Rethinking Economic Sanction Success: Sanctions as Deterrents

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This draft: December 2010

Abstract

Economic sanctions are one of the most common foreign policy tools. Despite their widespread use, there is little empirical evidence and much debate about how sanctions affect countries' behavior. In this study, I investigate whether sanctions affect future military behavior. I look at the effects of sanctioning a country involved in a militarized dispute on the probability that the sanctioned country will be involved in a militarized dispute in the future. I use the Correlates of War data on militarized interstate disputes and Hufbauer et al.'s data on economic sanctions and find that a country involved in a dispute is less likely to participate in another dispute in the future if it was sanctioned by a large country or by large group of countries.

*contact: ioanapetrescu@hotmail.com. I would like to thank Martin Feldstein for his great support with this project. I am extremely grateful to Hanley Chiang, David Cutler, Jeffry Frieden, Alexander Gelber, Caroline Hoxby, Gary Hufbauer, Giacomo Ponzetto, Andrei Shleifer, and to the audiences of the NBER summer institute, Peterson Institute research lunch, Harvard labor student research seminar, PACDEV conference, and the NBER national security working group for extremely valuable comments. I am also grateful to the Starr Fellowship donors for funding my research and to Gary Hufbauer for kindly sharing his data with me.

1 Introduction

In the past few decades, the use of economic sanctions has increased substantially and sanctions have become the foreign policy tool of choice for many countries. In theory, the way sanctions work is simple; sanctioned countries (called targets) suffer costs resulting from actions taken by the sanctioning countries (called senders). In order to avoid the costs, targets modify their behavior in the direction desired by the senders. Very often, the current behavior of targets does not seem to change in the direction desired by the senders. Thus, many scholars believe that sanctions are used mostly for sending messages to the international community and for deterring certain behaviors. The intuition of this paper is that countries perceive economic sanctions as signals of disapproval and expect senders to impose more sanctions on countries that repeat the target's "offense." Thus, countries are less likely to repeat the "offense" because they try to avoid the costs associated with economic sanctions. This paper investigates whether sanctioning a country involved in a militarized dispute makes the sanctioned country less likely to participate in other disputes in the future.

At a first glance, data seems to support the deterrence hypothesis. Figure 1 shows the number of disputes in which India participated before and after a military dispute with Pakistan in 1971 (the first two bars), the number of disputes in which Pakistan participated before and after the same dispute (the third and fourth bars). The next four bars show the before and after number of disputes in which India and Pakistan participated before and after another dispute between the two in 1982. Both India and Pakistan were sanctioned because of their participation in the 1971 dispute, but no economic action was taken in the 1982 dispute. The first four bars shows that India and Pakistan participated in less disputes in the five years following the sanctioned dispute than in the five years before it. The last four bars show that the same countries participated in more conflicts in the five

years after the dispute that was not sanctioned than in the five years before it.

The idea that sanctions are meant to express disapproval and deter is not new. Galtung (1967) is one of the first authors to point out that sanctions are a way of communication between countries and that senders express disapproval of targets' actions. Chan (2000) expands this idea and states that sanctions act as signals to other countries who might behave similarly to the target. Lindsay (1986) believes that the four possible objectives of economic sanctions are compliance, subversion, domestic symbolism, deterrence and international symbolism (sending messages to the international community). This paper tests whether economic sanctions imposed on a country involved in a militarized dispute deters future militarized actions by showing disapproval of militarized disputes and willingness to inflict costs.

There are many papers that predict militarized conflicts. Choi et al. (2006), Dixon (1994), Fearon (1994), Mousseau (1998), Oneal et al. (1996), (1997), and (2003) and Raymond (1994) believe that democratic countries are less likely to engage in international conflicts. This study also includes democracy as one factor that predicts future conflicts. Russett et al. (1998) adds relative military capabilities as a determinant of militarized disputes. This paper also controls for military capabilities measured as military personnel. Nordhaus et al. (2006) estimate that the probability of a militarized conflict between two countries is a function of the number of years they were at peace and of other variables. This study also controls for the country's belligerence by adding in the analysis the number of militarized disputes in which the country was involved in previous years and the level of violence reached in previous disputes. Unlike previous studies, this one considers the effect of previous dispute's fatalities on the outbreak of future disputes.

The paper that looks at the effect of economic sanctions on the outbreak of militarized disputes is Drury and Park (2004). The authors estimate the effects of economic sanctions

on the probability of an outbreak of a militarized dispute between sender and target. They find that sanctions are complements to militarized disputes and not substitutes. This paper looks at the effects of sanctioning a country involved in a militarized dispute on the probability that the same country will participate in another dispute in the future.

This paper's framework is simple. At time t, countries $T_1, \ldots, T_n$ get involved in a militarized conflict, C. Countries $S_1, \ldots, S_m$ impose economic sanctions E on T_i. I look at the effect of economic sanction E on the probability that country T_i will be involved in a militarized conflict $C\prime \neq C$, in the period $(t, t+5]$, where $C\prime \neq C$ if C and $C\prime$ share less than two participant countries.

I also look at the effects of reducing trade or development aid to countries involved in a conflict if an "official" economic sanction was not imposed. I analyze instances in which a decline in trade or aid is observed, but the country reducing the trade or aid made no official threats, didn't impose economic sanctions publicly and didn't link the decline to a militarized dispute[1]. If reducing trade and aid are messages for the international community, then a decline in trade or aid that is not accompanied by a public economic sanction is less visible than an economic sanction, and thus, less effective in deterring future military conflicts. In the above framework, we call τ a significant[2] decrease in trade between United States and T_i, and we call α, a significant[3] decrease in total development aid to T_i. I investigate the effects of τ and α on the probability that country T_i will be involved in a militarized conflict $C\prime \neq C$, in the period $(t, t+5]$.

I find that economic sanctions decrease the probability that T_i will participate in another dispute by 8% if the sender is a large country or a large coalition of countries. I also

[1] If an economic sanction is not recorded in Hufbauer et al.'s dataset, it will show up simply as a decline in trade/aid in this analysis.

[2] A significant decrease is a decrease of 50% or more in trade or in trade/ GDP_{T_i}. For more details, read the definitions for trade50, trade75, tradegdp50 and tradegdp75 in Table 3 in the Appendix.

[3] A significant decrease is a decrease of 50% or more in aid or in aid/ GDP_{T_i}. For more details, read the definitions for aid50, aid75, aidgdp50 and aidgdp75 in Table 3 in the Appendix.

find that only sanctions imposed by senders with GNP's 100 times or larger than the GNP of the target have a deterrent effect. I also conclude that a significant decrease in trade or aid to T_i that is not accompanied by an economic sanction does not affect the future military behavior of T_i.

The rest of the paper is organized as follows. Section 2 describes what types of conflicts I am using in the analysis, Section 3 describes the economic sanctions, Section 4 shows the way the variables are constructed. Section 5 shows the econometric model, Section 6 presents the results of the paper, Section 7 presents robustness checks and finally Section 8 concludes.

2 Militarized Disputes

In this study, the militarized disputes come from the Correlates of War v3.02. Militarized interstate disputes are united historical cases in which the threat, display or use of military force short of war by one member state is explicitly directed towards the government, official representatives, official forces, property, or territory of another state. Interstate disputes include only disputes between recognized state and exclude any non-recognized state or non-state entities. A militarized dispute is a single military action involving a threat, display, or use of force by one country towards another. Different militarized actions between two countries that are at war count as one dispute. Actions taken by officials of country against private citizens of another country are usually not considered militarized disputes unless they are seizures within a disputed territory, attacks on international shipping or pursuit of forces across borders.

