Instrumental or Symbolic? The Role of Multilateral Economics Sanctions

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Abstract

This article studies cooperation on multilateral economic sanctions. Despite low effectiveness and sanction-busting, multilateral economic sanctions are an increasingly popular tool of foreign policy. We explore two mechanism for cooperation on economic sanctions. First, instrumental, indicates that states face a collective action problem when coordinating multilateral coercion; we indicate that it can be solved through repeated interactions and reputation. Second mechanism, symbolic, relates to the domestic-audience benefit from multilateral foreign policy to the political leader; underscoring that the effectiveness of the sanction is irrelevant. We develop the two frameworks with the use of game theory and formal modelling and empirically test with observations from the TIES data set. Our results provide support for the instrumental mechanism theory; indicating that states cooperate on economic sanctions in order to increase the effectiveness of the tool. Reputation on observance of multilateral economic sanctions and years spent at an international organisation, that coordinates the sanction regime, are key predictors for probability of multilateral sanctions. Paradoxically, international organisation, designed to bring peace, help to stimulate cooperation on coercive foreign policy.

Introduction

Why do states cooperate on economic sanctions? Multilateral economic sanctions[1] are an increasingly popular tool of foreign policy (Morgan, Bapat, and Kobayashi 2014), despite lesser, and often counter-beneficial, effects of cooperation on the potential success of the policy (Morgan and Schwebach 1997; Miers and Morgan 2002; Hufbauer et al. 2007; N. Bapat and Morgan 2009; van Bergeijk 1994; Drezner 2000; N. A. Bapat and Kwon 2015). Scholars have overlooked this question, yet multilateral economics coercion is a striking example of cooperation in the anarchic international order (Martin 1992; Martin, Lisa 1993) and has major economic (Afesorgbor and Mahadevan 2016; Giumelli 2017) and humanitarian

[1] I employ the conceptualisation of Morgan et al. (2014), where economic sanctions are an "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 polices".

(Neuenkirch and Neumeier 2016; McCormack and Pascoe 2017; Lektzian and Regan 2016) consequences for the target states. The purpose of this article is to develop and empirically test two mechanism for the role of cooperation on economic sanctions. First, instrumental, in which the objective of the senders is to increase the effectiveness of the policy. And second, symbolic, in which cooperation on sanctions is a result of a domestic audience benefit for the political leader for conducting multilateral foreign policy.

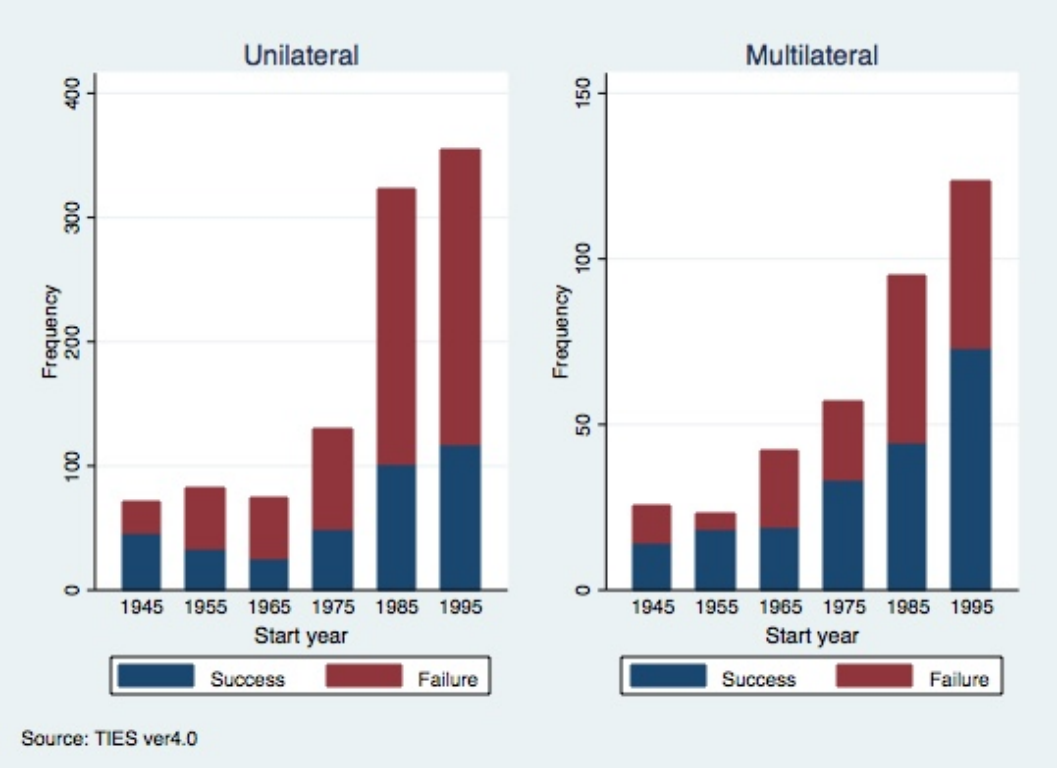

Figure 1 Frequency and effectiveness of economic sanctions over time, comparison of unilateral and multilateral sanctions

Researchers have extensively studied the effectiveness of multilateral economics sanctions. Scholars first assumed that cooperation is a necessary condition for economic sanctions to succeed (Galtung 1967; Doxey 1980; Gilpin 1984; Baldwin 1985).[2] Later, systematic empirical research proved this assumption to be wrong. Multilateral sanctions were shown to not

[2] But already Galtung warns against a "naïve theory of sanctions", where the effectiveness is a simple function of the severity of the sanctions; cooperation was seen as a necessary, but not a sufficient condition for multilateral sanctions to be effective.

increase the effectiveness of the tool; potentially they could be even counter-effective (Hufbauer et al. 2007; Drezner 1999, 2000; Morgan and Schwebach 1997; Miers and Morgan 2002; Bonetti 1997; van Bergeijk 1994). Three main theoretical frameworks were developed in order to explain this anomaly: selection effects, public goods problem and spatial theory.

The first framework, based on selection effect (Drezner, 2003), suggests that multilateral economic sanctions are less effective because only issues of high salience are targeted with joint action. Coalitions of states are difficult to coordinate and only critical threats provide sufficient motivation for states to organise and implement multilateral economic sanctions. But, precisely due to the high silence of the issue, the target of the sanctions will, most likely, perceive the demands of senders as of critical or even existential importance. This asymmetry places multilateral sanctions in an avenue where they are unlikely to succeed. Thus, the observed relatively low effectiveness; compared to unilateral efforts.

In the second framework, multilateral economic coercion as a public good (Martin, 1992), sanctions are a common resource on which each individual sender has incentives to deviate. This setting, consequently, leads to a series of deviation (including, eventually, the principal sender too). In this approach only sanctions introduced through international organisation can be robust (e.g Drezner, 2000), because sufficient supervision mechanisms are in place to deter deviation from the agreed coordinated sanction regime. If no international organisation is in place, then the principal sender should opt for unilateral sanctions. In the words of Drezner (2000) “unilateral sanctions can be more effective than multilateral effort; a small and sturdy stick is better than a large and brittle one.”

Finally, the third framework, rooted in spatial theory (Miers & Morgan, 2002), suggests that the key feature for success of multilateral sanctions is the number of demands made by the sender states. For a single demand, multilateral sanctions are expected to be more effectives than unilateral action. For multi-issue demands, multilateral sanctions will only be more effective than unilateral if, and only if, enforced through an international organisation. Otherwise, as chaos theorem suggests, multilateral sanctions may be counter-productive and likely less successful than unilateral sanctions over multiple demands.

However, most studies of the effectiveness of multilateral economic sanctions appear to have suffered from a data problem. A study conducted with the Threat and Imposition of Economic Sanctions (TIES) data set indicates that multilateral sanctions are, on average, more effective; particularly when addressing a security issue (N. Bapat and Morgan 2009). The TIES data set used by the Bapat and Morgan to deliver these findings is composed of 888 cases (522 imposed and 361 sanctions threats) and six times larger than the data offered by Hufbauer et al. (2007). Moreover, Bapat and Morgan (2009) indicate that the spatial model is supported by the findings from the TIES data set. Multilateral sanctions over a single issue or over a multiple issue but coordinated through an international organisation are most effective. The problematic part of the research of Bapat and Morgan (2009) is a relatively small number of multilateral sanctions over multiple issue. There is a risk that the low effectiveness of multilateral multiple issue sanctions is a result of a coding error. As Pape (1997) highlighted, when evaluating the data set of Hufbauer, there is substantial room for arbitrary judgements when assessing success or failure and the true objective of economic sanctions. An update of the TIES data set to 1412 cases (Morgan, Bapat, and Kobayashi 2014) confirms the previous results of Bapat and Morgan (2009): multilateral economic sanctions are more effective than

unilateral. However, the more extensive TIES data set is consistent with past research on the general effectiveness of sanctions – economic coercion more often fails than succeeds (Hufbauer et al. 2007).

If sanctions so often fail to reach the designated policy objective and coordinated efforts do not guarantee success, why states do decide to engage in multilateral economics sanctions? A game theory approach, developed by Lisa Martin (1993; 1992) in which sanctions are a coercive foreign policy instrument, proposes that states face a collective action problem when deciding on cooperation on economic sanctions. On the one hand, cooperation on a sanction regime can increase the chances of success of the policy, but, on the other hand, there are economics incentives to free-ride on the sanction regime and benefit both from trade with the target state and the additional security resulting from sanctions imposed by other senders.

Martin produces game matrixes in which actors are classified by a set of characteristics: strong or weak leadership and strong or weak strategy. The games are played out by two states that have to decide on cooperation on a sanction regime; games are non-repeated and simultaneous. Martin indicates that there are three paths that can lead to multilateral economics sanctions: coincidence, coercion and coadjustment. For the first path, we can observe cooperation on economic sanctions if both potential senders have overlapping interest. This could be related to the weakness of a potential target or to ideological alliance of the senders, what has been particularly relevant in the context of the Cold War. In the second path, coadjustment, which is a regular Prisoners' dilemma game, states face the problem that individually rational action may bring outcomes that are suboptimal on the

aggregate level. Martin expects, based on the findings of Axelrod, that institutions can stimulate cooperation in this setting. In the third path, coercion, a powerful state has the ability to force its partners to join the sanction regime. In this setting, the motivation for coercing partners into cooperation by the primary sender is the high cost of a potential sanction regime.

Martin also conducts a mixed-methods empirical test of the three theoretical models. In the qualitative component Martin looks at the following cases: Human Rights and Latin America, The Falkland Conflict, Technology Export Control and The Polish Crisis. Proposed cases serve as depiction of the theoretical frameworks that Martin has developed in the theory section. In the quantitative section, Martin conducts an analysis on a sample of 99 economic sanctions. The main finding is that international organisations play a crucial role in coordinating economics sanctions. In addition, data indicates that the costs of economic sanction positively affect cooperation. The main result of the quantitative section, on the role of international organisations, is consistent with the theory of collective action – in which a possible solution is to delegate supervisory power to a higher institution (Holzinger 2003) – and in line with the game theory models developed by Martin.

The second, functionalist, explanatory mechanism for cooperation on economic sanctions is rooted in domestic politics and indicates that sanctions have a symbolic, not instrumental, value. Scholars indicate that the main objective of economic sanctions is not to exercise power on another state – but to gain support from the domestic audience. Economic coercion has a purely symbolic purpose and follow a functionalist logic, in which economic sanctions are an outcome of the incumbent political leader's objective to increase popular support. The

effectiveness of economic sanctions becomes largely irrelevant and sanctions are, predominantly, an element of a domestic political game (Whang 2011; McLean and Whang 2014). This theoretical explanation, the symbolic value of economic sanctions, has been advocated for long by researchers (Galtung 1967), but until recently no empirical studies were conducted in this avenue.

