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Talking to the Hand: Bargaining, Strategic Interaction, and Economic Sanctions

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Abstract

The dominant theoretical perspective guiding research on economic sanctions views sanctions as tools of bargaining. This implies that senders and targets are engaged in strategic interaction and that each is basing its decisions, in part, on its expectations regarding how its opponent will react. In this paper, we test a number of hypotheses derived from a game-theoretic model developed by Morgan and Miers (1999) that focus specifically on the bargaining processes in sanctions episodes. Our results provide no support for these hypotheses and seem to suggest that sanctions senders and targets are paying very little attention to each other, at least in a manner consistent with the theory. We conclude with a consideration of why this might be the case and with some speculation regarding what this means for future research into the processes of economic sanctions. In short, we believe our results indicate that a new theoretical paradigm, focusing on legal enforcement and economic adjustment at the micro level is in order.

Introduction

In the field of international relations, many theories proceed from the fundamental assumption that world politics constitute situations of strategic interaction between states. This implies, among other things, that states are forward looking and their foreign policy choices depend on their expectations about choices by other states. Quite sensibly, scholars have studied such interdependence between states' foreign policy choices using game theory, which has proven to be particularly powerful tool in explaining some central puzzles in international relations, including why states fight costly wars (e.g. Fearon 1995). In the literature on economic sanctions, the application of game theory has also been quite successful. In particular, scholars employing a game theoretic approach have provided an explanation to one important puzzle in the sanctions research: why does it appear that sanctions rarely work? These models suggest that economic sanctions are more effective than the conventional wisdom suggests because sanctioned states willing to acquiesce tend to do so before sanctions are applied (Smith 1996; Morgan and Miers 1999; Drezner 2003; Lacy and Niou 2004; Krustev 2010). This is due to strategic interaction: in those cases where sanctions would induce targets to alter their behavior, targets can anticipate this when sanctions are threatened and change their policies before sanctions actually occur. This insight has led scholars to examine the existence of selection effects (Drezner 2001, 2003; Blake and Klemm 2006; Miller, 2014) and to incorporate selection processes in empirical models (Nooruddine 2002; Lektzian and Souva 2003, 2007; Whang, 2010; Whang, et al., 2013; Peterson 2013), as well as to collect a new dataset that includes cases of sanctions threats (Morgan, Bapat, and Krustev 2009).

While this insight from recent theories has certainly made valuable contributions to sanctions research, we still know little about the underlying strategic processes that produce the selection bias. Our empirical work shows that sanctions frequently do work at the threat stage, suggesting that a selection effect is at work, but we have not yet explored the causal mechanisms that produce this effect. One problem is that almost all theoretical models of sanctions have adopted a bargaining perspective, so they are based on similar assumptions about the underlying causal processes. Thus, we have yet to

question whether we truly understand these mechanisms. While there is a compelling intuition leading to the reliance on bargaining theory, there are many other possible causal processes that could produce similar expectations regarding the importance of threats in the use of sanctions. It is important to consider whether the dominant theoretical perspective really does provide a sound understanding of the phenomenon or whether it is time to modify it or replace it.

This article aims to explore the underlying strategic process in economic sanctions by directly testing hypotheses derived from a game-theoretic, bargaining model proposed by Morgan and Miers (1999), which, although never published, has been widely cited as one of the prominent models of economic sanctions in the literature.[1] Morgan and Miers (1999) develop a one-sided incomplete information model in which the sender is uncertain about the target's type. Their model does lead to the insights about the selection bias and the importance of sanctions threats mentioned above, and many hypotheses following from the model have found substantial empirical support (see, especially, Bapat et al., 2013). It also produces a number of testable hypotheses, some of which are counterintuitive, that let us examine whether the causal mechanisms that drive behavior in the model are, in fact, at play. We subject some of the hypotheses derived from Morgan and Miers' (1999) model to an empirical test using the recent version of the Threat and Imposition of Economic Sanctions (TIES) data (Morgan, Bapat, and Kobayashi, 2014). Importantly, the hypotheses we test would be common to almost any theory that views sanctions as involving bargaining between states; so, our empirical results have broader implications for a major paradigm upon which our understanding of sanctions processes is based. Using various measures, data sets, and model specifications, we find little evidence that is consistent with the notion that sanctioning states and their targets behave as Morgan and Miers' model would lead us to expect, especially once sanctions are imposed. Our results show that this model does not withstand empirical scrutiny, and suggest that the conventional approach to sanctions that focuses on strategic interactions between states may not be as productive as we would

[1] Miers and Morgan (1999) has been cited in a number of articles, including Bolks and Al-Sowayel (2000), Drury (2001), Drezner (2003), Lacy and Niou (2004), Drury and Li (2006), Kaempfer and Lowenberg (2007), Allen (2008), Bapat and Morgan (2009), Krustev (2010), Nooruddin and Payton (2010), Whang, McLean, and Kuberski (2013), Drury, et al., (2014); Carnegie, 2015; Clay, 2018; Mclean et al., 2018.

like it to be.

