Bachelor thesis

Economic sanctions and the relevance of sanction type

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Introduction

In the aftermath of the Ukrainian revolution in Kiev, the Russian Federation, according to the European Union, illegally annexed the south eastern province of Crimea. The EU imposed 'smart-sanctions' on businessmen, politicians and several financial institutions from the Russian Federation (Rijksoverheid, 2015). Russia retaliated in August 2014 with a ban on the lion's share of agricultural imports from the EU, the US and Australia (Wall Street Journal, 2014). When a state has decided to impose economic sanctions on another state, it has a number of options. It can impose trade sanctions, like import or export sanctions, it can impose so-called smart-sanctions, or it can impose different types of financial sanctions. When choosing the type of sanction to employ it must determine which type might be the most effective. Effectiveness in this sense is achieving the policy change that is desired by the sender at the lowest cost for the sending state. For the EU the most effective sanctions apparently were relatively limited smart-sanctions while Russia chose comprehensive import sanctions on agricultural commodities as retaliation.

What the most effective sanction type is, has received relatively little attention among scholars, notwithstanding that factors like sanction type and the severity of sanctions are adjustable to the sanction situation at hand. The type and severity of sanctions are factors open for adjustment by policy makers, while other factors are exogenously determined like: the relative economic size of both states, trade linkages, the salience of the policy change that is being sought and the likeliness of a certain sanction being busted by third parties. Particularly sanction busters can have a devastating impact on the effectiveness of sanctions (Hufbauer *et al.,* 2007: 8; Early, 2015: 218-219). Some types of sanctions might be more likely to be busted than others and therefore this thesis will also devote attention to the likeliness that particular sanctions are being busted.

The research questions of this thesis are: does the type of sanction imposed by the sender state influence the level of costs for the target state? Does the level of costs then influence the change at success of sanctions, such that one could conclude that the type of sanctions at least indirectly influences success? In connection hereof, are certain types of sanctions more likely to be busted?

Theoretical framework

Sanction type

The broadest distinction of sanction type is between trade sanctions and financial sanctions. Trade sanctions can further be subdivided into import sanctions and export sanctions. The terms export or import in this thesis are used in the same way as Hufbauer *et al.*, meaning that

Figure 1. Import sanctions

Figure 2. Export sanctions

the episode is viewed from the perspective of the sender country (2007: 91-92). One's state exports is always someone else's imports and the other way round. That is the reason that in this thesis the situation is always seen from the perspective of the sender state. This will help to keep the way sanctions are directed unambiguous.
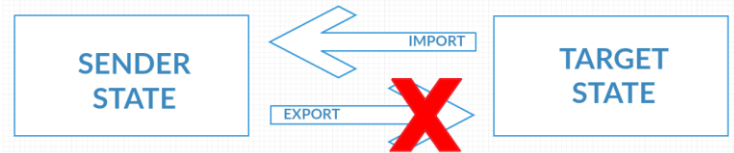
Import sanctions are the complete or partial obstruction of trade from the target state to the sender state, see figure 1. An example is the current Russian import boycott of food from the European Union (Wall Street Journal, 2014). Russia imposed these sanctions and the episode is thus seen from a Russian perspective. For the target country this means losing an export market and probably lower prices for the embargoed exports (Hufbauer *et al.*, 2007: 45). In the case of the Russian import boycott this means that European food exporters have to look for new markets and expect lower prices for their exported goods.

It follows logically that export sanctions are the complete or partial obstruction of trade from the sender state to the target state, see figure 2. A famous case of export sanctions is US President Carter's boycott of grain shipments from the US to the USSR in 1980 and 1981 (Hufbauer *et al.,* 2007: 29). For the target state this means the denial of critical imports and higher prices paid for substitutes (Hufbauer *et al.*, 2007: 45). The Soviet Union had to find new grain imports. Argentina and the European Economic Community increased grain exports to the USSR following the US grain embargo (Paarlberg, 1980).

The last type of sanction is financial sanctions, which can be broken down in several subclasses, such as prohibition of commercial finance, ending or pausing bilateral aid, freezing or seizure of assets within the sender's control, or the complete lockout of a state from the international monetary system, as happened in the case of Iran several years ago (Hufbauer *et al.,* 2007: 47). In this thesis there will not be a distinction between these different subclasses of financial sanctions.

Sanction type: trade sanctions

Different sanction types can influence the outcome of sanction episodes (Hufbauer *et al.,* 2007: 170). Although it is known that sanction type does influence sanction outcome, the reasons why it does, are not well understood. The most recent attempt to explain the different effects of import and export sanctions was in 1988, when Kaempfer and Lowenberg developed a theory of economic sanctions using public choice theory. They argued that it is more likely that sender states impose import restrictions than exports restrictions (Kaempfer & Lowenberg, 1988: 787). Their main line of reasoning is that the dominant interest groups in a country can influence government policy best. Producers are smaller in number than consumers and are therefore in general a more cohesive and politically effective interest group (Kaempfer & Lowenberg, 1988: 790). Imposing import sanctions does benefit domestic commercial constituents, because they are better off with fewer imports from abroad, which means less competition and thus higher domestic prices, also see appendix 1. This may benefit domestic producers but at the same time it will hurt domestic consumers. When commercial interests in the sender state are indeed dominant, as Kaempfer and Lowenberg argue, then this implies that it is more likely that the sender will impose import sanctions rather than export sanctions.

H1: Import sanctions are used more often than export sanctions.

