

H195B Honors senior thesis:

The impact of presidential approval rate and unemployment rate in imposition and outcome of the United States sanctions

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1. Introduction

Sanction is an economic policy tool employed by single, group of countries or international organizations as a measure to deter or influence policies of a target country. Margaret Doxey(1980)¹ defines sanctions “as penalties threatened or imposed as a declared consequence of the target’s failure to observe international standards or international obligations.” And Daniel Drezner(2003)² defines sanctions as “ threat or act by a sender government or governments to disrupt economic exchange with the target state, unless the target acquiesces to an articulated demand”. Scholars have emphasized the outcomes of economic sanctions in order to estimate the effectiveness of the sanctions. In doing so, almost all the existing empirical studies of sanctions are based on comprehensive sanctions’ data by Hufbauer in *Economic sanctions reconsidered*. However, when scholars of sanctions rely on regression result produced by sanction cases only, they are controlling for the selection bias. Only a handful of scholars, Nooruddin(2002) and Jing, Kaempfer, Lowenberg(1989) incorporates the selection bias in assessing economic sanction. Furthermore, while many scholars focus on politics and economy of a target in analyzing economic sanctions, few have dealt with those of a

¹ Doxey, Margaret, 1980, ‘Economic Sanctions and International Enforcement’, London:Oxford University Press.

² Drezner, Daniel, 1999, ‘The Sanctions Paradox: Economic Statecraft and International Relations’, Volume 65 of Cambridge Studies in International Relations, Cambridge University Press.

sender such as president approval rate, and unemployment rate except for Drury, Cooper(2001).

Observing economic sanctions in light of the unemployment rate and the president approval rate can be insightful. For example, in 1986, an economic sanction was levied upon South African as a result of ‘neo-mercantilist protectionist pressure as political interest groups voiced concerns over domestic economy.’³ Even though the purported mission of the sanction was to appose the practice of Apartheid, the president was attempting to win support from the domestic protectionist groups.

Also, during the Cold war, Jimmy Carter embargoed grain exports to Soviet Union as a retaliation against Soviet’s invasion on Afghanistan. Although Carter suffered greatly from the angered farmers, Carter prioritized the action against Soviet Union more than listening to the domestic audience. It is questionable whether Jimmy Carter would have sanctioned a country if it had not been a communist regime especially during the cold war. However, Ronald Reagan lifted the sanction on the Soviet Union that Jimmy Carter because he promised during his election time that he would lift sanction Soviet Union and ease the economic harm imposed on grain exporting farmers.⁴ Even though the president Reagan was not at all easy on communism, especially Soviet Union during the Cold War, his concern on domestic political group out-weighted the international diplomacy over communism. than previous Bush administration as he promised when he was campaigning in Florida⁵ The state of Florida for Clinton was important for electoral

³ Kaempfer, William and Anton, Lowenberg, 1989, ‘Sanctioning South Africa : the politics’, Cato Journal, Vol. 8, No. 3, New York: Cambridge University Press.

⁴ Drury, Cooper, 2000, ‘U.S. Presidents and the Use of Economic Sanctions’, Presidential Studies Quarterly 30, no. 4, Center for the Study of the Presidency.

⁵ Fisk, D. 2000, ‘Economic sanctions: The Cuba embargo revisited. In Sanctions as economic statecraft: Theory and practice’, edited S. Chan and A. Drury, 65-85. London: Macmillan.

votes and campaign money even though he lost in Florida.⁶ Thus, in this case, the interaction of regime type and domestic economic interest is a crucial factor in understanding economic sanctions.

The dynamics between regime types and politics and economics of a sender country is indispensable in assessing the workings of economic sanctions. Therefore, in this paper, I aim to analyze the impact of United States' political climate and state of the economy reflected in president approval rate and unemployment rate on effectiveness of economic sanctions after correcting for selection bias by using Heckman selection model.

2. Literature review

Starting with Hufbauer & Schott (1985) and Hufbauer, Schott & Elliott(1990), hereafter referred as HSE, studies assessing economic sanction have been rigorously pursued. HSE in *Economic sanctions reconsidered*, success score, ordered ranking of how successful sanctions were, ranges from 1 to 16. HSE concludes that 34% of the total 116 sanction cases had been successful. Eighteen correlates used in the ordinary least square regression consists of economic and political states of target and sender countries.

