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The return on social bonds: the effect of social contracts on international conflict and economics

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THE RETURN ON SOCIAL BONDS: THE EFFECT OF SOCIAL CONTRACTS ON INTERNATIONAL CONFLICT AND ECONOMICS

by

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ABSTRACT

Hierarchical or asymmetrical power relationships among states have long been a focus of scholarly attention (e.g., asymmetrical alliances, trade dependencies). While the "power to hurt" is one expression of power, an alternative approach is to gain and exercise authority, or "rightful rule." One of the major impediments to the study of social concepts such as authority or legitimacy, however, is in their informal or intangible nature. This dissertation uses game theoretic and latent variable approaches to capture informal, social authority relationships, or *social hierarchies*, among international states and explores the effects of these hierarchies on security and economic behavior.

I posit that states adopt one of two social roles—that of a *dominant* or a *subordinate*. Each subordinate chooses a degree of autonomy that it is willing to cede to the dominant in exchange for a corresponding degree of protection. Ranging from complete autonomy to complete control, these dyadic bargains make up a social international hierarchy. This hierarchy affects the relationships between each subordinate and the dominant, as well as the relationships among subordinates.

In the security realm, the probability of conflict initiation is inversely related to the degree of subordination. When conflict does occur, dominants are more likely to intervene when the target is located at a higher position in the dominant's social hierarchy than the aggressor state. Economically, the probability that a state enacts illiberal policies is inversely related to its degree of subordination. Moreover, more subordinated states face a lower risk of economic sanction than states located lower in

the hierarchy, even for similar illiberal actions. Empirical analysis of states within the US security and economic hierarchies (1950-2000) and UK colonial hierarchy (1870-1913) using strategic probit models supports these theoretical predictions.

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CHAPTER 1
INTRODUCTION

Hierarchical or asymmetrical power relationships among international states have long been a focus of scholarly attention (e.g., asymmetrical alliances, trade dependencies). While the "power to hurt" is one expression of power (Schelling, 1966, 2), an alternative approach is to gain and exercise authority, or "rightful rule" (Lake, 2009, 8). Material force, or coercion, is sometimes associated with legitimacy, yet possessing material superiority does not always equal legitimacy. For example, a foreign occupier is not always viewed as legitimate, despite its military superiority.

One of the major impediments to the study of social concepts such as authority or legitimacy, however, is in their informal or intangible nature. While one can measure material power by counting up the number of tanks or canons, it is much more difficult to capture the non-tangible power to persuade associated with legitimate authority. Unlike its material power, a state's level of authority cannot be measured without reference to whom is deferring to it. When the US, for example, increase its number of tanks, it is increasing its material power vis-à-vis every other state. Most would agree, however, that when it comes to legitimacy, an increase in US legitimacy vis-à-vis Egypt does not mean that there is any change in legitimacy in the US-Russia relationship. Each state, in other words, grants and is granted varying degrees of authority to each other state. This dissertation uses game theoretic and latent variable approaches to capture informal, social authority relationships, or *social hierarchies* among international states and explores the effects of these hierarchies on

security and economic behavior.

1.1 Social Hierarchy

A hierarchical international order is often contrasted to one of anarchy (e.g., Waltz, 1979). The term 'anarchy,' however, while technically correct given the absence of a world government, implies lawlessness, chaos, and random violence (Mueller, 2009, 39). Consistent with more recent theoretical accounts, I argue that the absence of a formal global government does not preclude the formation of informal hierarchical structures (Deudney, 2007; Lake, 2009; Weber, 1997).

I build on existing accounts of international social hierarchy by arguing that every state in the international system assumes one of two roles: that of a *dominant*, who acts as the creator and enforcer of social contracts between others, or a *subordinate*, who decides what degree (if any) to adhere to and legitimize the authority of the dominant in exchange for certain benefits. An implication is that authority varies among subordinate states and dominant states; thus, social hierarchy is a dyadic variable.

The degree of authority ceded by a subordinate to a dominant produces behaviors that are observable to other states, such as alliance patterns or the creation of specific economic institutions. These operate as a signal of a subordinate's position within a social hierarchy to other states. Position within a social hierarchy indicates the level of support between subordinate and dominant states and can provide information regarding their expected foreign policy behaviors.

Importantly, since multiple states may assume the dominant role at the same

time, the theory developed here allows for the existence of several hierarchies.[1] In the case of multiple dominant states, these states have to compete for available subordinates. In addition, dyadically established dominant–subordinate relationships or social contracts may also have spillover effects on interactions among third-party states. The goal of this dissertation is to explore the direct and indirect effects of social hierarchy on international conflict and economic behavior.

Accounting for social hierarchies helps explain the significant variation in conflict behavior, especially among small powers. Traditional accounts provide little explanatory power, for example, for why Poland and Ukraine—both relatively weak international actors—supplied troops to the US-led invasion of Iraq in 2003, in the absence of any outstanding grievances with Iraq, a formal alliance with the US, despite vocal domestic oppositions and, even more strikingly, risking the wrath of Russia—an alternative dominant state.

Moreover, the hierarchical theory developed here provides an explanation for why some states expropriate foreign investment while others do not. There is a long literature that asks why foreign investment ever occurs given the risk of assets being seized by the foreign government and the powerlessness of the investor to respond (e.g., Bulow and Rogoff, 1989*b*). Reputation-based theories provide explanations of why a state may not confiscate foreign assets (Tomz, 2007), but they do not explain why there is variation in this behavior among states (Jensen, 2008; Li, 2009).

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[1]Lemke (2002) develops a version of power transition theory—a theory of hierarchy that focuses on material capabilities—with multiple hierarchies existing simultaneously, but in separate geographical regions. In contrast, two dominant states could construct social hierarchies in the same geographical region or along different issue dimensions.

The theory of social hierarchy developed in this dissertation helps explain such puzzling behavior. This theory can, for example, account for the actions of Poland and Ukraine in regards to Iraq, by pointing out that both states adhered to US requests, because at the time of the invasion, these states were members and supporters of a US-led hierarchy, and viewed such an order as legitimate. In return for their support, the US provided these countries with benefits, such as economic aid and security guarantees. Investors are able to identify the type and effectiveness of a state's property rights enforcement depending on its location within different existing economic hierarchies. Hierarchy thus operates as an external institution that ties the hands of the domestic government and signals credibility to domestic and foreign firms.

This does not mean, however, that the preferences of subordinate states are in perfect harmony with those of the dominant or that they acquiesce to all of the dominant's demands. Nor is social hierarchy purely an artifact of material power disparities between states (Lake, 2009; Wendt and Friedheim, 1995). In fact, as I show later, the degree of hierarchy between two states is uncorrelated with differences in their material power capabilities. Thus, in contrast to earlier theories of hierarchy that fixate on capability distributions (e.g., Organski, 1958), I focus on what Lake (1996, 2) refers to as *relational* or *contractual hierarchy*.[2]

The contractual aspect of social hierarchy implies that some states tacitly ac-

[2]See Gilpin (1988), Kohout (2003), Pahre (2005), and Thompson (1988) for an overview of theories of material hierarchies.

cept the legitimate authority of a dominant state to regulate their behavior.[3] Many former British colonies, for example, have joined the Commonwealth of Nations, accepting restrictions regarding their political regime, domestic legal system, and permitting their citizens to join the United Kingdom's armed forces. In return, Great Britain acts as a coordinating center for economic activities, provides a common court for disputes between citizens and/or firms from different countries.[4] These hierarchical arrangements condition the foreign policy behavior of subordinate states towards the dominant as well as their behavior vis-à-vis one another.

1.2 Varieties of Hierarchy

Within the international system, only a handful of states have the economic and military capabilities to enforce social contracts and form global hierarchies. Not all states, however, that possess the capabilities to act as a dominant power are viewed

[3]Theories regarding social contracts have a long history. Classic examples include the work of Hobbes (1652), Locke (1690), and Rousseau (1762). Rawls (1974, 2001) and Binmore (1994, 1998, 2011) provide more recent examples. The kind of influence that a state gains is frequently referred to as *relational power* as opposed to *military power*, since the relationship is based upon authority being voluntarily conferred onto one party by another rather than taken by military coercion (Giddens, 1984; Haugaard, 2006; Lentner, 2005). This is akin to soft power, where citizens in a subordinate state lobby their own government to change policies to those sought by the hegemon (Nye, 1990). Relational power explored in this dissertation, however, differs from soft power in its top-down approach as opposed to the bottom-up approach taken by the soft power accounts. While soft power theories talk about changing policies of other states by winning the support of their populations, who, in turn, lobby their governments, the social hierarchy theory developed here focuses on the social relationships among the political elites of different states. Remaining agnostic about the role of domestic populations, this dissertation posit that it is the political elites who choose to form hierarchical relationships with the elites in a dominant state.

[4]Great Britain exercises authority along the legal dimension, operating as a common court for legal challenges by many foreign citizens (i.e., not citizens of Commonwealth states) in states with poor rule of law, such as Ukraine (Reuters, 2013), and assists the citizens of Commonwealth states who encounter legal problems in non-Commonwealth states, such as a Canadian citizen sentenced to death in Saudi Arabia (Canadian Broadcasting Company, 2006).

as legitimate to do so. In order to be a dominant, a state must have both 'power and purpose' (Art, 1998/1999, 82). Purpose, or authority, is important because power relations alone cannot explain why subordinates take actions that legitimize a dominant state, such as holding a reserve currency (Lake, 2009, 20) or transforming domestic legal codes and practices (Davie, 2000; Morrow, 1991, 912).

The presence of potential alternative hierarchies, moreover, means that dominant states must compete for legitimacy (Bull, 1977; Wendt, 1999). Yet, for a variety of reasons, not all states that meet the conditions to act as a dominant state choose to do so. Germany and Japan, for example, currently have the economic and military capacity to be a global power but have not sought such a role (Mueller, 1989). Thus, economic and military power by themselves are not sufficient conditions for adopting the role of the dominant state (Rosenau, 1980; Wendt and Friedheim, 1995).

It is important to define and conceptualize hierarchy as dyadic, because not all subordinates assign the same level of legitimacy to a dominant state. Each state has its own ideal point concerning the optimal level of hierarchy with each dominant state. The resulting hierarchical arrangement is the outcome of a bargain regarding the dominant's and the subordinates' ideal points and domestic constraints. Hierarchical relationships, then, exist on a continuum, ranging from complete autonomy to complete control. The level of hierarchy between the dominant and each subordinate, moreover, is subject to potential revisions as the strategic environment of each state changes, altering their ideal points. Finally, a failure or refusal to fulfill its obligations by either party leads to a decrease in the degree of hierarchy between them. Thus, hierarchy can vary over time.

In the immediate aftermath of World War II, for example, Yugoslavia was closely aligned with the Soviet Union and accepted its position as the leader of global communism. This had changed, however, in 1948, when Yugoslavia rejected Soviet input in creating its domestic economic plan. Yugoslavia continued to challenge the Soviet authority by intervening in the Greek civil war and concluding a treaty with Bulgaria, both without Soviet permission (Priestland, 2009, 218-219). The Soviet Union responded by expelling Yugoslavia from the Communist Information Bureau and terminating their bilateral alliance (Leeds et al., 2002)—a substantial decrease in Yugoslavia's position withing the Soviet hierarchy. By 1955, Yugoslavia moved back up in the Soviet hierarchy, when the two states largely reconciled and exchanged ambassadors, though Yugoslavia would never again be completely subservient to the Soviet Union (Priestland, 2009, 332-333; Valdez, 1993, 40).

This example highlights the need for a continuous and dyadic measure of social hierarchy. Traditional theories of hierarchy that focus only on military capabilities employ a dichotomous concept, i.e., a state either supports the status quo or is considered to be revisionist (e.g., Organski and Kugler, 1980). The use of a divisible conceptualization of hierarchy, in contrast, means that cases of pure equality (anarchy) between dominant and subordinate are treated as a special case or a particular type of political order. Pure hierarchy (empire) can be thought of in the same way. Moreover, by treating hierarchy as a dyadic variable, the theory developed here allows for the simultaneous existence of multiple political orders, thus leading to a more

general and rich account of world politics.[5]

Figure 1.1 displays a simplification of how states are arranged under the hierarchy of a dominant state. The relationship between a dominant and a subordinate depends on the subordinate's relative position within this hierarchy. The "dominated subordinate" level, for example, consists of states that have given up the most sovereignty and who, in return, expect the highest level of protection or other benefits. These states are the most likely to pursue policies in line with those of the dominant, including abstention from any unsanctioned conflict initiation or expropriating foreign assets. Examples of potential global dominant states include the US (1945-present), Russia/USSR (1917-present), and Great Britain (1816-present), each of which have their own sources of legitimacy.[6] Within the US hierarchy, Canada and South Korea are examples of "dominated subordinates," which construct their own foreign policy to conform to that of the US; Greece and Saudi Arabia are "semi-autonomous subordinates," in that they build their foreign policy agenda with US interests in mind but sometimes pursue their autonomous actions; while India and Myanmar are "non-aligned subordinates," as is the "rival dominant" state of Russia, developing foreign policies with little to no regard to US interests.[7]

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[5]While the origins of hierarchy are outside of the scope of the current study, there is work that addresses it. For an evolutionary account, see Binmore (1994, 1998); for a socio-historical perspective, see Ferguson and Mansbach (1996) and Ruggie (1986); for a Radical view, see Cox (1983, 1986), Marx (1867), Teschke (2003), and Rosenberg (1994).

[6]The US and USSR offer rival ideologies to subordinates, while Great Britain shares a common colonial and legal history with many states.

[7]Though uncommon, a social theory of hierarchy allows for the possibility that state A is considered as dominant by states B, C, and D, while A simultaneously subordinates itself to another state, state E. An example is Great Britain, which both heads its own hierarchy

1.3 Hierarchy and State Behavior

The effect of hierarchy goes beyond dominant–subordinate relationships, permeating interstate interactions at all levels. Hierarchy operates as a type of a general deterrent (Huth and Russett, 1993), where states closer to the dominant are less likely to become targets of aggression than states that are lower in the hierarchy. Subordinates are, for example, less likely to initiate conflicts against states located closer to the dominant because they recognize that these states entertain a greater security guarantee from the dominant. This means that a "semi-autonomous subordinate" is more constrained in its interactions with a "dominated subordinate" than with a "non-aligned subordinate" because the dominant state is more likely to act in response to aggression towards the former than the latter. Within the US social hierarchy, for example, Saudi Arabia (semi-autonomous), is more constrained in its behavior towards Canada (dominated) than it is towards Myanmar (non-aligned). This may explain, for example, why Saudi Arabia eventually acquiesced to Canadian requests to release a Canadian citizen from prison who had been convicted of murder and sentenced to death in a Saudi court (Ottawa Citizen, 2013). On the other hand, Saudi Arabia publicly condemned Myanmar for "human rights" violations related to its treatment of Muslims in the Rakhine province, and sent financial aid to the Rohingya Muslims living there. Myanmar does not recognize Rohingya Muslims as

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but is also a "semi-autonomous" subordinate within the US hierarchy. Finally, because there are multiple hierarchies, it is possible for a state to be in more than one hierarchy at a time. This is especially true if the two dominant states are closely linked, such as the US and Great Britain. Australia, for example, could be "semi-autonomous" to both the US and Great Britain. In these cases, divergent policy prescriptions on the part of the dominant would cause significant domestic strain on the part of the subordinate.

an ethnic or religious group and denied any abuses have taken place, instead saying it used "maximum restraint" when responding to riots in the region in the midst of a long running insurrection (Reuters, 2012; Yegar, 2002).

The theory also predicts that subordinate states that are located higher within the hierarchy are less likely to challenge the status quo. When challenges do occur, however, the dominant states have to decide whether to "look the other way" or "punish" the challenging state, e.g., by initiating a militarized dispute or imposing economic sanctions. I argue that in making this decision, the dominant states consider the relative hierarchical position between the challenger and target. Specifically, challenges directed at states positioned above a challenger are more likely to be punished than those directed at states positioned below a challenger. In other words, challengers' probability of being punished depends on their relative positions within the hierarchy.[8] Additionally, since dominant states have to compete for subordinates, they are more likely to punish challengers when alternative hierarchies are strong, in order to provide a clear benefit.

I test these theoretical expectations by analyzing the effect of US hierarchy between the period 1950-2000 using a two-stage strategic probit model (Bas, Signorino and Walker, 2008; Signorino, 2003). The two-stage estimator is able to account for the non-randomness of the sample by acknowledging that the conflict behavior of a subordinate state is conditioned by both its own actions and the expected ac-

[8]This is similar to Strange (1996, 26) idea of "power over" in that the power of the dominant state is not confined to its own intentions; rather, it has spillover effects that create costs and risks regarding the actions of others states simply by the dominant state being there.

tions of the dominant. The estimator assumes that before initiating a challenge, the subordinate calculates its expected utility from a challenge to the status quo in a probabilistic manner, by using the information from observed dominant responses to other challenges. In a way, this process of estimation treats subordinate states as capable of estimating the threat of the dominant's punishment in response to their own challenge, and making their decision to challenge with such a threat in mind.

An important advantage of such a modeling approach is that it addresses the problem of unobservable or implicit threats on the part of the dominant, such as the US implicit threat to China in case of an invasion of Taiwan. The estimation approach allows for such threats by estimating them probabilistically from the observed data and including them when calculating the expected utility that a subordinate would receive from embarking on a challenge (Signorino, 1999; Smith, 1999). Finally, the estimation approach is able to differentiate between two distinct types of "non-conflict" events: those in which the subordinate defers to the status quo and those in which the subordinate initiates a conflict and the dominant acquiesces by not responding to their aggression.

My account of international relations contributes to the larger literature by demonstrating the importance of social contracts on state behavior. State location within an international hierarchy affects who initiates conflict, which states are targeted, and whether the dominant power reacts coercively to the initiator. This means that social contracts affect not only their primary parties, but also influence interactions among third-party states. This dissertation also adds to the extended deterrence literature by proposing a continuous rather than a dichotomous measure of a

"protégé," and acknowledging that this role depends on a state's relative location vis-à-vis the conflict initiator in the dominant power's hierarchy. Moreover, by treating hierarchy as a relational form of power, I argue that multiple hierarchies can exist simultaneously and that dominant powers must compete for subordinate states.

In addition, the theory contributes to the international political economy literature by providing a more general explanation for the larger question of why we observe foreign investment, despite the inherent risks and limited responses available to international firms. Existing theories generally rely on a collective punishment mechanism, arguing that loan default or expropriation of foreign assets—referred to as "sovereign theft"—may be prevented either by the threat to exclude the offender from future investment, loans, or trade, or face militarized action from the investor's government.[9] The former explanation, however, relies on collective action by all other lending states, a situation that requires that they forgo potential trade benefits regardless of whether they themselves were victimized by the expropriation, while the latter explanation assumes that a government's foreign policies are relatively easily swayed by the plight of foreign investors.[10]

[9]Bulow and Rogoff (1989*a*,*b*); Eaton and Gersovitz (1981) theorize that sovereign debt default leads to exclusion from international credit markets, Kehoe and Levine (1993) and Rose (2005) find that loan defaults result in a loss of trade, while Mitchener and Weidenmier (2010) find that sovereign theft is retaliated against via "gunboat diplomacy" in the period 1870-1913.

[10]Kletzer and Wright (2000) demonstrate that both lender and debter can benefit from renegotiation of terms rather than taking punitive actions, such as exclusion, while Martinez and Sandleris (2011) show that the decreases in trade identified by Rose (2005) are unrelated to a creditor's debt holdings. Bulow and Rogoff (1989*b*) note that it is unlikely that private creditors can induce their governments to act against defaulters and Tomz (2007) finds that militarized and economic sanctions have been rarely, if ever, used punish defaulters.

This dissertation's theory contributes to our understanding of sovereign theft by arguing that the probability that a state opts for illiberal practices is inversely related to its degree of subordination to a dominant state. While a dominant states, such as the USSR or France under Napoleon III, may not advocate liberal economic policies generally, they do prefer the free flow of goods or capital between themselves and the closest members of their hierarchy (Mitchener and Weidenmier, 2008; O'Brien and Pigman, 1992; Oblath and Tarr, 1991).[11] More specifically, I argue that investors estimate the risk of a state's potential to expropriate foreign assets by examining the observable indicators of a state's hierarchical location (e.g., trade dependency and type of exchange rate) with reference to the economic policies of a dominant state.

My account complements the reputation-based theories by providing an *ex ante* measure of risk, based on observed state behavior, in addition to the *ex post* measure of previous theft of foreign assets. Additionally, more subordinated states face a lower risk of economic sanctions than states located lower in the hierarchy, even for similar challenges to the dominant's liberal economic order. Dominant states are more likely to consider such transgressions as anomalies and make exceptions for dominated subordinates, as these states are viewed as more prominent members of the dominant's foreign policy agenda (Stone, 2002, 19; see also Ikenberry, 2004). Thus, this dissertation explains why some states become the target of economic sanctions, while other states that exhibit analogous proximate behavior do not.

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[11]Oblath and Tarr (1991) and Rodrik (1992) find that, in contrast to previous expectations, the Soviet Union actually subsidized trade with Communist states in Eastern Europe by offering them favorable terms-of-trade. In addition, the USSR further encouraged trade among the members states of the Warsaw pact (Rodrik, 1994; Rosati, 1994).

1.4 Research Outline

The remainder of the dissertation proceeds as follows: in Chapter 2, I develop a general theory of dyadic social hierarchy as it relates to two specific behaviors: challenges by a subordinate and punishments by a dominant. I first build on a foundation of social theory to claim that states contract social hierarchies along specific issue areas. I use insights from social identity and role theory to argue that states identify themselves as either a dominant or subordinate state. Dominant states offer to provide certain benefits to a subordinate state in exchange for some degree of autonomy concessions within an issue area. Subordinate state either accept some degree of subordinate to the dominant or reject the offer and function as a non-aligned state. The level of hierarchy that a subordinate agrees to affects its foreign policy behavior: states that surrender greater degrees of autonomy are less likely to oppose, or challenge, the dominant's agenda.

The social contract reached between these two states, however, do not occur in a vacuum; instead, other dominant states seek their own subordinates while a state's position in a social hierarchy affects its relations vis-à-vis other states. This creates a competition among alternative dominant states to provide the strongest or most appealing benefits, whether that is physical or economic security, appealing cultural exports, or a compelling ideology. In addition, subordinates that are close to a dominant state expect increased protection, something potentially aggressive states must account for in order to avoid punitive actions by the dominant. The presence of third-party dominants and third-party subordinates, therefore, affect the dominant

state's foreign policy behavior: the competition by rival dominants increases the level of benefits provided while the placement of a subordinate within the dominant's hierarchy affects the likelihood of punishment.

I formalize this argument as a two-player, extensive form game with private information and solve it using quantal response equilibria (QRE) (McKelvey and Palfrey, 1995; Signorino, 1999). The equilibria generate probabilistic outcomes that are conditioned by the known distribution of the unobservable private information and the history of the game. The game generates three propositions: 1) the greater the degree of hierarchy between a subordinate and dominant state, the less likely the subordinate is to challenge the status quo, 2) the stronger a dominant state is relative to alternative great powers, the less likely the dominant state is to punish challenges, and 3) when a challenger is located higher within the hierarchy than its target, the are less likely the challenger is to be punished. These propositions are translated into hypotheses and tested in the empirical chapters that follow. One advantage of the modeling approach used here is that the theoretical model can be translated directly into an empirical model (i.e., strategic probit) to test the theory.

I apply this theory to explain conflict (Chapters 3 and 5) and economic behavior (Chapter 4) for US and British hierarchies. In Chapter 3, I apply the theory to the US hierarchy for all states in the international system from 1950-2000. I measure hierarchy along two dimensions: security and economic. In particular, the security dimension is measured as the number of dominant state's troops on the subordinate's territory in a given year and the number of subordinate state's alliances that do not include the dominant state. The economic dimension is measured as the subordinate

state's level of autonomy over its exchange rate and its level of trade dependence on the dominant state compared to other great powers. The greater the degree of hierarchy along either of these dimensions, the more dependent the subordinate state is on the dominant state. Each of these are measured directly with the dominant state as well as relative to every other state in the system.[12]

I operationalize challenge as a dichotomous variable coded as 1 if state A initiates any militarized interstate dispute (MID) without the US as originator on the same side, with the exclusion of joiners. Any independent dispute initiation, therefore, is viewed as an attempt to move the status quo closer to their ideal point and, by definition, away from that of the dominant. I treat punishment as a punitive response—measured as a MID or economic sanction initiated—by the US in response to a challenge. The results of the analysis demonstrate that subordinate states with greater degrees of hierarchy are less likely to initiate conflict. In addition, dominant states are more likely to respond with coercive action to subordinate states that initiate conflict when alternative hierarchies are strong and when the initiating subordinate state is positioned lower in the hierarchy than their target.

In Chapter 4, I analyze the effects of US hierarchy on economic behavior from 1971-2000 for all international states. In this chapter, I operationalize challenge as expropriation of US firms, defaulting on debt payments, or enactment of policies designed to close off a domestic economy from the international market. Punishments

[12]As is demonstrated later, these measures are uncorrelated with military power. Thus, they are not solely a result of military power, and instead reflect the degree of legitimate authority conferred onto a dominant by a subordinate state.

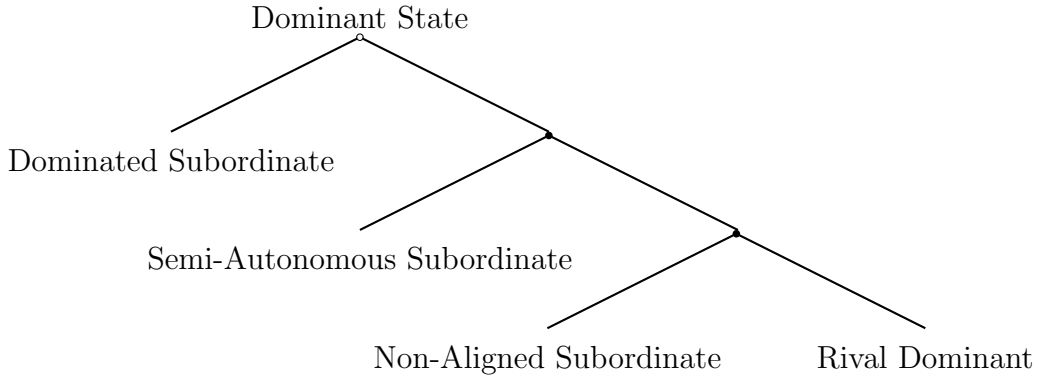
are measured as economic sanctions initiated by the US in response to a challenge. Results show that the degree of hierarchy helps explain which states are most likely to take actions against a liberal economic order. The results also indicate which challenging states are punished by the dominant state with economic sanctions, showing that the US uses the degree of hierarchy to distinguish between generally supportive states and those whose actions indicate a fundamental unwillingness to protect foreign assets while integrating into the global economy.

I conduct an additional test of my theory on data from the British colonial hierarchy from 1870-1913 for 26 colonies in Chapter 5. I utilize colonial trade data (Mitchener and Weidenmier, 2008) and data related to indirect rule, measured as the proportion of colonial recognized customary court cases (heard by local chiefs) by the total number of court cases (Lange, 2004). The data on British colonies, however, suffers from a type of omitted variable bias, as it does not allow for a separation between two types of non-events: successful deterrence and acquiescence. This is problematic in that the challenge variable is not available; instead, only whether a punishment occurred is known. In order to properly conduct the test, I derive an estimator that allows for an empirical separation of non-events to estimate the probability of a challenge, and use this information in the place of the missing challenge data. Results from the analysis show that colonies which granted Great Britain greater legitimacy were less likely to seek autonomy, but were less likely to be punished when they did.

Lastly, in Chapter 6 I provide a brief review of the theory and results before taking stock of how these fit within the literature. I also discuss the policy implications that result from this dissertation's social theory of hierarchy, such as the prospects of

future US-China relations and US relations with other potentially hostile powers. I conclude by discussing future directions for research, including extending the study to alternative issue dimensions, refining measures, such as studying multiple hierarchies simultaneously, and describe how the theory applies to other applications.

Figure 1.1: International Hierarchy as a Relationship with a Dominant State.



CHAPTER 2
A THEORY OF SOCIAL HIERARCHY AND STATE BEHAVIOR

How does social hierarchy affect international behavior? Like Wendt and Friedheim (1995, 689), I believe that much of this literature is concerned with dominant–dominant relations and that the dominant–subordinate relationship is underdeveloped.[1] Moreover, I suggest that how hierarchy affects subordinate–subordinate relations has been ignored almost entirely.[2] In this chapter, I develop a theory of social hierarchy where a dominant and subordinate state reach bilateral agreements regarding the degree of control bequeathed by the subordinate to the dominant along a specific issue area. The outcome of this dyadic interaction is observable to all other states in the international system. These outcomes are used to arrange states into informal hierarchies, the loci of which affects both a subordinate state's foreign policy behavior with all other subordinates, as well as the behavior of the dominant state towards its subordinates.

Previous studies typically treat hierarchy as a systemic variable and focus on changes at the top of a system or sub-system, such as long cycle theory (Modelski, 1987; Modelski and Thompson, 1999) or power transition theory (Kadera, 2001;

[1]Recent exceptions are Deudney (2007) and Lake (2007, 2009).

[2]A possible exception is the literature on immediate extended deterrence. Immediate extended deterrence studies, however, focus on very specific crises situations where the target state is considered a "protégé" of a more powerful state. These roles, or social identities, are often assumed and seldom theoretically explored. I argue later that immediate deterrence should be considered a special case of the more general theory of social hierarchy developed in this dissertation. For a survey of the deterrence literature, see Huth (1999) and Lupovici (2010).

Lemke, 2002; Organski, 1958). Hegemonic stability attempts to identify the effect of the presence or absence of hierarchy on international behavior (Gilpin, 1981; Kindleberger, 1973). Liberal hegemonic accounts, such as Ikenberry (2000) and Keohane (2005), focus on how a hegemon gains legitimacy by limiting its power through international institutions (see also Eichengreen, 1989, 1993). Each of these theories focus primarily on the behavior of a dominant state, where it provides public goods in return for legitimacy.[3] These theories argument that this is done to preserve resources while still extending their dominance over a system. All subordinate states are assumed to grant the same degree of authority to the hegemon, and the level of authority is expected to correlate perfectly with the dominant's material capabilities.

The evidence for hegemonic theories is mixed. Their ability to explain conflict is very sensitive to the length of the time lag used; moreover, the wars identified presented as evidence of hegemonic theories often feature the wrong initial participants, such as a rising Germany attacking France and Russia in 1914 rather than the hegemon, Great Britain (Vasquez, 2009; Wallensteen, 1981). Hegemonic explanations also lack explanatory power regarding a system's level of trade openness as hegemonic decline is seldom met with increases in protectionist policies (Krasner, 1976).

The few studies which focus is on a dominate state's effect on subordinate–subordinate interactions, such as Pahre (1999) or Spiezio (1990), treat hierarchy as a systemic variable, with no variation across system members. Pahre (1999) uses a series of formal models and case studies to examine the effect of leadership on cooper-

[3]Public goods are resources that are non-excludable and non-rivalrous.

ation within the international political economy. He finds that hegemons affect trade between subordinates, but not with the hegemon. The latter finding runs in contrast to standard systemic hegemonic theories, as dominant states are not benefiting from the system they are purported to be propping up. Spiezio (1990) studies the effect of British hierarchy on interstate war and finds that war is inversely related to the strength of the hegemon, though the effect is weak and not statistically significant in all periods.

Rather than being universal in scope, hierarchy may exist along specific dimensions or issues, such as monetary policy, energy policy, or security (Keohane and Nye, 1977, Ch 3). In Fiji, for example, local chieftains collaborated with the British government concerning fiscal policy by adopting accounting and financial practices in exchange for a portion of the economic rents that came with the formalization of the previously informal market economy (Davie, 2000). This multi-dimensionality aspect of hierarchy is important because the cost of activating power in one area (e.g., military) may be large and not necessarily easily transferable to other areas (e.g., environmental policy) (Conybeare, 1987, 49-50). Despite having the capability to do so, the British did not threaten to use force to require that Fiji change its accounting practices. Instead, the promise of greater economic gains from adhering to the British economic model proved to be quite convincing in prompting local chiefs to voluntarily change local accounting practices. This illustration points out that not all dimensions of hierarchy are weighted equally for all policy outcomes.

I extend the literature on hierarchy in two important ways. First, I argue that not all subordinates concede authority to the same degree. For example, following

World War II, Great Britain and France were members of NATO and closely adhered to US foreign policy. After its withdrawal from NATO's military structure in 1966, however, France pursued an independent foreign policy, while Great Britain continued to operate in close alignment with the US. A country's hierarchical position may also vary over time. After the Iraqi invasion of Kuwait in 1990, Saudi Arabia and Turkey each allowed a US-led coalition to use their territory in an effort to expel Iraq, with Saudi Arabia even contributing troops. In contrast, both states were formally opposed to the 2003 US-led invasion of Iraq and neither granted coalition forces access to their territory.

Second, dominant states seldom provide true public goods; instead, subordinates must accept certain conditions in order to receive benefits. That is, the goods provided by dominant states are excludable and do not equally benefit all states (Conybeare, 1980; Lake, 2009; Russett, 1985). For example, while the US provides a global reserve currency, states must accept the US dollar as their currency or peg their currency to the US dollar to gain the benefits of monetary stability. Doing so, however, restricts their domestic monetary autonomy and subjects them to the decisions of the US with little independent influence over these outcomes. Countries like El Salvador that "merge" their currency with the US have little say when the US Federal Reserve considers a rate hike, yet their domestic economy experiences the ramifications of such decisions. Likewise, Great Britain is often credited with protecting the seas in the 19th century. They did not, however, build naval bases at equal intervals for all shipping lanes; instead, they built them along the shipping lanes deemed important by the Empire and along the coasts of subordinate regions (Her-

man, 2004, 445, 448). Thus, hierarchy is more correctly thought of as a dyadic-level variable.

The Cold War provides a clear example of social hierarchy within the East and West blocs. As the US and USSR emerged as superpowers with expansionary, messianic visions—the former promoting liberal, free-market capitalism and the latter centrally-planned communism—other states became increasing reliant on them for military and political guidance. Subservient states under the sway of the superpowers acted very much like feudal vassals: holding certain rights and some autonomy over domestic politics, but also owing obligations and operating within the limited scope of the rules and regulations set by the dominant state of their side. Cuba, East Germany, and North Korea, for instance, heavily relied on Soviet aid while West Germany, the Philippines, and South Korea entrusted their military security to the US (Westad, 2005). Both superpowers created special schools that trained foreign participants to aid their ideological cause, either in an effort to gain control in their native country, or to resist such efforts (Kalyvas and Balcells, 2010). Political leaders within subordinate states frequently took their policy and propaganda cues from the two superpowers; Kim Il Sung and Mao Zedong, for example, used tactics ushered in by Joseph Stalin to create powerful 'cults of personality,' borrowing the language of '5-year plans,' and mimicking the dress, political structure, and even the practice of regular "self-criticism"—where individuals "purge" themselves of bourgeois thoughts or engage in a "rectification" of their Marxist credentials—within the Communist party (Priestland, 2009).

In return for economic, military, and political aid, members of each bloc were

obliged to undergo certain tasks in the name of their superpower. For instance, as a US ally, Turkey was expected to permit the placement of US troops within their borders and maintain relatively peaceful relations with Greece, a state considered by Turkey to be a bitter rival (Poe and Meernik, 1995; Meernik, Krueger and Poe, 1998). Other subordinates aided neighboring rebel groups against their central governments, as in the case of the US-supported Contras in Nicaragua (based in Honduras) and the Soviet-supported FAR and MR-13 in Guatemala (assisted by Cuba), as part of the "proxy wars" fought between the two dominant states (Kalyvas and Balcells, 2010; Westad, 1992). Lastly, state leaders understood that if their foreign policies swayed too far, they might be replaced by someone who would better 'toe the party line,' as illustrated by the 1948 Soviet-led coup in Czechoslovakia and the 1953 US-led coup in Iran. Such interference in domestic affairs and expectations of privilege and deference on the part of the US and USSR more closely resembled an era of feudal relations and empires than a world of legally equal, autonomous sovereign states (Ferguson and Mansbach, 2004; Wendt and Friedheim, 1995).

