Trade Exposure and Impact of Economic Sanctions on Civil Liberties

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September 25, 2018

Abstract

Economic sanctions are a major policy tool for many governments, especially the United States, but they have the potential to cause violent reactions from the targeted governments. This paper shows that the negative relationship observed between sanctions and civil liberties in the target country are not driven by the presence of the sanctions but how exposed the target country's trade was to the sanctioning countries using a fixed effect panel regression covering 160 countries from 1972-2005. In particular it is import exposure to the sanctioning countries that drives this negative relationship, with ever percentage point of import exposure reducing the FHI freedom score by 0.165 points. This implies that restricting imports to a country that promotes an oppressive response by the targeted government.

1 Introduction

Economic sanctions have been a staple of "soft power" from the end of World War II to today as a way to induce behavioral changes from the targeted government without engaging in direct warfare.(Hufbauer et al., 2007) A modern example are the ongoing sanction regimes against Iran and North Korea over their nuclear programs. These two cases also illustrate the importance how exposed a target country's trade is to those who are attempting to sanction it. The United States and the United Nations Security Council began sanctioning North Korea after its first nuclear test in 2006, targeting vital industries and eventually expanding to cover 90% of North Korea's bilateral trade flows. However the UN and US administrations have stressed the importance that China, which also accounts for 90% of North Korea's trade flows, must comply with these sanctions for them to have any effect.(Griffiths et al., 2009; Klein, 2018; Staff and Agencies, 2017) In effect, North Korea's trade is not exposed to the world, but only to China and so they are the arbiters of success or failure in terms of economic sanctions.

The nuclear sanctions against Iran also began in 2006, and eventually lead to the 2015 Joint Comprehensive Plan of Action, or the Iran Nuclear Deal, and required the combined efforts of China, France, Russia, the United Kingdom, the United States and the European Union to put pressure on the Iranian economy. The unilateral withdrawal of the United States from the agreement is causing short term disruptions, but without the cooperation of Europe and other major Iranian trading partners it is unclear how effective the new sanction regime under Trump will be.(Gambrell, 2018; Herszenhorn, 2018) Since Iran's trade is only exposed to the United States through the international oil trade, there is a limited impact that the United States can have on its own.

This paper uses this insight to investigate the relationship between sanctions and their potential for disruption and civil liberty outcomes in the target country. The potential disruption caused by a sanction will be measured here by trade exposure, which is defined as imports or exports between the targeted country and sanctioning country in the years leading up to the sanction, as a percent of the target country's GDP. I then include this measure in a regression analysis that allows me to differentiate whether it is the imposition of a sanction or the prior trade relationship between the sanctioning country and target state that matters for freedoms and civil liberty outcomes in the targeted state. It contributes to the literature

by developing a numeric estimate of the potential damage of a sanction, whereas previous studies have only examined sanctions as dummy variables with intensities based on the type of sanction being imposed, not the actual damage it might cause. This will allow me to differentiate between the signal sent by the type of sanction being imposed versus the signal sent by the potential disruption caused by the sanction event and evaluate which one is more significant.

I start with regressions omitting trade exposure, and find results that match prior estimates of the effect of sanctions on civil liberties as measured by the Freedom House Index, measures of extra-judicial government violence and democracy in sign and magnitude. Once trade exposure is included, the significance of the sanction dummy disappears and the relationship between sanctions and civil liberties is solely due to how exposed the target's trade was to the countries imposing sanctions upon it. During a sanction, an increase in trade exposure of 1 percentage point of the target country's GDP is associated with a decrease in that country's Freedom House Index Freedom score of 0.0625 points.

Trade exposure is then disaggregated into import exposure and export exposure. I find that exports being exposed, or exporting to countries which sanction you, does not affect civil liberties in the target country in a statistically or economically significant way. However, import exposure has a strong, negative relationship with civil liberties. During a sanction, a 1 percentage point increase in import exposure as a percent of the target country's GDP leads to a 0.165 point decrease in the Freedom score for that country This effect is significant at the 1% level, and indicates that there is a strong negative impact of civil liberties when countries cease the flow of goods to a target nation, in comparison to ceasing purchases from that nation. This result is robust to the disaggregation of sanctions into multiple categories categories.

Then I analyze the impact of sanction threats on civil liberties using the same regression format. The pattern of import exposure mattering more than export exposure is continued, with a coefficient estimate of -0.103 which is significant at the 1% level. However when accounting for sanction threats export exposure also becomes significant, although it has a much smaller coefficient of -0.0273 and is significant at the 5% level. There is also an interesting interaction with the threat dummy variable having a positive coefficient and import threat exposure having a negative coefficient. Although statistically insignificant, they have p-values below 0.15 and are jointly significant at the 1% level, but are too imprecisely

measured to speak confidently about the magnitude of either.

2 Literature: Sanctions and Civil Liberties

There has always been a concern that the collateral damage caused by sanctions might outweigh their usefulness as political tools. In addition to the direct hardship that cutting trade to a country will impose upon its citizens, there is also a concern that the targeted government might react harshly and crack down on its own population to maintain control rather than acquiesce to the sanctioning countries demands. Wood (2008) finds that both US and UN imposed sanctions are associated with an increase in government violence toward citizens, with harsher sanctions leading to more extreme repression. Soest and Wahman (2013) examine whether sanctions intended force authoritarians to adopt greater democratic institutions and find that sanctions in general seem to make things worse, while sanctions intended to improve democratic institutions do achieve that goal. Peksen (2009) and Peksen and Drury (2010) find that more intense sanctions are associated with increased political violence and reduced freedoms/human rights in the target countries.

There are several theoretical reasons for this relationship. The first explanation is a simple survival story, where a regime targeted by sanctions use violence to preempt or prevent a revolution or other form of regime change. Hardships caused by the sanctions are intended to incite the population against the government and its behaviors, and some governments attempt to confront this effect directly with terror tactics and fear.(Wood, 2008)

A second reason why governments might increase repression or coercive behavior when confronted with sanctions is that the sanction itself provides opportunities to consolidate power. When the flow of goods and funds to a country is restricted, it creates winners and losers in that country's industries. The government can therefor increase its relative power by taking over those winning industries, giving them greater control over the flow of goods and funds than they had before the sanctions began. By awarding these companies or resources to powerful political allies, and restricting access to these things to opposition groups, the sanction event can create a situation where the government is more powerful relative to opposition groups, even if the overall size of the economy was diminished.(Peksen and Drury, 2010) An example of this would be the Iranian Revolutionary Guard increasing the share of the economy directly under their command

during the anti-proliferation sanctions targeting Iran's nuclear program.

A third reason is that sanctions can be seen as signals or international support to opposition groups, both by those opposition groups and by the targeted government. In this case it may not be that the government fears losing control so much as they are using the sanctions as an excuse to target their political rivals. A "rally around the flag" effect where citizens largely come to support the government against foreign aggression is sometimes observed as a result of sanctions, and governments can use this to cover crack downs against the opposition which are scapegoated as supporters of the sanction event.(Peksen, 2009; Peksen and Drury, 2010; Wood, 2008) An example of this would be the current sanctions imposed against Venezuela, which its leadership have dubbed an "Imperialist Economic War" and accused the opposition parties of being collaborators with the United States.

A final reason for this observation could be that we are observing reverse causality, where it is not the sanctions that lead to repression but it is repression that leads to the sanctions. In that case we are observing the fact that governments which enact harsh measures against their population face more severe sanctions.

In all of these cases there is strong reason to suspect that the strength of the repressive response by the target government would be related to the damage being caused by the sanction, which is not necessarily captured by dummy variables. In the first case, a sanction which causes more damage will result in a more disgruntled population and a greater loss of control by the target government. The government has reason to suppress its population even more, in an attempt to prevent a popular uprising against it. In the second case, a sanction which is more disruptive to a market gives even greater opportunity for the government to choose winners and consolidate control over the remaining resources, leaving it even more powerful than when the sanction began. In the third case, a sanction which is actually causing harm can lead to greater nationalist fervor as the population seeks to resist the foreign influence, giving an even greater opportunity for the regime to target its opponents. Finally, if it is a case of reverse causality then it would be expected that a more oppressive, violent regime would be targeted by more intense sanctions.