Militarized disputes range from fairly minor to severe. Minor examples include a 1993 incident in which Russian 14th army that was stationed in Moldova since the collapse of the

U.S.S.R. started participating in military exercises. A more serious example is an incident from 1995 when a Nicaraguan coast guard cutter boarded 4 Honduran fishing boats and arrested their crew. Most crew was released, but the tension between the two countries continued as Honduras threatened to open fire at any patrol boats from Nicaragua. An even more serious dispute was one between Kenya and Uganda in 1995. Uganda sent troops at its border with Kenya to curb alleged incursions into Uganda by Kenyan troops. Uganda claimed that Kenyan troops entered Uganda, burnt villages and killed at least one person.

The data set contains militarized disputes from 1816-2001. Figure 2 shows the number of disputes for each year during this period. There are three major peaks during this time period: one during the first world war, the second during the second world war, and the third during the late 1980s. The peaks for the first two world wars are not as big because once a country is at war with another one all the subsequent disputes are counted as one dispute. The disputes in 1980s were smaller in magnitude than the ones during the world wars, but numerous. They include disputes between China and Vietnam in 1987, Indonesia and Papua New Guinea in 1988, and Egypt and Sudan in 1989. The length of the disputes varies between 0 to 13 years. 74.77% of disputes lasted less than an year, 18.30% lasted a year, 3.29% lasted 2 years, and the rest of 3.64% lasted 3-13 years.

Certain parts of the world have more frequent disputes than others. Out of all countries involved in disputes during 1816-2001, 24.57% are African countries, 14.29% are Central and Eastern European countries, 12% are Western European countries, 11.43% Middle Eastern countries, 10.86% from Latin America and the rest of 26.86% from the rest of the world. Some of the most belligerent countries in this sample are USSR that was involved in 341 disputes during this period and UK that was involved in 263 disputes.

3 Economic Sanctions

Economic sanctions are "deliberate, government withdrawal, or threat of withdrawal, of customary trade or financial relations" according to Hufbauer et al (2007). Economic sanctions are imposed to change a policy of one country of which the sender does not approve. Alternatively, the sender can do nothing, engage in diplomatic talks with the target, or go to war. The political science literature is divided on why senders choose sanctions over other alternatives. In general, they agree that the situation in the sender country is a far more important determinant in why sanctions are imposed than the situation in the target country. Sanctions are often motivated by special-interest groups in the sender country (Andreasson 2008). In the US, the president's decision to impose sanctions depends on the relationship with the government of the targeted country and domestic political situation (Drury 2000). Also, lobbying and special interests groups have played a more and more important role in advocating sanctions in recent years (Hufbauer et al 2007).

Economic sanctions are imposed for reasons ranging from stopping nuclear proliferation to preventing human right violations. In this study, I use economic sanctions incidents from Hufbauer et al (2007) that are imposed for war related reasons. These are sanctions whose goals are to stop a militarized disputes, punish the participants of militarized disputes or to demonstrate resolve regarding militarized conflicts. Sanctions imposed in order to stop a militarized dispute include The League of Nations and UK v. Italy in 1935 when Italy invaded Abyssinia. Statements from the sender countries such as the one from the British Prime Minister Stanley Baldwin: "The object of an oil sanction was to stop war" (Renwick 1981) make the goal of the sanction clear. The 1971 sanction, US v. India and Pakistan, is an example of a sender who is seeking to punish the sanctioned country and to show disapproval of the military activity of the target (Hochman 1975 and Knorr 1975). The whole list of sanctions included in my analysis are in Table 1.

Sanctions in my sample were imposed between 1914 and 1995. The senders in my sample are mostly large countries or coalitions of countries such as the League of Nations, United States, China, and the European Union. The targets vary from very large such as India and Pakistan to small such as Greece, Egypt, and Liberia. The targets also vary in terms of overall belligerence and participation in past conflicts. On one end, there are countries like USSR that show up 341 times in disputes in my sample and on the other there is Armenia with only nine occurrences in the militarized dispute data. The gravity of the sanctioned disputes vary greatly from conflict like border skirmishes between Greek and Bulgarian forces in League of Nations v. Greece sanction to conflicts like the war between Paraguay and Bolivia over the Chaco region in League of Nations v. Paraguay and Bolivia. The level of violence reached in these disputes varies widely as well. On average, the sanctioned disputes reach the level of mobilization (all the levels of violence present in the dispute data set are listed in Table 2).

Economic sanctions can involve cuts in imports from the target (import sanctions), cuts in exports to the target (export sanctions), and cuts in financial aid and/or freezing financial assets (financial sanctions). These kind of sanctions are usually imposed in combination of two or three. US v. India and Pakistan was an export and financial sanction and The League of Nations and UK v. Italy sanction was import, export and financial. However, there are cases when sanctions are threats only like in the case of League of Nations v. Greece.

Economic sanctions are lifted when the goals of the sanctions have been met or when the sender changed its mind. Three sanctions in my sample are considered successful in attaining the official goal according to Hufbauer et al. (2007)[4] and they were subsequently

[4]The author constructs a variable that takes value from 1 to 16, where 1 means the sanction was completely unsuccessful and 16 means it was completely successful. These three successful sanctions in my sample have a success score of 16. However, it is hard to assess if indeed the sanctions alone led to the successful outcome.

lifted because their reached their goals. Successful sanctions include League of Nations v. Yugoslavia in 1921 when Yugoslavia withdrew its troops from Albania "in order to avoid the dangerous consequences of nonacceptance" (Toynbee 1925). In most cases, though, the sanctions were lifted because the sender gave up/changed its goal. The sanctions were mildly successful like in League of Nations v. Paraguay and Bolivia when the war ended but apparently for other reasons than to avoid sanctions costs. Sanctions were completely unsuccessful at stopping the war in cases such as League of Nations v. Italy, when a year after the sanction was imposed, Italy entered the capital of Abyssinia. The sanction was lifted shortly after that.

4 Variables

This study uses six types of variables, dispute characteristics, country characteristics, probability, sanction, trade and development aid variables. First, dispute characteristics variables are taken from the Correlates of War -The Militarized Interstate Dispute v3.02. There are 2,331 disputes between 1816 and 2001, however I use the data after 1914 in the analysis because I have sanction data only after 1914. This paper uses data at participant-incident level which means that one observation is a country T_i involved in a dispute C. For example, for a conflict between Albania and Yugoslavia in 1921, the data set has two observations, one for each participant. The two dispute characteristics variables used are fatalities and violence. Fatalities approximates the number of fatalities of country T_i in dispute C and violence measures the highest level of violence taken by country T_i in dispute C. The violence level is measured on a scale from 0 to 21, where 0 is no militarized dispute and 21 is joining an interstate war. Table 2 shows all the levels of violence, Table 3 shows the definitions of all variables, and Table 4 shows the descriptive statistics.