The relevance of sanction cost

Economic sanctions inflict a certain cost to the target state. The basic theory of why costs are a relevant factor is that it is expected that economic sanctions impose a certain cost on the constituencies within a country who in turn demand their leaders to adhere to the policy change of the sender (Early, 2015: 32). Economic sanctions impose a cost on the target state because trade or capital flows are interrupted and this leads to higher costs for the target

state. The primary reason is that lost trade has to be replaced by more expensive imports from and/or cheaper exports to other countries, the target thus experiences diminished terms of trade (Hufbauer *et al.,* 2007: 101). See Appendix 1 for more on the economic theory behind trade sanctions in the target state. Not only do replacement goods have a relatively high price, it also takes time before new trade partners are found, new contracts are negotiated and goods or capital arrive. This all happens under increased uncertainty for the new trade partners (Early, 2015: 33). This uncertainty originates from the heightened risk of bankruptcy of the target state and also because of the risk that the trade partner may be punished by the primary sender for busting the sanctions (Early, 2015: 33).

The sender's goal is often targeted at the government, yet the effect of sanctions mainly hits its constituents, while the government apparatus seems not directly affected by trade sanctions. However, a government always feels the economic situation in the country and sees tax revenues decline. Governments from developing states will feel sanctions in another way as well, because import and export tariffs constitute a substantial amount of government income (IMF, 2004: 8-9). Decreased amounts of trade then directly result in lower tax revenues. Trade sanctions thus can have severe financial repercussions for targeted governments.

Financial sanctions and sanction cost

Hufbauer *et al.* showed with a simple cross tabulation that financial sanctions, when used as the only policy tool, are the most effective type of economic sanction (2007: 46-64). It has been found that financial sanctions are not very effective in cases with destabilization as sanction goal, but that for all other goals financial sanctions do in fact play a significant role (Dashti-Gibson *et al.,* 1997: 613-614). According to Hufbauer *et al.* the reasons that financial sanctions are more successful are multiple (2007: 46-48). First, financial sanctions not only hit the target state financially they also limit the possibilities for trade, because trade depends on the access to finance. Second, financial markets are often better regulated than goods markets, making it easier to impose the sanctions and prevent evasion by domestic constituents. Third, financial sanctions directly influence government income and capital streams in the target state, in contrast to trade sanctions that mainly bring higher costs to the civilian population through higher prices or lower profits for commercial constituents

through lower prices (Hufbauer *et al.,* 2007: 97). Finally, when financial sanctions involve the disruption of foreign assistance it is much easier to impose the sanctions unilaterally. From the perspective of the sender state these advantages make financial sanctions sound as the panacea of economic sanctions. If financial sanctions are indeed easier to enforce, harder to evade and have a direct impact on a government's budget (Hufbauer *et al.,* 2007: 47), this should also make them costlier than trade sanctions.

H2: Financial sanctions impose higher costs on the target state than trade sanctions.

Trade sanctions and sanction cost

Although financial sanctions are frequently used, trade sanctions are used even more often (Hufbauer *et al.,* 2007: 170). Hufbauer *et al.* see import sanctions as more effective than export sanctions for the reason that it deprives the target country of foreign currency and thus at the same time works as a kind of financial sanction (2007: 47). Having little foreign currency may also lead to the inability to buy foreign goods (Hufbauer *et al.,* 2007: 47). This then must mean that import sanctions come with a higher cost for the target state. On the other hand the opposite argument can be made for the sending state when it concerns export sanctions. First it is important to note that the cost to the sender will be much less than the cost to the target as the sender country is often a much larger economy (Hufbauer *et al.,* 2007: 109). Hufbauer *et al.* also argue that the cost of sanctions, primarily export sanctions can fall heavily on just a few domestic firms. This is the reason that Kaempfer and Lowenberg argue that firms in the sending state will lobby for the imposition of import sanctions instead of export sanctions, exactly because it comes with higher costs for commercial constituents in the sending state (1999: 38).

H3a: Import sanctions impose higher costs on the target state than export sanctions.

H3b: Export sanctions brings higher costs to the sender state than import sanctions.

Research so far has shown that higher costs for the target lead to more successful sanctions (Lam, 1990; Dehejia & Wood, 1992; Dashti-Gibson *et al.*, 1997: 608-609; Morgan & Schwebach, 1997: 46-48; Lam, 2000; Hufbauer *et al.*, 2007: 55, 168-171), while higher costs for the sender lead to less successful sanctions (Hufbauer *et al.,* 2007: 189; Lam 1990). If hypotheses 3a and 3b are supported, so that import sanctions are indeed costlier to the target state than export sanctions, and less costly for the sender than export sanctions, then

this must also mean that import sanctions are correlated with more successful sanction episodes in general.

H4: Import sanctions lead more often to successful sanctions than export sanctions.

Although from an theoretical perspective the previous discussion about the most effective sanction type makes sense, in reality there are some complicating factors. The first is that the General Agreement on Tariffs and Trade (GATT), which is nowadays part of the World Trade Organization (WTO), has legal constraints for import barriers, but almost none for export barriers (Leidy, 1989: 1300). Because import sanctions are in conflict with the free trade principle of the WTO, it is more controversial to impose import sanctions than export sanctions. Secondly, the powers of the US president have been restricted when it comes to the imposition of import restrictions, making it harder to impose import sanctions than export sanctions (Leidy, 1989: 1301; Hufbauer *et al.,* 2007: 45). This is especially relevant because the US is one of the most active users of economic sanctions (Hufbauer *et al.,* 2007: 10-13). A last reason is that it is much harder to reverse import restrictions, because of the price shock this will bring to domestic producers in the sender state itself (Leidy, 1989: 1302). When sanctions are lifted, the foreign competitors will re-enter the market, potentially pushing the producers in the sending state out of business. These arguments do not so much attack Kaempfer and Lowenberg's public choice theory internally, but it might explain why import sanctions may not be used more often than export sanctions as is expected by their theory.