The previous literature, which relied on dummy variables for different types of sanctions to determine the strength of that sanction might not be accurately this effect. A country issuing an embargo against a country that they have no trade relations with would be captured as imposing a very

harsh sanction, but in real terms the sanction may not be causing much damage. Conversely an import restriction might cut off critical materials or goods which causes major economic disruption, even though it is coded as a less severe sanction. The previous literature included bilateral trade as a control variable but did not interact it with the sanction event. The use of bilateral trade also misses potentialy differences between sanctions that disrupt imports to sanctions that disrupt exports.

I contribute to the literature in two ways. First I construct a measure of of how much damage an economic sanction could cause, rather than relying only on dummy variables to capture the strength of a sanction event. To do this I create a trade exposure term, which is how much the targeted country trades with the sanctioning countries before the sanction event begins, as a percent of the target country's GDP. By interacting this term with the sanction dummy I have a measure of the maximum disruption that a sanction could cause, as a proxy for how much economic disruption the sanction will cause.

Second I analyze the impact of imports and exports together, rather than examining bilateral trade flows. This will allow me to examine any potential differences in terms of outcomes for sanctions that disrupt exports versus sanctions that disrupt imports. Restricting exports might cripple the economy and cause a great deal of economic disruption, while restricting imports might increase prices for certain goods but otherwise have little effect. The alternative might also be true, if the target country relies on certain key imports for its economy or society while its exports can be sold to third-party countries with relatively little loss. Aggregating imports and exports together therefor might miss the real disruption being caused by the sanction, or it might lead to incorrect conclusions about what sort of sanctions should be used.

3   Data

The primary data used in this analysis is an unbalanced panel with 4,633 country-year observations covering 160 countries from 1972-2005. The variable of interest is the inverted Freedom score from the Freedom House Index, which measures political and civil liberties in every independent nation and some disputed territories in the world over the data period.[1]

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[1]The Freedom House Index is reported by Freedom House, a US based NGO that has compiled annual reports on democracy and civil liberties in all countries and territories since 1972. The data can be accessed at https://freedomhouse.org/report-types/freedom-world

The Freedom score is an aggregate measure of civil liberties formed into a 2-14 point scale. The inverted form of this index is used so that higher scores indicate a freer society.

I combine this with sanction and threat data from the Threat and Imposition of Sanctions (TIES) Dataset, which provides data on sanction episodes from 1945 to 2005.[2] The TIES dataset was constructed by first running a keyword search of legal documents on the *Lexis-Nexus* website and other sources for keywords such as sanctions, embargoes, reduction in foreign aid and other related terms.[3] Potential sanction cases were then examined by coders which determined whether a sanction event occurred, what type of sanction or threat was involved, the duration and other relevant information.(Morgan et al., 2014) This is done in an attempt to discover as many sanction cases as possible for any country-pair. There are 9 categories of sanctions for both imposed and threatened sanctions, which are summarized in Table 1. Summary statistics for the freedom index, sanctions and sanction threats are reported in Table 2

Trade data comes from the Correlates of War (COW) Trade Dataset.[4] The primary reason that this dataset is preferred is because it distinguishes between data which is missing from the dataset and data where two countries report zero/insignificant trade flows. Because the focus of this analysis is trade sanctions, it is expected that in at least some cases trade between the sanctioner and target country should go completely to zero, which is why this dataset is preferred.

Country characteristics data are drawn from the CEPII gravity dataset, a square panel of all country-pairs from 1948 to 2005.[5] This data includes GDP, population and international organization membership which are used as country controls in my analysis.

Finally I use the Major Episodes of Political Violence (MEPV) dataset to incorporate information on both the presence and intensity of international and civil wars that take place over the sample period. The MEPV

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[2]The Threat and Imposition of Sanctions dataset was created by Cliff Morgan, Navin Bapat, Valentin Krustev and Yoshiharu Kobayashi and is hosted by the University of North Carolina. Version 4 of the dataset is used in this analysis and can be found at http://www.unc.edu/ bapat/TIES.htm

[3]The most important sources are *Lexis-Nexus*, *Facts on File*, *Keesing's Record of Contemporary Events*, the *New York Times* and the *London Times*.

[4]The Correlates of War Trade dataset was created by Katherine Barbieri and Omar Keshk, and is based primarily on the IMF's Direction of Trade Statistics data. It is hosted by the University of South Carolina and Ohio State University. Version 4 of this dataset is used, and can be accessed along with documentation at http://www.correlatesofwar.org/data-sets/bilateral-trade

[5]The CEPII gravity dataset is hosted by the French Centre d'Etudes Prospectives et d'Informations Internationales, and is maintained by Thierry Mayer. It is accessible at http://www.cepii.fr/cepii/en/bdd_modele/presentation.asp?id=8

dataset covers all states over the period 1946-2016, with episodes coded on a 0-10 scale based on the intensity of the conflict and the magnitude of its impact on the society.[6] with separate scores for war between countries and civil wars/disorder within a country. Table 3 reports summary information for each of these datasets and the combined dataset used in this paper.

4 Effect of Sanctions on Trade

The first step of the analysis is to measure the impact of sanctions on the trade with the targeted country. To do this I first estimate how disruptive a given sanction type is on bilateral trade flows between the imposing and target country using a gravity model of exports ($E_{i,j,t}$) from the exporting country (i) to the importing country (j) in year (t). Data on trade comes from the COW Trade Database and sanction data comes from the TIES dataset. I capture all trade flows in the form of exports in current dollars, the log of which forms my dependent variable. Reported zeroes in the trade data are replaced with 1\$ so that they are not dropped from the dataset when taking the natural log and to differentiate them from missing data.

This analysis uses the same sanction definitions as Caruso (2005) and Hufbauer and Oegg (2003), but where Hufbaur & Oegg used a cross-sectional analysis comparing two years of data I follow Caruso who used a gravity panel to analyze the impact of sanctions between the U.S. and its trading partners.[7]

I differ in that my gravity panel captures bilateral trade flows in terms of exports, so that I have exports from country A to country B and also exports from country B to country A. This allows me to retrieve import and export information for any given country year. I also utilize time-varying country fixed effects as recommended by Head and Mayer (2013).

$$lnE_{i,j,t} = \alpha_{i,j} + \alpha_{i,t} + \alpha_{j,t} + \beta_1 S_{i,j,t}^X + \beta_2 S_{i,j,t}^M + \epsilon_{i,j,t} \tag{1}$$

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[6]The MEPV dataset was created by Monty Marshall and is hosted by the the Center for Systemic Peace. The dataset was created by researching all reported instances of major political violence which lead to 500 or more deaths over the course of the incident. It can be accessed from http://www.systemicpeace.org/inscrdata.html

[7]Caruso (2005) uses a panel of the United States and its trading partners to examine the impact of extensive and non-extensive sanctions on trade. Hufbauer and Oegg (2003) uses a multiple time series analysis of countries during three separate years to calculate the impact of sanctions on trade flows.

where $E_{i,j,t}$ is the logged current value of exports in dollars and $\alpha_{i,j}$ are country-pair fixed effects which control for distance, borders, shared language/history and other variables describing the relationship between the countries. Country characteristics such as GDP, population and whether the country is at war which vary in each country by year are controlled by $\alpha_{i,t}$ and $\alpha_{j,t}$, country-year fixed effects for the exporter/importer. These also control for multilateral resistance as described in Anderson and van Wincoop (2003). The error term for a given country-pair year is given by $\epsilon_{i,j,t}$.

Economic sanctions are added to the model by including two vectors of dummy variables, $S^X_{i,j,t}$ and $S^M_{i,j,t}$, which capture both the type and the direction of the sanction. $S^X_{i,j,t}$ is a vector dummy variables which take the value of 1 if country i, the exporter in the country pair is the target country of a sanction from the importing country j in year t. $S^M_{i,j,t}$ is a vector dummy variables which take the value of 1 if country j, the importer of the country pair is the target country for that type of sanction from the exporting country i in year t.