Whang (2011) argues that if the cost of introducing sanctions is smaller than the associated domestic political benefits, a rational actor would always pursue a sanction policy. Empirical research, conducted by Whang, on data for the approval rating of the US presidents in years 1948 to 1999 supports the claim that economic sanctions in a systematic fashion boost presidential domestic support – regardless of the effects of the policy. In another article, McLean and Whang (2014) further purse the topic of domestic politics and sanctions. With the use of the TIES data set they conclude that domestic politics play a role in the use of economic sanctions in a two-fold way. The higher is the political awareness of voters, the more likely are sanctions. On the other hand, the strength of sanctions will be affected by domestic groups of exporters, as they appear capable of lobbying exceptions and limitations in economic sanctions in order to safeguard their economic interest.

If we follow the domestic politics argument, cooperation on economic sanctions ought to be a function of domestic preferences too. Surveys show that voters are interested in foreign affairs and value when the government takes foreign policy action while holding an international mandate.[3] Hence, it may be that domestic politics are also the underlying

[3] Source: http://www.unfoundation.org/news-and-media/press-releases/2007/going-it-alone-new-opinion-research.html

mechanism that drives cooperation on economic sanctions. To provide an example, Bapat and Morgan (2009) are puzzled that "on October 15, 2006, US Secretary of State Condoleezza Rice claimed that the unanimous UN Security Council Resolution threatening to impose sanctions on North Korea would serve as a powerful tool to induce Pyongyang to cease its development of nuclear technology. Rice stated that the vote demonstrated a 'unity of purpose,' and that the participation of Russia and China made the threat of sanctions both more powerful and more credible." Bapat and Morgan wonder why, despite indications from scholars that multilateral sanctions are less effective, the US administration pursued the efforts to build a broad and diplomatically costly coalition on this issue. It may be that the efforts and message of the US Secretary of State were aimed at the American voters, not the North Korean regime. Given the poor record of China in monitoring and exercising the sanctions regime on Pyongyang, it would not necessarily be a wrong audience to address.[4]

To summarise, most of the research focuses on the effectiveness of multilateral economic sanctions and overlooks why coordination happens, despite the recent increase in multilateral economic coercion. However, two explanatory mechanism can be found in the literature. First, instrumental, in which the role of cooperation is to increase the effectiveness of the sanction regime. Second, symbolic, where sanctions serve purely a domestic audience purpose. In the following section of this article, we develop further both explanatory mechanisms and devise a set of hypotheses, then design and conduct a quantitative empirical test of the two theories and, finally, we conclude the article.

[4] Source: https://www.newyorker.com/news/news-desk/why-china-isnt-ready-to-put-pressure-on-north-korea

Theory

Instrumental

North (1993) concisely summarised the problem that is at the core of multilateral economic sanctions – "the issue is straightforward: how to bind the players to agreements across space and time". States, in order to benefit from the additional effectiveness of multilateral economic sanctions, must coordinate their economic policy towards the target state. Yet, there is no authority that can enforce the political agreement made between the sender states and there are economic incentives to defect from the multilateral sanctions for each of the senders. Martin (1992) proposes a game theory approach to the study of cooperation on economic sanctions in an anarchic setting of world politics. Building on this research and on formal modelling developed by author, we can propose an extension of theory that allows to account for three types of outcomes: status quo, unilateral and multilateral economics sanctions. In addition, we allow for dynamic games and multiplayer scenarios in our model.

In the following games we "focus on nation-states as primary actors in world politics, treat national preferences as sovereign, and assume that any ultimate escape from international anarchy is unlikely" (Oye 1986) and treat economic sanction as a foreign policy instrument. Nation-states are the senders and the targets of economic sanction and form coalitions for multilateral coercion. We assume that states are utility maximising and rational actors that operate under constraints and incentives resulting from the competitive and anarchic global order. Following author, the starting point of each game is two actors faced with the possibility to impose sanction on a third actor. If both actors do impose sanctions (cooperate/cooperate), they form a coalition and the outcome is multilateral coercion. If only

one actor imposes sanctions and the other backs out (cooperate/defect) – we observe unilateral sanctions. If both actors do nothing (defect/defect) – the outcome is the status quo. We follow the payoff design indicated by author, based on the work of Hilbe, Nowak and Sigmund (2013), *b* stands for benefit, *c* for cost and we assume that $b > b - c > 0 > -c$.

Table 1 Prisoners' dilemma

	Player B		
Player A		Cooperate	Defect
	Cooperate	*b - c, b – c*	*-c, b*
	Defect	*b, -c*	*0,0*

The underlying assumption for application of Prisoners' dilemma to the problem of cooperation on multilateral sanctions is that: (i) economic sanction result in an economic cost for the sender state (N. A. Bapat and Kwon 2015), (ii) enforcement of agreements on sanction cooperation is problematic (Drezner 2000), (iii) there is a benefit from multilateral action (Morgan, Bapat, and Kobayashi 2014) and (iv) there are individual-level benefits from defection (sanction busting) (Barry and Kleinberg 2015; Early 2012).

For a one-shoot game, from the above set-up we can conclude that economic sanction would never take place, as the Nash equilibrium in the static Prisoners' dilemma is for both players to defect.[5] However, following author, we can further our modelling efforts and study the outcome of a dynamic game. Motivation for this extension is that states repeatedly interact with one another on foreign policy issues (Oye 1986) and are embedded in international organisations, where reciprocal interactions occur (Davis 2004). In the repeated game the

[5] The mathematical derivation of the equilibrium can be found in the appendix.

payoff structure of the Prisoners' dilemma remains the same. The novelty is that we assume that actors will play an infinitely repeated number of rounds and there is a probability *w* that they will meet again. This allows actors to devise interactive strategies and creates opportunity for direct reciprocity – for example a tit-for-tat strategy in which if you cooperate with (defect on) me, I cooperate with (defect on) you. Following Nowak (2006), the condition for sustained cooperation can be summarised by the following formula [6]:

$$w \geq \frac{c}{b}$$

Cooperation is an individually rational strategy, if the probability of another encounter, described by *w*, is higher than the cost-benefit ratio, depicted in the game matrix. Therefore, other things being equal, we would expect that states that are joint members of an international organisation and have had opportunities to interact on foreign policy issues are more likely to engage in multilateral economic sanctions. Paradoxically, various forms of formal institutions, for example regional or security organisations, traditionally cherished as a source of peace (Keohane and Martin 1995), may be a force for multilateral coercion.

Hypotheses 1a: Multilateral economic sanctions occur from states that exhibit high levels of repeated interactions.

Neither interactions between states nor international organisations are limited to two states. To account for this, following author, we propose a model that incorporates the role of reputation. Evolutionary scholars indicate that cooperation in larger groups is more difficult to achieve, because of free-riding (Suzuki and Akiyama 2007). Nowak and Sigmund (2005), however, suggest that problem can be mediated through indirect reciprocity, more

[6] The mathematical derivation of the equilibrium can be found in the appendix.

commonly referred to as reputation. And scholars have indicated that reputation is both present and meaningful for economic sanctions (Peterson 2013). We assume that actors play an infinitely repeated game and, with a probability of q, are familiar with the past decisions of the player that they are facing in the current round. For cooperation to thrive, the probability of knowing past actions of the partner has to be higher than the cost-benefit ratio, depicted in the game matrix (Martin A. Nowak 2006).[7]

$$q \geq \frac{c}{b}$$

Above dynamic, as author indicated, can be linked to cooperation on economic sanctions. We would expect that states that have a solid reputation – strong past commitment on economic sanctions – are more likely to find partners to build a multilateral sanctions regime. This should hold, even if no previous interaction between the sender states have occurred.

Hypotheses 1b: Multilateral economic sanctions occur from states that exhibit a reputation of past commitment to economic sanctions.

Hypotheses 1c: Multilateral economic sanctions occur from states that exhibit a reputation of past commitment to economic sanction, even if no interactions occurred in the past.

Symbolic

Galtung (1967) wrote "If economic sanctions do not make a receiving nation comply, they may nevertheless serve functions that are useful in the eyes of the sending nation(s)". Whang (2011; 2013) build a theoretical model based on the intuition shared by Galtung, and other scholars, in which economic sanctions exhibit their symbolic power by addressing the expectations of the domestic constituencies. In the model of Whang, the political leader is uncertain about the coercive effectiveness of sanctions (the *instrumental* value) but is capable

[7] The mathematical derivation of the equilibrium can be found in the appendix.

of assessing the voters' response (the *symbolic* value). If the relative political benefits surpass the economic costs of economic sanctions, then, regardless of the coercive outcome of the policy, sanctions are a rational policy.

Let us consider the above theoretical sketch in relation to cooperation on economic sanctions. Below, we depict a ration-choice functionalist argument in which multilateral economic sanctions are an outcome of the policy leader's calculation about popularity among voters. We may assume that voters are concerned about international cooperation on foreign policy, as it provides legitimacy to the action of the state. Drezner (2000) indicate that the US policy-makers see it as a primary objective for finding coalition partners on economic sanctions. However, creating a coalition is a labour and cost-intensive diplomatic activity – according to Martin (1992). Political leaders seeking approval and re-election must weigh the cost and benefits associated with pursuing unilateral economic sanction and seeking international cooperation on the sanction regime. Let us consider this optimisation problem with the use of a utility function, following the work of Whang (2011).

Let us assume utility maximising behaviour of actors. Utility of the political leader is depicted by the function $U_{sanctions}$. A change in the behaviour of the target state leads to a political benefit of B, the imposition of economic sanctions carries also a political cost of C. The probability of success is described by P.[8] Thus, our baseline equation can be written as:

$U(sanctions) = P(B) - (1 - P)\,C$

We further assume that $B, C > 0$ and $0 \leq P \leq 1$.

[8] Whang indicates that the number of states that are possible to sanctions by a political leader is sufficiently large. This type of assumption is also made by scholars of military conflict.

In addition, there are sunk costs observed by the political leader – the foregone trade resulting from sanctions equal to C_{econ} and the coalition building efforts equal to $C_{co\text{-}op}$. There are also sunk benefits: the domestic audience benefit resulting from the symbolic value of economic sanctions B_{symb} and from voters' appreciation of international cooperation $B_{co\text{-}op}$.[9] Thus, we can rewrite our baseline equation to:

$U(sanctions) = [P(B) - (1 - P)\,C] + (B_{symb} - C_{econ}) + (B_{co\text{-}op} - C_{co\text{-}op})$

And assume that the sender will introduce economic sanctions if:

$$U(sanctions) > 0$$

Let us assume, following Whang, that economic sanctions have no chance of success (P = 0) and that success is so rare that the baseline element of the equation should be equated to zero as well. Thus, P(B) – (1-P) C = 0 what simplifies the utility equation to:

$U(sanctions) = (B_{symb} - C_{econ}) + (B_{co\text{-}op} - C_{co\text{-}op})$

Whang (2011), following Baldwin (2000), indicates that economic costs are not considered in the assessment of sanctions as a foreign policy tool, because the cost of the alternative – military action – are substantially higher. Furthermore, sanction frequently mean suspension of economic or military aid, what is fiscally beneficial or a freeze of foreign assets, what is fiscally neutral. We may also consider the diplomatic costs of creating a coalition as minor for

[9] A full utility equation – in which the status quo, diplomatic efforts and military action are included – is not considered. The objective of this (and any) model is to simplify the reality and allow us to disentangle how a particular mechanism may operate. The real world is certainly more complex and intertwined. Nevertheless, this model carries observable implications regardless of the valuation of diplomatic and military efforts. For example, if the relation between the costs and benefits of diplomatic efforts is zero and these of military action is negative we should not exclude economic sanctions from happening. On the other hand, if military, economic and diplomatic actions are all politically beneficial, the political leader would not limit herself to only one type of action, given the utility maximization assumption. The potential difficulty with the latter scenario is to accommodate how much of the additional political support is the result of economic sanctions if sanctions, diplomacy and military actions took place. It is, however, not the objective of this article, nor of this model.

a state. Nearly all senders of economic sanctions have an established diplomatic service and are represented in international organisations that may coordinate a potential multilateral regime. Hence, we can further simplify the utility equation to:

$U(sanctions) = B_{symb} + B_{co\text{-}op}$

Whang has proven empirically the presence of B_{symb}. In this article, we test attempt to confirm the results of Whang and, most importantly, determine whether an additional domestic audience benefit is present for multilateral economic sanctions.