Bringing all components together

The previous hypotheses already assume a connection between sanction success and the cost that an economic sanctions imposes. Sanction type can be a variable that directly influences sanction success but it is more likely that sanction type is an antecedent variable influencing target cost. Target cost then should influence the likeliness that a sanction ends in success. Target cost is in fact one of the best established factors determining sanction success (Lam, 1990; Dehejia & Wood, 1992; Dashti-Gibson *et al*., 1997: 608-609; Morgan & Schwebach, 1997: 46-48; Lam, 2000; Hufbauer *et al.,* 2007: 55, 168-171). The previous discussion leads us to expect that sanction type will influence the cost perceived by the target and thus indirectly change at success. The effect of sanction type on sanction success

has however not yet been established when target cost is also part of the analysis.

H5: Target cost is the intervening variable between sanction type and sanction success.

Sanction busters

If sanction type influences cost and it is indeed true that cost is central in determining sanction success, than the factors that heavily influence target cost deserve attention as well. When sanction busters can mitigate the costs imposed on the target to tolerable levels, an important effect of the initial sanctions is lost (Early, 2011: 383). This makes sanction busters a potentially important factor as they can undermine economic sanctions. Understanding this is important, because different types of sanctions are likely to cause different reactions from third parties. Research directed at sanction busters is relatively new and still rather scarce in the economic sanction literature. Hufbauer *et al.* focussed on so-called black knights; third-party states that replace lost trade or capital to the target country, where black knights are defined as: "powerful or wealthy allies of the target country" (Hufbauer *et al.,* 2007: 8). Although they present black knights as one of the main reasons that sanctions theoretically lead to failure, their empirical analysis does not support this assumption (Hufbauer *et al.,* 2007: 198). The concept of sanction busters is further developed by Early, who argues that the black knights definition of Hufbauer *et al.* is heavily influenced by Cold-War rivalry. The Cold War created an atmosphere where the two powers were willing to help targeted states without necessarily profiting economically from this. The most famous example is the case of Cuba (Early, 2015: 162-188). Early argues that there is much more commercial sanction busting going on instead of allies that are willing to help without profiting (Early, 2015: 20; Early, 2011: 392). Early hence uses a broader definition of sanction busters: "third-party states that respond to the imposition of sanctions by increasing their economic engagement with target states in ways that ameliorate the sanctions' adverse consequences" (2015: 21). Early argues that trade-based sanction busters are primarily profit-driven (2015: 22).

When a sender imposes export sanctions, this means that the target state loses a part of its imports, thus leaving a gap for other exporting countries to fill unless the target state can do without those products or can produce substitutes. Drury argues that black knights are only willing to replace lost imports, in other words: to bust the export sanctions (1998: 505). It is

likely that the busting state is willing to sell goods to the target, because it is an opportunity to profit. Meanwhile the busting state is not willing to open up its own market to the target's exports because that leads to increased competition for its domestic producers (Drury, 1998: 506). If there is a profit to be made it is likely that several states are interested and thus we expect that export sanctions have more sanction busters than import sanctions.

H6: Export sanctions have more sanction busters than import sanctions.

Early investigated the economic incentives of trading with a sanctioned state in his 2009 and 2011 articles (Early, 2009: 54). In 2011 Early defined sanction busters as "(…) third party states that respond to a sender's sanctions by significantly increasing their trade with the target state and in high enough absolute levels to substitute for the trade losses entailed by the sanctions." (2011: 390). This means that also in cases where the primary or only sanction was financial, Early still looks for third countries that increased their trade with the target country. It is doubtful whether this measure is appropriate for target states that only face financial sanctions and not trade sanctions.

Financial sanctions often deprive the target state of foreign currency and therefore should make trade with third countries harder (Hufbauer *et al.,* 2007: 46). Also financial markets have become much more regulated at the international level than the goods markets (Hufbauer *et al.,* 2007: 46-47). This should make it easier to prevent sanction busting of financial sanctions or at least be aware of its existence. It is thus rather unlikely that trade will increase significantly with financial sanctions, let alone that easy profits can be made from a country hit by financial sanctions. Altogether it is likely that trade busting has more impact on trade sanctions than on financial sanctions.

H7: Pure financial sanctions have fewer trade sanction busters than trade sanctions.

Data and methodology

The dataset

In order to make the statistical inferences that are needed to test the hypotheses as presented in the previous part we need data. Fortunately previous authors on economic sanctions have collected data, like Hufbauer *et al.* who created the HSEO database in 1983 and updated it most recently in 2007, now containing 204 sanction cases (Hufbauer *et al.,* 2007: X). Early also created a dataset for his articles in 2009 and 2011 on sanction busters. Early took 97 cases from the HSEO dataset, in which the USA was the sender. It is not clear what the basis of this selection is, because the HSEO dataset contains 123 cases in which the USA is the primary sender and another 10 in which the USA is the secondary sender. Early only mentions that the pre-1950 cases are left out (2011: 390). The reason might be that for the earlier cases the trade data was not available, this is however, not explicitly stated by Early. The 2011 dataset contains US sanction cases over time, so that every year a sanction persists in stalemate is represented by a separate case. This results in a dataset with 1150 cases that is based on 97 separate sanction episodes (Early, 2011: 382). In order to test the last two hypotheses presented in the theoretical framework of this thesis, the two datasets have to be combined. The HSEO dataset by Hufbauer *et al.* (2007)*,* is merged with the sanction busting dataset created by Early (2011). This is possible because the dataset by Early is also based on the HSE dataset and thus has the same unique case coding.