Three definitions of $S^X_{i,j,t}$ and $S^M_{i,j,t}$ are used to examine the impact of sanctions on trade. First is a simple measure of whether there are any sanctions imposed during a given year. Second is a model of sanctions that divides them into intense (blockades and embargoes) and non-intense sanctions. Third is a model that divides sanctions into three tiers, intense (blockades and embargoes), moderate (partial embargoes, import restrictions and export restrictions) and light (travel bans, asset freezes, suspension of economic agreement and termination of foreign aid).

The impact of sanctions in general on logged exports is reported in Table 5. The results are in line with the expectation that it is easier and less costly to cut sales coming from a target country compared to attempting to stop businesses from selling to the target country. Direct interpretation of these coefficients is difficult however, and so they are transformed into percent reductions for analysis.[8] A sanction is expected to reduce exports from the targeted country by 46.53%, which is statistically significant at the 1% level. By comparison the target country's imports are only reduced by 29.6%, significant at the 10% level.

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[8]The coefficients of sanctions are transformed into a percentage reduction using $\%Reduction = 100 * e^{(\beta-1)}$, where the β's are coefficients on the dummy variables of interest. By plugging in -0.626 for β we find that a sanction reduces a target country's exports by approximately 46.53%. I will convert coefficients from these panel regressions to percent reductions to correctly interpret them.

5 Effect of Sanctions on Civil Liberties

Based on the prior section there is evidence that sanctions impact trade, and through that there is a channel for them to cause economic damage and disruption in the target country. However this damage can come with costs beyond the direct impact of declining trade on GDP. The sanctions might pick winners and losers in the targeted country's markets, providing opportunities for governments and powerful actors to increase their power relative to the people. Sanctions are hostile acts that might provide a catalyst for purges or crackdowns on dissidents who can be seen as allies of the sanctioning country. However if a sanction has no economic impact on a target country, then none of these things should occur, or at least there should be a greater reaction if the real economic damage being caused is large relative to the size of the target country's economy.

To study this I will first use a simple fixed effects model with a sanction dummy, then I will develop a "trade exposure" term which will show how vulnerable the target country was to the sanctioner's action. The dependent variable of this analysis will be the FHI Freedom score, a measure of the political and civil liberties. This will be regressed against a lag of the Freedom score, population, GDP, WTO membership and measures of international and civil conflict a well as country and year fixed effects, following the general model setup of previous literature to try and replicate their results.(Peksen, 2009; Peksen and Drury, 2010; Soest and Wahman, 2013) The variable of interest is a sanction dummy which takes the value of 1 if country i is under any sort of sanction in year t. The estimation equation for this analysis is given by:

$$Free_{i,t} = Free_{i,t-1} + \alpha_t + \alpha_i + c_{i,t} + \beta_1 S_{i,t} + \epsilon_{i,t} \qquad (2)$$

Where $Free_{i,t}$ is the inverted Freedom score, α_t and α_i are time and country fixed effects and $c_{i,t}$ is a set of country controls: population, GDP, a measure of international conflict intensity in a given year, a measure of internal civil conflict intensity in a given year, and a dummy variable for if that country has GATT/WTO membership. $S_{i,t}$ is a dummy variable for whether any given country i is under any sort of economic sanction during year t. The literature includes a lag of the Freedom because although the Freedom House Index does not exhibit a unit root, it does show evidence of being strongly autoregressive process due to institutional inertia.Peksen and Drury (2010) Government institutions tend not to change quickly, and

the recent past is important for the state of institutions in the present. .

If β_1 is negative, that would mean that sanctions in general are associated with a reduction in civil liberties and political rights, giving support to the theory that governments increase repression as a response to sanctions. A positive β_1 would be associated with the opposite, indicating that sanctions promote civil and political liberties in the targeted country.

The impact of this first regression is found in Table 6, Column 1 (labeled Sanctions), where the coefficient associated with the sanction dummy variable is found to be -0.174 and statistically significant at the 1% significance level. This coefficient is equal to 4.2% of a standard deviation of the freedom score, or an approximately 2.18% decrease for a country with the mean freedom score of 7.978.

This result is comparable in sign and magnitude to the results found by Peksen and Drury (2010) analyzing the impact of sanctions on democracy, as well as the results found by Wood (2008) which examined the relationship between sanctions and government violence. This indicates that the presence of sanctions in general has a small, but statistically significant impact on freedoms as measured by the FHI that is within the same range as previously examined by the literature. As this is aggregating all sanctions from blockades to travel bans, the relatively small coefficient is unsurprising.

5.1 Calculating Trade Exposure

Previous literature has examined the impact of sanctions on civil and physical liberties in the targeted country. However this literature only examines the type of sanction being imposed, controlling for severity with the inclusion of dummy variables for different types or categories of sanctions. I contribute to the literature by creating an "exposure term." Trade exposure is defined here as the amount of trade as a percent of GDP that exists between a target country and countries that are imposing sanctions upon it. The more a country trades with its sanctioners, the more exposed it is to the potential damage and disruption caused by those sanctions.

To do this I exploit the existing trade relationship between the countries prior to the sanction to gain a measure of how important trade with the sanctioning countries are compared to the rest of the target countries economy. The equation for the basic export exposure term is given by equation 4:

$$R_{i,t}^{\%Exp} = \beta^{X\%} \sum_{j=1}^{n} \frac{Export_{i,j,lag}^{Avg} \times S_{i,j,t}}{GDP_{i,lag}^{Avg}} \tag{3}$$

where $R_{i,t}^{\%Exp}$ is how much of country i's exports are directed toward countries sanctioning it as a percent of country i's GDP. $Export_{i,j,lag}^{Avg}$ is the average exports from i to its partners j in the five years prior to the sanction, $GDP_{i,lag}^{Avg}$ is the average GDP in country i in the five years prior to the sanction and $S_{i,j,t}$ is a dummy variable for if country i is under any sort of sanction from a partner country j during period t. By design sanctions should impact exports and GDP in the target country simultaneously, so the lagged averages are used to avoid contemporaneous interactions between exports, GDP and the sanction event.

By summing over all of country i's trading partners in period t, I find the total exposure of a target country' exports to countries sanctioning them that year. For ease of interpretation I will scale this term by $\beta^{X\%}$, the coefficient associated with export sanctions from equation 1 transformed into a percent reduction. Using this term will give an estimate of the potential disruption caused by a sanction given how exposed the target country was to that sanction.

An equivalent process is done for imports to country i as well, giving an equivalent exposure term for imports:

$$R_{i,t}^{\%Imp} = \beta^{M\%} \sum_{j=1}^{n} \frac{Import_{i,j,lag}^{Avg} \times S_{i,j,t}}{GDP_{i,lag}^{Avg}} \tag{4}$$

where the variables are the same as in equation 3, except that $Import_{i,j,lag}^{Avg}$ is the average imports of country i from its countries j for the five years prior to the sanction and the term is scaled by $\beta^{M\%}$, the sanction coefficient associated with import sanctions from equation 1 transformed into a percent reduction.

Potential bilateral disruption is found by summing the import and export exposure terms together:

$$R_{i,t}^{\%Trade} = R_{i,t}^{\%Exp} + R_{i,t}^{\%Imp} \tag{5}$$

where $R_{i,t}^{\%Exp}$ and $R_{i,t}^{\%Imp}$ are defined by equations 3 and 4, respectively. Summary statistics of these variables, conditional on the presence of a

sanction, are given in Table 4. The mean trade exposure for a country under any sort of sanction is 4.3% of GDP for the targeted country, while the mean export exposure is 2.6% of GDP and the mean import exposure is 1.7% of GDP. In general, countries which are sanctioned tend to be more exposed in terms of exports than imports, both on average and in terms of the maximum results.

5.2 Trade Exposure and Civil Liberties

Now that I have measures of how exposed a country is to sanctions I will include them in my regression from equation 2, to determine whether it is the act of imposing a sanction or the potential damage it can cause which has a larger impact on civil liberties. This will allow me to differentiate whether it is the simple signal of sanction imposition that causes target governments to crack down on liberties or whether it is more related to the potential trade disruption caused by that sanction. I will first analyze total bilateral trade exposure using the following equation:

$$Free_{i,t} = Free_{i,t-1} + \alpha_t + \alpha_i + c_{i,t} + \beta_1 S_{i,t} + \beta_2 R_{i,t}^{\%Trade} + \epsilon_{i,t} \qquad (6)$$

where the variables are the same as equation 2, however $R_{i,t}^{\%Trade}$ is the total exposure of bilateral trade caused by the sanction as a percentage of GDP.

