

**Political Institutions and Constrained Response to
Economic Sanctions**

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Abstract

Institutional constraints within the target state not only influence a leader's ability to resist economic sanctions, but they also affect the decision-making process within the target state and the nature of information that a sender can ascertain about likely response. Autocratic leaders, who are less constrained, send noisier signals about their probable behavior. This lack of constraint also allows more freedom to resist sanctions, as they can shunt the costs of sanctions off onto the general public, who have little influence over policy outcomes or leadership retention. Democratic leaders are more constrained and more susceptible to sanctions pressure. As result, there is less uncertainty for senders about probable response. Using a heteroskedastic probit model to explore potential systematic components of the variation surrounding sanctions response, the impact of sanctions is shown to differ by regime type - both in the response to coercion as well as in the variance surrounding that response. The results presented here suggest that as expected, democracies are more susceptible to sanctions pressure, but the response of mixed and authoritarian systems are more difficult to predict. These findings have implications for the design of future sanctions policy as well as suggesting which states make the best targets for economic coercion.

Introduction

Scholarship on the democratic peace emphasizes clear differences in the choices made by democratic and autocratic states in matters of war and peace (Russett 1993; Bueno de Mesquita and Lalman 1992; Rummel 1979; Small and Singer 1976). This previous work highlights the predictability of the behavior of democratic governments, especially in their relations with other democracies (Senese 1997; Rousseau, *et al.* 1996). If democratic states are making predictable decisions, then there should be less uncertainty surrounding their interactions with other states. Due to the constraints of democratic institutions (Bueno de Mesquita and Lalman 1992; Morgan and Campbell 1991) and the openness of these societies (Schultz 1999, 2001; Siegal 1997), democratic states provide more reliable information about their likely behavior in international crises. Autocratic governments are less constrained, enabling them to make less predictable choices and to send noisier signals to potential adversaries.

Previous studies do not address the quality of information being sent or limitations that democratic institutions place on foreign policy behavior. If, due to institutional constraints, democratic leaders are effectively choosing from a smaller subset of policy options, we should consider how these limitations affect the choices they make and the information that other states can glean about their likely actions. The variance in the foreign policy choices made by democracies may be smaller than the variance surrounding the policy choices of other types of states because less uncertainty exists about those choices. In this paper, I explore the potential for unequal variance in the context of response to economic sanctions.

To do so, I utilize a heteroskedastic probit model¹ to assess the effect of domestic political structures on sanctions success. Although the mean hypothesis (that democracies are more likely to concede to sanctions pressure) and the variance hy-

¹Despite the computational shortcomings of this model (highlighted in Keele and Park (2004)), I believe this empirical approach best approximates the underlying process and is warranted theoretically.

pothesis (that democracies will have less variability in their behavior in response to sanctions) are related, the implications are distinct. The mean hypothesis predicts how targets should respond to sanctions pressure while the variance hypothesis predicts the amount of variability in those actions. If the variance surrounding the errors is inconsistent, as I predict, then previous studies have produced inefficient estimates of the various influences on sanctions outcomes.

Sanctions and Target Response

Economic sanctions, which can be defined as “the deliberate, government-inspired withdrawal, or threat of withdrawal, of customary trade or financial relations” (Hufbauer, Schott, and Elliott 1990, 2), have been utilized with progressively greater frequency since the end of World War I. This trend results, in part, from the movement towards international organization and collective security communities, which have viewed non-violent forms of coercion as preferable to direct military action (Cortright and Lopez 2000). The increase does not, however, represent a consensual opinion concerning utility of sanctions as a tool of statecraft (Rogers 1996; Elliott 1998; Pape 1997, 1998).

Traditionally, the economic impact has been considered the most important predictor of sanctions’ coercive power (Hufbauer, Schott, and Elliott 1983, 1990; Dashti-Gibson, Davis, and Radcliff 1997). Bearing the economic pain of sanctions is not in the national interest of the target state, especially if the cost of that hardship is greater than the value of the issue under dispute. In addition to the direct costs of sanctions, senders anticipate that the economic pain of sanctions should have a punishing effect on the targeted population, causing them to pressure their government to make concessions to the sender’s demands or face strong domestic opposition. Comprehensive sanctions are appealing because of a desire to create the greatest level of hardship in the targeted society. This is similar to punishment bombing strategies that target civilian populations (Pape 1996).

While intuitively appealing, high economic costs have not always resulted in political concession by target states, as recent sanctions episodes in Yugoslavia and Iraq demonstrate. The deprivation logic of sanctions suggests that there are limits to what a society can and is willing to withstand, and after that threshold is reached, political disintegration should come quickly. Historically, however, target states have been able to adapt economically by finding alternative trading partners and buying on the black market. The simple cost hypothesis does tell part of the story of sanctions, but it does not go far enough in its explanation of the coercive mechanism of sanctions (Galtung 1967; Renwick 1981).

If the impact of sanctions is not directly correlated to the economic pressure created, an alternate means of assessing sanctions would be to explore the political costs imposed. Regardless of the extent to which economic pressure is exerted, without political costs, there is no reason for targeted states to comply (Blanchard and Ripsman 1999/2000). In order to be successful, sanctions must be politically costly relative to the issue at stake between the target and the sender (Morgan and Schwebach 1996). Sanctions policies that are thought to fail often do have an economic impact, but the consequence of that impact is not the desired political change.

Kirshner (1997) advocates a disaggregation of both sender and target states in order to more clearly understand the coercive power of sanctions. Favorable political conditions will likely be as important, if not more important, than the economic pressure that can be exerted. In addition to the economic distributional costs associated with sanctions, there are likely to be political distributional costs. Brooks (2002) extends Kirshner's approach by exploring the political impact that different sanctions have on the targeted leadership and its core supporters by regime type. Both provide anecdotal evidence that the domestic political circumstances of the target will, to some degree, dictate the extent to which a sanctioning state can inflict political costs and conclude that authoritarian and democratic leaders respond differently to the pressures induced by sanctions, but neither conducts a quantitative

test of this proposition. This line of reasoning suggests that sanctions “bite” leaders in distinct ways, depending on the constraints of the political environment.