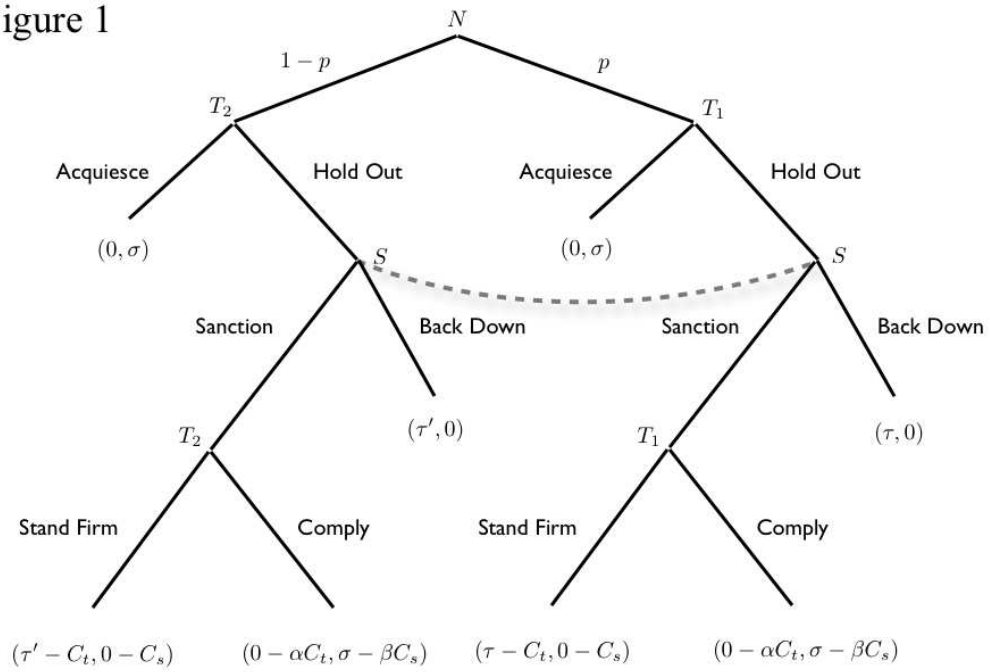
Morgan and Miers' Model of Economic Sanctions

In the sanctions literature, many game-theoretic models of sanctions have been proposed (Eaton and Engers 1992; Smith 1996; Morgan and Miers, 1999; Drury 1999; Lacy and Niou 2000; Hovi, et al. 2005; Krustev 2010; Bapat and Kwon 2015). Most of these models share core assumptions. First, they treat sender and target states as rational unitary actors and assume that they have a dispute over some issue(s).[2] Second, they assume that sanctions are threatened before the sender makes a decision to impose them. Third, when imposed, sanctions are modeled as costs imposed on both the target and sender. Fourth, they assume that the actors are engaged in strategic interaction. That is, they are paying attention to each other and are basing their decisions, in part, on what they expect the other to do *and* they believe the other is doing the same thing. While individual models differ in other aspects, such as their specification of players' possible moves and what information each player possesses, these four core assumptions lead to several similar predictions. Perhaps most obviously, they lead us to expect that threats are an important aspect of sanctions episodes. In addition, however, they lead us to expect that the parties pay attention to each other in specific ways; so, to consider one well-known example, we conclude that bargainers pay more attention to costly signals sent by opponents than they do to 'cheap talk.'

In this vein, Morgan and Miers (1999) develop a one-sided incomplete information model in which a sender is uncertain about the type of target it is facing: the possible types are distinguished by whether the target prefers acquiescing or standing firm when sanctions are imposed. Figure 1 presents the model.

[2] One exception is that of Bapat and Kwon (2015), which includes firms as a key player in addition to the sender and target states.

Figure 1



There are two players, a target (T) and a sender (S). The game begins when S has already threatened T with the imposition of economic sanctions in the event that the target does not acquiesce to S's demand. At the first node, T chooses to acquiesce to S's demand or hold out against S's sanctions threat. If T decides to hold out, S must choose whether or not to follow through the threat and impose sanctions. If S imposes sanctions, T must then decide to comply with the demand or to stand firm. Thus, there are four possible outcomes to this game: 1) S achieves her policy goal and no sanctions are imposed, 2) T achieves his policy goals and no sanctions are imposed, 3) S achieves her policy goals after sanctions have been imposed temporarily, and 4) T achieves his policy goals and the economic disruption created by the imposition of sanctions attains its maximum level.

To represent players' payoffs, Morgan and Miers (1999) assume the actors' preferences are represented by von-Neumann-Morgenstern utility functions. Von Neumann-Morgenstern utility functions are invariant up to linear transformation, which enables us to associate any outcome with the "zero" point on an actor's utility scale without loss of generality. For each actor, they designate the outcome at which it concedes the policy issue to its opponent and no sanctions are imposed as providing zero utility. The actor that achieves policy goals receives positive utility, denoted as σ for

player S and as τ for player T. The economic sanction is modeled as costs imposed on both players, C_S for S and C_T for T; and if sanctions are imposed temporarily, these costs are discounted by α for T and β for S, where $0 < \alpha < 1$ and $0 < \beta < 1$.

This characterization of the players' payoffs over the outcomes implies several restrictions on allowable preference orderings. First, the most preferred outcome for each player must be the one in which it achieves its policy objectives without bearing any sanctions costs. Thus, the best outcomes for S occurs when T immediately acquiesces, and the best outcome for T occurs when he holds out against S's demand and S backs down without imposing sanctions. Second, for each player, the outcome in which it fails to achieve its policy goals but avoids the imposition of sanctions must be preferred to the outcome in which it fails to achieve its policy goals after sanctions have been imposed, even if temporarily. Thus, S prefers the outcome associated with backing down to that associated with imposing sanctions and finding that T stands firm and T prefers the outcome associated with its own acquiescence to that associated with its compliance after S has imposed sanctions. Finally, if sanctions are imposed, S must prefer the outcome in which T complies to that outcome in which T stands firm. Given these restrictions, we have two possible preference orderings for S and three for T, creating six possible combinations of preference orderings:

Possible Orderings for S		**Possible Ordering for T**	
Type 1	σ P $\sigma - \beta C_s$ P 0 P $0 - C_s$	Type 1	τ P 0 P $0 - \alpha C_t$ P $\tau - C_t$
Type 2	σ P 0 P $\sigma - \beta C_s$ P $0 - C_s$	Type 2	τ P $\tau - C_t$ P 0 P $0 - \alpha C_t$
		Type 3	τ P 0 P $\tau - C_t$ P $0 - \alpha C_t$

Morgan and Miers (1999) make a few additional assumptions about players' utilities. First, they assume that S can only be a Type 1. A Type 2 S prefers backing down to either of the outcomes in which sanctions are imposed. Because, in this model, T knows S's type, we know that no Type 2 S will ever sanction. Thus, we need consider only Type 1 S.