The results of this regression can be found in Table 6, Column 2 (labeled Trade Exposure). Once trade exposure is included the sanction dummy becomes statistically insignificant, indicating that the negative relationship found in the previous regression was due primarily to the potential disruption that the sanction caused.

The coefficient associated with trade exposure is -0.0625 and significant at the 1% level. Interpreting this coefficient, a 1 percentage point increase in trade exposure during a sanction event results in a decline in the target state's freedom score approximately equivalent to a 1 point increase in the civil war measure.[9] Looking at Table 4, the mean trade exposure as a percentage of GDP caused is approximately 4.3%. Multiplying the trade exposure coefficient by this value gives an estimated mean reduction in the freedom score of 0.2696 points, equivalent to 6.74% of a standard deviation. Repeating the calculation for the maximum trade exposure

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[9]This is equivalent to a country going from no political violence to "sporadic political violence," the primary example of which is the United States' political instability during the 1960's.

of 23.6% results in a maximum predicted reduction in the freedom score equal to 1.47 points, a significant reduction equivalent to 1/3 of a standard deviation.

This suggests that the signal of imposing some sort of sanction seems to have little bearing on institutional changes and freedoms in the targeted country, but instead is related actual damage the sanction event causes that leads to reductions in rights and freedoms. Sanctions against countries with greater amounts of trade exposure are associated with serious, negative impacts on democracy, rights and freedoms in the targeted country.

5.3 Import vs Export Exposure and Civil Liberties

The next question is whether total trade exposure is important, or whether potential disruptions of imports are more important than potential disruptions in exports, or vice-versa. Cutting imports of food, medicine or vital equipment to the targeted country could backfire, turning the public against the outside forces and allowing the government/other actors even greater power in the targeted country, while restricting exports such as oil might make it very difficult for the targeted country to subjugate their citizens because of a lack of resources.

To examine this question trade exposure is split into import exposure and import exposure, resulting in the following equation:

$$Free_{i,t} = Free_{i,t-1} + \alpha_t + \alpha_i + c_{i,t} + \beta_1 S_{i,t} \quad (7)$$

$$+\beta_2 R_{i,t}^{\%Exp} + \beta_3 R_{i,t}^{\%Imp} + \epsilon_{i,t}$$

where $R_{i,t}^{\%Exp}$ and $R_{i,t}^{\%Imp}$ are how much exports/imports are reduced on average by the presence of some sort of sanction, respectively. Results of this regression are reported in Table 6, Column 3 (labeled Imp/Exp Exposure). The coefficient on the sanction dummy remains statistically insignificant, but the important result is the differential impact of export exposure versus import exposure.

It seems that export exposure is much less significant compared to import exposure, despite countries under sanctions typically being more exposed in terms of exports to the sanctioning countries. The mean and maximum value for export exposure from Table 4 are larger compared to

potential import exposure, 2.6% vs 1.7% for the means conditional on being sanctioned and 21.1% vs 9.8% for the maximum values. Despite this, export exposure does not have any statistically significant impact on freedoms and institutions. Instead it is exposure to import disruption that is the primary driver of the negative relationship between sanctions and rights and institutions in the targeted government.

The point estimate for the import exposure coefficient is -0.165, which is significant at the 1% level, approximately equivalent to a three point increase in the civil war measure.[10] Multiplying this by the mean import reduction percentage from Table 4 gives a predicted reduction in the freedom score of 0.281 points, which is nearly equivalent to the predicted freedom reduction of 0.2696 points from trade exposure in general from Section 5.2, giving additional evidence that import exposure is the primary driver of the previous results examining trade exposure. Taking the most extreme value of import exposure, 9.8% and conducting the same multiplication gives a predicted reduction in the freedom score of 1.62, approximately 1/3 a standard deviation of the Freedom Index and slightly larger than the 1.47 point decrease predicted for the maximum trade exposure. This would indicate that import exposure has a slightly greater impact on freedom outcomes compared to trade exposure, despite the mean and maximum value of import exposure being less than half the mean and maximum value of bilateral trade exposure.

There are a number of reasons this might be occurring. It might be an indication that imports tend to be more essential to the target country's economy, such as food or medicine. Alternatively it could be that countries under sanction have an easier time finding new buyers for their products compared to new suppliers for imports. Perhaps disrupting imports causes a greater amount of discontent among the population compared to stockpiling unsold exports, or that restricting imports makes it easier for the government to choose a scapegoat to blame. Whatever the reason, import exposure is associated with a strongly negative response from the target government in terms of civil liberties. This seems to argue against the idea that this is being driven by endogeneity between sanctions and civil liberties however, because although it could be that trade exposure and

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[10]A 1% increase in import exposure being equivalent to a 3 point increase in the civil war measure implies that a country under sanctions where 1% of its imports, as a percent of GDP, were exposed to the sanctioning countries is equivalent to those countries going from no political violence to "Serious Political Violence," which is characterized by localized but intense operations against militants, opposition members and leadership, the primary example of which is the crackdown on dissidents in Pinochet's Chile after the military coup of 1973.

sanctions suffer from reverse causality there is not a clear reason why it would be specifically with imports to the target country.

6 Heterogeneous Sanctions

The next step will be to expand the sanction term to examine three different tiers of sanctions rather than a simple sanction dummy, to better capture the full range of sanction types and different signals that might be sent. For example it could be that intense sanctions such as blockades and embargoes cause an extremely harsh reaction from the target government, no matter what how exposed the target is to the sanctioner's trade. If that is the case then the analysis in the previous section might be underestimating the importance of the presence of sanctions by diluting the impact of strong sanctions with the impact of weaker, more targeted sanctions.

To analyze this question I use the same setup from Section 5, but rather than a single reduction term for each country i in time t, there will be vectors of reduction terms from the different sanction types imposed during time t.

6.1 Heterogeneous Sanctions and Trade

The TIES database divides sanctions into nine categories, which vary in intensity from complete economic embargoes to targeted travel bans and asset freezes that attempt to limit wider economic damage. It may be possible that the sanction dummy used in Section 4 did not capture the true disruptive potential of sanctions, because it averaged the impact of economic blockades with reductions in foreign aid.

The first disaggregation of the sanction dummy used here is to divide sanctions into Intense (blockades and embargoes) and Non-Intense (all other sanction types) categories. These categories of sanctions are used by Caruso (2005) which gives me a basis of comparison for my results. The regression equation for this is the same as the baseline trade regression replacing the sanction dummy with a vector of intense / non-intense sanction dummies:

$$lnE_{i,j,t} = \alpha_{i,j} + \alpha_{i,t} + \alpha_{j,t} + \beta_1 S_{i,j,t}^{X(N,I)} + \beta_2 S_{i,j,t}^{M(N,I)} + \epsilon_{i,j,t} \qquad (8)$$

where all the variables are the same as equation 1, except that $S_{i,j,t}^{X(N,I)}$ is a vector of two dummy variables that take the value of 1 if the exporting

country i is under an intense or non-intense sanction and $S_{i,j,t}^{M(N,I)}$ is a vector of two dummy variables that take the value of 1 if the importing country j is under an intense or non-intense sanction.

Table 7, Column 1 (labeled Int./Non-Int.) gives the results for dividing sanction into intense and non-intense categories. The coefficient for intense import sanctions is -0.836, which translates to a reduction in imports to a target country j of 56.66%, while the coefficient for intense export sanctions is -0.952, translating to a reduction in exports from a target country i of 61.4% on average, but neither of these are statistically significant. Non-intense sanctions also lack statistical significance, with coefficients that translate to a reduction in exports from a target country i of 11.49% and a reduction in imports to a target country j of 39.88%, on average. The coefficients for intense sanctions on bilateral trade found by Caruso (2005) is -0.87, between the coefficient for import and export sanctions that I find. The coefficient for non-intense sanctions, -0.15, is also comparable to my coefficient estimates for non-intense sanctions. However in my data there is not enough information to differentiate between the effect of intense and non-intense sanctions, because of the inclusion of country-pair clustered standard errors.

