially influenced the domestic political calculations. In a report on the impact of sanctions against South Africa in the late 1980s, the finding stated: “Sanctions represent the only way to force the essential political changes that will halt the downward economic spiral that is already under way.”\textsuperscript{139}

Although Prime Minister P.W. Botha was inflexible on maintaining South Africa’s nuclear deterrent, the declining utility of the nuclear weapons became more evident as the threat environment improved and it was de Klerk’s “vision for his

\textsuperscript{136} Liberman, 258.
\textsuperscript{137} Ibid, 289.
\textsuperscript{139} Ibid, 111.
country and the courage to implement it,” that spurred the ultimate decision to give up nuclear weapons:140

*Causal Mechanisms of Sanctions*

The nationalist-statist nature of South Africa’s leadership changed with the election of de Klerk, who was acutely aware of South Africa’s unfavorable position within the international community and prioritized reforming the domestic system of apartheid and joining the international community by giving up the nuclear program and acceding to the norms espoused in the NPT. By choosing integration over isolation, de Klerk reversed nearly two decades of ostracism from the international community.

Solingen’s theoretical framework of ruling coalitions that pursue economic liberalization being far more susceptible to international pressure and norms can explain the shift in nuclear policy between Botha and de Klerk. Botha’s nationalist and inward-looking coalition was replaced by de Klerk’s vision of a normalized South Africa and “his nuclear policy was part of this larger strategy to normalize South Africa’s relations with the rest of the world...”141 This allowed sanctions to play an important role in guiding de Klerk’s decision to renounce nuclear weapons, as their symbolic and economic impact were key barriers to South Africa’s normalization.

In addition to nuclear policy, de Klerk sought to abolish the system of apartheid and have the sanctions associated with apartheid lifted as well. In order to re-integrate South Africa into the world economy and global community, de Klerk

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140 Reiss, 22.
141 Reiss, 20.
made the decisive choice to reverse both South Africa’s nuclear weapons program and domestic policy of apartheid.

**Conclusion**

After sixteen years that led to a total production of six and a half nuclear weapons, South Africa’s nuclear program was dismantled in less than twenty-four months. As the only state to have given up its nuclear weapons program, “South Africa’s decision to dismantle its nuclear deterrent capability and embrace fully its responsibilities as a non-nuclear weapon state will guarantee Pretoria an unprecedented place of honor in the evolution of the international nonproliferation regime.” Although the external security environment saw marked improvements by the end of 1989, it was the political decisions of de Klerk and his desire to reshape South Africa’s position on the international stage that led to the nuclear rollback decision. Sanctions were an important symbolic and coercive tool and although it is impossible to accurately pinpoint the extent of their contribution to the nuclear rollback decision, sanctions fit nicely into the map of causal mechanisms, and therefore their contribution to South Africa’s ultimate nonproliferation outcome is substantiated.

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142 Reiss, 17.
Figure 4.1

Map of Argentine Nuclear Sites

- **Sierra Pintada/San Rafael**: Uranium mines not currently operating.
- **Los Colorados**
- **Cordoba**
- **Rio Tercero (Embaile)**
- **Rosario**
- **Atucha**
- **Buenos Aires (Constituyentes) (Ezeiza)**
- **Arroyito**
- **Pilcaniyes**
- **San Carlos de Bariloche**
- **RA-6**: 0.5 MW research reactor that runs on imported HEU fuel. Subject to safeguards.
- **Reprocessing Pilot Plant**: This facility is 80% complete, but construction has been halted for over ten years. Some hot cell facilities operate at Ezeiza but none are involved in extracting plutonium. Not subject to IAEA safeguards.
- **Uranium enrichment plant**: No known production of weapons-grade uranium. The enrichment plant is not currently operating, and there are no plans to re-start it. Argentina currently imports all of its enriched uranium. Subject to safeguards.

Figure 4.2

Map of Brazilian Nuclear Sites

CASE STUDY 2: ARGENTINA AND BRAZIL

Introduction

Having never developed a fully-fledged nuclear program, Argentina and Brazil are categorized by Singh and Way under “pursuit,” which is demonstrated by evidence of a “political decision by cabinet-level officials, movement towards weaponization, or development of single-use dedicated technology.”\(^{144}\) Argentina’s nuclear development was tightly intertwined with Brazil’s nuclear development, as the enduring rivalry between the two countries fueled their nuclear ambitions. Given this linkage between the countries, the causal mechanisms behind their nuclear decisions will be examined within the regional context. This case study will be conducted as a joint examination of the two countries’ nuclear decision-making processes, which ultimately resulted in nuclear restraint.