Second, the country characteristics variables are *democracy*, *military*, and *previous disputes*. *Democracy* is the polity variable taken from the Polity IV data set that measures openness of political institutions on a scale from -10 to 10, where -10 is the least democratic country and 10 is the most democratic country. The countries involved in disputes are either very democratic or very undemocratic: 15.68% of the sample has a score of -10 or -9 and 19.18% have a score of 10. *Military* comes from another Correlates of War data set called National Military Capabilities v3.02 and it measures military personnel in thousands of people. Finally, *previous disputes* measures the number of disputes in which country T_i participated in the five-year period before the outbreak of dispute C. The values of this variable are quite large mostly because this data set contains countries that were involved in at least one conflict, thus contains mostly belligerent countries. The mean for previous disputes is 7.26 and the median is 4. Countries like Iran and Germany have more than 60 disputes in some five-year periods and countries like Luxembourg, Finland and Denmark have less than five disputes in most five-year periods.

Third, this paper uses probabilities of future disputes as dependent variables. P is the probability that country T_i will participate in another conflict $C\prime \neq C$ in $(t, t+5]$. For example, in 1974, Turkish troops invaded northern Cyprus. In 1976, Turkey was involved in another dispute with Israel (the dispute is considered different because the two conflicts shared only one participant country). Thus, $P = 1$ for Turkey in the 1974 conflict. As mentioned before, the group of countries represented in this data set is quite belligerent and it is not surprising that the mean P for these countries is .76.

Fourth, sanction variables are constructed using the sanctions in Hufbauer et al. (2007) data set. This data set provides information on economic sanctions imposed on various countries between 1914 and 2001. Thirty countries in our sample were sanctioned because of their participation in a militarized dispute. The variable *sanction* is a dummy

that takes value 1 if the country T_i involved in conflict C is sanctioned because its involvement in the conflict.

Other sanction variables are *big, gnp ratio,* and *trade link*. *Big* is a dummy that takes value 1 if any of the senders is a large country or a large international organization. Big takes value 1 for countries such as United States, United Kingdom, League of Nations, Economic Community of West African States. It takes value 0 for countries such as Turkey, Greece, Indonesia and Azerbaijan. *Gnp ratio* is the ratio of sender GNP to target GNP. It ranges between .53 for the 1986 Greece v. Turkey sanction and 47,948 for the 1992 Economic Community of West African States and United Nations v. Liberia. The average is 563 as many large countries are senders and many small countries are targets of sanctions. Trade link measure the extend to which the sender trades with the target before the sanction. It varies between 1 and 98, where 1 represents weak trade links like in the cases of Economic Community of West African States, United Nations v. Liberia and 98 represents very strong trade links like in the case of United States, United Nations and Iraq.

Fifth, I use four trade variables, *trade50, trade75, tradegdp50* and *tradegdp75* from the Correlates of War Trade Data Set v.1.1. *Trade50* and *trade75* are dummies that take value 1 if trade between United States and T_i decreased at least 50% and 75%, respectively in the year following the outbreak of conflict C. Similarly, *tradegdp50* and *tradegdp75* are dummies that take value 1 if trade between United States and T_i as a share of T_i's GDP decreased at least 50% and 75%, respectively in the year following the outbreak of C. These dummies capture declines in trade that are not associated with economic sanctions, thus these dummies take value 0 if the decrease in trade is accompanied by import or export sanctions imposed on T_i. These declines in trade are rare. There are only 258 instances in which a country involved in a dispute experienced a decline of 50% or more in trade

with the United States the year after the outbreak of a dispute and no official economic sanction was imposed and only 149 instances when the decline was larger than 75% and no sanction was imposed.

Finally, the aid variables are *aid50, aid75, aidgdp50* and *aidgdp75*. These are dummies similar to the trade dummies. *Aid50* and *aid75* take value 1 if total development aid to T_i declined by at least 50% and 75%, respectively and *aidgdp50* and *aidgdp75* take value 1 if total development aid to T_i as a share of T_i 's GDP declined by at least 50% and 75%, respectively. Similarly to the trade dummies, the aid dummies become 0 if the decline in aid was accompanied by financial sanctions imposed on T_i.

5 Econometric Strategy

The goal is to estimate the effect of sanctioning a country involved in a militarized dispute on the probability that the same country will participate in another dispute in the following five years. I use a probit model like the one below,

$$\begin{aligned} P_{kj} &= F(\beta_0 + \beta_1 sanction_{kj} + \beta_2 country\ characteristics_{kj} + \\ &\quad \beta_3 dispute\ characteristics_{kj} + \beta_4 t_{kj}), \end{aligned} \tag{1}$$

where k indicates the country, j indicates the dispute, P_{kj} is the probability P that country k will be involved in a dispute other than j in the next five years and t_{kj} is a year dummy for start of the conflict j for country k.

If sanctions have a deterrent effect, then the variable $sanction_{kj}$ is expected to have a negative effect on the probability P_{kj}. I control for the democracy level of the country because previous studies showed that the democracy level of country is a predictor of

militarized disputes because democracies are less likely to fight other democracies. Since I estimate the probability of conflict with both democratic and non-democratic countries, *democracy* is likely to be less important determinant of P. *Military* can be an important predictor of future militarized disputes. On one hand, it can prevent future disputes as countries are less likely to attack a highly militarized power and on the other hand, it can lead to more disputes if the militarization was done in order to prepare for future wars. The predicted sign on this variable is ambiguous. The characteristics of the present dispute j can predict future disputes. A high number of fatalities and high level of violence of the current dispute j can predict less militarized disputes in the future if the resources were depleted in a very deadly current conflict or it can predict more militarized disputes in the future because the country is particularly violent and belligerent. The predicted sign is ambiguous on these two variables. Finally, it is likely that the number of previous disputes predicts the likelihood of future disputes. Higher number of previous disputes is likely to lead to a higher probability of future disputes. Year dummies are included because in some periods, militarized disputes are more common than in others according to Figure 2.

Next, I add interaction terms to (1) to check whether certain sanction characteristics make the deterrent effect stronger or weaker. I use the equation,

$$\begin{aligned} P_{kj} &= F(\gamma_0 + \gamma_1 sanction_{kj} + \gamma_2 sanction_{kj} sanction\ characteristics_{kj} + \\ &\quad \gamma_3 country\ characteristics_{kj} + \gamma_4 dispute\ characteristics_{kj} + \\ &\quad \gamma_5 t_{kj}). \end{aligned} \tag{2}$$

The sanction variable is interacted with characteristics such as *big, gnp ratio,* and *trade link*. A large sender, a larger GNP ratio and a larger trade link are more likely to make a

bigger statement of disapproval to the dispute j and thus have a larger deterrent effect on future disputes. The predicted sign for all these interaction terms is negative. I introduce one interaction term at a time rather than controlling for all in one model because they are highly correlated and there are few distinct sanction incidents in the sample.

Then, I investigate if declines in trade or aid with country k that are not accompanied by official economic sanctions affect the probability that k will participate in another conflict in the future. The new model is

$$\begin{aligned} P_{kj} &= F(\zeta_0 + \zeta_1 X_{kj} + \zeta_2 \textit{country characteristics}_{kj} + \\ &\quad \zeta_3 \textit{dispute characteristics}_{kj} + \zeta_4 t_{kj}), \end{aligned} \tag{3}$$

where X_{kj} is *trade50, trade75, tradegdp50, tradegdp75, aid50, aid75, aidgdp50* or *aidgdp75.* The predicted sign on these measures of trade and aid cuts is likely to be negative if the deterrent effect is observed by countries even if there are no official sanctions in place. If the cuts are not observed or it is not linked to the militarized disputes, then the effects of these variables should be zero.

6 Results

Table 5 column (1) reports results for equation (1). The table shows the marginal of the probit model estimating probability that the same country will participate in another dispute in the following five years. The standard errors are presented in parentheses and they are clustered at country level. Economic sanctions reduce the probability that T_i will participate in another militarized dispute, however the sanction variable not statistically significant.