Because not all hypotheses do need the trade sanction buster data compiled by Early, we will test only the last hypotheses with the combined HSEO-Early dataset. The original HSEO dataset contains 204 unique sanction episodes, versus the 97 USA-sanction episodes collected by Early. To prevent a bias with the USA as sender and to be able to make generalizations it is preferred to use the HSEO dataset for the other hypotheses.

Operationalization

Sanction success is used in the same manner as Hufbauer *et al.* do, meaning that the variables policy success and sanction contribution, which are both categorical variables ranging from one to four are multiplied in order to create the variable sanction success (Hufbauer *et al.,* 2007: 49-52). The variable sanction success can thus take the value of 1 till 16. Policy success measures whether the sender's goals have been achieved and sanction

contribution measures the extent to which the economic sanction has contributed to that outcome. In our analyses, sanction success is used as a dichotomous variable. So when can we speak of sanction success? A sanction episode is defined a success when the sender's goals were at least partly realized and when the economic sanctions substantially contributed to this outcome. This means that both policy success and sanction contribution have a minimum value of three out of four (Hufbauer *et al.,* 2007: 48-50). Sanction success is then perceived as a success when their product is 9 or larger. This is the same operationalization as used by Hufbauer *et al.,* 2007; Early, 2009; Dashti-Gibson *et al.,* 1997.

Target cost and sender cost are both part of the HSEO dataset. Sender cost is a categorical variable or as Hufbauer *et al.* call it "a judgemental index, scaled from 1 to 4, to measure the economic and political pain endured by the sender country" (2007: 64), where 1 is a net gain to the sender and 4 is a major loss to the sender (Hufbauer *et al.,* 2007: 63-64). The authors call it judgemental index, because it is not based on a fixed calculation or formula but it is assessment made by the authors based on "the trade, financial, and political costs incurred by the sender" (Hufbauer *et al.,* 2007: 63-64). The cost to the target is calculated on the basis of predicted welfare loss and the elasticity of demand and supply. The result is expressed in the percentage lost GNP of the target country (Hufbauer *et al*., 2007: 62). In the original HSEO dataset the cost to the sender and the cost to the target are thus coded differently and that makes them incomparable. In order to enhance the comparability between sender cost and target cost, the variable target cost has been recoded into a categorical four-point scale, just like the sender cost variable.

Cost to target as percentage of GNP has been recoded in a categorical variable with four values. The categorization has been adapted to match the variable sender cost as much as possible and also has a distribution over the four categories that looks like the distribution of sender cost, with the majority of cases in the two middle categories, see table 1. As Hufbauer *et al.,* already observed the numbers seem small, with a majority of the cases that have target costs below 2% of GNP (2007: 105). The total coded cases add up to 94.7% because not all target costs are coded in the original HSEO dataset. With the recoding into a categorical variable some information is lost. This new measure will therefore only be used when it serves a purpose, for example when target cost and sender cost are compared.

Table 1. Recode: Target cost as categorical variable

Label:	Range in the original variable:	Recoded into:	Percent
No loss or insignificant loss	-∞ through 0.09	1	21.6
Minor loss	0.10 through 1.49	2	37.3
Modest loss	1.50 through 4.99	3	22.1
Major loss	5.00 through +∞	4	13.7
Total			94.7

The HSEO dataset has one variable with multiple codings. For the purpose of this thesis this variable is recoded into dummy variables as can be seen in table 2. In the HSEO dataset only six sanction episodes consist of import sanctions and only 22 are export sanctions. Import and export sanctions are more often combined with financial sanctions. Because it is expected that the effect of import and export sanctions should also be observable when they are combined with financial sanctions, a new variable is created that takes together import plus financial import sanctions and export plus financial export sanctions. This means that the variable broad import sanctions is coded by counting the import sanctions and the financial import sanctions in table 2 and the variable broad export sanctions is created by combining the variable export sanctions and the variable financial export sanctions. This leads to a slightly larger number of observations of import and export sanctions which is helpful in the further statistical analysis. This operationalization is borrowed from Hufbauer *et al.* (2007: 91). As long as the new variables are not used to make inferences about the difference between financial and import or export sanctions, this measure seems appropriate.

Lastly a new variable has been created that takes together all trade sanctions. This variable combines import sanctions and export sanctions in order to obtain the variable trade sanctions in table 2. This is necessary in order to be able to test hypothesis 6, which compares the number of sanction busters in financial cases versus sanction busters in trade cases.

Table 2. Frequency table: Sanction type

Label	Frequency	Percent
Financial sanctions	53	26.0
Import sanctions	6	2.9
Financial import sanctions	10	4.9
Broad import sanctions	*16*	*7.8*
Export sanctions	22	10.8
Financial export sanctions	28	13.7
Broad export sanctions	*50*	*24.5*
Export and import sanctions	12	5.9
Trade sanctions	*40*	*19.6*
Broad sanctions	62	30.4

Early measures the presence of sanction busters by looking at hikes in international trade data. In Early's article sanction busters are defined as "(…) third party states that respond to a sender's sanctions by significantly increasing their trade with the target state and in high enough absolute levels to substitute for the trade losses entailed by the sanctions." (2011: 390). This is operationalized by a count measure of the number of third party states that increased their imports or exports with at least 5% compared to the previous year and are responsible for at least 5% of the total trade with the target country. This way only extensive sanction busters are counted. As a final step the three-year running averages are taken instead of yearly numbers of sanction busters, which is justified by the lag that trade data has compared to actual yearly trade (Early, 2011: 391). This leads to a continuous variable with zero as minimum value, meaning that not a single third state has increased its trade significantly with the target country since the imposition of the economic sanctions. Table 3 provides the summary statistics for the sanction busters' variable.