The impact of domestic politics in both the target (Bolks and Al-Sowayel 2000; Kaempfer, Lowenberg and Mertens 2004; Marinov 2005) and the sender states (Smith 1996; McGillivray and Stam 2000; Hart 2000) is beginning to be explored, but a critical piece of the puzzle is missing. When sanctions are implemented, uncertainty exists about the target state’s willingness and ability to endure the economic burden that associated with sanctions. The domestic institutions of democratic target state and the openness of these societies lessens uncertainty and provides critical information about likely behavior, which decreases the variation in their responses. By also modelling the *variance* as a function of regime type to take this uncertainty as well as the distributional effects into account, our understanding of the impact of sanctions and factors which influence sanctions outcomes will become clearer.

Variation in Foreign Policy Behavior

That states with differing political structures have differing propensities to concede to sanctions pressure is not especially novel. The idea that there is also a significant difference in the variance around their responses is. This unequal variance is caused by two complementary political forces – degree of political constraints faced by targeted leaders and the amount of information available to the sender. These two forces are related.

The institutional constraints of a political system limit the state’s decision-making process. In his consideration of two-level games, Putnam (1988) suggests exactly this type of variance argument. Domestic politics determine a targeted leader’s bargaining space *vis-a-vis* the sender state. Because of their public accountability, democratic leaders will be more sensitive to the costs of economic sanctions. As result, there are more coercive demands to which democratic leaders will concede.

Heteroskedasticity is often a result of asymmetric information (Reed 2003). When determining whether or not to impose sanctions and what demands to make, sender

states are able to make more informed estimates about the likely behavior of a democratic target. In addition to being more publicly accountable, democratic leaders are largely unable to bluff (Schultz 1998) and these societies are more transparent (Eland 1995; Siegal 1997). If the choice to resist sanctions does not align with the preferences of the people in a democratic target state, either the media or opposition actions will make this discontent known publicly (Schultz 1998, 2001).

Senders cannot perfectly anticipate the behavior of democratic states, but they can design sanctions policies that are more likely to succeed when the target is a democracy. The amount of information available from a democratic target state leaves senders better informed, which again increases the likelihood that they will make demands to which democratic targets will concede. The informational asymmetry in these cases is less than it would be for an autocratic target.

Even in cases where the sanctions outcome is the same ($\mu_1 = \mu_2$), the variance surrounding that policy choice may differ ($\sigma_1^2 \neq \sigma_2^2$). Describing increased variability where the observable outcome is dichotomous is tricky and requires consideration of the underlying latent variable. In this case, that variable is the probability of sanctions success. This probability is determined in part by the choices made by the sender – type of sanctions, size of demand, number of countries involved – but it is also affected by the political institutions of the target state. Those institutions shape the target’s decisions about when to resist sanctions and when to give into sanctions pressure. The availability or lack of availability of information about the target country’s decision-making process creates uncertainty about the target’s preferences. This uncertainty creates the unequal variation being highlighted, and thus the variance of interest here is that of the individual target state in its choice of response, not the variance across the sample (Alvarez and Brehm 1998).

In contrast to the information available about democratic targets, potential autocratic targets send noisier signals about their probable behavior, increasing the information asymmetry and thus the amount of heteroskedasticity. As result, senders are more likely to make demands that autocratic targets will refuse. Due to the

lack of public accountability and institutional constraints, autocratic leaders are less politically sensitive to the costs associated with sanctions.

Regardless of political context, leaders are thought to be able to conceive of a greater range of palatable preferences in foreign policy than can the general public. This ability to envision a wider range of policies does not, however, necessarily allow all leaders to entertain a wider range of outcomes. Many of the same constraints that inform a leader's decisions to resist or concede to sanctions pressure place limits on the decision-making process. For example, democratic leaders, who are regularly held accountable electorally, are more constrained by the public's limits. In addition, an aggressive opposition party may be able to use failed policies to its advantage, and knowing this, a democratic leader will check his desire to engage in risky foreign policy decision-making (Bueno de Mesquita and Lalman 1992). All of these factors lessen the uncertainty that the sender has about what demands lead to concessions by a given democratic target.

In a more unitary system, leaders are freer to explore the full slate of potential choices. This freedom increases uncertainty for a potential sanctions sender. Allowing leaders to assess all options without an institutionalized check opens the playing field and increases variation in foreign policy behavior.² In autocratic states, policy choices will more closely reflect the interests of the leader and are, as result, less predictable. If all leaders, envisioning a greater range of preferences wish to choose from that wider variety, only the autocrat will be able to select his preferred policy without a great deal of public constraint.

Due to the institutional constraints and public accountability associated with a democratic system, leaders in these systems will be more sensitive to the economic costs of sanctions. As result, they will give in to a broader range of coercive demands, a fact that can be exploited by sanctions senders. When senders possess greater information about when a target will concede to sanctions, the sender's demands

²This logic is similar to that employed by Snyder (1991) in *Myths of Empire*, where he suggests that unitary leaders will be constrained by international pressures rather than domestic ones. A unitary leader's preferences will be diffuse and self-interested, but largely unchecked internally.

will reflect this knowledge, which should result in decreased variance in sanctions outcomes. On the other hand, when senders possess little information about when a sender will concede, as is the case when targets have fewer institutional constraints, there will be more variance in outcomes. This is a testable hypothesis; therefore, I posit that there will be greater variation in the response of autocratic states to sanctions (*Hypothesis 1*).

Predicting Sanctions Outcomes

The constraints created by domestic political institutions also affect the mean behavior of leaders in response to economic sanctions, suggesting that domestic institutions will affect outcome as well as the variance surrounding those outcomes.