On November 28, 1990, Presidents Carlos Saul Menem of Argentina and Fernando Collor de Mello of Brazil signed an epochal agreement that officially ended decades of nuclear ambiguity. The Joint Declaration of Common Nuclear Policy stipulated adherence to the Treaty of Tlatelolco, a nuclear-weapon-free zone treaty across Latin America, and pledged to “establish a bilateral nuclear inspection system, open all their nuclear installations to the IAEA...”\(^{145}\) In order to understand what factors contributed to the joint decision of nuclear restraint and how sanctions fit into the decision-making process, the political and historical context of the two countries will be examined in the next section.

\(^{144}\) Singh and Way, 866.  
\(^{145}\) Reiss, 45.
Historical Perspective on Argentina
Leadership and Nuclear Development History

Argentina’s nuclear development started in the mid 1950’s and by the 1960s, Argentina was the most advanced nuclear country in the region. As the first country in the region to have produced a fission chain reaction, other notable technical advancements included mastering the process of enriching uranium and exporting a nuclear reactor. Argentina’s nuclear sophistication and substantial investment in its nuclear development were objects of international scrutiny and suspicion. In order to avoid full-scope safeguards agreements and inspections, Argentina acquired sensitive nuclear technologies in a piecemeal fashion, acquiring components here and there from various countries, and through this fashion was able to construct Atucha II, its third commercial heavy-water nuclear power plant.

Argentina sought to preserve its nuclear weapons option by constructing two nuclear weapons plants, Pilcariyu and Ezeiza, outside of international safeguards. “By the mid 1980s many observers thought that Argentina was only a few years away from acquiring a nuclear weapons capability.”

During the timeframe of Argentina’s nuclear development, the government underwent several political transitions and volatile leadership changes. The Argentine Revolution installed military rule from 1966-1973 and the military continued to dominate the government until the 1982 Falklands War. Argentina’s defeat by the British discredited the military and triggered the transition to democratic governance.

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146 Reiss, 46.
147 Reiss, 48.
In 1983, Raúl Alfonsín became the first democratically elected president following decades of military rule. However, it was not until the election of Carlos Menem in 1989 that Argentina’s economy began the process of normalization through the implementation of Menem’s neo-liberal policies. Menem, who viewed Argentina’s nuclear program as “draining financial resources and aggravating relations with the United States,” embraced nuclear rapprochement with Brazil, which led to his signing of the Joint Declaration of Common Nuclear Policy in 1990, which will be further examined in the upcoming sections.\textsuperscript{149}

**Historical Perspective on Brazil**

*Leadership and Nuclear Development History*

Brazil’s nuclear development began in a similar time frame as Argentina’s nuclear development and, “like Argentina, Brazil was eyed by the international community during the 1970s and 1980s as a potential nuclear weapon state.”\textsuperscript{150} Although Brazil’s nuclear program was relatively modest up until the mid 1970s, a nuclear deal with West Germany transformed Brazil’s nuclear capabilities. The 1975 West Germany-Brazil nuclear deal came attached with international safeguards, which was much resented by the Brazilian military and domestic critics. As a consequence, a secret “parallel program” that gave Brazil the ability to explore the weaponization option was headed by the National Nuclear Energy Commission (CNEN) and maintained links to the Brazilian military.

The “parallel program” was exposed in 1986 by the discovery of a nuclear test site at Cachimbo. Although Brazil vehemently denied that Cachimbo was a nuclear

\textsuperscript{149} Reiss, 58.
\textsuperscript{150} Ibid, 48.
test site and refused to confess the existence of its secret parallel nuclear weapons program, most foreign experts and domestic critics doubted the veracity of the official explanations.\textsuperscript{151}

Unlike the Argentine nuclear program, which enjoyed general support from the scientific community and broader elements of society, the Brazilian nuclear program did not receive the same support from its scientific community. “In Brazil much of the scientific establishment remained estranged from the nuclear program...”\textsuperscript{152} The military was the fiercest protector of Brazil’s parallel program, as “each of the three branches of the armed services was committed to developing a nuclear weapons option...”\textsuperscript{153}

After a military coup in 1964, a totalitarian regime was installed, which brutally repressed civil society. It was under the leadership of the military that the parallel “secret” nuclear program was developed. “The program was initiated in the late seventies during the administration of General Ernesto Geisel (1974-78), and reached full flower under the leadership of General Joao Baptista Figueiredo (1978-1985).”\textsuperscript{154}