Table 3. Summary statistics of the sanction busters' variable

Variable	Observations	Mean	Std. Deviation
Sanction busters	1150	3.24	1.65

Results and discussion

Hypothesis 1

Import sanctions seem not to be used more often than export sanctions as table 4 shows. Even when the broader measure of import and export sanctions is used, it becomes clear that export sanctions are used in 50 cases and thus much more often than import sanctions in only 16 cases. Unlike Kaempfer and Lowenberg would predict, export sanctions are the more popular trade sanction. The hypothesis is therefore rejected.

Table 4. Frequency table: Import vs export sanctions

Label	Frequency	Percent
Import sanctions	6	2.9
Financial & import sanctions	10	4.9
Broad import sanctions	*16*	*7.8*
Export sanctions	22	10.8
Financial & export sanctions	28	13.7
Broad export sanctions	*50*	*24.5*

This result could mean that commercial constituents are not the dominant interest group, or at least that they are not able to influence the design of sanctions. As was discussed in the theoretical framework, there are several other factors that can explain the limited use of import sanctions, like the GATT rules favouring export sanctions. These factors do not necessarily contradict the theory of Kaempfer and Lowenberg, but at least show that more is happening than the theory predicted. Another reason export sanctions are used more is that export sanctions are used in a specific type of sanction case: the military impairment case. In these cases senders often put in place a very specific export boycott that limit the export of strategic weapons, like nuclear weapons, weapons of mass destruction and military technology (Hufbauer *et al.,* 2007: 70-72). Even though the commercial constituents in the senders' state will not be in favour of export sanctions, the political interests of preventing the target state of acquiring certain weapons are more important. Indeed 14 out of 29 cases within the military impairment category are export sanctions while none are import sanctions, see table 5. This means that the different sanction goals might partly explain another outcome than Kaempfer and Lowenberg had expected. Yet, even if the 14 export-oriented cases are disregarded or subtracted from the total of 50 export sanctions, 36 export sanction episodes remain, a number well above the 16 import sanctions. All together, it thus

remains true that export sanctions are used more often than import sanctions and the hypothesis is rejected.

Table 5. Export and import sanctions split out to policy goal

Foreign policy goal	Broad export sanctions	Broad import sanctions	Other sanction type	Total
Modest goal	10	10	23	43
Regime change	9	5	66	80
Disrupt military adventure	8	0	11	19
Military impairment cases	14	0	15	29
Other major policy changes	9	1	23	33
Total	50	16	138	204

Hypothesis 2

The second hypothesis states that financial sanctions impose higher costs on the target than trade sanctions. This is tested with an independent samples t-test with target cost as the test variable while sanction type is disaggregated in financial sanctions and trade sanctions. This is the variable of which the means are compared to each other in table 6. With a mean of 0.73 for trade sanctions verses 1.76 for financial sanctions the target cost is significantly different. Financial sanctions indeed impose higher costs on the target state and therefore the hypothesis is supported. Hufbauer *et al.* thus seem to be correct with their analysis that trade sanctions impose lower costs on the target state than financial sanctions.

Table 6. Independent samples t-test

		N	Mean	Std. Deviation	t	df	Sig.	Std. Error Difference
Target cost	Trade sanctions	40	0.73	0.22	-2.34	91	0.021	0.44
	Financial sanctions	53	1.76	0.34				

Two-tailed tests.

Hypothesis 3

In order to test hypothesis 3a target costs are compared for the sanction type. It is expected that import sanctions impose higher costs on the target state than export sanctions. Although the number of observations is small, we do see in table 7 that export sanctions are distributed at the lower end of the 'loss-spectrum', with 88% of the cases with values that signify no loss or only a minor loss compared to 69% of import sanctions. The differences are

even bigger in the major loss category with only 2% of the export sanction versus 19% of the import sanctions in this category. The chi-square shows that there is indeed a statistically significant association between target cost and sanction type.

Table 7. Cross tabulation of target cost and import/export sanctions (percentages)

		Broad export sanctions	Broad import sanctions	All other sanctions
Target cost (categorical)	No loss	40	44	13
	Minor loss	48	25	38
	Modest loss	10	13	30
	Major loss	2	19	19
	Total %	100	100	100
	N	50	16	127*

Chi-Square = 30.63; *p*=0.00 (*target cost is not coded for 11 'other sanction' cases)

Hypothesis 3b is tested by crosstabulating sender cost against sanction type and it is expected that in this case export sanctions lead to higher costs. Table 8 shows that neither export sanctions nor import sanctions lead to major losses for the sender state. Import sanctions do always impose some cost although 94% of the cases lead only to a minor loss compared to 72% of export sanctions. The results are clearly mixed even though the chi-square shows that there is association between sender cost and sanction type, it is by no means clear that export sanctions do indeed impose higher costs on the sender state. Hypothesis 3b is therefore rejected.

Table 8. Cross tabulation of sender cost and import/export sanctions (percentages)

		Broad export sanctions	Broad import sanctions	All other sanctions
Sender cost (categorical)	No loss	16	0	40
	Minor loss	72	94	35
	Modest loss	12	6	19
	Major loss	0	0	6
	Total %	100	100	100
	N	50	16	138

Chi-Square = 36,34; *p*=0,00

A possible explanation for this result is that the financial component of the import and export variables, diffuse the results or even influence them. A replication of hypothesis 3a and 3b with pure import and export sanctions instead of broad import and export sanctions,

however, showed that the results did not in fact alter that much and had no effect on the conclusion.