Office holding is the primary goal of politics. Different political systems create distinct incentives for leaders (Bueno de Mesquita, *et al.* 2003). While all leaders want to remain in power, the path to continued incumbency varies according to the incentive structure particular to the political system. Leaders, looking to maintain their hold on power, will primarily be concerned with how sanctions might threaten their position.

For sanctions to alter behavior, senders must be able political as well as economic costs. The avenues of political influence varies by regime type and must be taken into account when sanctions policies are designed (Brooks 2002). With a thorough exploration of sanctions against Rhodesia, Rowe (2000) concludes that these measures did alter the incentives of the white leaders, leading to a reorganization of domestic markets in order to shore up support for the minority government.

To explain sanctions responses *across* regime types, it is important to consider the size of a state's *selectorate*, or the group of people within a state who possess political rights. For leaders, it is imperative to make decisions and implement policies which will be viewed favorably by the selectorate. Staying in power, however, does not require the support of all of these individuals, only a smaller subset known as the winning coalition.

Democracies have large selectorates as well as larger winning coalitions than do autocracies and states with mixed systems. Leaders in these states are constantly endeavoring to maximize public favor. This can be done either through private rewards that accrue only to members of the winning coalition or public goods, such as national security, which benefit all members of society (Bueno de Mesquita, *et al.* 1999). Decisions on foreign policy must be made with an eye to maintaining a balance of private and public goods that maximizes support for the leader.

Since the winning coalition in a democracy is so large, the share of private rewards given to any *one* individual member will be slight. Democratic governments, therefore, must place greater attention on the public goods associated with policy outcomes (Bueno de Mesquita 2000). Self-selecting into winnable wars (Reiter and Stam 2002) would be an obvious example of the attention democracies give to attaining the common good of foreign policy success. When challenged in sanctions episodes as well as in war, democratic leaders must focus on policy outcomes.

To maximize their utility, leaders in democratic states are more likely to concede to sanctions pressure than their autocratic counterparts. The threat that a shrinking pie caused by sanctions could compromise a democrat's ability to create favorable policy outcomes is a threat to his or her political survival. The need to maintain the support of a winning coalition forces the hand of democrats. Because the institutions of a democratic society empower the median voter, leaders must be more aware of the public's preferences and yield to those preferences more readily. When the public does not perceive positive policy benefits associated with resistance, democrats are then forced to either concede quickly or to sacrifice some portion of the rewards for the winning coalition.

While most sanctions episodes against democracies end in concession, not all do,³ which suggests that democratic publics are willing to suffer deprivation in certain circumstances. In the face of an external threat, Galtung (1967) posits that domestic publics may rally 'round the flag, strengthening the position of the gov-

³The success rate for sanctions against democracies is roughly 43% compared to 27% for all other states.

ernment. When targeted governments are viewed as legitimate and enjoy domestic support, those governments have the political capacity to choose noncompliance (Knorr 1975). While Galtung uses social psychology to explain rallying behavior, Rowe (2000) suggests that economics might be used to explain such behavior as well. Focusing on the semi-democratic government of Rhodesia, the Rhodesian Front government was able to manipulate the economic structure of that state in order to create white stakeholders (who were benefiting from the RF's rule) and to punish potential opposition forces (Rowe 2000). Rally effects, however, are unpredictable and short-lived (Baker and Oneal 2001), such that democratic leaders cannot depend upon them for continuing support.

Diminished private rewards create a lesser threat for democratic leaders. Because the rewards any one member of the winning coalition receives are small, it is likely that private rewards will be affected first when sanctions are applied against a democracy. Unlike their autocratic counterparts, democratic leaders are unable to economically shield those supporters upon whom their rule depends, and so they will not make great efforts to do so.

Nondemocratic leaders have a much weaker incentive for good policies and the public goods that accrue from them (Bueno de Mesquita, *et al.* 2002). As result, the rewards structure is much more important in these societies. Only the support of the few is needed to maintain their position, and private rewards to those chosen few are the most efficient means to maintaining support. In these states, leaders and their supporters will benefit from sanctions if they are able to collect rents from the altered terms of trade (Kaempfer, Lowenberg and Mertens 2004).

With a small winning coalition, the influence of each individual is great, so the rewards must be large enough to guarantee continued loyalty (Bueno de Mesquita, *et al.* 2003). When sanctions are imposed, the total resources that can be expended either for publicly enjoyed policy outcomes or private rewards are diminished. Autocrats will shield their supporters from the economic pain and hardship caused by sanctions because rewards are critical for sustaining loyalty and power. Although the

average Haitian lived in the most abject poverty in the Northern Hemisphere during the mid-1990s under comprehensive sanctions imposed by the OAS, the military, upon whose support the Cedras government was dependent, continued to receive new technology, ammunition, and uniforms (Werleigh 1995).

Because the autocrat's winning coalition is small and the rewards are great, the penalty for defection is high, especially as the size of the selectorate increases. Individual members of the winning coalition have no guarantees that they will be included in a new winning coalition if they defect from the present order. For this reason, members of the winning coalition are likely to be very loyal to the leadership in exchange for their position of privilege (Bueno Bueno de Mesquita, *et al.* 2002).

Even if rewards shrink due to sanctions, the fear of losing access to those rewards should result in continuing loyalty to an autocratic government. Democratic leaders will not be afforded the same courtesy when public goods are decreased due to sanctions. The risk of being excluded from the winning coalition in a democracy is significantly less, and therefore, loyalty is not as strong. Fearful of losing support, democrats concede to sanctions pressure.

Additionally, autocratic leaders also have greater control over the distribution of resources, which again grants them greater flexibility. Democratic leaders are not as free to re-allocate, especially when the power of the purse is shared. Hands tied by institutional constraints, democrats cannot take actions, other than those supported by the public.