Hypotheses 2a: The popularity of the sender political leader increases when economic sanctions are introduced to target another state.

Hypotheses 2b: The popularity of the sender political leader increases more when multilateral, in relation to unilateral, economic sanctions are introduced to target another state.

Research design

Instrumental

We build on the games developed in the theory section of this article. We expect that repeated interactions and reputation are the mechanism that stimulate cooperation between states. In order to test the above assumptions, we homogenise the sample under study by analysing only economic sanctions regimes that were: (i) introduced through an international organisation, (ii) a primary sender, whether for unilateral or multilateral sanctions, can be identified and (iii) a threat of sanctions has been issued.

Scholars have already established that multilateral sanctions are strongly correlated with involvement of international organisations (Martin 1992; N. Bapat and Morgan 2009; Morgan, Bapat, and Kobayashi 2014). The objective of this article is to move beyond the assertion that "institutions matter" and establish under what circumstances do they matter. Thus, we propose a measure of repeated interaction that is a continuous variable of the years spent in the institution that coordinates the sanction sent by the primary sender. We connect this expectation to our game theory models and expect that the longer a state has been a member of an international organisation, the higher is the value of the *w* coefficient, that determines the probability of another encounter. With time states have the opportunity to build an array of *quid pro quo* relations on which they can expect support and are expected to yield support.

In order to assess the years spent at an institution, we must know the identity of the primary sender and the institution which issued the sanctions. The advantage of studying solely sanction episodes with an identifiable primary sender is that our empirical data is closer to the theoretical game theory model – we may assume that the primary sender plays a number of dyadic games when seeking for coalition partners. Finally, in order to control for non-random selection, we only study sanction incidents where a threat has been issued. Analysing sanction incidents with a threat that occurred within an institutional setting, allows us to assume that the primary sender have had the chance to gather a coalition of senders and multilateral sanctions were feasible.

In our sample there are 72 cases of threats only, where no sanctions were imposed, and 73 cases of threats that were followed by actual imposition. An overview in the table below.

Table 2 Success rate and imposition for the homogeneous sample

	Failure (Frequency)	Success (Frequency)
Threat only	41	31
Imposed sanction	26	47
Total	67	78

The main variable of interest is the type of economic sanctions – whether they are unilateral or multilateral. This observation is derived from the TIES data set. Multilateral sanctions are understood as a sanction regime that involves more than one sender. The dependent variable *Multilateral* is dichotomous and is set at zero for unilateral sanctions and at one for multilateral sanctions.

In our sample there are 43 cases of unilateral economics sanctions and 102 cases of multilateral economic sanctions. In the table below, we present an overview of the type of sanctions and the respective effectiveness rate. Unilateral sanctions were successful in 44 per cent of the cases and multilateral sanction in 58 per cent of the cases.

Table 3 Success rate and type of sanctions

	Failure (Frequency)	Success (Frequency)
Unilateral	24	19
Multilateral	43	59
Total	67	78

The key independent variables for this section are repeated interaction and reputation. The proxy for repeated interaction is the *years at institution* variable. It counts the number of years between the primary sender's accession to the institution that coordinates the sanction regime and the date when the sanction regime has been issued. The proxy for reputation, *mean past commitment,* is generated from the commitment variable, available in the TIES data set. It describes how dedicated the senders are to sanction regimes. The commitment

variable is categorical and ordinal, it identifies three levels of commitment: *Weak, Average and Strong*. We create the past commitment variable by generating the mean value of five last sanction episodes. Missing values are imputed with an ordered logistic regression method (Buuren 2007; Raghunathan 2015).

Control variables are generated from the TIES data set and represent common covariates in the literature on economic sanctions. We consider the salience of the issue *High salience*, which is in our study a dummy variable that takes a value of zero if sanctions are related to trade and a value of one if sanctions are related to security issues. We control for the number of issues covered by the sanction regime – sanction with more than one issue at stake are coded as one for the *Multi-issue sanctions* variable. We observe whether both the target and the sender are members of the same international organisation with a dichotomous variable *Target-sender joint institution*. Finally, *Threat of trade embargo* and *Threat of aid suspension* provide details about the type of the threat that has been issued by the sender(s). Table below provides a complete overview of the sample used to examine the instrumental approach.

Table 4 Overview of variables (instrumental)

Variables	N	Mean	Std. Dev.	Min	Max
Start year	145	1,980	18.25	1945	2005
End year	117	1,980	18.90	1947	2009
Imposition	145	0.503	0.502	0	1
Sanctioning institution name	145	3,464	1178	1240	4580
Target-sender joint institution	141	0.525	0.501	0	1
Primary sender	145	202.8	235.0	2	900
Target state	145	476.7	295.6	2	1000
Multi-issue sanction	145	0.179	0.385	0	1
High salience	145	0.669	0.472	0	1
Multilateral	145	0.703	0.458	0	1
Threat of aid suspension	145	0.124	0.331	0	1
Threat of trade embargo	145	0.607	0.490	0	1
Success	145	0.538	0.500	0	1
Years at institution	145	23.92	16.90	1	60
Mean past commitment (5 lags)	145	2.041	0.772	1	3

The depend variable in our study is binary; it takes up a value of one for multilateral economic sanctions or threat of sanctions and zero otherwise. Due to the nature of one our hypotheses – that reputation matters even if no interaction occurred in the past – we introduce an interaction term by multiplying the continuous *Years in institution* variable with the ordinal factor variable *Mean past commitment* (Brambor, Clark, and Golder 2006). The dependent variable can be summarised as:

$$Multilateral_{i,t} = \begin{cases} 1 \; if \; multilateral \; sanctions \; or \; threat \; occurs \; from \; primary \; sender \; i \; at \; time \; t \\ 0 \; if \; unilateral \; sanctions \; or \; threat \; occurs \; from \; primary \; sender \; i \; at \; time \; t \end{cases}$$

Our objective is to test the following econometric model, in order to assess whether cooperation on multilateral sanctions has an instrumental role:

$$Multilateral_{i,t} = \beta_0 + \beta_1 Years\ at\ institution_{i,t} + \beta_2 Past\ imposition\ mean_{i,t} + \beta_3 Years\ at\ institution_{i,t} * Past\ imposition\ mean_{i,t} + \beta_4 Control\ variables + \epsilon$$

Symbolic

In the domestic politics explanatory notion, we build on previous work of Whang (Whang 2011; Whang, Mclean, and Kuberski 2013) and indicate that the role of economic sanctions is symbolic – to gather support of voters – and the instrumental aspect, coercion of another state to change its policy, is not relevant for the decision-maker. Political leaders introduce sanctions, because they expect a return in form of a boost in voters' support. Moreover, we expect multilateral economic sanctions to provide a stronger boost in voters' support than unilateral action.

In order to empirically test these assumptions, we attempt to find whether there is a presence of an "audience benefit" in domestic politics for introduction of economic sanctions and an additional benefit from pursuing multilateral sanctions. We turn to the approval rating data

for the US presidents from 1948 to 1999.[10]. We aggregate the data to average monthly approval rating; this results in 625 monthly approval rating observations. The dependent variable *approval change* indicates how does the mean approval rate of the president change in the three months following the introduction of economic sanctions. The data is expressed in percentage. In the figure below, we provide an overview of the variation over time in the approval ratings.

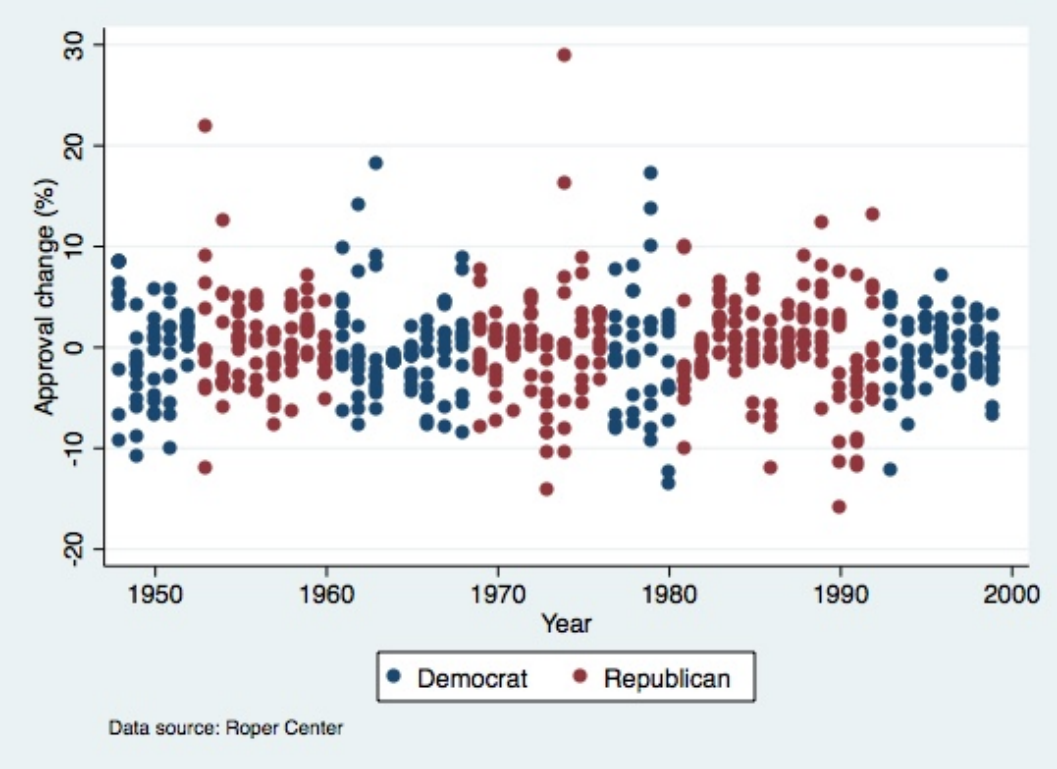

Figure 2 Change in approval rating of US president from 1948 to 1999

The approval rating of US presidents has been successfully used by scholars in identifying domestic political benefits and US presidents are traditionally perceived by American voters as the leaders on foreign affairs issues (Whang 2011). Scholars also indicate domestic audience benefits are strongest in countries where voters have high political awareness (McLean and Whang 2014). Moreover, the US is among the most active actors in respect to

[10] We replicate the work of Whang (2011).

economic sanctions, it accounts for more than half of all sanction present in the TIES data set, and the most economically powerful sender of economic sanctions, thanks to the size of its economy and the unique position in the global finance and trade.