Several scholars have questioned the legitimacy of the success score and the method used by HSE. Cooper Drury, in *Revisiting Economic sanctions reconsidered*, employs ordered-logit model in re-analyzing the effectiveness of sanctions using the data from HSE. However, he excludes the contribution score from success score which he suspects of introducing endogeneity to the regression.⁷ Also, Robert Eyster⁸, instead of

⁶ Vanderbush, W., and P. J. Haney, 1999, 'Policy toward Cuba in the Clinton administration', *Political Science Quarterly* 114:387-408.

⁷ Drury, Cooper, 1998, 'Revisiting economic sanctions reconsidered', *Journal of Peace Research*, Vol. 35, No. 4 : 497-509, SAGE Publication LTD.

rating the success score based on the outcome, makes a novel approach by observing the fluctuation of the target regime's exchange rate. Furthermore, Bolks and Al-Sowaye⁹ argue that the success can be observed in terms of longevity of economic sanctions since successful sanctions tend to last short.

Using the compiled data on sanctions, scholars also have identified the factors contributing to the success of sanctions. James Barber¹⁰ and Margaret Doxey¹¹ points out that severity is a pivotal factor. They stretch that more economically severe the sanctions are, more likely the targets would succumb to the sanctions. However, Johan Galtung¹² argues that severe sanctions encourage people in a target country to politically collaborate against the sanction. People in a target consider sanctions as undesirable interference and thus integrate against the economic sanction.

Other scholars such as Irfan Nooruddin, James Hart, William Kaempfer and Lowenberg Anton emphasize the regime types. Nooruddin¹³ argues that democratic targets are more likely to yield to sanctions because politicians in a democracy are concerned of alienating their electorates. Robert Hart¹⁴ also argues that that democratic senders tend to result in effective sanctions in order to remain in the office. While regime structures can be crucial factors in considering the effect of the sanctions, William

⁸ Eyley, Rober, 2007, 'Economic Sanctions: International Policy and Political Economy at Work (International Policy & Politic)', Palgrave Macmillan.

⁹ Bolks and Dina Al-Sowayel, 2000, 'How Long Do Economic Sanctions Last? Examining the Sanctioning Process through Duration', Political Research Quarterly, Vol53, No. 2 : 241-265, SAGE Publications Inc.

¹⁰ Barber, James, 1979, 'Economic Sanctions as a policy instrument, International Affairs', Royal Institute of International Affairs 1944-, Vol. 55, No. 3.

¹¹ Doxey, Margaret, 1980, 'Economic Sanctions and International Enforcement', London:Oxford University Press.

¹² Galtung, Johan, 1967, 'On the effects of International Economic Sanctions : With Examples from the Case of Rhodesia, World Politics', Volume 19, Issue 3, 378-416.

¹³ Nooruddin, Irfan, 2002, Modeling selection bias in studies of sanctions efficacy, International Interactions, 28:59-75, Taylor&Francis.

¹⁴ Hart, Robert, 2000. 'Democracy and the Successful Use of Economic Sanctions', Political Research Quarterly 53(2): 267-284.

Kaempfer and Lowenberg Anton¹⁵ express the power of political interest groups in a sender country. Depending on the regime type of a sender country, domestic interest groups have different degree of power in initiating a sanction.

While majority of the sanctions' scholars have focused on the efficacy of economic sanctions alone, some scholars have dealt with the target selection bias. Irfan Nooruddin¹⁶ uses two-way Heckman method and Cooper Drury¹⁷ includes control countries to the non-random dataset. Thus, Nooruddin combines the selection process with the outcome process and Drury adds control countries to randomize the dataset.

There is no doubt that scholars have pursued rigorously in order to assess the impact of economic sanctions. But, none incorporates the economic and political indices such as unemployment and president approval rate into the study and, at the same time, corrects for the selection bias. Therefore, I specifically focus on United States unemployment rates and president approval rates in analyzing their impact on outcomes after adjusting for the selection bias.