It was not until 1985 that civilian control over the government was regained. The 1985 democratic election of Tancredo Neves to presidency was short-lived; his death soon after the election led his vice president, José Sarney, to assume the office of presidency. Sarney inherited dire economic issues of rampant inflation, corruption, and massive foreign debt, and the nuclear program undoubtedly exacerbated these economic problems. The costs of the nuclear program were

\\textsuperscript{151} Reiss, 51.
\textsuperscript{152} Redick, 9.
\textsuperscript{153} Reiss, 57.
\textsuperscript{154} Redick, 9.
enormous: construction of the nuclear reactors Angra II and Angra III were estimated to be as high as $5.3 billion. The strained state of the economy delayed construction and the project was halted in 1986. Construction of Angra III was not resumed until 2007.

The election of Fernando Collor in 1990 and his massive turnaround of Brazilian nuclear policy led to the signing of the Joint Declaration of Common Nuclear Policy at Iguazú. Collor was the crucial force driving nuclear cooperation with Argentina. His mission to bring the Brazilian nuclear program strictly under civilian control was demonstrated by both his willingness to participate in bilateral cooperation and his desire to reassure the international and domestic community. He personally inspected, along with ministers of the army, navy, and air force, the Cachimbo nuclear test site, which had been the source of international and domestic controversy after its initial discovery in 1986, in order to reassure the world of Brazil’s sincere intentions of nuclear transparency.

The return of democratic governments led to a thaw in Argentine-Brazil relations, and commercial relations were a crucial component of the normalization process. Nuclear rapprochement fit into the grander picture of regional economic integration, which will be examined in the next section.

The Evolution of Argentine-Brazilian Nuclear Cooperation

Historically, Argentine-Brazilian relations have been rooted in the rivalry between the Spanish and Portuguese dating back from the early colonial period. However, Argentine-Brazilian relations have not been marked by direct military

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155 Reiss, 56.
conflict. Instead competition and rivalry, in the form of territorial boundary disputes and political influence over the region, have been the defining features of the relationship. “While antagonism and distrust have characterized the relationship, Argentine-Brazilian rivalry also has been relatively muted, low key, and non-ideological.” ¹⁵⁶ In stark contrast to the highly militarized rivalry between India and Pakistan, the relatively subdued characteristics of the Argentine-Brazilian rivalry undoubtedly contributed to their eventual nuclear restraint.

In 1979, the ongoing dispute over water resources was resolved with the signing of the Rio de la Plata agreement, which paved the way for closer bilateral relations in the nuclear realm as well. In May 1980, the two countries found common ground in their opposition to the NPT regime.¹⁵⁷ After the return of civilian control to their governments in the mid 1980s, further nuclear cooperation was achieved, notably with the 1985 “Declaration of Iguazú” that created a joint working group to foster nuclear cooperation and mutual inspections.

By 1990, the landmark Joint Declaration of Common Nuclear Policy at Iguazú was signed, which was followed by more comprehensive and multilateral agreements in 1991. The Guadalajara Accord of July 1991 established the Brazilian-Argentine Agency for Accounting and Control of Nuclear Materials (ABACC), which created an institution for bilateral inspections of nuclear sites outside of IAEA safeguards.

In December 1991, the Quadripartite Agreement between Brazil, Argentina, the ABACC, and the International Atomic and Energy Agency (IAEA) brought all

¹⁵⁷ Reiss, 53.
nuclear activities and materials under IAEA safeguards. Argentina promptly ratified the agreement by September 1992, but Brazil underwent a longer and more contentious ratification process due in part to the impeachment of President Collor, who was one of the key Brazilian actors championing nuclear transparency. However, “quiet diplomacy by the IAEA…and a concerted effort by the Brazilian executive branch all helped to sway the vote,” and the Quadripartite Agreement was ratified in February 1994.\textsuperscript{158}

The NPT regime, which had been the subject of much animosity during the period of military rule of the 1970s to 1980s, was ultimately ratified by Argentina in 1995 and Brazil in 1998.

**The Impact of Sanctions**

*Scope of Sanctions Regimes*

The U.S. nonproliferation sanctions regime against Argentina and Brazil began in 1978 and lasted until 1982. Although U.S. nonproliferation sanctions were only explicitly levied during those four years, the continued application of diplomatic pressure, both from the United States and broader international nonproliferation regime, worsened the already deteriorating economies of both countries. Brazil was in an especially dire economic state in the mid 1980s and both countries understood that they could not continue to bear the steep political and economic costs of isolation from the most advanced and industrialized nations in the world.