The next step in this analysis is to further break down sanctions into three categories, Intense (blockades and embargoes), Moderate (export restrictions, import restrictions and partial embargoes) and Light (asset freezes, reduction of foreign aid, suspension of economic agreements, travel bans). These three categories were used in Hufbauer and Oegg (2003) and are commonly used in sanctions literature. The regression equation used here is mostly unchanged:

$$lnE_{i,j,t} = \alpha_{i,j} + \alpha_{i,t} + \alpha_{j,t} + \beta_1 S_{i,j,t}^{X(L,M,I)} + \beta_2 S_{i,j,t}^{M(L,M,I)} + \epsilon_{i,j,t} \qquad (9)$$

where all the variables are the same as equation 1, except that $S_{i,j,t}^{X(L,M,I)}$ is a vector of three dummy variables that take the value of 1 if the exporting country i is under a light, moderate or intense sanction and $S_{i,j,t}^{M(L,M,I)}$ is a vector of three dummy variables that take the value of 1 if the importing country j is under a light, moderate or intense sanction.

Table 7, Column 2 (labeled Three Tiers) shows the results for this regression. The pattern of intense sanctions generally having larger coefficients is maintained, but again prior analysis shows a much stronger and statistically significant relationship. Of the three sanction tiers only moderate export sanctions are statistically significant, with an estimated

percent reduction of 46.05%, significant at the 5% level. This is not seen as evidence that only moderate sanctions matter, but rather that the data cannot precisely estimate the other sanction impacts in the presence of country-pair clustered standard errors.

In comparison, Hufbauer and Oegg (2003) find that intense sanctions almost completely stop bilateral trade with very high significance. However their results match mine in that light sanctions do not seem to statistically impact trade. This comparison is not as straightforward, because their paper utilized a cross-sectional analysis to examine the impact of sanctions, but in general my findings are in line with theirs as far as the coefficient pattern is concerned.

6.2   Heterogeneous Sanctions and Civil Liberties

Although there is generally low statistical significance for the different levels of sanctions in my estimations, the coefficient pattern observed in Table 7 and findings from prior literature do seem to suggest that stronger types of sanctions are more effective at reducing trade. In that case how exposed a target country's trade is to the sanctioning countries will matter more if those countries impose harsher types of sanctions such as an embargo versus lighter sanctions like an asset freeze. On the other hand, the target government may instead react more to the implicit signal of a harsher sanction type, regardless of the potential trade disruption that results from it. To analyze this question first freedom is regressed against the three tiers of sanction dummies defined in the previous section:

$$Free_{i,t} = Free_{i,t-1} + \alpha_t + \alpha_i + c_{i,t} + \beta_1 S_{i,t}^{L,M,I} + \epsilon_{i,t} \qquad (10)$$

where $S_{i,t}^{L,M,I}$ is a vector of dummy variables that take the value 1 if country i is targeted by a light, moderate or intense sanction, respectively. The remaining variables are defined in equation 2, giving a baseline relationship between heterogeneous sanctions and the freedom index. The same interpretation remains on β_1 where a negative coefficient indicates a lower FHI Freedom Index score and a less free/well run society on average.

Results for the tiered sanctions examining the response of the FHI Freedom Index can be found in Table 9, Column 1 (labeled Sanctions). By splitting sanctions into three categories, it becomes clear that the same issue of differentiating different categories of sanctions continues from Table 6. Unsurprisingly the only sanction type which is statistically significant

is the moderate sanction, matching the result from Table 7, with a coefficient of -0.136, significant at the 10% level. Again this is not seen to be an indication that only moderate sanctions are especially important for freedom outcomes, but rather a limitation in the data to precisely estimate the impact of these different types of sanctions.

The general pattern of the coefficients follows the expected trend however, with larger negative coefficients associated with intense sanctions compared to moderate and light sanctions. This does not seem to indicate that sanctions don't matter, instead it seems that the data cannot differentiate the impact of intense, moderate and light sanctions from one another in a statistically significant way. This was an examination of the presence of a type of sanction though, it may be the case that even though the data can't differentiate between the presence of the different types of sanctions it might be able to differentiate between different levels of trade exposure that are then affected by different types of sanctions.

6.3 Heterogeneous Trade Exposure

To analyze the relationship between freedom, heterogeneous sanctions and the trade exposures associated with those levels of sanctions, the first step is to create a new measure of trade exposure. Instead of a single trade exposure measure, trade exposure will be calculated in terms of what type of sanctions the target country is being targeted by. Heterogeneous export exposure is given by the following equation:

$$R_{i,t}^{\%Exp(L,M,I)} = \beta^{X\%(L,M,I)} \sum_{j=1}^{n} \frac{Export_{i,j,lag}^{Avg} \times S_{i,j,t}^{L,M,I}}{GDP_{i,lag}^{Avg}} \tag{11}$$

where these variables are defined the same as they were in equation 3, except that $\beta^{X\%(L,M,I)}$ is a vector of percent-reduction transformed beta coefficients for if the exporting country i is under a light, medium or intense sanction and $S_{i,j,t}^{L,M,I}$ is a vector of dummy variables for if the exporting country i is under a light, medium or intense sanctions. Instead of a single export exposure term then, $R_{i,t}^{\%Exp(L,M,I)}$ is a vector of three export exposure terms for how exposed the target country i's exports are against light, medium and intense sanctions.

An equivalent process is done for import exposure and total trade exposure. Summary statistics for these new exposure terms are given in Table 8. I use these disaggregated exposure terms to augment equation

10, giving a regression of civil liberties on heterogeneous sanctions and trade exposures:

$$Free_{i,t} = Free_{i,t-1} + \alpha_t + \alpha_i + c_{i,t} + \beta_1 S_{i,t}^{L,M,I} \tag{12}$$

$$+\beta_2 R_{i,t}^{\%Trade(L,M,I)} + \epsilon_{i,t}$$

where $R_{i,t}^{\%Trade(L,M,I)}$ are the total heterogeneous trade exposure terms, and the other variables are the same as defined in equation 10. The results of this regression are given in Table 9, Column 2 (labeled Trade Exposure). After adding in trade reduction terms for each of the light, medium and intense sanction cases, the coefficient for moderate sanctions becomes statistically insignificant while the coefficients for intense and light sanctions are small enough to be essentially zero.

The light, moderate and intense trade exposure terms are all statistically significant with coefficients ranging from -0.0431 to -0.0478, and all of the coefficients are within a standard error of one another.[11] Since there is no reason to believe that 1% of trade as a percent of GDP being disrupted by a light sanction versus 1% of trade as a percent of GDP being disrupted by an intense sanction should have different impacts, this consistency is encouraging. The coefficients are also very similar to the -0.0625 coefficient estimated for trade exposure in the aggregate case shown in Table 8. The mean predicted decrease in the freedom score is between 0.0478 points for light exposure and 0.129 points for intense sanctions, which is smaller than the decreases predicted in the aggregate sanction case but are generally comparable. The estimate for intense sanctions is 1.63% of a standard deviation of the freedom score, lower than estimated in the aggregate case. The maximum freedom score reduction comes from intense sanctions as well, with an estimated reduction of 1.38 points which is again lower than seen in the aggregate case, but is still around 1/3 of the freedom score's standard deviation.