Hypothesis 4

Although hypotheses 3b cannot be supported, it is still worth testing whether import sanctions are more successful than export sanctions. Using a dichotomous measure for sanction success, 31% of import sanctions lead to successful outcomes versus 20% of the export sanctions. The results do indeed indicate that import sanctions tend to lead more often to success than export sanctions. The difference in cost, as was tested in hypotheses 3a and 3b, is thus likely to be correlated to sanction success.

Table 9. Cross tabulation of sanction success and import/export sanctions (percentages)

		Broad export sanctions	Broad import sanctions
Sanction success	Failure	80	69
	Success	20	31
	Total %	100	100
	N	50	16

Chi-Square = 6.49; p=0.04

Hypothesis 5

As the answer to the previous hypothesis already suggests, there should be a relationship between sanction type, target cost and sanction success.

The only logical relation is when sanction success and sanction type have sanction cost as intervening variable. This will be tested by running three separate binary logistic analyses in which the dichotomous variable sanction success is the dependent variable. Target cost and sanction type are alternately added in the first and second analysis. Target cost and sanction type are both added in the third analysis. When the direct relation between sanction type and sanction success (a) is larger than the relation between

Figure 3

them when cost is also part of the logistic analysis (b), so that $a > b$, it is shows that target cost is the intervening variable, see figure 3. At the same time the coefficients between target cost and sanction success in the second and third analysis should more or less stay the same, so that $c \cong d$ in figure 3. Sanction type has been entered as in most of the analyses in
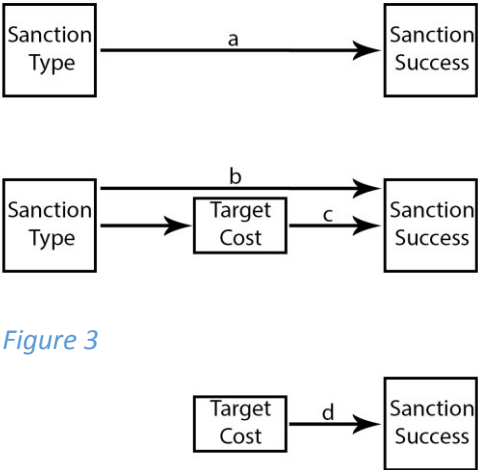
this study, meaning that the variables are dichotomous and consists of: financial sanctions, broad import sanctions, broad export sanctions and broad sanctions. Broad sanctions consist of export, import and financial sanctions at the same time.

Table 10 shows sanction type coded as financial, import, export and broad sanctions versus the dependent variable: sanction success. All coefficients have negative signs, meaning that the dependent and independent variables are negatively related. If any type of sanction is included then the odds that the sanction will result in a success decreases. Only export sanctions reach significance and it also has the highest negative coefficient.

Table 10. Logistic regression: Sanction type

	B	S.E.	Wald	Sig.	Exp(B)
Financial sanctions	-0.495	0.506	0.956	0.328	0.610
Import sanctions	-0.701	0.682	1.058	0.304	0.496
Export sanctions	-1.299	0.547	5.641	0.018**	0.273
Broad sanctions	-0.305	0.491	0.386	0.535	0.737
Constant	-0.087	0.417	0.043	0.835	0.917

*p < 0.10, **p < 0.05, ***p < 0.01, two-tailed tests.
Pseudo R-square: 0.038 (Cox & Snell)

When the variable target cost as a percentage of GNP is added to the logistic regression, we observe some changes. None of the variables is significant anymore, while all coefficients of the entered variables have become positive. The absolute values of the coefficients of sanction type have become higher in the second logistic analysis as can be observed in table 11. This does not match the conditions for target cost as intervening variable between sanction type and sanction success and runs against the assumption that was presented in the theoretical framework. This result also contradicts the results found under hypothesis 3a, where a relation between import/export sanctions and target cost was found.

Table 11. Logistic regression: Sanction type and target cost

	B	S.E.	Wald	Sig.	Exp(B)
Financial sanctions	1.021	0.826	1.527	0.217	2.775
Import sanctions	0.835	0.944	0.781	0.377	2.304
Export sanctions	0.248	0.852	0.085	0.771	1.281
Broad sanctions	1.091	0.826	1.746	0.186	2.978
Target cost (% of GNP)	0.026	0.025	1.117	0.291	1.026
Constant	-1.649	0.776	4.519	0.034**	0.192

*p < 0.10, **p < 0.05, ***p < 0.01, two-tailed tests.
Pseudo R-square: 0.043 (Cox & Snell)

In the last logistic regression in table 12, we observe that the variable target cost alone also does not reach significance. The variable target cost does indeed remain in the same order of magnitude, shifting from 0.026 to 0.040. This does not immediately violate assumption $c \cong d$ from figure 3.

Table 12. Logistic regression: Target cost

	B	S.E.	Wald	Sig.	Exp(B)
Target cost (% of GNP)	0.040	0.024	20.699	0.100	1.041
Constant	-0.890	0.171	26.964	0.000***	0.411

*p < 0.10, **p < 0.05, ***p < 0.01, two-tailed tests.
Pseudo R-square: 0.016 (Cox & Snell)

These surprising results cannot confirm that sanction cost is the intervening variable between sanction type and sanction success. This raises the question whether there might be another intervening variable at play. It is also possible that the dataset itself is not giving correct results, because it is hard to comprehend how it is possible that whatever sanction type is added in the analysis the odds of success decrease.