3. Theoretical background and hypothesis

The primary objective of a sanction centers on behaviors and characteristics of target country; and the secondary objective of a sanction centers on status and characteristics of sender countries.¹⁸ Not only does each characteristic have significant impact on sanctions, but the interacting dynamics between the sender and the target also

¹⁵ Kaempfer, William H. & Anton D. Lowenberg, 1989. 'The Theory of International Economic Sanctions: A Public Choice Approach: Reply, *American Economic Review* 79(5): 1304–1306.

¹⁶ Nooruddin, Irfan, 2002, Modeling selection bias in studies of sanctions efficacy, *International Interactions*, 28:59–75, Taylor&Francis.

¹⁷ Drury, Cooper, 2000, 'U.S. Presidents and the Use of Economic Sanctions', *Presidential Studies Quarterly* 30, no. 4, Center for the Study of the Presidency.

¹⁸ Barber, James, 1979, 'Economic Sanctions As a Policy Instrument', *International Affairs (Royal Institute of International Affairs 1944-)*, Vol. 55, No. 3 :367-384.

have pivotal role on sanctions. The public interest group theory and democratic peace theory offer insights into how sanctions can be a reflection of a country's politics and economy. As the theories are explicated, relevant hypothesis are proposed.

Public interest group theory

The public interest group theory supports that “observed policies in international relations and their consequences are viewed as outcomes of the configurations of domestic interest group politics”.¹⁹ It emphasizes the role of public interest groups in government decision-making process. When government is possibly initiating a sanction, public interest group is a crucial component to take into a consideration. Galtung(1967) theorizes that sanctions are not necessarily meant to create a maximum pain for targets all the time, but also to reflect the political climate and to express the interests of the constituencies.²⁰ Demonstration of the public group's interests in domestic politics is evident mostly in public polls or elections. Therefore, when the presidents are concerned of public discontent, politicians are motivated to take public interests into consideration during sanctioning. Similarly, during an election season, president appeals to the public by making noticeable moves. Leaders initiate sanctions in hopes of sending favorable signs to public in order to publicize politicians' political stance, which leaders hope is in the interest of the public.

Bueno de Mesquita et al(1999) emphasizes the powerful effect of the public interest in the politics especially in the democracy. He argues that the primary goal of

¹⁹ Kaempfer, William H. & Anton D. Lowenberg, 2007, 'The political economy of economic sanctions, Handbook of Defense Economics', volume 2.

²⁰ Galtung, Johan, 1967, 'On the effects of International Economic Sanctions : With Examples from the Case of Rhodesia, World Politics', Volume 19, Issue 3, 378-416.

democratic politicians is to remain in the office; and in order to remain in the office, politicians have to cater to interest of the public supporters.²¹ Therefore, politicians are motivated to take advantage of utilizing sanctions during when they are seeking for greater degree of approval during economic downturns and elections. When the presidents are suffering from an economic downturns and a low public rating which can be problematic for the re-election, they are motivated to initiate a sanction which might not have been enacted if the economic and political climate had been more favorable. Although the politicians in autocratic regimes do not completely lack motivation to care the public opinion, the tendency is much less apparent in autocracies. In autocratic countries elections and political appointment are less transparent and open to the public than in democratic regimes.

Democratic peace theory

The public interest group theory, as Bueno de Mesquita et al(1999)²² explains, has different implications for democratic and autocratic regimes as the democratic peace theory suggests.

The democratic peace theory explores dynamics between regime types and political tools employed during conflicts between countries. It suggests that voices of the peace-seeking public are more reflected in a democratic nation than in an autocratic nation. In democracy, ‘very few goals could be justified in fighting wars’, because the

²¹ Bueno de Mesquita, Bruce; James Morrow, Randolph Siverson & Alastair Smith, 1999. ‘An Institutional Explanation of the Democratic Peace’, *American Political Science Review* 93(4): 791–807.

²² Bueno de Mesquita, Bruce; James Morrow, Randolph Siverson & Alastair Smith, 1999. ‘An Institutional Explanation of the Democratic Peace’, *American Political Science Review* 93(4): 791–807.

general public, from which the legitimacy of the government is derived from, prefers non-belligerent means of resolving international conflicts to the violent methods²³ Thus, one of the utmost goals of democratic policy-makers is to pursue policies that reflect the ideologies of the general public This leads democratic nations to utilize non-violent measures such as economic sanctions, embargoes and other peaceful economic tools, attempting not to offend the public interests.²⁴ On the other hand, authoritarian regimes relative to democratic regimes lack political channels through which the public can impact government decisions. The incapability of the public in the autocracy to pursue changes in the politics discourages the leaders from reflecting the public voices in politics, relative to the democracy.