However there is still value in examining the difference between import exposure for different types of sanctions and export exposure for those types of sanctions. Intense sanctions in particular attempt to cut all imports and exports between the sanctioner and target, so that coefficient in particular will be of interest as a check to make sure the results from the

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[11]Light exposure is statistically significant at the 10% level, moderate exposure at the 1% level and intense exposure at the 5% level.

aggregate sanction case were being driven by differences in import versus export sanctions. If there is a difference between the impact of import exposure and export exposure on civil liberties during an intense sanction, then this cannot be because of a systematic preference for sanctions that restrict imports to the target over sanctions that restrict exports from the target. To analyze this question I use the following equation:

$$Free_{i,t} = Free_{i,t-1} + \alpha_t + \alpha_i + c_{i,t} + \beta_1 S_{i,t}^{L,M,I} \quad (13)$$

$$+\beta_2 R_{i,t}^{\%Exp(L,M,I)} + \beta_3 R_{i,t}^{\%Exp(L,M,I)} + \epsilon_{i,t}$$

where these variables are the same as equation 12, except with the total trade exposure vector being replaced by the export and import exposure vectors $R_{i,t}^{\%Exp(L,M,I)}$ and $R_{i,t}^{\%Imp(L,M,I)}$. The results of this regression is given in Table 9, Column 3 (labeled Imp/Exp Exposure). The coefficient for the sanction dummies all remain small and statistically insignificant, while the light exposure terms become highly insignificant.[12] while there is an observed differential impact on export and import exposure. Export exposure for the different tiers of sanction are statistically insignificant and extremely close to zero, indicating that restricting the ability of a country to sell its goods abroad does not illicit a strong response from the target government in terms of restricting rights, democracy or eroding other institutions.

Import reductions by contrast have a negative impact on the FHI index, with intense and moderate import exposure being significant at the 5% level. The intense import exposure coefficient of -0.105 is smaller than the moderate import exposure coefficient of -0.206. However these estimates have overlapping standard errors, so this difference isn't seen as economically significant. Also of interest is that the import exposure coefficient in the aggregate sanction case was estimated to be -0.165, nearly directly in the middle of the moderate and intense coefficients. Instead the important result is that despite intense sanctions applying equally to imports and exports, export exposure does not appear to have any impact on civil liberties while import exposure for those intense sanctions does. This gives even stronger evidence that there is something about imports that directly relates to the target government's reactions, whether it is because import goods are more necessary for target countries or it is harder for countries to find new sources for importing goods.

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[12]The coefficient on light import exposure is very large, but this is driven by the fact that there are almost no cases of import exposure for light sanctions resulting in an incredibly imprecise estimate.

The next sections will continue to examine these questions from different perspectives, giving additional robustness to my results and potentially finding avenues for further research in the future.

7 Sanction Threats

The next analysis will examine the relationship between sanction threats and trade, then the relationship between sanction threats and civil liberties. If sanctions can be interpreted as a signal which provokes action from a targeted government, then the threat of a sanction should serve a similar, if generally weaker purpose. Threats of sanctions can cause businesses to preemptively begin stockpiling or shifting business plans to account for the potential disruption of a future sanction, and if that is the case then there could be a relationship between threats and civil liberties as well.

Sanction threats are gathered from the same dataset as impose sanctions, the TIES database. In addition to finding government legislation imposing sanctions between countries, their keyword search is also able to detect when a government is threatening a sanction. In some cases this takes the form of the preemptive legislation from the sanctioning country that promises sanctions if the target country does not change its behavior. Other times the TIES dataset detects threats through news stories, where heads of state give speeches that threaten economic hardship against foreign rivals before any legislation is passed at all. This data is then coded into the same categories as imposed sanctions based on what the threat indicated, allowing me to analyze the relationship between threats and my variables of interest.

7.1 Sanction Threats and Trade

The first variable of interest will be trade and how sanction threats affect it relative to imposed sanctions. To examine the impact of sanction threats on trade equation 1 is modified with the inclusion of dummy variables to capture sanction threats, using the same format as the dummy variables for the sanction dummies:

$$lnE_{i,j,t} = \alpha_{i,j} + \alpha_{i,t} + \alpha_{j,t} + \beta_1 S^X_{i,j,t} + \beta_2 S^M_{i,j,t} \tag{14}$$

$$+\beta_3 T^X_{i,j,t} + \beta_4 T^M_{i,j,t} + \epsilon_{i,j,t}$$

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where $T^X_{i,j,t}$ is a variable that takes the value 1 if the exporting country i is threatened with a sanction in period t and $T^M_{i,j,t}$ is a dummy variable that takes the value 1 if the importing country j is threatened with a sanction in period t. The remaining variables are defined the same as in equation 1.

The results of this regression are shown in Table 10. When accounting for sanction threats, threats to exports are not statistically significant but threats do tend to lead to an increase in imports to the threatened country, which is statistically significant a the at the 1% level. In particular, when a country is threatened with sanctions it tends to increase imports from the threatening country by 42.47%, suggesting a strong stock-piling response to threats and confirms that there is a relationship between sanction threats and trade. The direct effect of export sanctions is mostly unchanged from Table 5, while import sanctions have a smaller coefficient and no statistical significance.

The primary result from this is that sanction threats, at least in terms of imports, do have a significant impact on trade. Interestingly, the effect is to increase trade in terms of imports to the target country, the reverse of what imposed sanctions caused in the prior analysis. This provides the opportunity to test if it is truly the potential *disruption* or if it is *reduction* in trade flows that is driving the relationship observed in previous sections.

7.2 Sanction Threats Effects on Civil Liberties

The first step will be to examine the impact a sanction threat has on civil liberties. Even if the actual impact of the threat is to increase imports from the threatening country, a sanction threat is still a signal sent to the target government to enact some action or face the imposition of a sanction. The target government might then react to this signal with repression or other ways to strengthen its position against the sanctions. To test this equation 3 is augmented with the addition of a threat dummy indicating the presence of sanction threats:

$$Free_{i,t} = Free_{i,t-1} + \alpha_t + \alpha_i + c_{i,t} + \beta_1 S_{i,t} + \beta_2 T_{i,t} + \epsilon_{i,t} \qquad (15)$$

where the variables are defined the same as equation 2, except that $T_{i,t}$ is a dummy variable indicating that country i was under some threat of sanctions during year t. The results for this equation are given in Table 12, Column 1 (labeled Threat). The primary result of this regression is that

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sanction threats on their own don't appear to have any relationship to civil liberties at all, with a coefficient near zero and no statistical significance. So even though there was an impact on trade as a result of sanction threats, there is no direct effect of threats on civil liberties.

The next step is still to examine the threat exposure, because even though the simple presence of a threat does not seem to affect civil liberties, there could be a relationship between how exposed the target is to those threats and the civil liberties in the target country.

7.3 Threat Exposure and Civil Liberties

To analyze the relationship between threat exposure and civil liberties another set of trade exposure terms are needed. Rather than measuring how exposed a country was in the period before the sanction was imposed, these exposure terms measure how exposed the target country was before the threats began.

The threat exposure in terms of exports is given by the following equation:

$$TR_{i,t}^{\%Exp} = \beta^{TX\%} \sum_{j=1}^{n} \frac{Export_{i,j,lag}^{Avg} \times T_{i,j,t}}{GDP_{i,lag}^{Avg}} \qquad (16)$$

where these variables are defined the same as they were in equation 3, with the primary difference being the five year average for exports and GDP is calculated for the five years prior to the start of the sanction threat. Other major differences are $\beta^{TX\%}$ is the percent-transformed beta coefficient for if the exporting country i is under a sanction threat found in Table 10 and $T_{i,j,t}$ is a vector of dummy variables for if country i is under a sanction threat from its partner country j in year t. The final difference is rather than being a percent reduction transformation as in previous sections, the $\beta^{TX\%}$ is a percent *increase* term, since trade threats are associated with an increase in trade flows.

An equivalent process is then done for import and total threat exposure. With these terms I analyze the relationship between how exposed a country is before threats begin and how the target government reacts in terms of civil liberties. Summary statistics for countries the threat exposure conditional on being threatend are provided in Table 11. I continue the analysis rerunning the regression of the freedom score and sanction threats with the addition of trade exposure and trade threat exposure:

$$Free_{i,t} = Free_{i,t-1} + \alpha_t + \alpha_i + c_{i,t} + \beta_1 S_{i,t} + \beta_2 T_{i,t} \qquad (17)$$

$$+\beta_3 R_{i,t}^{\%Trade} + \beta_4 TR_{i,t}^{\%Trade} + \epsilon_{i,t}$$

where the variables defined are identical to equation 6, with the addition of a threat dummy $T_{i,t}$ and the measure of threat exposure $TR_{i,t}^{\%Trade}$. The results from this regression can be found in Table 12, Column 2 (labeled Threat Exposure). The sanction dummy loses significance compared to the baseline threat regression, as expected, and the trade exposure term is essentially statistically unchanged from the aggregate sanction case shown in Table 6. Of interest is that the sanction threat term actually becomes statistically significant at the 10% level, with a coefficient estimate of *positive* 0.096. This indicates that when you account for threat exposure, the presence of a sanction threat has a tendency to increase the freedom score of the threatened country by 1.2% of a standard deviation.