I argue that this variation in obligations owed and benefits received is attributable to tacit social contracts regarding the degree of hierarchy that a subordinate state concedes to a dominant state within an issue area. The influence that a dominant state gains is frequently referred to as *relational power* as opposed to *military power* since the relationship is based upon authority being voluntarily conferred onto one party by another rather than being taken by military coercion (Giddens, 1984; Haugaard, 2006; Lentner, 2005; Onuf and Klink, 1989; Wendt and Friedheim,

1995).[4] The degree of hierarchy conceded affects the behavior of both subordinates and dominant states. The greater the degree of hierarchy, the more likely that subordinate states pursue policies consistent with that of the dominant state (Lake, 1999, 2009). In return, dominant states are more likely to confer benefits.

In addition, since hierarchy is a dyadic variable, there is a potential for multiple dominant states to co-exist. Competition among dominant states impacts the quality of benefits that dominant states offer. The presence of multiple dominant state means that a subordinate can essentially "shop around" for the best set of benefits. On the other hand, the absence of competition alleviates the pressure on the dominant to provide costly benefits, just as a monopolistic firm faces less pressure to provide quality products to customers. Finally, the theory developed in this dissertation demonstrates that the level of hierarchy has spill-over effects, impacting the behavior of subordinate states toward one another.

In the rest of the chapter, I provide a foundation for a social theory where hierarchy is contracted between states. I argue that states identify themselves as either a dominant or subordinate state. Dominant states negotiate contracts with subordinate states, offering to provide certain benefits in exchange for autonomy concessions within an issue area. The degree of hierarchy negotiated between these states is a continuous variable, ranging from complete autonomy to complete control. The placement of subordinate states along this continuum impacts their relationships with the dominant states, as well as with other subordinate states. I formalize the

[4]See Baldwin (2002) for a discussion of the different conceptualizations of power.

dominant–subordinate interaction as a two-player extensive form game and generate several propositions which are tested in the empirical chapters that follow.

2.1 Hierarchy as a Social Contract

Social hierarchies are present in any situation where any political process is at play—which includes most social interactions. Joseph Henrich and his co-authors, in a series of cognitive psychology studies, argue that *prestige*—representing voluntary deference to authority—is an emergent psychological adaptation improving the quality of information acquired via cultural transmission (Henrich, 2001; Henrich and Gil-White, 2001). Based on theories of biological evolutionary learning processes and social exchange, the argument is that deference allows new entrants to adaptively cope with their own environments by learning from other actors.

Henrich and his co-authors employ experimental and social network analysis designs and find that subjects imitate *prestigious* figures—those whom purport expertise and receive some existing level of deference from other actors—even in the presence of threats or intimidation from other actors (Cheng et al., 2013; Chudek and Henrich, 2011; Chudek et al., 2012; Henrich and Broesch, 2011). Additional studies find that association among a limited set of known actors exhibit lower thresholds for acceptable cooperation (i.e., express forgiveness) than to those outside of the group, even for the same behavior (Hruschka and Henrich, 2006). Finally, Henrich (2004) extends this argument to the societal level, claiming that the human species' evolved cultural learning capacities produce imitative abilities across complex social organizations.

These micro-processes are central to social theories, which expect ideational and non-material factors, in addition to purely material factors, to affect the behavior of social actors (Henrich, 2000; Henrich et al., 2001).[5] I build on this foundations to argue that states—and more specifically, political elites—exhibit analogous behavior by deferring to the expressed expertise of other, seemingly more successful states, along specific issue areas. I argue that the resulting social hierarchies create identifiable cliques that provide information about a state's foreign policy interests and create social constraints that regulate its behavior vis-à-vis other states, conditional on the latter's own standing within the same social hierarchy.

Acceptance of a social contract limits expressions of power and reduces the range of possible actions of those agreeing to it. Thus, both the dominant state and the subordinate state tie their hands to some extent when accepting any degree of hierarchy.[6] Cox and Sinclair (1996, 518) provide a microfoundation for this process, noting that hierarchy "derives from the ways of doing and thinking of the dominant social strata of the dominant state or states insofar as these ways of doing and thinking have *inspired emulation or acquired the acquiescence* of the dominant social strata of other states" (emphasis added). This perspective is echoed by Ikenberry and Kupchan (1990, 283), who state that "[e]lites in secondary states buy into and internalize norms

[5]Henrich (2000); Henrich et al. (2001), for example, find that, in addition to pure economic factors, public good and ideational concerns, such as fairness and group membership, are important determinants to how resources are distributed in the ultimatum game—a one-shot game where one player decides how to distribute a resource and the other player decides whether to accept the offer.

[6]Acknowledging the role of subordinate states in the social contract and empowering them as active participants in the political order generates hereto now unseen theoretical space for such actors.

that are articulated by the hegemon and therefore *pursue policies consistent with the hegemon's notion of international order*" (emphasis added).

An international hierarchical relationship, therefore, requires that a state *willingly* adhere to the authority of another along at least one issue area, such as security or economic dimensions. This means that in any instance of hierarchy, one state is accepting the *dominant state* role—the creator and enforcer of the social contract—and the other assumes the role of a *subordinate state*—adhering to some degree of the dominant's authority in exchange for agreed upon benefits.[7] Roles are important within the social contract framework because each side must accept their role and adjust their behavior in line with it; the dominant state must assume the role of contract enforcer and subordinate states must accept the arrangement.[8]

Roles are learned, in part, from other's expectations of a state based on their material capabilities and their previous interactions (Mansbach and Vasquez, 1981, 213; Walker, 1992, 23; Wendt, 1999, 327). Yet, political structure on its own cannot dictate a state's identity of a dominant or a subordinate state. Instead, states choose whether to accept the set of roles that their place in the structure allows, akin to selecting from a menu of options (Braumoeller, 2008; Most and Starr, 1989). Thus,

[7]Any theory involving social contracts necessarily invokes identity and role theory. See Jepperson, Wendt and Katzenstein (1996) for a synopsis of the argument that states' identities influence their international behavior and Thies (2010) for an overview of role theory.

[8]The origins of this authority may be militaristic in that the government may have been installed (Wendt and Friedheim, 1995, 697). Subsequent governments, however, choose whether to continue to adhere to a dominant's control. While the political costs to demanding more autonomy is likely to be high and, as I show, may invite a coercive reaction on the part of the dominant state, such an option is available if the subordinate is willing to pay it.

while the structure limits the range of options available to them, states ultimately select the roles that they take (Cantir and Kaarbo, 2011; Doran, 2003), thus linking agent and structure (Dessler, 1989; Wendt, 1987; Wendt and Duvall, 1989).

Uruguay cannot, for example, independently pursue any role it wants because the political structure limits the role choices available to it. It cannot be the global security or economic leader; it can, however, choose whether it will act as a subordinate by welcoming US troops on its soil or pegging its currency to the US dollar. While it may seem like a state such as Uruguay has little choice but to adhere to the demands of a dominant state such as the US, states may chose to reject this role and operate as a non–aligned state, as Cuba and Venezuela have done.

The opposite is also true; a state with the material capacity to operate as a dominant state may not have the desire to do so. Mueller (1989, 20) refers to this as "Hollandization." Holland dropped out of the great power system after 1713 and sought to avoid all international conflict, instead focusing on commercial endeavors. Mueller notes several other states that likewise opted against great power status despite possessing the material capabilities, such as Sweden, Spain, Denmark, and Portugal. Similarly, Germany, as was noted in Chapter 1, refused to seek the role of being a global dominant state in the second half of the twentieth century (Harnisch, 2001). Another example is the US, which in the aftermath of World War I, rejected a dominant state role and instead pursued an isolationist policy. This suggests that becoming a dominant state is a function of both material capabilities and a policy choice (Fordham, 2011)

Some roles, such as a "global dominant state," requires the acceptance of the

relevant states; simply seeking such a role does not mean that other states will recognize it. China, for example attempted to transition from a "junior partner" role with respect to the Soviet Union, to rivaling it as the "leader of global socialism" (Beylerian and Canivet, 1997; Holsti, 1970; Priestland, 2009; Shih, 1993). Neither North Korea nor Vietnam, however, fully embraced to Chinese leadership. Despite China's active lobbying and gifts of foreign aid, Vietnam refused to comply with Chinese foreign policy requests, and even invaded Cambodia despite Chinese objections (Priestland, 2009; Womack, 2006). Vietnam demonstrated a further lack of subordination to China by reneging on their withdraw of a claim to the Paracel Islands, a contributing factor to the 1979 Sino–Vietnamese War (Carter, 2010; Cole, 2012). For its part, North Korea engaged in numerous public ideological clashes with China, beginning with harsh criticism by Kim of Mao's 'Cultural Revolution' and extending to China's economic reforms, and actively exploited the Sino–Soviet split in order to increase aid (Ji, 2001; Priestland, 2009). By lacking legitimacy, China was forced to pay a premium to acquire influence rather than draw on their authority as a leading state whose policy position's should simply be emulated (Lumsdaine, 1993).

Contrast this with China's more recent behavior: establishing foreign schools to promote Chinese as a second language, increasing its membership in international organizations, increasing its presence in international peacekeeping missions, and its practice of peacefully resolution of territorial disputes. Taken together, these activities suggest China is acting to enhance its legitimacy and promote itself for a global leadership role (Gill and Huang, 2006). This example, combined with the experiences of the pre–World War I, isolationist US and post–World War II Germany, illustrate

that a state must have the desire, material capabilities, *and* legitimacy offered by willing subordinate states in order to create its own hierarchy.[9]

A state may have a number of roles of which they identify with varying degrees of effectiveness (Holsti, 1970; Walker, 1987; Wendt, 1999). These include identities such as leader, faithful ally, independent, protectorate, and rival (Holsti, 1970; Thies, 2010). A state, such as Great Britain, may see itself as both a dominant state—such as the leader to the British Commonwealth or as a policy leader within Europe—as well as a subordinate state—as in the security issue area under the US. In addition, two states that view themselves as both subordinates within the US hierarchy may also consider themselves as rivals with one another (e.g. India–Pakistan, Israel–Egypt, South Korea–Japan).[10] Such role contradictions can produce great strain as states calculate which actions to pursue (Cantir and Kaarbo, 2011; Cronin, 2001; Ferguson and Mansbach, 1996; Rosenau, 1987, 1990).

In this study, the primary roles of interest are that of *dominant state* and *subordinate state* at the global level. I assume that dominant states exert a great deal of effort towards this role and want to maintain it. Subordinate states can possess varying levels of involvement in their role. States that attach a high level of importance to this role would align themselves closely to a dominant state's positions. Lake (2009, 30) suggests that "as actors invest in relationally specific assets, they

[9]While I focus my analysis on cases where a dominant state has many subordinate with global influence, the theoretical approach could be applied to regional or sub-regional settings.

[10]See Diehl and Goertz (2000), Goertz and Diehl (1995), Mitchell and Thies (2011), Thies (2001, 2008), and Thompson (1995, 2001) for a discussion of the conceptual definitions and social physiological aspects of interstate rivalry.

become dependent on the authority structure that produces a particular order and in turn acquire incentives to support the ruler and suppress possible dissidents who would overturn it." This may manifest itself in joining military coalitions organized by the dominant state or pursuing economic policies that the dominant state views favorably. In contrast, states that are not highly invested in this role may pursue policies independent of the dominant state's preferences or openly oppose them. This process of role acceptance or rejection manifests in states' foreign policy behavior.

Treating hierarchy on a scale from 0 to 1, where 0 represents the absence of hierarchy (anarchy) and 1 is complete subordination, a necessary condition for a positive level of hierarchy between two states is that one state accept the role of *dominant state* and the other the role of *subordinate state*. If both members of a dyad refuse the *subordinate* role, they are treated as non-aligned, or completely autonomous of one another. In addition, if both states pursue a *subordinate* role, they are also effectively autonomous of one another. In either case, the degree of hierarchy between the states is zero. Observed hierarchy is only possible if one state takes the *dominant* role and the other that of a *subordinate*. Thus, hierarchy can be treated as a variable which is relational in nature.

A state's role identities affect their foreign policy behavior. As was noted earlier, contradictions between these identities sometimes produce internal strain. Before pursuing a course of actions, subordinate states consider the costs and benefits of all possible sets of actions to determine which path yields the greatest utility in light of how much they invest in and value any social role. For instance, two states that identify one another as *rivals*, but each concede a degree of hierarchy with the

same dominant state, may value their relationship with the dominant more than they distrust one another. In such cases, the two rival states would maintain an uneasy peace. Examples of this situation include the contentious relationship between Japan and South Korea, as well as more broadly at the regional level in Latin America. The quasi-alliance between Japan and South Korea (via the US) is often used to explain why their oft-contentious relationship has seldom boiled over into militarized conflict in the post-World War II era (Cha, 1997, 2000; Ikenberry and Mastanduno, 2003). In addition, despite ongoing territorial disputes and numerous interstate rivalries among many Latin American states, the close ties that many state maintain with the US is thought to have contributed to peace (Ebel, Taras and Cochrane, 1991; Kacowicz, 1998; Thies, 2008).

In contrast, if one member of a rivalry is located high within a dominant's hierarchy while the other is much lower, the former state may determine that the dominant state will "look the other way" if it takes action against its rival, because the dominant state has few obligations to defend the latter. By accounting for the bilaterally negotiated location of both the potential aggressor and target states within an informal social hierarchy, the theoretical approach of this dissertation can be used to identify when "dominated subordinates" are likely to maintain peace and when they are likely to "go rogue."

The use of social identity theory suggests that how actors interpret the material world depends on its entire body of knowledge, including both its own and other's social roles (Haas, 1992). Wendt (1999) suggests, for example, that during the 18th and 19th centuries, European states viewed each other as rivals over territory and

glory but, owing to extensive family ties among the royal families and nobility, did not seek to destroy one another. After democratization, these states no longer saw each other as rivals, but as friends. He argues that while these states may disagree, the act of warfare among them became inconceivable. Similarly, Senese and Vasquez (2008) argue that the *realpolitik* framework is a 'culture,' or expectation of how a state *should* conduct foreign policy, held by state leaders and this 'culture' can change over time (see also Haas, 1953). Bennett and Stam (2004, 19) summarize these arguments using statistical terminology by stating that the "underlying tendency to resort to war is a function, in part anyway, of some mutually socially constructed identity that is subject to change over time."

The characteristics of activities a dominant states discourage—contrasted to those which they permit—establishes a set of shared expectations among the subordinate states that contributes to their body of knowledge (Doyle, 1986; Wendt and Friedheim, 1995). Wendt (1999, 159-160) argues that "common knowledge concerns actors' beliefs about each other's rationality, strategies, preferences, and beliefs, as well as about states of the external world." In other words, "the structure of any system .... must be seen not as something that is given by nature, but something that has been socially constructed by the combination of practices that have been employed by political actors" (Vasquez, 2009, 95).[11] These shared, common behavioral expectations are necessary for states to be able to systematically calculate the expected behavior of another state. What one state expects another to do in response

[11]For more on this point, see Ashley (1987, 1988), Finnemore (1996), Vasquez (1998), and Wendt (1999).

to its own actions significantly impacts its own behavior. Therefore, the degree to which a state accepts the conflict management strategies deemed appropriate by a dominant state—and how aware other states are of the degree of acceptance—affects subordinate state behavior.

Numerous studies, for example, demonstrate that the frequency of war varies depending on degree of which international norms of conduct regarding conflict management are widely known and ascribed to (Kegley and Raymond, 1982, 1984, 1986, 1990; Vayryen, 1983; Wallensteen, 1981; see also Vasquez, 2009). When such norms are either unclear or are rejected by some states, minor disputes are more likely to escalate to militarized conflicts. Dominant states serve as both a source for these norms of conduct and as a coordinate point. Former French colonies, for example, often retain the civil law legal tradition that France installed in place of indigenous laws. Such states are more likely to take their international disputes to international courts, like the International Court of Justice (Mitchell and Powell, 2011; Powell and Wiegand, 2010). States with common legal traditions are also more likely to form alliances, while the type of legal tradition influences a state's commitment to its alliances (Powell, 2010).

Socially constructed rules are not unique to conflict but affect other behaviors, such as a state's economic policy. Changes in government positions towards monetary and fiscal policies over the past 100 years provides a useful illustration. Ikenberry (1993, 58-59) argues that, in the aftermath of World War II, most economists and officials held Keynesian views. These ideas were "crucial in defining government conceptions of postwar interests," and "the 'new thinking' of these experts transformed

the way people thought of or framed the issue of postwar economic order and, as a consequence, changed the outcome." Similarly, Ruggie's (1983) analysis describes the post-WWII economic order as embedded within a larger social context. He notes that for many governments, control of inflation became a more pressing concern than full employment in the late 1970s and early 1980s. This normative change is credited to the increased role of orthodox liberal economists within governments' economic ministries and American universities. This normative change coincides with the increased role of US-trained orthodox liberal economists in both foreign governments' economic ministries and in the academy at large (Van Overtveldt, 2007; Weymouth and MacPherson, 2012). Practical illustrations of these changes are found in Dion (2008, 2009), who provides an in-depth examination of reformations in Mexico's social policy in response to this shifting climate in economic theory.

Which norms are broadly adopted are determined, in part, by which norms are promoted or punished by a dominant state (Mitchell, 2002; Wendt, 1999). Fordham and Asal (2007), for example, argue that the prestige of major powers helps define what is normatively acceptable, and find that prestige is linked with the diffusion of formal political equality to women and improvements in human rights practices. Dominant states promote behavior by rewarding subordinates with economic packages, such as loans or debt forgiveness, technical assistance, easing travel restrictions, or security guarantees and arms contracts. Punishments include diplomatic and trade restrictions, economic sanctions, and militarized actions (Doyle, 1986; Lake, 2009; Stone, 2004). States that adjust their policy in response to rewards and punishments internalize these policies as their own as the behaviors become beauractratized. These

beauractratized behaviors result in observable indicators of a state's hierarchical location (e.g., shared alliances, type of exchange rate) (Wendt and Friedheim, 1995). These observable indicators serve as signals regarding a state's intention of honoring its commitments, along with other observables such as domestic institutions and prior history (Chyzh, 2014; Gibler, 2008; Leeds, Mattes and Vogel, 2009).

Mansbach and Vazquez (1981, 287) argue that these patterns of behavior and sets of known rules of conduct lead to decision games where actors anticipate each other's moves (see also Bueno de Mesquita and Lalman, 1992, Ch 4). By operating in the shadow of an observant third party, states must account for the preferences of the dominant state and the risk of coercive actions by the dominant state when deciding policy. That is, dominant states affect the behavior of other states towards one another and change their calculus for war-making and other behaviors (Bueno de Mesquita, 1981; Chatagnier, 2013). This means that subordinate states are able to determine the actions that are most likely to provoke a punitive reaction from a dominant, and can use this information to calculate the probability of coercive action on the part of the dominant in response the subordinate's actions. This calculation includes the location of the potential target state within the dominant's informal hierarchy vis-à-vis that of the aggressor state.

In the next section, I elaborate how dominant and subordinate states negotiate their degree of hierarchy with one another. I highlight that each subordinate state negotiates its own level of hierarchy with a dominant state. The degree of hierarchy varies between countries, as well as within countries temporally, in response to changes in either actor's ideal point or strategic environment. Following this discussion, I then

construct and solve a formal theoretical model of the interaction between dominant and subordinate states.

2.2 State Behavior Under Hierarchy

Hierarchy is a tacit social contract reached through a process of negotiation between a dominant and each subordinate state (Deudney, 2007; Lake, 1996, 2009). In this negotiation, each state attempts to move the outcome closer to its ideal point, as displayed in Figure 2.1. The outcome of the bargain is based upon each state's ideal point, which is influenced by both internal and external factors, as well as domestic constraints.

Each state's ideal point is conditioned by their strategic environment and varies somewhere between complete autonomy and complete control (Lake, 1996, 2009; Morrow, 1991; Weber, 1997; Wendt and Friedheim, 1995). The ideal point of the dominant state may be less than complete control. This is the case because it may not want to pay the administrative costs of occupying another state (i.e., it lacks strategic value, logistically difficult to manage, etc). King Philip of ancient Macedonia, for example, pursued "every conceivable legal sanction" and had himself appointed as the champion of the Delphic Apollo in order to gain legitimacy for his domination over the Greek state' foreign policy because "forcible and unrequested invasion" would have been be expected to produce a costly Hellenistic world war (Cummings, 1940, 66-73).

There are also several reasons why a subordinate state's ideal point may not be complete autonomy. In rare cases, a state may outright surrender its autonomy. Fol-

lowing independence from the Poland, Ukraine's leader Bogdan Khmelnytsky sought a protectorate, as years of perpetual warfare weakened the young state. After initially contacting the Ottoman sultan, Khmelnytsky agreed to the Treaty of Pereyaslav, which unified Ukraine and the Tsardom of Russia (Sobtelny, 2009). In less extreme cases, subordinate states can still profit from the order and stability guaranteed by the dominant state.

The order and stability created by hierarchy generates investment, trade, and long-term development for the subordinate state without it being forced to make decisions between 'guns or butter' (Lake, 2001, 2009; Kadera and Morey, 2008; Powell, 1993). If a subordinate exists in a dangerous neighborhood, as in the case with South Korea, they become more willing to allow a dominant state to station troops within its borders or otherwise surrender its foreign policy autonomy, when it fears an external invasion. After the threat subsides, the subordinate may revert to seeking more autonomy. Saudi Arabia, for example, actively sought for coalition troops to be placed on its soil in the build up to the Persian Gulf War with Iraq in 1991. This suggests a shift in their ideal point towards control by the dominant in exchange for military security. As this risk subsided in the years after the conflict, Saudi Arabia's ideal point moved closer towards complete autonomy. The case of Saudi Arabia points out that either state may seek to renegotiate the level of hierarchy if there is a change in their internal or external environment (Powell, 1999; Werner, 1999).

Internal factors also affect a state's ideal point. Internal factors include a perceived closeness in identity/values based upon a common culture, economic system, history, or repeated interactions among elites (Lerner, 1956; Mousseau, 2003; Rose-

nau, 2003; Solingen, 1998).[12] Finally, domestic constraints represent internal barriers to changing current foreign policy, such as bureaucratic inertia or institutional status quo biases (Goldmann, 1988; Skidmore, 1994; Tsebelis, 2002).

The degree of hierarchy between a dominant and subordinate is observed by examining certain characteristics of the subordinate along a policy dimension. Examples include observable characteristics such as the nature of a state's trade or alliance network in reference to a dominant state, or how much of a subordinate's reserve currency is in the dominant's denomination. The precise location of each state's ideal point along the continuum, however, is private information. The location of the ideal points can only be approximated by a state's foreign policy behavior.

To do this, I focus on two types of foreign policy behaviors: *challenges* on the part of subordinates and *punishments* by the dominants. Subordinates engaging in the global political environment strictly of their own accord are considered to be *challenging* their hierarchical status quo location and trying to establish a new status quo closer to their own ideal point. Challenges include initiating a conflict against a third party without the dominant's authorization or defaulting on loans backed by international institutions supported by the dominant or its banks. These constitute a challenge because any action that has not previously been approved by the dominant is a move strictly away from the dominant's ideal point. This unsanctioned behavior may be subject to "coercive, violent, and punitive actions" on

[12]These arguments are similar to those given by proponents of a normative explanation of the democratic peace (Maoz and Russett, 1993; Mitchell, 2012; Oneal and Russett, 1999; Risse-Kappen, 1995) and for the spread of neoliberal economic theory (Harvey, 2005; Weymouth and MacPherson, 2012).

the part of the dominant state (Holsti, 1982, 218). I define these punitive actions as *punishments* and conceptualize them as costly actions by dominant states directed at a subordinate in response to a challenge (Alt, Calvert and Humes, 1988; Stone, 2002, 2004).[13]

Variation in the degree of hierarchy between a subordinate and a dominant state corresponds to variation in the level of benefits, such as political and economic security that a dominant provides. That is, states positioned higher within a dominant's hierarchy receive greater benefits than those located at a lower position. The result of this variation is that not all challenges are viewed as equal by the dominant. Challenges which are directed against third parties that located close to the dominant are more likely to elicit a punishment by the dominant than challenges directed against a third party with a low position within the informal social hierarchy. In fact, challenges aimed at subordinate states located close to the dominant may even be interpreted as an indirect attack by the dominant, as in the extended deterrence literature (George and Smoke, 1974; Huth, 1988; Huth and Russett, 1984, 1988).

This literature considers situations where a defender state attempts to defend a "protégé" from an attacker. Much of the work on extended deterrence assumes that states compare their expected utility from using force to the status quo; the defender decides if it values the security of the "protégé" enough to defend it from an attack, while the attacker calculates the likelihood (and costs) associated with fighting

[13]Predatory actions by the dominant are not considered to be punishments. Such actions undermine the legitimacy on which the social contract is built and are considered as imperialism. As such, they are not considered to be a part of this bargain.

the defender (Achen and Snidal, 1989; Fearon, 1994*b*; Powell, 1990; Schelling, 1960; Snyder, 1961; Zagare and Kilgour, 2000; George and Smoke, 1989). Empirical studies generally find that material factors, such as the military balance of power, provide explanatory power in cases of immediate deterrence, where a crisis is underway (Huth, 1988; Signorino and Tarar, 2006), though not in cases of general deterrence (Huth and Russett, 1993; George and Smoke, 1974).

My theory builds on this work and extends it by treating the role of "protégé" as a continuous concept, rather than as a binary one. In addition, the protégé role given by the dominant is contingent upon the status of *both* the challenging and target states. Dominant states consider the hierarchical location of the belligerent state. Though states that are close to the dominant are less likely to initiate challenge than non-aligned states, they are also less likely to be punished by the dominant; this is especially true if their target occupies a lower position within the hierarchy. The reason is that a dominant state has few obligations to defend a target located in a low position within its hierarchy. The USSR, for example, had little reason to retaliate against Peru for seizing several Ecuadorian military outposts in 1981, or Uganda for its 1978 invasion of Tanzania, as neither Ecuador nor Tanzania adhered to Soviet leadership.

If the target is located at a higher position than the belligerent, however, the dominant is more likely to punish the belligerent state. This holds even if the belligerent is located at a relatively high position within the dominant's hierarchy as well. The US, for example, may be more willing to punish Guatemala if it engages in a conflict with Mexico than a state with a lower hierarchical position, such as

Belize, even though Guatemala is positioned relatively highly within the US hierarchy. Therefore, dominant states do not just take the absolute hierarchy position of the challenger and the target into account when deciding whether to punish a challenge, but also their relative positions vis-à-vis each other, or the amount of *relative hierarchy* separating the two subordinate states.[14]

This argument is consistent with Stone (2002, 2004), who argues that so long as states know the rules for making distinctions, dissimilar treatments of dissimilar cases still produce strategies without credibility problems. He notes that, within the context of the IMF, states that play a more prominent role in US foreign policy are less like to have funds withheld when loan terms are violated (the US is the single largest stakeholder in the IMF). Yet, the IMF does not suffer credibility issues related to punishments, because loan recipients are aware of factors that produce such unequal treatment. "As long as Bulgarians and Poles know that they cannot get away with behaving like Russians," Stone (2002, 19) contends, "they can be deterred regardless of what concessions the IMF makes to Russia."

Thus, challenging subordinate must account for their location in the relative hierarchy—and the associated risk of punishment—when calculating their expected utility when selecting potential targets. An implication is that challenging states tend to select "non-aligned" targets in order to reduce the chance of the target receiving outside assistance (Gartner and Siverson, 1996). Yet, subordinates located close to the dominant state may be emboldened and act more aggressively against those at

[14]This is similar to the role of relative bias, as opposed to absolute bias, that a mediator has towards disputants impacting mediation success (Savun, 2008).

lower positions (Leeds, 2003; Smith, 1996*b*). This "moral hazard" is created because subordinate states may engage in more risky behavior based on the knowledge that the dominant is less likely to punish them (Kreps, 1990, 577).

The potential for a moral hazard points to the potentially countervailing effect of hierarchy on observing challenges: subordinate states close to the dominant are less likely to challenge, yet they are also unlikely to be punished with their target is located at a lower position in the social hierarchy. This suggests that two dominated subordinate states located at roughly the same hierarchical position are unlikely to engage in a conflict owing to their reluctance to challenge the status quo, it is less clear what the net effect of social hierarchy will be on cases where a dominated state is considering initiating a conflict with a non-aligned subordinate. Lake (2009, 105) describes the potential for a moral hazard within social hierarchies and laments that without fully modeling this interaction, there is no expectation on the frequency by which subordinates will select themselves into militarized disputes. I address this problem by conceptualizing how relative hierarchy enters into both the dominant and subordinate's foreign policy calculus and incorporating it in a formal model.

Finally, while much of the traditional deterrence literature focuses on conflict, the deterring effects of social hierarchy extends to economic foreign policy as well. Lobell (2001), for example, contends that Great Britain considered foreign commercial policies when determining whether to punish contending states that challenged its interests in Europe. The same ideational factors which influence conflict deterrence also affect economic deterrence. Subordinate states consider what degree of authority to confer to a dominant and this manifests itself in the degree of hierarchy between

the two (Lake, 2009; Stone, 2002, 2004). Subordinates challenge the dominant by pursuing policies that contradict those advanced by the dominant, such as expropriation of foreign assets, defaulting on state guaranteed loans to banks or international institutions within the US or Great Britain hierarchies (Stone, 2002, 2004; Tomz and Wright, 2010), or liberalization and engagement with the international markets of these sectors in the case of the Soviet Union's hierarchy (Valdez, 1993; Wendt and Friedheim, 1995). The dominant state weighs the severity of the challenge by considering the relative position of both the challenging and target and determines whether to punish the challenging state.

In the next section, I formalize the interaction between dominant and subordinate states as a two-player, extensive form game which is solved using quantal response equilibria (QRE) (McKelvey and Palfrey, 1995, 1996, 1998; Signorino, 1999). The equilibria generate probabilistic outcomes that are conditioned by the known distribution of unobservable factors and the history of the game. The game generates three propositions: 1) the greater the degree of hierarchy between a subordinate and dominant state, the less likely the subordinate is to challenge the status quo; 2) the stronger a dominant state is relative to alternative great powers, the less likely the dominant state is to punish challenges; and 3) when a challenger is located higher within the hierarchy than its target, the are less likely the challenger is to be punished. These propositions are translated into hypotheses related to conflict and economic behavior and are tested in the empirical chapters.

2.3 A Formal Model of Challenges and Punishments

Lake (2009, 29) suggests that the expectation of punishment created by the dominant "provides just enough political order to gain the compliance of the ruled to the taxes and constraints required to sustain that order, and [the subordinate state] complies just enough to induce [the dominant state] to actually provide it." This account treats challenges and punishments as non-equilibrium behavior, where these actions only occur by accident or over–reach. Punishments, for instance, are costly *ex post* actions which would only increase the costs of a challenge already incurred for the dominant. Alt, Calvert and Humes (1988) suggest the reason punishments are sometimes observed is because dominants have an incentive to engage in costly actions in order to gain long–term reputational benefits to dissuade other subordinates from challenging. Reputation–based explanations have been challenged by Hopf (1994), Gibler (2008), and Sartori (2002). Hopf finds little evidence of the impact of reputation on Soviet foreign policy while Gibler and Sartori argue that reputational concerns seem to be primarily based on recent behavior and dissipate over time.

In contrast to these accounts, I develop a model under which both challenges and punishments occur within equilibria. Previous theoretical models in which conflict occurs within equilibria generally rely on informational and commitment problems (Fearon, 1995; Powell, 2004). Traditionally, informational accounts argue that actors have incentives to misrepresent, or bluff, their actual level of strength or resolve (e.g., Fearon, 1994*b*; Powell, 1996, 1999; Werner, 2000), while commitment arguments center on actors' lack of credibility to adhere to an agreement under conditions of

changing material capabilities (Powell, 2006; Filson and Werner, 2002). As Powell (2006, 173-175) notes, however, informational accounts usually assume that there would be no conflict with full information.[15] Powell goes on to argue that informational accounts are actually a type of commitment problem, because states cannot credibly convey the accuracy of the information they provide about their type or capabilities.

I contend that ideational factors, such as the position of a state within a dominant state's hierarchy and the quality of alternative hierarchies, are a key part of a state's rational calculation (Kratochwil, 1989; Onuf, 1989).[16] This approach helps to bridge the existing gap in the literature between ideational and rationalist approaches (Bueno de Mesquita, 2004; Fearon and Wendt, 2002; Ferejohn, 2004), and provides an explanation for credible deterrence with rational actors.[17] These factors influence states in three ways. First, a state's identity and material capability leads it to assume the role of either a dominant or subordinate state. This identity, in turn, affects states in regards to their relationships with other states regarding whether they bargain to surrender or assume autonomy in exchange for receiving or providing

[15]Slantchev (2003) describes conditions under which conflict results from fully informed states. In his model, the outcome is endogenous rather than treated as a lottery and a continuous process instead of a single-shot game. States are able to impose additional costs on another during the conflict and threaten to switch to alternative equilibria which leave opponents with distinctly worse outcomes.

[16]See Arfi (2007) and Penn (2008) for other formal models which focus on ideational factors.

[17]Lupovici (2010, 708) notes that credible deterrence requires that one of the actors must act, or at least appear to act, irrationally (see also Schelling, 1960; Zagare, 2004). Other alternative explanations include audience costs (Fearon, 1994*a*).

benefits. While it is possible for states to take both roles in different situations, as in the case of the Great Britain being a dominant state in reference to Commonwealth members and also a subordinate to the US following the end of World War II, most states assume primarily one of the two roles.

Second, the degree of hierarchy enters each state's utility calculation when determining how to act on the international arena. For subordinate states, hierarchy directly affects whether they pursue policies and actions against the interests of the dominant. A subordinate that concedes a great deal of authority to a dominant will value the dominant approved status quo more than another subordinate that concedes the dominant less authority. Therefore, the former will ascribe more utility to maintaining the status quo than the latter, and it is less likely to challenge the dominant state.

For dominants, hierarchy operates in a slightly different way. If a subordinate pursues actions against the interest of the dominant state, the dominant receives less utility than if the status quo was maintained. The level of disutility, however, depends on the hierarchical locations of the belligerent state (state A) and target state (state B). If state A is low in the hierarchy and state B close to the dominant, the dominant receives more disutility from the action than if A is located in a high position within the hierarchy and B a low position. The difference in location of states A and B in the dominant's social hierarchy is an important factor as to the likelihood of punishment.

Third, the presence of potential alternative hierarchies means that dominant states must compete for legitimacy and provide greater benefits to subordinates, such as political security, which affects the probability of punishment. Dominant states

that face few legitimate rival providers of hierarchy face less repercussions in the form of subordinate defections than when alternatives hierarchy providers are strong. The options of subordinate states that seek the physical and economic security benefits associated with hierarchy are constrained when alternative dominant states are weak, as these dominants may lack the resources to legitimately support many subordinates. Owing to this lack of competition, a relatively strong dominant can operate as a monopolist and reduce the quality of benefits provided.

In contrast, when there are multiple dominant states that each possess the resources to offer benefits to subordinate states, a dominant state must increase the benefits it offers to attract subordinates or risk losing them to an alternative dominant state. This account helps explain why some find that leading states are able to distribute private goods to maintain state satisfaction (Lake, 2009; Lemke, 2004) while others do not (Bussmann and Oneal, 2007).[18]

2.3.1 Players and Payoffs

I model international behavior under a dyadic, social hierarchy as a two-player, non-cooperative game between a dominant state (D) and a subordinate state (S). I assume both actors are rational and pursue actions that maximize their expected utility. In addition, two other actors influence the payoffs of S and D: the target of the subordinate state's challenge (T) and an alternative dominant (A). I assume that all parameters range in value from 0 to 1 unless otherwise denoted. The extensive form game is depicted in Figure 2.2.

[18]Private goods are resources that are excludable and rivalrous.

In the first stage, the subordinate state chooses either to challenge the status quo or not. If S does not challenge, the game ends and a status quo (SQ) outcome is the result. If S challenges, the game moves to the second stage where the dominant state elects to either punish or not punish the challenger. Conflict (Con) results if the dominant state punishes the subordinate; otherwise the dominant state acquiesces (Acq). In essence, this is a variant of the chain store paradox (Selten, 1978) and is the same structure used by Alt, Calvert and Humes (1988) and Signorino and Tarar (2006) to examine hegemonic reputation and deterrence theory, respectively.

Payoffs account for the ideational factors theorized to affect the interaction between S and D. Each payoff includes a component representing information regarding the observable outcomes from the ideational factors, as well as private information which is known only to player i. Private information accounts for uncertainty regarding the other state's true intentions and may represent a state's efficiency or resolve in coping with (levying) punishments (Maoz, 1983; Midlarsky, 1974; Signorino, 1999). Private information is denoted as π_{i_j}, where i represents the player and j an outcome. While neither $\neg i$ nor the analyst know the true value associated with π_{i_j}, they do know its mean and distribution. When the distribution is small, $\neg i$ and the analyst have a better idea of how much i values an outcome than when the distribution is large. Therefore, the less certain a state is, the less information the observed utilities convey and the greater the variance associated with their utility calculation (Signorino, 1999). Finally, if the distribution around the mean is zero, the game

converges to one with complete and perfect information (Signorino, 2003, 338).[19]

The payoff for SQ reflects the degree of hierarchy, H_S, that S concedes to the D and private information $\pi_{S_{SQ}}$. H_S also represents how much S values the status quo. As this value increases, S places greater importance on adhering to the policies of D. S's status quo utility can be also be written as $U_S^*(SQ) = \mathrm{H}_S + \pi_{S_{SQ}}$.[20]

S's payoffs for both Acq and Con include the expected benefits that they would receive from challenging their status quo with T. States calculate their expected utility by considering the potential benefit or cost of an outcome, such as initiating a dispute or maintaining the status quo, and the probability of that outcome occurring. In terms of conflict, this is usually understood as potential gains from acquiring a piece of territory, replacing a target's regime, or otherwise altering the status quo for some benefit to the aggressor state, such as increases in resources, population, security, or prestige, and comparing them to the corresponding losses should the other side win and allowing for the costs of military action. The benefits of economic challenges may include expropriating foreign firms, refusing to pay back loans, or adjusting trade policies in a way that hurts foreign firms, such as imposing subsidies, quotas, and exchange rate manipulation, while the losses of future trade

[19]Signorino and Tarar (2006, fn 4) describe this model as a "two-player extensive-form game of two-sided incomplete information, but in which the analyst is also imperfectly informed about the actors utilities." It is also worth noting that the uncertainty introduced by the private information assumption permits direct statistical estimation of the model as long as $\pi_{i_j} \neq 0$. I describe statistical estimation of the model in more detail in the research design section of Chapter 3.

[20]The SQ payoff for D is not displayed because this outcome has no impact on any of the decisions in the game. Presumably, however, D is expected to strictly prefer that S adhered to it, all else being equal, rather than not.

or investment, as well as equivalent retaliatory actions by the affected party are also accounted for. A wide range of conflict interactions have used expected utility theory to explain outcomes and processes of an aggressor and target state for both military and economic interactions (e.g., Bueno de Mesquita and Lalman, 1992; Slantchev, 2005; Stone, 2002; Tomz and Wright, 2010).[21]

Because my focus is on the ideational factors that influence dominant–subordinate relations, I build on previous work and assume that S has calculated the benefits they expect to receive from T rather than explicitly modeling their interaction here. B_T are the expected benefits that S expects to receive from initiating a dispute with T, and is the same for both the Con and Acq outcomes in its interaction with D. An important difference between the Acq and Con is that the Con outcome includes a cost parameter (c_S) which accounts for the costs that S expects to pay resulting from a punishment by D. Assuming that $0 < \mathrm{c}_S \leq 1$, the model reflects that fact a military or economic challenge is more costly to S if D elects to punish than if D did not punish, even while B_T is the same. This parameter ensures that S strictly prefers Acq to Con and reflects that a punishment involves either a military confrontation, inflicting a loss of life and money, or an economic conflict, imposing barriers to trade and investment, between S and D (Fearon, 1995; Rose, 2005). The payoff also includes the private information terms $\pi_{S_{Acq}}$ and $\pi_{S_{Con}}$ for Acq and Con, respectfully. More formally, the utilities for the outcomes are $U_S^*(Acq) = \mathrm{B}_T + \pi_{S_{Acq}}$ and $U_S^*(Con) = \mathrm{B}_T - \mathrm{c}_S + \pi_{S_{Con}}$.

[21] See Reiter (2003) for an overview of the expected utility literature as applied in international relations.

D's payoff for Con includes the difference of T's and S's loci within D's social hierarchy, or $\mathrm{H}_T - \mathrm{H}_S$. When $\mathrm{H}_T - \mathrm{H}_S > 0$, D is negatively affected by the challenge, such as when a "dominated subordinate" is the recipient of a challenge by a "non-aligned subordinate" (e.g., when Japan or South Korea receive threats from North Korea). Because D is negatively affected, it prefers Pun to $\neg Pun$ and derives positive utility from punishing the challenge. When $\mathrm{H}_T - \mathrm{H}_S < 0$, however, D derives negative utility from punishing the challenge, because D is closer to the challenger than the target. These outcomes reflect that D prefers the latter case to the former.[22] As was the case for S, a cost parameter, c_D, is included to account for the costs associated with punishing a challenge, where $0 < \mathrm{c}_D \leq 1$, as is a term for its privative information, $\pi_{D_{Con}}$. This is formally denoted as $U_D^*(Con) = \mathrm{H}_T - \mathrm{H}_S - \mathrm{c}_D + \pi_{D_{Con}}$.

Finally, D's payoff for Acq is $-\mathrm{A} + \pi_{D_{Acq}}$. The first term in the payoff, $-\mathrm{A}$, accounts for the competition for subordinates induced by alternative dominant states (D'). The stronger D' is (the greater the value of A), the more negative D's utility for capitulating to a challenge from S and not protecting T. The inverse of this, of course, is that when D' is weaker (the lesser the value of A), D faces less pressure to respond to a challenge. $\pi_{D_{Acq}}$ represents private information held by D. This payoff can be rewritten as $U_D^*(Acq) = -\mathrm{A} + \pi_{D_{Acq}}$.

[22] That $\mathrm{H}_T - \mathrm{H}_S$ can take on a negative value does not require that D prefer S to challenge rather than not challenge, just that D views some targets as more valuable than others.

2.3.2 Equilibria

I solve the game using the QRE solution (McKelvey and Palfrey, 1995, 1998). Assuming actors are (expected) utility maximizing and ignoring knife–edge cases, the best response of a player is conditioned by the observable portion of the games (H_S, H_T, B_T, c_S, c_D, A), the known distributions of the unobservable term ($\pi_{S_{SQ}}$, $\pi_{S_{Acq}}$, $\pi_{S_{Con}}$, $\pi_{D_{Acq}}$, $\pi_{D_{Con}}$), and the history of the game. Players make their decisions based on random utility assumptions, selecting the best choice available to them based on the equilibria distribution of their opponent's choices (McKelvey and Palfrey, 1998, 9-10). In order to generate the probabilities used by player $\neg i$ and the analyst regarding player i's expected action, I assume that π_{i_j} are independently and identically distributed normal with mean 0 and variance σ^2. Intuitively, players make strategic choices based on the expected action of the other player and the game's equilibria are probabilistic.

QRE does not require a full scale departure from Nash-based equilibria nor does it require systematic features in the unobserved terms to produce probabilistic best responses by the players. Both QRE and Nash equilibria are a fixed point of the player's best response function. Under QRE, players are still assumed to estimate their payoffs in an unbiased way. The incomplete information introduced by the private information, however, means that other player's expected actions are "noisy," and that player's action is probabilistic in response to this uncertainty, even if all players pursue pure strategies (McKelvey and Palfrey, 1996, 187). QRE outcomes are probabilistic if the variance associated with the private information is greater

than zero and the same as the Nash equilibria if the variance is zero. It is worth noting, however, that a player's best response under the private information setting is not simply a "smoothed" version of its best response without this source of variation; rather, the amount of private information in the model can significantly alter equilibrium behavior (Signorino, 2007, 9-11).

Moreover, QRE is consistent with other Nash-based concepts, such perfect Bayesian equilibrium (PBE). For instance, McKelvey and Palfrey (1995, 1998) demonstrate that if log Weibull disturbances are added to players' payoffs as private information, QRE and PBE are equivalent (see also Wand, 2006). Both PBE and QRE are solved via backwards induction, player beliefs about payoffs are sequentially rational and based on their beliefs, and beliefs are based on the other player's equilibrium behavior.

To derive the equilibria, the game is solved backwards. This means that I "work up the tree" by first solving for D's equilibria choice and then using this to inform S's equilibrium choice. D chooses Pun if and only if $U_D^*(Con) > U_D^*(Acq)$. Thus,

$$\begin{aligned} p_{pun} &= \Pr\left[\mathrm{H}_T - \mathrm{H}_S - \mathrm{c}_D + \pi_{D_{Con}} > -\mathrm{A} + \pi_{D_{Acq}}\right] \\ &= \Pr\left[\pi_{D_{Con}} - \pi_{D_{Acq}} < \mathrm{H}_T - \mathrm{H}_S - \mathrm{c}_D + \mathrm{A}\right] \\ &= \Phi\left[\frac{\mathrm{H}_T - \mathrm{H}_S - \mathrm{c}_D + \mathrm{A}}{\sqrt{\sigma^2_{\pi_{D_{Con}}} + \sigma^2_{\pi_{D_{Acq}}}}}\right] \end{aligned} \tag{2.1}$$

where p_{pun} is the probability that D chooses to play Pun and $\Phi(\cdot)$ is the standard normal cumulative distribution function. This implies that $1 - p_{pun}$ is the probability that D selects $\neg Pun$.

The numerator in Equation 2.1 represents the difference in the observed utility for D to play Pun. The greater the observed utilities for $U_D^*(Con)$ relative to $U_D^*(Acq)$, the more likely that D selects Pun. The denominator in Equation 2.1 represents the amount of uncertainty S has regarding D's true utility. The more certain S and the analyst are the closer p_{pun} is to either 0 or 1, while the less certain they are, the closer p_{pun} is to 0.5. Thus, p_{pun} reflects the belief that D will punish a challenge held by both S and the analyst, while $1-p_{pun}$ reflects the belief that D will acquiesce to a challenge.

Moving up the game tree, we now turn to deriving the choice equilibria of S. S chooses either $\neg Chal$ or $Chal$. S takes into account D's expected actions when calculating its expected utility for selecting $Chal$. This means that S conditions its utility for Acq and Con based on the probability that D plays Pun, or p_{pun}. That is, $U_S^*(Chal) = (1-p_{pun})(U_S^*(Acq)) + p_{pun}(U_S^*(Con))$. The utility for playing $\neg Chal$ is simply $U_S^*(SQ)$. S selects $Chal$ if and only if $U_S^*(Chal) > U_S^*(SQ)$. This inequality yields:

$$\begin{aligned} p_{chal} &= \Pr\left[p_{pun}\left(B_T - c_S + \pi_{S_{Con}}\right) + (1-p_{pun})\left(B_T + \pi_{S_{Acq}}\right) > H_S + \pi_{S_{SQ}}\right] \\ &= \Pr\left[p_{pun}\left(\pi_{S_{Con}}\right) + (1-p_{pun})\,\pi_{S_{Acq}} - \pi_{S_{SQ}}\right. \\ &\quad \left. < p_{pun}\left(B_T - c_S + \pi_{S_{Con}}\right) + (1-p_{pun})\left(B_T + \pi_{S_{Acq}}\right) - H_S\right] \\ &= \Phi\left[\frac{p_{pun}\left(B_T - c_S\right) + (1-p_{pun})\left(B_T\right) - H_S}{\sqrt{p_{pun}^2\sigma_{\pi_{S_{Con}}}^2 + (1-p_{pun})^2\,\sigma_{\pi_{S_{Acq}}}^2 + \sigma_{\pi_{S_{SQ}}}^2}}\right] \end{aligned} \tag{2.2}$$

where p_{chal} is the probability that S selects $Chal$ and $\Phi(\cdot)$ is the standard normal cumulative distribution function. This implies that $1-p_{chal}$ is the probability that S chooses $\neg Chal$.

Analogous to the previous case, the numerator in Equation 2.2 contains the difference in the expected utility for S. S is more likely to choose $Chal$ when the observable parts of $U_S(Chal)$ increase relative to those of $U_S^*(SQ)$. The denominator again represents uncertainty, only this time, the uncertainty is conditioned by the beliefs p_{pun} and $1 - p_{pun}$.

Finally, equilibrium outcome probabilities are calculated from the products of the choice equilibria of each player. The probability of observing the status quo is the same as the probability that S does not challenge. The probability that D acquiesces is equal to the product of S choosing to challenge and D choosing not to punish. Lastly, the probability of conflict is equal to the product of S challenging and D punishing. That is,

$$\Pr(SQ) = 1 - p_{chal} \tag{2.3}$$

$$\Pr(Acq) = p_{chal}(1 - p_{pun}) \tag{2.4}$$

$$\Pr(Con) = p_{chal}p_{pun} \tag{2.5}$$

The inclusion of ideational factors, such as a subordinate's degree of hierarchy or its relative hierarchical position, suggests that social factors matter in international behavior. Next, I derive three propositions and describe their testable implications.

2.3.3 Empirical Implications

A number of propositions with testable implications can be derived from the player's choice equilibria in Equation 2.1 and 2.2. I focus on three propositions here.

The first proposition focuses on how changes in the degree of hierarchy between

a subordinate and dominant state influence the likelihood of observing a challenge.

Proposition 1. *Assuming that the subordinate state has at least a moderate amount of uncertainty regarding the dominant state's expected utilities, the probability of a challenge decreases as H_S increases. Therefore, subordinate states that concede a greater degree of hierarchy to the dominant state are less likely to initiate a challenge against the status quo.*

Proof. To explore the change in p_{chal} wrt H_S, we must take the partial derivative of Equation 2.2.

$$\begin{aligned}\frac{\partial p_{chal}}{\partial H_S} &= f\left(\frac{\Phi[z](B_T - C_S) + (1-\Phi[z])(B_T) - H_S}{\sqrt{\Phi[z]^2\sigma^2 + (1-\Phi[z])^2\sigma^2 + \sigma^2}}\right) \\ &\times \left(\frac{(f[z](-C_S) - 1)\sqrt{\Phi[z]^2\sigma^2 + (1-\Phi[z])^2\sigma^2 + \sigma^2}}{\sigma^2\left(\Phi[z]^2 + \left(1-\Phi[z]^2\right) + 1\right)}\right. \\ &- \frac{(\Phi[z](B_T - C_S) + (1-\Phi[z])(B_T) - H_S)}{\sigma^2\left(\Phi[z]^2 + \left(1-\Phi[z]^2\right) + 1\right)} \\ &\left.\times\sqrt{2\sigma(\Phi[z])^2 + (1-\Phi[z])^2}\right) \end{aligned} \tag{2.6}$$

where f(·) is the probability density function and $z = \frac{H_T - H_S - C_D + A}{\sqrt{2\sigma^2}}$. The first term is positive since it is a probability density, the first product of the second term is negative owing to the sign on C_S, while the sign of the second term is unclear, as $B_T - C_S$ can be either positive or negative in the second product of the second term. When $B_T - C_S$ is positive, then the derivative is negative; when $B_T - C_S$ is negative, then the sign of the derivative depends on the difference between the first and second products of the second term, which is determined, in part, on the value of σ. This means that the probability of S selecting *chal* depends on both the sign associated

with the difference of $B_T - C_S$ and its level of certainty in D's expected utilities, represented by σ. Smaller values of σ represent greater certainty on the part of S.

I run simulations in order to identify the effect of H_S at varying levels of σ when $B_T - C_S$ is either positive, negative, or 0. Figure 2.3 presents the results of these simulations. It is clear that, consistent with the analytical results just discussed, when $B_T - C_S$ is positive, the probability of challenge decreases as H_S increases. In contrast, when $B_T - C_S$ is either zero or negative, the relationship between the probability of challenge and H_S is non-monotonic when *sigma* is small, as evident by the short dashed line in the second and third graphs in Figure 2.3. As σ increases, however, the relationship between H_S and the probability of challenge becomes negative and strictly monotonic, even at relatively low levels (solid and long dashed lines, respectively). □

The intuition of the proof is that while the effect of a change in H_S has both a direct and indirect effect—via the p_{pun} term—on the utility of the subordinate (see Equation 2.2), the direct effect is larger than the indirect effect, assuming that players are at least moderately uncertain regarding other's expected utilities. The indirect effect runs against the direct effect; an increase in the subordinate's hierarchy makes the subordinate less likely to initiate a challenge (direct effect), yet it also decreases the probability of a punishment by the dominant state as the relative hierarchy between subordinate and target decreases in absolute terms (indirect effect). The indirect effect represents the moral hazard. The indirect effect, however, is constrained because it enters S's utility as a part of the probability of punishment term, while the direct

effect faces no such limitation.

The argument for this is that the subordinate states which concede a greater degree of hierarchy to a dominant state increasingly identify the policy goals of the dominant as their own (Cox and Sinclair, 1996; Ikenberry and Kupchan, 1990; Wendt and Friedheim, 1995). Thus, the social identity of the subordinate state enters their utility calculation and makes them less likely to take actions that go against the interests of the dominant state. The stronger this social identity, the less likely a subordinate is to challenge the dominant state, even in the face of material benefits from which they could strictly benefit (e.g., seizing territory of a weaker neighbor, expropriating foreign firms).

The relationship between the counteracting direct and indirect effects represents one of the advantages of formally modeling the challenge–punish interaction between dominant and subordinate states. In addition, it highlights the importance of accounting for player uncertainty within the formal model, as altering this changes the expected behavior of the players.

The next two propositions concern the likelihood of observing a punishment to a challenge on the part of a dominant state. Proposition 2 concerns how likely punishments by a dominant state are in the face of alternative hierarchies.

Proposition 2. *p_{pun} increases as A increases. Therefore, the probability of a punishment increases as the material strength of a dominant state declines relative to alternative dominant states.*

Proof. Demonstrating that an increase in p_{pun} results from an increase in A is straight-

forward. Taking the partial derivative of Equation 2.1 yields

$$\frac{\partial p_{pun}}{\partial A} = f\left(\frac{H_T - H_S - C_D + A}{\sqrt{2\sigma^2}}\right)\sqrt{2\sigma^2} \geq 0 \tag{2.7}$$

where f is the probability density function. The derivative is always either positive or equal to zero because a probability density function and a square root are always either positive or zero, hence their product is also either positive or zero. □

This expectation is driven by a simple supply and demand logic. Dominant states prefer that subordinates adhere to their interests as opposed to those of an alternative dominant. Providing benefits to subordinates, such as political security, however, is costly. In the absence of credible alternatives to which a subordinate may defect, a dominant is unlikely to want to pay high costs relative to the degree of subordination of its subordinates. That is, when the supply of hierarchy is low (there are few dominant states), subordinates must pay more costs (reduce autonomy) to receive the same level of benefits. When the supply is high (credible alternatives exist), on the other hand, a dominant state must increase the quality of benefits (more security) to keep subordinates within its camp.

Finally, Proposition 3 considers the how the relative position of a belligerent state vis-à-vis its target within a dominant's social hierarchy influence the probability of observing a punishment.

Proposition 3. *p_{pun} increases as the difference $H_T - H_S$ increases. Therefore, the probability of a punishment increases as the relative distance between the target and subordinate state increases.*

Proof. Taking the partial derivative of Equation 2.1 yields

$$\frac{\partial p_{pun}}{\partial H_T - H_S} = f\left(\frac{H_T - H_S - C_D + A}{\sqrt{2\sigma^2}}\right)\sqrt{2\sigma^2} \geq 0 \tag{2.8}$$

where f is the probability density function. The product of a probability density function and square root is always either positive or zero, as both terms are either positive or zero. □

Dominant states do not just consider the absolute hierarchy position of the challenger or target when deciding whether to punish a challenge. Instead, the degree of *relative hierarchy* separating the target from the belligerent is accounted for. Aggressor states that are located at a greater position within the dominant's social hierarchy than their target are less likely to be punished than if the positions were reversed. Thus, state's loci within a social hierarchy influence the likelihood of punishment.

The formal model builds on theories of social hierarchy (Lake, 2009; Wendt and Friedheim, 1995) by provide clear, logically derived propositions and hypotheses. Rather than viewing challenges and punishments as non-equilibria behavior, the model provides probabilistic expectations of each outcome. The model contributes to the extended deterrence literature (Huth and Russett, 1993; Zagare and Kilgour, 2000) by generating testable hypotheses of general deterrence. It does this by explaining which states are most likely to initiate a conflict and their target selection, as well as when dominant states are likely to respond. In addition, it extends the deterrence logic to international economics. This helps explain which states expropriate foreign assets and why dominant states are likely to respond to some cases and not others.

The formal model presented here provides a unified model of militarized and economic behavior within a social hierarchy. The derived propositions imply that ideational factors affect the propensity for both militarized and economic challenges by subordinate states. The model builds on social theories to demonstrate that subordinate's located at higher positions within the social hierarchy are less likely to challenge, even acknowledging the "moral hazard" induced by a state's relative position (Proposition 1). Moreover, the model expects that the quantity of benefits varies depending on the quality of competition for subordinates that it faces (Proposition 2). Finally, the model is able to explain variation in the "success" of extended deterrence by treating the statuses of "protégé" (target) and "attacker" (challenger) as continuous and relative variables (Proposition 3).

2.4 Conclusion

In this chapter, I developed a theory of social hierarchy. I argue that states identify themselves as either a dominant or subordinate state. Dominant states negotiate contracts with subordinate states, offering to provide certain benefits in exchange for autonomy concessions within an issue area. The degree of hierarchy negotiated between these states is a continuous variable, ranging from complete autonomy to complete control. The placement of subordinate states along this continuum impacts their relationships with the dominant states, as well as with other subordinate states. Specifically, I examine how social hierarchy impacts two types of foreign policy: challenges on the part of subordinates and punishments by the dominants.

I argue that states' social identity conditions their behavior in three ways:

First, a state's social identity influences which role—dominant or subordinate—it assumes. This identity, in turn, affects their relationships with other states regarding whether to surrender or assume autonomy in exchange for receiving or providing benefits. Second, this identity affects a state's utility calculation when interacting with other states. For subordinate states, hierarchy directly affects whether they pursue policies and actions that challenge the interests of the dominant. For dominant states, the relative position of a belligerent state relative to that of the target is a determinant of severity of a challenge, and thus affects the likelihood of punishment. Third, the presence of potential alternative hierarchies means that dominant states must compete for legitimacy and provide greater benefits to subordinates.

I formalize the interaction between dominant and subordinate states as a two-player, extensive form game and solve it using QRE. The game generates three propositions: 1) the greater the degree of hierarchy between a subordinate and dominant state, the less likely the subordinate is to challenge the status quo; 2) the stronger a dominant state is relative to alternative great powers, the less likely the dominant state is to punish challenges; and 3) when a challenger is located higher within the hierarchy than its target, the are less likely the challenger is to be punished. In the next chapter, the theory is applied to interstate conflict behavior. In particular, the three propositions are translated into hypotheses relevant to the US hierarchy and tested empirically.

Figure 2.1: Bargaining Range of the Level of Hierarchy

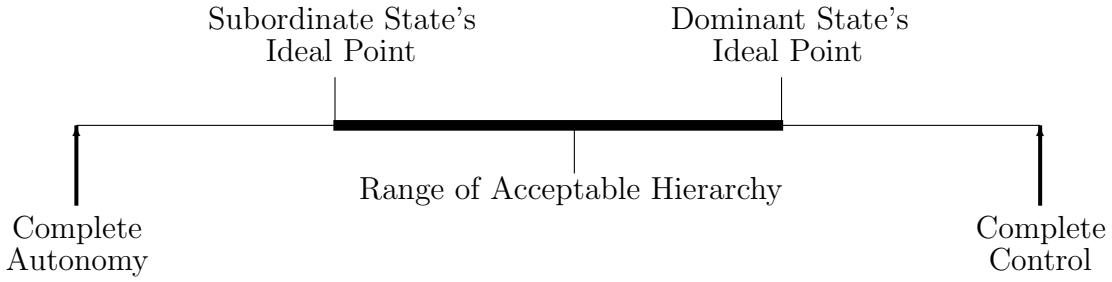


Figure 2.2: Interaction of Subordinate and Dominant in a Social Hierarchy.

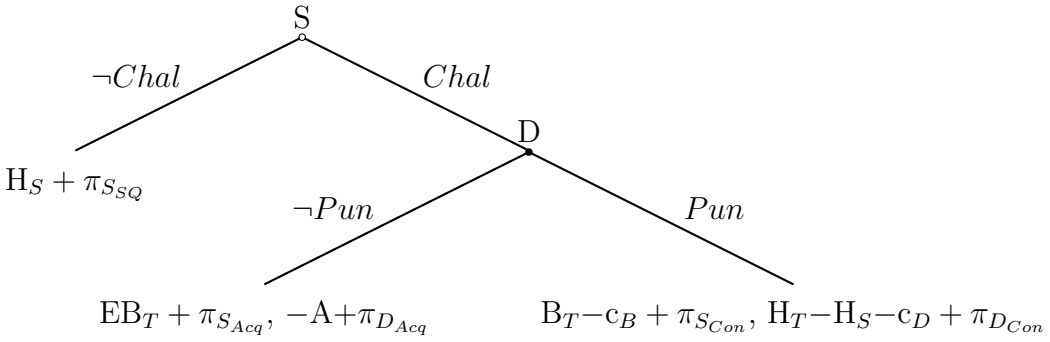
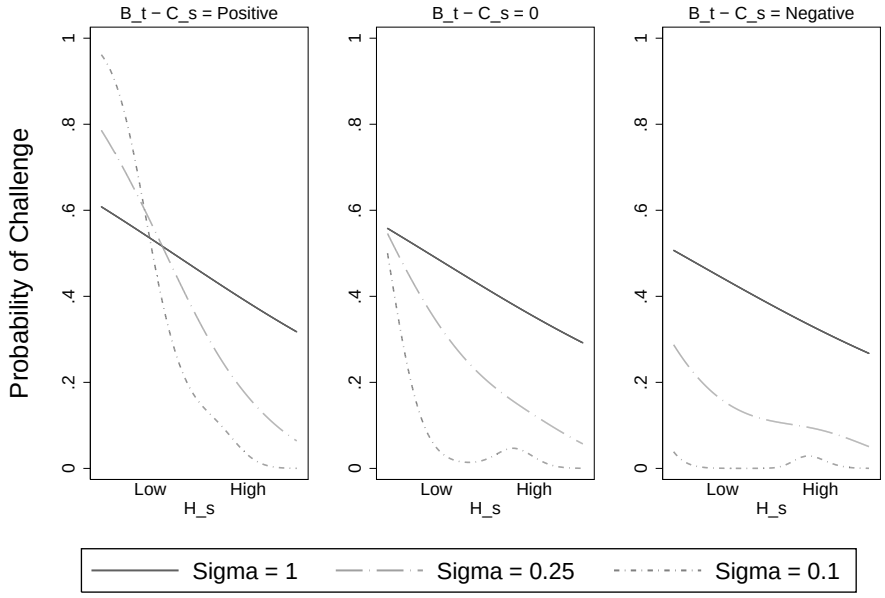


Figure 2.3: Simulation of Comparative Statics for Proposition 1.



Note: B_t is held at .5 and C_s varies of either .25, 0, or .75.

CHAPTER 3
US HIERARCHY AND INTERNATIONAL CONFLICT

In this chapter, I apply the theory formulated in Chapter 2 to international conflict. Specifically, I examine the impact of US hierarchy on the conflict behavior of all states from 1950-2000. I select these cases because the US has been treated as a hegemon in numerous studies.[1] Moreover, the US has been a policy leader, exporting the vision of a liberal economic order, such as free trade and limited government intervention, as evident by the number of US-trained economists in a host country increasing the speed at which it opens its economy (Weymouth and MacPherson, 2012).

US hierarchy is also interesting owing to the tendency of the US to use military force as well as to form coalitions (Krahmann, 2005; Lake, 2009; Silkett, 1993; Tago, 2007). International disputes of the second half of the 20th century can be roughly divided into two categories: (1) those initiated by the US or by another state with US support or authorization, and (2) those that were initiated without US authorization. The latter group of disputes constitutes challenges—to some degree—of the US-established status quo. In other words, given the willingness of the US to resort to conflict, if a challenger had complete US support, the US would be an originator on the same side.[2] All challenges, however, are not created equal: a dominant state

[1]See, for instance, Doran (2003), Gilpin (1981), Ikenberry (2000), Keohane (2005), Mansfield (1992), Mastanduno (1997), Thompson (2006), and Suominem (2012).

[2]Rather than explicitly siding with a conflict initiator, the US could signal its tacit support through arms transfers. The US did, after all, ship weapons to prop up governments in the third world in order to contain communism (Kinsella and Tillema, 1995). It is unclear,

is less opposed conflicts initiated against particular targets than others. The US, for example, may be less opposed to a military dispute if the initiating state is high while the target is low within the hierarchy. The US is more likely to "look the other way" when a state that is relatively high within its hierarchy, such as Israel, is settling scores with an external rival that is lower in the hierarchy, such as Iran, but it is much more likely to come to the aid of Israel, if the direction of the threat is reversed. Variation in support for a challenge is captured by the measure of *relative hierarchy* between the challenger and target states.

Lastly, the US case is selected because, in contrast to the other uncontested dominant state of the last 60 years—the Soviet Union—data is available to make a systematic study of dyadic hierarchy possible. This is not to say that there was no variation of hierarchy within the Soviet bloc—historical analysis done by Valdez (1993) within Eastern Europe and Priestland (2009) when describing the development of communist thought demonstrate that undoubtedly there was—rather, focusing on the Soviet Union would require strong assumptions and tremendous leaps of faith given the lack of available data to permit a systematic, large-N analysis. Unfortunately, archival research does not resolve the issue as internal Soviet figures were often

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however, if arms transfers were used as a method of external balancing or to induce conflict in order to "roll back" communist regimes rather than just contain them. Arms transfers are associated with domestic repression of communist and non-communist groups alike, though human rights violations are negatively associated with arms transfers after the Cold War. (Blanton, 1999, 2005). Evidence regarding arms transfers inciting interstate conflict, however, is mixed (Craft, 1999; Kinsella, 1994; Schrodt, 1983). While the initial transfer of arms is found to produce more aggressive foreign policies, arms dependence restrains this effect (Kinsella, 1998). Thus, it is unclear if the US offers arm transfers with the intention of the recipient initiating a conflict or simply to strengthen it in the event of an attack. US involvement as a conflict originator, on the other hand, is a clear signal of support.

exaggerated in order to aid careers of Soviet firm managers and meet the requirements of the government's goals (e.g., Priestland, 2009, 155). Instead, I focus the empirical test on US hierarchy to examine if there is support for the theory in this context and leave evaluating the Soviet hierarchy for future research. To help overcome potential idiosyncrasies introduced by examining only US hierarchy, I test the theory in the context of conflict within the British Empire in Chapter 5.

Empirically evaluating the effect of US hierarchy on conflict is important in its own right, as the results provide an explanation for why there is so little actual conflict observed between states (Goldstein, 2012). I find that hierarchy affects conflict behavior in two ways. First, subordinate states with greater degrees of hierarchy are less likely to initiate conflict. When challenges occur, however, the dominant states uses information on the relative hierarchical positions of both the challenger and the target to decide whether to punish. Challenges aimed at states positioned higher in the relative hierarchy are especially likely to be punished, while the reverse is true for challenges directed at states with relatively lower positions. Finally, dominant states are more likely to respond with coercive action to when alternative hierarchies are competitive.

In the pages that follow, I provide a brief review of the theory and the hypotheses that it generates as they apply to conflict behavior. I then introduce and discuss the two-stage strategic probit model and describe the variables used to conduct the analysis. Finally, I present and interpret the results before concluding the chapter.

3.1 How Hierarchy Affects Conflict Behavior

Many scholars posit that insecurity creates an environment that promotes conflict and dissuades cooperation (Fearon, 1995; Morganthau, 1948; Waltz, 1979). Given this security dilemma, it is surprising how rare militarized conflict is. Deudney (2007, 27) argues that "insecurity results from the absence of restraint on violent power" and identifies two sources of restraint: material and ideational factors. Material factors put physical restraints—geographical or technological—on a state's reach (i.e., loss of strength gradient) (Boulding, 1965). Hierarchy, on the other hand, acts as a ideational constraint, limiting the power of the dominant by alleviating the commitment problem and limiting subordinates by reducing their autonomy.

Hierarchy is more than just one state coercing another to adhere to its wishes. Building on contract theory, hierarchy can be thought of as a relational authority in which one state (the dominant state) provides a good desired by another state (the subordinate state) in exchange for legitimacy conferred to the former (Ikenberry, 2000; Keohane, 2005; Lake, 2009). In fact, subordinate states often tie their own hands and willingly offer varying degrees of their domestic autonomy (e.g., foreign policy) to dominant states in exchange for a good (e.g., security). The trade-off between autonomy and security produces alliances that are easier to form and more stable than alliances designed to aggregate capabilities or "marriages-of-convenience" because they are based on shared preferences regarding specific issue areas rather than short-term material power considerations (Morrow, 1991).

In the previous chapter, I developed an account of hierarchy that focuses on

challenges issued by subordinates and punishments levied by dominants. The basic structure of the social contract relationship is presented in Figure 3.1 and is the same as that of the extensive form game used in Chapter 2. In the first stage, the subordinate chooses whether to challenge the status quo. It weighs its expected benefits from initiating a conflict (resolving a territorial dispute, acquiring additional resources) compared to its material (military and economic costs) and ideational constraints (social hierarchy). If the subordinate elects to challenge, it moves to the second stage where the dominant determines whether the challenge is worth the cost of punishment. In order for the subordinate state to maximize its expected utility, it must account for the expected behavior of the dominant state. That is, the subordinate must decide whether punishment by the dominant is credible and whether the potential gain is worth the cost of punishment.There are three possible outcomes from this interaction: maintaining the status quo, acquiescence by the dominant state, and conflict between the subordinate and dominant states.

3.1.1 Hypotheses about Conflict Behavior

Previous work has identified numerous material factors impacting the propensity of conflict, such as the power ratio between sides, contiguity, and joint democracy (Bremer, 1992; Russett and Oneal, 2001). As was formally derived in Proposition 1, I argue that a state's position within the dominant's hierarchy is also an important determinant of whether it will initiate a conflict. Since hierarchy is a bargain where a subordinate recognizes the dominant's authority in return for some benefit, greater degrees of hierarchy mean that the subordinate is more accepting of the status quo.

That is, barring some change to the benefits they receive, the subordinate state is deriving positive utility from the current political order. In fact, Lake (2009, 30) argues that these benefits becomes stronger as states become more vested in the hierarchical relationship. This means that states located higher within the hierarchy are less likely to challenge the dominant state while states located at lower positions are expected to act more autonomously.

Within the US hierarchy, this implies that states with greater degrees of hierarchy, such as Canada and South Korea, are unlikely to initiate an unauthorized militarized dispute than a state at a low position, such as Iran. This is true even if they have an outstanding issue with another state that, all else being equal, they would prefer to address with military force, because the former states generally accept the political order offered by the US, while the latter does not. In a way, states that are lower within the US hierarchy on a given issue can be thought of as "revisionist" in the sense that they are willing to actively pursue an alternative status quo to the current one. In contrast to the typical use of a "revisionist state" (e.g., Schweller, 1994; Wolfers, 1962), however, the conception of hierarchy offered here allows states to be placed on a continuum of status quo acceptance.[3] States that are more accepting of the US' political order should be more compliant and therefore less likely to pursue an independent foreign policy and initiate conflicts that are not congruent with US aims. This means that Proposition 1 can be rewritten as a hypothesis within

[3]States that are low in the dominant's hierarchy along several issue dimension can, from the perspective of the dominant, be thought of as "rogue states" (Caprioli and Trumbore, 2005; George, 1993).

the context of the US hierarchy as:

Hypothesis 1. *The greater the degree of hierarchy between a state and the US, the less likely the state is to initiate a militarized challenge to the status quo.*

Because hierarchy is a form of relational power, authority is given rather than assumed (Lake, 2009, 20). Thus, a dominant only holds its position because subordinate states are willing to confer authority to it. While a dominant can coerce other states to act by threatening violence (i.e. imperialism), such actions are costly and do not permit the same degree of global influence as gaining legitimacy. In fact, predatory actions undermine the legitimacy on which the social contract is built.[4] If the dominant state abuses its position or fails to provide sufficient benefits, a subordinate may choose to adjust their ideal point closer to complete autonomy or turn to alternative providers of hierarchy.

As was expected from Proposition 2, the presence of multiple dominants in the system, each with their own hierarchy, forces dominants to compete for subordinates (i.e., the US or Soviet Union during the Cold War). One way to do this is to provide political order by punishing states that initiate conflicts aimed at members that are closer to the dominant (i.e., "dominated subordinates"). The absence of competi-

[4]This helps explain the pattern noted by Forsythe (1992) and Thyne (2010) of democratic great powers using covert operations when seeking to remove some uncooperative democratic regimes. The use of overt operations, however, is not limited to democratic powers and were frequently conducted by the Soviet Union, even against states within the Eastern bloc (Johnson, 1992; Priestland, 2009). By their secretive nature, such predatory actions are less likely to be known by third-party states and thus less likely to be seen as a violation of the hierarchical arrangement. For illustrations of covert operations, see Kim (2005) for a case study of US activity in Chile and Mawby (2002) regarding British actions in Yemen.

tion, on the other hand, alleviates the pressure on the dominant to provide order to their subordinates, just as a monopolistic firm faces less pressure to provide quality products to customers. With few legitimate alternative hierarchies to compete with, dominant states are more likely to find that the costs of enforcement outweigh the benefits of strictly regulating subordinates' foreign policies or providing protection. Thus, when the dominant is strong relative to other great powers, the dominant state is less likely to defend their subordinates.

Within the US context, this means that in periods when alternative powers such as Russia or France are relatively strong, the US is forced to compete for subordinates by more vigorously protecting subordinates when they are attacked. In contrast, when the US is strong compared to other great powers, it is able to lower the quality of the "product" it is offering to subordinates, as there are few legitimate competitors that can other similar benefits. Thus, Proposition 2, when recast within the US context, produces the following hypothesis:

Hypothesis 2. *When the US is strong relative to alternative great powers, it is less likely to punish challenges.*

Finally, not all challenges are viewed equally by the dominant. States low in the hierarchy are more likely to challenge since they are generally outside of the dominant power's influence. However, as demonstrated in Proposition 3, challenges that are directed against third parties that are closer to the dominant are more likely to be punished. Attacks against states close to the dominant are viewed as serious challenges to their political order, perhaps even as an indirect attack on the dominant

state itself. This is well known within the deterrence literature, where an attack on a "protégé" is treated as an attack on the defending dominant power (George and Smoke, 1974; Huth, 1988). Allowing attacks on subordinates that are located high within the hierarchy would be a violation of the social contract and potentially call into question the legitimacy of the hierarchical arrangement.

In addition, not all target states are responded to in the same manner by the dominant state. Though states that are close to the dominant are unlikely to challenge, such states are unlikely to be punished, especially if their target occupies a lower position within the hierarchy. This is because when punishing, the dominant takes into account not just the absolute hierarchy position of the challenger and the target, but also their relative positions vis-à-vis each other or *relative hierarchy*. Here the theory builds on the general deterrence literature, and extends it by treating the status of a "protégé" as continuous and relational rather than a binary measure. Therefore, challenging subordinates consider their location in the relative hierarchy—and the associated risk of punishment—when selecting their targets. Thus, the concept of general deterrence is enriched by considering the implicit threat of retaliation dependent on the location of the target and aggressor within dominant's hierarchy.

This theoretical insight helps explain the reaction of the US during the 1956 Suez War when France, Great Britain, and Israel, all closely aligned with the US, invaded Egypt. Specifically, US displeasure with the invasion can be explained by Egypt's ascent within the US hierarchy at that time. Consistent with the theory described here, both the US and Egypt offered certain benefits to the other. Egyptian

President Nasser actively sought US support, thinking that the US "special relationship" with Great Britain would restrain British actions towards Egypt (Gaddis, 1998, 168; Thornhill, 2004). At the same time, many high ranking officials in the US, including Secretary of State John Foster Dulles and Egyptian Ambassador Jeffrey Caffey, believed that Nasser was willing to surrender autonomy and lead an informally allied Arab League against the Soviet Union (Burns, 1985, 11; Gaddis, 1998, Neff 1981, Thornhill, 2004). The US acted to reinforce the relationship, publicly supporting Egypt in various disputes with Israel in 1953 and 1954 (Neff, 1981, 43-44). Only after Nasser thanked the Soviet Union for their role in resolving the Suez crisis—despite privately saying that it was US economic pressure that forced the British, French, and Israelis to withdraw—did the US begin to shift its attention away from promoting a policy of an Egyptian-dominated Middle East, offering little to no support until the Israeli-Egyptian peace accords of 1992 (Gaddis, 1998, 173-175). One is left to wonder if the US would have been as likely to risk tensions with its long-time allies in 1954, had it not been actively wooing Egypt as the focal point of its Middle East policy.

When taken into US context, the logic of Proposition 3 leads to the hypothesis:

Hypothesis 3. *When challengers are located lower within the US hierarchy than their target, they are more likely to be punished.*

3.2 Research Design

I test these hypotheses using directed-subordinate-years for the time period 1950-2000. Directed-subordinate-years contain information about each subordinate state and the dominant state, as well as information regarding each subordinate

state's characteristics and behavior vis-à-vis each subordinate state. Subordinate-years are necessary because hierarchy varies by country and over time. Directed-subordinate-years account for both the actions of Subordinate A toward Subordinate B and Subordinate B towards Subordinate A, including their relative hierarchy with one another. This unit of analysis allows for identification of which subordinate state initiates a conflict in the first stage of the analysis—a challenge of the status quo—and whether the dominant state punishes the challenger in the second stage. Directed-subordinate-years are generated by first creating directed-dyads for all Correlates of War state system members using the the software package EUgene (Bennett and Stam, 2000). Next, I merge subordinate-dominant dyadic information to create subordinate-years for all states.

I use the time period 1950-2000 owing to data availability of the hierarchy explanatory variable. I measure hierarchy using data originally generated by Lake (2009, Ch 3). These data treat the US as the system's dominant state and are discussed in more detail below. I have data for 141 countries, which yields 549,576 non-missing observations in the sample.

3.2.1 Methodology

I analyze the data using a two-stage strategic probit model (Bas, Signorino and Walker, 2008; Carrubba, Yuen and Zorn, 2007). This statistical estimator is appropriate, as it allows to account for the nonrandomness of the sample, resulting from the strategic selection of targets on the part of challengers (Danilovic, 2001; Smith, 1996*b*). A failure to model this selection effect would produce biased estimates and

incorrect inferences (Clarke and Signorino, 2010).[5] A two-stage strategic probit model is in effect a recursive system of equations, also referred to as statistical backwards induction (SBI) (Bas, Signorino and Walker, 2008, 26-27).[6] In substantive terms, the estimator effectively treats subordinate states as able to calculate their expected utilities from a challenge by estimating the probability of a punishment from other observed cases of challenges. The challenger use this estimated probability, or a belief regarding the threat of punishment, to weigh the costs and benefits they would derive from challenging the status quo. This allows the estimator to effectively isolate the independent effects of the predictors, such as the pacifying effects of hierarchy from the deterring effects of military power and relative hierarchy, by allowing each outcome to have their own equation within a random utility model (McFadden, 1974, 1976).

The utilities associated with each outcome are composed of an observable and an unobservable component, such that $U^*_{i_j} = U_{i_j} + \pi_{i_j}$ where i is the state and j is the payoff. The observable utility U_{i_j} is captured by a set of regressors and the unobservable component π_{i_j} represents private information, such as its military's ef-

[5]Though a strategic probit is a type of selection model, it is important to note that it is not the same as a bivariate selection model (Signorino, 2002; Smith, 1999). In a traditional selection model, a state's behavior in the first stage is conditioned only by its own expected action in the second stage (Heckman, 1976, 1979). In a strategic model, however, a state's behavior in the first stage is conditioned on both its own expected behavior *and* the expected behavior of the other state in the second stage. Signorino (2002) uses Monte Carlo simulations to demonstrate that a strategic model outperforms the bivariate selection model unless states are almost completely unaware of one another's preferences.

[6]The model can also be estimated simultaneously rather than recursively. SBI is used because it more quickly and easily identifies and computes the likelihood function while making better use of observed data (Bas, Signorino and Walker, 2008, 7-8).

fectiveness or resolve, that is known only to state i. State i's private component is assumed to be a random variable with a standard normal distribution. The private information component accounts for uncertainty regarding the other state's true intentions (Midlarsky, 1974; Signorino, 1999). The less certain a state is about another state's private information, the less information the observed utilities convey and the greater the variance associated with their utility calculation (Signorino, 2003).[7]

Figure 3.2 displays the empirical specification of the strategic model. Consistent with the theory outlined in Chapter 2, subordinates located high within the dominant state's hierarchy are expected to maintain the status quo. Thus, $X_{S_{11}}$ represents the subordinate's degree of hierarchy, which is treated as the observable component of the utility function. This can be written formally as $U_S(\neg Chal) = \beta_{S_{11}} X_{S_{11}}$. Standard explanations of why a subordinate would initiate a conflict with a targeted state are captured by observable variables represented by $X_{S_{22}}$, while the subordinate's utility from the dominant state acquiescing to a challenge is captured by a parameter, $\beta_{S_{21}}$. Each outcome depends on the expected action of the dominant, where p represents the subordinate's belief that the dominant will punish them and $1-p$ that they will not punish. Thus, the subordinate's expected utility from challenging can be rewritten as $U_S(Chal) = p(\beta_{S_{22}} X_{S_{22}}) + (1-p)(\beta_{S_{21}})$.

The expectations associated with the dominant state are represented by $X_{D_{22}}$,

[7]McKelvey and Palfrey (1996, 1998) describe an alternative model of behavior where states are bounded rational, sometimes playing suboptimal strategies but selecting better strategies more often. Thus, the random component is derived from errors on the part of states to implement correct strategies. While conceptually distinct from the private information assumption, the approaches produce substantively similar results given the relationship depicted in Figure 3.1, though in other structures this is not always the case (see Signorino, 2003).

which captures both the theoretically relevant position of a dominant relative to alternative dominant states and the degree of relative hierarchy between a challenging subordinate and their target. This can be written as $U_D\left(Pun\right) = \beta_{D_{22}} X_{D_{22}}$. Finally, the acquiescence outcome for the dominant is normalized to zero, or $U_D\left(\neg Pun\right) = 0$.[8]

Consistent with the SBI principles, the second stage of the model (the dominant's response to a challenge) is estimated first, and the resulting expectation is used to condition the behavior in the first stage (the subordinate's decision to challenge). If the variance is assumed to be normally distributed with $\sigma^2 = 1$, the probability that $U_D\left(Pun\right) > U_D\left(\neg Pun\right)$ in cases where a challenge occurred can be estimated using a probit model (Bas, Signorino and Walker, 2008; Signorino, 2007). This provides estimates for $\beta_{D_{22}}$ as well as for p, the subordinate's belief that the dominant punishes a challenge. From observing cases where the dominant has been forced to respond to a challenge, a subordinate is able to gather information and estimate the probability of punishment from other cases. When p is low, they believe that punishment is unlikely, while if p is high, they believe that punishment is likely.

The subordinate's expected value for challenging can be calculated by multiplying p with the regressors $X_{S_{22}}$ while $1 - p$ is multiplied with the constant from the *Acquiesce* outcome. This mimics the formal game depicted in Chapter 2 by noting that the benefits that a challenging state expects to gain are conditioned by the risk that the dominant punishes their action. These modified regressors are then included

[8]In order to statistically identify the model, the same variable cannot be included in every equation associated with an actor (Signorino and Tarar, 2006, fn 12). In the case of the subordinate state, a constant term is suppressed in the conflict equation.

in a probit model identifying the probability that $U_S\left(Chal\right) > U_S\left(\neg Chal\right)$, which is the likelihood that the subordinate challenges (Bas, Signorino and Walker, 2008, 7-9, 18-19). Modified regressors are necessary because using first-order regressors would ignore that the variables associated with a challenge are conditioned by the expected action of the dominant state. Ignoring this would produce biased and inconsistent parameters (Signorino and Yilmaz, 2003). Thus, the use of the strategic model allows for isolating the effects of each theoretically relevant factor for both subordinate and dominant states.

Calculating the standard errors (SEs) is slightly more complicated. SEs for coefficients related to the dominant's choice require no modification because the dominant's choice does not depend on the expected actions of anyone else (Bas, Signorino and Walker, 2008, 29). Instead, the dominant acts only when a subordinate challenges. Potential problems arise, however, when calculating SEs associated with the subordinate's coefficients because the subordinate's decision is conditioned by the expected action of the dominant state. Ignoring this conditional relationship would produce inconsistent SEs. I account for this by employing nonparametric bootstraps.[9]

3.2.2 Dependent Variables

Two dependent variables are used to represent the actions of the subordinate and dominant. The first dependent variable indicates whether a state challenges the status quo. *Challenge* is a dichotomous variable coded as 1 if state A initiates any

[9]Bootstrapping calculates sample estimates by resampling the sample data. See Efron and Tibshirani (1993).

militarized interstate dispute (MID), defined as the threat, display or use of military force, without the US as originator on the same side. I exclude of joiners—states which become conflict participants after the first day of a dispute—because they did not initiate a conflict, but may have been drawn in by an alliance or saw fighting spillover onto their soil, such as Syria's involvement in a 1994 clash between Israel and Lebanon. Any independent dispute initiation, therefore, is viewed as an attempt to move the status quo closer to their ideal point and, by definition, away from that of the dominant. MID data are obtained from the Correlates of War (Ghosn, Palmer and Bremer, 2004).

Given the general willingness of the US to resort to military means when it seeks international change,[10] as well as its tendency to form coalitions[11] or aid allies, states that initiate conflict without initial US support must find their existing situation unacceptable and are unwilling to compromise their aims to the extent that is necessary to gain US support (Morrow, 1991, 909). While the US may later offer to support an ally's aggressive actions, the lack of the initial US support suggests that it did not want a conflict to occur, at least at that particular time. Hence, such conflict initiation represents at least a nominal challenge to US authority.

The second dependent variable represents coercive responses by the dominant

[10]Great powers have a higher than average tendency toward conflict initiation (Bremer, 1992; Chiba, Machain and Reed, 2013).

[11]The US and other major powers frequently build coalitions or seek authorization from international bodies prior to initiating conflicts (Krahmann, 2005; Tago, 2007). The US, for instance, has been a member of a coalition in all of its modern wars (Silkett, 1993). This is not the result of happenstance; the US actively seeks to build multilateral coalitions when initiating conflicts, in part to legitimize such actions (Mastanduno, 1997; Lake, 2009).

to challenges. *Punishments* are operationalized as a dichotomous variable indicating either a MID or economic sanctions initiated by the US towards the challenger in the same year or one year later.[12] MIDs and economic sanctions are only considered a *punishment* if the subordinate has already initiated a challenge. Data related to the threat or use of sanctions are gathered from the Threat and Imposition of Sanctions (TIES) dataset (Morgan, Krustev and Bapat, 2006). Sanctions are coded as "actions such as tariffs, export controls, embargoes, import bans, travel bans, freezing assets, cutting foreign aid, and/or blockades" (Morgan, Krustev and Bapat, 2006, 1). Both militarized and economic actions are included because they may be used as substitute forms of punishment (Most and Starr, 1989). In the sample, punishments occur in twenty-eight percent (180/652) of *challenges*. Approximately seventy percent (127/180) of all *punishments* within the sample involve MIDs—almost half of which are used in conjunction with economic sanctions (66/127)—with the exclusive use of economic sanctions making up the remaining thirty percent (53/180).[13]

3.2.3 Independent Variables

3.2.3.1 Subordinate Status Quo Regressors ($X_{S_{11}}$)

Hierarchy is more than just coercion by a powerful state over a weak state; it is the degree of legitimacy conferred on a dominant state. The literature offers several alternative operationalizations of this concept (Pahre, 2005, 480-481). I use Lake's

[12]I present results looking at only *punishments* in the same year in Table 3.4 and 3.5.

[13]That economic sanctions and MIDs are jointly used as punishments is consistent with previous findings (Peterson and Drury, 2011). Results that include only militarized *punishments* are presented in Table 3.6 and 3.7.

(2009, Ch 3) measures of hierarchy because they are continuous variables that capture the degree of legitimization along multiple dimensions that each subordinate affords the dominant each year. Higher values along any of the dimensions are associated with a greater values of hierarchy.

Lake measures hierarchy along two dimensions: security and economic. He operationalizes *security hierarchy* with two measures. The first is based on the number of *military personnel* that the US stationed in a country divided by the host country's population.[14] Lake (2009, 69) argues that "to the extent that B accepts A's personnel on a continuing basis, this control can be regarded as legitimate and, therefore, authoritative" (see also Morrow, 1991, 905). This means that as a subordinate accepts more of the dominant's troops, they are tacitly accepting their authority. The measure acknowledges that hierarchy is a two-way street: a subordinate must permit the dominant to maintain troops within its territory and the dominant must want to do so (e.g., the territory holds strategic value).[15] Military personnel data were originally compiled from the Department of Defense and population data are from Gleditsch (2002).

The second measure of *security hierarchy* concerns the number of allies that the subordinate shares with the dominant as a proportion of all formal alliances. The

[14]Each of the hierarchy measures is normalized to 1 by dividing them by their highest value in 1995 to ease comparability between states and over time (Lake, 2009, 69).

[15]While in cases where troops originally placed in a country at the conclusion of a war hardly seems like a subordinate state granting "permission" (e.g., Germany and Japan at the end of World War II), their post-conflict governments did agree to the arrangement. In addition, subsequent governments choose whether to allow troops to remain in their territory. While the political costs to demanding the removal of troops is likely to be high, such an option is available if the state is willing to pay them.

logic here is that states with non-diversified alliance portfolios are more accepting of the dominant state's foreign policy (see Morrow, 1991). In other words, states with more independent allies are more independent of the dominant state. *Shared alliances* is operationalized as one divided by the number of independent alliances; hence, the larger the value, the less independent allies and the greater the level of hierarchy.[16] While similar to S-scores, the measure examines alliance portfolios in terms of embeddedness with one state, the dominant, rather than their overall similarity (Signorino and Ritter, 1999). The measure implies that not all alliance ties are created equal; alliance networks anchored around key states provide more information about foreign policy preferences than looking at similarities more generally. As a robustness check, the security variables are used both as an additive index and as separate variables, though they are not highly correlated ($r = 0.17$) within the sample. Alliances are coded as 1 if there is a formal agreement (defense pact, non-aggression pact, or entente) between countries and zero otherwise. Alliance data are from Gibler and Sarkees (2004); Singer and Small (1966).

The second dimension captures *economic hierarchy*. This is also operationalized with two measures. The first concerns exchange rates. The level of autonomy a state has over its exchange rate directly affects its control over its monetary policy. Higher degrees of hierarchy imply that states have less control over their domestic economy. This measure seems an especially appropriate measure of authority "since exchange rates are typically chosen with only minimal pressure from the anchor coun-

[16]Lake (2009, fn 13) notes that a subordinate state is assumed to be allied with itself. This means that the denominator is always at least one.

try, but are nevertheless constraining..." (Lake, 2009, 73). *Exchange rate* is coded on a four-point scale using IMF measures where higher scores indicate greater hierarchy. These are, in order of most to least autonomous: floating exchanges, a crawling peg, fixed exchange, and "merged" or "dollarization." Floating exchange rates change value according to market forces and include most of the world's major currencies (e.g., the euro, Japanese yen, British pound, and US dollar). Crawling pegs are currencies that 'float' within a specified range of a foreign currency or a bundle of foreign currencies (e.g., Chinese yuan). Fixed exchange rates include most countries during the 1950s and 1960s under Bretton Woods. Lastly, dollarization refers to pegging one's currency directly to a foreign currency, such as the US dollar (e.g., Ecuador, El Salvador, and Panama). Exchange rate data are based on the classification devised by Reinhart and Rogoff (2004) for currencies anchored to the US Dollar. Currencies not anchored to the US Dollar are coded as 0. Anchor currency data is from Meissner and Oomes (2009).

The second measure looks at a subordinate's trade dependence on the dominant compared to other major powers in the system. Similar to the independent allies argument, failure to diversify trading partners is viewed as an acceptance of the status quo. *Trade dependence* is operationalized as a country's total trade with the US divided by its GDP. The level of trade dependence the state has with each of the other major powers (defined as the other permanent members of the UN Security Council) are calculated and subtracted from that of the US and truncated at zero. As with security measures, I include model specifications with the additive index and with separate measures since the two economic measures are not highly correlated

($r = 0.23$) within the sample. Trade data are originally from Gleditsch (2002).[17]

The measures of hierarchy outlined above capture a contractual relational power that exists independent of coercive military power. In fact, neither the *security* nor *economic* dimensions of hierarchy are highly correlated with traditional measures of military power, such as the *power ratio* measure (discussed below), with $r = -0.09$ and $r = 0.01$ within the sample, respectively. This means that a stronger state in terms of coercive capabilities, such as Great Britain or Japan, is nearly as likely to be a "dominated subordinate" as a weaker state, such as El Salvador or New Zealand.

3.2.3.2 Subordinate Conflict Regressors ($X_{S_{22}}$)

Subordinate's utility from challenging the status quo depends on a number of factors aside from hierarchy. States that are strong in terms of material power are expected to seek greater autonomy. Three measures are used to represent a state's military capabilities: *power ratio*, *power ratio*^{2} and *power change*. These are measured using the Correlates of War's CINC variable, which measures a country's power based upon economic and military capabilities and population size (Singer, 1987; Singer, Bremer and Stuckey, 1972).[18] *Power ratio* is measured as the CINC

[17]Lake's original data do not included values for trade dependence, nor the aggregated economic hierarchy measure, for Great Britain, China, France, or Russia (the other permanent members of the UN Security Council). I modify his data by calculating these values following the procedures outlined by Lake (2009, Ch 3), except I only subtract the other three permanent UN Security Council member's trade from that of the US. The result in all cases is a zero value on the trade dimension. To calculate the aggregated value, I divide the sum of the two dimensions (*trade dependence* + *exchange rate*) by 1.3333333, which was the greatest *economic hierarchy* score in 1995. Not including these cases does not alter the substantive results in any way.

[18]Economic capabilities are based upon a state's iron and steel production and energy consumption. a state's military personnel and military expenditure compose its military

score of the state A divided by the sum of A and B or *power ratio*= $\frac{\text{CINC A}}{\text{CINC A+CINC B}}$. In this equation, state A represents the potential challenger and B the potential target state. Perfect preponderance would equal 1 and perfect symmetry would equal 0.5.

Power ratio and *power ratio*^{2} capture the competing claims associated with relative parity. A state is more likely to initiate a conflict against a target if is relatively equal in strength (Bennett and Stam, 2004; Kugler and Lemke, 1996). States with and overwhelming preponderance of power, however, are less likely to have a militarized dispute, as the weaker state will back down if confronted. The inclusion of the squared terms captures this non-linear effect.

Power change acknowledges that growing states may be more dangerous while weakening states less so as later developers learn from those that transition before them (Gerschenkron, 1962). In addition, growing states have expectation of continued growth and may act more aggresively (Doran, 2003). *Power change* is measured by subtracting State A's CINC score in the current year from its CINC score the previous year. *Power ratio* and *power change* are rescaled as percentage points for ease of interpretation.

I also include a control for *Civil wars*, which are expected to reduce the likelihood of a challenge, as states experiencing a civil war are preoccupied with domestic concerns. Civil war is defined as any conflict between the government and non-state actor with at least 1,000 battle deaths in a twelve month period. *Civil wars* are coded dichotomously and are obtained from the Correlates of War project (Sarkees,

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capabilities. Finally, population capabilities are configured as a state's total population, as well as its urban population.

2000). The number of *previous challenges* by a state is also included in the analysis as conflict is path dependent, with both states viewing each other in more antagonistic terms with each additional conflict (Colaresi, 2004; Goertz and Diehl, 1995; Jones, Bremer and Singer, 1996). A large number of previous challenges could also represent a state that is outside of the dominant's hierarchy (i.e., non-aligned subordinate).

Subordinates are more likely to initiate challenges against contiguous neighbors. Contiguous states are more likely to have unresolved territorial issues, which tend to be more contentious than other issue types (Hensel, 2001; Hensel et al., 2008; Vasquez, 2009). The effect of contiguity goes beyond merely having increased interaction; contiguous states exhibit different behavior towards neighbors than they would towards other states with similar characteristics (i.e. regime type, trade volumes) (Reed and Chiba, 2010; Vasquez, 1995). I treat *contiguity* as a dichotomous variable where 1 indicates that states share a land border and 0 otherwise (Bennett and Stam, 2000).[19]

The literature offers a number of theoretical expectations regarding the effects of trade on subordinate-subordinate conflict. Grieco (1988) and Gowa (1989) theorize that states view their gains from trade in zero-sum terms: state A's gains detract from state B's level of satisfaction. Therefore, states fear relative losses because they view such losses in terms of decreased autonomy and security. As a result, relative losses from trade may lead to conflict. Rosecrance (1986) argues that the opportunity costs of war are too great for countries that are highly engaged in trade, as war interferes

[19]Changing the operationalization of *contiguity* to include neighbors with 12 miles or even 400 miles of open sea did not substantially alter the results.

with trading lines. Such divergent results are also found in the empirical literature as several scholars discover that trade reduces conflict (Gartzke, 2007; Russett and Oneal, 2001), others show that a positive effect (Barbieri, 2002; Gowa, 1994), while yet a third camp finds no effect (Keshk, Pollins and Reuveny, 2004).[20] Trade is measured as a percent of GDP using data from the Correlates of War project (Barbieri, Keshk and Pollins, 2009).

Finally, previous studies demonstrate that democracies are less likely to attack other democracies (Reed, 2000; Russett and Oneal, 2001). *Joint democracy* may represent an ideological cost (Maoz and Russett, 1993) or operate as an institutional constraint on leaders who wish to initiate a conflict (Bueno de Mesquita et al., 1999). Democracy is measured using the 21 point Polity score of the country where scores of 10 indicate democracy and scores of -10 autocracy (Marshall and Jaggers, 2008). *Joint democracy* is a dichotomous variable that is given a value of 1 if both members have democracy scores of at least 6, and 0 otherwise.[21]

3.2.3.3 Dominant Conflict Regressors ($X_{D_{22}}$)

Several variables are expected to affect whether the dominant punishes a challenge. The most important of these are the strength of alternative dominants and the challenger's location within the hierarchy vis-à-vis its target. Dominant states compete for the authority of subordinates. When multiple dominant states are present

[20] See Barbieri and Schneider (1999) for a summary of the contrasting formal expectations and empirical results regarding trade and conflict.

[21] Other thresholds were used in the two models without altering the results in any meaningful way.

and strong, subordinates are free to join the hierarchies that provide the greatest benefits. When one dominant is strong compared to other powers, however, it is under less pressure to provide expensive benefits, such as political order. *Global power* represents the degree to which the dominant state has military supremacy over other major powers. This variable is measured as a ratio of the dominant state's CINC score over the total CINC score of all great powers (as defined by the Correlates of War project) rescaled as percentage points for ease of interpretation (Singer, 1987; Singer, Bremer and Stuckey, 1972).[22]

Relative hierarchy variables are used to reflect the hierarchical position of the challenger compared to that of the target state. As was noted earlier, not all challenges are weighted equally by the dominant. This variable represents the severity of a challenge as it is viewed by the dominant state. When the challenger attacks a target that outranks it within the dominant's hierarchy, such a challenge generates a positive *relative hierarchy* score, increasing the dominant's utility to punish as the dominant views this as a significant challenge against their legitimacy. When, on the other hand, the challenger outranks its target within the hierarchy, such a challenge will create a negative *relative hierarchy* score, as the dominant is less likely to view this as a serious challenge. The US is more likely to "look the other way" when a state that is relatively high within its hierarchy, such as South Korea, is settling scores with an external rival that is lower in the hierarchy, such as North Korea,

[22]Within the time frame under review, great powers are operationalized as China (1950-2000), France (1950-2000), Germany (1991-2000), Japan (1991-2000), Great Britain (1950-2000), the US (1950-2000), and Russia/USSR (1950-2000) (Small and Singer, 1982).

but it much more likely to come to the aid of South Korea, if the direction of the threat is reversed. Mathematically, values of *relative hierarchy* are generated as the difference in hierarchy scores between a potential target and a potential challenger (i.e., all states are compared to one another). This is done for both the security and economic dimensions of hierarchy, and for each of their components. This variable is especially important when considering Hypothesis 3.

The punishment equation also contains a number of control variables. A dominant power is more likely to punish challengers that it can defeat rather than those that stand a greater chance of defeating them in a conflict. That is, the US is more likely to punish challengers as the balance of capabilities are increasingly in its favor. To capture this, I include a *power ratio* variable, that is calculated as a ratio in CINC score between the US and the challenger or *power ratio*$= \frac{\text{US CINC}}{\text{US CINC+Challenger CINC}}$. There is a point, however, where dominant states are unlikely to care if the weakest states in the system challenge their authority, since such actions are of likely trivial consequence to the larger region or system. To capture this non-linear effect, a squared term is also included.

Ongoing MIDs is a count variable tracking the total number of MIDs with US involvement in a given year. I expect a negative association between *ongoing MIDs* and punishment, since US involvement elsewhere ties up its forces and increases the marginal cost of additional interventions.

More distant locations increase the cost of fighting, as the costs of supporting troops increases (Bueno de Mesquita, 1981). This holds even if the dominant state has troops stationed in nearby states, as invading or occupying a hostile country

requires greater logistical prowess. Data regarding *distance* are logged and obtained from EUgene (Bennett and Stam, 2000).

I also control for the effect of *previous challenges* and *joint democracy*. *Previous challenges* should decrease the probability of a punishment, all else equal, as such states are likely outside of the dominant's social hierarchy. Democratic dominants are expected to be less likely to punish democratic challengers, for the same reasons as discussed in the subordinate's conflict equation. Descriptive statistics of each of these variable are displayed in Table 3.1.

3.3 Empirical Analysis

Tables 3.2 and 3.3 present the results of the strategic probit and Figures 3.3 and 3.4 provide substantive interpretations of these results. Table 3.2 displays the specification with the aggregated hierarchy measures, while Table 3.3 presents the specification using individual hierarchy components. Each table includes the coefficients and standard errors from both the subordinate and dominant states. I describe the results of each model before moving on to discussing their substantive implications.

In Table 3.2, the coefficient for *security hierarchy* is positive and statistically significant for the subordinate in the status quo equation, while the coefficient for *economic hierarchy* is insignificant. Table 3.3 demonstrates that the *security hierarchy* result is driven by *shared alliances*, as it is positive and statistically significant while *military personnel* is insignificant. Each of these results indicates that the status quo becomes more attractive as the degree of hierarchy increases. This provides

support for Hypothesis 1, which expected that subordinates located higher within the hierarchy are less likely to challenge the status quo.

The lack of significance on the *economic hierarchy* variable in Table 3.2 suggests that the economic dimension may be less important to subordinates' strategic decision-making. Table 3.3 provides additional support, as *exchange rate* is insignificant, though *trade dependence* is negative and significant at the .1 level for a one-tailed test. The later result, however, is not overly robust to alternative specifications. These results suggest that, in terms of social hierarchy at least, economics factors do not seem to affect conflict behavior.

Tables 3.2 and 3.3 provide support for Hypothesis 2, which posited that when the dominant state is strong relative to alternative great powers, it is less likely to punish the challenging subordinates. The *global power* coefficient is negative and statistically significant in the dominant's conflict equation in each table. This means that an increase in the dominant's power vis-à-vis other great powers results in a decrease in the probability of punishments. This result holds in each model.

Relative security is positive and statistically significant. Recall that this variable reflects the hierarchical position of the target compared to the challenger. The positive coefficient on *relative security* indicates that a target located at a higher position within the hierarchy relative to the challenger is more likely to be punished. Both *relative shared alliances* and *relative military personnel* are positive and statistically significant, suggesting that both factors are important considerations to the dominant regarding its likelihood of issuing a punishment. This outcome provides support for Hypothesis 3, which posited that challengers act strategically and generally choose

targets, who are located below them in the hierarchy. The degree of relative economic hierarchy does not seem to have the same impact, as the *relative economic* coefficients are statistically insignificant in the dominant's punishment equation for both the aggregate and component models.

Most of the remaining variables have the expected effects or are statistically insignificant. A few of the results, however, are surprising. Subordinate states engaged in *civil war* are more likely to initiate challenges, as evident by the subordinate's conflict equation. This may be explained by previous studies that find governments sometimes attempt to divert attention away from domestic conflict by engaging in foreign conflicts (Enterline and Gleditsch, 2000; Gleditsch, Salehyan and Schultz, 2008) or those that highlight the transnational aspects of civil war (Gleditsch, 2007; Salehyan and Gleditsch, 2006). *Trade* is also positive and statistically significant, suggesting that increased trade between subordinate's is associated with a greater probability of conflict. Turning to the dominant's conflict equation, the coefficient associated with *ongoing MIDs* indicates that dominants are more as likely to punish challengers when they are already engaged in existing MIDs. This surprising result holds even if *punishment* is coded to only include MIDs, as evidenced by Tables 3.6 and 3.7, albeit only at the .1 level in a one-tailed test.

Directly interpreting the effects of security hierarchy in Table 3.2 is difficult because it enters the model in two separate ways—in the subordinate's status quo equation and in the dominant's punishment equation through the relative measures. For ease of interpretation, Figure 3.3 presents predicted probabilities for each of the three outcomes of the subordinate-dominant relations: status quo, acquiescence by

the dominant, and conflict between the dominant and subordinate. Predicted probabilities are calculated by varying security hierarchy for the challenger while holding the target's level of hierarchy constant at either the 5th percentile, the mean, or the 95th percentile. Substantively, these values reflect "non-aligned," "semi-autonomous," and "dominated subordinates" from Figure 1.1.

It is necessary to hold the target state's level of hierarchy constant because changes in the challenger's hierarchy impact the probability of challenges in two ways: directly as subordinates with higher hierarchy positions are less likely to challenge, and indirectly as increases in its hierarchy score also change its relative hierarchy vis-à-vis the target. The latter affects the likelihood of punishment for the potential challenger, thus impacting its expected utility of challenging. To make the predicted probabilities more realistic, I examine each outcome for the situation where challengers are autocrats and their target is a contiguous state, while all other variables are held at their mean or median values as appropriate.[23]

Figure 3.3 illustrates four substantively important results. First, comparing the location of the long dashed line among the three parts of the graph from left to right, we can see that there is a direct relationship between the target's hierarchical position and the probability of dominant–subordinate conflict. The probability of conflict is greater as we move from non-aligned to semi-autonomous targets, and as we move from the semi-autonomous to dominated targets.

[23]Holding all variables at their mean or median values generates similar results. The benefit of setting variables to more meaningful values is that it helps create and examine more realistic and substantively important scenarios (Signorino and Tarar, 2006, 596).

Second, let us explore the changes in the probability of a challenge, represented by the solid line. The most common type of challenges are those directed against states located at higher positions within the hierarchy, even though such challenges are the most likely to be punished by the dominant. Moving from left to right on the graphs, one can see that non-aligned states are targeted less frequently than semi-autonomous states, and semi-autonomous states are targeted less frequently than the dominated states. This result stems from Proposition 1, which posited an inverse relationship between the probability of a challenge and the degree of hierarchy, while controlling for the moral hazard induced from the lower likelihood of punishment. As the degree of hierarchy declines, therefore, challenges become increasingly likely. Moreover, directing a challenge against a target located higher within the hierarchy represents a greater challenge to a status quo, which makes such challenges more attractive to the challengers who derive a lower utility from the status quo (note the relationship between $H_T - H_S$ in Equation 2.6). This helps explain Cuban involvement in US-backed Angola and Ethiopia, covert US operations in Tibet and Cuba, as well as US interventions in Soviet-allied Grenada and North Vietnam. In addition, states that are located at a low position within one hierarchy may be located at a high position in an alternative, rival hierarchy, or even be the dominant in an alternative hierarchy.

Third, states that are closer to the dominant are less likely to challenge, regardless of the hierarchical position of the target. This is evident by looking at the declining slope of the solid line in each of the graphs. This is consistent with the theoretical expectation that states located higher within the hierarchy are more ac-

cepting of the status quo and are less likely to act in a unilateral manner. Finally, dominants are always more likely to acquiesce than punish, as the short dashed line is always located above the long dashed line.

Figure 3.4 reflects the proportion of challenges that result in conflict as opposed to acquiescence and demonstrates that dominant states do not weigh all challenges equally. Figure 3.4 shows that conflict between the dominant and the challenger is more likely for targets located closer to the dominant within the hierarchy. This is evident by the increased position of the line when moving left to right across the graphs. While dominants are always more likely to acquiesce to challenges than to punish, they are especially likely to acquiesce when the target is positioned lower than the challenger, as opposed to when the target is positioned higher than the challenger. Moreover, dominants are more likely to acquiesce to states that are located at higher positions within in their hierarchy. This is illustrated by the declining slope of the line as the degree of hierarchy increases in each of the graphs.

The net effect of this strategic interplay is that "dominated subordinates" rarely challenge, but when they do, the dominant state frequently acquiesces. This is counter-intuitive unless ideational constraints are considered: one ordinarily would think that the low probability of a punishment would make such challenges *more*, not *less* likely. This insightful and non-straightforward finding supports the social contract theory developed in Chapter 2. Even more broadly, this finding provides evidence that non-material, ideational factors exert a direct effect on state behavior.

The analysis provides one of the few empirical tests of general deterrence. While many theoretical accounts focus on general deterrence (e.g., Werner, 2000;

Zagare and Kilgour, 2000), most empirical studies examine cases of immediate deterrence, where a crisis is already underway (Huth, 1988; Huth and Russett, 1984; Signorino and Tarar, 2006; though see Huth and Russett, 1993; Quackenbush, 2010).. My empirical strategy is able to account for this strategic selection by isolating deterring effects, such as the military balance of power, from those that make it less inclined to challenge the status quo in the first place, such as social hierarchy.

The findings are consistent with a number of previous findings in the extended deterrence literature, but also helps explain some previously contradictory results. Consistent with previous work, the military balance of power and previous interactions play an important role (Huth, 1988). Ideational factors also help address the "surprising" result that alliances between a "protégé" and a "defender" (dominant state) make an attack more likely, as identified by Signorino and Tarar (2006, 594). Rather than possibly being due to an earlier selection stage, as suggested by Fearon (1994*b*) and (Signorino and Tarar, 2006), non-aligned states may *prefer* to target a dominated subordinate (recall Figure 3.3). This is because such an attack represents a greater challenge to the status quo, a desirable property to states outside of the US hierarchy.

The empirical results also contribute to the alliance literature, particularly as it pertains to the relationship between alliances and conflict. The literature provides little agreement on the expected effect of alliance on conflict (for an overview, see Vasquez, 2009). Consistent with the theory presented by Smith (1995), my model suggests that ties that increase the security of a state may also embolden it to act more aggressively, creating a moral hazard (see also Leeds, 2003; Snyder, 2007). On balance,

however, this dissertation's theory of social hierarchy and the empirical results suggest that independent militarized actions on the part of states are constrained by their acceptance of the US political order.

The argument and results are also consistent with recent work by Maoz (2006, 2009), Maoz et al. (2005), and Signorino and Ritter (1999), which suggests that scholars must consider alliances as a network because direct alliance ties offer only limited information about a state's foreign policy strategies (see also Bueno de Mesquita, 1981). More information can be gathered from also examining a state's indirect alliance relationships. For example, despite lasting animosity rooted in their colonial history, Japan and South Korea are unlikely to engage in a major militarized conflict owing to their shared alliance with the US (Cha, 1997; Ikenberry, 2004).

Expanding on these insights, I argue that a state's degree of embeddedness in some alliance networks is more informative than others. Rather than weighing alliances by material capabilities, I suggest that one must also consider a state's position within a dominant's security hierarchy. Sharing several alliances with minor powers that offer little additional security, but are also tied to the same dominant state, demonstrates a lack of alliance diversity and increased reliance on the same dominant state (Morrow, 1991). Such states are also likely to have similar policy preferences. Previous work shows that states embedded in the US alliance network—i.e., have few allies that are not also allied to the US—are more likely to join US-led military coalitions (Lake, 2009). The above results indicate that states with more shared alliances also engage in few militarized actions independent of the US.

The theoretical findings also highlight the existence of two forms of "non-

conflict" events between the dominant and the subordinates: (1) subordinate's acceptance of the status quo, and (2) a peaceful challenge, or the acquiescence by the dominant. Distinguishing these two types of events is important, as conflating them leads to significant underestimates of the degree of global instability and conceptual oversimplification of what constitutes a status quo challenge. Subordinate states may not be as accepting of the US order as would appear from the lack of US actions against them. Nor must rogue states directly challenge the US in order to demonstrate their disapproval or ambiance towards the US' security order. Rather, subordinated state within the US hierarchy act strategically to avoid US punishment by targeting states that the US is unlikely to defend (recall Figure 3.4). Thus, subordinate states are making only minor challenges to the status quo, reflecting their support, albeit not complete support, for the US order. States outside the US hierarchy, on the other hand, can specifically target dominated subordinates as an alternative to a direct confrontation with the US.

3.4 Conclusion

This chapter tests a social explanation of international conflict, deterrence, and acquiescence. It posits that conflict is regulated by tacitly negotiated hierarchies between dominant and subordinate states. Expanding on previous studies, I argue that social hierarchy is best conceptualized as a series of bilateral bargains reached between a dominant and each individual subordinate and reflects the degree of authority that a subordinate cedes to the dominant in exchange for certain benefits. These bilateral agreements produce observable characteristics that inform third-parties about the in-

formal relationship between a dominant and subordinate. The degree of hierarchy, in turn, affects the conflict behavior of dominant and subordinate states.

Hierarchy has direct and indirect effects on conflict behavior. Subordinates that are located higher within the hierarchy are less likely to challenge the status quo. When challenges occur, however, the dominant states uses information on the relative hierarchical positions of both the challenger and the target to decide whether to punish. Challenges aimed at states positioned higher in the relative hierarchy are especially likely to be punished, while the reverse is true for challenges directed at states with relatively lower positions. Subordinates act strategically when selecting targets in order to reduce the risk of punishment. Additionally, the theory allows for co-existence of multiple dominant states who then have to compete for subordinates by providing them with political order. Competition among dominant states results in stricter enforcement of the status quo and, hence, higher probability of punishment.

A more nuanced definition of hierarchy developed in this dissertation helps shed new light on the strategic causes of international conflict. It highlights that states exist in a strategic environment where they are affected not only by the characteristics of states they directly interact with, but by indirect relationships with dominant powers as well. Using a two-stage strategic probit, I have been able to isolate the effects of hierarchy on a subordinate state's propensity to initiate unauthorized conflicts in pursuit of an independent foreign policy from that of deterrence. In addition, the effect of a state's location within the dominant's hierarchy compared to that of its target—i.e., the degree of relative hierarchy—has been shown to be an important factor in whether a dominant state punishes states that challenge the

status quo. In the next chapter, I extend the model to examine cases of US hierarchy on economic behavior.

Table 3.1: Descriptive Statistics, US Hierarchy and Conflict.

Variable	Obs.	Mean	Std. Dev.	Min.	Max.
Challenge	549570	0.001	0.034	0	1
Security Hierarchy	549570	0.234	0.393	0	5.913
Shared Alliances	549570	0.373	0.479	0	1
Military Personnel	549570	0.096	0.546	0	10.826
Economic Hierarchy	549570	0.200	0.311	0	2.781
Trade Dependence	549570	0.054	0.140	0	2.708
Exchange Rate	549570	0.213	0.359	0	1
Power Ration (Challenge)	549570	0.515	0.356	0	1
Power Change	549570	0.001	0.081	-3.58	0.916
Previous Challenge (Challenge)	549570	0.026	0.322	0	21
Contiguity	549570	0.024	0.154	0	1
Joint Democracy (Challenge)	549570	0.209	0.406	0	1
Trade	549570	-6.638	0.602	-6.908	0.265
Civil War	549570	0.068	0.253	0	1
Punishment	652	0.276	0.447	0	1
Relative Security Hierarchy	652	0.046	0.310	-2.303	1.32
Relative Shared Alliances	652	0.087	0.483	-1	1
Relative Military Personnel	652	0.004	0.328	-4.605	1.641
Relative Economic Hierarchy	652	0.006	0.385	-1.258	1.742
Relative Trade Dependence	652	0.009	0.225	-1.678	2.323
Relative Exchange Rate	652	0.000	0.450	-1	1
Global Power	652	33.383	4.497	28.274	46.638
Power Ratio (punishment)	652	93.582	9.224	53.22	99.993
Distance	652	8.524	0.602	0	9.099
Joint Democracy (punishment)	652	0.275	0.447	0	1
Ongoing MID	652	3.307	1.244	1	6
Previous Challenge (punishment)	652	1.856	2.754	0	21

Table 3.2: Militarized Challenge and Punishment in US Hierarchy.

Actor	Subordinate		Dominant	
Status Quo Equation:				
Security Hierarchy	0.217^{***}	(0.056)		
Economic Hierarchy	0.024	(0.047)		
Constant	4.461^{***}	(0.236)		
Acquiesce Equation:				
Constant	1.650^{***}	(0.256)		
Conflict Equation:				
Global Power			-0.070^{***}	(0.015)
Relative Security			1.103^{***}	(0.220)
Relative Economic			0.148	(0.160)
Challenger-Target Power Ratio	4.868^{***}	(0.733)		
Challenger-Target Power Ratio^2	-3.965^{***}	(0.618)		
Dominant-Subordinate Power Ratio			0.278^{***}	(0.080)
Dominant-Subordinate Power Ratio^2			-0.192^{***}	(0.049)
Power Change	-0.160	(0.302)		
Ongoing US MIDs			0.093^{**}	(0.047)
Civil War	0.509^{***}	(0.149)		
Previous Challenge	0.542^{***}	(0.053)	-0.058^{***}	(0.021)
Contiguity	2.964^{***}	(0.127)		
Distance			-0.223^{**}	(0.094)
Trade	4.490^{***}	(2.570)		
Challenger-Target Joint Democracy	-0.927^{***}	(0.172)		
Dominant-Subordinate Joint Democracy			-0.3256^{**}	(0.140)
Constant			-5.675^{*}	(3.256)
Log-Likelihood	-4110.597		-308.831	
Observations	549570		652	

Note: $^{***}p$ <0.01, $^{**}p$ <0.05, $^{*}p$ <0.1, two-tailed; ^{+}p <0.1, one-tailed. Subordinate standard errors calculated with bootstraps (500 simulations).

Table 3.3: Militarized Challenge and Punishment in US Hierarchy. Hierarchy Index Reduced to Components.

Actor	Subordinate		Dominant	
Status Quo Equation:				
Security Hierarchy				
Shared Alliances	0.162^{***}	(0.033)		
Military Personnel	0.0385	(0.039)		
Economic Hierarchy				
Trade Dependence	-0.149^{+}	(0.101)		
Exchange Rate	0.038	(0.043)		
Constant	4.666^{***}	(0.236)		
Acquiesce Equation:				
Constant	1.688^{***}	(0.256)		
Conflict Equation:				
Global Power			-0.070^{***}	(0.015)
Relative Security				
Shared Alliances			0.528^{***}	(0.130)
Military Personnel			0.606^{**}	(0.305)
Relative Economic				
Trade Dependence			-0.092	(0.251)
Exchange Rate			0.151	(0.141)
Challenger-Target Power Ratio	4.869^{***}	(0.739)		
Challenger-Target Power Ratio^2	-3.944^{***}	(0.636)		
Dominant-Subordinate Power Ratio			0.277^{***}	(0.080)
Dominant-Subordinate Power Ratio^2			-0.191^{***}	(0.048)
Power Change	0.539^{***}	(0.053)		
Ongoing US MIDs			0.093^{**}	(0.047)
Civil War	0.506^{***}	(0.143)		
Previous Challenge	0.542^{***}	(0.053)	-0.057^{***}	(0.021)
Contiguity	2.960^{***}	(0.130)		
Distance			-0.213^{**}	(0.095)
Trade	4.516^{*}	(2.592)		
Challenger-Target Joint Democracy	-0.888^{***}	(0.197)		
Dominant-Subordinate Joint Democracy			-0.337^{**}	(0.140)
Constant			-5.693^{*}	(3.254)
Log-Likelihood	-4111.211		-308.549	
Observations	549570		652	

Note: $^{***}p$ <0.01, $^{**}p$ <0.05, $^{*}p$ <0.1, two-tailed; ^{+}p <0.1, one-tailed. Subordinate standard errors calculated with bootstraps (500 simulations).

Table 3.4: Militarized Challenge and Punishment in US Hierarchy. Punishment in Same Year.

Actor	Subordinate		Dominant	
Status Quo Equation:				
Security Hierarchy	0.205^{***}	(0.056)		
Economic Hierarchy	0.026	(0.048)		
Constant	4.749^{***}	(0.281)		
Acquiesce Equation:				
Constant	4.749^{***}	(0.260)		
Conflict Equation:				
Global Power			-0.070^{***}	(0.015)
Relative Security			1.033^{***}	(0.217)
Relative Economic			0.126	(0.163)
Challenger-Target Power Ratio	5.382^{***}	(0.828)		
Challenger-Target Power Ratio^2	-4.433^{***}	(0.699)		
Dominant-Subordinate Power Ratio			0.282^{***}	(0.080)
Dominant-Subordinate Power Ratio^2			-0.196^{***}	(0.049)
Power Change	-0.184	(0.309)		
Ongoing US MIDs			0.096^{**}	(0.048)
Civil War	0.512^{***}	(0.163)		
Previous Challenge	0.602^{***}	(0.053)	-0.067^{***}	(0.021)
Contiguity	2.962^{***}	(0.144)		
Distance			-0.216^{**}	(0.094)
Trade	5.177^{**}	(2.458)		
Challenger-Target Joint Democracy	-0.985^{***}	(0.202)		
Dominant-Subordinate Joint Democracy			-0.293^{**}	(0.141)
Constant			-5.802^{*}	(3.265)
Log-Likelihood	-4138.322		-299.812	
Observations	549570		652	

Note: $^{***}p$ <0.01, $^{**}p$ <0.05, $^{*}p$ <0.1, two-tailed; ^{+}p <0.1, one-tailed. Subordinate standard errors calculated with bootstraps (500 simulations).

Table 3.5: Militarized Challenge and Punishment in US Hierarchy. Hierarchy Index Reduced to Components. Punishment in Same Year.

Actor	Subordinate		Dominant	
Status Quo Equation:				
Security Hierarchy				
Shared Alliances	0.151^{***}	(0.034)		
Military Personnel	0.039	(0.040)		
Economic Hierarchy				
Trade Dependence	-0.153^{+}	(0.097)		
Exchange Rate	0.042	(0.042)		
Constant	4.740^{***}	(0.252)		
Acquiesce Equation:				
Constant	1.761^{***}	(0.272)		
Conflict Equation:				
Global Power			-0.070^{***}	(0.015)
Relative Security				
Shared Alliances			0.529^{***}	(0.130)
Military Personnel			0.428^{+}	(0.284)
Relative Economic				
Trade Dependence			-0.112	(0.255)
Exchange Rate			0.150	(0.144)
Challenger-Target Power Ratio	5.310^{***}	(0.786)		
Challenger-Target Power Ratio^2	-4.371^{***}	(0.670)		
Dominant-Subordinate Power Ratio			0.281^{***}	(0.080)
Dominant-Subordinate Power Ratio^2			-0.196^{***}	(0.049)
Power Change	-0.177	(0.296)		
Ongoing US MIDs			0.095^{**}	(0.048)
Civil War	0.526^{***}	(0.142)		
Previous Challenge	0.588^{***}	(0.055)	-0.066^{***}	(0.021)
Contiguity	2.984^{***}	(0.142)		
Distance			-0.205^{**}	(0.095)
Trade	5.131^{**}	(2.531)		
Challenger-Target Joint Democracy	-0.951^{***}	(0.200)		
Dominant-Subordinate Joint Democracy			-0.302^{**}	(0.142)
Constant			-5.839^{*}	(3.260)
Log-Likelihood	-4140.686		-299.472	
Observations	549570		652	

Note: $^{***}p$ <0.01, $^{**}p$ <0.05, $^{*}p$ <0.1, two-tailed; ^{+}p <0.1, one-tailed. Subordinate standard errors calculated with bootstraps (500 simulations).

Table 3.6: Militarized Challenge and Punishment in US Hierarchy. Only MIDs as Punishment.

Actor	Subordinate		Dominant	
Status Quo Equation:				
Security Hierarchy	0.212^{***}	(0.059)		
Economic Hierarchy	0.049	(0.051)		
Constant	4.800^{***}	(0.276)		
Acquiesce Equation:				
Constant	1.789^{***}	(0.289)		
Conflict Equation:				
Global Power			-0.032^{**}	(0.016)
Relative Security			1.374^{***}	(0.236)
Relative Economic			-0.018	(0.177)
Challenger-Target Power Ratio	6.202^{***}	(0.902)		
Challenger-Target Power Ratio^2	-5.223^{***}	(0.754)		
Dominant-Subordinate Power Ratio			0.236^{***}	(0.088)
Dominant-Subordinate Power Ratio^2			0.170^{***}	(0.054)
Power Change	0.177	(0.354)		
Ongoing US MIDs			0.082^{+}	(0.054)
Civil War	0.507^{***}	(0.173)		
Previous Challenge	0.623^{***}	(0.080)	-0.069^{***}	(0.024)
Contiguity	3.236^{***}	(0.160)		
Distance			-0.185^{*}	(0.095)
Trade	7.810^{***}	(1.534)		
Challenger-Target Joint Democracy	-1.299^{**}	(0.546)		
Dominant-Subordinate Joint Democracy			-1.095^{***}	(0.199)
Constant			-5.472^{+}	(3.575)
Log-Likelihood	-4359.428		-233.324	
Observations	54970		652	

Note: $^{***}p$ <0.01, $^{**}p$ <0.05, $^{*}p$ <0.1, two-tailed; ^{+}p <0.1, one-tailed. Subordinate standard errors calculated with bootstraps (500 simulations).

Table 3.7: Militarized Challenge and Punishment in US Hierarchy. Hierarchy Index Reduced to Components. Only MIDs as Punishment.

Actor	Subordinate		Dominant	
Status Quo Equation:				
Security Hierarchy				
Shared Alliances	0.186^{***}	(0.033)		
Military Personnel	0.044	(0.044)		
Economic Hierarchy				
Trade Dependence	-0.076	(0.103)		
Exchange Rate	0.055^{+}	(0.041)		
Constant	1.253^{***}	(0.397)		
Acquiesce Equation:				
Constant	-1.694^{***}	(0.397)		
Conflict Equation:				
Global Power			-0.032^{**}	(0.016)
Relative Security				
Shared Alliances			0.818^{***}	(0.148)
Military Personnel			0.292	(0.254)
Relative Economic				
Trade Dependence			-0.156	(0.284)
Exchange Rate			0.078	(0.159)
Challenger-Target Power Ratio	6.135^{***}	(0.916)		
Challenger-Target Power Ratio^2	4.372^{***}	(0.778)		
Dominant-Subordinate Power Ratio			0.233^{***}	(0.088)
Dominant-Subordinate Power Ratio^2			-0.168^{***}	(0.054)
Power Change	0.171	(0.351)		
Ongoing US MIDs			0.082^{+}	(0.054)
Civil War	0.538^{***}	(0.184)		
Previous Challenge	0.520^{***}	(0.065)	-0.072^{***}	(0.024)
Contiguity	3.075^{***}	(0.165)		
Distance			-0.181^{*}	(0.096)
Trade	0.627^{***}	(0.071)		
Challenger-Target Joint Democracy	-1.669^{***}	(0.588)		
Dominant-Subordinate Joint Democracy			-1.111	(0.201)
Constant			-5.326^{+}	(0.3.587)
Log-Likelihood	-4331.394		-231.855	
Observations	549570		652	

Note: $^{***}p$ <0.01, $^{**}p$ <0.05, $^{*}p$ <0.1, two-tailed; ^{+}p <0.1, one-tailed. Subordinate standard errors calculated with bootstraps (500 simulations).

Figure 3.1: Structure and Outcomes of Dominant—Subordinate Interaction

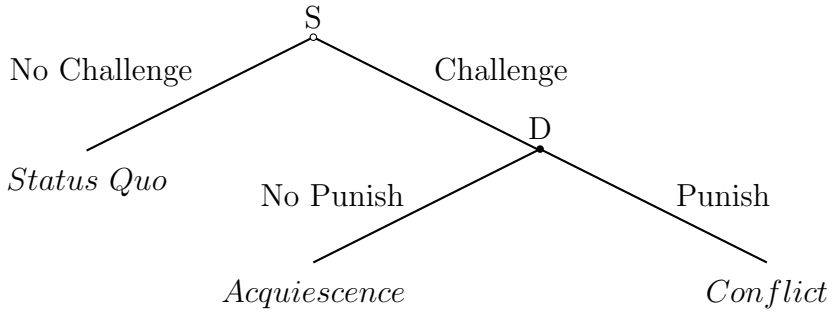


Figure 3.2: Specification of the Strategic Probit Estimator.

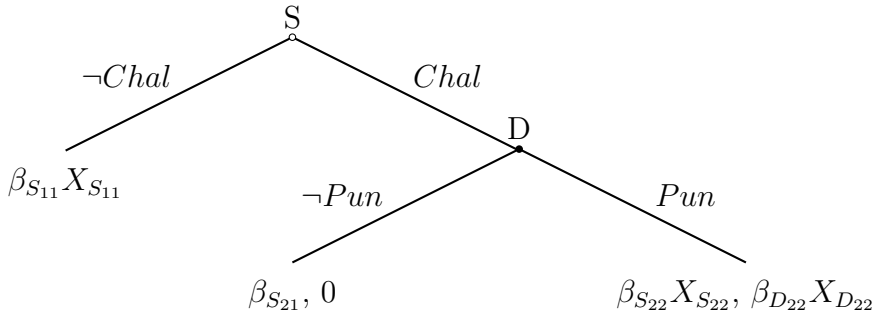
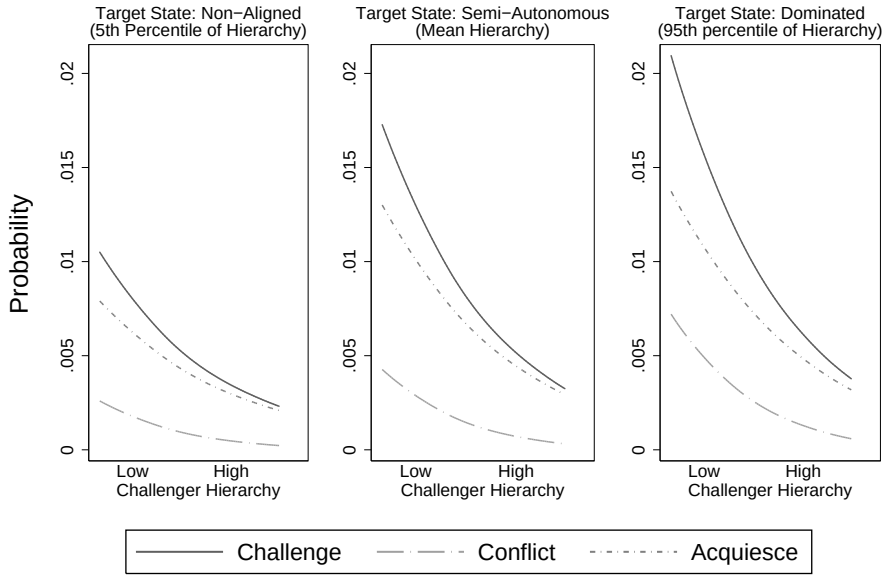
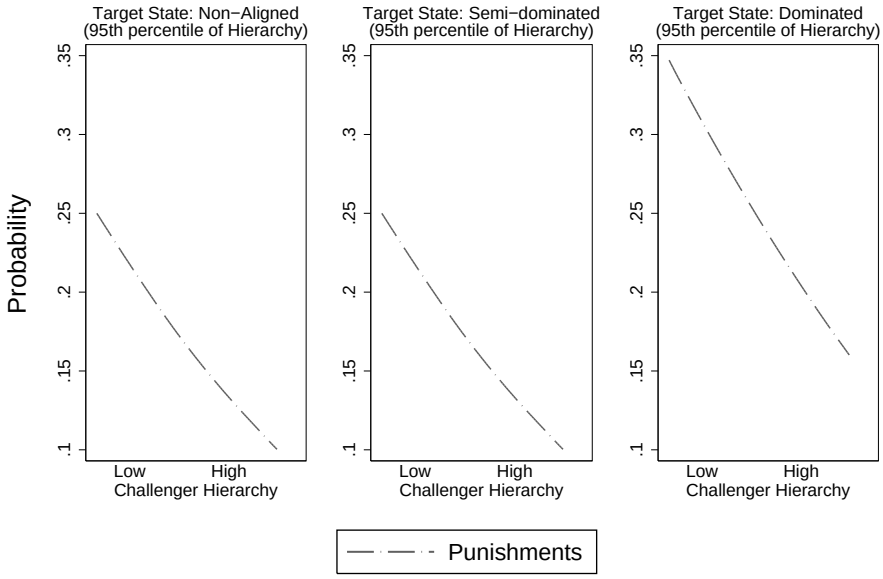


Figure 3.3: Predicted Outcomes at Varying Levels of Security Hierarchy.



Note: Predicted probabilities for each outcome are of contiguous states where the challenger is autocratic. All other variables held to their mean or median.

Figure 3.4: Proportion of Punishments if a Security Challenge Occurred.



Note: Predicted probabilities for conflict as a proportion of all challenges where challengers are autocratic and target is contiguous. All other variables held to their mean or median.

CHAPTER 4
US HIERARCHY AND ECONOMIC BEHAVIOR

How does social hierarchy affect economic behavior? I argue that social hierarchy helps to explain why certain economic practices occur, such as foreign investment and lending, and to what degree variation in these phenomena exist. Social hierarchy influences the type of property rights regime, as well as fiscal and monetary policies, that a subordinate state adopts. These policies produce observable outcomes that are considered by firms when deciding where to invest. Economic hierarchy, therefore, serves as a signal to investors regarding a subordinate's level of risk and serves as an external constraint on the subordinate's economic behavior.

Moreover, this dissertation's social hierarchical account provides an explanation for the timing of punitive measures, such as economic sanctions, a topic rarely considered in the economic statecraft literature.[1] In addition, the theory provides an explanation for why punitive actions are employed in some cases and not others, even when the type of offending economic behavior is the same. Finally, such an explanation is consistent with the oft-noted empirical finding that economic sanctions are rarely "effective" in terms of reversing the offending state's behavior (Licht, 2011; Pape, 1997, 1998).

In this chapter, I begin by discussing why either a dominant or subordinate would participate in a social hierarchy along the economic dimension. In contrast

[1]The sanctions literature often focus on infrequently changing or cross-sectional variation between sanction targets, such as institutional features, rather than proximate events.

to earlier economic accounts of material-based hierarchy (e.g., Eichengreen, 1989; Kindleberger, 1973), I contend that the supply of economic security should be treated as a club good rather than public good, because of the costs attributed to subordinates in order to obtain a return (Conybeare, 1987, Ch 3; Leblang 2003).[2] I then argue that hierarchy operates as a signal to investors that their assets are secure from the threat of sovereign theft; that is, that their assets will not be seized and that loans will be repaid according to their original terms. I apply the theory developed in Chapter 2 to explain specific economic behavior within the context of the US hierarchy: economic challenges and punishments. I conceptualize policies and actions of sovereign theft as illiberal actions as challenges to the dominant's economic hierarchy and economic sanctions on the part of the dominant state as punishments. Finally, I describe the variables and research design that I use in the empirical analysis, present and discuss the results, and conclude.

4.1 How Hierarchy Affects Economic Behavior

As I argued in Chapter 2, subordinate states surrender some policymaking autonomy in return for political order. While the trade off between foreign policy autonomy and political security is most often considered in reference to conflict behavior (e.g., Deudney, 2007; Morrow, 1991; Weber, 1997), social hierarchy also influences a state's economic decision-making. This is because the social contract that dominant and subordinate states create does more than guarantee political stability in terms of security, it also provides economic benefits. For instance, political security gained by

[2]Club goods are resources that are excludable, but non-rivalrous.

subordinate states reduces the demand for defense spending, allowing subordinates to focus on issues of economic development (Lake, 2009, Ch 5). More directly, economic subordination can signal shared conceptions of property rights and generate confidence in a state's economic capacity.

Though most studies of economic hierarchy focus on the benefits of free trade to the international system (e.g., Kindleberger, 1973), a dominant state does not have to pursue free-market capitalism in order to offer more open trade as an economic advantage of hierarchy to subordinate states (Conybeare, 1987; Krasner, 1976). Instead, the dominant state need only seek open or reduced trade among a subset of states, not the entire global system. Illiberal dominant states, such as the USSR or France under Napoleon III, did not generally pursue open trade policies. Yet, they did prefer the free flow of goods or capital between themselves and the closest members of their hierarchy, and set up customs unions and standard monetary units to enhance this aim (Mitchener and Weidenmier, 2008; O'Brien and Pigman, 1992; Oblath and Tarr, 1991).

The Soviet Union, for example, actually subsidized trade in order to validate the superiority of their economic model and gain support from subordinate governments (Marrese and Vanous, 1983). That the terms-of-trade between satellite states and Russia became *negative* following the end of the Cold War provides some evidence that the USSR subsidized bilateral trade with its Eastern bloc allies (Oblath and Tarr, 1991; Rodrik, 1992). In addition, there is also evidence that the USSR provided incentives that encouraged trade among the Warsaw pact members (Rodrik, 1994; Rosati, 1994). Similarly, China has provided African states loans with favorable,

back-loaded payment plans that do not include the structural reforms required by the US-dominated IMF and World Bank, such as privatization of many state-controlled firms. Moreover, China accepted payments in kind rather than in hard currency, and offered technical and logistic support on private and public works to these states in return for input on project planning and access to resources (Carmody and Owusu, 2007).

Rather than providing a public good by supporting universal free trade, a dominant seeks to provide a stable market of exchange to assist states that conform their internal economic structure in line to the dominant's preferred economic model. That is, dominants provide a resource to *their* subordinates. Such external signals provide investors with valuable information regarding the type of property rights enforcement and governance structure to expect within a state (Stulz, 2005). The *type* of property rights is important: while firms consider the protection of property rights to be of great importance when deciding where to invest (Biglaiser and Staats, 2010; Staats and Biglaiser, 2012), "the delineation of property rights is not independent of what rights members of a society accept as legitimate, and as a result most, if not all, property rights are truncated in a most complex manner" (Chang, 2003*a*, 181; see also Barzel, 1989). Thus, economic hierarchy operates as an external economic institution in a state, tying the hands of the domestic government and signaling credibility to domestic and foreign investors by providing a well-known, stable, and coherent property rights regime (Chang, 2003*a*; Sunstein, 1997).

These signals benefit subordinates in a number of ways. For instance, shared perceptions of what is "legitimate" and what the framework of a property rights

regime is encourage information spillovers (Audretsch and Feldman, 1996; Jaffe, 1989; Jaffe, Trajtenberg and Henderson, 1993). By sharing common codes and reducing knowledge transaction costs—e.g., standardizing measurements or adopting the dominant's language as the *lingua franca* of business, methods and knowledge gained from a firm in one state can be more easily transfered to another (Maskell, 2001). Following the East Asian financial crisis, for example, Western states increasingly adopted the accounting standards of the US—unifying financial reporting and auditing standards—to reduce transaction costs among compliant firms within the increasingly important financial sector (Arnold, 2012). Given the potential for multiple providers of economic hierarchy to emerge, and that the marginal return of benefits of reducing transaction costs and economic risk is greatest among states where the potential of trade is greatest, such as neighboring states, economic hierarchy helps explain why similar economic systems and corporate structures emerge in geographical clusters (Breschi and Malerba, 2001, 821-822).

In addition, monetary policy stability decreases economic risk, allowing investors to know what behavior to expect from a dominated subordinate, which increases investment (Ahlquist, 2006; Jensen, 2008; Li, 2006, 2009; Zheng, 2011). Moreover, Lake (2009, Ch 5) shows that states at higher positions within the US hierarchy have greater levels of bilateral trade with one another, after controlling for a host of common determinants. Increased trade benefits state leaders by increasing the number of available public goods that leaders can distribute to their selectorate in order

to remain in power (Bueno de Mesquita et al., 2003).[3] Economic gains also benefit state leaders by acting as a signal of competence to the public, increasing leaders' probability of remaining in power (Smith, 1996*a*, 1998).

These benefits to the subordinate, however, come at a cost. In order to obtain the benefits of monetary stability and reduced opportunity costs associated from common rules of exchange, subordinates must adopt the economic policies of a dominant. While many of these policies are benign and require only limited resources—such as standardizing measures to that of the dominant—others are quite costly. Fixing a currency to that of a dominant state, for example, necessitates a loss of monetary autonomy. In addition, pegging a currency requires significant currency reserves and a willingness to implement fiscal and monetary adjustments that may increase sovereign debt (and debt service), increase interest rates, and/or introduce capital controls in the wake of a speculative currency attack (Leblang, 2003). The surrender of monetary and fiscal policy leaves subordinate states more limited in their ability to respond to economic shocks. In the absence of monetary and fiscal mechanisms, economic shocks can prove costly not only economically (Bhagwati, 1998; Eichengreen and Rose, 2003), but also can have high political costs, such as government termination (Bernhard and Leblang, 2008; Lewis-Beck, 1990) or even civil conflict (Chassang and Miquel, 2009; Nieman, 2011). Because of these costs, the stable terms of exchange underwritten by dominant states are better understood as club rather than public goods.

In return for reducing opportunity costs and providing stable markets of ex-

[3]The selectorate are those who have a voice in policy outcomes.

change to their subordinates, dominant states reap substantial benefits, both intangible and tangible. Intangible benefits include economic policies that adhere to the normative world vision of the dominant, such as free market capitalism in the case of Great Britain or the US, centrally-planned communism in the case of the USSR (Chang, 2003*b*). That much of the contemporary world now engages in an open, global economy was not inevitable. Instead, a handful of countries, specifically the US and Great Britain, " made choices about the organization of markets and proceeded to put their power at the service of these goals" (Ikenberry, 2004, 356). During the Pax Britannica, British diplomats undermined any privileged status for their own merchants using Most Favored Nation treaties, instead offering any commercial advantage they obtained to all other nations (O'Brien and Pigman, 1992, 108). Olson (1993) argues that without such external pressure, it is difficult for states to reduce trade barriers.[4] For this reason, subordinate states may be unlikely to pursue policies of free trade on their own.

Tangible benefits include reduced transaction costs of trade and investments and additional financial flexibility. Transaction costs are reduced because subordinates feature similar economic institutions and reliable currencies and property right regimes, reducing risk and providing safe and stable markets for the dominant state and its firms. Additional financial flexibility, such as artificially low interest rates and cheaply 'selling' debt, stems from being a global currency reserve and lender of

[4]To see why domestic politics make it difficult for states to reduce trade barriers, see Bhagwati (1988), Brawly (1997), Busch and Reinhardt (2000), and Hiscox (2002). For a critical view of free trade policies for developing state, see Chang (2003*a*, 2008).

last resort (Mastanduno, 2009; Thompson, 1988). This financial flexibility was also found in the former Eastern bloc, where Eastern European states provided loans to the USSR at well below the Western European market rate (Balassa, 1991). In addition, dominant states gain from their monopoly over 'invisible' factor endowments, such as banking, insurance, transportation, and profits from their foreign investment, generating significant returns and flows of capital.[5]

This dissertation's hierarchical account of international economics provides a general explanation for the question of why we see *any* foreign investment, given the high risks and limited responses available to international firms.[6] This is all the more puzzling given the mixed theoretical or empirical evidence whether states are even punished or suffer any costs for sovereign theft. As I argued in the previous section, however, treating economic hierarchy benefits as a club good can function as a signal to investors of the risk of sovereign theft. Moreover, hierarchy can also explain variation in the punishments levied at violators, as dominant states can identify cases where transgressions can be attributed to unusual circumstances and treated as an anomaly, and separate these from more serious violations where the state acted in an opportunistic and predatory manner.

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[5]See Knight (1921) and Strange (1996, 122-146) for a discussion of the importance of insurance on economic interactions. For a history of the growth of the US financial sector, see Wilmarth (2002). For how the US earns higher returns on investment income despite being a net debter, see Schwartz (2009). For a discussion of British profits on shipping and investment returns, see Ferguson (2002) and Herman (2004). O'Brien and Pigman (1992, 109) and Saul (1960) describe the receipts that Great Britain gathered from financial services.

[6]Tomz and Wright (2010, 69) argue ,"political risk is particularly severe in the case of foreign investments, where the absence of supranational courts limits legal remedies and where an investor's foreign nationality limits redress through domestic political institutions."

Existing theories of foreign investment generally rely on a collective punishment mechanism to prevent states from expropriating assets by excluding offenders from future investment, loans, and trade. Bulow and Rogoff (1989*a*,*b*) and Eaton and Gersovitz (1981), for instance, develop models which expect sovereign debt default to lead to exclusion from international credit markets.[7] Kehoe and Levine (1993) and Rose (2005) find evidence that loan defaults result in a loss of trade. Other model rely on states revealing whether they are a good or bad "type" (Cole, Dow and English, 1995; Rose and Spiegel, 2009; Sandleris, 2008; Tomz, 2007). If a state is found to be a bad type, it will lose future investment as investors deem it a money-losing option.

The former explanation, however, relies on collective action by all other lending states, a situation that requires that they forgo potential benefits regardless of whether they themselves were victimized by the expropriation. This is unlikely given the problems associated with large-N coordination (Tomz and Wright, 2010).[8] Moreover, Kletzer and Wright (2000) develop a model showing that both lender and debtor can benefit from renegotiation of terms rather than taking punitive actions, such as exclusion. The empirical record regarding negative responses to loan defaults is also unclear, as Martinez and Sandleris (2011) show that the decreases in trade identified by Rose (2005) are unrelated to a creditor's debt holdings, while several studies show that any exclusion or increase in cost of borrowing subsides within a few years (Borensztein and Panizza, 2009; Gelos, Sandleris and Sahay, 2004). The reputation

[7]See Aguiar and Gopinath (2006) and Yue (2010) for recent papers that make similar assumptions of exclusion or significant increases in the cost of borrow for the violating state.

[8]See Oye (1985) for a discussion of the prospects of cooperation in N-player games.

explanation is also inconsistent with the existing data. In order to maximize their return, a "bad type" would want to engage in as many illiberal actions as possible when they reveal their type. Yet, Tomz and Wright (2010, 98-100) find this is not the case; instead, there are alternating waves of expropriation and default.

Proponents of materialist hierarchical theories, such as hegemonic stability theory, rely solely on punitive responses by the hegemon to dissuade challenges to their economic order. O'Brien and Pigman (1992, 103), for example, note that Great Britain responded to Chinese attempts to ignore the terms of the Treaty of Nanking, which greatly expanded China's openness to foreign trade, by sending a fleet of warships to the mouth of the Peiho River. Similarly, Mitchener and Weidenmier (2010) find that colonial powers frequently retaliated to sovereign theft by invoking "gunboat diplomacy," that is, sending military forces to compel developing state to honor contracts. Not only did offenders repay, but they were less likely to default on loans in the future.

These accounts assume that a dominant state's foreign policies are relatively easily swayed by the plight of investors. Bulow and Rogoff (1989*b*) argue that it is unlikely that private creditors can induce their governments to act against defaulters. Moreover, Tomz (2007) finds that militarized and economic sanctions have rarely, if ever, been used to punish defaulters.

The social theory of hierarchy developed in Chapter 2 implies that any investor can observe the actions and institutions (e.g., trade dependency and type of exchange rate) of subordinate states in reference to their dominant state and calculate, in conjunction with traditional economic fundamentals, the risk of sovereign theft. This

complements the reputation-based theories by providing an *ex ante* measure of risk based on observed state behavior in addition to the *ex post* measure of previous theft of foreign assets. When sovereign theft does occur, the theory is able to predict variation in the likelihood that a violator is punished by the dominant state by looking at these indicators: the more dominated the subordinate by a dominant state, the more likely the dominant state is to treat sovereign theft as anomalous behavior induced by unusual circumstances and undeserving of formal punishment.

An implication of this is that not all sanctions are necessarily intended to deprive the target state of economic benefits; instead, they may be used as a costly signal to the dominant's hierarchy of actions deemed "inappropriate." This is because sanctions will generally only be levied against states that do not prescribe to the US economic model and are outside of the US economic hierarchy; that is, the very cases in which they are least likely to induce changes in behavior. The action is costly because economic sanctions are most costly to US firms (Griswold, 2012; Lektzian and Biglaiser, 2013). In addition, this explanation suggests that economic sanctions are levied in response to specific, observable actions, and are issued selectively (Drezner, 1999, 2003; Lacy and Niou, 2004; Nooruddin, 2002; Smith, 1995). That is, more subordinated states exhibiting the same proximate behavior are more likely to be given a pass than less subordinate states. Therefore, it is no surprise that sanctions are generally ineffective in coercing a change in the sanction target's policies (Hufbauer, Schott and Elliott, 1990; Morgan, 1990, 1994; Pape, 1997, 1998; Whang, 2010). This is because sanctions are not necessarily levied with the purpose of adjusting the recipient's behavior, but pointing out that behavior to their subordinates, both as a

signal to investors and as a deterrent.

4.1.1 Hypotheses about Economic Behavior

In the empirical section of the chapter, I focus on the US economic hierarchy. The US, like Great Britain before it, has supported universal, free-market policies. Wade (2002, 202) argues that "to the extent that powerful segments of national elites want these same things for themselves the US state can achieve its foreign economic policy objectives at lower cost than through materially based negotiation or coercion." He continues that "wide belief in the *mutual* benefits of free markets allows critics of free markets to be easily delegitimized, as defenders of special interests ('protectionists') at the expense of the general good."

Wade (2002) contends that the mutual benefits argument is built on two pillars, one substantive and the other procedural. The substantive argument is that the normative belief that the US conception of free-market capitalism produces the most material benefits and outperforms any alternative economic model (Wade, 2002, 203; see also Chang, 2003a; Rodrik, 1996).[9] The procedural element is based on the belief that all states operate according to the same known rules of conduct. It is important to recall, however, that the latter pillar does *not* require that all states are treated equally, only that the rules for making distinctions are known (Stone, 2002).

There is empirical evidence that the strategy of 'winning the hearts of minds' of

[9]See Friedman (1962) and Hayek (1944) for examples advocating the primacy of free-market capitalism. For alternative capitalist models, see Hall and Soskice, (2001). For a variety of other economic models, see Harvey (2005, Ch 5), Schumpeter (1954), Schweickart (2011).

subordinate's economic and political elites does lead to more open economic policies. Weymouth and MacPherson (2012), for example, find that the speed and degree of trade liberalization within a country increases with the number of US-trained economists. Van Overtveldt (2007) provides support on this result on the micro-level by tracing the spread of liberal, free-market economic ideas among foreign business and political elites attending the famed University of Chicago's schools of business, economics, and law. Dion (2008, 2009) finds similar processes at work in the case of Mexico's social policy reformation of the early 1990s.

Such favorable views towards liberal policy prescriptions are somewhat surprising given the debate regarding whether financial and trade openness increases economic growth. While some scholars treat the positive relationship between free trade and economic growth as a foregone conclusion (Dollar, 1992; Dollar and Kraay, 2002; Krueger, 1998; Wacziarg and Welch, 2008), others contend it is far less certain (Rodrik, 2006; Yanikkaya, 2003). Rodríguez and Rodrik (2001), for example, question this relationship and challenge the reliability and validity of indicators used to measure economic openness (see also Pritchett, 1996).[10] Despite some reservations, the US and the multinational agencies that it influences, most notably the World Bank and IMF, generally require some economic restructuring in order to receive fi-

[10]Rodríguez and Rodrik (2001) point to the potential of reverse causality between openness and growth, and note the difficulty of finding appropriate instruments to overcome this problem. They argue that many indices of openness include other policy or institutional variables that exhibit an independent effect and, once accounted for, significantly reduce or eliminate the effect of openness. Likewise, Ciccone and Jarocinski (2010) show that the estimates of economic growth are highly sensitive to even minor changes in how a variable is measured. Lastly, Rodríguez and Rodrik (2001) state concerns that overstating the evidence of trade openness has had important policy implications as trade liberalization has been treated as a cure-all at the expense of well thought out development strategies.

nancial support (Bearce and Tirone, 2010; Chwieroth, 2008; Das, Papaioannou and Trebesch, 2012; Stone, 2002, 2004), though geopolitical factors sometimes outweigh these efforts (Boockmann and Dreher, 2003; Kilby, 2009). That conditionalities are frequently included on aid, loans, and debt forgiveness suggests that liberalization remains a foreign policy goal of the US.

Proposition 1 expects that when the degree of subordination of a state increases, it is less likely to challenge the status quo. Given the policy goals of the US and its success at promoting the normative virtues of its economic ideology, it is reasonable to expect that more subordinated states within the US hierarchy are more likely to have liberalized their trade and financial sectors. Based upon the free-market prescription advocated by the US, such states are unlikely to enact new, illiberal policies that run counter to these policies in either sector. In addition, such states are less likely to intervene in the private sector by seizing business assets, domestic or foreign, or refusing to pay back loans to private or national banks. Translating Proposition 1 into the context of US hierarchy produces the following hypothesis:

Hypothesis 4. *The greater the degree of hierarchy between a state and the US, the less likely the state is to initiate an economic challenge against the status quo.*

Proposition 2 suggests that the presence of multiple hierarchies impacts the likelihood of punishment on the part of the dominant when a subordinate does challenge the status quo. Rival dominant states offer alternative hierarchies to subordinate states; therefore, a dominant state must emphasis the credibility and utility of their economic hierarchy to subordinate states (and investors) by demonstrating the

advantages of their hierarchy compared to those provided by alternatives. Dominant states can do this in a number of ways.

First, they can argue the superiority of their economic ideology and contrast it to those of their competitors. The USSR, for example, frequently invited foreign journalists and academics to visit designated cities and stay in special hotels where they were provided testimonials of "ordinary workers" and provided with figures describing factory output and national progress.[11] These journalists and academics, in turn, would return to their home countries and tell of the alleged "superiority" of the Soviet economic model (Priestland, 2009, 182-233). Similarly, President Reagan also considered the spread of the liberal, free-market ideology to be an active component of US foreign policy, and took active measures to point out its virtues (Wade, 2002, 201). Moreover, following the repeal of the Corn Laws in Great Britain, merchants and proponents of free trade argued the benefits of free trade were self-evident, and that once Britain unilaterally removed her trade protections, other states would soon follow suit (O'Brien and Pigman, 1992, 100).

Second, dominant states can take actions that differentiate states that adhere to their preferred economic model. Issuing economic sanction, for instance, can serve as a political signal that the economic institutions of another state are unsound. Sanctions may serve as a stern signal of questionable or unfamiliar property protections, and sanction recipients may represent excessive risk to the investors and states within the dominant's social hierarchy. Moreover, publicly repudiating the economic actions

[11]These figures were often inflated, as I mentioned at the beginning of Chapter 3.

of a subordinate state informs other subordinates about what economic behaviors are acceptable and which are not.

How strenuously dominant states pursue these actions is conditioned by the strength of alternative dominant states. If alternative dominant states are economically strong, the economic policies they advance are more attractive and enticing to subordinate states. Thus, a dominant state must act more aggressively to promote the benefits of its own economic model. When alternative dominant states are weak, however, their economic policies are viewed less favorably by subordinate states. Strong dominants, therefore, have less incentive to punish actions that challenge their economic order because subordinates have less proven alternative models to pursue. Within the US context, Proposition 2 is written as:

Hypothesis 5. *When the US is strong relative to alternative great powers, it is less likely to punish economic challenges.*

Proposition 3 stated that the degree of relative hierarchy of a state affects the probability that the dominant punishes it for a challenge. In contrast to conflict deterrence, however, the dominant state is likely to be the direct recipient of an economic challenge—that is, the dominant state *is* the target. This is because dominant states are likely among the largest investors and trading partners with a challenging state. In addition, changes in trade and financial policy directly affect domestic firms and investors in dominant states (Ferguson, 2002; Mastanduno, 2009; Mitchener and Weidenmier, 2010; Wohlforth, 1999). Expropriation of foreign assets, therefore, is likely to directly affect US firms and investors. The US, for example, is the largest

investor abroad in the world (Jackson, 2012).

Note that, unlike in the previous chapter, where a security challenge could be directed against any state within the hierarchy, the main target of the economic challenges is the dominant. Relative hierarchy, therefore, corresponds to the absolute hierarchy between the subordinate and the dominant. The hierarchy, in other words, provides a lens through which the dominant is interpreting the adoption of illiberal policies by a subordinate. For subordinates located low within the hierarchy, an enactment of an illiberal policy is treated with a suspicion.[12] In other words, the dominant might apply a double standard: a faltering state that has not been acting on the dominant's advice must have been fiscally irresponsible, while the same illiberal policies by a close protégé are likely to be attributed to some sort of an exceptional hardship.

For example, if a non-aligned subordinate defaults on its sovereign debt (i.e., its loan payments to major US-based international banks), its behavior is viewed as predatory. If a dominated subordinate, in contrast, does the same, its behavior is more likely to be viewed as a response to an unexpected domestic situation, such as a response to a sudden currency crisis or temporary political turmoil, where the debt may be restructured. While obviously displeased that obligations to US banks were unfulfilled, the US is more likely to treat the case of the latter as anomalous behavior from an otherwise trustworthy state than the former.

In the case of US hierarchy, Proposition 3 leads to the hypothesis that:

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[12]In the context of debt payments, see Reinhart and Rogoff (2009) for the conceptual difference between a government's willininingness and inability.

Hypothesis 6. *Economic challenges from states located higher within the US hierarchy are less likely to be punished.*

4.2 Research Design

The unit of analysis is the subordinate-year. I use subordinate-years because I am interested in the interaction of each subordinate state and the dominant state. In particular, I am interested if a subordinate challenged the US hierarchy and whether the US responded by initiating a punishment. In contrast to the analysis used in Chapter 3, however, this means that rather than examining how subordinate A behaves toward subordinate B, due to data constraints I only include how subordinate A behaves towards the dominant state. Given that dominant states provide the large majority of foreign investment, however, it is unlikely that the actions that comprise an economic challenge would not directly affect the dominant state. Data are generated using the EUgene software for all Correlates of War state system members (Bennett and Stam, 2000). There are 2,890 observations, which includes 117 countries, in the sample after accounting for missingness.

4.2.1 Methodology

I test these hypotheses using the two-stage strategic probit model described in section 3.2.1 and depicted in figure 3.2. The estimator uses SBI to closely mimic the theoretical model depicted in Chapter 2 by first solving the second stage, the *punishment* stage, and then the first stage, the *challenge* stage. That is, first, the likelihood of whether the dominant punishes a challenge calculated. This information is then used to calculated an expectation of the value of a challenge by a subordinate

and compared to the utility of not challenging in the first stage. Thus, the model is able to isolate the effects of the regressors representing the observable component of each player's utility for each stage of the model (Bas, Signorino and Walker, 2008). This means that the effect of hierarchy can be identified for each player.

4.2.2 Dependent Variables

I use two dependent variables in the statistical model, one for each stage. I conceptualize a *challenge* against the US economic hierarchy as one of several complementary illiberal actions. Specifically, these include a state expropriating assets of US firms, defaulting on sovereign debt (owed to US-based international banks), or increasing their financial regulations.[13] Each of these observable actions are faces of the same underlying disregard for the US' liberal, free-market normative economic vision and represent a economic challenge to the US hierarchy. I operationalize *challenge* as 1 if any of the illiberal actions occur, and 0 otherwise.

Data regarding expropriation and default are obtained from Tomz and Wright (2010). They define expropriation as any case where the government intervenes and takes control over operations of foreign direct investment, using data from Kobrin (1984), Minor (1994), and Hajzler (2007). Default is defined as failure to pay interest or principal within the grace period, or made an exchange offer at less favorable terms than the original issue. They use data from Beers and Chambers (2004) and Suter

[13]While not as immediately apparent as the other two indicators, financial openness is of major importance to the US (Caprio and Summers, 1993; Wade, 2002). For example, even in the immediate aftermath of the Mexican Peso crisis, Undersecretary of Commerce Garten was questioned extensively by the Senate Foreign Relations Committee on South Asia about his failure to open the Indian financial system to US firms (Bhagwati, 1998, 11).

(1990).

More subordinated states to the US economic hierarchy are increasingly likely to have more open financial systems and higher scores according to the measure. Rather than focusing on what level of regulation constitutes a challenge to the US economic hierarchy, however, I treat any shift in policy towards increased government controls as an illiberal action. Therefore, any year where financial openness is lower in year t than in year t-1 is coded as a challenge. Financial openness data are obtained from Chinn and Ito (2008). They code a continuous measure of financial openness where greater number indicate more open policies. They construct a continuous measure of financial openness based on the IMF's *Annual Report on Exchange Arrangements and Exchange Restrictions*. An advantage of these data is that they measure the intensity of financial regulations by accounting for not only the presence of capital controls, but also the stringency of other types of restrictions (e.g., limiting the number of transactions).

I operationalize a *punishment* as an economic sanction in response to an economic challenge.[14] Economic sanctions are considered a coercive form of diplomacy which restrict normal economic relations directed against a target state (Drury, 2001; Hufbauer, Schott and Elliott, 1990). Democratic states are found to be particularly

[14]I also present results where MIDs are included as a punishment. I do not treat this as part of the primary analysis, however, as militarized responses to economic challenges have rarely, if ever, been used (Tomz, 2007). Studies that focus on militarized responses to economic challenges emphasis their unusual nature and that they tended to occur prior to World War I (Mitchener and Weidenmier, 2010; O'Brien and Pigman, 1992). Such instances tend to be in colonial settings, where norms of violence significantly differ from interstate interactions (Philpott, 2001). For the sake of posterity, results were militarized conflict is included as a form of punishment are presented in Tables 4.4 and 4.5.

fond of this foreign policy tool, as it is perceived to lower costs in terms of human lives (Cox and Drury, 2006; Hart, 2000). The US, in particular, frequently is party to levying economic sanctions and does so for a variety of purposes, of which punishment for economic challenges is only one reason. To isolate economic sanctions that are in response to economic challenges, I treated *punishment* as a dichotomous variable that is coded 1 if there is an economic sanction issued by the US towards a challenger in the same year or one year later.[15] *Punishments* are initiated against about seven percent (34/481) of the *challenges* in the sample. Sanctions data are obtained from the TIES database (Morgan, Krustev and Bapat, 2006).

4.2.3 Independent Variables

4.2.3.1 Subordinate Status Quo Regressors ($X_{S_{11}}$)

Social hierarchy is expected to make subordinate states place greater value on the status quo and not undertake illiberal actions that challenge the US' economic order. I measure hierarchy along the security and economic issue dimensions using

[15]Of the 172 economic sanctions issued by the US between 1971-2000, 36 are coded as *punishments* for economic challenges using this coding procedure. While there is still potential for overlap with other proximate causes of issuing sanctions, such as human rights violations, restricting *punishments* to only those cases in which the proximate event under review occurred contrasts with much of the quantitative economic statecraft literature, which largely ignores immediate causes. Restricting the lag period in which an economic sanction is attributed to an economic challenge should also limit overlap with alternative reasons to initiate sanctions. Results including only *punishments* issued in the same year are reported in Table 4.6 and 4.7. Differences with the primary analysis in the punishment equation can be attributed to the slower bureaucratic nature associated with initiating sanctions in the US in contrast to uses of force, where the executive has broader power for making unilateral decisions. This is evident by 16 of the 34 economic sanctions being levied in the year following the economic challenge. Differences in the challenge equation are likely the result of the differences in the modified regressors stemming from the adjusted expected utility of punishment associated with the punishment equation.

data from Lake (2009). These continuous variables represent the degree of legitimization that a subordinate surrenders to the dominant each year. Hierarchy measures are discussed in more detail in section 3.2.3.

Security hierarchy is calculated with two measures. The first measure, *military personnel*, is based on the number of troops that the US stationed in a country divided by the host country's population. Accepting troops from a dominant state on the part of the subordinate is treated as acceptance of their authority. The second measure, *shared alliances*, accounts for how reliant a subordinate is on the dominant's alliance network by examining the number of alliances a subordinate has that is not also shared by the US. Each of these measures is configured so that greater values indicate increased hierarchy.

Economic hierarchy is also composed of two measures. *Exchange rate* measures the degree of monetary policy that a subordinate surrenders to the US, with increasing values indicating greater subordination. *Trade dependence* measures how reliant a subordinate state is on the US market for trade compared to other dominant states. A failure to diversify trade partners is viewed as acceptance of the dominant's economic hierarchy. Greater values suggest increased trade dependence.

4.2.3.2 Subordinate Conflict Regressors ($X_{S_{22}}$)

There are a number of potential causes for a state to initiate an economic challenge by engaging in illiberal behavior. States that experience an economic crisis, inducing economic contraction or high inflation, are more likely to engage in sovereign theft or implement restrictions on capital. I include measures of *GDP growth* and

inflation to capture this. *GDPgrowth* data were computed from annual GDP figures (Gleditsch, 2002). Inflation data are obtained from Thies (2008).

State with rich resource endowments, such as oil, are more likely to be tempted to expropriate assets than states relying on investment in other sectors. Given the high potential returns on oil sales, firms may determine that the rewards outweigh the risks and be more willing to invest in states with poor reputations for protecting foreign assets. I code *oil* as a dichotomous variable equal to 1 if oil constitutes 1/3 of a state's export revenue and 0 otherwise (Fearon and Laitin, 2003).

States with higher rates of debt are expected to be more likely to default on loans than those with less debt (Manasse and Roubini, 2009). Heavily indebted states have more to gain by defaulting in terms of reduced payments. On the other hand, indebted states are likely to seek continued access to credit markets and may attempt to preemptively restructure terms rather than default (Das, Papaioannou and Trebesch, 2012). *Debt* is measured as a percent of GDP and is gathered from the World Bank (2011).

I also control for other economic indicators. I control for *GDP*, as states with larger GDP have a stronger economic base. This is logged for skewness. Official developmental assistance, *ODA*, and how effective a state is at extracting taxes from its population, *tax ratio*, are also controlled for. State's receiving more assistance are considered to be in a more perilous economic situation, while states that are more efficient at extracting taxes from their population have a stronger financial footing. *ODA* is measured as ratio of official assistance to total revenue and is logged for skewness. *GDP* data are from Gleditsch (2002) and *ODA* and *tax ratio* data were

taken from Thies (2008).

I include an indicator variable for *democracy*. Democratic states are expected to be more open economically and less likely to seize foreign assets because they are more likely to enforce the rule of law (De Haan and Sturm, 2003; Jensen, 2003; Li, 2006; though see Li and Reuveny, 2003; and Rigobon and Rodrik 2005). Democracy is coded as 1 if a state has a score of at least 6 on the polity2 scale, and 0 otherwise (Marshall and Jaggers, 2008).

Finally, I include a variable for *previous challenge*. Some states are considered to be less "debt tolerant" than other states and more likely to engage in sovereign theft (Reinhart, Rogoff and Savastano, 2003). In addition, states that fall outside of the US economic hierarchy, or the liberal, free-market economic order more generally, are likely to expropriate firms or tighten their capital controls with little regard to the preferences of the US. This variable counts of the number of prior challenges that a subordinate has engaged in.

4.2.3.3 Dominant Conflict Regressors ($X_{D_{22}}$)

As noted earlier, since the target of an economic challenge is the dominant state, the degree of relative hierarchy now corresponds to the subordinate's level of hierarchy. The greater the level of hierarchy, the less likely the dominant is to punish the subordinate for initiating a challenge. Hierarchy is measured in the same manner as was described in Chapter 3.

Global power represents the degree to which the dominant state has material supremacy over other major powers. When alternative powers are strong, the eco-

nomic policies they pursue appear more attractive to subordinate states, and the US is expected to more aggressively promote its own economic model and differentiate it from alternatives. Punishing challenges is one way that the US can differentiate what behavior fits within the framework of its liberal, free-market model and what does not. When alternative powers are weak, however, a dominant state has less incentive to differentiate its model. *Global power* is measured as a ratio of the dominant state's CINC score over the total CINC score of other great powers, as defined by the Correlates of War project (Singer, 1987; Singer, Bremer and Stuckey, 1972).

I also control for democracy and trade. Previous research has found that democratic states are less likely to initiate sanctions against one another (Cox and Drury, 2006; Lektzian and Souva, 2003, 2007). I account for how important of a trade partner the subordinate is to the US. The literature offers mixed expectations on this effect. Some expect trade to decrease the likelihood of economic sanctions (Hafner-Burton and Montgomery, 2008; Lektzian and Souva, 2003), others expect no effect (Whang, 2010), and some expect it to increase it (Barbieri, 2002). It is important to consider, however, that the sample in the punishment equation includes only states that have already initiated a challenge to the US economic hierarchy, and the initiation of sanctions in said cases might be treated differently than how economic sanctions are initiated more generally. *US Trade share* is measured as total bilateral trade as a percent of the US' GDP and multiplied by 100 for ease of interpretation. I code missing observations as instances of zero trade between the US and the subordinate. Data on *democracy* are coded in the same manner as above, while trade data are obtained from the Correlates of War project (Barbieri, Keshk and Pollins, 2008).

Lastly, I include the number of *previous challenges* by a state in the analysis. Once a punishment has been levied, additional sanctions may become redundant and, hence, less likely to be levied as existing sanctions continue (Bolks and Al-Sowayel, 2000; Dorussen and Mo, 2001). Descriptive statistics of each of these variable are displayed in Table 4.1.

4.3 Empirical Analysis

Table 4.2 displays the specification with the aggregated hierarchy measures, while Table 4.3 presents the specification using individual hierarchy components. Each model includes the coefficients and standard errors from both the subordinate and dominant states. Figure 4.1 provides a substantive interpretation of these results. I describe the results of each model before moving on to discussing their substantive implications.

In Table 4.2, the negative, statistically significant coefficient for *security hierarchy* in the status quo equation of the subordinate state indicates that as the position of a subordinate increases within the US security hierarchy, they are more likely to challenge the US economic order. The coefficient associated with *economic hierarchy* is positive and statistically significant. More economically subordinated states are less likely to take illiberal actions that oppose the US' economic foreign policy interests.

The results indicated that, in contrast to conflict behavior described in Chapter 3, both the US security and economic hierarchies influence subordinate economic behavior. Their effect, however, operates in opposite ways. Consistent with Hypoth-

esis 4, *economic hierarchy* reduces the likelihood of an economic challenge. *Security hierarchy*, on the other hand, increases the likelihood that a subordinate will challenge. This suggests, consistent with Conybeare (1987, 49-50), that not all forms of influence necessarily transfer into other areas. A possible explanation for this result is that US security partners expect that they will be given greater leeway in their economic behavior. This explanation is supported by previous work on IMF lending (Barro and Lee, 2005; Stone, 2002), which finds that states of more political relevance to the US have access to loans with with favorable terms, even if they have failed to meet the terms of previous loans, and foreign aid (Alesina and Dollar, 2000; Fleck and Kilby, 2010), which finds that security concerns are a better determinant of foreign aid than governance or economic need.

The status quo equation in Table 4.3 provides additional information regarding the factors behind each result. While both of the components that constitute the *economic hierarchy* index are positive, only *exchange rate* is statistically significant, and this is only at the .1 level when using a one-tailed test. *Trade Dependence* is not statistically significant. That the aggregated *economic hierarchy* is positive and statistically significant while the individual parts offer only a weak relationship on their own suggests that the component parts are substitutes, capturing different dimensions of the same concept. Along the *security hierarchy* dimension, the coefficient for *shared alliances* is negative and statistically significant while *military personnel* is insignificant. This suggests that *shared alliances* is likely driving the positive relationship between *security hierarchy* and economic challenges.

The coefficient for *Global power* is statistically insignificant in the conflict

equation for the dominant state in both Tables 4.2 and 4.3. These results offer no support for Hypothesis 5, which expected that the US was less likely to punish states that challenged the US economic order when alternative dominant states were strong.

The coefficient associated with *Economic hierarchy* is negative and statistically significant in the conflict equation for the dominant state in Table 4.2. This means that as the position of a subordinate state increases within the US economic hierarchy, it is less likely to be punished for an economic challenge. The coefficient for *Security hierarchy* is insignificant in this equation. The *economic hierarchy* result offers support for Hypothesis 6, which expected that challenges from states located higher within the US security order were less likely to be punished.

Table 4.3 offers more fine tuned results. Of the component variables that make up the *economic hierarchy* index, *exchange rate* is negative and statistically significant while *trade dependence* is not significant. This suggests that the US is less likely to punish a subordinate state's challenge as it cedes more control of its monetary policy to the US. Neither *shared alliances* nor *military personnel* were statistically significant indicators in the dominant state's conflict equation.

In the case of the subordinate state, most of the control variables in Tables 4.2 4.3 are either insignificant or in the predicted direction. *Previous challenge* and *oil* are positive and statistically significant, indicating that states are more likely to challenge if they have done so in the past or if they make significant profits from oil exports. *Debt* is negative and statistically significant, while *GDP growth* and *inflation* are insignificant. The latter results are consistent with Tomz and Wright (2007), who show that poor economic performance and sovereign theft is surprisingly

weak, and (Aguiar and Gopinath, 2006), who finds that the timing of a loan default is countercyclical to growth. The debt finding is somewhat unexpected, but fits data presented by Das, Papaioannou and Trebesch (2012) regarding debt restructuring and access to future credit.

Looking at the dominate state's control variables in Tables 4.2 and 4.3 finds *US trade share* to be positive and statistically significant in each. This means that as states make up a larger share of US trade, they are more likely to be punished in the event of a challenge. *Previous challenge* is negative and statistically significant in each table, though only at the .1 level for a one-tailed test in Table 4.3. States that frequently challenge may simply be outside the US hierarchy, with decreasing marginal returns for continuing to signal disapproval of their economic behavior. *Democracy* is a positive predictor of punishment in Table 4.2, but only at the .1 level in a one-tailed test, and is not robust to other specifications.

Substantive effects of the the subordinate-dominant interaction are presented in Figure 4.1. The graph on the left displays the predicted probabilities of subordinate challenge, dominant acquiescence to a challenge, and punishment from the dominant at varying levels of economic hierarchy, holding all other variables constant. The graph on the right displays the proportion of sanctions out of all challenges at varying levels of economic hierarchy.

It is evident from looking at the solid line in the first graph of Figure 4.1 that as the degree of *economic hierarchy* increases, the probability of an economic challenge as rises until reaching a critical value where it begins to decline. This surprising results seems at first to run counter to the results from the subordinate's challenge

equation presented in Tables 4.2 and 4.3. The result, however, makes sense once the "moral hazard" generated from the dominant state's reluctance to punish subordinate's located high within the economic hierarchy is considered. While Proposition 1 indicates that the subordinate state's degree of hierarchy would counteract the moral hazard generated from the dominant's reduced likelihood to punish it, this holds only for the hierarchy term itself. When variables other than *economic hierarchy* are accounted for, however, the increase in the subordinate's utility from conflict as the probability of punishment decreases can supersede the restraint of how much it values the status quo.

This is made apparent from Figure 4.2, which displays the results from a naive model including *only* the *economic hierarchy* variable, and sets the value of all other variables to zero. Here, the probabilities of both *challenge* and *punishment* decline as economic hierarchy increases.

Returning to Figure 4.1, it is also clear by looking at the short dashed line that the dominant state frequently acquiesces to subordinate challenges. The short dashed line indicating dominant acquiescence increases at a very similar rate to the solid line indicating the subordinate's probability of challenging. They do not, however, increase at an exact 1:1 ratio, as this would suggest that the probability of a sanction did not vary. Instead, the probability of a sanction decreases monotonically given a challenge as the degree of economic hierarchy increases. This is displayed in the second graph of Figure 4.1. This demonstrates that the decline in challenges (solid line) as the degree of economic hierarchy increases displayed on the left side of Figure 4.1 is not due to a greater threat of punishment, but instead is associated with an

increased valuation of the status quo.

This dissertation's theory of social hierarchy is able to contribute to the literature on economic statecraft in a number of ways. It can shed light on why firms engage in foreign investment, despite their lack of recourse in the event of sovereign theft. It does this by providing an *ex ante* measure of risk to investors, operating as a signal to investors of the subordinate state's quality and type of property rights. Economic hierarchy also encourages investment by serving as a common point of reference for standards of measurement, language, and legal issues, reducing transaction costs.

In addition, the theory provides an explanation for the timing of economic sanctions, by providing a proximate cause. Much of the sanctions literature is concerned with issues such as human rights violations, regime types, and specific trade terms (Lopez and Cortright, 1997; McGillivray and Stam, 2004). The drawback to these explanations, however, is that they do not tend to vary much over time. The effect of this, of course, is that much of the explanatory power is coming from cross-sectional variation that makes sanctions more likely rather than examining the proximate event that led to the issuing of the sanctions. I suggest that while these cross-sectional features influence the hazard rate of being a recipient of an economic sanction, they do not explain the timing of when economic sanctions are levied. The concept of economic challenges augments the existing literature by raising one possible cause.

The theory also helps explain why sanctions are often found to be "ineffective" in terms of reversing their target's behavior by focusing on their value as a signal to

other states of what behavior is deemed inappropriate. The literature been aware of possible selection bias for some time (Drezner, 1999, 2003; Smith, 1995) and developed sophisticated theories and econometric solutions for it (Lacy and Niou, 2004; McLean and Whang, 2010; Whang, 2010). My explanation provides leverage on this topic by suggesting that not all sanctions are levied with the intention of working, but instead serve as a signal to international investors and states about whether a dominant state deems specific policies as consistent with its economic model.

4.4 Conclusion

In this chapter, I examined the effects of social hierarchy on economic behavior. I argue that the benefits of economic hierarchy should be thought of as a club good that dominant state's provide to their members. Benefits include signals of specific property right regimes, reduced transaction costs, and reduced economic risk. Subordinate state's must surrender some degree of their fiscal and monetary autonomy, however, to the dominant state in return for these benefits. Moreover, investors can observe which dominant states' currency makes up a subordinate reserve, or whether and with whom it pegs its currency or depends on for trade. Economic hierarchy, therefore, serves as an observable signal to investors regarding a subordinate's level of risk and serves as an external constraint on its economic behavior.

I tested theory of social hierarchy developed in this dissertation by examining the US' economic hierarchy. I consider illiberal actions, such as expropriation of foreign firms, sovereign debt default, and enacting more protectionist capital market protections, as challenges to the US economic hierarchy. I focus on economic sanctions

as the primary tool of punishment used by the US. I find that states located higher with the US economic hierarchy put more value on the status quo, but are less likely to be punished when they do challenge. The results indicate that economic hierarchy plays an important role in a state's economic behavior, operating as an important determinant of a subordinate state's economic foreign policy and affecting the likelihood of a dominant levying economic sanctions.

Table 4.1: Descriptive Statistics, US Hierarchy and Economics.

Variable	Obs.	Mean	Std. Dev.	Min.	Max.
Challenge	2812	0.143	0.350	0	1
Security Hierarchy (challenge)	2812	0.202	0.274	0	1.629
Military Personnel (challenge)	2812	0.038	0.184	0	2.259
Shared Alliances (challenge)	2812	0.367	0.478	0	1
Economic Hierarchy (challenge)	2812	0.168	0.281	0	1.742
Exchange Rate (challenge)	2812	0.166	0.310	0	1
Trade Dependence (challenge)	2812	0.058	0.147	0	2.323
GDP Growth	2812	0.035	0.061	-0.371	0.673
Inflation	2812	0.168	0.351	-0.345	4.921
Oil	2812	0.152	0.359	0	1
Debt	2812	0.350	0.520	0	8.235
GDP	2812	10.619	1.827	5.874	15.267
ODA	2812	0.055	0.130	-.001	1.874
Tax Ratio	2812	0.166	0.090	.002	1.185
Democracy (challenge)	2812	0.446	0.497	0	1
Previous Challenge (challenge)	2812	3.140	3.391	0	17
Punishment	481	0.071	0.257	0	1
Security Hierarchy (punishment)	481	0.224	0.291	0	2.658
Military Personnel (punishment)	481	0.040	0.271	0	4.317
Shared Alliances (punishment)	481	0.408	0.491	0	1
Economic Hierarchy (punishment)	481	0.221	0.325	0	1.117
Exchange Rate (punishment)	481	0.227	0.378	0	1
Trade Dependence (punishment)	481	0.068	0.130	0	1.122
Global Power	481	30.953	1.703	28.274	33.970
Democracy (punishment)	481	0.335	0.472	0	1
US Trade Share	481	0.483	1.219	0	14.687
Previous Challenge (punishment)	481	4.842	3.408	1	17

Table 4.2: Economic Challenge and Punishment in US Hierarchy.

Actor	Subordinate		Dominant	
Status Quo Equation:				
Security Hierarchy	-0.550^{***}	(0.137)		
Economic Hierarchy	0.276^{**}	(0.138)		
Constant	5.983^{+}	(4.669)		
Acquiesce Equation:				
Constant	5.240	(4.715)		
Conflict Equation:				
Global Power			0.029	(0.055)
Security Hierarchy			0.128	(0.391)
Economic Hierarchy			-0.853^{**}	(0.391)
Democracy	-0.138	(1.026)	0.291^{+}	(0.199)
US Trade Share			0.242^{***}	(0.66)
Previous Challenge	0.488^{***}	(0.189)	-0.045^{+}	(0.030)
GDP Growth	-7.201	(8.089)		
Inflation	-0.887	(1.071)		
Oil	2.474^{**}	(1.161)		
Debt	-4.234^{**}	(1.741)		
GDP	0.315	(0.573)		
ODA	0.400	(0.421)		
Tax Ratio	-4.669	(7.630)		
Constant			-2.322^{+}	(1.725)
Log-Likelihood	-1072.958		-110.467	
Observations	2812		481	

Note: $^{***}p$ <0.01, $^{**}p$ <0.05, $^{*}p$ <0.1, two-tailed; ^{+}p <0.1, one-tailed. Subordinate standard errors calculated with bootstraps (500 simulations).

Table 4.3: Economic Challenge and Punishment in US Hierarchy. Hierarchy Index Reduced to Components.

Actor	Subordinate		Dominant	
Status Quo Equation:				
Security Hierarchy				
Shared Alliances	-0.398^{***}	(0.095)		
Military Personnel	0.247	(0.254)		
Economic Hierarchy				
Trade Dependence	0.073	(0.391)		
Exchange Rate	0.200^{+}	(0.137)		
Constant	4.832	(5.012)		
Acquiesce Equation:				
Constant	4.056	(5.065)		
Conflict Equation:				
Global Power			0.027	(0.055)
Security Hierarchy				
Shared Alliances			0.123	(0.226)
Military Personnel			−0.383	(0.939)
Economic Hierarchy				
Trade Dependence			0.254	(0.796)
Exchange Rate			-0.823^{**}	(0.345)
Democracy	−0.359	(0.995)	0.248	(0.205)
US Trade Share			0.218^{***}	(0.067)
Previous Challenge	0.458^{**}	(0.208)	-0.059^{*}	(0.032)
GDP Growth	−6.942	(7.496)		
Inflation	−1.242	(1.238)		
Oil	2.493^{**}	(1.074)		
Debt	-4.156^{**}	(1.747)		
GDP	0.266	(0.631)		
ODA	0.461	(0.412)		
Tax Ratio	−5.531	(7.808)		
Constant			-2.210^{+}	(1.726)
Log-Likelihood	-1066.067		-109.428	
Observations	2812		481	

Note: $^{***}p$ <0.01, $^{**}p$ <0.05, $^{*}p$ <0.1, two-tailed; ^{+}p <0.1, one-tailed. Subordinate standard errors calculated with bootstraps (500 simulations).

Table 4.4: Economic Challenge and Punishment in US Hierarchy. MIDs included in Punishment.

Actor	Subordinate		Dominant	
Status Quo Equation:				
Security Hierarchy	-0.483^{***}	(0.136)		
Economic Hierarchy	0.261^{*}	(0.155)		
Constant	4.883	(3.862)		
Acquiesce Equation:				
Constant	4.178	(3.901)		
Conflict Equation:				
Global Power			0.003	(0.051)
Security Hierarchy			0.039	(0.344)
Economic Hierarchy			-0.760^{**}	(0.357)
Democracy	−0.621	(0.909)	0.174	(0.193)
US Trade Share			0.219^{***}	(0.063)
Previous Challenge	0.520^{***}	(0.172)	-0.038^{+}	(0.028)
GDP Growth	−6.122	(7.161)		
Inflation	−0.755	(1.033)		
Oil	2.055^{**}	(0.990)		
Debt	-3.514^{**}	(1.528)		
GDP	0.169	(0.536)		
ODA	0.265	(0.402)		
Tax Ratio	−4.961	(6.708)		
Constant			−1.403	(1.614)
Log-Likelihood	-1070.046		-125.307	
Observations	2812		481	

Note: $^{***}p$ <0.01, $^{**}p$ <0.05, $^{*}p$ <0.1, two-tailed; ^{+}p <0.1, one-tailed. Subordinate standard errors calculated with bootstraps (500 simulations).

Table 4.5: Economic Challenge and Punishment in US Hierarchy. Hierarchy Index Reduced to Components. MIDs included in Punishment Variable.

Actor	Subordinate		Dominant	
Status Quo Equation:				
Security Hierarchy				
Shared Alliances	-0.329^{***}	(0.096)		
Military Personnel	0.273	(0.238)		
Economic Hierarchy				
Trade Dependence	-0.279	(0.509)		
Exchange Rate	$.228^{+}$	(0.149)		
Constant	3.249	(4.024)		
Acquiesce Equation:				
Constant	2.502	(4.065)		
Conflict Equation:				
Global Power			0.004	(0.051)
Security Hierarchy				
Shared Alliances			0.046	(0.216)
Military Personnel			-0.528	(1.203)
Economic Hierarchy				
Trade Dependence			0.809	(0.676)
Exchange Rate			-0.886^{***}	(0.333)
Democracy	-0.866	(0.839)	0.121	(0.199)
US Trade Share			0.189^{***}	(0.063)
Previous Challenge	0.450^{**}	(0.192)	-0.057^{*}	(0.031)
GDP Growth	-5.471	(6.531)		
Inflation	-0.922	(1.032)		
Oil	2.181^{**}	(1.062)		
Debt	-3.428^{**}	(1.443)		
GDP	0.109	(0.518)		
ODA	0.366	(0.374)		
Tax Ratio	-6.050	(5.277)		
Constant			-1.369	(1.622)
Log-Likelihood	-1065.030		-122.798	
Observations	2812		481	

Note: $^{***}p$ <0.01, $^{**}p$ <0.05, $^{*}p$ <0.1, two-tailed; ^{+}p <0.1, one-tailed. Subordinate standard errors calculated with bootstraps (500 simulations).

Table 4.6: Economic Challenge and Punishment in US Hierarchy. Punishment in Same Year.

Actor	Subordinate		Dominant	
Status Quo Equation:				
Security Hierarchy	-0.436^{***}	(0.144)		
Economic Hierarchy	0.087	(0.155)		
Constant	3.476	(9.088)		
Acquiesce Equation:				
Constant	2.551	(9.126)		
Conflict Equation:				
Global Power			0.051	(0.068)
Security Hierarchy			0.015	(0.480)
Economic Hierarchy			-1.038^{*}	(0.595)
Democracy	-1.698	(2.171)	0.015	(0.262)
US Trade Share			0.274^{***}	(0.075)
Previous Challenge	0.461	(0.378)	-0.036	(0.039)
GDP Growth	-12.318	(14.608)		
Inflation	-1.786	(2.107)		
Oil	4.850^{**}	(2.144)		
Debt	-4.587^{+}	(3.191)		
GDP	0.407	(1.233)		
ODA	0.460	(0.838)		
Tax Ratio	-22.768^{+}	(17.487)		
Constant			-3.258^{+}	(2.158)
Log-Likelihood	-1098.8212		-66.056	
Observations	2812		481	

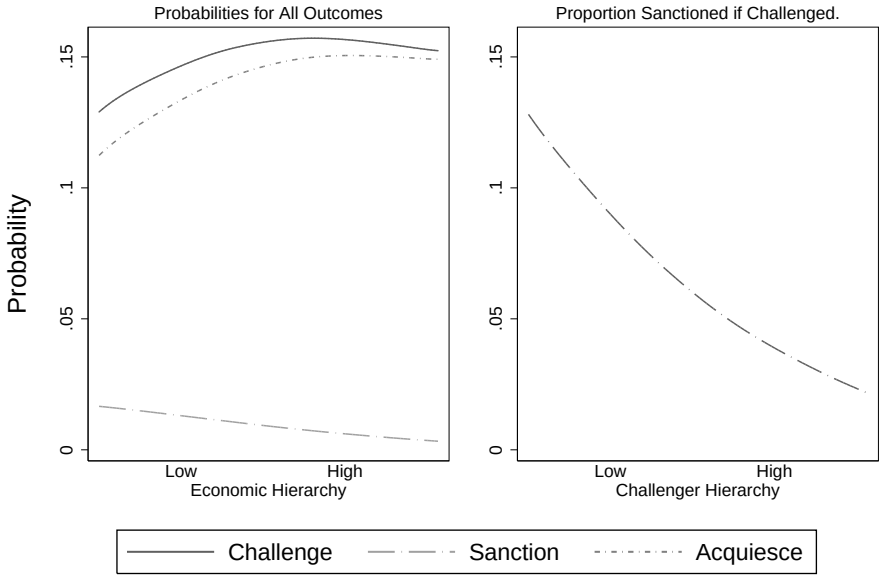
Note: $^{***}p$ <0.01, $^{**}p$ <0.05, $^{*}p$ <0.1, two-tailed; ^{+}p <0.1, one-tailed. Subordinate standard errors calculated with bootstraps (500 simulations).

Table 4.7: Economic Challenge and Punishment in US Hierarchy. Hierarchy Index Reduced to Components. Punishment in Same Year.

Actor	Subordinate		Dominant	
Status Quo Equation:				
Security Hierarchy				
Shared Alliances	-0.239^{***}	(0.073)		
Military Personnel	0.467	(0.808)		
Economic Hierarchy				
Trade Dependence	-0.111	(0.231)		
Exchange Rate	-0.149^{+}	(0.107)		
Constant	-4.486	(8.261)		
Acquiesce Equation:				
Constant	-5.577	(8.282)		
Conflict Equation:				
Global Power			0.054	(0.069)
Security Hierarchy				
Shared Alliances			0.202	(0.301)
Military Personnel			-16.268	(13.235)
Economic Hierarchy				
Trade Dependence			-0.995	(1.531)
Exchange Rate			-0.795^{+}	(0.498)
Democracy	-1.366	(1.719)	0.025	(0.271)
US Trade Share			0.307^{***}	(0.086)
Previous Challenge	0.341	(0.326)	-0.063^{+}	(0.045)
GDP Growth	-11.440	(12.428)		
Inflation	-0.951	(1.697)		
Oil	4.095^{**}	(1.760)		
Debt	-3.122	(2.527)		
GDP	-0.299	(1.125)		
ODA	0.149	(0.753)		
Tax Ratio	-18.480	(15.946)		
Constant			-3.257^{+}	(2.180)
Log-Likelihood	-1111.473		-64.315	
Observations	2812		481	

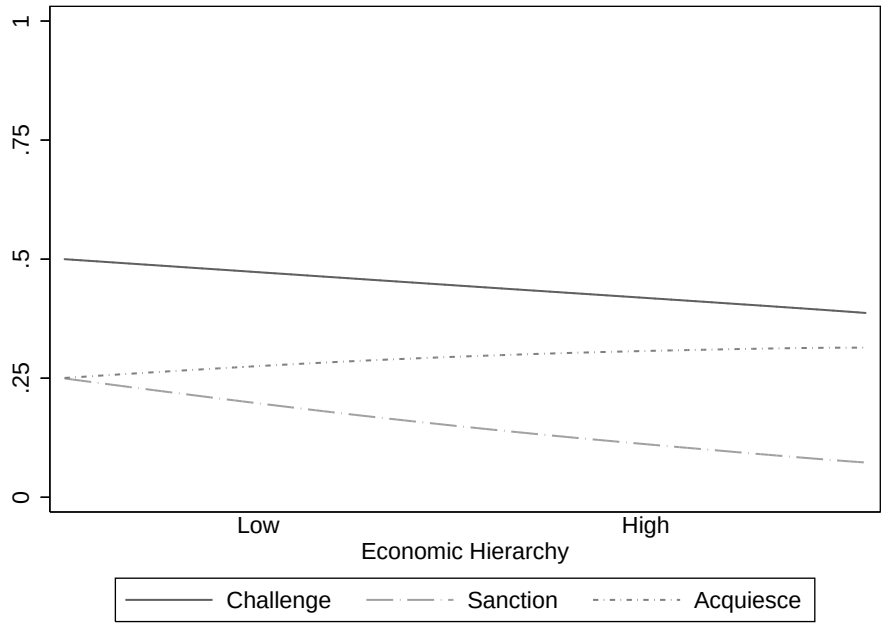
Note: $^{***}p$ <0.01, $^{**}p$ <0.05, $^{*}p$ <0.1, two-tailed; ^{+}p <0.1, one-tailed. Subordinate standard errors calculated with bootstraps (500 simulations).

Figure 4.1: Predicted Outcomes at Varying Levels of Economic Hierarchy.



Note: Predicted probabilities for each outcome where the challenger is autocratic and an oil exporter. All other variables held to their mean or median.

Figure 4.2: Predicted Outcomes at Varying Levels of Economic Hierarchy, all other Variables Suppressed.



CHAPTER 5
BRITISH COLONIAL HIERARCHY AND CONFLICT

In order to access whether there is variation between dominant states, I extend the previous analysis to cases involving Great Britain—widely acknowledged as the world's leading power and hegemon from the eighteenth through early twentieth centuries (e.g., Ferguson, 2002; Lobell, 2001; Krasner, 1976; Thompson, 1988, 1995). Examining alternative cases of social hierarchy is important because the US hierarchy is one example of how a dominant state structures international relations. Characteristics exhibited by the US may not be generalizable or representative of the social hierarchies of other states. By comparing the US hierarchy to that of Great Britain, it becomes possible to identify characteristics that are common to dominant states and separate these from state specific idiosyncrasies (King, Keohane and Verba, 1994). For instance, Pahre (1999) suggests that while the US emphasizes overt influence, or 'hard power,' Great Britain emphasized 'soft power,' with citizens in subordinate states lobbying their own government to change their policies to those preferred by the dominant state (Nye, 1990, 2002-2003).

Rather than examining Great Britain's interactions with other states in the international system, I examine social hierarchy within the British Empire's colonial structure. This should provide a hard test of the theory as colonialism is generally thought of as an exploitive economic system based on military coercion, leaving little room for social hierarchy (Cardoso and Faletto, 1979; Killingray, 1986; Wendt and Friedheim, 1995; though see Lake, 2009, 37).

While all colonies operated under the backdrop of tacit military suppression (Doyle, 1986; O'Brien and Pigman, 1992), Great Britain, in contrast to other colonial powers such as Spain, Belgium, and the Netherlands, exhibited substantial variation in how they controlled the many colonies and quasi-independent polities within their empire (Frankema, 2011; Grier, 1999; Lange, Mahoney and Vom Hau, 2006). Lange (2004) argues that the source of this variation rested largely on the degree to which a polity's colonial leadership voluntarily adhered to British authority. Great Britain was able to develop a more extensive legal-administrative apparatus in polities that conceded a greater degree of authority, while Great Britain used more indirect methods—utilizing existing local government structures—in colonies where their rule was more acrimonious.

5.1 British Colonial Hierarchy

Social hierarchy translates itself to the colonial setting by the level of direct administrative control exercised by Great Britain. British colonial administration varied from legal-administrative institutions to indirect customary law (Lange, 2004, 909). Whereas the legal-administrative approach dismantled pre-existing political institutions and largely replaced them with a rationalist, rule-based administration, indirect rule left in place traditional governing structures. In either case, however, British-ruled colonies tended to exert significant influence over their own domestic affairs.

In fact, after 1839, Great Britain exerted total control in only two areas of colonial affairs: writing their constitution and foreign affairs. All other political mat-

ters, including domestic policy, budgets, even trade policy, were determined by local government (Ferguson, 2002; Grier, 1999).[1] Moreover, Britain tailored constitutions to fit local needs, giving them significant control in the structure of government institutions. This permitted substantial room for variation in Great Britain's social authority to manifest.

On the lowest end of the authority scale, Great Britain utilized indirect methods of rule. Indirect rule was most common in colonies that were considered less open towards British customs and where the British government greater interest in obtaining specific resources than state-building (Acemoglu, Johnson and Robinson, 2001, 2002). In Jamaica, for example, British military forces were unable to suppress the Maroons, a group of former slaves that had escaped during Spain's previous control of the island. After numerous unsuccessful attempts to repress uprisings by the Maroons, a treaty was signed in 1739 that granting them autonomy over a specified area in return for refraining from attacking plantations to free slaves and returning runaway slaves for a reward (Ferguson, 2002, 68).

Great Britain benefited from indirect rule by exercising some degree of control over a territory's mineral, material, and strategic wealth—especially important within the context of the global brinkmanship between Great Britain and her colonial rivals, such as France, Germany, and Spain—while simultaneously reducing the risk of

[1](Local governments controlled all aspects of trade policies, including with whom trade was conducted. Great Britain required no preferential treatment for British goods, and colonies could (and did) impose tariffs against these goods (Ferguson, 2002, 208). Great Britain even permitted colonies holding "dominion" status to determine their monetary policies (though all remained on the sterling) (Ferguson, 2002; Mitchener and Weidenmier, 2008).

outright rebellion that direct control might incite. Indirect rule, however, had hidden costs. Negotiating these arrangements—politically in terms of learning the complex traditions of indigenous peoples and economically in terms of inefficiencies in tax extraction and legal issues resulting from the informal market—incurred significant costs on imperial government (Spear, 2003).

Conversely, polities that ceded greater authority to Great Britain's rule sought to mimic British institutions in government design, property right protections, and economic practices (Acemoglu, Johnson and Robinson, 2001, 2002).[2] In contrast to Acemoglu, Johnson and Robinson (2001, 2002), however, Lange (2004) argues that factors other than the presence of British settlers influenced the degree of indirect control in a colony. That is, variation existed among the non-white, "dominion"-status colonies. India, for example, had an extensive legal-administrative apparatus, reducing the need for coercive military control despite its vast population. In fact, the native Indian army significantly outnumbered their British counterparts, and were often used to suppress rebellions or respond to external threats in other parts of the Empire (Ferguson, 2002).

Great Britain benefited from reduced military expenditures and transaction costs associated with trade in colonies where it held greater legitimacy. At the same time, an arrangement based on hierarchy rather than pure military might benefited the colony by improving institutional features, such as rule of law, and created a

[2]See Davie (2000) for a case study of British accounting practices in Fiji. See Ferguson (2002, 157-159) for a discussion in the role of British education on integrating Indian elites into the colonial government structure.

pro-business environment that encouraged economic development long after British rule ended (Acemoglu, Johnson and Robinson, 2001, 2002; Grier, 1999; Lange, 2003; Wade, 1990).[3]

5.1.1 Hypotheses about Conflict Behavior

As noted earlier, British colonies lacked foreign policy autonomy within the security dimension. This did not mean, however, that colonial leadership, either indigenous or imperial, were unable to challenge Great Britain's hierarchy. Rather than initiating militarized disputes against foreign states, Wimmer and Min (2009, 401-402) argue that colonies engaged in two types of intra-polity conflict: secessionist and non-secessionist civil movements against the imperial power. Challenged by a civil movement, the imperial power responded by either acquiescing to the rebels' demands or initiating a military crack-down. If it reached a large enough scale, the latter had to potential to turn into a civil war.

A secessionist civil movement occurs when a colony initiates a political challenge against the political center (imperial power) demanding independence, such as the Ndebele and Shona rebellion during the Second Matabele War in Zimbabwe. Non-secessionist movements may include fights over domestic relationships, including issues of domestic autonomy, distribution of local rents, and local lawmaking. An

[3]The inclusion of post-British governance within Britain's colonial agenda is not accidental. Great Britain consciously included the goal of eventual self-rule for its colonies in its foreign policy, though it sought to continue to include them within its sphere of cultural, economic, and military influence (Philpott, 2001). As argue by Ferguson (2002, 308), what the British Empire sought to prove was "that empire is a form of international government that can work – and not just for the benefit of the ruling power." It is important to note, however, that while British Empire may not work *just* for the benefit of the ruling power, it was still intended to work *for* Britain's benefit.

example of a non-secessionist civil movement, is the Bambatha Uprising in South Africa, in which the Zulu resisted a tax increase. In both cases, the subordinated colony is attempting to move the status quo closer to its own ideal point, whether that is seeking more autonomy or a greater proportion of rents from trade and taxes in the case of a non-secessionist insurrection, or gaining full independence in the case of a secessionist rebellion. A social movement of either type is a significant, direct assault to the preferred status quo of Great Britain, and thus constitutes a challenge to its social hierarchy.

Proposition 1 states that as the position of a subordinate increases within the dominant's hierarchy, it is less likely to initiate a challenge. As I argued previously, the degree of social hierarchy is related to the level of direct rule via legal-administrative apparati. In the British context, this means that colonies which cede Great Britain a greater degree of legitimacy are less likely to initiate a challenge.

Hypothesis 7. *There is an inverse relationship between the degree of hierarchy between a colony and Great Britain and the probability that a colony will initiate a militarized challenge.*

Proposition 3 demonstrates that the probability of a punishment increases as the relative distance between the target and subordinate state increases. As was the case in Chapter 4, however, the target in the colonial setting is the dominant state, i.e., the imperial power. Since the colonial challenge are by definition directed at Great Britain, the degree of relative hierarchy also corresponds to the challenger's degree of absolute hierarchy. Colonies that have more developed legal-administrative

apparati have a closer resemblance to Great Britain, which limits Great Britain's justification to 'civilize' the indigenous population by force (Ferguson, 2002; Philpott, 2001). Great Britain views such colonies as higher within its hierarchy. When a colony located low in the Great Britain's hierarchy initiates a challenge, it is more likely to face a militarized response than if the colony were located at a higher position.

Hypothesis 8. *Challenges from colonies located higher within the British hierarchy are less likely to be punished.*

5.2 Research Design

The hypotheses are difficult to empirically test in a systematic manner owing to a number of research problems unique to th the British Empire. First, I must define what constitutes a British colony. Egypt, for example, was under significant British influence in the later half of the nineteenth century, but was also a province of the Ottoman Empire. I use coding rules established by Wimmer and Min (2006, 2009) to determine whether a territory is a British colony. They code imperial incorporation as the first year "a territory was effectively administered by an empire, or a garrison was established that controlled the territory militarily, or a territory legally became a protectorate or colony (Wimmer and Min, 2006, 880). A territory is no longer a British colony when it either gains legal sovereignty or becomes a colony possessed by another imperial state.

Second, owing to a lack of reliable data, only instances of wars between the imperial power and the colony are studies rather than lower levels of militarized conflict. Examining only wars raises the threshold of what is considered a challenge

or punishment by colonial and imperial governments. I use a dataset generated by Wimmer and Min (2006, 2009) to measure colonial–imperial, or intra-polity, wars. This data set expands on the Correlates of War data set to include wars both between and among colonies, quasi-independent polities, and non-recognized states.[4]

In addition, these data are only available in aggregate form. This is problematic because we only observe when intra-polity wars occur, but cannot separate the cases where oppositions elected not to fight from cases where Great Britain acquiesced to a challenge. I address this by deriving an estimator which uses maximum likelihood to probabilistically estimate the decisions of whether to challenge and punish from data where only the aggregated outcome data is available.

In order to construct hierarchy measures, I use data from Lange (2004) and Mitchener and Weidenmier (2008). The Lange data examines the level of indirect British control in 33 British colonies. Mitchener and Weidenmier created a trade data set which includes colonial trade figures for the period 1870-1913. I use these data to construct measures of hierarchy that are analogous to those used in the previous chapters. These are described in more detail below.

The unit of analysis is the subordinate-year. Each observation contains information regarding characteristics of the subordinate and dominant, as well as their joint features, such as the level of hierarchy. This observation unit is appropriate

[4]This is similar to the Correlates of War extra-systemic war dataset (Sarkees and Wayman, 2010). However, the two data sets differ in that data regarding conflict are separated by war aim (war of conquest by the imperial power vs intra-polity war) and domestic characteristics of non-state actors are collected in the Wimmer and Min (2006, 2009) data. Below, I discuss the importance of accounting for war aim when discussing the dependent variable.

because it allows for the identification of which cases experienced a civil war, while also permitting measures of hierarchy and specific characteristics of each colony and Great Britain for each year.

Unfortunately, not all data could be gathered for the same political units across the sources. Conflict data and indirect British control, for example, are coded to reflect where they occurred in 2001 territorial units (e.g., Pakistan) while trade data are gathered in terms of colonial political units (e.g., Newfoundland is separate from Canada). To address this, I aggregate data to the level of the dependent variable (2001 territorial units). This results in the sample including 26 British colonies between the years 1870-1913, yielding 980 observations after accounting for missingness and the entry and exit of colonies from the British Empire.

5.2.1 Methodology

The theory outlined in Chapter 2 expects strategic behavior on the part of subordinate and dominant states. Unfortunately, the structure of data prevents using the statistical approach employed in the previous empirical chapters—strategic probit—because, while the outcome of an interactive process is observed, the actions of players are not.[5] In contrast to previous chapters, where data for both the *challenge* and *punishment* actions are available, in the British colonial setting we only observe when a civil war occurs, but not when colonies elect to challenge or when

[5]Signorino (2007, 487) states that "assuming one has data for the players decisions and regressors for the utilities, then one can estimate parameters via maximum likelihood estimation." Unfortunately, as is the case here, one does not always have data for the players' decisions.

Great Britain choose to punishment. Ignoring these decisions during estimation is problematic, because doing so groups qualitatively distinct "non-conflict" outcomes together, such as *status quo* and *acquiescence* (see Figure 3.1). Grouping these outcomes together effectively treats the observed outcome as an additive function of actor utilities and ignores the conditional nature of the subordinate's choices, producing biased estimates of the subordinate's utility (Clarke and Signorino, 2010; Signorino and Yilmaz, 2003).

I address this by deriving and implementing an estimator—censored strategic probit (CSP)—that probabilistically estimates the *challenge* and *punishment* actions when only outcome aggregated data is available. In contrast to a split-population binary choice estimator (Xiang, 2010), CSP explicitly accounts for strategic behavior on the part of the actors. Assuming π_{ij} is i.i.d. and normally distributed with mean 0 and variance 1, the likelihood takes the form:

$$L = \prod_{i=1}^{n} \mathrm{P}\left(Y_i = 1\right)^{y_i} \mathrm{P}\left(Y_i = 0\right)^{1-y_i} \tag{5.1}$$

where

$$\begin{aligned}
\Pr\left(Y_i = 1\right) &= p_S p_D, \\
\Pr\left(Y_i = 0\right) &= \left(1 - p_S\right) + p_S\left(1 - p_D\right) = 1 - p_S p_D, \\
p_S &= \Phi\left[\frac{p_{\mathrm{B}} U_1\left(Con\right) + \left(1 - p_{\mathrm{B}}\right)\left(U_1 Acq\right) - U_1\left(SQ\right)}{\sqrt{p_{\mathrm{B}}^2 + \left(1 - p_{\mathrm{B}}\right)^2 + 1}}\right], \\
p_D &= \Phi\left[\frac{U_2\left(Con\right) - U_2\left(Acq\right)}{\sqrt{2}}\right],
\end{aligned} \tag{5.2}$$

and U_{ij} is a set of regressors, i indicates the actor, j the payoff, Φ is the normal cumu-

lative density function, S denotes the subordinate, D the dominant, SQ represents the status quo outcome, Acq the acquiesce outcome, Con the conflict outcome, and Y is the binary dependent variable. The estimator corresponds to the equations 2.1 and 2.2 and the structure depicted in Figure 3.2.

See Appendix for Monte Carlo results and root mean squared error comparisons between CSP, traditional probit, and split-sample probit models when actors follow a strategic data generating process.

5.2.2 Dependent Variable

The dependent variable is *intra-polity war*, obtained from Wimmer and Min (2006, 2009). They code an intra-polity war any conflict with at least 1,000 battle-deaths fought by a polities within a state (Wimmer and Min, 2006, 879-880). Intra-polity wars are fought for a variety of reasons: independence, increased autonomy, changes in colonial administration, changes to the distribution of income from trade, etc. These types of war do *not* include wars of imperial conquest against independent polities. The First Boer War, for example, is included as an *intra-polity war* because it was a war of independence fought between the Boers (decedents of the Dutch-speaking settlers in Souther Africa) and the British colonial administration of which they were a part. The Second Boer War, however, is not included because it was fought between the British Empire and the free Boer republics that emerged after the war for independence (the Transvaal Republic and the Orange Free State). The former case involves a challenge to the British colonial hierarchy while the latter case is a war between independent states featuring predatory actions by the imperial power

to expand its holdings. Predatory wars fall outside of the social contract bargain central to this dissertation's theory of social hierarchy.

5.2.3 Independent Variables

5.2.3.1 Subordinate Status Quo Regressors ($X_{S_{11}}$)

I capture social hierarchy using two measures: *Government Hierarchy* and *Economic Hierarchy*. *Government hierarchy* captures the degree of direct imperial authority in a colony using data from Lange (2004). Indirect rule was common when local populations did not accept the legitimacy of the British rule because it provided a buffer of local chiefs between the British imperial government and the colonial population (Grier, 1999; Lange, 2004; Spear, 2003). Lange measures the degree of indirect rule by dividing the number of colonial customary court cases heard by local chiefs from the total number of court cases, which include both customary and magistrate court cases (i.e., heard by colonial officials). Indirect control measure has a strong, negative correlation with the number of police per capita ($r = -0.82$), suggesting it is inversely related to the legal-administrative personnel in a colony (Lange, 2004, 909). I reverse the measure used by Lange (2004) so that now larger values represent a closer resemblance to British-style government and its legal-administrative apparatus, and hence more, greater acceptance of British rule.

I measure *relative trade* using data from Mitchener and Weidenmier (2008). They collect annual bilateral trade figures for all international states and colonies for the period 1870-1913 where data is available. Beginning in the second half of the 1800s, Great Britain, in sharp contrast to other leading imperial states, permitted

colonies trade goods with other states and non-British colonies (Lobell, 1999; O'Brien and Pigman, 1992). In response, some colonies diversified their trade portfolios and became less reliant upon imperial trade. Canada and Jamaica, for example, traded heavily with the US. To account for this, I follow the coding scheme of Lake (2009, Ch 3) and calculate *relative trade* by taking the level of bilateral trade per capita between a colony and Great Britain and subtracting other major powers (France, Germany, Spain, US) in order to access a colonies reliance on the British market.[6] As was the case in earlier chapters, a lack of trade diversity reflects acceptance of the status quo. *Government hierarchy* and *relative trade* are weakly correlated ($r = 0.15$), suggesting they capture different policy dimensions.

In contrast to previous chapters, I do not control for either exchange rate or independent alliances, as neither is applicable within the colonial context. As was noted above, Great Britain controlled colonial foreign policies; therefore, colonies were not permitted to have independent alliances (Wimmer and Min, 2006, 2009). Regarding monetary policy, only the white settler "dominions" were given autonomy along this dimension, and each remained firmly subordinate to Great Britain by adopting the sterling pound. All other colonies where members of various imperial currency unions with Great Britain, which frequently also included several other British colonies (Mitchener and Weidenmier, 2008, 1823-1824).

Finally, Australia, Canada, New Zealand, and South Africa are expected to be

[6]Lake (2009, Ch 3) takes trade as a percent of GDP. GDP data, however, are unavailable for the most of colonies in the sample. I follow Mitchener and Weidenmier (2008, 1810) and use population as a substituted form of a state's mass and normalize trade on a per capita basis. Following Lake, *relative trade* normalized to the highest value in 1900 to ease comparison across units over time.

somewhat different given their history as settler colonies with "dominion" status, with these holding significantly larger European populations than other British colonies (Acemoglu, Johnson and Robinson, 2001, 2002; Lange, 2004). On account of this, Lange (2004) excludes them from his analysis, viewing their levels of direct rule as qualitatively distinct from colonies with smaller European populations. In contrast to other colonies, *intra-polity wars* in *dominions* are more likely to feature uprising directed at the domestic European population rather than an explicit challenge to British rule. That is, indigenous populations opposed the minority government, but did not necessarily seek to leave the British Empire. I include an indicator variable for colonies with *dominion* status.

5.2.3.2 Subordinate Conflict Regressors ($X_{S_{22}}$)

I control for a number of factors that may effect the likelihood of a *challenge*. I proxy imperial investment in a colony by measuring the log of *railroad* tracks in miles. The British Empire heavily subsidized the construction of railroads in order to increase trade, but this had the added benefit of providing an infrastructure for continued economic development (Ferguson, 2002, 142). *Railroads* present a test of the common "greed" explanation for civil conflict, as colonial leaders may be more likely to seek an increased share of profits as the value of their colonial holdings increase (Grossman, 1999). In contrast, greater economic development also increases the "opportunity costs" associated with joining an insurgency, which may reduce the likelihood of a *challenge* (Collier and Hoeffler, 2004). Data are obtained from Mitchener and Weidenmier (2008).