The theory also has implications for the outcomes of economic sanctions. The more democratic regime would not only employ peaceful measures more often, but also encourage politicians to succeed in sanctions. The democratic politicians tend to be punished for their failures, because the leaders in the democracy tend to be reprehended by the public for their failed policies than the leaders in the autocracy.²⁵ This leads the leaders in the democracy to sanction targets more discretely than the leaders in the autocracy. On the other hand, even though the leaders in an autocracy certainly prefer successful sanctions to the abortive ones, pleasing the public with the successful policy outcome is not one of the utmost concerns for the autocratic leaders.²⁶

²³ Maoz, Zeev, and Russett, Bruce, 1993, 'Normative and structural causes of democratic peace 1946–1986'. *American Political Science Review* 87: 624-38.

²⁴ Zinnes, Dinna, 2004, 'Constructing political logic : The democratic peace puzzle, *Journal of Conflict Resolution*', 48:430, SAGE Inc.

²⁵ Hart, Robert, 2000. 'Democracy and the Successful Use of Economic Sanctions', *Political Research Quarterly* 53(2): 267–284.

²⁶ Chan, Steve, 1997. 'In Search of Democratic Peace: Problems and Promise', *International Studies Review* 41(1): 59–91.

Furthermore, the theory hints at interactions between different regimes when they are embroiled in a conflict. Democracies tend to share common values and interests in their political ideologies with each other.²⁷ Although democratic nations utilize economic sanctions more frequently than the autocratic countries, democracies tend to refrain from initiating sanctions on other democratic nations. Thus, democracies are more likely to sanction an authoritarian regime than a democratic regime.

Interest group theory and democratic peace theory combined

Interest group theory supports that government leaders are interested in public voices on state of the economy and politics. Such tendency of the leaders to please the publics is more clearly observed in democratic regimes according to the democratic peace theory. In democracy, government seats reflect popular voices more transparently than the autocratic regimes, leading democratic leaders to be selective in choosing targets and sensitive to outcomes of the sanctions. This combined effect of public interest theory and democratic peace theory affects not only the initiations but also the outcomes the economic sanctions.

Based on the democratic peace theory, the first selection hypothesis is that the United States' presidents are more likely to sanction autocratic countries than democratic countries because of the similar political ideologies and norms that democracies share. Under the public interest theory, second and third hypothesis argue that the United States' presidents are likely to impose sanctions when the approval rate is lower and the unemployment rate is higher. When the public is discontent with the domestic state of the

²⁷ Dan Cox and Cooper Drury, Democratic Sanctions: Connecting the Democratic Peace and Economic Sanctions, SAGE Publication Inc., Journal of Peace Research 2006 43:709

economy and politics, presidents utilize sanctions to show that they are trying to handle the situation. Under the combined story of the democratic peace and the public interest theory, the fourth selection hypothesis states that the United States' presidents are more likely to respond to Military Interstate Disputes (MIDs) with sanctions when the target is autocratic because the United States seeks peace more with the democratic targets than with the autocratic countries when trying to resolve military issues.

The first outcome hypothesis is that the United States sanctions are more effective with the democratic targets than with the autocratic targets as supported in the democratic peace theory. The democratic targets which share more political norms and institutional structures more inclined to solve the dispute peacefully with the United States. The second and third outcome hypothesis elaborate that the United States sanctions are more effective when the public approval rate and the employment rate is lower. When the public is not satisfied with the presidents regarding the economy and the politics, presidents are more likely to put more effort into the sanctions.

In studying sanctions' initiation and effectiveness, the interest group theory and the democratic peace theory are insightful analytical frameworks, complementing each other. Two theories shed light onto how regime types, economy and politics of the United States affect economic sanctions.