Our key independent variables are: (i) imposition of sanctions, *imposition,* in contrast to issuing a threat only and (ii) *multilateral,* indicating whether economic sanction regime is unilateral or multilateral. Data on imposition and cooperation on sanctions is derived from the TIES data set (Morgan, Bapat, and Kobayashi 2014). Both variables are binary, what means that *imposition* takes a value of one if the sender pursued the sanction threat with an actual sanction. The variable *multilateral* takes a value of one if the sanction regime is multilateral. We observe in our sample 196 sanction. There are 140 unilateral and 56 multilateral sanctions and 98 incidents of imposition and 98 threats only.[11]

Table 5 Imposition in relation to multilateral economic sanctions

	Threat only (Frequency)	Imposition (Frequency)
Unilateral	88	52
Multilateral	10	46
Total	98	98

Control variables can be divided into three categories: (i) political (ii) economic and (iii) sanction related. First, political covariates, indicate the party of the president, the year in office and inauguration moment. Second, economic, account for change in the

[11] The US has issued more sanctions in the period under study, but our data for approval rating is aggregated at the month level, hence we had to combine sanction incidents. The advantage of this approach is that the signal to the public from such aggregated action is stronger and we may be more likely to find statistically plausible relations. On the other hand, by averaging over imposition, multilateral character or saliency of the issue on a monthly basis we lose precision.

unemployment[12] and inflation rate[13], both variables are the difference between the sanction month value and an average of three months' lags. Finally, sanction related covariates indicate whether the sanction is related to an issue of high salience and whether the threat involved suspension of economic relations, based on the TIES data set.

Table 6 Overview of variables (symbolic)

Variables	N	Mean	Std. Dev.	Min	Max
Year	625	1,973	15.02	1,948	1,999
Month	625	6.502	3.453	1	12
Mean approval	625	54.45	12.77	23	84.75
Inauguration	625	0.0144	0.119	0	1
Democrat	625	0.462	0.499	0	1
Unemployment	625	5.678	1.574	2.500	10.80
Inflation	625	71.24	48.08	23.40	168.3
Election prox.	625	11.49	6.931	0	23
Multilateral	196	0.286	0.453	0	1
Primary sender	186	25.21	110.5	2	900
Target state	196	545.5	282.3	20	1,000
Issue	196	9.087	4.390	1	15
Imposition	196	0.500	0.501	0	1
High salience	196	0.582	0.495	0	1
Threat of trade embargo	196	0.577	0.495	0	1
Major cost to target	196	0.158	0.366	0	1
Success	196	0.536	0.500	0	1
Presidency year	625	2.362	1.111	1	4
Change in approval	573	-0.237	4.868	-16	28.83
Change in unemployment	573	0.00131	0.283	-0.867	1.333
Change in inflation	573	0.440	0.440	-0.650	2.067
President	625	5.674	2.887	1	10
Change in approval (lagged)	573	0.372	4.862	-25.17	14.25

In order to establish the relation between changes in approval rating and economic sanction, we employ a difference-in-difference model. It is a quasi-experimental approach, used for establishing the effect of a particular treatment, by comparing the outcome for the treatment and the control group at the pre-intervention and the post-intervention stage. In our study, the treatment is equivalent to multilateral and the control to unilateral economic sanctions.

[12] Source: Bureau of Labor Statistics

[13] Source: OECD

Pre-intervention period is the threat only and the post-intervention period is imposition of economic sanctions. Hence, we observe four moments: (i) unilateral threats only or (ii) unilateral imposition and (iii) multilateral threats only or (iv) multilateral imposition. The differences-in-differences model helps us to estimate: (i) what is the audience benefit of the imposition of unilateral economic sanctions and (ii) what is the additional benefit, in terms of change in approval rating, of the imposition of multilateral sanctions – in comparison to imposition of unilateral sanctions.

The key assumption for the use of the differences-in-differences model is the parallel trend between the treatment and the control group. It indicates that in absence of treatment (multilateral efforts) the difference between the treatment and the control group is constant in the pre (threat only) and post (imposition) intervention periods (Angrist and Pischke 2009). In our case, it translates to an assumption that the US citizens would assess in the same way a decision to impose, in relation to a threat only, a multilateral sanction regime if it was a unilateral sanction. In other words, we assume that, for example, a US president would receive a three per cent approval rating increase for moving from a threat to imposition of sanction on Iran, regardless of the number of senders. Furthermore, we make a general assumption that, after controlling for time, with the president dummy, and for political and economic factors, the US population is comparable in the periods under study in their perception of the US involvement in the global affairs. We specify the econometric model in the following way:

$$\Delta Approval_{i,t} = \beta_0 + \beta_1 Mulilateral + \beta_2 Imposition + \beta_3 Multilateral * Imposition + \beta_4 Control\ variables + \epsilon$$

And the coefficients of the regression model have the following interpretation:

$\beta_0 = effect\ of\ a\ \boldsymbol{threat\ only\ of\ unilateral\ sanctions}\ on\ change\ in\ approval\ rating$
$\beta_1 = effect\ of\ a\ \boldsymbol{threat\ only\ of\ multilateral\ sanctions}\ on\ change\ in\ approval\ rating$
$\beta_2 = effect\ of\ an\ \boldsymbol{imposition\ of\ unilateral\ sanction}\ on\ change\ in\ approval\ rating$
$\beta_3 = \boldsymbol{difference\ between\ imposition\ of\ multilateral\ and\ unialteral\ sanctions}$

Studying the impact of economic sanctions on approval rating runs the risk of endogeneity. It may be that the presidents whose rating has slumped seeks to revert this trend by a decisive foreign policy action. Alternatively, a president with an increasingly strong position may feel sufficient comfort to pursue aggressive foreign policy. The advantage of the differences-in-differences methods is that it allows us to account for the endogeneity problem (Angrist and Pischke 2009). Our dependent variable indicates whether and by how much the presidential rating changes, on average, in the period after the imposition of economic sanctions, regardless of the previous motivation. Nevertheless, as a robustness test, we study how past changes in the approval rating (an average of past 3 months prior to the imposition) relate to the imposition of economic sanction. A positive (negative) and significant coefficient on any of the variables in the robustness test would indicate that a particular percentage rise (fall) in approval ratings stimulates the decision to invoke sanction or a threat of sanctions. If the robustness test proves true, our hypotheses on symbolic role of sanctions would be correct, however, the underlying mechanism would differ. It would be the past decline (rise) in popularity that motivate action of US presidents on economic sanctions, rather than the prospect of future gains, as specified in our theoretical model.

Results

Instrumental

The table below provides an overview of the results for the logit analysis of the instrumental role for cooperation on economic sanctions. We provide four estimates: (i) only the effects of

years at an institution, (ii) years at an institution and the past commitment of the primary sender, (iii) interaction term between years at an institution and the past commitment, but no control variables and (iv) the full model with the control variables. For all four models we provide the odds ratios.

Table 7 Regression results collective action

Variables	Odds ratio (1)	Odds ratio (2)	Odds ratio (3)	Odds ratio (4)
Multilateral				
Years at institution	1.042***	1.047***	1.082***	1.088**
	(0.0123)	(0.0146)	(0.0276)	(0.0364)
Mean past commitment				
Average		1.696	2.738	1.521
		(0.754)	(2.437)	(1.624)
Strong		4.047**	15.62***	12.40**
		(2.197)	(15.03)	(12.89)
Mean past commitment * Years at institution				
Mean past commitment (Average) * Years			0.973	0.972
			(0.0304)	(0.0388)
Mean past commitment (High) * Years			0.925**	0.914**
			(0.0351)	(0.0391)
Multi-issue sanction				11.43***
				(10.60)
High salience				0.816
				(0.448)
Target-sender joint institution				0.208***
				(0.118)
Threat of trade embargo				2.644**
				(1.298)
Threat of aid suspension				0.696
				(0.643)
Constant	0.972	0.480*	0.259*	0.498
	(0.296)	(0.214)	(0.181)	(0.529)
Observations	145	145	145	141
Control variables	NO	NO	NO	YES
Interaction effect	NO	NO	YES	YES

Robust Standard Errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

In the first model we observe that the variable *years at institution*, our proxy for repeated interaction, has an odds ratio that is significant and larger than one. Unfortunately, this is the only model in which we can provide a regular interpretation of the variables. In the remaining

three models an interaction term is present and, consequently, the coefficients of the constitutive terms cannot be interpreted as in an additive model. Hence, we focus on the interpretation of the marginal effects (Brambor, Clark, and Golder 2006).

In Figure 3, below, we can observe that years that the primary sender of a sanction regime has spent in the institution that coordinates the sanction regime have a positive and significant impact for senders that have *weak* or *average* past commitment rates. For sender with *strong* past commitment the results are not significant.

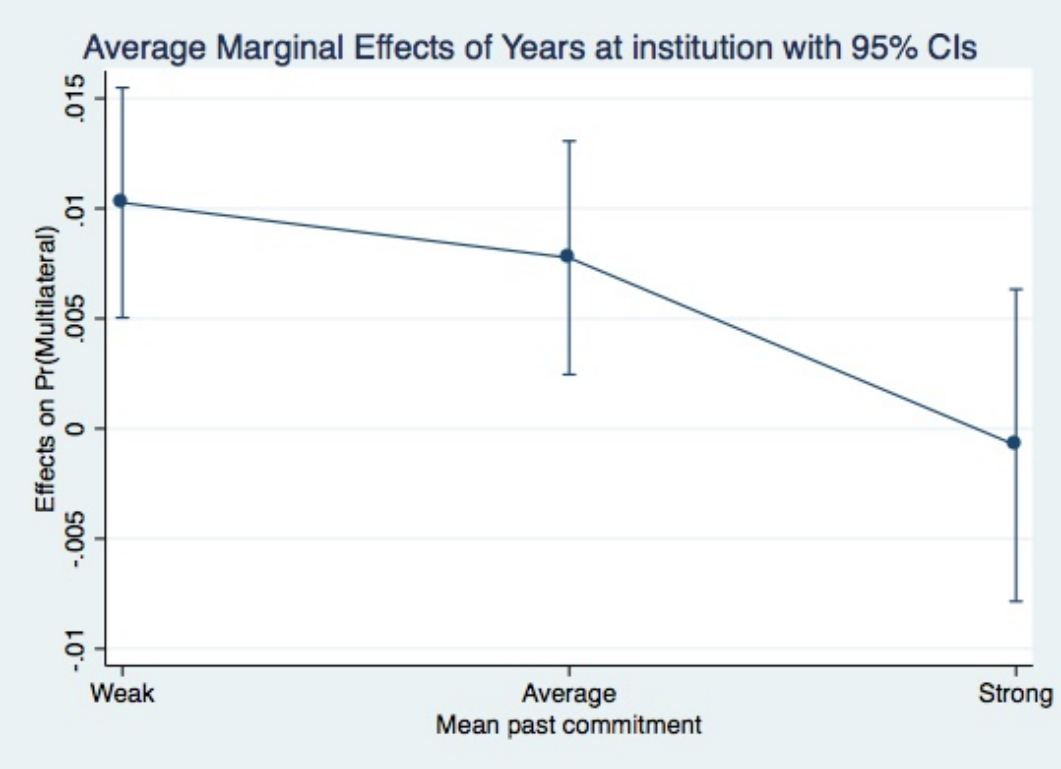

Figure 3 Average Marginal Effects of Years at institution on probability of multilateral sanction for different levels of mean past commitment

When we separate each of the reputation categories, we can observe two dynamics. First, actors that have shown *weak* or *average* past commitment to economic sanctions have low probabilities of finding allies for a multilateral sanction regime in the institution that coordinates the coercive policy. Consequently, the primary senders with poor reputation and

short interaction-span are more likely to issue threats only or threats followed by unilateral sanctions.

However, we observer that with an increase in the exposure of the primary senders with poor reputation to the coordinating institution the probability of multilateral sanctions increases too. This would suggest that general reputation, captured by *mean past commitment*, matters most in instances of, relatively, brief repeated interactions. It may be that actors over time develop an alternative reputation that is only observable within the institution that coordinates the sanctions regime.

Second, we observe that high levels of past commitment to sanction regimes of the primary sender are associated with high probabilities of a multilateral sanction regime within the organisation that is coordinating the coercive action. This result appears to hold, regardless of the number of years spent at an institution by the primary sender. Strong reputation appears to stimulate cooperation, despite infrequency interactions. Scholars have established that reputation matters for the relation between the sender and the target of economic sanctions (Peterson 2013), but not that it also affects cooperation between the senders. [14]

[14] For post-estimation diagnostics please see the appendix.

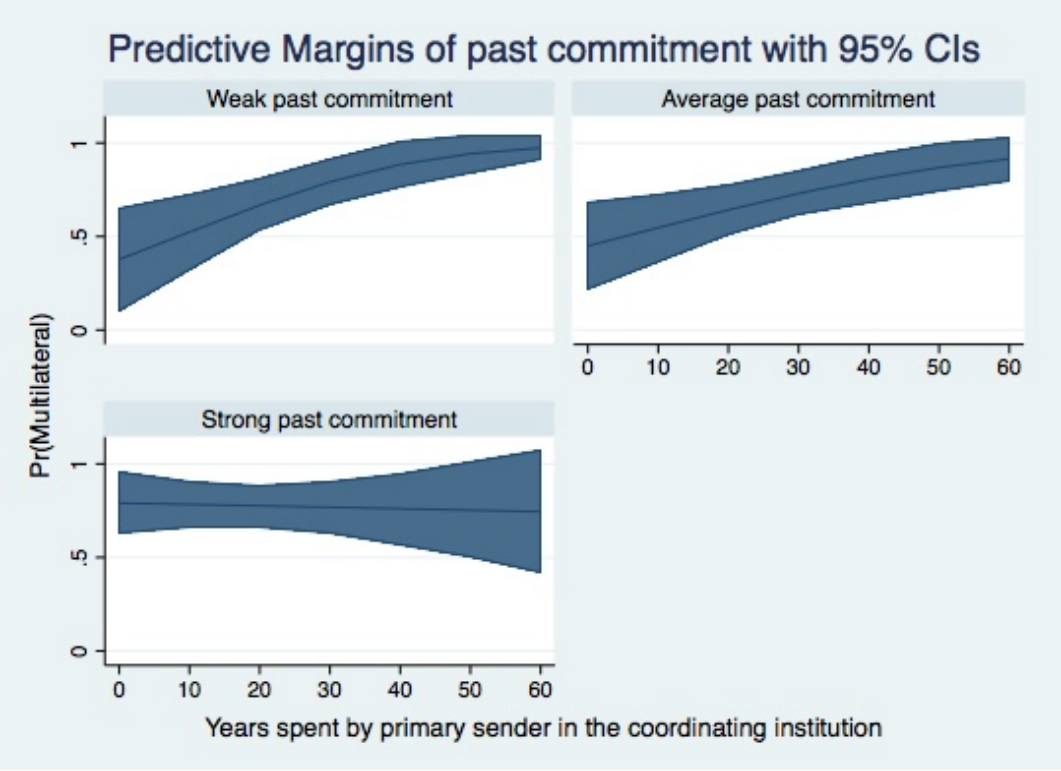

Figure 4 Predictive margins for each past commitment level

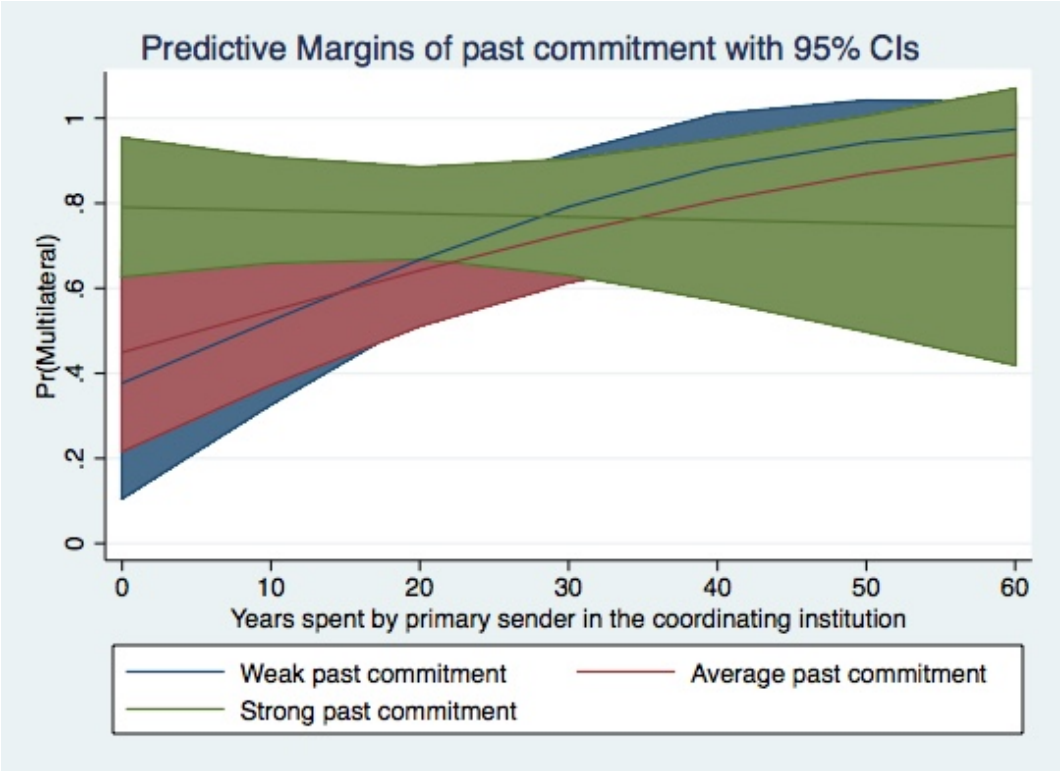

Figure 5 Predictive margins for all past commitment levels combined

Data indicates that for formal institutional settings repeated interactions positively stimulate the probability of multilateral economic sanctions. We also observe that poor reputation

decreases the prospects for cooperation, however, after longer periods of membership in the coordinating institutions the effects of reputation fade away. In addition, for states that have a solid reputation the prospects of cooperation are very high, regardless of the numbers of years spent at an institution – reputation is sufficient to drive cooperation. Finally, it appears that members of an institution, over time, generate an alternative reputation within the organisation.

These finding are consistent with the rational choice institutionalism expectations. A change in the structure of the game, for example from non-repeated to repeated interactions, leads to a new equilibrium, which is manifested with a new institutional setting, in our case a move from unilateral to multilateral economic sanctions (Hall and Taylor 1996). As each potential sanction regime represents a single institution, but the parameters (repeated interaction and reputation) are systemic, above finding are consistent with the observed increase in the number of multilateral economic sanctions (Morgan, Bapat, and Kobayashi 2014). Moreover, the strong increase in multilateral sanctions after the end of the Cold war and, more notably, in the last year is consistent with the fact that after the collapse of the Soviet Bloc new members joined international organisation (e.g. the Baltic Republics and the NATO) or old members have sent representative of a new elite with a dramatically different worldview (e.g. Central European countries and the UN). Time was needed to establish a pattern of repeated interaction and a reputation, in order to allow for more frequent multilateral action.

The results also relate to the broader discussion in political science on the impact of international organisations on states decision-making processes. Keohane and Martin (1995) argued that institutions “do matter” and the realist assessment that “institutions have no

independent effect on state behaviour" is inaccurate. Keohane and Martin indicate that scholars following the liberal institutionalism programme ought to focus on *when* organisations affect the state behaviour, as the fact that institutions play an independent role has been already established. This research speaks to this wish, by indicating the condition for cooperation on economic sanctions for states embedded in a formal institutional setting.

There is, however, a discrepancy between the beliefs of the liberal institutionalism scholars and this article. Keohane and Martin (1995) argue that "in a world politics constrained by state power and divergent interests, and unlikely to experience effective hierarchical governance, international institutions operating on the basis of reciprocity will be components of any lasting peace". Scholars of liberal institutionalism have overlooked the prospect that the solution to the collective-action problem can also lead to more frequent multilateral coercion. It is not lack of conflict *per se* that international institutions strive for, but more effective cooperation – and this is not synonymous to peace.

Symbolic

Below, we present the results for the assessment of the symbolic role of cooperation on economic sanctions. Model (1) only looks at the key differences-in-differences variables, Model (2) includes the political and economic control variables and Model (3) adds also the economic sanction control variables. Adding the covariates substantially increases the explanatory power of our model.

The coefficient for β_0, which is the *constant* in our regression, indicates the effect of a threat only of unilateral economic sanctions on the change in the average approval for the three months following the foreign policy action. It is (highly) significant only for models (2) and (3)

and indicates a negative effect of, respectively, 4.7 and 3.9 per cent on the approval for a US president that issues threats of economic sanctions only. The β_1 coefficient, represented by *multilateral* in our regression, measures the effect of threats only of multilateral sanctions on changes in popularity – and it is not significant for any of the models. The β_2 coefficient, *imposition* in our regression, indicates the effects of imposition of unilateral sanctions on the approval rating – it is significant and positive, with an effect of roughly 2 per cent on the approval rating, across all three models. Finally, the variable of key interest β_3 that indicates the additional benefits of imposition of multilateral sanctions in relation to unilateral sanctions, indicated by *multilateral * imposition* variable in the regression, is not significant in any of the three models.

Table 8 Differences in differences result

Variables	Model (1)	Model (2)	Model (3)
Multilateral	0.545	0.373	0.372
	(1.651)	(1.734)	(1.779)
Imposition	1.920**	2.163**	2.323**
	(0.887)	(0.890)	(0.896)
Multilateral * Imposition	-2.623	-2.525	-2.410
	(1.947)	(2.033)	(2.027)
Democrat		5.204***	4.534**
		(1.891)	(1.924)
President		–	–
Presidency year		–	–
Change in unemployment (lag)		-1.289	-1.361
		(1.490)	(1.487)
Change in inflation (lag)		2.450*	2.306*
		(1.246)	(1.245)
Issue salience			0.237
			(0.900)
Threat of trade embargo			-1.345
			(0.880)
Constant	-0.620	-4.706***	-3.880**
	(0.538)	(1.487)	(1.626)
Observations	186	166	166
R-squared	0.030	0.213	0.229
Control variables	NO	YES	YES

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

We also study the effects of the past changes in the approval rating on the decision to issue a threat of economic sanctions or impose the measures, either in a unilateral or a multilateral fashion. We may expect that leaders that either are losing support seek foreign policy actions as a tool to recover popularity or, alternatively, that leaders that experience a popularity surge may be less concerned about the use of coercive foreign policy measures.

In the next model we also apply the differences and differences regression and the same interpretation of the coefficients applies. The depended variable is the difference between the approval rate in the month in which the sanctions were issued and the average approval rate of the three months prior to the issue of the sanction. The independent variables and control variables are as in the previous analysis. We see no statistically significant relation between the depended and independent variables. Thus, the expectation that the relation between imposition of economic sanction is symbolic, but also backward-looking, does not appear to hold.

Table 9 Past changes in approval rating and economic sanctions

Variables	Model (1)
Multilateral	1.187
	(1.879)
Imposition	0.0470
	(0.925)
Multilateral * Imposition	-1.672
	(2.120)
Constant	0.627
	(1.678)
Observations	176
R-squared	0.175
Control variables	YES

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

In respect to robustness tests, we have conducted the analysis for both the main model and "backward-looking" model on three alternative combinations of lags: (i) one lag on the

dependent variable and three lags on the independent variables, (ii) three lags on the dependent variable and one lag on the independent variable and (iii) one lag both on the dependent and independent variables. The results show similar coefficient and the same level of significance, however, the model with three lags both on the dependent and independent variables has the highest joint significance and the highest R squared.[15]

Based on the differences-and-differences analysis, we indicate that imposition of unilateral economic sanctions seems to produce a domestic audience effect, regardless of the outcome of the sanction episode. The data indicates that a US president that issues unilateral economic sanctions may expect an average boost of two per cent in the approval rating in the period of three months following the introduction of economic sanctions. This finding supports the hypothesis, that the use of economic sanctions servers a domestic-benefit purpose and is in line with the results of Whang (2011).

Nevertheless, we find no evidence that multilateral economic sanctions give an additional domestic audience benefit. We have to, thus, reject this hypothesis – we cannot indicate that domestic politics are the mechanism that explains the variation in the use multilateral economic sanctions. Consequently, multilateral sanctions must have value other than symbolic to the senders.

[15] For post-estimation graphical diagnostics please see the appendix.

In the figure below, we compare the kernel density of the change in the approval rating for unilateral and multilateral economic sanctions. For multilateral sanctions to provide an additional domestic audience benefit we should observe multilateral sanctions to have a longer right-side tail than unilateral sanctions and the red line to be shifted below and to the right from the blue line. In our data they overlap, however.

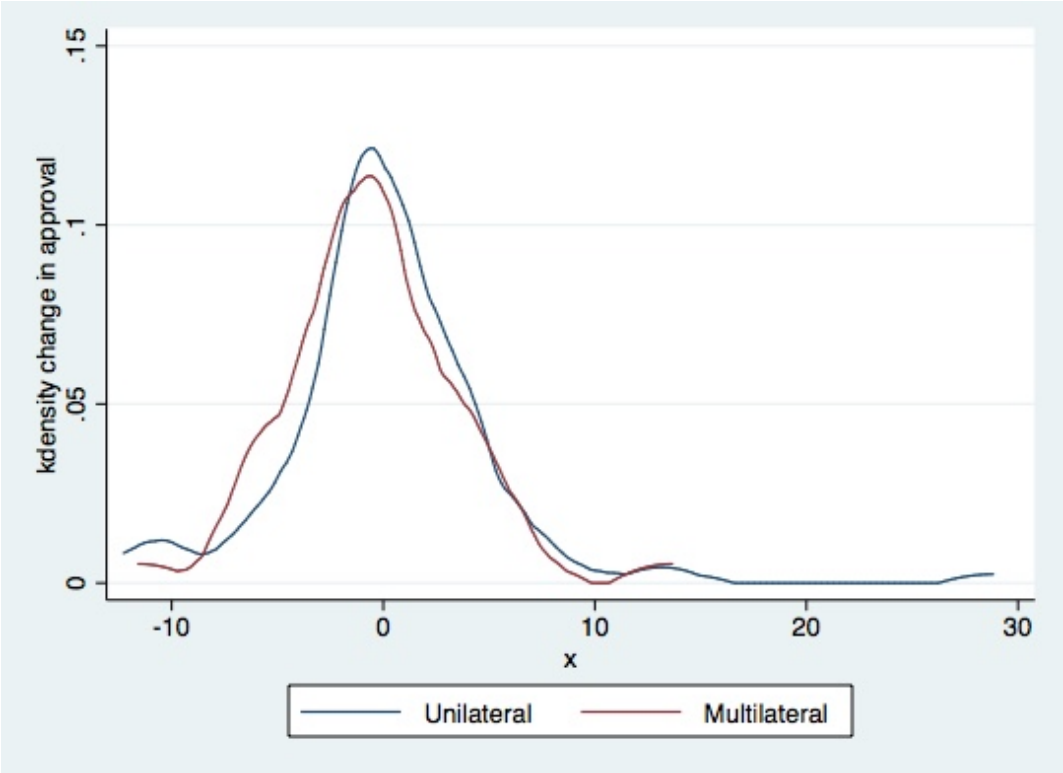

Figure 6 Kernel density of change in approval rating by type of sanctions (unilateral vs multilateral)

Finally, we provide a novel finding that the threat of unilateral economic sanctions, not followed by imposition, has a negative domestic audience effect; twice as strong as the positive effect of imposition of economic sanctions. This broadly support the domestic politics argument – if voters appreciate action, they should also be concerned about empty threats. This finding provides support to assumptions about the domestic audience reputation cost for issuing an empty threat (Peterson 2013).

The figure below provides the kernel density of the change in approval rate for threats only. We can observe that red line, representing imposed sanctions, has both a longer tail on the right-side and is shifted below the threats-only line, in blue.

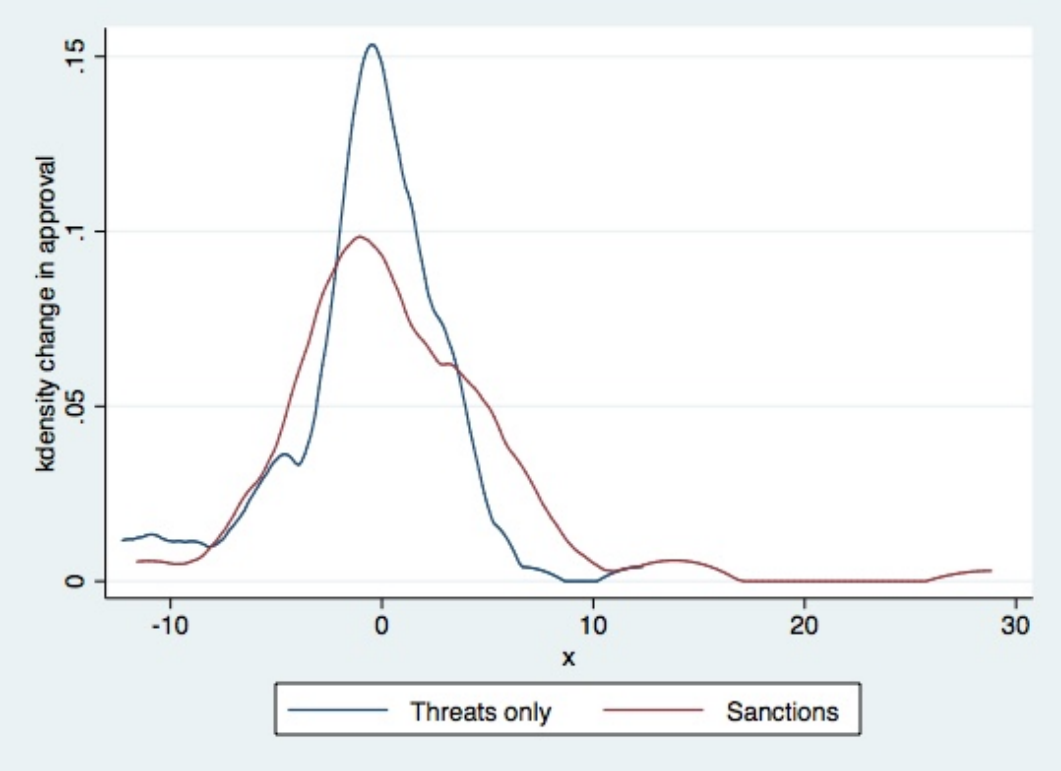

Figure 7 Kernel density of changes in approval rating by type of sanctions (threat only vs imposition

Conclusion

The motivation for this article was the question why do we see cooperation on economic sanctions. We have developed two possible explanatory mechanism for multilateral economics sanctions. First, instrumental, in which multilateral sanctions are a tool to reach a foreign policy objective and cooperation increase the chances of success, but there are individual-level incentives to bust cooperation. Second symbolic, where sanctions are expected to produce a domestic audience benefit for the political leader and multilateral sanctions are valued higher by the voters than unilateral economic coercion.

The empirical test, principally based on the TIES data set, yield support for the first explanatory mechanism – instrumental role of multilateral sanctions. We find that for the primary sender (i) years spent at international organisations and (ii) reputation on dedication to previous sanction regimes are key determinants for probability of cooperation. We also find that after a period of time spent at an international organisation states with a reputation of sanction-busting are more likely to find partners for a multilateral economic coercion. This would suggest that states construct an alternative reputation within the international organisation. Moreover, we observe that states with solid reputation are likely to find partners for cooperation regardless of the time factor.

The findings of this paper contribute to the scholarship on (increasingly popular) economic coercion, building on previous work of Lisa Martin (1992) on cooperation on economic sanctions. More broadly, this research relates to the work of Keohane and Martin (1995) on liberal institutionalism, in which they ask under what circumstances international organisation *do* stimulate cooperation. Paradoxically, more cooperation between states may not only be a source of peace but also lead to more effective, and more damaging (Neuenkirch and Neumeier 2016), forms of coercion in the international order.

Reference

Afesorgbor, Sylvanus Kwaku, and Renuka Mahadevan. 2016. "The Impact of Economic Sanctions on Income Inequality of Target States." *World Development* 83:1–11. https://doi.org/10.1016/j.worlddev.2016.03.015.

Angrist, Joshua D, and Jörn-Steffen Pischke. 2009. *Mostly Harmless Econometrics*. Princeton, N.J.: Princeton University Press.

Baldwin, David A. 2000. "The Sanctions Debate and the Logic of Choice." *International Security* 24 (3):80–107. https://doi.org/10.1162/016228899560248.

Baldwin, David A. 1985. *Economic Statecraft*. Princeton, N.J.: Princeton University Press.

Bapat, Navin A., and Bo Ram Kwon. 2015. "When Are Sanctions Effective? A Bargaining and Enforcement Framework." *International Organization* 69 (01):131–62. https://doi.org/10.1017/S0020818314000290.

Bapat, Navin, and Clifton Morgan. 2009. “Multilateral versus Unilateral Sanctions Reconsidered: A Test Using New Data.” *International Studies Quarterly* 53 (4):1075–94. https://doi.org/10.1111/j.1468-2478.2009.00569.x.

Barry, Colin M., and Katja B. Kleinberg. 2015. “Profiting from Sanctions: Economic Coercion and US Foreign Direct Investment in Third-Party States.” *International Organization* 69 (04):881–912. https://doi.org/10.1017/S002081831500017X.

Bergeijk, Peter A G van. 1994. *Economic Diplomacy, Trade, and Commercial Policy*. Brookfield: Edward Elgar.

Bonetti, Shane. 1997. “The Analysis and Interpretation of Economic Sanctions.” *Journal of Economic Studies* 24 (5):324–48.

Brambor, Thomas, William Roberts Clark, and Matt Golder. 2006. “Understanding Interaction Models: Improving Empirical Analyses.” *Political Analysis* 14 (1):63–82. https://doi.org/10.1093/pan/mpi014.

Buuren, Stef Van. 2007. “Multiple Imputation of Discrete and Continuous.” *Statistical Methods in Medical Research* 16:219–42.

Davis, Christina L. 2004. “International Institutions and Issue Linkage: Building Support for Agricultural Trade Liberalization.” *American Political Science Review* 98 (1):153–69. https://doi.org/10.1017/S0003055404001066.

Doxey, Margaret. 1980. *Economic Sanctions and International Enforcement*. 2nd ed. London: Palgrave Macmillan. https://doi.org/10.1007/978-1-349-04335-4.

Drezner, Daniel. 1999. *The Sanctions Paradox: Economic Statecraft and International Relations*. Cambridge: Cambridge University Press.

———. 2000. “Bargaining, Enforcement, and Multilateral Sanctions: When Is Cooperation Counterproductive?” *International Organization* 54 (1):73–102. https://doi.org/10.1162/002081800551127.

———. 2003. “The Hidden Hand of Economic Coercion.” *International Organization* 57 (03). https://doi.org/10.1017/S0020818303573052.

Early, Bryan R. 2012. “Alliances and Trade with Sanctioned States: A Study of U.S. Economic Sanctions, 1950-2000.” *Journal of Conflict Resolution* 56 (3):547–72. https://doi.org/10.1177/0022002711420961.

Galtung, Johan. 1967. “On the Effects of International Economic Sanctions, With Examples from the Case of Rhodesia.” *World Politics* 19 (03). Cambridge University Press:378–416. https://doi.org/10.2307/2009785.