\textsuperscript{158} Reiss, 63.
Causal Mechanisms of Sanctions

An examination of the causal mechanisms that led to the ultimate decision of mutual nuclear restraint, leads to the conclusion that the leadership of Menem and Collor was crucial in the ultimate outcome. “Menem and Collor saw as the main objectives for their administrations the revitalization of their economies and the integration of their countries into the larger world community.”159 Economic integration into the world economy pushed Menem and Collor to abandon the decades-old policy of nuclear ambiguity. Both leaders had little personal stake in the continued development of nuclear weapons and had no desire to continue to bear the political and economic costs of their programs. Solingen’s argument of economic liberalization can provide an adequate framework for explaining the theoretical basis for the policy shift.

The period of military rule in both countries, lasting from the 1960s to mid 1980s made it difficult for the sanctions regime to influence nuclear policy: “While restrictive foreign export policies enhanced the difficulty and expense of the Argentine and Brazilian nuclear programs, they also reinforced the nationalistic nuclear theology of victimization by the advanced nations.”160

By the mid 1980s, the deteriorating economic conditions of the two countries and damaging effects of international isolation created the impetus for changes in nuclear policy: “Alternatively, the promise of positive inducements, including

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159 Reiss, 60.
160 Redick, 1.
increased foreign investment and access to advanced technology, encouraged domestic forces to press for change in long-cherished nuclear policies.”

However, it was only after the return of democratic governance that this new thinking on security, economic, and political issues was realized into concrete policy changes.

**Conclusion**

The evolution of the Argentine-Brazil nuclear relationship cannot be attributed to a single factor; rather, a range of different incentives played crucial roles in shaping the relationship, including the following:

...a common position during negotiations in the mid-1960s on the Tlatelolco Treaty; a shared hostility to the international nonproliferation regime that led to the formation of an ‘anti-NPT axis’; the advent in the mid-1980s of civilian governments that wanted to wrestle control over nuclear programs from the military; presidential leadership; and eventually a greater mutual appreciation, on both sides, of the political and commercial benefits of joining the nonproliferation regime and the corresponding liabilities of maintaining a nationalistic nuclear stance.

It is also important to note that the mutual security threat had long faded and unlike India and Pakistan, there was no ideological competition between the two. Instead, it was the return of civilian control over the government in both countries and the desire to integrate into the world economy that opened the door for substantive nuclear cooperation and eventual nuclear nonproliferation. Sanctions were crucial in blocking integration into the world economy and therefore influenced the political decision to renounce nuclear ambitions.

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161 Redick, 1.
162 Reiss, 52.
Figure 4.3

Map of Libyan Nuclear Sites

- **Al Khallat**
  Former site for uranium conversion facility supplied by Japan in 1980s. Cold-tested (not using uranium) in 2002 before closing later that year.

- **Al Hashan**
  Former centrifuge R & D location. By April 2002, a 9-machine cascade was complete and 19-machine and 64-machine cascades were close to completion. Modules disassembled in March 2004.

- **Former chemical weapons plant.** Prior to 1990 closing, Libya produced up to 100 tons of mustard blister agent and sarin nerve agent at the site. Re-opened in 1995 as a pharmaceutical plant.

- **Soviet-supplied 10 MWt pool-type LEU research reactor, operating under safeguards. Former storage site for HEU removed in March 2004 under IAEA supervision.**

- **Former rocket-testing base built by a West German firm in 1980, became inactive in 1984.**


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CASE STUDY 4: LIBYA

Introduction:

On December 19, 2003, Libya declared to the world its intention to abandon its nuclear weapons program by demolishing all of its WMD facilities and hereby abide by the NPT. After nearly four decades of nuclear ambiguity, Libya’s decision was a monumental victory for U.S. nonproliferation efforts.

The immediate events leading up to Libya’s nuclear reversal began in March 2003, when Libya approached the United States and Britain with the offer to discuss its WMD program. The secret negotiations, which were limited to a tight circle of Libya, British, and U.S. government officials, were accelerated by the interdiction of the BBC China. In October 2003, the United States and Britain interdicted the vessel BBC China, which was laden with incriminating nuclear enrichment components, notably centrifuges, on its way to Libya from Germany. A mere two months after getting caught red-handed, Libya made its decisive announcement. Starting from its inception in 1970 to its dismantlement in 2003, Libya’s nuclear weapons program will be examined in the following section.