Sanctions can threaten the incumbency of leaders. The institutional incentives in a democratic system encourage leaders to concede to sanctions rather than to hold out as less constrained autocratic leaders might be inclined to do. I hypothesize that leaders constrained by democratic institutions will be more likely to concede to sanctions pressure (*Hypothesis 2*).

The mean hypothesis (*Hypothesis 2*) and the variance hypothesis (*Hypothesis 1*) are related but distinct. The mean hypothesis predicts how a regime should act in the face of sanctions pressure (controlling for other factors), and the variance

hypothesis predicts the variability in those actions. If the variability is not consistent then employing an econometric technique that assumes consistent error variance is inappropriate, leading to inefficient estimates (Greene 1997).

Research Design

The assumption of homoskedasticity is a cornerstone of econometric estimation. Without a consistent variance of errors, estimates become inefficient and in the case of probit, as is applicable here, inconsistent (Greene 1997). For that reason, if heteroskedasticity is suspected, it is necessary to test for it and adjust accordingly.

While heteroskedasticity does lead to some econometric difficulties in estimation, the unequal variability may be substantively interesting (Downs and Rocke 1979). Scholars of American politics utilize heteroskedastic probit models in order to model variation within the opinions of individuals (Alvarez and Brehm 1995, 1998). More recently, this method has been applied to explore variation in conflict behavior among states with different democratic institutional structures (Clark and Nordstrom 2005) as well as the role of economic interdependence to diminish uncertainty and, as result, the likelihood of militarized conflict (Reed 2003). Variance modelling is a potentially interesting method for international relations research, as it can be employed for the examination of variance within regime types as well as comparison across types.

To understand this estimation approach, a brief explanation of the differences between the standard probit model and heteroskedastic variant is needed. In a simple latent variable probit model, the outcome variable, Y^* , is estimated as a function of some covariates (\mathbf{X}) and an error term (u):

$$Y_i^* = \mathbf{X}_i\beta + u_i \tag{1}$$

where the errors are assumed to be normally distributed with a mean of zero and a variance of σ^2 (more formally, $u_i \sim N(0, \sigma^2)$) and the observed outcome variable

can take only take on values of 0 and 1.

Using the above relationships and simple algebra, we know

$$Pr(Y_i = 1) = Pr(Y_i^* > 0) \quad (2)$$

$$= Pr(u_i > -\mathbf{X}_i\beta) \quad (3)$$

$$= \Phi(\mathbf{X}_i\beta) \quad (4)$$

Both sides of the inequality can then be divided by the same number without altering the relationship:

$$Pr(Y_i = 1) = Pr\left(\frac{u_i}{\sigma} > -\mathbf{X}_i\frac{\beta}{\sigma}\right) \quad (5)$$

where σ is the standard deviation of the error distribution. To simplify:

$$Pr(Y_i = 1) = \Phi\left(-\mathbf{X}_i\frac{\beta}{\sigma}\right) \quad (6)$$

When a standard probit model is estimated, we assume that $\sigma^2 = 1$, so the σ in the denominator drops out. This is not the case for the heteroskedastic model, where the value of this denominator is also estimated. Because σ^2 is the variance of the errors, it is determined by the covariates in the model and their relationship to the outcome variable, not just the outcome itself.

In order to produce estimates for the heteroskedastic probit, two equations are created. The first models sanctions success, in which the likelihood is a linear combination of domestic and international factors leading to an outcome, either success or failure. The second equation is a model of the error variance, which allows for variables to be specified that account for any systematic component of the error term. Once the mean relationship between the outcome and the covariates is accounted for, variance equation is used to determine whether or not there exists a systematic component of the errors that can be explained by the variables specified.

Following Alvarez and Brehm (1995) (who take their cues from Harvey (1975)), the error variance is estimated in the multiplicative functional form presented Equation 7:

$$Var(\varepsilon_i) = \sigma_i^2 = exp(\mathbf{z}_i\gamma)^2 \quad (7)$$

where \mathbf{z} is a vector of covariates that defines groups with different error variances (as they are associated with the latent dependent variable) and γ which is a vector of the parameters to be estimated (i.e. the variances).

Using a heteroskedastic probit model allows for the variance of the dependent variable to vary with one or more independent variables. In other words, we no longer assume the variance is equal to 1. Instead, values of σ^2 are estimated as a function of some independent variables. In the analysis presented here, σ^2 is allowed to vary by regime type.⁴ After calculating the mean relationship between regime type and the sanctions outcome, including a regime variable in second equation lets us know if there remains a systematic component of the errors that varies by regime. The estimated variances can be thought of as the amount of noise in the signal being sent by the target state. I anticipate larger variances for autocratic states, i.e. noisier signals, and smaller variances for democratic states. A value of σ^2 is estimated for *each* value on the Polity scale (-10 to 10).

By selecting a heteroskedastic model, I am able to examine the variance of sanctions response both within regime types and then compare them across types. If, in the face of sanctions pressure, autocratic regimes do have more options open to them as result of a small degree of public accountability, it is inappropriate to assume

⁴The suggestion has been made that I might want to include other variables in the variance equation such as the level of international cooperation (per Martin 1992), the sender's stated goal(s) for a given sanction, the economic impact, and the duration of the sanctions episode, but I found that all of these variables added nothing significant (either statistically or substantively) to the model. In fact, the inclusion of these variables in the variance equation leads to an increase in the size of the standard error estimates of the coefficients, suggesting that none of these factors are driving the unequal variance finding. Extraneous variables in the variance equation lead to inefficient estimates and are, therefore, undesirable. For this reason, only regime type appears in the variance equation.

that their responses will be distributed in the same fashion as those of democratic governments. The process that created the responses would not be homogeneous, and thus it is incorrect to assume that they are identically distributed.