Summary of hypothesis

Selection hypothesis	Supporting theory
1. United States is more likely to sanction autocratic countries as targets than democratic countries as targets.	Democratic peace theory
2. United States is more likely to sanction when presidents have lower approval rate from the public.	Public interest theory
3. Sanctions are more likely to be imposed when the unemployment rate is higher.	Public interest theory
4. When there is a militarized interstate dyad between the United States and the target, the United States is more likely to respond with sanctions if the target's regime is autocratic.	Democratic peace & Public interest theory
Outcome hypothesis	Supporting theory
5. Sanctions are more effective when the target's regime is democratic than when it is autocratic.	Democratic peace theory
6. Sanctions are more effective with higher approval rate from the public.	Democratic peace & Public interest theory
7. Sanctions are more effective when the unemployment rate is lower.	Democratic peace & Public interest theory

4. Data and method

The Data from the Nooruddin, Irfan

In *selection bias in studies of sanctions efficacy* by Nooruddin Irfan,²⁸ he modifies the original data from Hufbauer's *Economic sanctions reconsidered*²⁹. While Hufbauer's one data point represents each sanction case, one data point in Nooruddin's represents one year. Since Nooruddin analyzes both the initiation and the outcome process, there are two types of the data: data of variables affecting United States decision to initiate a sanction and variables affecting the outcomes of sanctions. Some of the

²⁸ Irfan Nooruddin, *Modeling selection bias in studies of sanctions efficacy*, Taylor & Francis, *International Interactions*, 28:59–75, 2002.

²⁹ Hufbauer, Gary & Jeffrey, Schott & Kimberly Elliott, 1990, *Economic sanctions reconsidered: History and current policy*, Washington, DC: Institute for International Economics.

variables overlap. For the selection process, he includes a dummy variable for western hemisphere region, the polity score, percentage of the trade with the United States, a dummy variable for major power relative to the United States, a dummy variable for ongoing hostility, and a dummy variable for Soviet bloc during the Cold war. In assessing the outcome, Nooruddin observes the polity score which captures the regime authority spectrum on a 21-point scale ranging from -10 (hereditary monarchy) to +10 (consolidated democracy)³⁰, cost of sanctions as a percentage of GDP, percentage of trade with the United States, domestic stability of the target, alliance with the US, prior cordial relationship with the US, Militarized Interstate Dispute(MID), existence of the black knight during sanctions, any outside help to the US, and existence of a major goal. Using two-way Heckman selection model, Nooruddin estimates rho signifying how the selection process and outcome of sanctions are related. He only analyzes economic sanctions initiated by the United States because he was concerned that Hufbauer's dataset would systematically exclude sanctions initiated by small powers. Thus, he minimizes the bias by includes only the US-initiated sanctions most of which, small or big, have been included in recent studies of sanctions.

Data from Drury, Cooper

*In Sanctions as coercive diplomacy : The US president's decision to initiate economic sanctions*³¹ by Cooper Drury, one data point corresponds to one month. Since Drury assesses how the mixture of domestic and international issue leads presidents to

³⁰ Marshall, Monty and Jaggers, Keith, 2002, 'Polity IV Project: Political Regime Characteristics and Transitions, 1800-2011', Center for International Development and Conflict Management, University of Maryland, College Park.

³¹ Drury, Cooper, 2000, 'U.S. Presidents and the Use of Economic Sanctions', Presidential Studies Quarterly 30, no. 4, Center for the Study of the Presidency.

sanction a particular country in a given month from 1966 to 1992, he uses the logit method. Because including only 28 countries that have been sanctioned for at least once would introduce selection bias, Drury includes 22 countries as control countries to avoid selection bias. His independent variables for presidents' decision to sanction include degree of tension, escalation of the target as a measure of urgency, approval rate of the president from the public and yearly unemployment rate.

The Combined data and the method

The data is constructed by modifying data from Nooruddin Irfan³² and Cooper Drury³³. From Nooruddin's data, yearly figures on initiation, regime types and characteristics of the United States and the target country are extracted. From Cooper's data, monthly figures on presidential approval rates and unemployment rates are extracted. Also, the outcome of the sanction is coded 1 if the sanction was successful and 0 if not. Since Drury's each data is compiled in monthly basis while Nooruddin's each data is set in yearly basis, monthly unemployment data and approval rate are averaged to a year. Four regressions, two logit models and two Heckman selection models are run. Before analyzing the Heckman selection models, Logit models are observed in order to see how the exclusion of selection process would bias the analysis of the sanctions' outcomes. Since the unemployment and president approval rate are highly correlated, they are included separately for the logit and the Heckman models.