Historical Perspective on Libya
Leadership and Nuclear Development History

After the Revolutionary Command Council (RCC) ousted King Idris in 1969, Colonel Muammar Qaddafi seized control and the new regime immediately sought to acquire nuclear weapons, first by turning to the nuclear powers and seeking to buy
them “off the shelf.” Qaddafi “frequently used a more distant Israel as his main public justification for nuclear weapons,” yet his ultimate motivation in acquiring nuclear weapons was to consolidate his power domestically and increase his importance internationally.

After coming into power in 1969, Qaddafi sought to rule with an iron fist and relied on the brutal tactics of a vast secret police network to clamp down on political opposition. A failed coup by his ministers of Planning and Foreign Affairs in 1976, several assassination attempts by Muslim radicals, and one assassination attempt by the United States in 1986 increased Qaddafi’s desire to “enhance popular support through nationalistic and xenophobic policies.” Revenue from oil exports allowed Qaddafi to maintain close links to the military through “promises of sophisticated weapons technology.” Nuclear weapons, justified by the threatening security environment he had painted to the public, became one of the means through which Qaddafi sought to secure his regime domestically and internationally.

However, after achieving no success in the acquisition of weapons, Qaddafi instead decided to develop Libya’s indigenous nuclear capabilities. After ratifying the NPT in 1975, Qaddafi sought nuclear assistance from other countries under the guise of peaceful civilian nuclear cooperation, but to no avail: “Libya’s nuclear efforts were frustrated due to the reluctance on the part of most supplier countries to provide assistance.”

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164 Etel Solingen, Nuclear Logics: Contrasting Paths in East Asia and the Middle East, 215.
165 Ibid, 221.
166 Ibid 221.
167 Palkii and Smith, 265.
Undeterred, Qaddafi pursued other strategies to acquire nuclear weapons. One strategy involved partnering with the Soviet Union, which “became Libya’s most important source of nuclear technological assistance at least during the first decade of Libya’s activities.”\(^{168}\) Libya acquired a ten-megawatt nuclear research reactor in 1975, but further nuclear assistance was cautiously deflected by the Soviet Union.

The second strategy was the Pakistani-based A.Q. Khan network, which operated internationally in providing illicit nuclear technology and materials on the black market. Libya acquired the bulk of its centrifuges from A.Q. Khan in order to enrich uranium to create nuclear bomb-grade material. Although A.Q. Khan provided Libya with a “blueprint for manufacturing and assembling a nuclear weapon,” gross mismanagement of the program led to very little results- Libya was unable to produce both nuclear warheads or bombs and failed to even produce fissile material for nuclear weapons.\(^{169}\) The fact that the development of the Libyan nuclear weapons program was hampered by managerial problems and resulted in no substantial progress likely contributed to Qaddafi’s increasing disillusionment of nuclear weapons.

**The Impact of Sanctions**

*Scope of Sanctions Regimes Against Libya*

The U.S. sanctions regime against Libya was initially imposed due to concerns about support for terrorist groups and Libya was designated a state sponsor of terrorism in 1979. The actual impact of unilateral U.S. sanctions from 1986 to 1992


\(^{169}\) Jasper, 125.
was by most estimates thought to be minimal but the imposition of multilateral sanctions proved to be much more damaging. Increasing concerns of Libya’s terrorism-related activities, including the 1988 bombing of Pan Am flight 103 and the 1989 bombing of French airline UTA 722, led to the passage of UN Resolutions 748 in 1992 and 831 in 1993. The UN resolutions, coupled with U.S. sanctions, entailed “an arms embargo, an air embargo, travel restrictions, petroleum-sector restrictions, and the freezing of Libya’s financial assets and funds...these bans exacerbated the dire economic conditions precipitated by Muammar Qaddafi’s chosen political economic model, which isolated Libya from the global economy.”

The estimated economic impact of the sanctions was $23.5 billion from 1996-1998, according to an official assessment by the Arab League conducted in mid-1998.

Causal Mechanisms of Sanctions

The impact of sanctions on Libya’s nuclear ambitions can be examined through Escribà-Folch and Wright’s framework of personalist, military, and single-party authoritarian regimes. As an authoritarian regime, Qaddafi “retained heavy reliance on oil, which endowed his ruling coalition with rents and windfall revenues to provide public services and secure support from mobilized constituencies.”

Given that oil exports composed nearly 95 percent of the Libyan economy, the multilateral sanctions regime effectively struck at Libya’s economic vitality.