The model utilized in this analysis includes an estimate of the natural log of σ^2 . The significance level of this estimate is tested against the null hypothesis that the variance is homoskedastic (or that all regimes have the same error variance in response to sanctions), and if the measure is significant, homoskedasticity cannot be assumed.

Operationalization

The Hufbauer, Schott, and Elliott (HSE) data (1990) include 115 sanctions episodes between 1915 and 1990.⁵ For the purpose of this project, only 109 are being considered. In three instances (*US vs. Grenada 1983*, *India vs. Hyderabad, 1978-82*, and *South Africa vs. Lesotho, 1982-86*), cases are excluded due to missing data. In the other three cases (*US vs. the Arab League, 1965-*, *Canada vs. the EC, 1977-78*, and *US vs. Eastern Europe, 1975-1991*), the exact target state is unclear. Not all cases where more than one target is specified are excluded,⁶ but those which do not have directly stated targets are (as is the case in those episodes mentioned above). No credible measure of the regime type for these groups can be calculated (as the polity scores range widely among the states and across time), nor would it be readily comparable to the scores for individual states.

The dependent variable is dichotomous - whether or not sanctions succeed. This variable, as well as many of the covariates, is also coded as part of the HSE data. When considering how to delineate between outcomes, only the score for policy success is considered. In the original data, HSE calculated scores for both policy

⁵Information provided concerning sanctions against Iraq is incomplete and therefore, this case is excluded.

⁶In cases where two or even three countries are named as direct targets of the sanctions policy, an average regime score of the states is calculated. In most of these cases, the targets have very similar regimes (for example, the Netherlands and the US, which were jointly sanctioned by the Arab League in 1973-4).

success and sanctions impact and then multiplied them together. Using this score is problematic because it creates a non-continuous measure of success that is difficult to use for statistical analysis. Substantively, this multiplicative measure allows for cases that received low scores for coercive effectiveness to still be scored as successes. For the purposes of this paper, only the success of the coercive policy is considered (following Drury 1998).

Cases rated as a four (or a “successful outcome”) by HSE are scored as a concession by the target (Dashti-Gibson, *et al* 1997). All other cases are considered to be failures because the sender has not achieved the full aim of its policy. The results of the analysis are robust to choosing either three (“partial success”) or four as the cutpoint for success. I have opted to use four because it provides a more stringent threshold, with the hope of clearly delineating between successful and unsuccessful coercion.⁷

Because I am limiting my analysis to the success of the coercive policy, it will be important to control for other factors that could affect the outcome. To do so, a variable to capture the accompanying policies implemented by the sender is also included from the HSE data. This variable is ordered (0-3) from no additional threat (0) to full regular military action (3). The two intermediate categories are covert military action (1) and quasi-military action (2).

Additionally, the prior relationship between the target and sender is also considered. To do so, the presence of an alliance is drawn from the Correlates of War Alliance data (1991). Drezner (1999) posits that sanctions should be more successful when a positive prior relationship exists, such as is suggested by a military alliance. An indicator for the United States as the primary (or sole) sender is also included. By controlling for these contextual factors, it is possible to limit the dependent variable only to the accomplishment of the stated policy goals.

The nature of the demand being made should also have an impact on the likeli-

⁷Running this model as a heteroskedastic ordered probit is a possibility from an econometric standpoint (Alvarez, Brehm, and Wilson 2003), but the small number of cases limits the reliability and consistency of such estimation.

hood of concession. A targeted state may not be willing to bear the costs of sanctions if the demand being made by the sender is small. As the extent of the demand increases, the likelihood that the target will concede should decrease. Large military demands are the demands that target states should be least likely to given in to when faced with economic coercive pressure, so a dichotomous indicator variable for these demands is included. An example would be U.S. sanctions against the Soviet Union in 1980 demanded they pull out of Afghanistan.

To capture the economic effect of sanctions a measure of the sanctions' economic impact (calculated as an average annual change in GNP) is included. The type of sanction imposed, an indicator for whether or not financial sanctions are utilized, is included in the analysis.⁸ Additionally, following the debate between Martin (1992) and Drezner (2000) on the efficacy of multilateral sanctions, an indicator of whether or not the sanctions were imposed multilaterally is also included. This information as well as the demand variable are all drawn from the original HSE data. Summary statistics for all variables can be found in Table 1.

Table 1 About here

In addition to the other shortcomings of the HSE data, only a brief mention is given to the political circumstances of the target. This is captured in a subjective ordinal stability score ranging from 1 to 3 that includes both the economic and political stability of the target. This is problematic for several reasons. First, this stability score is only given only as a single point estimate, regardless of the fact that the sanctions may last for several decades during which stability may not remain constant. The type of regime of the target is ignored by this measure: a stable dictatorship receives the same score as a stable democracy. To correct for this omission, regime scores, ranging from 10 (highly democratic) to -10 (highly autocratic)

⁸This does not amount to a measure of targeted sanctions. When the HSE data collection began, the idea of using financial sanctions to pinch leaders and elites in target states directly had not been clearly developed. Their measure only captures whether or not any sanctions of a financial nature were imposed. The author is grateful to Jeffrey Schott for clarification on this point.

are calculated as an average for the duration of the sanctions using the Polity 98 data (McLaughlin *et al* 1998). Scores are lagged one year in order to capture regime changes that may have come as result of the sanctions policy but were not reflected in the regime score until the year after the policy was ended. This variable is utilized in both the mean and variance equations to ascertain the impact that regime type has on the probability of sanctions success as well as on the variance surrounding that outcome.

Results

To assess the usefulness of this heteroskedastic probit analysis, I set the results in opposition to those of a standard probit model. Both sets of results were calculated with robust standard errors and can be seen in Table 2.⁹

Table 2 About here

In comparison to the traditional probit analysis, several differences are immediately apparent. The coefficients for the heteroskedastic model tend to be larger and the standard errors for those coefficients are smaller. The results are generally consistent between the two models.