This might be because governments which can be influenced by economic coercion would acquiesce to foreign demands at the threat stage, meaning that threats are effective at improving civil liberties in the target country or otherwise prevent bad behavior. Conversely countries that actually suffer the imposition of sanctions were always going to be resistant to foreign pressure, and so the impact for the imposition of sanctions is negative. However the threat exposure coefficient is much larger and negative, which could potentially counter this effect. Importantly the trade impact of sanction threats was seen in terms of imports to the target country, not exports and therefor it might be the case that splitting threat exposure into imports and exports will counter this result.

The next regression is therefor to split threat exposure and trade exposure into imports and exports:

$$Free_{i,t} = Free_{i,t-1} + \alpha_t + \alpha_i + c_{i,t} + \beta_1 S_{i,t} + \beta_2 T_{i,t} + \beta_3 R_{i,t}^{\%Exp} \qquad (18)$$

$$+\beta_4 R_{i,t}^{\%Imp} + \beta_5 TR_{i,t}^{\%Exp} + \beta_6 TR_{i,t}^{\%Imp} + \epsilon_{i,t}$$

where the variables defined are identical to equation 17, with the addition import and export exposure terms $R_{i,t}^{\%Exp}$ and $R_{i,t}^{\%Imp}$ as well as import and export threat exposure terms and the measure of threat exposure $TR_{i,t}^{\%Exp}$

and $TR_{i,t}^{\%Imp}$. The results from this regression can be found in Table 12, Column 3 (labeled Imp/Exp Threat Exposure).

The most interesting result is that export exposure term is now -0.0273 and statistically significant at the 5% level. However this impact is very small compared to import exposure coefficient of -0.103, which is significant at the 1% level. This supports the idea that the primary contributor to the negative relationship between sanctions and civil liberties is the import exposure term, even though the export exposure time might matter more than was observed in previous regressions.

The positive and statistically significant coefficient on the sanction threat term is not robust to the inclusion of import/export exposure and threat exposure terms. However a closer observation of the standard errors and p-values does show something interesting. The coefficient on the sanction threat term is positive, with a p-value of 0.124, very close to the 10% significance level. The import threat exposure term is negative, with a p-value of 0.131 which is also close to the 10% cut off level. An F-test of joint significance rejects the null that both coefficients are zero at the 10% level. This indicates that the signal sent by a sanction threat and the potential disruption caused by the sanction threat could be having the opposite effect, even though the disruption of a sanction threat is to increase imports to the threatened country rather than limiting trade. However I cannot comment further on the magnitude of these effects, because of the imprecise nature of the coefficient estimates.

8 Conclusion

In this paper I analyze the relationship between sanctions and civil liberties, to investigate whether sanctions might lead to additional oppression as a reaction by the targeted government. I use a fixed effects panel regression covering 160 countries from 1972-2005 to study the impact of sanctions on civil liberties as measured by the Freedom Index. I find that the presence of a sanction reduces the freedom score by 0.174 points, a result statistically significant at the 1% level. This result is comparable to the results found by Peksen and Drury (2010) and Wood (2008). I then generate a novel trade exposure variable using the trade relationship that existed before the sanction event occurred and included it in my regressions. I find that the presence of the sanction doesn't affect the freedom score, but rather trade exposure was the primary driver of the negative re-

lationship between sanctions and civil liberties. The trade exposure term is associated with a coefficient estimate of -0.0625, leading to an estimated mean decrease in the freedom score of 0.2696 points, equivalent to 6.74% of a standard deviation.

I then split trade exposure into import and export exposure, and find that the primary reason that the sanction dummies were negative related to the freedom score was because of import exposure, with a coefficient of -0.165 leading to a mean decrease in the freedom score of 0.281 points, slightly larger than observed in the trade exposure case. This result was robust to disaggregating sanctions into multiple tiers as well as the inclusion of sanction threats, with the only interesting development being that export exposure is also significant when accounting for import and export threat exposure, with a coefficient estimate of -0.0273 which is significant at the 5% level.

I contribute to the literature in two primary ways. By developing my trade exposure terms and interacting it with the sanction and threat dummies I develop a measure for how potentially damaging a sanction is independent of the type of sanction dummy used. I also examine the impact of both potential import disruption and potential export disruption, rather than using bilateral trade as a control variable. Together with these I show that sanction dummy variables are not directly related to freedom outcomes in the target countries, but rather it is how potentially disruptive the sanction is that matters, as measured by trade exposure. I also show that in particular it is import exposure that matters most, with export exposure being mostly statistically insignificant in my analysis.

This result has potentially important implications for policymakers in terms of what sort of sanctions should be implemented to avoid inciting a government crackdown in the target country. I now plan to utilize this term in analyzing the success or failure of a sanction regime. It is also important to investigate what is driving the importance of import exposure relative to export exposure, which has theoretical explanation but no definitive reason.

The general result of this paper is that it is not the imposition of the sanction that matters for civil liberties in the target country, but how exposed that country's trade was to the sanctioning countries and in particular how exposed the target country's imports were to those sanctioning countries. Import exposure is strongly and statistically significantly associated with a decrease in civil liberties in the target country during the sanction event.

Tables and Figures

Table 1: Sanction Descriptions

Sanction Type	Description	Imposed Cases
Blockade	Imposer attempts to prevent all countries from economic interactions with target country.	37
Embargo	Imposer cuts all economic activity between itself and the target.	51
Partial Embargo	Imposer cuts economic activity in certain sectors with the target country.	118
Import Restriction	Imposer restricts imports from the target country.	447
Export Restriction	Imposer restricts exports to the target country.	58
Withdrawal from EA.	Imposer withdraws from previously negotiated economic arrangements.	55
Asset Freeze	Imposer seizes all or part of the target state's assets in the imposing country's jurisdiction.	34
Reduction in Foreign Aid	Imposer reduces or terminates foreign aid to the target country.	191
Travel Ban	Imposer bans travel to and from the target country, either in general or for specific individuals.	55

This table is based on the Threat and Imposition of Sanctions categories. The number of imposed sanction events are reported in the third column.

Table 2: Freedom and Sanction Summary Statistics

Variable	Mean	Std. Dev.	Min	Max
Freedom Index	7.978	4.003	2	14
Sanction	0.199	0.399	0	1
Light San.	0.051	0.233	0	1
Moderate San.	0.100	0.299	0	1
Intense San.	0.041	0.199	0	1
Threat	0.065	0.247	0	1

These statistics are based on the 4,633 observations of the combined dataset. The mean of the sanctions and threat are the percentage of country-year observations featuring a sanction or threat.

Table 3: Summary of Component Datasets

Datasets	Description	Countries	Years
FHI Freedom Index	Political Rights and Civil Liberties	204	1972-2015
TIES Sanctions	Threat/Imposition of 9 sanction types	165	1945-2005
COW Trade Database	Bilateral Trade Flows (Current Dollars)	205	1948-2014
CEPII Gravity Dataset	Country/Territory Pair Characteristics	225	1948-2015
MEPV	Major Episodes of Civil War/International Conflict	165	1946-2017
Combined Dataset	Summary of combined overlap (N = 4,633)	160	1972-2005

This table reports the number of countries and period covered by the component datasets used in this analysis as well as a summary of the final combined dataset utilizing all of them.

Table 4: Conditional Trade Exposure Summary Statistics

Variable	Mean	Std. Dev.	Min	Max
Trade Exposure	0.043	0.053	$1.18 * 10^{-10}$	0.236
Exp. Exposure	0.026	0.038	$7.09 * 10^{-11}$	0.211
Imp. Exposure	0.017	0.02	$4.68 * 10^{-11}$	0.098

This table reports summary statistics for trade exposure, conditional on a sanction being in place. Variables are the mean level of exposure a target country's trade, exports or imports are to countries sanctioning it, the minimum level of exposure observed and the max level of exposure observed as a percentage of the target country's GDP.