³²Irfan Nooruddin (2002): Modeling Selection Bias in Studies of Sanctions Efficacy, *International Interactions: Empirical and Theoretical Research in International Relations*, 28:1, 59-75

³³ Drury, Cooper, 2000, 'U.S. Presidents and the Use of Economic Sanctions', *Presidential Studies Quarterly* 30, no. 4, Center for the Study of the Presidency.

5.Results

Figure 1. Logit with the unemployment rate

	Logit with Unemployment rate			
	Est. Std.	Error	T value	Pr(> t)
Target was in western hemisphere	0.35	0.13	2.81	0.0055**
Log cost as percentage of GNP to target	0.02	0.02	1.32	0.19
Relative target power to US	-0.03	0.02	-1.48	0.14
Target's percentage trade with the US	-0.0007	0.002	-0.3	0.76
Target regime health	-0.007	0.04	-0.17	0.86
Alliance with US before	-0.33	0.13	-2.56	0.011*
Assistance from other countries	0.07	0.05	1.34	0.18
US had cooperation	-0.14	0.05	-2.71	0.007**
The polity score of the target	0.22	0.008	2.9	0.004**
Target was within a soviet block	0.006	0.063	0.103	0.918
The goal of the sanctions was major	0.03	0.06	0.47	0.64
The unemployment rate of US	0.85	0.16	0.53	0.6
Null deviance	12.106 on 188 degrees of freedom			
Residual deviance	10.199 on 174 degrees of freedom			
AIC	16.583			

Figure 2. Logit with president approval rate.

	Logit outcome model with president approval rate			
	Std. dev	Error	T value	Pr(> t)
Target was in western hemisphere	0.342	0.124	2.752	0.0066**
Log cost as percentage of GNP to target	0.02	0.178	1.07	0.27
Relative target power to US	-0.03	0.02	-1.45	0.15
Target's percentage trade with the US	-0.00027	0.002	-0.13	0.897
Target regime health	-0.006	0.041	-0.138	0.89
Alliance with US before	-0.306	0.128	-2.396	0.018
Assistance from other countries	0.056	0.047	1.193	0.235
US had cooperation	-0.135	0.053	-2.57	0.011*
The polity score of the target	0.021	0.008	2.75	0.0066*
Target was within a soviet block	0.009	0.063	0.143	0.89
The goal of the sanctions was major	0.04	0.057	0.694	0.489
The president approval rate of US	0.021	0.023	0.918	0.36
Null deviance	12.106 on 188 degrees of freedom			
Residual deviance	10.166 on 174 degrees of freedom			
AIC	15.976			

Figure 3. Heckman Selection model with unemployment rate

	Selection model			
	Std Dev	Error	t value	Pr(> t)
Target was in western hemisphere	1.46	0.13	11.33	< 2e-16 ***
Target's percentage trade with the US	-0.03	0	-6.24	5.01e-10 ***
Target was a major power	-0.6	0.22	-2.56	0.01052 *
Target was within a soviet block	0.32	0.11	2.88	0.00406**
The polity score of the target	-0.04	0.01	-3.15	0.00165**
Existence of military interstate dyad	1.53	0.21	7.24	9.67e-05 ***
The yearly unemployment rate of US	-1.24	0.32	-3.9	-3.923 8.94e-05 ***
Polity score * military dispute dummy	-0.39	0.35	-1.1	0.27
	Outcome model			
	Std Dev	Error	t value	Pr(> t)
Log cost as percentage of GNP to target	0.02	0.01	1.8	0.07305
Relative target power to US	-0.01	0.02	-0.96	0.33721
Target's percentage trade with the US	0	0	1.84	0.06535
Target regime health	-0.01	0.04	-0.32	0.74632
Alliance with US before	-0.23	0.09	-2.67	0.00768 **
Assistance from other countries	0.07	0.05	1.55	0.12123
US has cooperation	-0.12	0.05	-2.6	0.00944 **
The polity score of the target	0.03	0.01	3.66	0.00026 ***
Existence of military interstate dyad	0.31	0.1	-3.13	0.00175 **
The yearly unemployment rate of US	0.32	0.2	1.68	0.1
Inverse Mills Ratio	-0.24	0.08	-2.91	0.00364 **
Multiple R-squared	0.15			
Adjusted R-squared	0.1			