In column (2), I interact with *big*, and obtain that sanctions imposed by large countries have a negative and statistically significant effects on P. A sanction imposed by a large country decreases the probability of a large dispute by 8%. The results also show that sanctions imposed by small countries do not have a deterrent effect, they have a very small (1%) embolden effect.

In (3), I interact sanction with *gnp ratio* and show that a sanction imposed by a sender with a large GNP relative to the target has a deterrent effect as well. A sanction imposed sender with GNP as share of the target's GNP higher than 100 decreases the probability that the target is involved in another dispute. The mean *gnp ratio* in my sample is 563.01 and the deterrent effect for a sanction imposed by such a mean sender on such a mean target is of 9%.

Finally, in the last column, I interact the trade link variable with the sanction variable. The higher the trade link, the higher the deterrent effect, however these coefficients are not statistically significant.

Some of the dispute and country characteristics have effects on the probability of a future militarized dispute. *Democracy* is not statistically significant. This suggests that the level of democracy in a country has no effect on the probability that country will participate in another militarized dispute when the level of democracy of the opponent is not specified. The number of fatalities in the current dispute have a negative and significant effect on the probability of future dispute. It seems that the higher the loss of human life in the current dispute, the less likely the country is to be involved in another dispute in the near future. The other country characteristic that has a small, positive, and highly significant effect is military. In column (1), an increase of 100,000 in military personnel increases P by .05% which supports the hypothesis that countries increase military capabilities because they are more belligerent and expect participation in future wars. Also an increase of 1 in number

of previous disputes increases P by .01% which means that previous disputes are a good measure of the belligerence of one country and predict future disputes. *Violence* has no effect on P. *Violence* could affect future disputes negatively if they country suffered high losses in the present disputes or positive if violence proxies for the country's belligerence. The effect could be zero because these two effects cancel each other or because the highest degree of violence reached by a country in a conflict doesn't depend on the country's belligerence alone, but also on its adversaries' actions, and thus, the violence in the present conflict explains little of the country's characteristics.

Tables 6 and 7 estimate the effects of declines in trade or aid on P. These results correspond to equation (3). It seems that declines in trade have no effect on the probability that the country suffering this decline in trade will participate in another dispute in the next five years. It is certainly possible that the decline in trade observed soon after the outbreak of the conflict occurs because the country's infrastructure is destroyed by the conflict and not because United States intentionally decreased trade with that country to punish or warn that country. In that's the case, it is not surprising that the targets[5] are not modifying their behavior. But large drops in development aid are less likely to be anything else but punishments or warning messages. And as seen in Table 7, large declines in aid have no effect on P when they are not accompanied by economic sanctions. Thus, economic policies that are not visible don't have a deterrent effect. Senders need to send clear messages of disapproval that can be heard and understood by targets in order to modify future behavior.

However, the results on trade and aid might be completely reliable because the trade measure captures the overall declines in trade with a particular country and does not capture declines in particular goods only. Thus if United States cut the trade in one specific

[5]I call targets the countries that experience the decline in trade or aid although no economic sanctions were imposed in those cases.

area (possibly one in which United States has monopoly) and the total trade did not change much, then we don't observe this policy. Thus, we might be ignoring exactly some trade policy that can have an important impact on target's economy and have an important deterrent effect. Also, aid variables are target's total aid received from all sources. So, if only one country decides to cut the aid to the target and that cut is not large enough to be noticed in the total aid, then we don't observe this policy in the aid variables.

7 Robustness Checks

Tables 8-12 show a number of robustness checks. Table 8 shows the results for sanctions and sanctions characteristics effects on P controlling for a different measure of democracy. The Polity IV data set contains various measures of democracy. The autocracy score measures the autocracy level in one country. It varies from 0 to 10, where 0 means the least autocratic country and 10 means the most autocratic country. The mean autocracy score in my sample is 3.94. The results using this new democracy control are almost identical to the results from Table 5 using the polity variable as democracy proxy. Sanctions imposed by large countries and countries with large GNP relative to their targets have deterrent effects. The democracy of the target is not important in determining the future disputes. More fatalities in the current disputes decrease the probability of future disputes, a larger military increases P, more previous disputes increase P, and the level of violence has no effect on P.

Table 9 shows the analysis from Table 5 using a different measure of military capabilities. National Material Capabilities Data Set contains a military capabilities score, cinc, that is a function of iron and steel production, military expenditures, military personnel, energy consumption, total population and urban population. The score varies between

.000001 and .38 with a mean of .04, where high numbers represent countries with high military capabilities. The United States right after World War I had a score of .38. The results using this measure of military capabilities are similar to the ones using military personnel. Sanctions imposed by large countries and countries with large GNP ratios relative to targets act as deterrents. Countries with large military capabilities are more likely to be involved in future disputes. The military capabilities score is positive and statistically significant. An increase of one standard deviation in this military capabilities score leads to an increase of .43 standard deviations in probability P.

Next, in Table 10, I look at the effects of sanctions when I eliminate the two world wars related disputes. The whole sample contains world wars related disputes and sanctions imposed on Japan and Germany in the two world wars. I expect that eliminating these types of disputes and sanctions would make the effect stronger since the sanctions imposed before the two world wars were not successful in deterring future disputes. Indeed, the effect of sanctions is negative for large senders and senders with large GNP ratios and the magnitude of the effects is larger than in the original specifications (Table 5).

Table 11 looks at the effects of large reductions in trade on P. (1) looks at the effect of a significant decline in trade with France[6] on P, (2) on the effect of a significant decline in trade with USSR[7] on P and (3) on the effect of a large decline in trade with UK[8] on P. Similarly to the results for declines in trade with the US, these decreases in trade also don't seem to have an effect on P.

Since the original dispute might affect the infrastructure of a country and damaged infrastructure might lead to decreases in trade, I run a regression on a restricted sample of minor disputes for which there is no reason to believe that affected trade. (4) shows the

[6] A significant decline in trade is a decrease of 50% or more in trade between France and T_i.
[7] A significant decline in trade is a decrease of 50% or more in trade between USSR and T_i.
[8] A significant decline in trade is a decrease of 50% or more in trade between UK and T_i.

effects of a decline in trade with US on P for this reduced sample. *tr50* is negative and again statistically insignificant.

Finally, I investigate whether there is a endogeneity problem with my model. If senders select targets that are less belligerent to sanction, then the negative effect of the sanction on P could reflect the way senders pick the target countries. If the senders sanction mostly highly belligerent countries, then the deterrent effects I find in this paper are understated.

There is no political science literature of which I am aware that predicts sanctions based on the overall belligerence of the targets. In order to address this possible endogeneity issue, I use the same data of militarized disputes and sanctions from 1914 to 2001 to estimate the effects of having previous disputes in the past five years on the probability of being sanctioned today. I use the following model:

$$\begin{aligned} p_{kj} &= f(\delta_0 + \delta_1 lagged\ disputes_{kj} + \delta_2 country\ characteristics_{kj} + \\ &\quad \delta_3 dispute\ characteristics_{kj} + \delta_4 t_{kj}), \end{aligned} \tag{4}$$

where p is the probability that country k is sanctioned for its involvement in dispute j, lagged disputes takes value 1 if k was involved in a different dispute in the previous five years and 0 otherwise, the country characteristics are *democracy* and *military* and the dispute characteristics are $fatalities$ and *violence*.