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172 Solingen, Nuclear Logics, 220.
International sanctions tremendously decreased oil revenues from approximately $21 billion in 1980 to $6.5 billion in 1986.\textsuperscript{173}

Qaddafi’s regime fits into Escribà-Folch and Wright’s classification as a personalist regime. According to Escribà-Folch and Wright, personalist regimes are particularly vulnerable to economic sanctions. “If sanctions can decrease the resources available for political payoffs, the elites’ expected benefits of supporting the incumbent leader decrease, making elite defection more likely.”\textsuperscript{174}

Amidst a steadily declining economy, Qaddafi was forced to reevaluate his inward and nationalistic economic policies:

Qaddafi’s ultimate decision to declare and surrender his nuclear weapons program must be seen against this background of declining resources, domestic challenges to his rule, and the embrace of a new model. The combined effect of his nationalistic economic policies and international sanctions had left Libya’s economy ruined and his regime vulnerable to subversion.\textsuperscript{175}

Qaddafi became increasingly disillusioned of the utility of nuclear weapons and determined that nuclear weapons were essentially useless, given that there was no security threat. “Regime security rather than state security was his foremost motivation for seeking nuclear weapons since the 1970s and for abandoning them in 2003. Threats could be constructed and deconstructed according to Qadhafi’s perceptions of popular receptivity at home and in his region.”\textsuperscript{176}

\textsuperscript{173} Solingen, Nuclear Logics, 222.
\textsuperscript{174} Escribà-Folch and Wright, 340.
\textsuperscript{175} Solingen, Nuclear Logics, 223.
\textsuperscript{176} Ibid, 216.
Conclusion

Libya represents a case of nonproliferation sanction success in the sense that sanctions contributed to the ultimate nonproliferation outcome, but a counterargument would invoke Iraq as the most compelling reason for Libya’s nuclear reversal. This counterargument would postulate that after witnessing the Bush administration’s invasion of Iraq due to its alleged WMD program, Libya renounced its nuclear program in order to avoid the same fate as Iraq. However, this argument is not consistent with the timeframe of Libya’s evolving foreign policy, which began in the 1990s. Jasper finds that:

...the crucial transformation materialized in or around 1996. In any case the alteration took place way prior to 2003 when Gaddafi officially announced the end of Libya’s WMD efforts. This undermines the claim that the Gaddafi administration only backed down in the face of US military pressure following the fall of Saddam Hussein.177

Although Qaddafi was undoubtedly fearful of experiencing the same fate as Saddam Hussein, his fear had been present since far before the invasion of Iraq. Instead, a crippled economy due to the international ban on oil exports and the lack of an actual security-based reason for nuclear weapons changed Qaddafi’s thinking towards Libya’s nuclear weapons program. When faced with the choice between the survival of his regime and nuclear weapons, the continued international pressure and isolation from the sanctions regime forced him to pick the former.

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177 Jasper, 160.
PART THREE: CONCLUSION

CHAPTER FIVE
Assessing the Impact of Nonproliferation Sanctions

This thesis has examined the role of sanctions in national decisions to go nuclear in North Korea, Pakistan, India, South Africa, Argentina, Brazil, and Libya. The case studies revealed a more nuanced understanding of the power of sanctions. Each case provides greater insight in how nonproliferation sanctions factor in the causal mechanisms of national decisions on nuclear weapons, but the cases also reveal how unrealistic it is to find a single overarching theory on the efficacy of nonproliferation sanctions. The unique historical, regional, and political dynamics of each case have made it difficult to establish generalizations on the efficacy of sanctions.

Nonetheless, tying together the common findings of the case studies has revealed the importance of domestic politics. Although nonproliferation sanctions have a symbolic dimension and represent American resolve and commitment to the international nonproliferation regime, their true efficacy lies not in their external influence, but their ability to influence internal politics. Sanctions fit into the mechanism of domestic politics and their ability to change domestic calculations about nuclear weapons hinges on three factors: regime type, the structure of the economy, and domestic political coalitions.
**Explaining Proliferation Outcomes**

In the cases of North Korea, India, and Pakistan, sanctions failed to inflict domestic political costs and these states were able to proliferate and deflect the economic pressure of sanctions.