The basic findings of the primary (mean) equation are similar to those previously examining the success of economic sanctions (ex. Drezner 1999, Dashti-Gibson, *et al.* 1997). The amount of economic impact that a sender can impose on the target state has a statistically significant positive impact on the success of the policy. Larger economic costs do improve the chances of sanctions success. For this reason, previous economic relationships are also potentially important. When two countries have little trade, as was the case when Canada sanctioned Pakistan over nuclear safeguards (1974-76), it is unlikely that sanctions can disrupt the target economy

⁹Both models are estimated with robust standard errors using Stata 9.2. Following the heteroskedastic probit, the post-estimation `-predict-` command is utilized to return estimated values of the sigma.

enough to bring about a desired change. On the other hand, when the United States sanctioned South Korea over the same issue, the sanctions were highly successful because nearly 40% of South Korean exports go to the US (HSE 1990).

The existence of a military alliance also has a positive influence on sanctions success. Following work by Drezner (1999), senders are more likely to sanction successfully when they have not only economic ties, but also political-military ties as well. If the states fear future conflict and value reputation, then the long-term cost of resistance should make it comparatively less appealing to target states. The strength of this relationship was masked a bit in the standard probit model but becomes clearer in the heteroskedastic model.

Several factors concerning the sanctions themselves also have an important impact. The type of sanctions has an effect as financial sanctions are more likely to succeed than are trade sanctions, an effect that is absent in the standard model. Multilateral sanctions are also more likely to lead to concessions as are sanctions that are accompanied by additional coercive threats. On the other hand, sanctions do not seem to be a good tool for bringing about major shifts in the military behavior of target states. These demands are negatively correlated sanctions success.

Most interestingly with regard to this project are the findings concerning the regime type of the target. The regime variable, which measures the level of democracy of a state's institutions, is statistically significant and positive, lending empirical support to *Hypothesis 2*. This suggests, as do other quantitative studies including Nooruddin (2002), that the more democratic the target state is, the more likely it is to concede to sanctions pressure, thus causing the sender's policy to be successful.

The magnitude of the effect of this variable more than doubles when σ^2 is allowed to vary as a function of the regime scores. By not including this second equation for variance in the model, previous scholars have underestimated the importance of regime type as a predictor of sanctions success.

Further, the model demonstrates that there is a statistically significant difference in the variance across regime types that is substantively important. The negative

coefficient on this variable suggests that as a state's Polity score increases, the estimated variance decreases. As the targets become progressively more democratic, the variability in their actions decreases by -0.175. This difference in the variance is statistically significant, and a change of 0.175 is large (given that in the standard model, σ is assumed to be 1). This result supports *Hypothesis 1*, which suggests that there will be more variation in the responses of autocratic countries to sanctions because they are less constrained by the demands of the people. This greater variance around the estimates for autocratic states captures the increased "noise" in the signals being sent by these sanctions targets.

Predicted values for the variance (σ^2) were generated and graphed against the values of regime score (Figures 1 & 2). Looking at the graph, there is a dramatic decrease in variance as regime scores increase. The estimates of σ^2 range from less than .05 for the most democratic states to more than 16 for the most autocratic states. The standard probit model, which holds the variance constant at 1 for all states, dramatically underestimates the value for the autocratic cases and overestimates for democracies.

To demonstrate the significance of the interrelationship between the mean and variance hypotheses, predicted probabilities of sanctions success were also generated and graphed by regime score (Figure 3). The base probability for success is .07% for the most Autocratic States to about 20% for the Democratic States. In addition, confidence bounds were added to demonstrate the variance effect. As this figure clearly demonstrates, the variance surrounding the estimates of the predicted probabilities is much smaller for more constrained democratic states. When sanctions are imposed, senders should have less uncertainty about the likely behavior of these targets.

To some degree, the unequal variance highlighted in this paper points to shortcomings in our theoretical explanations of sanctions success. The basic model posited here, which echoes previous work (including Nooruddin 2002, Drury 1998, Dashti-Gibson *et al* 1997), does a relatively "good" job explaining the behavior of some

targets (resulting in smaller residuals) and a relatively “poor” job of explaining the behavior of others (resulting in larger residuals). Empirically, this model identifies the fact that the differences between those two groups of states varies systematically by regime type. In other words, common explanations of sanctions success predict the behavior of democratic targets more effectively than they predict the behavior of autocratic targets.

In this paper, I offer one possible explanation for this unequal variance – the difference in amount and quality of information available about democratic and non-democratic targets. Given the literature on informational asymmetries in interstate relations, I believe this hypothesis is theoretically compelling. The openness of democratic societies provides other states with more information, but given this model and the readily available measures of regime type, it is not possible to determine definitively whether or not this particular theory neatly explains some or all of the uneven variance.

By identifying the heteroskedasticity in the dominant models of sanctions success, at the very least, this paper represents a challenge for a more complete theory of sanctions success. In addition, I believe it points to the importance of information to sanctions outcomes. When the decision-making process in the target state is transparent as it is in democracies, outcomes are more predictable as senders make more informed decisions concerning sanctions design.

Possible Explanations for Unequal Variance

The unequal variance identified here may have additional substantive implications. Less variation in the outcomes for democratic states could be driven by the nature of the states that are targeted. If senders can look at the institutions of target states and glean information about their potential behavior (*Hypothesis 1*) as well as information about the variability around that potential behavior (*Hypothesis 2*), we might expect that a sender’s awareness about a target’s regime type will be important to the selection process.

Sender states looking to coerce economically should be able to better identify those democracies that will likely concede to sanctions. The transparency of democratic societies enables senders to get a clear picture of a potential democratic target's level of resolve. If senders can tell that a democratic target states is highly resolved and, therefore, unlikely to concede to sanctions pressure, an alternative coercive measure will be employed instead.