Second, Morgan and Miers (1999) further assume that T can only be Type 1 (weak) or Type 2 (tough). Partly, this was motivated by a desire to simplify the model;

but, they do argue that the preference ordering for a Type 3 T is, while not unthinkable, peculiar. Notice that a Type 3 T prefers to acquiesce rather than suffer the imposition of *any* sanction but, if sanctions are applied it prefers to suffer the full sanction and achieve its policy goals to suffering a temporary sanction and complying with S's demands. For these preferences to obtain α must be relatively high. This means that the economic relationship must be of a sort that once sanctions are applied, the decision is essentially irreversible; that is, the cost associated with very short-lived sanctions is almost the same as the cost associated with sanctions of infinite duration. If we see sanctions as a means of manipulating bargaining costs, it makes no sense for senders to design or impose sanctions that cannot be removed[3]. Thus, assuming away Type 3 Ts makes perfect sense from the dominant conceptualization of sanctions processes. This point becomes critical below and we return to it in the conclusion.

In this model, the first move is assigned to nature, who determines player T's type. T will be a Type 1 with probability p and a Type 2 with probability 1-p. These probabilities are common knowledge. After nature's move, S does not know whether T is Type 1 or Type 2. Notice that if T is Type 2, its strategy {Hold Out, Stand Firm} dominates all others and that, if S knew she was playing against a Type 2 T, she would back down. A Type 1 T would comply at its second choice node, so S would opt to impose sanctions against a Type 1 T and, knowing this, the Type 1 T would acquiesce. Because S does not know what type of T it is facing, however, a Type 1 T may have an incentive to hold out in the hope that S would back down in the mistaken belief that T is Type 2. This creates an incentive on the part of S to sanction occasionally when it observes T holding out to induce Type 1 T's acquiesce. Thus, the pure strategies available to Type 1 Ts and to Ss will not typically be a part of equilibrium.[4]

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[3] The model does not address the question of sanctions design. We are assuming here that senders design sanctions optimally and we are asserting that, if one adopts the perspective that sanctions are a means of manipulating bargaining costs, which most theories of sanctions do, then it would make no sense for senders to impose sanctions that could not be removed should the target comply with the sender's demands.

[4] Certainly, there are conditions under which there are pure strategy equilibria. These typically involve sufficiently extreme values of some parameters (especially p, the probability T is Type 1) so that the game resembles the complete information version. Under those conditions, we never observe sanctions—either T backs down before imposition or S knows there is no point in imposing. Such cases are probably ubiquitous, but uninteresting from the standpoint of wanting to understand sanctions processes.

To solve this game, the Bayesian equilibrium concept is applied. In equilibrium, a T of Type 2 will adopt the pure strategy {Hold Out, Stand Firm}, which is a best reply to any strategy adopted by the other players. Under most conditions, a T of Type 1 and player S will adopt mixed strategies. A T of Type 1 will adopt a mixed strategy designed to make S indifferent between backing down and imposing sanctions. Let r denote the probability that a Type 1 T will hold out at its first node. Type 1 T will hold out with the probability $r = \frac{C_S(1-p)}{(\sigma-\beta C_S)p}$ and will acquiesce with probability $1 - r$ at its first node and will comply at its second decision node. If player S reaches her decision node, she will believe she is playing a T of Type 1 with probability $p' = \frac{pr}{pr+(1-p)(1)}$ and believe she is playing a T of Type 2 with probability $1 - p'$. S will play sanction with probability $q = \frac{\tau}{\alpha C_T+\tau}$ and back down with probability $1 - q$.

Morgan and Miers (1999) equilibrium results provide an explanation for many observed empirical regularities. They suggest, for example, that greater target costs are associated with a higher probability that targets will back down in the face of threats and imposed sanctions. Most importantly, they answer one of the major puzzles facing sanctions scholars: Why are sanctions frequently imposed if they seldom work in an instrumental sense? The intuition behind this result hinges on the fact that the probability that *imposed* sanctions will 'work' depends on the proportion of those targets holding out in the face of imposed sanctions that are Type 1 targets. In equilibrium, as senders become increasing likely to impose sanctions, Type 1 targets are less likely to stand firm in the fact of threats; and, as the likelihood that a target of imposed sanctions will be Type 2 increases, the probability that the sender will impose those sanctions decreases. In this model, even under optimal conditions, imposed sanctions *cannot* work more than half the time. If we assume that conditions seldom approach optimality, which is probably reasonable, it should not be surprising that imposed sanctions only work in around thirty percent of cases. This result is the basis for the conclusion that, although *observed* sanctions seldom "work," a policy of threatening and sometimes imposing sanctions can be quite effective. Targets that would be influenced by sanctions can anticipate this and will alter their behavior at the threat stage and senders know that they must be willing to impose sanctions to sustain the credibility of the threat.

While the Morgan and Miers model has produced a number of hypotheses that have met with empirical support, other hypotheses remain to be tested. Here, we turn to a set of hypotheses suggesting that sanctions senders and targets should condition their behavior on their beliefs about their opponent's costs and benefits. These hypotheses are important because they speak directly to the causal mechanism at the heart of the theory. Moreover, at the level of generality at which we test these hypotheses, we believe they are consistent with many other theoretical models assuming that sanctions can be viewed as instances of strategic interaction between state actors.

First, consider the probability that a T of Type 1 holds out: $r = \frac{C_S(1-p)}{(\sigma-\beta C_S)p}$. This equation serves as a basis for formulating hypotheses about the target's decisions to acquiesce to the sender's demand at the threat stage. We can see that as the anticipated cost of sanctions to the sender increases, the probability that T would hold out increases and thus the probability that T would acquiesce decreases. This, in turn, suggests that the anticipated cost of sanctions to the sender should be negatively related to the probability of target acquiescence at the threat stage. Moreover, as the value of the issue under contention increases for the sender, the likelihood that the target would hold out decreases and therefore the probability of target acquiescence increases. Thus, we should expect that the salience of the issue to the sender should be positively related to the probability of target acquiescence. This discussion leads to the following two hypotheses about the successes of sanction threats:

Hypothesis 1.1: Sanctions threats are more likely to be successful when the anticipated costs of sanctions to the sender are low.

Hypothesis 1.2: Sanctions threats are more likely to be successful when the issues are more salient to the sender.

Next, consider the probability that S would impose sanctions: $q = \frac{\tau}{\alpha C_T+\tau}$. Here, we derive hypotheses regarding the likelihood that sanctions are imposed. From the equation for probability q, we can see that as the anticipated cost of the sanctions to the target increases, the probability that S would impose sanctions decreases. This result is somewhat counterintuitive, but the logic here is that when the sender believes that

sanctions would be very costly, relative to the value of the issue in contention, for Type 1 (weak) target, it interprets the fact that the target has held out against the threat of sanctions as strong evidence that the target must, in fact, be Type 2 (tough). Furthermore, the model predicts that as the value of the issue at stake for the target increases, the probability that the sender would impose sanctions also increases. Thus, we expect the following:

Hypothesis 2.1: Sanctions are more likely to be imposed when the anticipated costs of sanctions to the target are low.

Hypothesis 2.2: Sanctions are more likely to be imposed when the issues are salient to a Type 1 target.

Finally, we derive hypotheses about the likelihood that imposed sanctions would be successful. Consider again the probability that the target would hold out at the threat stage. Recall that when the anticipated costs of sanctions to the sender are high, the target is more likely to hold out at the threat stage. This implies that when the costs of sanctions to the sender are high, imposed sanctions are likely to be successful, which is the opposite of the expected relationship between this variable and successes of threats. This is because Type 1 Ts who hold out at the threat stage will comply with the senders' demands once sanctions imposed. Similarly, because the salience of issues to the sender is positively related to the probability of threat successes, we should expect that this variable would be negatively related to the likelihood of successes of imposed sanctions.

Hypothesis 3.1: Imposed sanctions are more likely to be successful if the costs of sanctions to the sender are high.

Hypothesis 3.2: Imposed sanctions are more likely to be successful if the issues are less salient to the sender.

These hypotheses specifically address our expectations regarding the selection mechanism at work in sanctions episodes. Each is driven by the assumption that the actors are paying attention to each other and that the strategy of each is based, in part, on expectations about the other. Thus, testing these hypotheses allows us to examine,

directly, the causal mechanisms that the theory asserts are driving sanctions behavior. We now turn to a test of these hypotheses.

Research Design

We test these six hypotheses using data from the new version of TIES data set, which codes both threats and sanctions during the 1945 to 2005 period (Morgan, Bapat, and Kobayashi 2014).[5] All our variables regarding sanctions episodes are constructed using information from the TIES data set. TIES defines sanctions as "actions that one or more sender states or an international institution take to limit economic relations with a single target state in an effort to persuade the latter to change its policies." Economic sanctions appear in a variety of forms, from tariffs and export controls to asset freezes and aid cuts, but economic restrictions not accompanied by demands are not coded. A sanction episode begins when a sender or senders make a threat about the possibility of sanctions—threats are usually initiated through verbal statements by government officials against a target state. When the threat fails to coerce the target to change its policy, the sender(s) have a choice to follow through the threat and impose sanctions. If the sender(s) choose to do so, the targets have the choice to acquiesce or stand firm.[6] TIES includes information about outcomes from each stage in sanctions episodes, which we use to test our hypotheses. We conduct three sets of analyses using three separate datasets and three different dependent variables, which we will discuss below.

In the first set of analyses, we test Hypotheses 1.1 and 1.2 by analyzing all cases where threats of sanctions are issued. After excluding sanction cases with missing values (in either the dependent variable or key independent variables), we are left with a total of 625 threat cases to analyze their successes. For these analyses, the dependent variable is

[5] The TIES data set and the codebook are available at http://sanctions.web.unc.edu/.

[6] TIES does include some cases in which threats did not precede the impositions of sanctions. While it is possible that sanctions were imposed without any threats, it is likely that threats were made behind the scenes, or even if they were made in public, TIES coders found no record of those statements. In any case, when threats are not coded, TIES does not include information on some key variables of interest to us, and thus we exclude them from the tests of our hypotheses.

Threat Success, which specifies whether sanctions are successful at the threat stages before the sanctions were imposed. We code a case as a successful threat if TIES reports that the target capitulated or partially capitulated. Of our 625 threat cases, 134 cases, or 21.4%, are coded as successful according to this definition of success.

Second, to analyze senders' decisions to impose sanctions (Hypotheses 2.1 and 2.2), we need a data set that includes all failed threats. We created this data set by excluding from our threat cases those where the targets acquiesced prior to impositions of sanctions. This leaves us with a total of 491 cases where the senders have the opportunity to impose sanctions. The dependent variable here is *Imposed Sanctions*, which is coded as 1 if the sender imposed sanctions, and 0 otherwise. In 285 cases out of 491 (58%), the senders chose to impose sanctions.

Finally, the third data set is constructed for testing Hypotheses 3.1 and 3.2 regarding targets' decisions to acquiesce after sanctions are imposed. We start with the second dataset (i.e. failed threats) and then exclude those cases in which the senders did not impose sanctions. This process leaves us with a total of 285 (imposed) sanction cases. The dependent variable for these analyses is *Sanction Success,* which is coded as 1 if the target capitulates or partially capitulates after sanctions are imposed. Of our 285 cases, 93 (32.6%) ended with the successes of imposed sanctions.

We construct four key independent variables, all of which are dichotomous, to test our hypotheses: 1) expected costs of the sanction to the sender (*Anticipated Sender Cost*), 2) expected costs of the sanction to the target (*Anticipated Target Cost*), 3) the salience of the issue(s) for the sender (*Sender Salient Issue*), and 4) the salience of issue(s) for the target (*Target Salient Issue*). To construct the *Anticipated Sender Cost* and *Anticipated Target Cost* variables, we make use of variables in TIES that measure the expected costs of sanctions for targets and senders. These variables capture the potential costs of sanctions on the health of the target or sender economy, which coders evaluate based on information available from various sources (e.g. newspaper articles, history books). TIES divides the anticipated costliness of sanctions into three levels: minor, major, and severe. It is worth noting that these anticipated costs variables account for various designs of sanctions (as long as those designs are known and anticipated at the threat stages). For example, if many senders are expected to impose costly sanctions on the same target, the

anticipated cost to the target is more likely to be coded higher than when sanctions were imposed by one sender. We code *Anticipated Sender Cost* as 1 if the anticipated cost to the sender is either major or severe, and 0 otherwise. Similarly, we code *Anticipated Target Cost* as 1 if the anticipated cost to the target is either major or severe, and 0 otherwise.

The next two independent variables are *Sender Salient Issues* and *Target Salient Issues*. These variables are intended to capture the saliency of disputed issues to each actor in sanctions episodes, which is difficult to measure. Thus, we make a few additional assumptions in coding these variables. First, we assume that issues are particularly salient to senders when they are related to international security. That is, we code *Sender Salient Issue* as 1 if issues are 1) to prevent military actions by the target state, 2) to resolve conflicts stemming from territorial disputes, or 3) to prevent the target state from supplying weapons or materials to a third-party client, and 0 otherwise. Second, we also assume that issues are particularly important to target states when they are related to their efforts to influence other states or to the survival of their regimes. That is, we code *Target Salient Issue* as 1 if issues involved in sanctions episodes are (1) to prevent the target from exercising non-military power over third states, (2) to prevent military actions by the target state, (3) to overthrow the target's regime in power, (4) to resolve conflicts stemming from territorial disputes, (5) to induce the target state to improve human rights practices, or (6) to prevent the target state from supplying weapons or materials to a third-party client, and "0" otherwise.

While our main analyses will focus on these key independent variables, we will conduct additional analyses to assess the robustness of the results by adding several control variables to our models. These variables capture forces outside the theoretical model that have been extensively studied as factors that influence states' decisions during sanctions episodes.

The first three control variables capture the economic and political nature of the relationships between the sender and the target. First, we control for the pre-sanction trade dependence for the targets and senders (*Target Trade Dependence* and *Sender Trade Dependence*) as previous studies have suggested that these measures are related to the impositions and success of sanctions (van Bergeijk, 1994; Hufbauer et al. 2007; Bapat

and Kwon, 2015). We define the pre-sanction target's (sender's) trade dependence as the volume of sender-target trade over the target's (sender's) GDP from the year before threats started. We draw trade and GDP data from Gleditsch (2002). Second, we further control for the political similarity between the sender and target (*S Score*) as some scholars have argued that future expectation of conflict are important considerations in the context of sanctions (Drezner, 1999; Jing, Kaempfer, and Lowenberg, 2003). We use a measure of alliance portfolio similarity (lagged one year) based on Signorino and Ritter (1999).

We also control for the specificity of demands made by the sender(s) (*Clear Demand*) as it is found to be strongly associated with the success of threats (Morgan, Bapat, and Krustev 2009; Peterson 2013). The *Clear Demand* variable is coded 1 when TIES identifies that a threat made by the sender(s) clearly states what actions needs to be changed to avoid sanctions, and 0 otherwise. As there is no a priori reason to expect the specificity of demands to affect senders' decisions to impose sanctions or the success of imposed sanctions, we include *Clear Demand* only in the models of threat success.

Finally, we also control for the characteristics of the sender and target states, in particular their regime types. While scholars differ on precise mechanisms, they agree that regime types influence states' decisions during sanctions episodes (Galtung 1967; Pape 1997; Hart 2000; Lektzian and Souva 2003, 2007). We draw data from Polity IV (Marshall and Jaggers 2005) and code *Democratic Sender* and *Democratic Target* as 1 if the target's or sender's Polity score is higher or equal to 6 (lagged one year).

Empirical Results

We first report our results from probit analyses of three outcomes: threat successes, sanctions impositions, and successes of imposed sanctions. Table 1 reports the coefficient estimates our three main models (Models 1.1, 2.1, and 3.1), which include the key independent variables. We first discuss our results for Hypotheses 1.1 and 1.2 pertaining to the successes of sanctions threats.

	Threat Success (1.1)	*Imposed Sanction* (2.1)	*Sanction Success* (3.1)	*Threat Success* (1.2)	*Imposed Sanction* (2.2)	*Sanction Success* (3.2)
Anticipated Sender Cost	-0.685**		0.129	-0.607		-0.477
	(0.302)		(0.304)	(0.379)		(0.396)
Sender Salient Issue	-0.489**		0.228	-0.584**		-0.549
	(0.233)		(0.230)	(0.294)		(0.340)
Anticipated Target Cost		0.287*			0.517***	
		(0.147)			(0.174)	
Target Salient Issue		0.110			-0.033	
		(0.142)			(0.175)	
Sender Trade Dependence				0.052	-1.252	2.298
				(1.639)	(1.207)	(2.224)
Target Trade Dependence				0.654	-0.573	-0.511
				(0.947)	(0.859)	(1.305)
Alliance Similarity				-0.375	0.074	-1.380***
				(0.309)	(0.280)	(0.418)
Democratic Sender				0.062	0.487**	-0.754**
				(0.238)	(0.190)	(0.309)
Democratic Target				-0.213	-0.031	-0.298
				(0.156)	(0.155)	(0.195)
Clear Demands				0.827***		
				(0.206)		
Constant	-0.723***	0.114*	-0.488***	-1.263***	-0.298	1.117***
	(0.060)	(0.069)	(0.085)	(0.365)	(0.281)	(0.432)
Observations	625	491	285	434	369	212

Table 1: Probit Analyses of Threat Successes, Sanction Impositions, and Sanction Successes: Estimated standard errors are reported in parentheses. *** p-value < 0.01, ** p-value < 0.05, * p-value < 0.1.