Figure 4. Heckman model with president approval rate

	Selection model			
	Std Dev	Error	t value	Pr(> t)
Target was in western hemisphere	1.46	0.13	11.33	< 2e-16 ***
Target's percentage trade with the US	-0.03	0	-6.38	1.42e-10 ***
Target was a major power	-0.6	0.22	-2.78	0.00465 **
Target was within a soviet block	0.34	0.11	3.08	0.00211 **
The polity score of the target	-0.04	0.01	-3.51	0.00056 ***
Existence of military interstate dyad	1.56	0.19	7.15	1.14e-12 ***
The president approval rate of US	0.11	0.05	2.13	0.03363 *
Polity * Military interstate dummy	-0.41	0.37	-1.1	0.27
	Outcome model			
	Std Dev	Error	t value	Pr(> t)
Log cost as percentage of GNP to target	0.22	0.01	1.63	0.102709
Relative target power to US	-0.01	0.02	-0.97	0.33199
Target's percentage trade with the US	0.004	0.002	1.9	0.057845
Target regime health	-0.012	0.04	-0.34	0.735721
Alliance with US before	-0.21	0.09	-2.42	0.015699 *
Assistance from other countries	0.06	0.04	1.44	0.150181
US had cooperation	-0.12	0.05	-2.5	0.012547 *
The polity score of the target	0.03	0.01	3.55	0.000398 ***
Existence of military interstate dyad	-0.31	0.1	-3.12	0.001823 **
The president approval rate of US	-0.0011	0.03	1.68	0.964377
Inverse Mills Ratio	-0.223	0.08	-2.79	0.00536 **
Multiple R-squared	0.16			
Adjusted R-squared	0.103			

Results from logit analysis

Figure 1 is the logit model of the sanctions outcome with the unemployment rate and figure 2 with the president approval rate. In models both with the unemployment and president approval rate, the same factors are statistically significant.

First, when the target is in the Western hemisphere, the presidents tend to have more successful sanctions. If the target is, for example, in Latin America or Europe, the presidents have a better chance of succeeding when the target is in Asia. Second, the

previous political alliance of the target with the United States does not work in favor of the outcome. If the United States has had a former political alliance with the target, the target is less likely to succumb to the sanction. Third, more democratic a target regime is, more probable that the sanctions would be successful. This result is analogous with the democratic peace theory that sharing of the norms between democratic countries leads to successful sanctions between the democracies.

However, the unemployment rate and the president approval rate do not hold significance in the logit despite the expectation that higher unemployment rate and lower approval rate would motivate presidents make sanctions succeed. Whether this insignificance of the two indices is because the logit model fails to control for selection bias will be analyzed when the Heckman selection model is applied.

Results from the Heckman selection analysis

Figure 3 is the Heckman selection model with the unemployment rate and *figure 4* with the president approval rate. In the selection part both with the unemployment and the approval rate, same variables are significant.

The US Presidents tend to aim for targets in the western hemisphere and in the soviet bloc, as suggested by the democratic peace theory. Also, the higher trade volume with the target discourages presidents to sanction since sanctions disrupt the flow of trade and alienate economic interest groups as the public interest theory suggests. Interestingly, higher unemployment rate and lower approval rate lower the probability of presidents to impose sanctions. While the hypothesis under the public interest theory suggests that lower employment rate and approval rate would prompt presidents to initiate the

sanctions, public distrust dissuades presidents from initiation a sanction. It can be the case that the presidents are driven to focus on domestic issues rather than on international issues in order to please discontent domestic interest groups. Also, the existence of Military Interstate Dispute (MID) with the target catalyzes presidents to sanction the target. However, the hypothesis that the presidents are more likely to impose a sanction as a response to a MID if a target is autocratic does not gain support. The United States does not discriminate based on regime characteristics when the military conflict is involved.