Table 5: Effect of Sanctions on Log Exports

Ln(Exports)	Sanctions
Import Sanctions	-0.351*
	(0.212)
Export Sanctions	-0.626***
	(0.225)
Observations	975,210
R-squared	0.770

Includes controls for Country-Year and Country-Pair
fixed effects. Country-Pair Clustered standard errors
are reported in parentheses.
*** p<0.01, ** p<0.05, * p<0.1

Table 6: Freedom Baseline Sanctions

	(1)	(2)	(3)
Freedom Index	Sanction	Trade Exposure	Imp/Exp Exposure
Sanction	-0.174***	-0.00254	0.0313
	(0.0583)	(0.0576)	(0.0650)
Trade Exposure		-0.0625***	
		(0.0168)	
Import Exposure			-0.165**
			(0.0640)
Export Exposure			-0.0170
			(0.0192)
Lag Freedom	0.852***	0.848***	0.848***
	(0.0143)	(0.0146)	(0.0144)
Pop	-0.000800	-0.000674	-0.000812
	(0.000631)	(0.000593)	(0.000627)
GDP	-0.0709**	-0.0727**	-0.0723**
	(0.0288)	(0.0303)	(0.0310)
WTO Member	-0.103	-0.0800	-0.0849
	(0.0671)	(0.0659)	(0.0656)
International War	0.00243	0.00416	0.0121
	(0.0265)	(0.0257)	(0.0248)
Civil War	-0.0685***	-0.0684***	-0.0679***
	(0.0155)	(0.0164)	(0.0161)
Observations	4,633	4,633	4,633
R-squared	0.951	0.952	0.952

Robust standard errors adjusted for country clustering are reported in
parentheses. All regressions also include country and year fixed effects.
*** p<0.01, ** p<0.05, * p<0.1

Table 7: Heterogeneous Sanctions and Log Exports

Ln(Exports)	(1) Int./Non-Int.	(2) Three Tiers
Intense Import San.	-0.836	-0.838
	(0.576)	(0.572)
Non-Intense Import San.	-0.122	
	(0.221)	
Intense Export San.	-0.952	-1.013
	(0.656)	(0.639)
Non-Intense Export San.	-0.355	
	(0.225)	
Moderate Import San.		-0.168
		(0.282)
Moderate Export San.		-0.617**
		(0.289)
Light Import San.		-0.00191
		(0.263)
Light Export San.		0.159
		(0.288)
Observations	975,210	975,210
R-squared	0.770	0.770

Includes controls for Country-Year and Country-Pair
fixed effects. Country-Pair Clustered standard errors
are reported in parentheses.
*** p<0.01, ** p<0.05, * p<0.1

Table 8: Conditional Heterogeneous Trade Exposure Summary Statistics

Variable	Mean	Std. Dev.	Max
Light Exposure	0.01	0.034	0.284
Moderate Exposure	0.028	0.038	0.221
Intense Exposure	0.03	0.079	0.319
Light Export Exposure	0.01	0.034	0.284
Light Import Exposure	0.000	0.000	0.006
Moderate Export Exposure	0.011	0.023	0.209
Moderate Import Exposure	0.003	0.006	0.038
Intense Export Exposure	0.017	0.049	0.182
Intense Import Exposure	0.013	0.033	0.142

This table reports summary statistics for trade exposure,
conditional on a sanction being in place. Variables are the
mean level of exposure a target country's trade, exports or
imports are to countries sanctioning it, the minimum level
of exposure observed and the max level of exposure
observed as a percentage of the target country's GDP.

Table 9: Heterogeneous Sanctions and Freedom

Freedom Index	(1) Sanction	(2) Trade Exposure	(3) Imp/Exp Exposure
Intense	-0.213	0.0170	0.0503
	(0.131)	(0.174)	(0.184)
Moderate	-0.228***	-0.115	-0.0854
	(0.0675)	(0.0703)	(0.0760)
Light	-0.0809	0.0511	0.181
	(0.0770)	(0.0733)	(0.111)
Intense Exposure		-0.0431**	
		(0.0210)	
Moderate Exposure		-0.0461***	
		(0.0124)	
Light Exposure		-0.0478*	
		(0.0252)	
Import Intense Exposure			-0.105**
			(0.0438)
Export Intense Exposure			-0.00229
			(0.0255)
Import Moderate Exposure			-0.206**
			(0.0980)
Export Moderate Exposure			-0.0187
			(0.0210)
Import Light Exposure			-34.82
			(21.30)
Export Light Exposure			-0.0102
			(0.0167)
Lag Freedom	0.851***	0.847***	0.847***
	(0.0143)	(0.0145)	(0.0145)
Pop	-0.000765	-0.000592	-0.000688
	(0.000634)	(0.000638)	(0.000652)
GDP	-0.0692**	-0.0731**	-0.0723**
	(0.0268)	(0.0287)	(0.0289)
WTO Member	-0.109	-0.0855	-0.0925
	(0.0673)	(0.0660)	(0.0661)
International War	0.00338	0.00512	0.0136
	(0.0265)	(0.0257)	(0.0248)
Civil War	-0.0690***	-0.0688***	-0.0693***
	(0.0155)	(0.0160)	(0.0159)
Observations	4,633	4,633	4,633
R-squared	0.951	0.952	0.952

Robust standard errors adjusted for country clustering are reported in parentheses.
All regressions also include country and year fixed effects.
*** p<0.01, ** p<0.05, * p<0.1

Table 10: Sanction Threats and Log Exports

Ln(Exports)	Sanctions
Import Sanctions	-0.138
	(0.160)
Export Sanctions	-0.721***
	(0.181)
Import Threats	0.359***
	(0.119)
Export Threats	0.134
	(0.145)
EIA	0.00262***
	(0.000475)
Observations	852,469
R-squared	0.757

Includes controls for Country-Year and Country-Pair fixed effects. Country-Pair Clustered standard errors are reported in parentheses.

*** p<0.01, ** p<0.05, * p<0.1

Table 11: Conditional Threat Exposure Summary Statistics

Variable	Mean	Std. Dev.	Min	Max
Trade Threat Exposure	0.085	0.097	$3.05*10^{-12}$	.561
Exp. Threat Exposure	0.043	0.056	$1.53*10^{-12}$	.286
Imp. Threat Exposure	0.042	0.051	$1.52*10^{-12}$	.321

This table reports summary statistics for threat exposure, conditional on a threat being in place. Variables are the mean level of exposure a target country's trade, exports or imports are to countries threatening it, the minimum level of exposure observed and the max level of exposure observed as a percentage of the target country's GDP.

Table 12: Sanction Threats and Freedom

Freedom Index	(1) Threat	(2) Threat Exposure	(3) Imp/Exp Threat Exposure
Sanction	-0.174***	0.00483	0.0257
	(0.0582)	(0.0591)	(0.0616)
Threat	0.0821	0.0960*	0.0874
	(0.0574)	(0.0581)	(0.0565)
Trade Exposure		-0.0498***	
		(0.0101)	
Trade Threat Exposure		-1.511	
		(1.119)	
Import Exposure			-0.103***
			(0.0377)
Export Exposure			-0.0273**
			(0.0125)
Import Threat Exposure			-6.029
			(3.970)
Export Threat Exposure			2.335
			(2.342)
Lag Freedom	0.852***	0.849***	0.849***
	(0.0143)	(0.0143)	(0.0142)
Pop	-0.000869	-0.000722	-0.000842
	(0.000632)	(0.000597)	(0.000628)
GDP	-0.0708**	-0.0719**	-0.0730**
	(0.0291)	(0.0303)	(0.0317)
WTO Member	-0.103	-0.0777	-0.0840
	(0.0671)	(0.0662)	(0.0658)
International War	0.00132	0.00283	0.00817
	(0.0261)	(0.0252)	(0.0243)
Civil War	-0.0690***	-0.0681***	-0.0686***
	(0.0155)	(0.0162)	(0.0160)
Observations	4,633	4,633	4,633
R-squared	0.951	0.952	0.952

Robust standard errors adjusted for country clustering are reported in parentheses.
All regressions also include country and year fixed effects.

*** p<0.01, ** p<0.05, * p<0.1

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