The results from Model 1.1 provide little support for the Morgan and Miers' model. Both *Anticipated Sender Cost* and *Sender Salient Issue* variables are statistically significant and negatively related to the successes of threats. While the negative coefficient on *Anticipated Sender Cost* is consistent with Hypothesis 1.1, the estimate for *Sender Salient Issue* is in the opposite direction to what Hypothesis 1.2 predicts. These results imply that it is unlikely that the targets employ mixed strategies determined, in part, on their expectations regarding the sender as expected in the Morgan and Miers' model. Furthermore, one implication is that if the targets do not adopt the hypothesized strategies at the threat stage, the senders' decisions to impose sanctions are likely not to

involve the expected mixed strategies, either. Indeed, we show that this appears to be the case.

Turning to our analysis of senders' decisions to impose sanctions, Model 2.1 presents estimation results. The coefficient estimate on the *Anticipated Target Cost* variable is marginally significant, but the direction of the relationship is the opposite that hypothesized in Hypothesis 2.1. Our result also provides no support for Hypothesis 2.2. While the coefficient on *Target Salient Issue* is positive, which is consistent with Hypothesis 2.2, it is not statistically significant. These findings also provide little support for the hypotheses regarding senders' strategic behavior that follow from Morgan and Miers (1999).

If we consider the successes of (imposed) sanctions, we again find little support for our hypotheses. In Model 3.1, we observe that neither *Anticipated Sender Costs* nor *Sender Salient Issue* is statistically significant. Once we control for several variables (Model 3.2), we find the coefficients of these variables to be significant but negative. While Hypothesis 3.2 predicts a negative relationship between the issue saliency for the senders and the successes of sanctions, Hypothesis 3.1 predicts a positive relationship between the expected costs to the targets and sanctions success.

Robustness Checks

We assess if our core findings depend on particular decisions made in our research design. First, we estimated a large number of models with different sets of control variables that fall outside the model but yet could influence states' decisions during sanctions episodes. The results either change little, lose statistical significance, or move in the directions that are inconsistent with the hypotheses. In Table 1, we present results from models with all the control variables (Models 1.2, 2.2, and 3.2). In Model 1.2, both *Anticipated Sender Cost* and *Sender Salient Issue* maintain the directions of the relationships but *Anticipated Sender Cost* lose significance, suggesting that we have little evidence for Hypotheses 1.1 and 1.2. Model 2.2 shows the previous results change little. Finally, in Model 3.2, the coefficient estimates for *Anticipated Sender Cost* and *Sender Salient Issue* become negative but still not significant. As our interest is in testing our hypotheses, we preclude a detailed discussion of control variables.

To further check the robustness of our results, we also run several additional analyses using cases whose issues are not related to trade practices, applying an alternative coding of success, and accounting for potential selection bias between stages in sanction episodes. First, we replicate our analyses excluding cases in which the Senders' demands involved trade practices. Previous studies argue that trade policy disputes are qualitatively different from others (e.g. Hufbauer et al. 1990; Pape 1997). Our results are presented in Table A.1 in the appendix. The results regarding our hypotheses are similar when we focus just on non-trade cases.

Second, we also replicated our analyses using an alternative definition of success. In our main analyses, we regard threats and sanctions to be successful when targets partially or fully acquiesced. However, this definition of success may be too strict. Thus, we replicated our analyses using a less restrictive measure of success by considering negotiated settlement as successes in addition to targets' full and partial acquiescence (Bapat et al. 2013). The results are presented in Table A.2 in the appendix. Again, our substantive findings do not change.

Finally, we also address the possibility of nonrandom selection that is not accounted for in our main analyses. Existing theories of sanctions, including Morgan and Miers (1999), indicate that decisions that states make during sanctions episodes are not independent of one another, which can lead to biases in our estimates (Nooruddin 2002; Lektzian and Souva 2007; Peterson 2010; McLean and Radtke 2018). For instance, it is unlikely that states are randomly selected into threats of sanctions. If we are interested in the outcomes of sanctions threats, this nonrandom selection can be problematic because the outcome is only observed conditional on the selection into threats. The same can be said about other outcomes of interest to us such as senders' decisions to impose sanctions or targets' decisions to acquiesce after sanctions are imposed. Accordingly, we use a Heckman probit model and specify the process that precedes the stage in which we are interested. Below, we explain our specifications of Heckman probit models for each of our analyses.

For the analyses of threat success, we model *Issued Threat* simultaneously with *Threat Success*. This requires the entire universe of potential cases for sanctions threats. Thus, we chose the unit of analysis to be a directed-dyad-year and construct a data set

that includes all the directed dyads between 1945 and 2005.[7] Our selection variable here is an *Issued Threat*, which equals 1 in any year that a state issued a threat of sanctions against another state. When there are multiple threats initiated by one state against another in one year, we select one of these multiple threats randomly. Following several previous studies (Lektzian and Souva 2003, 2007; Peterson 2012; McLean and Radtke 2018), we specify the selection equation with the following variables: *Sender Trade Dependence, Target Trade Dependence, S Score, Democratic Sender, Democratic Target, Sender ln(GDP), ln(Distance),*and *MID.*[8] The last three variables are included only in the selection equation to satisfy the exclusion restrictions. These variables are suggested as important determinants of threat issuance, but not found to be associated with threat success.

Table 2 presents our findings from the Heckman probit models. Model 1.3 is our main model. The estimates in our selection equation (i.e. *Issued Threat*) suggest that a state is more likely to threaten another state with sanctions when it is wealthy, is geographically close to the potential target, and has a dissimilar foreign policy affinity, a dependent trade relationship, and ongoing MIDs with the potential target. Turning to the outcome equation (i.e. *Threat Success*), the results are similar to those from our probit analyses: the estimates on *Anticipated Sender Costs* and *Sender Salient Issue* are negative but not statistically significant. When we add our control variables in our outcome equation, the coefficient estimate on *Sender Salience Issue* becomes marginally significant but not in the theory-consistent direction. Thus, our substantive findings do not change: we have little support for Hypotheses 1.1 and 1.2.

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[7] We also replicate our analyses of threat success using two different data sets. First, we examine all the trading directed dyads between 1945 and 2005. Second, we restricted our data to all the "politically relevant" dyads between 1945 and 2005 (Maoz and Russet 1993). The results are reported in Table A.3 in the appendix. Our main findings are similar.

[8] *Sender ln(GDP)* is the natural log of the gross domestic product of the sender state (Gleditsch, 2002). *ln(Distance)* is the natural log of capital-to-capital distance between the sender and target. *MID* is a dummy variable which takes a value of 1 when there was an ongoing militarized interstate dispute between the sender and target and 0 otherwise. These variables are lagged by one year. We also included *t, t2, t3, which* are peace years (years without sanctions), peace years squared, and peace years cubed to account for temporal dependence in the panel data (Carter and Signorino, 2010).

	Threat Success (1.3)	*Issued Threat*	*Threat Success* (1.4)	*Issued Threat*	*Imposed Sanction* (2.3)	*Failed Threat*	*Imposed Sanction* (2.4)	*Failed Threat*	*Sanction Success* (3.3)	*Imposed Sanction*	*Sanction Success* (3.4)	*Imposed Sanction*
Anticipated Sender Costs	-0.485		-0.621			0.496		0.558	-0.302	-0.302	-0.585**	
	(0.371)		(0.388)			(0.371)		(0.378)	(0.238)	(0.238)	(0.237)	
Sender Salient Issues	-0.296		-0.499*			0.539*		0.584**	-0.308*	-0.308*	-0.420*	
	(0.286)		(0.298)			(0.289)		(0.292)	(0.183)	(0.183)	(0.220)	
Anticipated Target Costs					0.474***		0.579***			0.516***		0.560***
					(0.162)		(0.174)			(0.143)		(0.151)
Target Salient Issues					0.135		0.105			-0.037		-0.002
					(0.151)		(0.179)			(0.150)	(0.146)	(0.146)
Sender Trade Dependence		0.990***	0.858	0.985***		0.231	-1.086	-0.081		-0.254	2.247	-1.298
		(0.144)	(1.689)	(0.144)		(1.491)	(1.206)	(1.672)		(0.704)	(1.520)	(1.263)
Target Trade Dependence		0.640***	1.479	0.596***		-0.536	-0.399	-0.651		-0.467	0.058	-0.543
		(0.141)	(1.165)	(0.148)		(0.923)	(0.873)	(0.971)		(0.600)	(0.914)	(0.884)
Alliance Similarity		-0.857***	-0.173	-0.833***		0.329	0.122	0.375		-0.336*	-0.800**	0.138
		(0.089)	(0.365)	(0.090)		(0.292)	(0.287)	(0.307)		(0.191)	(0.339)	(0.278)
Democratic Sender		0.038	0.083	0.035		-0.189	0.524***	-0.048		-0.005	-0.731***	0.469**
		(0.043)	(0.285)	(0.043)		(0.224)	(0.200)	(0.237)		(0.116)	(0.218)	(0.191)
Democratic Target		0.342***	-0.171	0.352***		0.192	0.003	0.206		-0.115	-0.099	-0.029
		(0.036)	(0.171)	(0.036)		(0.150)	(0.164)	(0.156)		(0.128)	(0.148)	(0.154)
Sender ln(GDP)		0.366***		0.369***								
		(0.014)		(0.014)								
ln(Distance)		-0.179***		-0.183***								
		(0.021)		(0.022)								
MID		0.721***		0.648***								
		(0.116)		(0.124)								
Clear Demand			0.985***			-0.809***		-0.836***				
			(0.230)			(0.204)		(0.204)				
Constant	-0.459	-10.778***	-1.590**	-10.832***	-0.156	1.387***	-0.558*	1.262***	0.290***	0.363*	-0.345	1.408***
	(0.348)	(0.445)	(0.765)	(0.452)	(0.097)	(0.345)	(0.319)	(0.361)	(0.070)	(0.187)	(0.272)	(0.329)
ρ	-0.158		-0.007		0.734*		0.452		-1.000		-.980***	
Observations	846565		846549		434		434		369		369	

Table 2: Heckman Probit Analyses of Threat Successes/Issued Threat, Imposed Sanctions/Failed Threats, and Sanction Success/Imposed Sanctions: Estimated standard errors are reported in parentheses. Coefficients on t, t2 and t3 are omitted. *** p-value < 0.01, ** p-value < 0.05, * p-value < 0.1.

Next, we use Heckman probit models to account for the dependence between threat and imposition stages in sanction episodes. As impositions of sanctions cannot be observed unless prior threats fail, our selection variable is a *Failed Threat,* which takes a value of 1 when the target did not capitulate to the sender's demand. We model the selection equation using the specification with our key independent variables and our controls. The results are summarized in Table 2 (Models 2.3 and 2.4). The results are similar to those in Table 1: the estimates provide little support for Hypothesis 2.1.

Finally, we account for the correlation between two processes in the sanctions episodes: Impositions of sanctions and the outcomes of (imposed) sanctions. Our selection variable is *Imposed Sanction*, and we use the same model specification from our earlier analysis. The results are presented in Table 2 (Models 3.3 and 3.4). Though the coefficients on *Sender Salient Issues* are marginally significant, those on *Anticipated Sender Costs* are in the direction opposite that hypothesized as in the direction expected and they are sensitive to model specification. Again, we find little support for our hypotheses.

Discussion and Conclusions

Our analyses provide essentially no support for the hypotheses we have tested. Some, but not many, of the statistical coefficients are statistically significant, but they are as likely to have a sign opposite of that predicted as they are to be in the anticipated direction and they do not appear to be robust. While these hypotheses were derived from one specific, formal theoretic model (Morgan and Miers, 1999), they are consistent with what one would expect from about any such model based on the assumption that economic sanctions are primarily an instrument for manipulating costs in bargaining and/or for signaling a willingness to bear such costs. Quite pointedly, our results suggest that sanction episodes do not appear to involve the type of strategic interaction one would expect to occur between states using sanctions to manipulate bargaining costs.

This is perplexing. Thinking about sanctions through the lens of bargaining and strategic interaction has come to dominate, at least implicitly, scholarship on sanctions processes because it provides, so obviously, an intuitive understanding of the phenomenon. Moreover, adopting that perspective has contributed greatly to advancing our knowledge of sanctions. It provides a logically consistent theoretical basis and it

does get a lot of things right empirically. Many hypotheses derived from the Morgan and Miers theory have been tested in previous work and have been supported empirically. Some of these things might seem obvious, like the fact that increasing the costs to the target is associated with greater success, but other things, like the importance of threats, are not as obvious without the theory. Why would a perspective that gets so much correct in other respects fail so abjectly here? It is tempting to blame the empirics and to conclude with a call for more research that can prove the theory right; but, we think we have to accept that the causal mechanisms assumed in the theory simply are not the ones at work in the real world.

Why might that be? We believe the key can be found in the assumption, identified above, that Type 3 targets should seldom, if ever, exist and, if one does exist, we should always observe it giving in over suffering any sanctions. Recall that a Type 3 target prefers acquiescing to the sender's threat over any outcome that involves sanctions imposition, no matter how briefly those sanctions are in effect, and prefers suffering indefinite sanctions without complying over complying and having sanctions lifted. It does seem implausible that a target could have such preferences and even more implausible that we would ever observe sanctions being imposed on such a target. Yet, the results presented here might be telling us that such targets exist and, in fact, are quite common. Moreover, such targets might frequently resist senders' threats, resulting in sanctions imposition. Let us explain.

The dominant perspective on sanctions presumes that sanctions are imposed by a sender *state* on a target *state* and involve ending some valued economic relationship coupled with a demand for a change in behavior. The costs associated with ending the economic relationship continue until the sanctions are removed, either because the target complies with the demand or the sender gives up. The level of costs to both parties are under the control of the sender and this level is chosen strategically. Given these assumptions, it is obvious why a Type 3 target seems implausible. This perspective overlooks a key feature of sanctions, however. Unlike most instruments of foreign policy, such as foreign aid or the use of force, sanctions are not under the direct control of the sender *state*. States do not directly sever economic relationships with the target; rather, they enact laws directed at the individuals and firms under their jurisdiction that

conduct business with individuals and firms in the target state. These individuals and firms do not simply end economic relationships when told to do so. They might try to find ways around the law that allow them to continue or they might simply break the law. Even if they comply with the letter and spirit of the law, neither they nor their counterparts in the target state just sit back and wait for the sanctions to be lifted. They adjust to changes in their environment by finding new business partners, by finding new businesses, by shutting down, or by any of a countless number of other options. For firms and individuals, sanctions laws are probably very similar to changes in tax laws, changes in technology or competition, or natural disasters that interrupt supply chains.

Recognizing this point has a number of major implications for the dominant perspective of sanctions. First and foremost, it implies that we have conceptualized the costs of sanctions incorrectly. If a sender imposes sanctions cancelling $3 million annually in trade with the target, the costs are not $3 million per year until the sanctions are lifted. The true costs are those associated with individuals and firms adjusting to the sanctions law. Another implication is that a sender's declaration that it is imposing sanctions is practically meaningless unless a legal mechanism for enforcing sanction law on individuals and firms is established. Adjustment costs are nil without the ability to investigate suspected violations of the law and/or without the ability to prosecute violators. Thus, understanding enforcement might be a key element of understanding sanctions processes. A third implication is that adjustment costs might be very real, but they are also likely to be very short-lived. In fact, adjustment costs might be short-lived and essentially permanent. If a firm ceases to exist because of sanctions, its employees will find other activities—it cannot just start doing business again when sanctions are lifted. If a firm continues to exist, it will have entered into contracts with other suppliers and customers, it will have reduced its capacity, or it will have found other business to conduct. Restarting sanctioned business might require adjustment costs as great as those paid when sanctions were imposed. In short, rather than imposing a stream of costs, sanctions might cease to matter after a fairly short adjustment period.[9]

[9] We note that results presented by Krustev and Morgan (2011) suggesting that when targets do alter their behavior in the face of imposed sanctions they do so in a matter of months, not years, are entirely consistent with the argument we are developing. If imposed sanctions are enforced and adjustment costs would be substantial, targets back down. Once the adjustment costs are paid, there is no point in doing so.

If we accept these points, we can see why Type 3 targets might be quite common: In terms of the model, this suggests that C_t and C_s are generally much lower than we have thought and, importantly, that α and β are essentially 1.0. In other words, the costs associated with economic sanctions might be much lower than, and only weakly related to, the value of the severed economic relationship and they might be more akin to a one-time payment than to a steady stream of costs. Moreover, we can see why a Type 3 target, who prefers acquiescing to a threat over suffering *any* sanctions might hold out, even if it believes the sender actually would impose threatened sanctions. It is entirely possible that the enforcement of sanctions would be sufficiently lax as to eliminate most adjustment costs and it probably takes at least a brief period to determine if the enforcement mechanism is effective. If this is correct, a major implication is that once firms have adjusted to sanctions there is no more strategic interaction between sender state and target state. Sender states might continue to declare that the cost of sanctions can be stopped if only the target will change its behavior and target states might continue to declare that they are willing to endure the costs if the sender is; but, neither side is listening to the other.

Our empirical results in this paper suggest that the dominant theoretical perspective through which we understand sanctions processes is wrong. While it leads to many correct predictions, the assumed underlying causal processes are simply not at work. We believe we learn, a lot, from these results, however. We have learned that sanction threats are an important tool of foreign policy but, if we want to better understand the processes at work when sanctions are imposed, it is probably time to begin developing an alternative theoretical perspective that incorporates an appreciation of the importance of enforcement and adjustment at the micro level. When it comes to sanctions, individuals and firms are not just lobbyists, pressure groups, or the state's audience. They are critical actors whose interests might be orthogonal to those of the states that govern them. Any theoretical perspective that does not allow us to see that will fall short.

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