Table 3 About here

Profiles of both target and sender states can be found in Table 3, which shows that while democracies are more likely to initiate sanctions, they are less likely to be the targets of such measures.¹⁰ The United States is the primary sending state in 71 of the 109 cases under consideration, due largely to its preeminent position in the world economy. In addition to the transparency issues described above democratic senders may be less inclined to initiate sanctions against democratic targets as they are less likely to initiate military action against other democracies (Dixon 1993). The information in Table 3 does not suggest that sanctions senders are selecting their targets on the basis of regime type with a view to more successful outcomes.

One possible explanation for the lack of democratic targets might be selection prior to implementation. Because of the lack of uncertainty surrounding the behavior of democratic states, senders may be able to simply threaten sanctions rather than impose them to bring about changes in behavior (Morgan and Miers 1999). Complete data on cases of sanctions threatened might provide additional insight into this issue of selection prior to sanctions implementation. Future extensions of this research may incorporate the recently released TIES data (Morgan, Krustev, and Bapat 2006).

Another possibility is that the likelihood of sanctions success (and therefore, in part, regime type) may not be the primary decision criterion for leaders in sanctions-sending states (Baldwin 1985; Smith 1996). The potential outcome may be only one

¹⁰Categorization based on Polity scores. States considered democracies have scores of 7 or greater. All other states are considered non-democracies. Lowering the threshold to 5 or 6 does not dramatically change the percentages.

of several considerations for the leader. Consequently, the selection process may also be driven more directly by additional factors including testing resolve where uncertainty exists, signaling disapproval, as well as demonstrating a commitment to act.

Conclusions

Economic sanctions have become an important tool of American foreign policy. The United States is far and away the most prolific sender of economic sanctions. Many of these sanctions are applied against autocratic targets. The results presented here suggest that the outcomes of the sanctions episodes are more difficult to predict. As target states become more closed politically, the information these states provide to senders is less credible, the range of acceptable demands become more uncertain, and thus the outcomes of sanctions episodes are more likely to be difficult to predict. If sender states like the United States are indeed attempting to craft successful policies, senders should be able to craft demands that will be more likely to lead to concessions. This will only be possible for sanctions imposed against political open states. For autocracies, other forms of coercive pressure may be more effective.

The scholarship on the democratic peace clearly suggests that leaders are constrained by democratic publics. The informational effect of these constraints as described by Schultz (1998) leads to observable and *predictable* patterns of behavior by democracies in the international system. To this end, the democratic peace proposition has direct implications for the variance surrounding the behavior of these states, as do many of our theories. Testing variance-based hypotheses provides greater richness in our analysis. Often, it is important to consider more about a variable than just its mean. Variance analysis gives further information about the distributions. Because informational asymmetries can lead to heteroskedasticity we should be substantively interested in testing variance effects.

This work also provides an added facet for the study of international relations

and the democratic peace proposition more specifically. Much of the democratic peace literature has a definite bias toward the examination of the military foreign policy decisions made by democratic leaders. One notable exception is Leeds and Davis (1999), who point out that if war does emerge from a process of interaction (as is suggested by Bueno de Mesquita and Lalman (1992)), domestic political institutions should influence the entire process. In order to understand variation in foreign policy response, we should look to find patterns that span multiple levels of crisis. Examining the foreign policy decision-making of sanctions targets adds to our knowledge on non-violent confrontations between states.

Additionally, an important avenue for future research is to continue exploring the theoretical underpinning of potential selection effects that plague sanctions research. Early work in this direction has illustrated the methodological pitfalls related to the selection process, but with little attention to the theoretical importance of the issue (Nooruddin 2002).

Recognizing and correcting for empirical difficulties such as heteroskedasticity and selection effects are critical steps in creating good scholarship, but looking deeper for the theoretical significance of these empirical artifacts in our data can also be a rewarding pursuit. The findings presented here demonstrate the substantive importance of the unequal variance surrounding target's response to economic sanctions. Allowing the value of σ^2 to vary by regime type, we find that democratic leaders are significantly more constrained in their response to economic coercion. The actions of autocratic leaders are, as result, more unpredictable. Beyond the econometric inefficiencies associated with this heteroskedasticity, the unequal variance highlighted here leads to the creation and continuance of inefficient and ultimately ineffective sanctions policies.

Table 1. Summary Statistics

Variable	Mean	Std. Dev.	Min.	Max.
Dependent Variable				
Sanctions Outcome	0.303	0.462	0	1
Independent Variables				
Regime Score	-1.417	6.674	-9	10
Alliance	0.349	0.479	0	1
Accompanying Threat	0.706	1.108	0	3
Economic Impact	1.247	2.412	-5.5	14.3
Financial Sanctions	0.734	0.444	0	1
US Sender	0.651	0.479	0	1
Multilateral Sender	0.220	0.416	0	1
Major Military Goal	0.092	0.29	0	1

Table 2. Heteroskedastic & Standard Probit Estimates, Sanctions Outcomes, 1915-1990

Variable	Het. Coefficient	Std. Coefficient
Equation 1: Sanctions Outcome		
Regime Score	.096** (.025)	.049* (.022)
Accompanying Threat	.211† (.129)	.263† (.146)
Economic Impact	.189* (.089)	.118* (.056)
Financial Sanctions	.553 (.214)	.205 (.341)
Multilateral Sanctions	.585* (.280)	.370 (.352)
Alliance	.548* (.264)	.566† (.294)
US Sender	.022 (.307)	.056 (.312)
Major Military Goal	-1.356* (.543)	-0.811 (.595)
Intercept	-1.795** (.294)	-1.248** (.406)
Equation 2: Variance		
Regime Score	-0.106** (.030)	
N	109	109
Wald χ^2	38.72	17.58
Prob > χ^2	0.000	0.023
Log-likelihood	-54.204	-57.582
Significance levels : * : 5% ** : 1% *** : .1%		