Gilpin, Robert. 1984. “Structural Constraints on Economic Leverage: Market-Type Systems.” In *Strategic Dimensions of Economic Behavour*, edited by Gordon McCormick and Richard Bissell, 105–28. New York: Praeger.

Giumelli, Francesco. 2017. “The Redistributive Impact of Restrictive Measures on EU Members: Winners and Losers from Imposing Sanctions on Russia.” *Journal of Common Market Studies* 55 (5):1062–80. https://doi.org/10.1111/jcms.12548.

Hall, Peter A., and Rosemary C. R. Taylor. 1996. “Political Science and the Three New Institutionalisms.” *Political Studies* 44 (5):936–57.

Hilbe, C., M. A. Nowak, and K. Sigmund. 2013. “Evolution of Extortion in Iterated Prisoner’s Dilemma Games.” *Proceedings of the National Academy of Sciences* 110 (17):6913–18. https://doi.org/10.1073/pnas.1214834110.

Holzinger, Katharina. 2003. “The Problems of Collective Action: A New Approach.” 2003/2. Preprints Aus Der Max-Planck-Projektgruppe Recht Der Gemeinschaftsgüter. Bonn. http://hdl.handle.net/10419/85085.

Hufbauer, Gary Clyde, Jeffrey J Schott, Kimberly Ann Elliott, and Barbara Oegg. 2007. *Economic Sanctions Reconsidered , 3rd Edition*. *Peterson Institute*.
Keohane, Robert O., and Lisa L. Martin. 1995. "The Promise of Institutionalist Theory." *International Security* 20 (1):39–51. https://doi.org/10.2307/2539214.
Lektzian, David, and Patrick M. Regan. 2016. "Economic Sanctions, Military Interventions, and Civil Conflict Outcomes." *Journal of Peace Research* 53 (4):554–68. https://doi.org/10.1177/0022343316638714.
Martin, Lisa, L. 1993. "Credibility, Costs, and Institutions: Cooperation on Economic Sanctions." *World Politics* 45 (3):406–32.
Martin, Lisa L. 1992. *Coercive Cooperation: Explaining Multilateral Economic Sanctions*. Princeton: Princeton University Press.
McCormack, Daniel, and Henry Pascoe. 2017. "Sanctions and Preventive War." *Journal of Conflict Resolution* 61 (8):1711–39. https://doi.org/10.1177/0022002715620471.
McLean, Elena V, and Taehee Whang. 2014. "Designing Foreign Policy." *Journal of Peace Research* 51 (5):589–602. https://doi.org/10.1177/0022343314533811.
Miers, Anne C., and T. Clifton Morgan. 2002. "Multilateral Sanctions and Foreign Policy Success: Can Too Many Cooks Spoil the Broth?" *International Interactions* 28 (2):117–36. https://doi.org/10.1080/03050620212099.
Morgan, T. Clifton, Navin Bapat, and Yoshiharu Kobayashi. 2014. "Threat and Imposition of Economic Sanctions 1945–2005: Updating the TIES Dataset." *Conflict Management and Peace Science* 31 (5):541–58. https://doi.org/10.1177/0738894213520379.
Morgan, T Clifton, and Valerie L Schwebach. 1997. "Fools Suffer Gladly: The Use of Economic Sanctions in International Crises." *International Studies Quarterly International Studies Quarterly* 41 (41):27–50. https://doi.org/10.1111/0020-8833.00032.
Neuenkirch, Matthias, and Florian Neumeier. 2016. "The Impact of US Sanctions on Poverty." *Journal of Development Economics* 121:110–19. https://doi.org/10.1016/j.jdeveco.2016.03.005.
North, Douglass C. 1993. "Institutions and Credible Commitment." *Journal of Institutional and Theoretical Economics* 149 (1):11–23.
Nowak, M. A., and K. Sigmund. 2005. "Evolution of Indirect Reciprocity." *Nature* 437. https://doi.org/10.1038/nature04131.
Nowak, Martin A. 2006. "Five Rules for the Evolution of Cooperation." *Science*. https://doi.org/10.1126/science.1133755.
Oye, Kenneth A. 1986. "Explaining Cooperation Under Anarchy: Hypotheses and Strategies." In *Cooperation Under Anarchy*, edited by Kenneth A Oye, 260.
Pape, Robert A. 1997. "Why Economic Sanctions Do Not Work." *International Security* 22 (2):90–136. https://doi.org/10.1162/isec.22.2.90.
Peterson, Timothy M. 2013. "Sending a Message: The Reputation Effect of US Sanction Threat Behavior." *International Studies Quarterly* 57 (4):672–82. https://doi.org/10.1111/isqu.12017.
Raghunathan, Trivellore. 2015. *Missing Data Analysis in Practice*. Boca Raton, FL: Chapman and Hall/CRC.
Suzuki, Shinsuke, and Eizo Akiyama. 2007. "Evolution of Indirect Reciprocity in Groups of Various Sizes and Comparison with Direct Reciprocity." *Journal of Theoretical Biology* 245 (3). Academic Press:539–52. https://doi.org/10.1016/J.JTBI.2006.11.002.
Whang, Taehee. 2011. "Playing to the Home Crowd? Symbolic Use of Economic Sanctions in the United States." *International Studies Quarterly* 55 (3):787–801.

https://doi.org/10.1111/j.1468-2478.2011.00668.x.
Whang, Taehee, Elena V. Mclean, and Douglas W. Kuberski. 2013. "Coercion, Information, and the Success of Sanction Threats." *American Journal of Political Science* 57 (1):65–81. https://doi.org/10.1111/j.1540-5907.2012.00629.x.

Appendix

1. Proofs of lemmas

Direct reciprocity in a two-players prisoners' dilemma

For a repeated game in which both players cooperate we obtain:

$$U_{i,j,cooperate} = b - c * \sum_{t=o}^{\infty} w^t = b - c * \frac{1}{(1-w)} = \frac{b-c}{(1-w)}$$

An w is probability of another encounter that ranges from 0 and 1. For both players defect, we obtain:

$$U_{i,j,defect} = 0 * \sum_{t=o}^{\infty} w^t = 0 * \frac{1}{(1-w)} = 0$$

And for a tit-for-tat setting in which one player cooperates in the first round and defects afterwards and the other defects from the first round:

$$U_{i\,,defect} = b * w^0 + 0 * \sum_{t=T+1}^{\infty} \delta^t = b + 0 * \frac{w}{(1-w)} = b$$

$$U_{j,cooperate} = -c * w^0 + 0 * \sum_{t=T+1}^{\infty} w^t = -c + 0 * \frac{w}{(1-w)} = -c$$

Based on above equation, we can derive:

$$\frac{b-c}{(1-w)} \geq b \;\Rightarrow w \geq \frac{c}{b}$$

Thus, cooperation occurs only if the ration cost to benefits is higher than the probability of another encounter.

Indirect reciprocity in a multiplayer prisoners' dilemma

Following the approach from the previous lemma, but replacing *w* with *q*:

$$\frac{b-c}{(1-q)} \geq b \;\Rightarrow q \geq \frac{c}{b}$$

Only when the probability *q* of knowing another's players past actions is greater the ratio of costs and benefits, will cooperation occur.

2. Diagnostics for the instrumental role of cooperation on economic sanctions

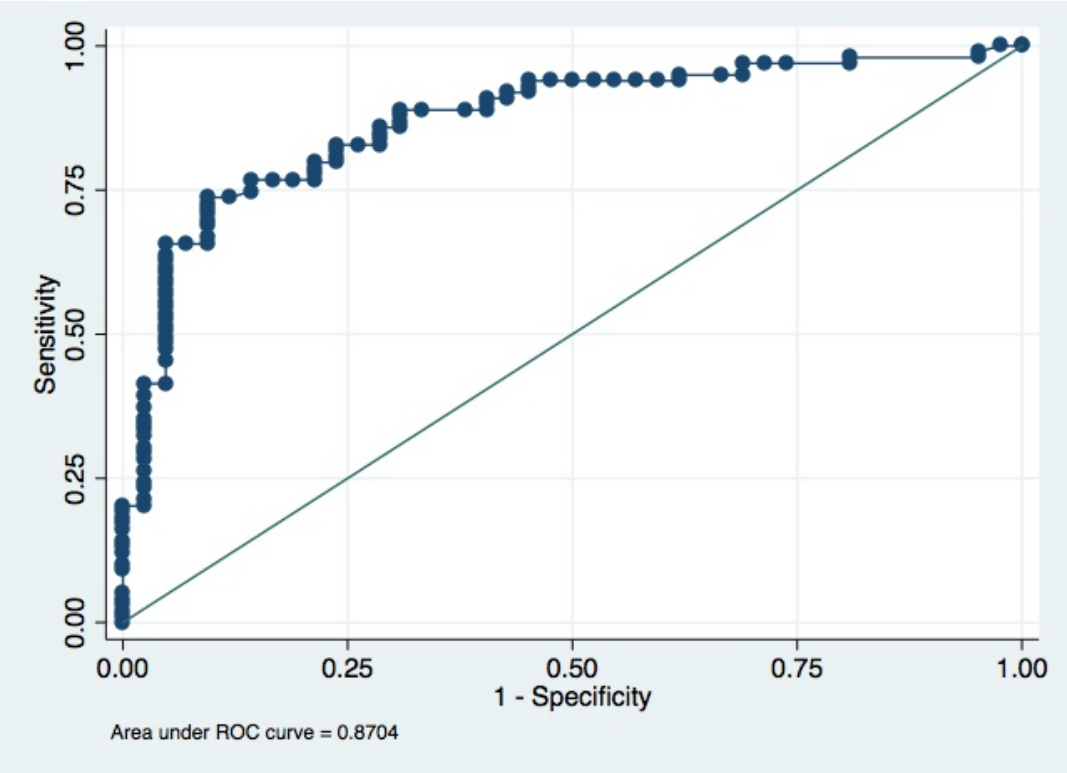

Figure 8 ROC

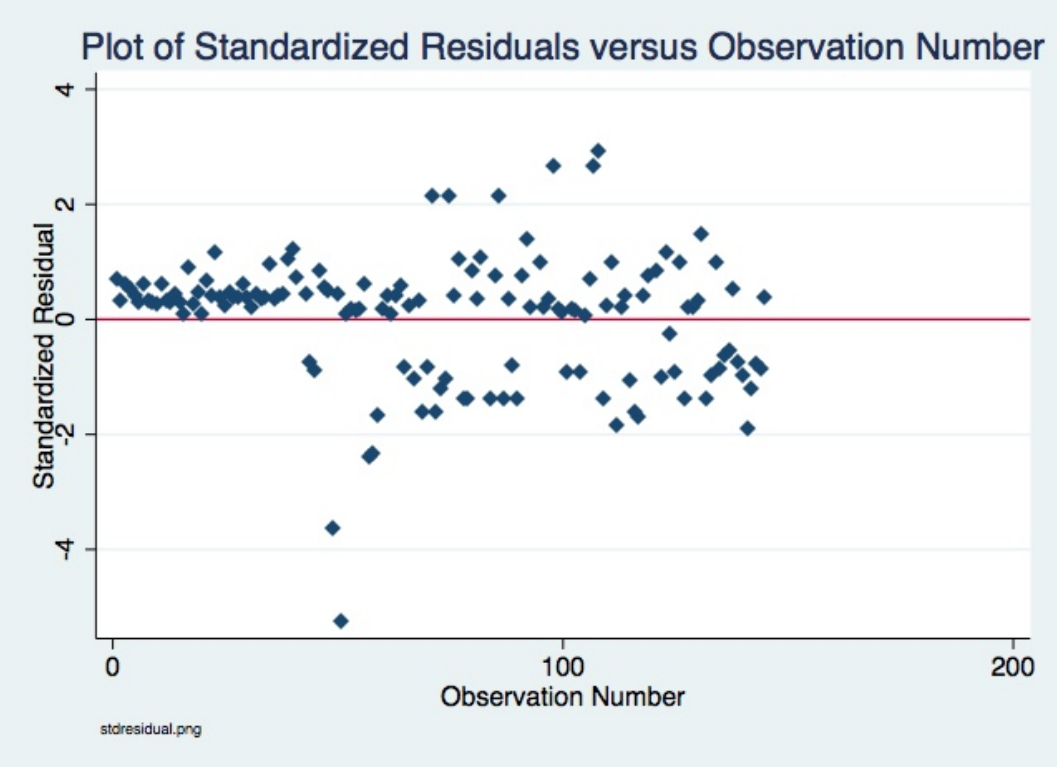

Figure 9 Standardised residuals

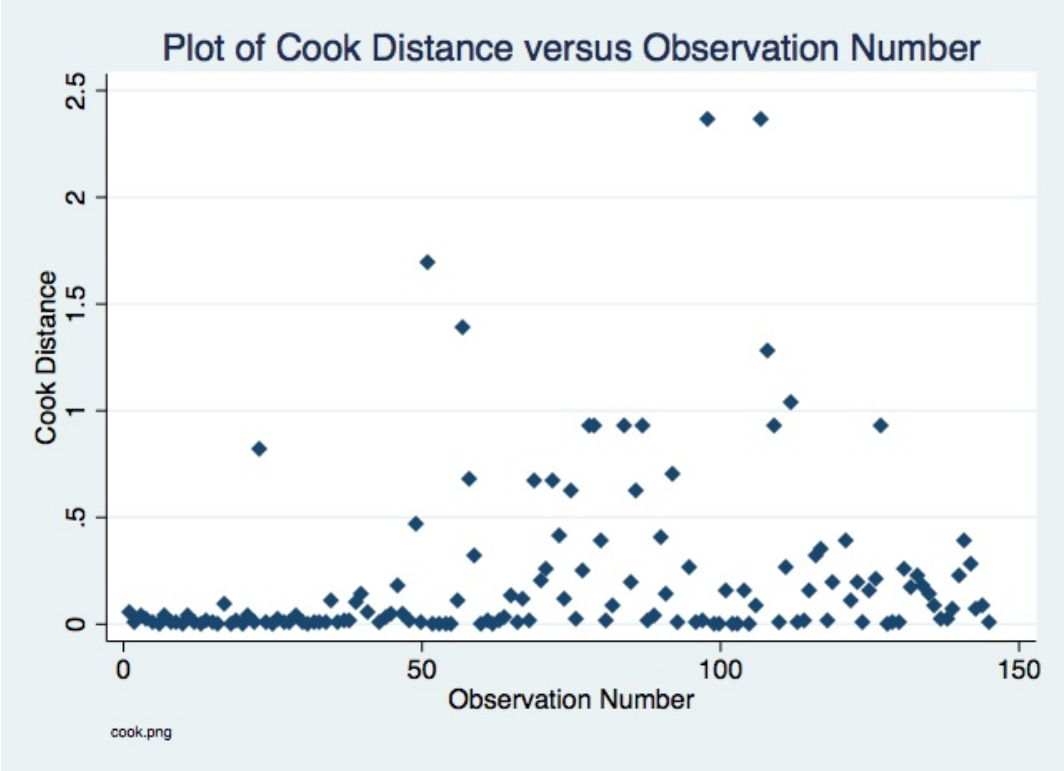

Figure 10 Cook distance

3. Diagnostics for the symbolic role of cooperation on economic sanctions

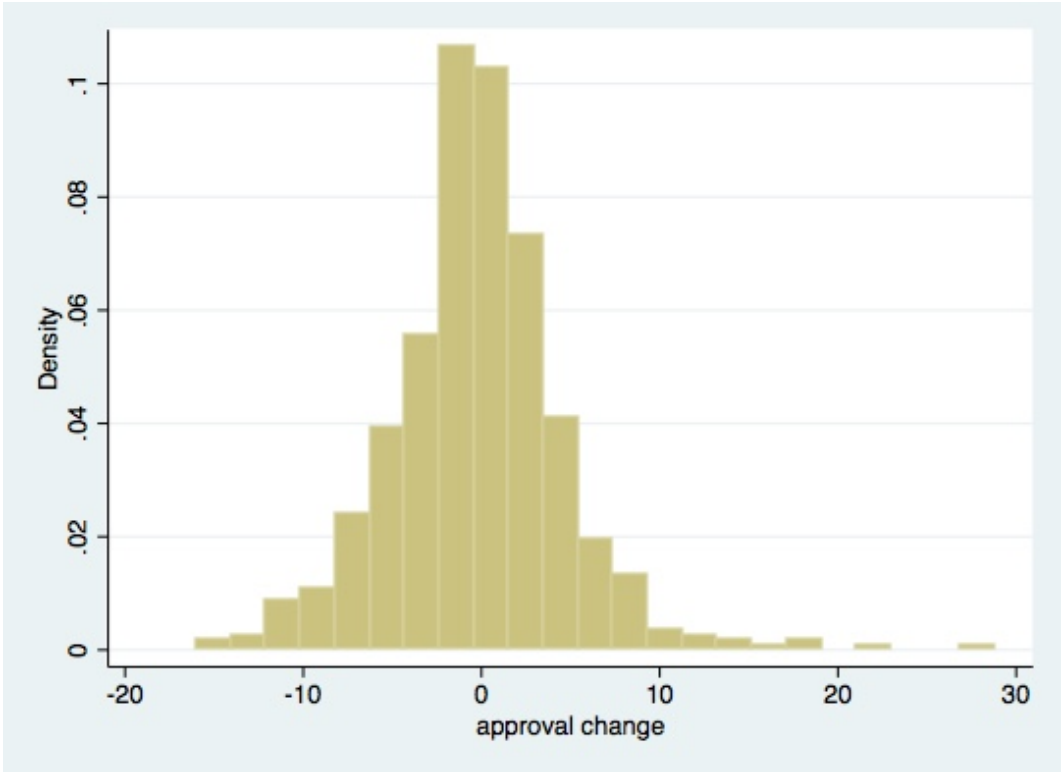

Figure 11 Histogram of the distribution in change of the approval rating 3 lags (dependent variable)

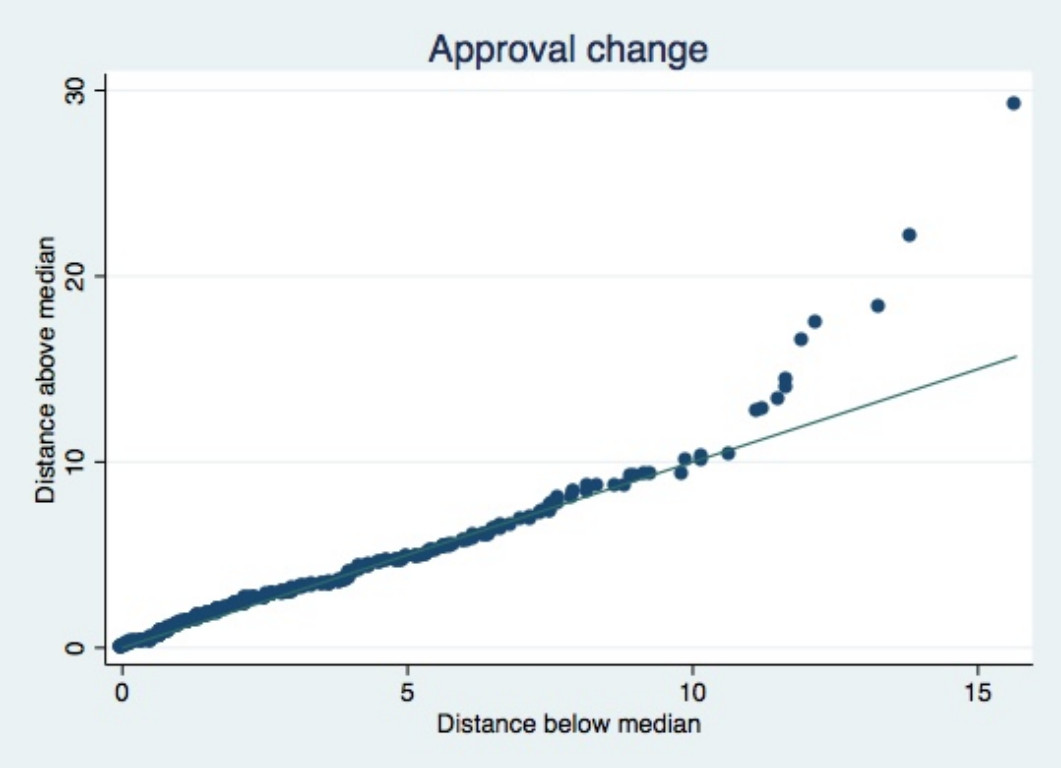

Figure 12 Symplot of change in approval rating 3 lags (dependent variable)

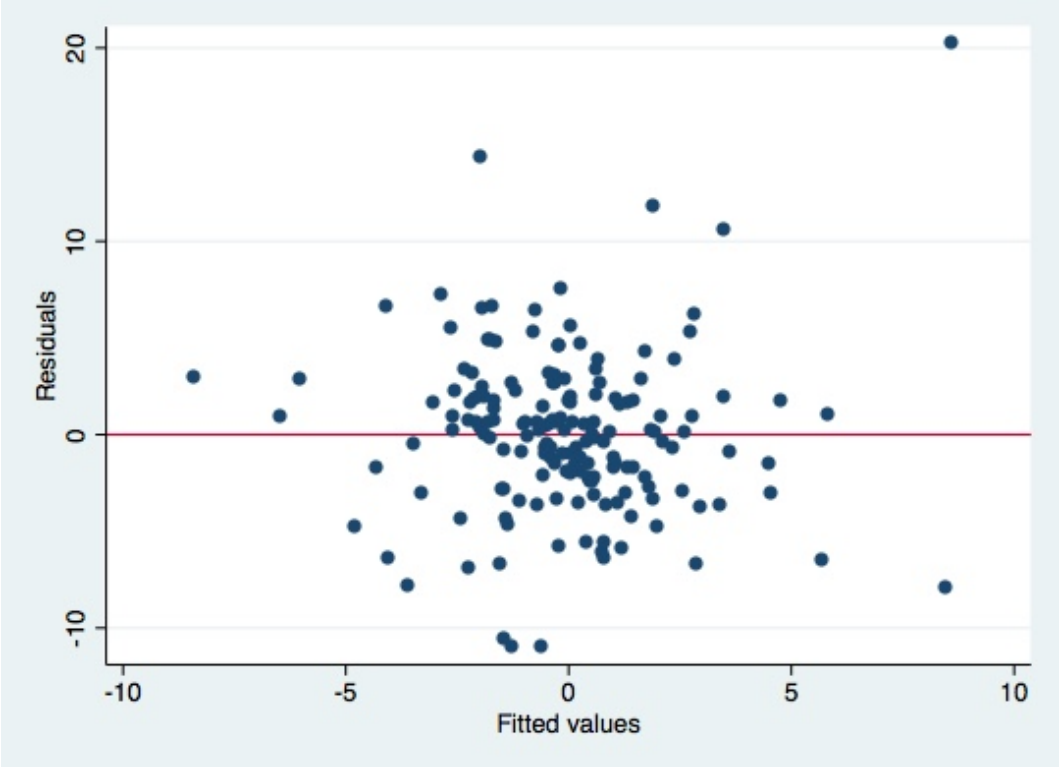

Figure 13 Plot of residuals against the fitted values

4. List of tables

5. List of figures