Table 12 shows the results of this analysis. The first column shows the effects of lagged disputes on the probability that the country will be sanctioned by any country or organization. The lagged disputes have an insignificant effect on the probability of being sanctioned, so given the same level of military and democracy of the possible target and for the same level of fatalities and violence of the conflict in which the possible targets are involved, senders are not more or less likely to sanction countries with a record of

recent previous disputes. The second column shows the effects of lagged disputes on the probability of being sanctioned by a large country. The coefficient of the lagged disputes is positive and statistically insignificant. The third column estimates the effects of lagged disputes on the probability of being sanctioned by two or more countries. Lagged disputes is negative and statistically insignificant. Thus, these results show that senders don't strategically pick countries that have a record of being less belligerent in the hope of easily stopping the military behavior of these relatively peaceful countries. This result is consistent with the hypothesis that the belligerence of the country does not play a role in the decision of the sender to impose a sanction.

8 Conclusion

The central intuition of this paper is that economic sanctions imposed on countries involved in militarized conflicts show sender's disapproval of militarized conflicts and a willingness to impose economic costs on countries involved in militarized conflicts. Thus, countries that were sanctioned due to their involvement in a militarized dispute are less likely to participate in future disputes because they try avoiding the economic and political costs associated with economic sanctions.

This study finds that economic sanctions decrease the probability that a country in the militarized dispute will participate in another dispute only if the sender is large. The deterrent effects produced by a large sender is a drop of 8% in the probability of future disputes. The deterrent effect is present when the GNP ratio between sender and target is larger than 100. For GNP ratio values higher than 100, the deterrent effect increases with the GNP ratio. Thus, the larger the sender relative to the target, the larger the deterrent effect. Then, I find that decreasing trade and aid to a country involved in a militarized dispute without imposing economic sanctions have no effect on the future military behavior

of this country.

A number of lessons can be drawn from the above results. If sanctions are to be used as deterrents, then large countries or large collations of countries relatively to the target should impose the sanction. Cutting trade or aid tacitly does not deter future military actions. The decrease in trade or aid needs to be made public and visible to countries involved in the dispute.

This study provides some answers regarding the deterrent effect of economic sanctions, but many important questions are left unanswered. If a sender sanctions a country involved in a dispute, but it doesn't sanction another country in a similar situation, does the sender's message become less credible? Are certain governments more likely "to hear" the message than others? Do large sender and target costs borne by innocent civilians worth the 8% drop in the probability of another dispute? Future research should investigate these aspects of economic policy that could affect the success of sanctions as deterrents.

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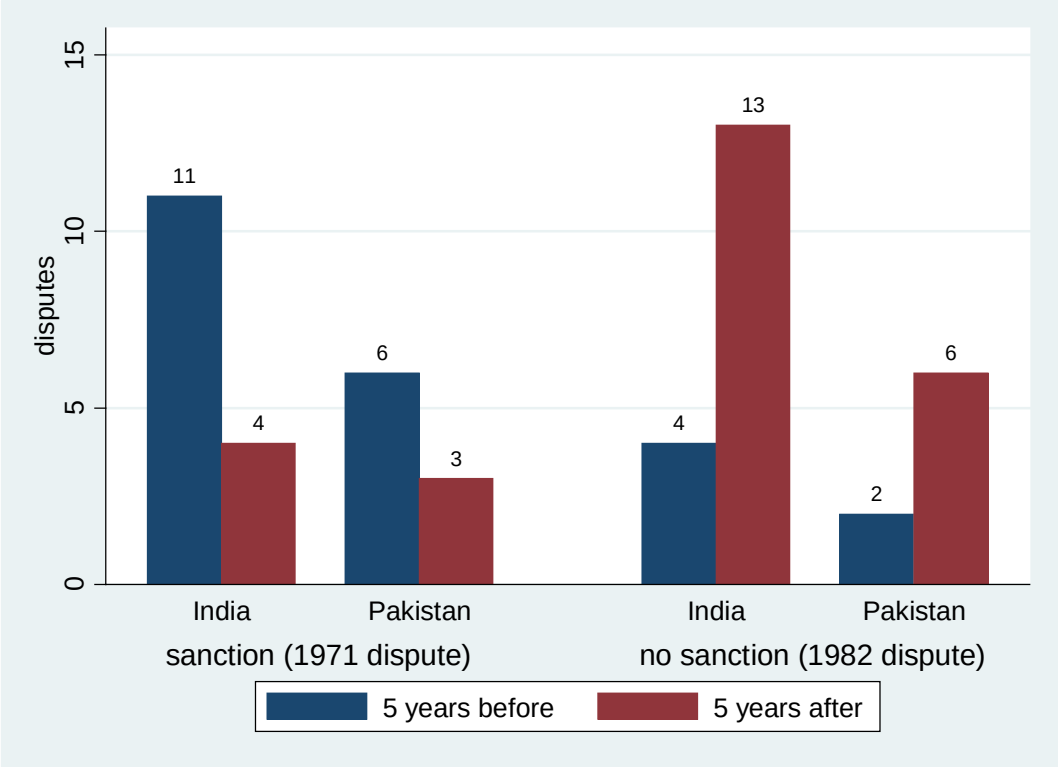
Appendix

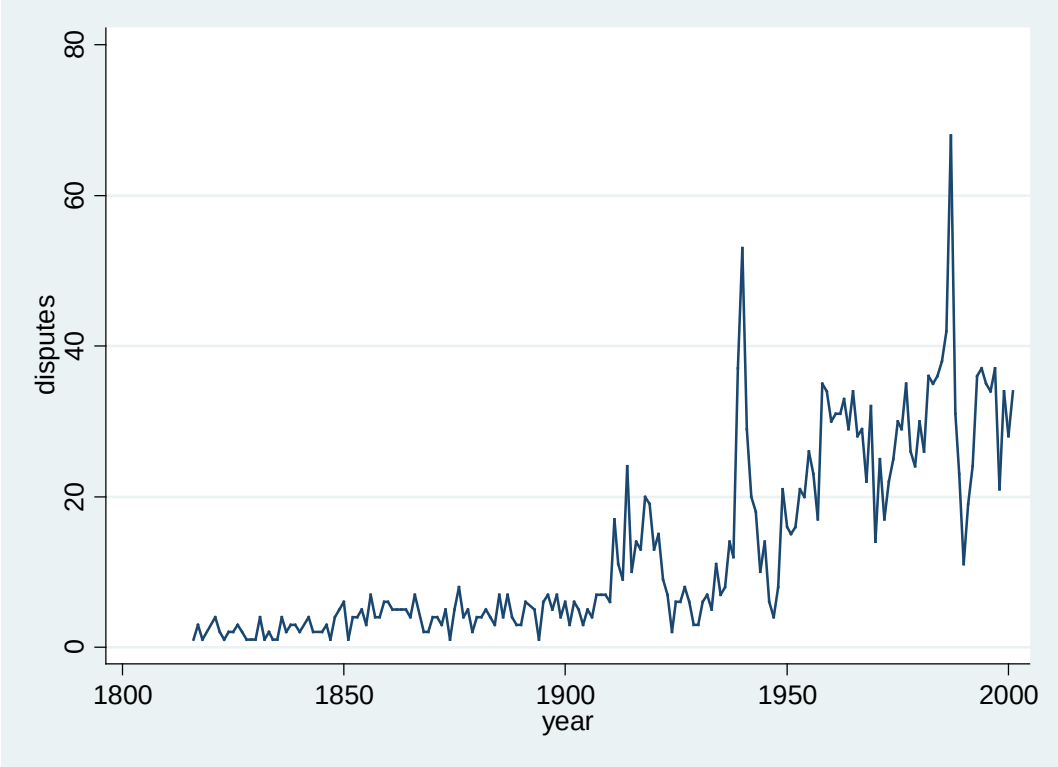
Figure 1. Number of disputes 5 years before and 5 years after the 1971 sanctioned Indian-Pakistani militarized dispute and the 1982 unsanctioned Indian-Pakistani militarized dispute



Sources: Hufbauer et al. (2007), Correlates of War – Militarized Interstate Dispute Data v3.02 and author's calculations.

Notes: The first bar shows the number of disputes in which India was involved 5 years before the sanctioned 1971 dispute with Pakistan. The second bar shows the number of disputes in which India was involved 5 years after this sanctioned dispute. The third bar shows the number of disputes in which Pakistan was involved 5 years before the sanctioned 1971 dispute and the fourth bar shows the number of disputes in which Pakistan was involved 5 years after this sanctioned dispute. The fifth bar shows the number of disputes in which India was involved 5 years before the unsanctioned 1982 dispute with Pakistan. The sixth bar shows the number of disputes in which Pakistan was involved 5 years after this unsanctioned dispute. The seventh bar shows the number of disputes in which Pakistan was involved 5 years before the unsanctioned 1982 dispute and the last bar shows the number of disputes in which Pakistan was involved 5 years after this unsanctioned dispute.

Figure 2. Number of disputes per year 1816-2001



Sources: Correlates of War – Militarized Interstate Dispute Data v3.02 and author's calculations

Table 1. List of sanctions used in the analysis

sender1	sender2	target1	target2	starts	dispute
United States		Indonesia		1963	dispute between the newly formed Malaysia and Indonesia
Turkey	Azerbaijan	Armenia		1989	Nagorno-Karabakh
United States	European Union	Yugoslavia		1998	Kosovo
United Kingdom		Germany		1914	World War I
United States	South Vietnam	North Vietnam		1975	Vietnam War related disputes, North Vietnam attacks Kampuchea
United Kingdom		Argentina		1982	Falklands wars
South Africa		Lesotho		1982	South Africa invades Lesotho and then sanctions it as part of the war
Greece		Turkey		1986	Aegean Island related disputes between Greece and Turkey
Indonesia		Malaysia		1963	Disputes between Indonesia and Malaysia over the separation of Malaysia from Indonesia
League of Nations		Yugoslavia		1921	Yugoslavia enters in Albania
League of Nations		Greece		1925	Greece military invasion of Bulgaria
League of Nations		Paraguay	Bolivia	1932	Chaco War between Paraguay and Bolivia
League of Nations	United Kingdom	Italy		1935	Italy invades Abyssinia
United States	Alliance Powers	Germany	Japan	1939	World War II
United States		Japan		1940	US sanctions Japan because of the World War II
United States	Chincom	China		1949	Chinese involvement in the Korean War
United States	United Nations	North Korea		1950	Korean War
United States		Israel		1956	Israel attacks Suez Channel
United States		United Kingdom	France	1956	Suez Channel dispute

sender1	sender2	target1	target2	starts	dispute
United States		Egypt		1963	UAR troops in Yemen
OAU	United Nations	Portugal		1963	disputes in Africa between Portugal and their colonies (former colonies) that wanted independence
United States		India	Pakistan	1971	military dispute at the Indian Pakistani border
United States		Turkey		1974	Turkey invades Cyprus
China		Vietnam		1978	military dispute at the Vietnamese-Chinese border
United States		USSR		1980	invasion of Afghanistan
United States		USSR		1983	USSR shots down a plane
Unites States		Angola		1986	Soviet troops are still in Angola, United States asks them to leave
United Nations	United States	Iraq		1990	Kuwait invasion
Economic Community Of West African States	United Nations	Liberia		2000	Liberia's dispute in Sierra Leone
United States		Peru	Ecuador	1995	border dispute between Peru and Ecuador

Source: Hufbauer et al 2007

Notes: The senders are the countries that impose the sanctions, the targets are the countries that are sanctioned, the start year is the first year when the sanction was imposed and the dispute is the dispute that triggered the sanction or was the one of the reasons to sanction the target.

Table 2. Levels of violence

level of violence	score
no militarized action	0
threat to use force	1
threat to blockade	2
threat to occupy territory	3
threat to declare war	4
threat to use CBR weapons	5
threat to join war	6
show of force	7
Alert	8
nuclear alert	9
Mobilization	10
fortify border	11
border violation	12
Blockade	13
occupation of territory	14
Seizure	15
Attack	16
Clash	17
declaration of war	18
use of CBR weapons	19
begin interstate war	20
join interstate war	21

Source: Correlates of War v3.02.

Table 3. List of variables

variable	source	definition
dispute characteristics		
Fatalities	Correlates of War – The Militarized Interstate Dispute v3.02	Approximation of fatalities in the dispute. It takes values from 0 to 6. 0=no fatality and 6= 999 or more fatalities.
violence	Correlates of War – The Militarized Interstate Dispute v3.02	Highest level of violence taken by the country in the dispute. It takes values from 0 to 21. 0=no militarized action and 21=join interstate war.
country characteristics		
democracy	Polity IV Dataset	Polity score of the country. It measures general openness of political institutions. It takes values from -10 to 10. -10=least democratic country and 10=most democratic country.
military	Correlates of War National Material Capabilities v3.02& author's calculations	Troops under the command of the national government, intended for use against foreign adversaries, and held ready for combat as of January 1 of the referent year (in thousands).
previous disputes	Correlates of War – The Militarized Interstate Dispute v3.02 & author's calculations	The number of disputes in which the country participated in the 5 years period before the outbreak of the dispute.
Probabilities		
P	Correlates of War – The Militarized Interstate Dispute v3.02 & author's calculations	The probability that a country involved in a dispute will participate in a different dispute[+] in the following 5 years.
Sanctions		
sanction	Hufbauer et al. (2007)	It takes value 1 if the country was sanctioned because of its involvement in that dispute. It takes values 0 if the country in the dispute was not sanctioned.
big	Hufbauer et al. (2007) & authors' calculations	The sender is a big[++] country or a large coalition of countries.
gnp ratio	Hufbauer et al. (2007)	GNP of the sender/GNP of the target.
trade link	Hufbauer et al.(2007)	Imports and exports between target and sender.
Trade		
trade50	International Trade Database & author's calculations	The amount of trade[+++] between US and the country involved in the dispute decreased by 50% or more in the year following the outbreak of the dispute.
trade75	International Trade Database & author's	The amount of trade between US and the country involved in the dispute decreased by 75% or more in

	calculations	the year following the outbreak of the dispute.
tradegdp50	International Trade Database & author's calculations	The amount of trade between US and the country involved in the dispute/ (GDP of the country in the dispute) decreased by 50% or more in the year following the outbreak of the dispute.
tradegdp75	International Trade Database & author's calculations	The amount of trade between US and the country involved in the dispute/ (GDP of the country in the dispute) decreased by 75% or more in the year following the outbreak of the dispute.
development aid		
aid50	World Development Indicators & author's calculations	The amount of development aid to the country involved in the dispute decreased by 50% or more in the year following the outbreak of the dispute.
aid75	World Development Indicators & author's calculations	The amount of development aid to the country involved in the dispute decreased by 75% or more in the year following the outbreak of the dispute.
aidgdp50	World Development Indicators & author's calculations	Development aid to the country involved in the dispute /(GDP of recipient country) decreased by 50% or more in the year following the outbreak of the dispute.
aidgdp75	World Development Indicators & author's calculations	Development aid to the country involved in the dispute /(GDP of recipient country) decreased by 75% or more in the year following the outbreak of the dispute.