The North Korean regime has based its security on its nuclear weapons and therefore nukes serve as an existential necessity for the regime’s survival. The question of how sanctions did not dissuade North Korea’s nuclear ambitions can be understood using the theoretical framework offered by Escribà-Folch and Wright. The Kim regime’s the ability to shift the fiscal pressure of sanctions can be explained by its firm control over the military and its monopoly over the political system, which classifies it as a single-party and military authoritarian regime. The history behind the origins of the monolithic Kim regime provides insights into how the North Korean economy functions today, especially in their circumvention of sanctions. Although the Kim regime leadership is structured around a single supreme leader, through the mechanism of systemic bribery and brutal oppression, the Kim regime has proven that it is not susceptible to the same pressures faced by democratic leaders. Therefore, sanctions have failed to alter the Kim regime’s nuclear policy and are likely to continue to be ineffective so long as the regime maintains its ability to shift fiscal pressure and deflect political accountability.

India and Pakistan’s nuclear weapons programs, developed out of mutual hostility and forged in nationalistic rhetoric, present two very different pictures of domestic politics.

Pakistan’s political system, with its minimal democratic features, was unable to influence its nuclear program, which was under the tight control of the military.
Pakistan’s political system suffers from a weak civil society and the role of the military is indisputable.

Pakistan ended up as a garrison or praetorian state and whenever the military ceded power to elected civilian governments, it did so only partially. This left Pakistan a hybrid democratic model where the ultimate power rested not with the people but with the military as a veto player in any decisions the civilian government would take.178

Therefore, Pakistan can fit into Escribà-Folch and Wright’s framework as a military regime. The lack of political accountability has allowed the military to advance the nuclear weapons program, despite the economic costs of sanctions and the disapproval of the international community.

On the other hand, India’s democratic government confounds Marinov’s framework of democracies being more susceptible to economic sanctions. However, the election of the deeply nationalistic BJP and its commitment to making India a nuclear weapons state, which was a part of its election manifesto, indicates that the BJP was able to mobilize popular support for its nuclear platform. The nationalistic sentiment surrounding nuclear weapons also mitigated the negative impact of sanctions. In the cases of India and Pakistan, a nuclear-armed India required nothing short of a nuclear-armed Pakistan and the domestic political conditions allowed the impact of sanctions to be deflected: “...the Indian and Pakistan regimes, buoyed by popular support, were experiencing little economic pain as a result of the international response.”179

179 Simons, 156.
Explaining Nonproliferation Outcomes

The nonproliferation cases have revealed the structure of the economy to be a nuanced condition of sanction success and the importance of domestic political coalitions. Sanctions require countries to weigh the utility of nuclear weapons against integration into the world market. Sanctions have a substantial impact on domestic coalitions that favor re-integration by mobilizing anti-nuclear sentiment to achieve economic reform and global economic reintegration. Given the substantial economic might of the United States, U.S. nonproliferation sanctions wield the power to isolate a state, to varying degrees, from the world market. The state of the economy may be an indicator of a state’s vulnerability to economic pressure, but it has proven to be unreliable to correlate the magnitude of economic costs with policy changes. The underdeveloped economies of North Korea and Pakistan did not stop those regimes from demonstrating their willingness to bear steep economic costs. Instead, sanctions have proven to be more successful in countries where economic decline has led to domestic reforms of the economy.

In South Africa, Argentina, Brazil, and Libya, the initiation of economic reform preceded the reversals of nuclear policy. Therefore, economies that seek to embrace outward-looking models that require integration into the world economy are likely to be strongly influenced by sanctions. Solingen’s framework of the political economy of nuclear weapons has provided a reasonable logical mechanism for how sanctions led to reversals in nuclear policy for South Africa, Argentina, and Brazil. In addition, domestic political coalitions play an important role as causal mechanisms.
In South Africa, de Klerk’s vision of bringing South Africa into the international community spurred the initiation of domestic reforms, both economic and social. South Africa is also the only state to give up a fully functional and indigenously developed nuclear weapons program:

Whilst sanctions came too late to prevent South African proliferation, they were not entirely futile...They were important in pressuring the regime in general, and, together with other forms of political pressure, particularly from the Clinton administration, contributed towards the decision made by the de Klerk government that proliferation was no longer politically viable. These pressures ultimately caused the dying apartheid regime to dismantle the apartheid bomb and adhere to the NPT before surrendering power to a new democratic project. Dismantling its nuclear weapons and adherence to the NPT also laid the foundation for South Africa’s re-entry into international nuclear politics.\(^{180}\)

F.W. de Klerk’s decision to renounce nuclear weapons was part of a broader agenda of domestic reforms that were designed to reshape South Africa’s image, both domestically and internationally. De Klerk’s efforts to reach out and include domestic political coalitions, notably in his decision to lift bans on the African National Congress (ANC) and Communist Party of South Africa (CPSA), stemmed from his new vision of South Africa.