Hypothesis 6

Even though the previous hypothesis is not confirmed and target cost could not be shown to the variable connecting sanction type and sanction success, it remains likely that sanction busters can have a significant effect on sanction success through sanction type. In order to test the sixth hypothesis, the number of sanction busters is tested for broad import sanctions and for broad export sanctions. In total 274 cases of the 1150 are export sanctions, while 98 are import sanctions. An independent t-test establishes whether the means of sanction busters are significantly different for import and export sanctions. As can be seen in table 13, the mean number of sanction busters in import sanctions is substantially higher than the number of sanction busters when export sanctions are imposed. The mean entails the average number of sanction busters over all import and export cases. For import sanctions this average number of sanction busters is with 3.93 higher than for export sanctions where it is only 3.46. So on average there are more sanction busters active when the target country is confronted with import sanctions. The t-test in table 13 shows us that the difference is indeed significant. This result is, however, the complete opposite of the stated hypothesis where it was expected that export sanctions were more likely to attract a

19

high number of sanction busters. A targeted state confronted with import sanctions at that moment needs imports that originally came from the sender state. The numbers do, however, show the opposite and seem to indicate that third parties are more willing to buy the goods that the targeted state exports. This could be the case because these goods are probably available at a discount as the theory in appendix 1 predicts. Another explanation for this could be that the measure developed by Early, the number of sanction busters, does in fact not accurately measure sanction busting. The variable is a count variable, meaning that every sanction buster is counted as one, no matter whether it increased its trade with exactly 5% or with 50%. Therefore, the number of trade partners may have increased, but that does not mean that the total amount of trade has increased. It is possible that this influences the result obtained here. A variable containing absolute trade changes would be a more accurate measure to be tested. From the perspective of the sender it is thus preferred to impose export sanctions if they do not want their sanctions to be busted.

Table 13. Independent samples t-test

		N	Mean	Std. Deviation	t	df	Sig.	Std. Error Difference
All Busters	Broad export sanctions	274	3.46	0.07	-2.91	370	0.004	0.16
	Broad import sanctions	98	3.93	0.18				

Two-tailed tests.

Hypothesis 7

The number of sanction busters is tested for both trade sanctions and financial sanctions. From the 1150 cases, 242 cases are purely financial sanctions and 87 are purely trade sanctions. The variable trade sanction is a combination of cases where only import sanctions, only export sanctions or both import and export sanctions are being used. Table 14 shows that trade sanctions have more trade sanction busters than financial sanctions and the difference is significant. These results confirm the hypothesis that trade sanctions have a higher number of sanction busters. Although this result was expected, the question remains whether financial sanctions can be busted by third parties that increase imports or exports to or from the target country. It would make more sense to develop a variable that takes capital flows into account, instead of just looking at hikes in international trade data, as Early

does in the dataset for his 2009 and 2011 articles. If financial sanctions cannot be busted by increasing trade, the number of sanction busters in the case of financial sanctions should be zero. However, with a mean of 3.32 it is not zero at all. This consequently raises the question sanction busters is properly operationalized. It could for example be that all countries, sanctioned or not, have major shifts in their yearly trade partners.

Table 14. Independent samples t-test

		N	Mean	Std. Deviation	t	df	Sig.	Std. Error Difference
All Busters	Trade sanctions	87	3.90	1.02	3.57	327	0.000	0.16
	Financial sanctions	242	3.32	1.40				

Two-tailed tests.

Conclusion

This study has shown that import and export sanctions are used relatively little compared to financial sanctions and that import and export sanctions do not significantly influence the costs as perceived by the sender. The type of sanction does have a significant impact on the target cost. This casts doubt about the theoretical model as presented by Kaempfer and Lowenberg (Kaempfer & Lowenberg, 1988; 2007). Either domestic commercial constituents in the sender state are not the influential interest groups Kaempfer and Lowenberg expect them to be, or this cannot be properly measured with the analyses we have done. It still could be true that commercial constituents are able to influence the domestic design of sanctions, but not to the extent that they can apply them to their own advantage i.e. bend them all to import sanctions. In particular export sanctions can be rather sector-specific and impose heavy losses on narrow commercial constituents (Hufbauer *et al.,* 2007: 109). Commercial constituents might understand and accept the political reality that sanctions are going to be imposed and still be able to divert the most negative outcome and be able to prevent the creation of export sanctions. Although this is hard to test, because this would necessitate a measure of influence and that is beyond the scope of this thesis. It has also been demonstrated that financial sanctions impose much higher costs to targets than trade sanctions, although this is likely to be primarily true for poorer countries and less so for more developed states.

That sanction type seems to matter also becomes clear in the result that export sanctions, compared to import sanctions, lead to higher costs for the target state. At the same time export sanctions relate to more successful sanction episodes, oddly enough this relation disappears when target cost is added as a variable in the logistic analysis. Another finding is that import sanctions attract, on average, more sanction busters than export sanctions. A higher number of sanction busters is, according to Early, supposed to decrease sanction success. This conclusion is supported by the findings in this thesis and it strengthens the argument for the use of export sanctions instead of import sanctions.

There is still no empirical support for target cost as the intervening variable between sanction type and sanction success. Although it is accepted among scholars that sanction type can be a relevant factor in determining sanction success, sanction type remains too

little understood and there is a need for more thorough analysis on the role of sanction type in economic sanction in order to close the existing knowledge gap in the sanctions literature. There is also a need to include more different types of sanctions in the HSEO dataset, like smart sanctions and further subdivisions of financial sanctions like the impediment of aid flows or asset freezes.