Sources: see column 2.

Notes: [+]A different dispute is a dispute that has less than 2 participants in common with the original dispute. [++] The big countries or alliances are: United States, United Kigndom, League of Nations, OAU, China, United Nations, Economic Community of West African States, European Uniton, and the Alliance Powers. [+++]Trade between countries A and B is the sum of the merchandise that A imports from B + the value of the merchandise that B imports from A. The amounts are in million US dollars.

Table 4. Descriptive statistics

variable	obs	mean	SD	min	max
dispute characteristics					
fatalities	4980	.46	1.32	0	6
violence	5600	9.88	7.22	0	21
country characteristics					
democracy	4916	.007	7.49	-10	10
military	5475	734.16	1350.05	0	12500
previous disputes	5596	7.26	9.43	1	78
Probabilities					
P	5358	.76	.42	0	1
sanctions					
sanction	4658	.06	.24	0	1
big	298	.91	.27	0	1
gnp ratio	298	563.01	4789.29	.53	47948
trade link	289	18.33	14.69	1	98
Trade					
trade50	2318	.11	.31	0	1
trade75	2318	.06	.24	0	1
tradegdp50	1183	.07	.26	0	1
tradegdp75	1183	.04	.20	0	1
development aid					
aid50	1542	.16	.20	0	1
aid75	1542	.11	.37	0	1
aidgdp50	1381	.15	.35	0	1
aidgdp75	1381	.09	.30	0	1

Sources: Hufbauer et al. (2007), International Trade Database, Correlates of War – Militarized Interstate Dispute v3.02 and National Material Capabilities v3.02, World Development Indicators, Polity IV, and author's calculations.

Notes: Sanction data is available for years 1914-2001, trade data is available for years 1870-1992, development aid is available for years 1960-2001 and militarized disputes data is available for years 1816-2001.

Table 5. Effects of sanctioning a country involved in a dispute on the probability that the same country will participate in another dispute in the following five years

	(1)	(2)	(3)	(4)
sanction	-.02	.01	.02	.002
	(.03)	(.005)***	(.006)***	(.03)
sanction*big		-.09		
		(.07)**		
sanction*gnp ratio			-.0002	
			(.00007)***	
sanction*trade link				-.0008
				(.0007)
democracy	.00001	-.000002	-.00004	.00002
	(.0003)	(.0003)	(.0003)	(.0003)
fatalities	-.004	-.004	-.003	-.004
	(.002)***	(.001)***	(.001)***	(.001)**
military	.00005	.00004	.00004	.00004
	(.00001)***	(.00001)***	(.00001)***	(.00001)***
previous disputes	.01	.01	.009	.01
	(.002)***	(.002)***	(.001)***	(.002)***
violence	.0001	.0001	.00001	.0001
	(.0002)	(.0002)	(.0002)	(.0002)
year dummies	yes	yes	yes	yes
observations	3114	3108	3108	3106
pseudo-R^2	30.65%	30.63%	31.18%	30.62%

Sources: Hufbauer et al. (2007), Correlates of War – Militarized Interstate Dispute v3.02 and National Material Capabilities Data Set, Polity IV, and author's calculations.

Notes: The dependent variable is the P, the probability that a country involved in a dispute will participate in a different dispute in the following 5 years. Results are probit marginal effects. Standard errors are in parentheses. *** denotes significant at 1% level, ** denotes significant at 5% level and * denotes significant at 10% level.

Table 6. Effects of a large decrease in trade to a country involved in a dispute on the probability that the same country will be involved in another dispute in the future

	(1)	(2)	(3)	(4)
trade50	-.01			
	(.02)			
trade75		-.02		
		(.03)		
tradegdp50			-.001	
			(.02)	
tradegdp75				-.007
				(.03)
democracy	-.0008	-.0008	-.0001	-.0002
	(.0008)	(.0008)	(.0009)	(.0009)
fatalities	-.001	-.001	.002	-.002
	(.005)	(.005)	(.007)	(.007)
military	.0001	.0001	.0002	.0002
	(.00003)***	(.00003)***	(.00005)**	(.00005)**
previous disputes	.02	.02	.02	.02
	(.002)***	(.002)***	(.004)***	(.004)***
violence	-.0002	-.0002	-.0001	-.0001
	(.0007)	(.0008)	(.0009)	(.0009)
year dummies	yes	yes	yes	yes
observations	1867	1867	1017	1017
pseudo-R^2	28.51%	28.54%	29.77%	29.77%

Sources: Hufbauer et al. (2007), International Trade Database, Correlates of War – Militarized Interstate Dispute v3.02 and National Material Capabilities Data Set, Polity IV, and author's calculations.

Notes: The dependent variable is P, the probability that a country involved in a dispute will participate in a different dispute in the following 5 years. Results are probit marginal effects. Standard errors are in parentheses. *** denotes significant at 1% level, ** denotes significant at 5% level and * denotes significant at 10% level.

Table 7. Effects of a large decrease in aid to a country involved in a dispute on the probability that the same country will be involved in another dispute in the future

	(1)	(2)	(3)	(4)
aid50	.01			
	(.02)			
aid75		.02		
		(.02)		
aidgdp50			.003	
			(.01)	
aidgdp75				-.01
				(.02)
democracy	.001	.001	.0004	.0004
	(.001)	(.001)	(.001)	(.001)
fatalities	-.001	-.002	-.005	-.004
	(.009)	(.009)	(.007)	(.007)
military	.0002	.0002	.0002	.0002
	(.00006)***	(.00006)***	(.00006)***	(.00006)***
previous disputes	.03	.03	.02	.02
	(.005)***	(.005)***	(.007)***	(.007)***
violence	.0007	.0006	.0001	.0001
	(.001)	(.001)	(.001)	(.001)
year dummies	yes	yes	yes	yes
observations	1078	1078	961	961
pseudo-R^2	26.73%	26.78%	29.99%	30.03%

Sources: Hufbauer et al. (2007), World Development Indicators, Correlates of War – Militarized Interstate Dispute v3.02 and National Material Capabilities v3.02, Polity IV, and author's calculations.

Notes: The dependent variable is P, the probability that a country involved in a dispute will participate in a different dispute in the following 5 years. Results are probit marginal effects. Standard errors are in parentheses. *** denotes significant at 1% level, ** denotes significant at 5% level and * denotes significant at 10% level.

Table 8. Robustness checks for sanctioning a country involved in a dispute on the probability that the same country will participate in another dispute in the future *using a different democracy measure*

	(1)	(2)	(3)	(4)
sanction	-.02	.01	.02	.002
	(.03)	(.006)***	(.007)***	(.03)
sanction*big		-.09		
		(.08)*		
sanction*gnp ratio			-.0002	
			(.00008)***	
sanction*trade link				-.0009
				(.0007)
autocracy score	*-.0001*	*-.0001*	*-.0000003*	*-.0002*
	(.0007)	*(.0007)*	*(.0006)*	*(.0007)*
fatalities	-.004	-.004	-.004	-.004
	(.002)***	(.001)***	(.001)***	(.001)**
military	.00005	.00005	.00004	.00005
	(.00001)***	(.00001)***	(.00001)***	(.00001)***
previous disputes	.01	.01	.009	.01
	(.002)***	(.002)***	(.001)***	(.002)***
violence	.0002	.0001	.0002	.0001
	(.0002)	(.0002)	(.0002)	(.0002)
year dummies	yes	yes	yes	yes
observations	3114	3108	3108	3106
pseudo-R^2	30.44%	30.41%	30.97%	30.39%

Sources: Hufbauer et al. (2007), Correlates of War – Militarized Interstate Dispute v3.02 and National Material Capabilities Data Set, Polity IV, and author's calculations.

Notes: The dependent variable is the P, the probability that a country involved in a dispute will participate in a different dispute in the following 5 years. Results are probit marginal effects. Standard errors are in parentheses. *** denotes significant at 1% level, ** denotes significant at 5% level and * denotes significant at 10% level.

Table 9. Robustness checks for sanctioning a country involved in a dispute on the probability that the same country will participate in another dispute in the future using *a different military capabilities measure*

	(1)	(2)	(3)	(4)
sanction	-.01	.03	.03	.01
	(.03)	(.009)***	(.01)***	(.02)
sanction*big		-.09		
		(.07)*		
sanction*gnp ratio			-.0003	
			(.0001)***	
sanction*trade link				-.001
				(.0009)*
democracy	-.0003	-.0004	-.0004	-.0003
	(.0005)	(.0005)	(.0004)	(.0005)
fatalities	-.006	-.006	-.006	-.006
	(.002)***	(.002)***	(.002)***	(.002)***
military	*.91*	*.89*	*.84*	*.87*
capabilities score	*(.26)***	*(.25)***	*(.24)***	*(.25)***
previous disputes	.01	.01	.01	.01
	(.002)***	(.002)***	(.002)***	(.002)***
violence	.0003	.0003	.0004	.0003
	(.0003)	(.0003)	(.0003)	(.0003)
year dummies	yes	yes	yes	yes
observations	3196	3190	3190	3188
pseudo-R^2	30.22%	30.21%	30.61%	30.22%

Sources: Hufbauer et al. (2007), Correlates of War – Militarized Interstate Dispute v3.02 and National Material Capabilities Data Set, Polity IV, and author's calculations.

Notes: The dependent variable is the P, the probability that a country involved in a dispute will participate in a different dispute in the following 5 years. Results are probit marginal effects. Standard errors are in parentheses. *** denotes significant at 1% level, ** denotes significant at 5% level and * denotes significant at 10% level.

Table 10. Robustness checks for the effects of sanctioning a country involved in a dispute on the probability that the same country will participate in another dispute in the future on a *sample without world wars*

	(1)	(2)	(3)	(4)
sanction	-.05	.02	.03	-.005
	(.06)	(.009)***	(.01)***	(.05)
sanction*big		-.15		
		(.11)		
sanction*gnp ratio			-.0004	
			(.0001)***	
sanction*trade link				-.001
				(.005)
democracy	.00001	.00007	-.00001	.00001
	(.0005)	(.0005)	(.0005)	(.0005)
fatalities	-.003	-.003	-.003	-.002
	(.003)	(.002)	(.003)	(.003)
military	.0001	.00009	.0001	.00009
	(.00002)***	(.00002)***	(.00002)***	(.00002)***
previous disputes	.01	.01	.01	.01
	(.002)***	(.002)***	(.002)***	(.002)***
violence	.00009	.00007	.0001	.00004
	(.0004)	(.0004)	(.0004)	(.0004)
year dummies	yes	yes	yes	Yes
observations	2748	2742	2742	2740
pseudo-R^2	29.19%	29.16%	29.82%	29.14%

Sources: Hufbauer et al. (2007), Correlates of War – Militarized Interstate Dispute v3.02 and National Material Capabilities Data Set, Polity IV, and author's calculations.

Notes: The dependent variable is the P, the probability that a country involved in a dispute will participate in a different dispute in the following 5 years. Results are probit marginal effects. Standard errors are in parentheses. *** denotes significant at 1% level, ** denotes significant at 5% level and * denotes significant at 10% level.

Table 11. Robustness checks for the effects of a large decrease in trade with a country involved in a dispute on the probability that the same country will be involved in another dispute in the future

	(1)	(2)	(3)	(4)
		all disputes		minor disputes
tr50 fr	-.008			
	(.01)			
tr50 ussr		-.009		
		(.01)		
tr50 uk			-.001	
			(.01)	
tr50				-.11
				(.09)
democracy	.0006	.001	.0001	.0001
	(.0005)	(.0009)**	(.0007)	(.003)
fatalities	-.0004	.007	-.0007	.35
	(.003)	(.008)	(.004)	(.13)***
military	.00006	.00008	.00008	.0003
	(.00001)***	(.00002)***	(.00002)***	(.00008)***
previous	.01	.009	.01	.08
disputes	(.002)***	(.004)***	(.002)***	(.01)***
violence	.000006	.0007	-.0002	-.01
	(.0004)	(.0007)	(.0005)	(.04)
year dummies	yes	yes	yes	yes
observations	1408	457	1536	537
pseudo-R^2	30.41%	37.63%	29.18%	23.77%

Sources: Hufbauer et al. (2007), World Development Indicators, Correlates of War – Militarized Interstate Dispute v3.02 and National Material Capabilities v3.02, Polity IV, and author's calculations.

Notes: The dependent variable is P, the probability that a country involved in a dispute will participate in a different dispute in the following 5 years. tr50 uk takes value 1 if trade with UK dropped more than 50% from the previous year, tr50 ussr takes value 1 if trade with USSR dropped more than 50% from the previous year and tr50 fr takes value 1 if trade with France dropped more than 50% from the previous year. (1)-(3) presents results for all disputes and (4) presents results for a dataset restricted to minor disputes (the highest level of violence is a threat to join interstate war). Results are probit marginal effects. Standard errors are in parentheses. *** denotes significant at 1% level, ** denotes significant at 5% level and * denotes significant at 10% level.

Table 12. Robustness checks -Predicting economic sanctions using lagged militarized disputes

	sanction	sanction by big sender	multilateral sanction
	(1)	(2)	(3)
lagged disputes	*.01*	*.01*	*-.001*
	(.02)	*(.02)*	*(.01)*
democracy	-.001	-.002	-.003
	(.002)	(.002)	(.001)***
fatalities	.004	.003	.0001
	(.004)	(.004)	(.004)
military	.00002	.00002	.00001
	(.00001)***	(.00001)***	(.000008)***
violence	.002	.002	.001
	(.001)***	(.001)***	(.007)*
year dummies	yes	Yes	yes
observations	2749	2681	2207
pseudo-R^2	26.83%	32.16%	46.07%

Sources: Hufbauer et al. (2007), Correlates of War – Militarized Interstate Dispute v3.02 and National Material Capabilities Data Set, Polity IV, and author's calculations.

Notes: In the first column, the dependent variable is p, the probability that the country is sanctioned because of its involvement in the militarized dispute. In the second, it is the probability of being sanctioned by a large country or a large organization and in the third it is the probability of being sanctioned by two or more countries. Results are probit marginal effects. Standard errors are in parentheses. *** denotes significant at 1% level, ** denotes significant at 5% level and * denotes significant at 10% level.