In a similar vein, the nuclear reversals of Argentina and Brazil were preceded by returns of civilian control over the government. The civilian governments inherited dire economies, as economic development was stunted under decades of military rule. Given the strong interest of reviving the economy, the mutual decision to renounce nuclear development was driven by the desire to have sanctions lifted and the need for Argentina and Brazil to become re-integrated into the world economy.

In Argentina, the Peronist candidate Carlos Menem, who made economic recovery a cornerstone of his campaign platform, was elected to office in 1989 and “was clearly committed to a break with his party’s nationalistic traditions, emphasizing instead continued economic and political coordination with Brazil, including nuclear cooperation.”\(^{181}\) His public commitment to economic reform made him accountable to constituents and forced him to evaluate Argentina’s nuclear program in a new light- as a barrier to re-integration into the world market.

The return of democratic government to Brazil led to legislative efforts to constrain nuclear activity. In Brazil, anti-nuclear domestic political coalitions were represented in the Brazilian congress.

In 1988, prior to Collor assuming office, the rejuvenated Brazilian congress adopted a new constitution which incorporated a specific clause limiting nuclear activities to peaceful purposes and requiring express congressional approval. Stimulated by increasing revelations regarding the parallel program (especially the secret funding), the Brazilian congress began a long process of opening the nuclear program to public scrutiny and gaining a voice in national nuclear policy.\(^{182}\)

In response to the increasing involvement of the congress in Brazilian nuclear policy, President Collor brought in a group of civilians who were tasked with bringing the parallel military program back under civilian control.

The causal mechanisms differ slightly in the case of Libya, which fits into Escribà-Folch and Wright’s categorization as a personalist authoritarian regime. Although Qaddafi had demonstrated “prior efforts to re-insert Libya in the global economy through *infitah* (economic reform),” Libya’s nuclear reversal can be best

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\(^{181}\) Redick, 23.  
\(^{182}\) Ibid, 12.
explained through Escribà-Folch and Wright’s framework.\footnote{Solingen, Sanctions, Statecraft, and Nuclear Proliferation, 326.} Libya’s oil-based economy and Qaddafi’s high dependence on the revenues from oil exports to maintain his regime’s stability made him vulnerable to the impact of sanctions. Sanctions forced Qaddafi to evaluate the utility of nuclear weapons against his regime’s survival and he ultimately picked the latter.

*Policy Implications and Future Research*

Understanding if and how nonproliferation sanctions take the “profit out of proliferation” has led this thesis to conclude that the role of domestic politics is key in the imposition of sanctions. However, in a broader sense, sanctions are important tools of nonproliferation policy regardless of their ability to single-handedly induce reversals of nuclear policy. The absence of nonproliferation sanctions would mean that nuclear proliferators would encounter no tangible barriers to the world market or international community. “Proponents of the view that ‘sanctions don’t work’ might also take a closer look at the views of Indian officials, who freely admit that calculations about international reactions played a major role in discouraging India from testing nuclear devices on more than one occasion.”\footnote{Rydell, 10.}

As of May 2015, the ongoing nuclear negotiations with Iran have not led to a conclusive deal, but the Iranians have made the removal of sanctions a crucial objective in the nuclear negotiations, which speaks volumes on the impact of sanctions. In the realm of nonproliferation policy, sanctions reign as indispensable tools of statecraft. Further studies on the efficacy of nonproliferation sanctions could
examine if targeted sanctions are more effective against military or single-party authoritarian regimes. The growing recognition that sanctions need to go beyond restricting trade is changing U.S. policy towards North Korea. The challenge of how to best craft and implement sanctions that strike at the revenue sources keeping the Kim regime’s nuclear ambitions alive is an important avenue for future research.

Targeting illicit activity and procurement networks are arguably steps in the right direction, yet it is too early to tell if these practices will have any effect on changing Kim Jong-un’s mind.

In conclusion, the imposition of nonproliferation sanctions should take into account domestic political conditions and the focus on taking the “profit out of proliferation” may be misguided. The ability of military and single-state authoritarian regimes to bear steep economic costs has proven that correlating economic costs with policy change is tenuous. Instead, a thorough understanding of the causal mechanisms of the domestic politics of nuclear ambitious states can amplify the impact of sanctions.
References


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Source for Figures 3.1, 3.2, 3.3, 4.1, 4.2, 4.3: