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Determinants of Sanctions Effectiveness: Sensitivity Analysis Using New Data

Navin A. Bapat
Department of Political Science
University of North Carolina
at Chapel Hill
bapat@unc.edu

Tobias Heinrich
Department of Political Science
Rice University

th5@rice.edu

Yoshiharu Kobayashi*
Department of Political Science
Rice University

yoshiharu.kobayashi@rice.edu

T. Clifton Morgan
Department of Political Science
Rice University

morgan@rice.edu

Word Count: 7150

*contact person

Abstract

In the literature on sanctions effectiveness, scholars have identified a number of factors that may contribute to sanctions success. However, existing empirical studies provide mixed findings concerning the effects of these factors. Among the possible reasons for this lack of consistency, two stand out: selection bias created by the data set used in the previous research and model dependency of these findings. This research note addresses these two shortcomings in the literature by using the newly released Threat and Imposition of Economic Sanctions data and by employing a methodology that permits us to check systematically the robustness of the empirical results under various model specifications. Our analysis of both threats and imposed sanctions show that two factors - involvement of international institutions and severe costs on target states - are positively and robustly related to sanctions success at every stage in sanctions episodes. Our analyses also identify a number of other variables that are systematically related to sanctions success; but, the significance of these relationships depends on the specific model estimated. Finally, our results point to a number of differences at the threat and imposition stages, which suggests specific selection effects that should be explored in future work.

The conventional wisdom of twenty years ago held that economic sanctions are not effective policy instruments. Recent research has convinced many scholars that sanctions can influence targets' behavior under identifiable conditions, however. Some have argued that the key variable in sanctions success is whether the costs to the target are sufficiently high (Doxey, 1980; Hufbauer, Schott and Elliott, 1990; Morgan and Schwebach, 1997; Drury, 1998) while others have suggested that sanctions will work if they are "smart," that is, if sanctions are designed so that the costs are borne by the right people in the target state (Morgan and Schwebach, 1996; Cortright and Lopez, 2002). Drezner (1999) has argued that a key variable in determining sanctions outcomes is the extent to which the sender and target expect to be involved in future conflicts. Others have focused on the characteristics of states involved in sanctions episodes and have suggested, for example, that democratic targets or states that are suffering internal turmoil are particularly susceptible to sanctions (Bolks and Al-Sowayel, 2000; Brooks, 2002; Lektzian and Souva, 2007). Still others have suggested that the key variable is whether they are imposed unilaterally or by a multilateral coalition (Martin, 1993; Kaempfer and Lowenberg, 1999; Miers and Morgan, 2002; Bapat and Morgan, 2009).

While the literature has identified many factors as possible determinants of sanctions success, the empirical findings regarding these hypotheses have been inconclusive.[1] For example, Drezner (1999) and Allen (2005, 2008) find that sanctions against allies are more likely to succeed, but Drury (1998) and Krustev and Morgan (2011) find no support for this claim, and Nooruddin (2002) and Early (2011) find that sanctions against allies are less likely to succeed for U.S. sanctions. Even when we consider the cost of sanctions, which many see as the most important predictor of sanctions success, the empirical findings are not conclusive (Bonetti, 1998; Nooruddin, 2002; Jing, Kaempfer and Lowenberg, 2003).

Among the possible reasons that might account for this lack of agreement in the empirical

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[1]Some empirical findings on the determinants of sanctions success are summarized in Table 1. The table is not meant to be comprehensive, rather it illustrates the large range of variation in the previous empirical findings.

literature of sanctions effectiveness, two stand out. First, most findings reported in any one article result from one regression model (Kaempfer and Lowenberg, 2007). Even though many scholars conduct tests to ensure the robustness of their findings, these attempts are often not sufficient - they simply include a few more variables to see if the main results hold. The problem with such robustness checks is that they leave open the possibility that the results could change with still different variables or model specifications.

Second, recent theoretical developments have attributed the lack of agreement in the empirical findings to a selection bias, stemming from looking only at cases of imposed sanctions. Many recent theories suggest that threats are an important part of sanctions episodes (Eaton and Engers, 1992; Smith, 1996; Morgan and Miers, 1999; Drezner, 2003; Lacy and Niou, 2004; Krustev, 2010). They suggest that sanctions policies might actually be more effective than the previous studies suggest, but to observe this, we also have to consider cases in which sanctions were threatened, but not imposed. It might be that 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. Additionally, when evaluating the determinants of the success of sanctions, this argument suggests that it might be problematic to look only at actually imposed sanctions. For instance, if sanctions imposed through international institutions are more likely to succeed because they can generate higher costs, target states facing threats from international institutions may already take this information into account and concede at the threat stage. As a result, the cases where imposed sanctions are observed consist mainly of instances in which targets did not relent even though they were facing the prospects of the high costs of sanctions by the international institutions. If we only analyze this nonrandom sample of cases, we would falsely conclude there to be a weak, perhaps insignificant, relationship between institutional involvement and sanctions success. The crux of this argument is that the selection bias may be preventing us from appropriately evaluating the determinants of sanctions success.

In this research note, we address these two shortcomings in the existing empirical literature to

examine the robustness of the relationships between sanctions success and a number of variables that may contribute to success. First, using a newly released Threat and Imposition of Economic Sanctions (TIES) dataset (Morgan, Bapat and Krustev, 2009), we include threat cases in our analyses together with cases of imposed sanctions. This allows us to investigate which factors affect the likelihood that the sender achieves its goals through threats and impositions of sanctions. We also conduct separate analyses on the threat and imposition stages. Comparison of these results allows us to see how the effects of various factors may change at different stages in sanctions episodes.

Second, we employ an approach that permits us to check systematically the robustness of our findings (Leamer, 1985; Sala-i-Martin, 1997; Sturm, Berger and De Haan, 2005; Hegre and Sambanis, 2006). In particular, we use a set of eighteen factors that the literature identified as determinants of sanctions success and run every regression possible with the combination of these variables.[2] We then combine results from these regressions to establish the distribution of parameter estimates, which informs us about the robustness of these relationships.

Empirical Strategy

Data

We take all of our sanctions data from the new TIES data set (Morgan, Bapat and Krustev, 2009).[3] TIES contains data on 888 cases in which sanctions were threatened and/or imposed in the 1971-2000 period. Sanctions are defined as actions that one or more countries take to limit or end their economic relations with a target country in an effort to persuade that country to change its policies. By definition, a sanction must 1) involve one or more sender states and a target state, and 2) be

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[2] For the sake of space, we do not provide a detailed summary of existing theoretical arguments on the effects of these eighteen factors on sanctions success. However, we provide a table (see Table 1) listing these eighteen theoretical concepts found in the literature as well as expected relationships between these factors and sanctions success. Table 1 also provides representative findings from studies that were intended to test these relationships. In the last two columns, we introduce variables that our analyses use to test the effects of these eighteen theoretical concepts, and their measurements.

[3] The TIES data set can be obtained at `http://www.unc.edu/~bapat/TIES.htm`.

implemented by the sender in order to change the behavior of the target state. Actions taken by states that restrict economic relations with other countries for solely domestic economic policy reasons therefore *do not* qualify as sanctions. For the purposes of this dataset, all sanctions cases may only include one target state. If a sender state makes threats against multiple targets, a new case is created for each individual target.[4]

While we are interested in which variables increase the probability that the sender achieves its policy goal, we are also interested in which factors affect the success rate at different stages in sanctions episodes. We therefore conduct three sets of analyses: (1) one that investigates the success of both threats and imposed sanctions, (2) one that examines the success of imposed sanctions, and (3) one that considers the success of sanctions threats.[5]

The analysis of both threats and imposed sanctions includes 842 cases.[6] For this analysis, a sanction case is coded a success if the target partially or completely acquiesced, or the case ended with negotiated settlement.[7] For the analysis of successes of imposed sanctions, we consider 510 cases where sanctions were imposed.[8] An imposed sanction is coded a success if the case ended with target' complete or partial acquiescence, or negotiated settlement. For the analysis of threat successes, we examine 664 cases where threats were made before sanctions were imposed. We code a threat successful if the case ended with target's complete or partial acquiescence or negotiated settlement before sanctions were imposed.[9] Note that cases where sanctions are imposed are

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[4]Sanctions may take many forms including actions such as tariffs, export controls, embargoes, import bans, travel bans, asset freezes, aid cuts, and blockades.

[5]In keeping with the definition of the TIES data, we view a "sanction" as a policy tool by a sender(s). Therefore, we do not model the selection process between threats and impositions, but look at the separate phases of the sanctioning case. This leaves the focus on whether, once the policy begins, the sanction works. Modeling the entire process is beyond the scope of this research note.

[6]We exclude cases in which the target is an international organization or an entity that the Correlates of War project does not recognize as a state (e.g. Macao and Hong-Kong).

[7]Of the possible indicators of success suggested by Morgan, Bapat and Krustev (2009), this is the one that strikes the best balance of the reliability and captures what most people seem to think what constitutes success. While additional research should consider the robustness of these findings with respect to the measure of success, this is beyond the scope of this research note.

[8]The analysis of imposed sanctions include 178 cases where threats were not made before sanctions impositions. These cases were excluded from the analysis of threat successes.

[9]All three dependent variables are binary.

coded unsuccessful for the analysis of threat success.

For all sets of analyses, we use the same eighteen independent variables, which are summarized in the "Measurement (Data Source)" column of Table 1. Note that, in this research note, we only consider the unconditional effects of these independent variables simply because most existing arguments are about them.

Sensitivity Analysis

A key problem in any regression is that we may find that a certain variable has a large and statistically significant association in one model, but is less relevant when other covariates are included or dropped. This occurs because we never know the "true" data generating process (Sala-i-Martin, 1997). Simply adding more controls does not guarantee that this bias decreases (Clarke 2005, 2009). Further, as all theoretical models are, inevitably, simplifications of reality, no model can address all relevant variables. We are therefore left with the question: how can we assure that the obtained coefficients are not just a function of a particular selection of covariates?

To address this question, we take a systematic approach that is similar to Leamer's (1985) extreme bounds analysis.[10] Using the eighteen independent variables, we run Bernoulli-logistic regressions with every combination of the these variables as predictors.[11] This results in $262,143$ ($= 2^{18} - 1$) models with each variable being included in $131,072$ of them. We report the distributions of the parameter estimates and t statistics for each independent variable.[12]

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[10]Sala-i-Martin (1997), Sturm, Berger and De Haan (2005), Hegre and Sambanis (2006) use a variant of Leamer's (1985) extreme bounds analysis in their articles.

[11]All continuous variables were mean-centered and scaled by the standard deviation of the variable for ease of interpretation (Gelman and Hill, 2006).

[12]To lessen the problems associated with missing data, we make use of multiple imputation (see King et al. 2001). We generate six complete data sets using Amelia II (Honaker and King, 2010), which fills in the missing values from the imputation posterior. We run each of the $262,143$ models on the six imputed data sets, which results in the total of $1,572,858$ models with $786,432$ parameter estimates for each variable. These parameter estimates resulting are pooled for our inference. Due to the massive memory requirements, we randomly draw 10% of the saved estimates. We repeated this procedure several times to ensure that the graph we depict is not due to an odd draw.

Table 1: **Concepts, Expected Relationships, Previous Findings, Variable Names, and Measurements**

Concept	Expected Relationship(s)	Representative Empirical Findings*	Variable Name	Measurement (Data Source)
Cordial Relationship between Sender and Target	*Positive*: Drezner (1999)	Lam (1990) [+], Drezner (1999) [+], Allen (2005) [+], Krustev and Morgan (2011) [0], Early (2011) [-], Nooruddin (2002) [-]	Ally	Recorded as 1 if the primary sender and the target are formally allied (Leeds et al. 2002).
Sender's Power relative to Target	*Positive*: Morgan and Schwebach (1997), Krustev (2007)	McLean and Whang (2010) [+], Nooruddin (2002) [0], Drury (1998) [0], Jing, Kaempfer and Lowenberg (2003) [-]	Capability Ratio	The primary sender's CINC score divided by the sum of the primary sender's and target's CINC scores Singer, Bremer and Stuckey (1972)
Positive Inducements by Sender	*Positive*: Baldwin (1971), Cortright and Lopez (1998)		Carrots	Recorded as 1 if the sender(s) offered some positive inducements (e.g. aid, trade concessions) to the target (TIES)
Democratic Sender	*Positive*: Hart (2000)	Shagabutdinova and Berejikian (2007) [+], Lektzian and Souva (2007) [+], McLean and Whang (2010) [0]	Democratic Sender	Recorded as 1 if the primary sender's Polity score is higher or equal to 6 (Marshall and Jaggers, 2005)
Democratic Target	*Positive*: Pape (1997), Bolks and Al-Sowayel (2000) *Negative*: Galtung (1967), Lektzian and Souva (2003)	Allen (2005) [+], Bolks and Al-Sowayel (2000) [+], McLean and Whang (2010) [0], Early (2011) [-]	Democratic Target	Recorded as 1 if the target's Polity score is higher or equal to 6 (Marshall and Jaggers, 2005)
Export Restriction	*Positive*: Kaempfer and Lowenberg (1992)	Lam (1990) [0], Dehejia and Wood (1992) [0], Bonetti (1998) [0]	Export Restriction	Recorded as 1 if the threat or imposed sanction was intended to restrict exports to the target (TIES)
Financial Sanctions	*Positive*: Dashti-Gibson, Davis and Radcliff (1997), Hufbauer, Schott, Elliott and Oegg (2007)	Allen (2008) [+], Dashti-Gibson, Davis and Radcliff (1997) [+], Hufbauer et al. (2007) [0], Dehejia and Wood (1992) [0]	Financial Sanctions	Recorded as 1 if the threat or imposed sanction included aid terminations or asset freezes (TIES)
Involvement of International Organization	*Positive*: Drezner (2000), Bapat and Morgan (2009)	Bapat and Morgan (2009) [+], Marinov (2005) [0]	IO Involvement	Recorded as 1 if the threat or imposed sanction was operated through international institutions (TIES)
Number of Issues	*Negative*: Miers and Morgan (2002)	Bapat and Morgan (2009) [+]	Multiple Issues	Recorded as 1 if the sanction case involved more than one issue (TIES)
Multilateral Cooperation among Senders	*Positive*: McLean and Whang (2010), *Negative*: Drezner (2000)	McLean and Whang (2010) [+], Allen (2008) [+], Lektzian and Souva (2007) [0], Drezner (2000) [-]	Multiple Senders	Recorded as 1 if the sanction case involved more than one sender (TIES)

* [+]: Positive and significant relationship, [0]: Insignificant relationship, [-]: Negative and significant relationship

Concept	Expected Sign(s)	Representative Empirical Findings*	Variable Name	Measurement (Data Source)
Antagonistic Relationship between Sender and Target	*Negative*: Drezner (1999)	Drezner (1999) [-], Jing, Kaempfer and Lowenberg (2003) [-], Nooruddin (2002) [-], Dehejia and Wood (1992) [0]	Rivalry	Recorded 1 if the primary sender and the target are enduring rivals, identified on the basis of the Goertz and Diehl definition and data (Klein, Goertz and Diehl, 2006)
Saliency of Disputed Issue	*Negative*: Lektzian and Souva (2007), Dashti-Gibson, Davis and Radcliff (1997)	Lektzian and Souva (2007) [-], Allen (2008) [-] Lam (1990) [0], Nooruddin (2002) [0]	High Issue Saliency	Recorded 1 if the sender's goal was to contain political influence or military behavior, destabilize regimes, solve territorial disputes, improve human rights, or end weapons proliferation (TIES)
Cost of Sanctions to Sender	*Negative*: Morgan and Schwebach (1997), Drezner (1999)	Jing, Kaempfer and Lowenberg (2003) [+], Drury (1998) [0], Hufbauer et al. (2007) [0], Morgan and Schwebach (1997) [-]	Sender Costs	Recorded 1 if the cost to the sender was either severe or major (TIES)
Smart/Targeted Sanction	*Positive*: Morgan and Schwebach (1996), Cortright and Lopez (2002)	Morgan and Schwebach (1996) [+], Shagabutdinova and Berejikian (2007) [+], Hufbauer et al. (2007) [0], Lam (1990) [0]	Smart Sanctions	Recorded 1 if the sanction was intended to target the regime leadership, business interests, or the military (TIES)
Political/ Economic Instability of Target	*Positive*: Hufbauer, Schott and Elliott (1990), Lam (1990)	Lam (1990) [+], Jing, Kaempfer and Lowenberg (2003) [+], Nooruddin (2002) [0], Dehejia and Wood (1992) [0]	Target Instability	Banks' (2005) measure of political conflict, which is weighted measure of assassinations, strikes, guerilla warfare, riots, etc (Norris, 2008)
Cost of Sanction to Target	*Positive*: Doxey (1980), Hufbauer, Schott and Elliott (1990)	Allen (2008) [+], Lektzian and Souva (2007) [+], Jing, Kaempfer and Lowenberg (2003) [0], Bonetti (1998) [0]	Target Costs	Recorded 1 if the costs to the target was either severe or major (TIES)
Target's Trade Dependence on Sender	*Positive*: Miyagawa (1992), van Bergeijk (1994), Bonetti (1998)	van Bergeijk (1994) [+], Hufbauer et al. (2007) [+], Drury (1998) [0], Dashti-Gibson, Davis and Radcliff (1997) [0]	Target Trade Dependence	The pre-sanction trade between the primary sender and the target divided by the target's GDP (Gleditsch, 2002)
The United States as Sender		Drury (1998) [0], Allen (2008) [0], Hufbauer et al. (2007) [0]	United States Sender	Recorded 1 if the primary sender was the United States (TIES)

* [+]: Positive and significant relationship, [0]: Insignificant relationship, [-]: Negative and significant relationship

Empirical Results

Before we delve into a discussion of our empirical findings, let us briefly explain how to interpret the results from our sensitivity analysis. Figure 1 reports the results for when we analyze both threatened and imposed sanctions.[13] The left column shows the distribution of the estimated coefficients; the right column gives the corresponding distribution of the absolute values of the t statistics.[14] For ease of interpretability, we consider variables with t statistics above an absolute value of 1.65 to statistically significant.[15] The vertical line in the right column represents a value of 1.65.

To make sense of the results in Figure 1, let us first examine the Target Costs variable toward the bottom of the figure. All estimated coefficients fall to the right of zero which indicates that target costs are positively associated with sanctions success in every model specification, regardless of which variables are included. To the right, we see that all t statistics associated with Target Costs are beyond 1.65 in their absolute value. This suggests that target costs came out statistically significant in every regression in which it was included, regardless of which other variables were included. From these results, we can conclude that the target costs make sanctions success more likely and do so robustly.

Second, consider the Target Trade Dependence variable. Most of its estimated coefficients fall to the right of zero, indicating that we are certain about its positive relationship with sanctions success. Looking to the t statistics, about a half of them fall to the left of 1.65, meaning that in about a half of the regressions we ran, this relationship lacks statistical significance. Consequently, it is possible that some particular analysis would suggest that there is no significant relationship

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[13]We generate figures using the ggplot2 package in R (Wickham, 2009).

[14]We do not report the mean (weighted) coefficients and t statistics that Sala-i-Martin (1997) and Hegre and Sambanis (2006) calculated in their papers. Instead, we focus our discussions on the distributions of the results for each independent variable. As the graphs show, the means of the coefficients do not show the great amount of heterogeneity of estimates across models. We believe that the distributions provide a better representation of the effect and its robustness for the impacts of each of the variables.