Table 3. Senders and Targets by Regime Type

	Democratic Target	Non-Democracy
Democratic Sender	13	72
Non-Democracy	10	14

Figure 1. Predicted Values of σ^2 by Regime Score (-10 to 10)

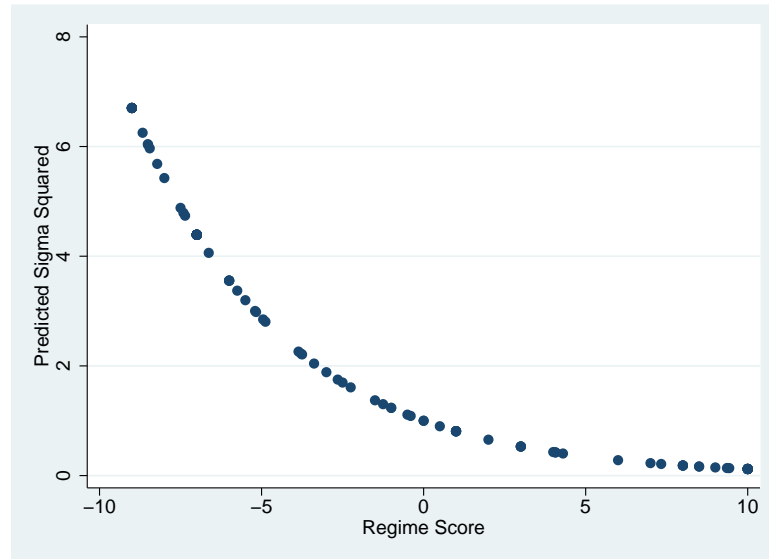


Figure 2. Predicted Values of σ^2 by Regime Score (0-10)

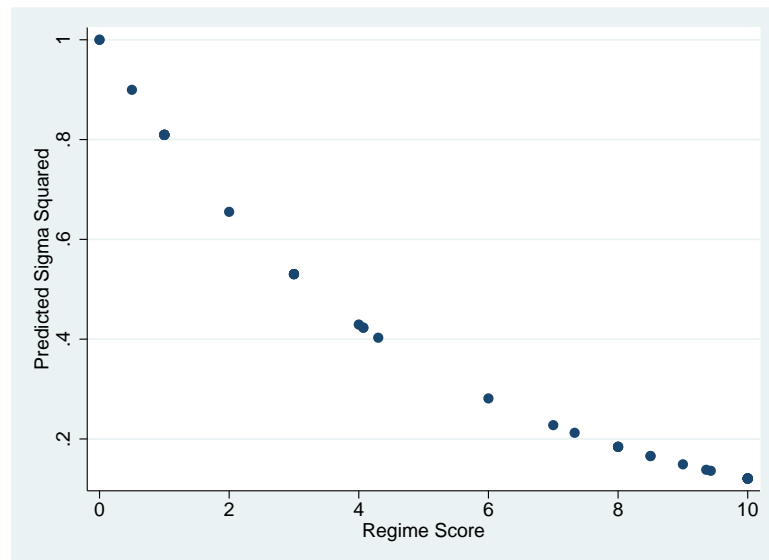
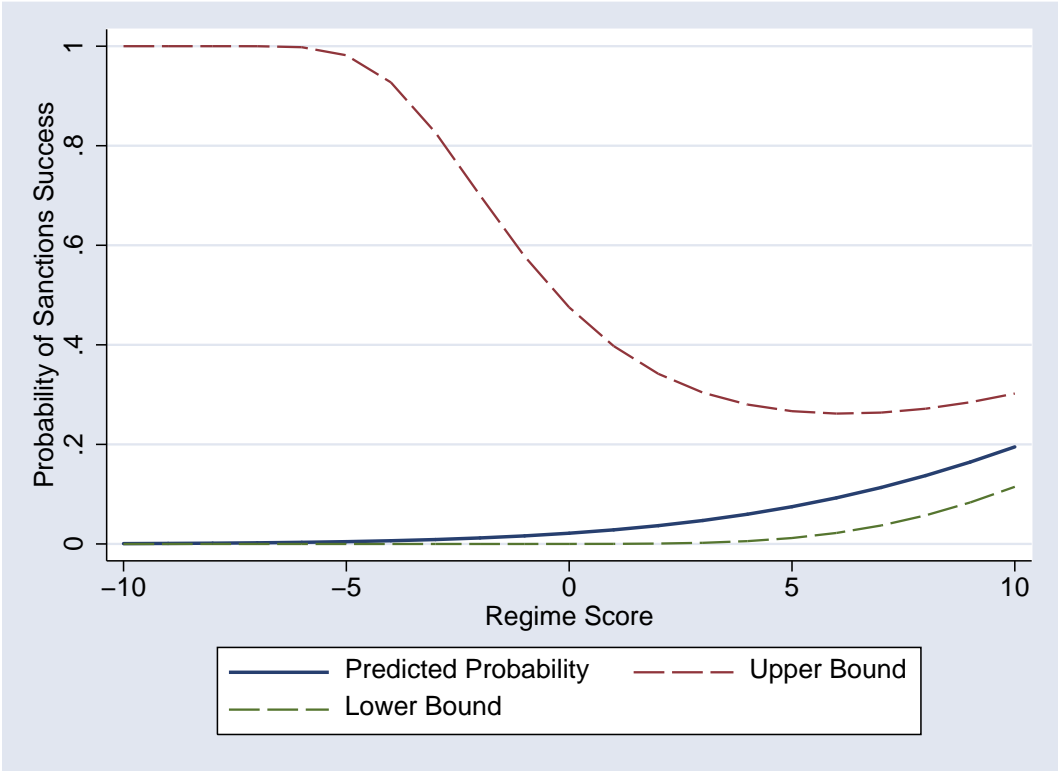


Figure 3. Predicted Probability of Success by Regime Score



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