I also control for *area*, *religious fractionalization*, and *previous war*. Larger territories are associated with lower rule of law (Rigobon and Rodrik, 2005) and are expected to increase the ease of rebellion by making it more difficult for the colonial armies to track and arrest insurgents (Fearon and Laitin, 2003). These data are logged to control for skewness. *Religious fractionalization* is also a potential source of conflict within colonies, as competition between religious sects may lead to violence.[7] Lastly, I control for the number of *previous wars*, as prior conflicts may generate resentment among indigenous populations and increase the probability of future challenges. All data for these variables are obtained from Wimmer and Min (2006, 2009).

5.2.3.3 Dominant Conflict Regressors ($X_{D_{22}}$)

Great Britain is less likely to punish states located higher within their hierarchy. Great Britain faced more internal opposition to conflicts with colonies that greater degrees of hierarchy, instead facing pressure to accommodate grievances in a peaceful manner consistent with Britain's liberal ideology (Ferguson, 2002; Philpott, 2001). Therefore, I expect *government hierarchy* and *relative trade* to affect the probability of *punishment*.

I control for *global power*, *previous war*, and *dominion* status. In contrast to earlier chapters, *global power* is not expected to operate as it had in cases involving US hierarchy. Unlike subordinate states, colonies cannot choose to follow an alternative dominant state. While there is variation in the degree of social hierarchy

[7] I do not include *ethnic fractionalization* because it is highly correlated with, and may be an explanatory factor for, indirect control (Lange, 2004).

among colonies, they are still under the rule of their imperial power and hold no independent legal status (Philpott, 2001). As such, *global power* represents the ease at which British forces moved around the world and its ability to fight conflicts in multiple theaters. *Previous war* accounts for previous antagonistic relations between the imperial center and periphery. The imperial center may appease insurgent as the number of previous wars increases as the government becomes weary of repeated costly conflicts, as illustrated by the Jamaica case described above. Finally, I include *dominion* to acknowledge that British forces were more willing to defend the interests of colonial elites in the white settler colonies than elsewhere. Descriptive statistics for all variables are presented in Table 5.1.

5.3 Empirical Analysis

Table 5.2 presents the empirical results. Looking at the status quo equation, the coefficient associated with *government hierarchy* is positive and statistically significant for the subordinate. This indicates that a colony places greater value on the status quo as a the degree of government hierarchy increases. This is consistent with Hypothesis 7, which expected that colonies are less likely to initiate a challenge as the their degree of hierarchy increases. *Relative trade* is insignificant, suggesting that trade dependence does not influence the likelihood of a subordinate to challenge the status quo. Finally, *dominion* is negative and statistically significant, indicating that colonies with "dominion" status are less likely to value the status quo.

Turning to the dominant's conflict equation, *government hierarchy* is negative and statistically significant. The result implies that as the degree of government hi-

erarchy increases, a dominant state is less likely to punish a challenge. The result is consistent with Hypothesis 8, which expected that increases in hierarchy are associated with a decreased likelihood of punishment. *Relative trade*, on the hand, is positive and statistically significant. The result indicates that colonies that are more reliant on trade with Great Britain are more likely to be punished for a challenge. This is consistent with theories expecting asymmetric trade relationships to be more conflict prone (Barbieri, 2002; Gasiorowski, 1986; Wallensteen, 1973).

Next, *dominion* is positive and statistically significant. Challenges that occur in "dominions" are more likely to receive an imperial response. I interpret this as evidence that the British government came to the aid of colonial governments facing threats from indigenous populations—i.e., the First Boer War—as opposed to the British being more likely to suppress colonists in the settler colonies. This interpretation is consistent with the qualitative literature. Ferguson (2002, 79), for instance, argues that "London lacked the stomach to impose British rule on white colonists who were determined to resist it. It was one thing to fight native Americans or mutinous slaves, but it was another to fight what amounted to your own people."

Looking at the other control variables, *railroads* is negative, but only significant at the .1-level using a one-tail test. *Religious fractionalization* is negative and significant. Given the high threshold necessary to be considered an intra-polity war, this surprising result may suggest that religious divisions rarely reached the severity to constitute a challenge as operationalized here. *Previous war* is insignificant in the subordinate's conflict equation, but negative and significant in the dominant's conflict equation. The latter result suggests war-weariness, or less resolve, on the part

of the imperial power.[8] Finally, *global power* is positive and statistically significant, indicating that as Great Britain becomes stronger than other major powers it is more likely to punish challenges from colonial subordinates.

Predicted probabilities are plotted in Figure 5.1 in order to access the substantive effect of the colony-imperial power social hierarchy interaction. Challenges from subordinates (solid line) increase sharply when their degree of *government hierarchy* reaches a value of approximately .4, peaks at .75, and then declines. At values less than .4, the probability of punishment from Great Britain seems to deter challenges. After reaching this value, however, the probability of punishment declines enough for challenges to occasionally be worth more than the risk of punishment. The declining risk of punishment is evident by the rising probability of British acquiescence (dotted line). This is not to say that Great Britain never punishes, as the the probability of a colonial war (long dashed line) increases as well. As Great Britain's utility to punish colonies with greater degrees of *government hierarchy* continues to decline, the probability of a colonial war decreases even as the probability of a challenge continues to climb. Eventually, colonies value the status quo enough that the probability of a challenge drops, despite the probability of being punished being effectively zero (and with it, acquiescence being almost certain).

These findings do more than just add to our understanding of British–colonial, or imperial power–colonial, relations; they also contribute to our understanding of

[8]The literature notes the relative inefficiency of strong states defeating weaker adversaries (e.g., Bueno de Mesquita, 2000). Sullivan (2007) posits this is because certain war aims of powerful states are difficult to achieve while Maoz (1983) suggests that weaker states sometimes have greater resolve than stronger states.

modern civil wars. This dissertation makes a theoretical and methodological contribution to the study of civil war onset, as well as a theoretical contribution to civil war intervention.

The application of this dissertation's social hierarchical theory within a domestic context provides theoretical insights into why some ethnic and religious minorities are granted increased autonomy, others remain loyal to their state's government and instead rely on political parties to pursue goals, while a third camp engage in civil conflicts. Rather than assuming civil war to be a unitary actor outcome (e.g., weak states are more likely to experience civil war), my account assumes that civil war is the result of a joint decision on the part of an opposition and a government (Fearon and Laitin, 2003; Collier and Hoeffler, 2004; Cunningham, Gleditsch and Salehyan, 2009). The opposition makes a decision of whether to challenge the existing governing structure (e.g., demand greater autonomy or independence, demand a role in government) while the government decides whether to acquiesce to their demands (e.g., grant greater autonomy or independence, peacefully hand over power or dissolve the government). Social hierarchy affects each of these decisions and, in turn, the likelihood of civil war.

Political minorities compare their expected value from challenging (and potentially fighting) to how much they value the status quo (i.e., view the government at legitimate). In order to due so, political minorities must determine the probability that the government would prefer to repress minorities rather than acquiescence to them if a challenge occurred. The more minorities value their current allegiance to the state and its opportunities to achieve political goals within the current political struc-

ture (e.g., its political party has sufficient opportunity to affect policy and resource distribution), the less likely they are to initiate a challenge (Thyne and Schroeder, 2012; though see Cunningham, 2011).

Moreover, this dissertation's conception of social hierarchy can help explain the likelihood of external intervention into a civil conflict. Previous studies find that external intervention affects the duration and outcomes of civil wars (e.g., Cunningham, 2011*a*). Moreover, Thyne (2006) suggests that external states affect the probability of civil war onset, duration, and outcome by signaling their support to either government or rebel groups. It is unclear, however, why a state would signal their support to the state or an opposition group. The degree of subordination on the part of either the opposition or the government to external states provides a possible answer. Opposition groups that indicate that they will be subordinate to an external states are more likely to receive external support, as in the cases of Cuba and the MR-13 in Guatemala. Highly subordinate governments are also likely to receive external support and, hence, discourage opposition groups from taking arms, as was the case in Chile Kornbluh (2004).

Finally, the CSP estimator makes a methodological contribution to the study of civil war onset, as well as any other field where a strategic interaction is theorized but the structure of data prevents the implementation of strategic probits and logits. As noted previously, the onset of a civil war is the result of a joint decision between an opposition and a government. Unfortunately, as was the case for British government–colony interactions, because the actions of the opposition and government are aggregated, only observation where a civil war occurred are known, but

not when oppositions elect not to fight or when governments acquiesce.[9] The CSP enables scholars to systematically evaluate these data and still account for strategic behavior on the part of actors by probabilistically estimating their choices and using this information to recover unbiased coefficients.

This is important because, while recent civil war scholarship has incorporated the dyadic nature of civil wars when studying conflict duration and outcome (Akcinaroglu, 2012; Cunningham, Gleditsch and Salehyan, 2009), these studies only include cases from observed civil wars—i.e., where there is data on rebels—and not those cases where a civil war was avoided because of government concessions or deterrence. This has important substantive implications as it becomes difficult to interpret the actual effect of key explanatory variables on specific actors. This problem helps to explain why the literature remains divided whether increases in gross domestic product (GDP) per capita, a nation-level variable, reflects deterrence on the part of the government (Fearon and Laitin, 2003) or higher opportunity costs for potential insurgents (Collier and Hoeffler, 2004). The CSP estimator allows this variable to be included in both equations to uncover its effect on the utility calculation of either actor.

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[9]Cunningham (2013) examines civil war onset using data on opposition movements seeking self-determination in effort to account for the dyadic nature of civil war onset. This is an important step in accounting for biases caused by treating civil war onset as a unitary state-level phenomenon. The data, however, still suffers from selection problems regarding which groups seek self-determination and which are placated by government concessions.

5.4 Conclusion

In this chapter, I examined the effects of social hierarchy in the British colonial setting. Great Britain had significant variation in the degree of direct control they held in their colonies. I exploit this variation to examine if colonies that more closely resemble the rationalist, legal-administrative government structure of Great Britain at the expense of their traditional government were less likely to initiate militarized challenges, and whether British authorities were less likely to respond coercively against such "civilized" colonies when they did challenge.

I find that social hierarchy affects the behavior of both subordinate and dominant, reducing the likelihood of a challenge in the case of the former, and reducing the likelihood of punishment in the face of a challenge in the latter. The results provide evidence that social hierarchy directly influenced colonial and imperial behavior.

Table 5.1: Descriptive Statistics, British Hierarchy and Conflict.

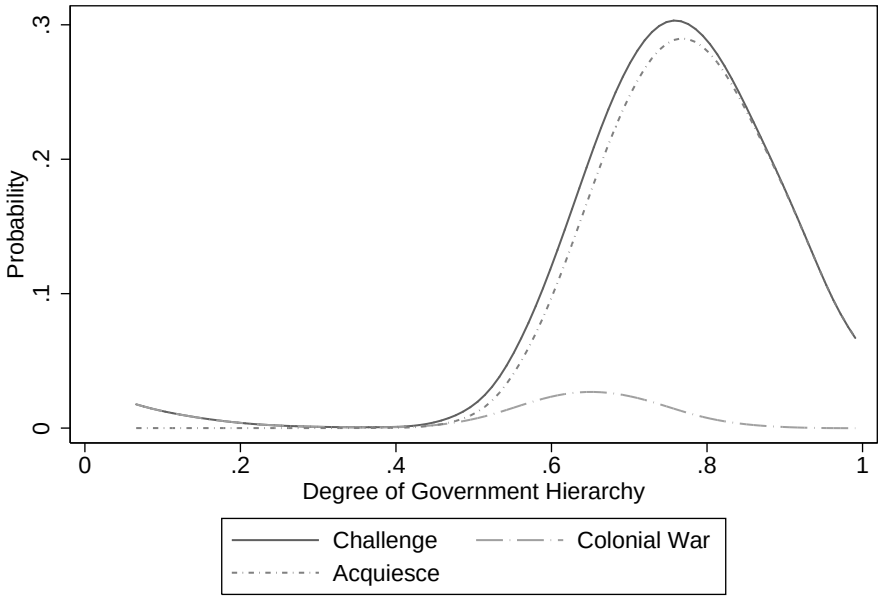
Variable	Obs.	Mean	Std. Dev.	Min.	Max.
Intra-polity war	896	0.010	0.100	0	1
Government Hierarchy	896	0.614	0.299	0.066	1
Relative Trade	896	4.546	12.709	0	138.117
Dominion	896	0.194	0.396	0	1
Railroad	896	10.879	2.157	3.689	13.901
Area	896	12.886	1.765	9.132	16.115
Religious Fractionalization	896	0.496	0.169	0.18	0.77
Previous War	896	0.218	0.505	0	2
Global Power	896	26.64	8.620	14.605	38.562

Table 5.2: Militarized Challenge and Punishment in British Hierarchy.

Actor	Subordinate		Dominant	
Status Quo Equation:				
Government Hierarchy	7.047^{*}	(3.647)		
Relative Trade	-0.033	(0.036)		
Dominion	$-6.881**$	(2.966)		
Constant	-3.777	(4.266)		
Acquiesce Equation:				
Constant	1.058	(4.073)		
Conflict Equation:				
Government Hierarchy			-11.997^{***}	(4.271)
Relative Trade			0.389^{*}	(0.225)
Global Power			0.421^{***}	(0.120)
Dominion			16.844^{***}	(4.937)
Previous War	-2.202	(2.977)	-5.498^{***}	(1.703)
Railroads	-0.293^{+}	(0.225)		
Area	0.087	(0.291)		
Religious Fractionalization	-8.797^{**}	(4.154)		
Constant			-6.850^{***}	(1.990)
Log-Likelihood		-35.526		
Observations		896		

Note: $^{***}p$ <0.01, $^{**}p$ <0.05, $^{*}p$ <0.1, two-tailed; ^{+}p <0.1, one-tailed.

Figure 5.1: Predicted Outcomes at Varying Levels of Government Hierarchy.



Note: all variables held to their mean or median level as appropriate.

CHAPTER 6
CONCLUSION

In this dissertation, I argue that social hierarchy represents the level of legitimate authority that one state (a *subordinate*) cedes to another state (a *dominant*) along an issue area, such as security or economic foreign policy. Subordinate states can defer some degree of autonomy along an issue area in exchange for benefits from the dominant state. If an agreement is reached, the level of hierarchy that a subordinate agrees to affects its foreign policy behavior: states that surrender greater degrees of autonomy are less likely to oppose, or challenge, the dominant's agenda. Social hierarchy also affects, and is influenced by, third-party behavior. Subordinate states consider one another's loci within a dominant's social hierarchy when deciding how to interact. Moreover, the behavior of the dominant state is also a function, in part, of the degree of competition competition it faces to provide benefits to its preferred subordinates, as well as the relative hierarchy between a target and aggressor subordinate state.

I formalize this argument as a two-player, extensive form game with private information. I solve the game using QRE, which generates probabilistic outcomes that are conditioned by the known distribution of the unobservable private information and the history of the game. I derive three propositions from the game: 1) the greater the degree of hierarchy between a subordinate and dominant state, the less likely the subordinate is to challenge the status quo, 2) the stronger a dominant state is relative to alternative great powers, the less likely the dominant state is to punish challenges,

and 3) when a challenger is located higher within the hierarchy than its target, the are less likely the challenger is to be punished. One advantage of the modeling approach used here is that the theoretical model can be translated directly into an empirical model (i.e., strategic probit) to test the theory.

I translate these propositions into hypotheses and test them in terms of conflict behavior in the US hierarchy in Chapter 3. I examine whether and against whom a subordinate initiates a militarized conflict, focusing in particular on the hierarchical position of the potential challenging state. To explain the likelihood of the dominant responding to a challenger with militarized action or economic sanctions, I consider the strength of alternative hierarchies and the degree of relative hierarchy between a target and the challenging subordinate. I assume that states act strategically by calculating their expected utility from each action; to account for this empirically, I use a two-stage strategic probit estimator. The empirical results indicate that subordinate states with a greater degrees of security hierarchy are less likely to initiate a conflict. The results also show that dominant states are more likely to respond with coercive action to subordinate states that initiate conflicts when alternative hierarchies are strong, and when the target state is located at a higher position than the challenger within the dominant's security hierarchy.

I examine how the theory applies to economic behavior in the US hierarchy in Chapter 4. I treat challenges as any illiberal action on the part of a subordinate state, such as expropriate foreign assets, defaulting on sovereign debt, or enacting policies intended to close its market to the international economy. I measure punishments by the dominant state as economic sanctions. The empirical results show that eco-

nomic hierarchy reduces the likelihood that a subordinate state undertakes illiberal actions and that the dominant state is less likely to initiate economic sanctions against subordinate states located at higher positions within their economic hierarchy.

Finally, in Chapter 5 I apply the theory to cases of hierarchy between colonies and the imperial center within the British Empire. I compare levels of direct rule as a proxy for the level of government hierarchy. As was the case in the previous analyses, the results support the theory: colonies with a greater degree of government hierarchy are less likely to challenge the imperial center for greater autonomy, while colonies located at higher positions within this social hierarchy are less likely to be punished when they do challenge.

The empirical results provide support for the social hierarchical theory across dominant states and issue areas. This suggests that social hierarchy is an important factor on state behavior. Social considerations, in additional to material factors, influence how states interact with one another. This is true not only of the states directly party to a social hierarchical arrangement, but for third-party states as well. Third-parties must take into account how social factors affect the expected behavior of other states when calculating the utility of their own actions. This has important implications for the study of IR, and politics more generally.

This dissertation makes important contributions to several literatures, namely deterrence, peace science, international political economy, economic statecraft, and civil war. This dissertation contributes to the deterrence literature by generating testable hypotheses related to general extended deterrence. It is often difficult to separate the direct effect of factors that produce deterrence from those that effect the

status quo, in effect identifying and separating two types of "non-conflict" outcomes. The theoretical and empirical strategy used here addresses this by clearly identifying factors that increase the utility of a subordinate state derives from the status quo, and separating them from deterring factors associated with a dominant's likelihood of punishing a challenge. Moreover, the theory is able to help explain variation in the "success" of extended deterrence by treating the status of both "protégé" (target) and "attacker" (challenger) as continuous and relative variables. Finally, the model contributes to the broader peace science literature by demonstrating that social hierarchy reduces the likelihood of a challenge on the part of a subordinate, even after accounting the possibility of a "moral hazard" when a subordinate state is located at higher positions in the hierarchy than its target.

This dissertation also contributes to the literature on international political economy. By acting as an *ex ante* measure of risk, the dissertation's theory is able to help explain why firms are willing to invest in foreign states despite their lack of legal recourse in the event of sovereign theft. Social hierarchy informs investors of a state's type of property rights regime, while also acting as a common point of reference for states regarding standards of measurements, business language, and legal definitions. Thus, social hierarchy is able to reduce transaction costs by reducing the uncertainty associated with investing or trading with a foreign state.

In addition, this dissertation contributes to the economic sanctions literature by pointing to a proximate event to trigger sanctions. Existing quantitative studies focus on the baseline hazard associated with a state being a recipient of economic sanctions, but do not explain the timing of the sanction itself. Finally, the theory

of social hierarchy presented here provides an additional explanation for the "ineffectiveness" of economic sanctions, by arguing that they are intended to function as a signal to investors and third-party states of economic behaviors that is inconsistent with the economic policies of the dominant state.

Finally, the theory has important implications for the study of civil war by helping to help explain why some minority groups are satisfied within an existing state structure while others challenge the government. The theory also helps to explain by some opposition movements are granted increased autonomy while others produce civil conflict. In addition, social hierarchy helps to explains why external states support or intervene in some civil conflicts and not others, as well as which side they offer their support to.

6.1 Policy Implications

This dissertation produces several important implications for US foreign policy, such as US-China relations, as well as US relations with non-aligned, and potentially hostile, states more generally. While material theories of hierarchy suggest that 'rising powers' almost inevitably challenge the existing hegemon (Kennedy, 1987; Rice, 2000), the theory of social hierarchy outlined in this dissertation provides an alternative, non-deterministic, and (potentially) optimistic view of US-Chinese relations. It prescribes that US policymakers resist the urge to paint China in a 'Cold War' light, as China may be open to some of the same normative positions as the US. According to this dissertation, the policy of dètente may be more successful to that of containment. While it may, at first, seem odd to argue that communist China as

an economic subordinate of the liberal, free-market US, but since the economic 1979 reforms initiated by Deng Xiaoping, China has pursued "capitalism with Chinese characteristics (Harvey, 2005). As a result, until recently, China has been located relatively high within the US economic hierarchy.

Though China does not strictly adhere to US dominance on all economic policies—the US charges China with violating intellectual property rights, illegally dumping products on the US market, manipulating sales of rare earth metals, and even currency manipulation (CNN, 2012; WTO, 2009)—until 2005 China's currency was pegged to the US dollar. In response to calls from the US to devalue their currency to ease trade imbalances, China has since switched to a "crawling peg" anchored on a mix of currencies, the US dollar and Euro prominent among them. The empirical analyses in Chapter 4 indicate that, in contrast to the calls of many US politicians, the US may have benefited more *before* China's move to float its currency. When China's currency was tied to that of the US, it had greater value for the economic status quo, and indirectly imported US monetary policy. Moreover, there is some evidence that a more economically subordinate China was less aggressive in military terms, as *exchange rate* is positively associated with the status quo when the analysis in Chapter 3 is restricted to militarized punishments (Tables 3.6 and 3.7). By demanding that China float its currency, the US may have actually reduced its military and economic security.

More optimistically, based on China's previous economic subordination to US policies, as well as statements and actions by its own leadership, China has increasingly become a stakeholder on the international scene, ostensibly supporting and

legitimizing many US causes (Beylerian and Canivet, 1997; Breslin, 2009). China has, for example, agreed to peacefull resolve territorial disputes, joined a number of international organizations, contributed to peacekeeping missions and became a participant in the G-20 economic group (Gill and Huang, 2006; Suominem, 2012). This is not to say that China will not seek to establish its own social hierarchy, just that such a hierarchy does not necessitate conflict with the US. The recent actions by China to increase its role as a stakeholder in institutions conducive to US security and economic interests (UN peacekeeping and the G-20, respectively) is suggestive of common ground within the existing international framework.

A more conciliatory approach may be beneficial in relations with other potentially hostile state as well. Rather than treating any concession to a potentially hostile state as a "Munich moment," the US might consider reaching out to minor powers, especially those that are apprehensive as to the US intentions. Compromises and trust-building measures provide useful tools to draw states into the broader normative US camp, even if only at low levels. While this dissertation provides some evidence for effectiveness of deterrence, it also highlights that almost any degree of social hierarchy reduces the probability of challenges to the US-established order. The use of positive incentives with hostile states, in other words, may result in more favorable economic or security outcomes than the use of punishments.

This prescription extends to US policy within the Western hemisphere, e.g., towards Bolivia, Cuba, Ecuador, and Venezuela—states that are currently located low within the US social hierarchy. From the perspective of the dominant state, the potential gains from even mild support of its ideological goals outweigh the loss of

face associated with attempts to cool previously hot issues. Richard Nixon's "ping-pong diplomacy" and engagement of communist China seems to have improved the US-Chinese relations and, subsequently, enhanced the US' position relative to, first, the Soviet Union, and second, North Korea, without firing a missile. The US also received the added benefit of gaining a large trading partner. Moreover, this outreach has led to an improvement of welfare of over a billion people, with millions lifted out of poverty as China has become more economically open. In contrast, the embargo and lack of official relations with Cuba have seen few changes in its behavior in over 50 years, with a large agricultural market remaining unexploited and millions of Cubans being denied employment (via an export sector) and access to goods from should be their largest trade partner—the US.

6.2 Future Directions and Other Applications

The theory presented in this dissertation highlights a number of directions for future research. One such directions is to explore possible variation among dominant states and the types of hierarchical social orders they enforce. The present study captures such alternative hierarchies with a rather blunt measure, which could be substantially refined by future research. One could, for example, explicitly model the alternative hierarchies and include them in the same empirical analyses. Such an approach would allow for testing a currently unexamined implication of this dissertation regarding the correlation among the subordinates' locations within multiple co-existing hierarchies. Another interesting question is whether the states that are non-aligned across social hierarchies are more likely to be the target of militarized

and economic challenges.

Social hierarchies are ubiquitous. The theory developed here could also extend to other issue areas, such as environmental policies, human rights, and the political treatment of minority groups—such as voting rights and equality before the law. Furthermore, the logic of social hierarchies is not restricted to the study of IR or even political science. Any area that lacks clear legal processes that are rigorously adhered to is likely to be influenced by social hierarchies. This includes the respect for and the influence of the elderly in decision-making, job promotions in the private sector, and even relationships among primates.

The theory, for example, can provide insights into the variation found in recent IMF, EU, and the European Central Bank (ECB) bailouts of European countries. The existing research on financial crises has been limited to domestic economic and political institutional determinants of government intervention into the financial sector (Dam and Koeeter, 2012), as well as comparisons of these determinants across European and North American states (Alter and Schüler, 2012; Grossman and Woll, 2013). The social hierarchy theory, in the meantime, highlights the variation in bailout plans to states by the EU, ECB, and (to a lesser extend) the IMF during the 2008-2013 European financial crisis.[1] The conditions attached to the bailouts received by Greece, Ireland, Portugal, Spain, and Cyprus vary significantly; while all require some austerity measures be undertaken by the government receiving the bailout, the

[1]See Stone (2002, 2004) for an analysis of the IMF's loans and punishments towards Eastern European and African states, respectively. His analyses, however, are more general in nature and do not address IMF responses to any continental wide financial crises.

terms for Greece and especially Cyprus are more stringent than for the other three states (BBC, 2012; Economist, 2013*a*).[2] Theories of power politics cannot account for the variation in the severity of bailout terms, as the terms given to Cyprus are counter-productive to the EU's strategic interests and push Cyprus closer to Russia (Stacey, 2013).

The variation in severity of terms can be accounted for by the varying degree of subordination to the economic standards of the largest and most influential financial contributor to the EU and ECB: Germany. The theory outlined in Chapter 2 argues that punishments are least likely to be levied as the degree of subordination increases. Ireland, Spain, and Portugal are all major trade partners of Germany and large recipients of German foreign direct investment; in contrast, Greece, and especially Cyprus, are much less reliant on German trade and investment (OECD, 2013). Moreover, Ireland, Spain, and Portugal all adhere to EU and ECB fiscal transparency requirements while Greece intentionally hid debt figures and Cyprus has a large offshore bank industry (MSNBC, 2013; New York Times, 2010; Washington Post, 2013). Finally, Cyprus is less dependent on Germany and also turns to Russia for financial help, receiving a $4.5bn loan, which included generous terms, just prior to its finan-

[2]The austerity cuts and tax increases required of Greece are twice that of Ireland and Portugal, and three times that of Spain, resulting in a fiscal reduction of 20% of GDP (approximately 85bn Euros by 2015) (Financial Times, 2011; Monastiriotis et al., 2013). Cyprus' terms do not only include austerity measures, but also the closure of one of its two major banks—the Laiki bank—with shareholders losing all capital and accounts above 100,000 Euros being converted into bonds worth the profit from the sale of bad assets. In addition, there has been a freeze of all accounts over 100,000 Euros in the other major bank—Bank of Cyprus (European Commission, 2013).

cial crisis.[3] Considered in this light, it is not surprising that Germany sought (and achieved) harsher punishments against Greece and Cyprus than Ireland, Spain, and Portugal.

Social hierarchy also applies to explaining domestic-level policies. Within the field of comparative politics, social hierarchies are evident in appointments for ministerial positions in parliamentary systems, or legislative appointment in closed-list party systems (Jones et al., 2002; Kam, 2009; Strøm, 1997). Since such appointments are determined by party bosses, social hierarchical relationships among potential candidates could factor as an important explanatory factor.

This framework could also apply to protests and public condemnations in authoritarian political regimes. Russian President Vladimir Putin, for example, has jailed numerous political opponents, such as oil tycoon Mikhail Khodorkovsky, for voicing opposition to his policies. Despite this, recently esteemed economist Sergei Guriyev publicly criticized Putin's economic policies. Material factors alone cannot account for his challenge of Putin's authority, as Guriyev knew doing so would likely result in his arrest. While Guriyev has since fled abroad, he had been previously appointed to an inquiry into corruption in the Khodorkovsky trial by former president Dmitry Medvedev. Medvedev, who served as Prime Minister under Putin, launched many investigations into allegations of corruption and took some action to liberalize the economy. Despite these actions, he has not drawn public rebukes from Putin (Economist, 2013*b*). A social hierarchical account suggests that the case of Guriyev is

[3]Cyprus' loan from Russia was at 4.5%, included no amortization or repayment until maturity in 4.5 years, with no penalty if repayment delayed.

treated differently from that of Medvedev because the latter previously demonstrated an acceptance of Putin's authority. Hence, Medvedev is given greater leeway in his statements and actions than Guriyev, who did not display similar subordination to Putin.

Social hierarchy also applies to the study of American politics. Prior to the 1910 revolt against Speaker Joseph Cannon, for example, the Speaker of the House in the US House of Representatives had significant latitude to assign committee chairs (Jones, 1968). As noted by Katz and Sala (1996), Speakers had incentives to reward loyal or productive representatives with chairmanships of premium committees while relegating disloyal or unproductive representatives to less important committees, at least until the widespread use of the Australian ballot.[4] Challenging the Speaker, in other words, could be punished by a placement on a less prestigious committee. Those deemed sufficiently loyal, on the other hand, could expect to be placed on committee that enhanced their influence over policy and the distribution of government resources.

In addition, the role of social hierarchies is evident in deference to the elderly, that is common in many cultures and cannot be explained in terms of pure material considerations (Henrich and Gil-White, 2001; Silverman and Maxwell, 1978). Social hierarchies also affect employee-managerial relations and promotions. For example, subordinate employees have been found to imitate the behavior of their supervisor, but only if the subordinate perceived their supervisor as competent. Interestingly, this

[4]Katz and Sala (1996) argue that the adoption of the Australian ballot dramatically increased the importance of the individual reputation for congressional members, leading to the rise of the electoral norm of "committee assignment property rights."

effect is uncorrelated with their superior's reward power (Wayne, Shore and Liden, 1997; Wei et al., 2010; Weiss, 1977). Moreover, the more deferent a subordinate is, the more likely their mistakes are downplayed (Kiong and Kee, 1998).

Finally, social hierarchies are found in the life of primates and other social animals (Sapolsky, 2005; Thierry, Singh and Kaumanns, 2010). The degree of social hierarchy varies significantly among species and impacts material conditions, including food and mate allocations. While rank is obtained via displays of aggression and intimidation in some primate societies (e.g., ring-tailed lemurs), in other cases rank is dependent upon factors such as seniority within the group (e.g., rhesus monkeys). In neither case are hierarchical members forced to remain part of the group, but membership is based on the animal's volition. In fact, in some species, joining an alternative group is fairly common. In addition, punishment for violation of the dominant's expectation do not require physical harm, but extend to psychological punishments, including seemingly minor actions such as disapproving glances or turning away from the subordinate (De Waal, 1982; Sapolsky, 2005).

Social hierarchies are paramount, with applications ranging from the interactions of international governments to the workplace to some animal interactions. Accounting for the informal power structures that are associated with social hierarchies—often generated from ideational and non-material factors—in an actor's rational utility calculation can help shed light on a large number of outcomes. The theory of social hierarchy developed in this dissertation applies to explaining the dominant-subordinate relationships in all systems characterized by some degree of "rightful rule."

APPENDIX

I derived an estimator in Equation 5.1—censored strategic probit (CSP)—based on Signorino's (1999, 2003) strategic probit that probabilistically estimates unobservable actor choices when only the interaction's binary outcome is known. If actor choices are unobserved, it becomes difficult to separate the two types of "non-event"—*SQ* and *Acq*—as both are coded as "0" in the data. Existing estimation techniques for binary outcomes, such as traditional logit/probit or split-sample logit/probit (Xiang, 2010), fail to account for strategic behavior. Traditional logit/probit treat the strategic model as an additive function, ignoring the conditional nature of the subordinate state's choices. Split-sample models assume two distinct "types" of subordinate state—one who never engages with the dominant state (zero-inflated equation) and one who does (tradition probit/logit equation). Again, the behavior of the subordinate state is independent of the dominant state, ignoring any strategic behavior.

I use Monte Carlos to compare the likelihood of the CSP to a standard probit and a split-sample probit (SSP). I assume a data generating process consistent with Equations 2.1 and 2.2 and Figure 3.2, where the disturbance term on each outcome has a normal distribution with mean 0 and variance 1 and are independently and identically distributed across observations. I set $\beta_{S_{11}} = \beta_{S_{22}} = \beta_{D_{22}} = 1$ and $\beta_{S_{21}} = 0$. I run 500 simulations with 5,000 observations each.

Results of the simulations comparing the kernal density of the estimates from the CSP (red line), traditional probit (black line), and SSP (green line) are displayed in Figure A.1. The CSP always captures the true value while the traditional probit

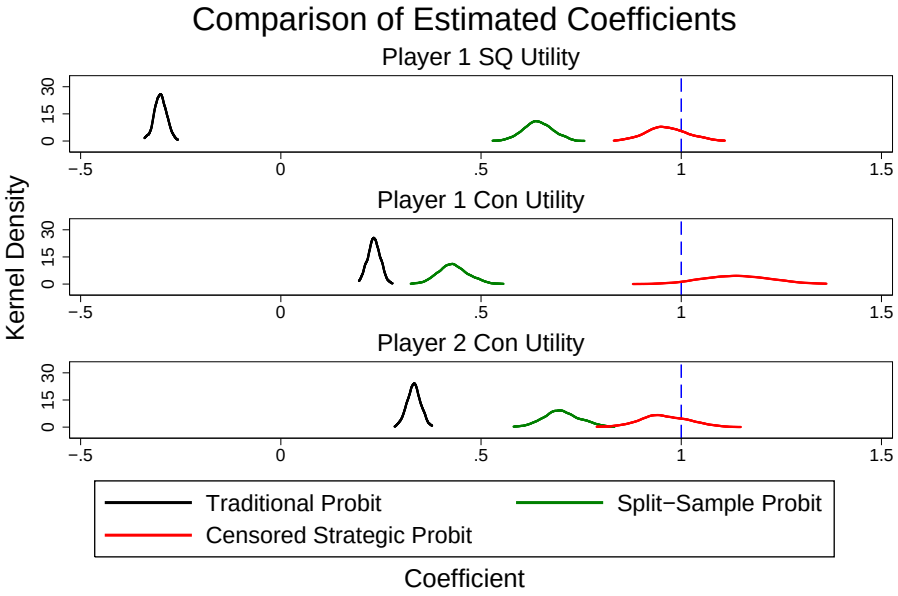
and SSP demonstrate significant bias, with the traditional probit even displaying the incorrect sign for the subordinate status quo estimate ($\beta_{S_{11}}$). Root mean squared error comparisons of the estimators are in Table A.1. The results demonstrate that the CSP outperforms both the traditional and split-sample probit models.

Table A.1: Comparison of Estimated Coefficient and RMSE Across Models

		Recovered Coefficient			RMSE		
Variable	Value	Probit	SSP	CSP	Probit	SSP	CSP
$U_1\,(SQ)$	1	-0.300	0.642	0.964	1.308	0.408	0.241
$U_1\,(Con)$	1	0.233	0.431	1.140	0.780	0.601	0.325
$U_2\,(Con)$	1	0.332	0.702	0.959	0.682	0.361	0.243

Note: RMSE $= \sqrt{\text{Bias}^2 + \text{Variance}}$.

Figure A.1: Comparison of Recovered Coefficient Across Models.



Note: Dashed blue line represents the equation's true coefficient. Results of 500 simulations with 5000 observations each.

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