Early truly has provided us with a deeper insight in the presence of sanction busters and their motivations. Although it remains a mystery why financial sanctions would be 'busted' when third parties increase trade with the target state (Early, 2011: 388-389). A better operationalization of sanction busting that measures the amount of trade that is busted instead of the number of sanction busters would help to measure the real effect of third party sanction busting on sanction success. Additional research on this point could lead to interesting findings and enhance our understanding on the role that is played by sanction busters and the role that sanction type plays in attracting black knights.

Sanction type is one of the few factors policymakers in the sending state wield control over and this thesis showed that sanction type can affect the costs for the target and can affect the likeliness that third parties will bust the sanction. All this stresses the relevance of proper sanction design by the sending state in order to achieve the foreign policy goal that is being sought in the most efficient way.

Appendix 1

Economic theory behind the effect of trade sanctions in a target country

The economy of a target country can be illustrated as a supply-and-demand curve and looks like figure 4. On the horizontal axis is the quantity demanded and supplied and on the vertical axis is the price per unit of any good, also called the 'composite good'. The lines *Supply* and *Demand* in figure 4 show the goods supplied and demanded in the target country in the pre-sanctions period.
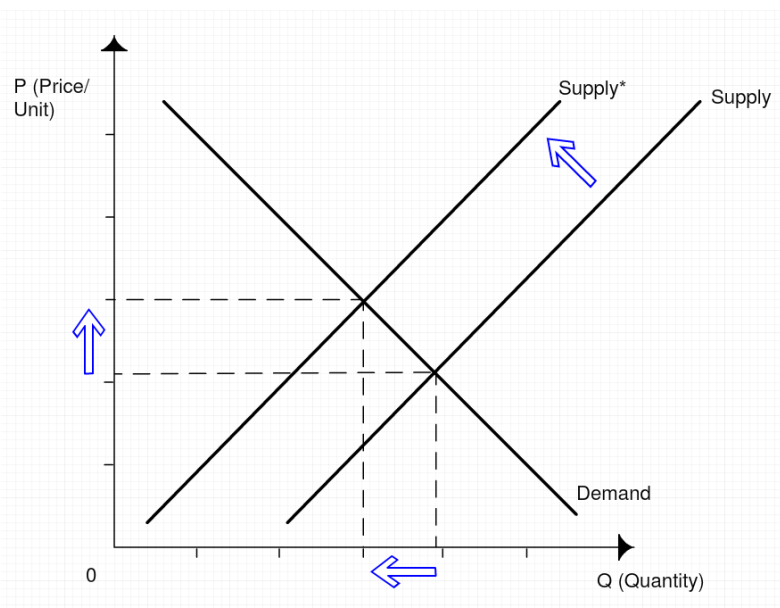

Figure 4. Demand and supply curve of export sanctions

Export sanctions

If an export sanction is imposed, the total supply of goods in the target state goes down, indicated by a shift of the *Supply* curve to the left, now *Supply**. This triggers several reactions; the first is that prices go up because of the lower supply. Higher prices mean that people will consume less, partly solving the problem of a lower supply. It also creates an incentive for domestic producers to produce more, and lastly, it explains why third states are willing to bust the sanctions: the higher prices mean there is a higher profit to be made. So not everyone is worse off, as far as domestic production can replace the lost imports, the domestic producers can make higher profits and so can the trade sector. The populace in the target state buying the composite good are the ones primarily paying the higher price.
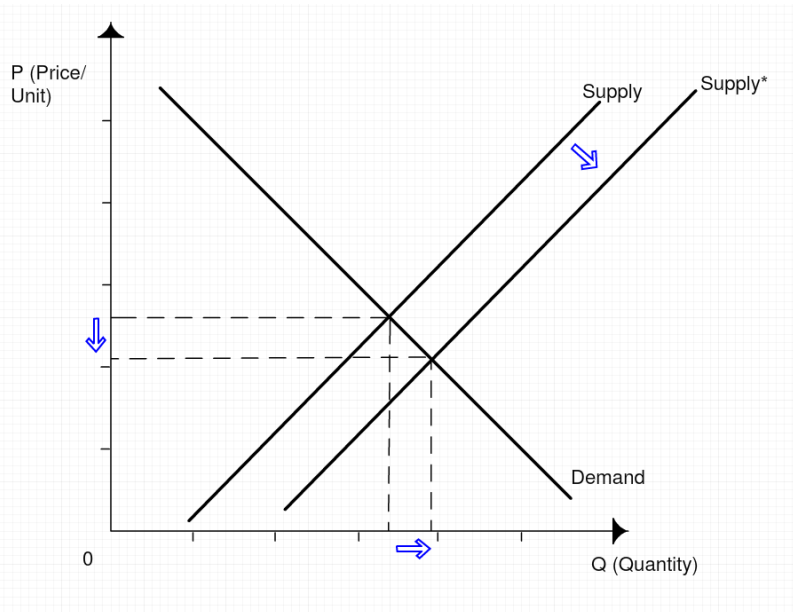
Figure 5. Demand and supply curve of import sanctions

Import sanctions

With import sanctions, the *Supply* curve shifts to the right as indicated in figure 5. This time domestic producers in the target state cannot export their products to the sender state and are left with a surplus, leading to lower prices and thus probably some increased demand in the target state itself. Third countries might be willing to take over these exports for a lower price as long as it does not hurt their internal market. The commercial constituents in the target country are worse off this time, while the populace benefits from at least temporary lower prices.

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