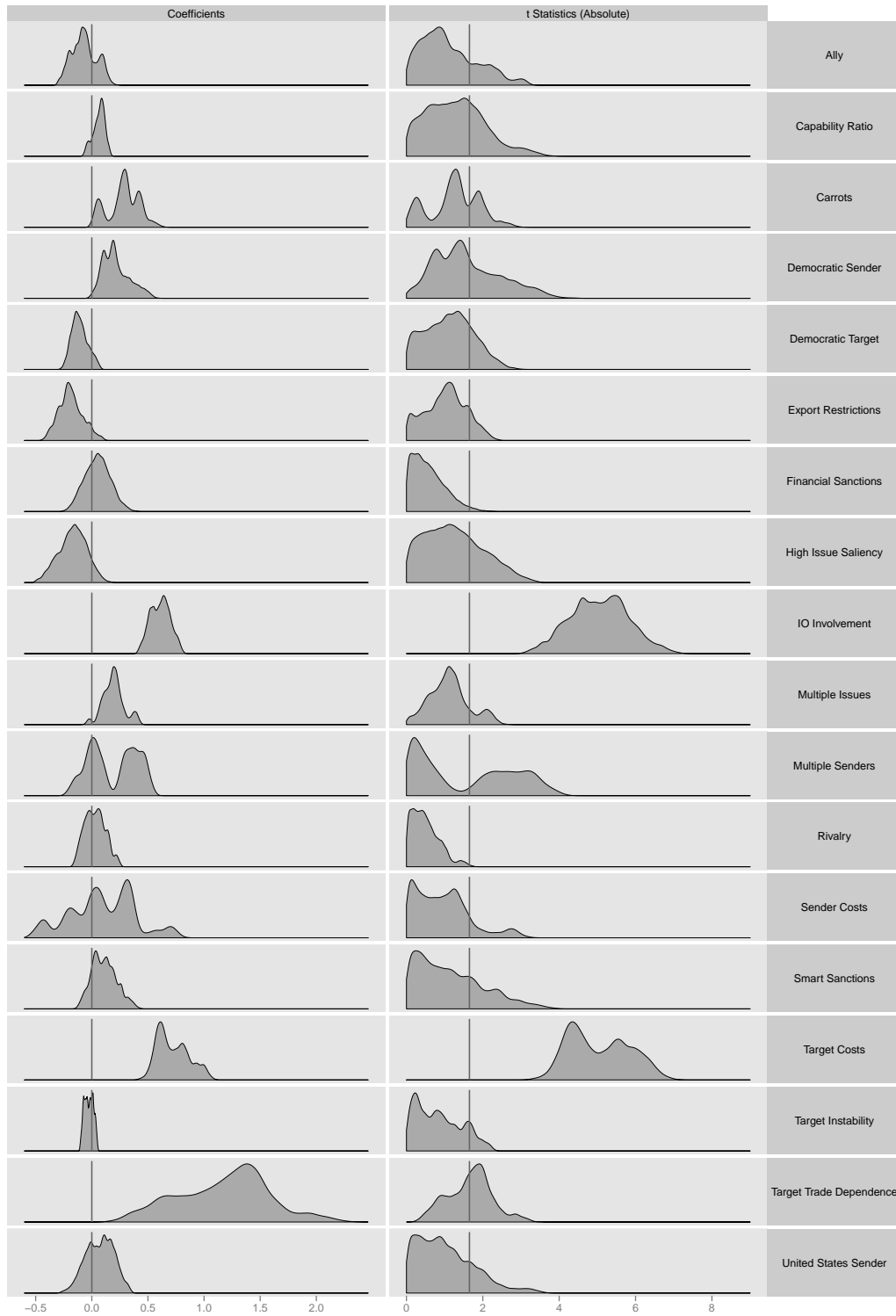[15]This corresponds to $p < .10$ in a two tailed test.

Figure 1: **Analysis of All Cases.** The left column shows the distribution of the estimated coefficients and the right column gives the distribution of the absolute values of the t statistics for each variable. The vertical lines in both columns correspond to zero and 1.65, respectively.

between target's trade dependence and sanctions success. Yet, our results suggest that the effect of target's trade dependence is positive and that the relationship is weakly robust.

Finally, consider the Sender Costs variable for which the coefficients are split about evenly on each side of zero. This indicates that the signs of the coefficient estimates depend essentially on which variables are included in the models. Therefore, we cannot be certain whether the relationship between sender costs and sanctions success is positive or negative. Moreover, while most of the t statistics for the variable lie between zero and 1.65, some do exceed this value. This suggests that, under certain model specifications, it is possible to find results indicating significant effects of sender costs; however, our sensitivity analysis suggests these are artifacts of particular models and we conclude that sender costs appear to have no systematic effect on sanctions success,.

Success of Economic Sanctions

Having examined Target Costs, Sender Costs, and Target Trade Dependence in all sanctions cases, let us examine the rest of the variables. Figure 1 reveals that senders are more likely to achieve their goals (1) when they threaten and/or impose sanctions under the auspicies of international institutions (IO Involvement) and (2) when sanctions are anticipated to impose or actually impose severe economic costs on targets (Target Costs). In our analysis, these factors are found to be positively associated with success of sanction policies, which is consistent with the hypotheses in the literature, and these relationships are robust.

Figure 1 also suggests that many other variables may be systematically related to sanctions success, but their significance depends on which other covariates are included. The relationships between sanctions success and seven variables - Carrots, Democratic Sender, Democratic Target, Export Restrictions, High Issue Saliency, Multiple Issues, Target Trade Dependence - are found to be weakly robust, meaning that about half of the corresponding t statistics are below 1.65. However, we find all or most of the coefficient estimates for these variables are in the same direction. We believe this suggests that we can be certain that these seven variables do have a systematic

effect on sanctions success even though the statistical significance of the results depends on the particular model specification.

Finally, our results show that the rest of the variables appear to have no systematic effect on sanctions success. Their t statistics fall below 1.65 and the directions of the coefficients are lacking a systematic pattern. This result suggests that these variables do not look to be relevant to sanctions success. Note that it is still possible to find model specifications in which they have a statistically significant relationship with sanctions success. Our results show that these relationships are not to be taken as robust, however.

Analysis of Imposed Sanctions

Figure 2 shows the results when we analyze only cases of imposed sanctions. In this analysis, we are interested in which factors contribute to success of sanctions once sanctions are imposed. Thus, we exclude cases where sanctions were not imposed (i.e. cases where threats succeeded or senders chose not to follow through their threats). We notice from Figure 2 that, in contrast to the results in Figure 1, there are considerably fewer systematic patterns. We find that, as was the case in Figure 1, the effects of IO Involvement and Target Costs are robust and positive. Aside from these two variables, there are only three variables - Financial Sanctions, Multiple Issues, Target Trade Dependence - that appear to be systematically (and positively) related to success of imposed sanctions. However, these variables are only weakly robust.

The findings in Figure 2 map neatly with those from previous studies, which mostly looked at imposed sanctions. Our results are thus commensurate with the varied findings that we reported in Table 1 in that for every relationship, there exists at least one study in which the coefficient was shown to be insignificant. Along similar lines, Table 1 also shows that some variables were found both positively and negatively related to success. Our results corroborate this as the relationships between most variables and success of imposed sanctions are sensitive to changes in model specifications. For example, some studies found the effects of the Ally and Sender Cost variables to be
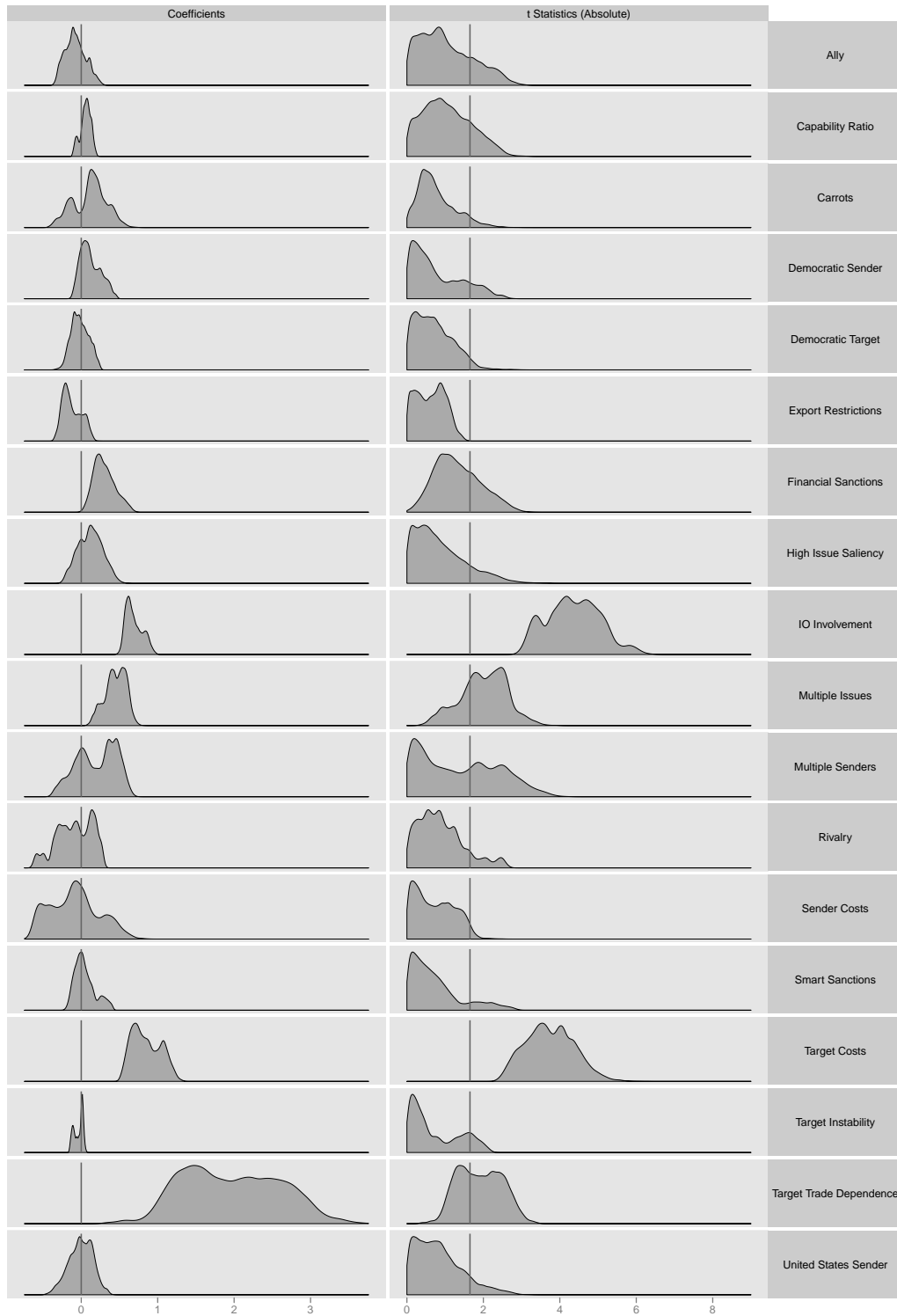
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Figure 2: **Analysis of Imposed Sanctions.** The left column shows the distribution of the estimated coefficients and the right column gives the distribution of the absolute values of the t statistics for each variable. The vertical lines in both columns correspond to zero and 1.65, respectively.

positive while others reported negative effects. Our findings in Figure 2 show that the possibilities for positive and negative relations exist. Our results suggest that, if one considers only imposed sanctions, one's conclusions will be heavily dependent on the specific model estimated. To be somewhat circumspect, we have to recognize that one of the models we run might be the 'true' specification and that might be appropriate tests of specific theoretical hypotheses. These sensitivity analyses might also suggest, however, that understanding sanctions effectiveness requires that we consider both threats and impositions.

Analysis of Sanctions Threats

We now turn to the results in Figure 3 when we consider only threat cases. Here we are interested in identifying which factors influence the probability that threats of sanctions are effective. Thus, the dependent variable is the threat success, and we consider it a failure if sanctions are imposed or if the sender capitulates before imposing sanctions. In Figure 3, we see that threats are more likely to succeed if (1) they are issued under the auspices of international institutions (IO Involvement), (2) severe economic costs on the targets are anticipated (Target Costs), and (3) disputed issues are salient (High Issue Saliency). The effects of these variables are robust.

Figure 3 also suggests that six variables are systematically related to threat success, but not robustly so. These variables include Carrots, Democratic Target, Export Restrictions, Financial Sanctions, Multiple Issues, and United States Sender. About half of their respective t statistics fall below 1.65 for each of these variables, but the estimated coefficients are consistently in the same direction. Thus, we are certain about the direction of the effects of Carrots and United States Sender (positive) and that of the effects of Democratic Target, Export Restrictions, Financial Sanctions, and Multiple Issues (negative).

It is worth pointing out several differences between the results from analysis of threat successes and that of success of imposed sanctions. We first discuss one factor that seems to be systematically related to success at the imposition stage but not at the threat stage. Our results suggest that the
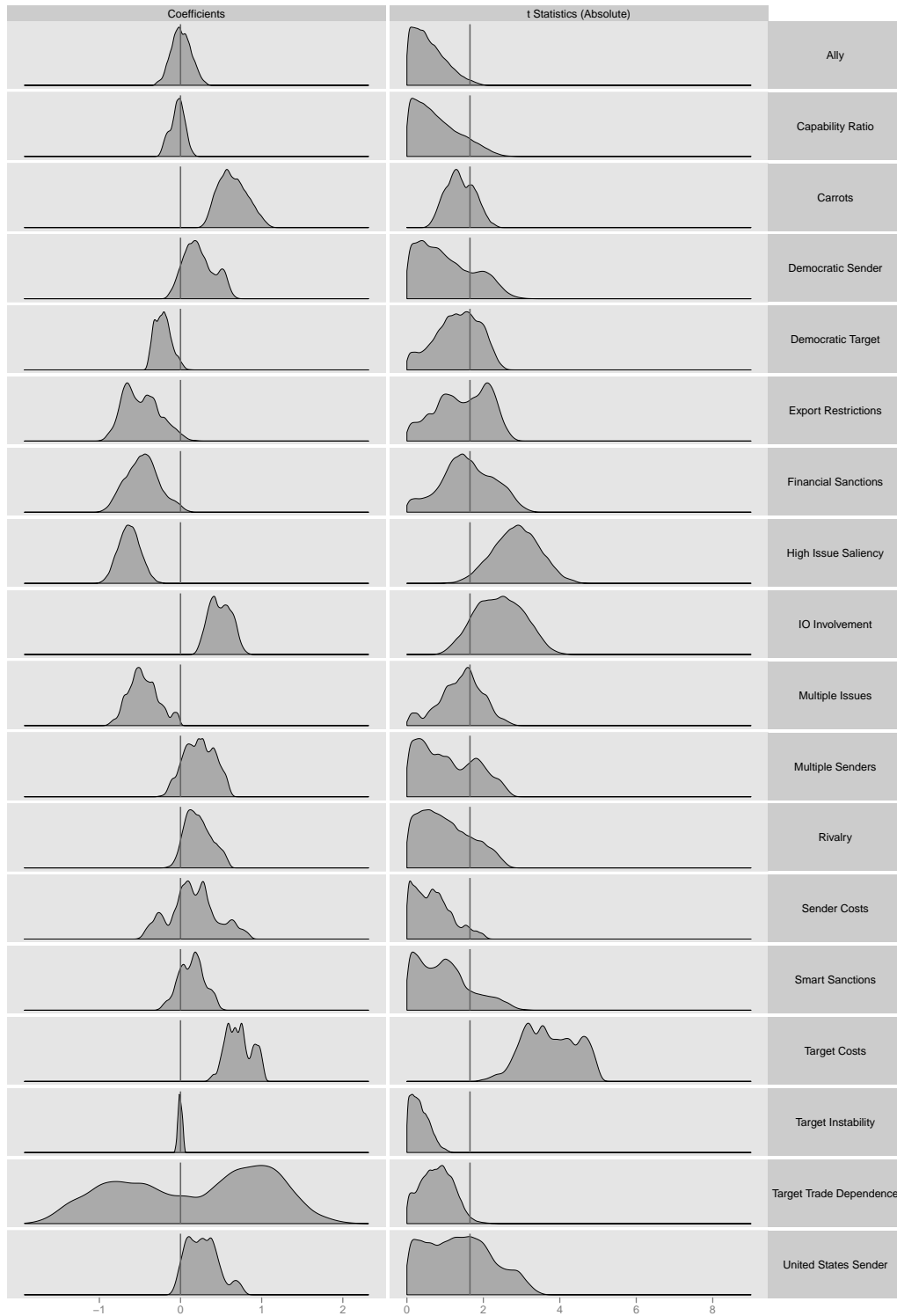
Figure 3: **Analysis of Sanctions Threats.** The left column shows the distribution of the estimated coefficients and the right column gives the distribution of the absolute values of the t statistics for each variable. The vertical lines in both columns correspond to zero and 1.65, respectively.

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Target Trade Dependence variable is positively and fairly robustly correlated with success when we analyze only imposed sanctions. However, when we consider success of threats, the relationship becomes ambiguous. Thus, our results suggest an interesting puzzle: Why does a target's trade dependence seems to be associated with success at the imposition stage but not at the threat stage?

In contrast, some factors are found to be relevant at the threat stage, but are either not related or related in the opposite directions at the imposition stage. Some variables, including Carrots, Democratic Target, Export Restrictions, High Issue Saliency, and United States Sender are found to have ambiguous relationships with success when only imposed sanctions are analyzed, but the relationships become clearer and more robust when threat success is analyzed. Additionally, a few variables like Financial Sanctions and Multiple Issues are found to be positively related to success at the imposition stage, but negatively associated with success at the threat stage. The implications of these findings for theories of sanctions may be significant. One reason that accounts for these results may be a selection effect. For example, our finding that carrots contribute to threat success is entirely consistent with the expectation in the literature. But, precisely because carrots help induce targets to give in before the sanctions are imposed, cases where the sender imposed sanctions but offered carrots before imposition of sanctions can be considered hard cases. That is, the carrots offered before the imposition were not valuable enough to convince the target to give in. If this argument is true, the relationship between carrots and sanctions success should be negative for these hard cases. This mechanism may have contaminated the positive effect of carrots on sanctions success. We believe this implies that future theoretical work must explicitly consider possible selection mechanisms and address why these factors but not others may matter at different stages in sanctions episodes.

Conclusion

Using the newly released TIES data set and an approach similar to the one suggested by Leamer (1985), we report the robustness of the relationships between sanctions success and factors that are identified to contribute to success in the literature. We find many relationships to be sensitive to changes in variables included in the model, but others are not. We find that two factors - the target costs and international institutions - are robust determinants of success. Our analyses also suggest that the senders are more likely to achieve their goals when carrots are offered by the senders; when the senders are democratic; when the targets are not democratic; when sanctions do not include export restrictions; when issues are less salient; when multiple issues are involved; and when the target highly depends on the trade with the sender.

We further investigated which factors determine success at different stages in sanctions episodes. We find that the target costs and international institutions are robust determinants of both threats and imposed sanctions and also that the issue saliency is robustly related to success of threat. Furthermore, comparison of results from these separate analyses provide some interesting empirical findings. For example, we find that financial sanctions are less likely to be effective at threat stage, but more likely to succeed at the imposition stage. Our results also indicate that when multiple issues are involved, threats are less likely to be successful, but imposed sanctions are more likely to succeed.

This research note does not seek to test any particular theory of sanctions success or sort out the different causal mechanisms behind the correlations found in our analysis. Instead, we were motivated by the fact that even though the sanctions literature to date has suggested a number of factors as determinants of sanctions success, there is little agreement on their empirical merits. This research note seeks to establish which correlations are systematic and robust. However, we believe that our results will help sanctions scholars with their theory-building. By establishing which factors have robust effects on sanctions success, our results point to which variables need

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to be included in future theories of sanctions effectiveness. Our analysis also reveals empirical patterns that have not been theoretically well understood. In particular, these findings provide some guidance regarding which selection processes may be at work in sanctions cases. At the very least, it is clear that much of the 'action' occurs at the threat stage.

As always the case with any empirical studies, our study is also limited because certain sources of uncertainty are not considered here. For example, we have not considered the uncertainty in the measurements of the variables or the choice of statistical models. We also have not considered certain interactions of the factors, such as the interaction between multiple issues, institution involvement, and multilateral sanctions that recent studies have suggested (Bapat and Morgan, 2009). These sources of uncertainty should be explored in future work.

Our results provide strong evidence for some of the relationships that received mixed empirical findings in the previous studies. Our findings on the target costs and international institutions confirm that the literature has developed a good understanding of the factors that determine sanctions success. Moreover, we find that many factors contribute to success at the threat stage before sanctions are imposed. These findings are consistent with recent theories that suggest threats are important part of sanction episodes. In contrast, we also find that target's trade dependence matters for success of imposed sanctions, but not for threat success. Our results show that certain factors contribute to success at different stages of sanctions episode, but our theoretical understanding of why and how these patterns emerge is still limited. Our empirical evidence calls for further theoretical as well as empirical investigations of the mechanisms by which these factors contribute to the success.

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