In the outcome part of the Heckman, fewer variables are significant than in the selection part. A previous alliance and assistance to the US lower the likelihood success. Furthermore, the democratic regime is more likely to capitulate to the sanctions as the democratic peace hypothesis theorizes. It is noteworthy to point out that, while the low employment and president approval rate decrease the chances of imposing the sanction, they do not affect the outcome. This is consistent with the public interest theory which suggests that United States presidents sanction not only to contain the target regime's behavior but also to reflect the public interest.

Linking the hypothesis and the results

The first selection hypothesis that autocracies have higher chances of being sanctioned by the is supported in the Heckman selection model. Democratic targets tend to agree with the United States in resolving the conflict faster and more peacefully than the autocracies. The second and third hypothesis that the presidents feel obliged to impose sanctions to appease the public when the unemployment is high and approval rate

is low are rejected. Rather, the result proves to be the exact otherwise. The Heckman result indicates that presidents are disinclined to use sanctions when the domestic circumstances are not favorable in terms of the employment rate and approval rate. The fourth hypothesis suggests that the presidents are more likely to impose sanctions on autocracies than on democracies in the case of military conflicts, arguing that the presidents discriminate based on regime types. Although the combined democratic peace theory and interest group theory hints that the presidents respond more frequently with sanctions against autocracies especially during the Military Interstate Dispute(MID), the claim does not gain support.

The first outcome hypothesis that the sanctions yield positive outcomes more often with democracies than with autocracies is supported under the Heckman regression, which is consistent with the democratic peace theory. The second and the third hypothesis postulate that the high unemployment and president approval rate would yield successful outcomes. Although the US presidents' decision to sanction is affected by unemployment and approval rate, outcomes are not affected the domestic political and economic climate.

Comparing the logit and the Heckman selection model

The biggest takeaway from comparing Heckman selection model is that the selection bias exists in choosing targets. The rho value from the Heckman selection, the correlation between the unobservable between the selection and outcome model, turns out to be significant. This means that selection bias exist when the US presidents choose targets and thus it should be taken into consideration when evaluating the effectiveness of

the sanctions. Especially when the unemployment rate is low and president approval rate is high, the statistical probability that the US presidents sanction is higher than the otherwise. However, in the logit model, the unemployment rate and the president approval rate do not hold any significance. Thus, evaluating how sanctions work is more accurate when the study combines the selection process with the outcome.

6. Conclusion and limitations to the study

Due to the collinearity between the unemployment rate and the president approval rate, the two separate regressions are employed, including only in each regression. It is possible to have a different result if the model capable of including two factors in a regression and avoid the problem of collinearity can be part of the further analysis.

Furthermore, Heckman selection model regard selection bias as an omitted variable which is a probability of being targeted for this particular study³⁴. In the study, the probability of being observed is the probability of the country being sanctioned by the United States. Thus, the omitted variable, as a probability is added to the outcome model. One of the alternatives is a fixed effect model. Comparison between country fixed model and the Heckman model would offer insightful analysis into the sanctions.

The study concludes that the unemployment and president approval rates are components which have significant impact on presidents' decision to sanction, but not on the outcomes. Although it should not be generalized that the US presidents utilize sanctions as short-term tactics for appeasing the public, the domestic and international

³⁴ Heckman, James, 1997, 'Instrumental Variables : A study of Implicit Behavioral Assumptions Used in Making Program Evaluations', Journal of Human Resources, Vol.32, No.3, University of Wisconsin Press.

population would be more pleased to observe state of the US economy and public opinion more reflected in sanctions' outcome.

References

- Barber, James, 1979, 'Economic Sanctions As a Policy Instrument' *International Affairs* (Royal Institute of International Affairs 1944-), Vol. 55, No. 3 :367-384.
- Bolks and Dina Al-Sowayel, 2000, 'How Long Do Economic Sanctions Last? Examining the Sanctioning Process through Duration', *Political Research Quarterly*, Vol53, No. 2 : 241-265, SAGE Publications Inc.
- Bueno de Mesquita, Bruce; James Morrow, Randolph Siverson & Alastair Smith, 1999. 'An Institutional Explanation of the Democratic Peace', *American Political Science Review* 93(4): 791–807.
- Chan, Steve, 1997. 'In Search of Democratic Peace: Problems and Promise', *International Studies Review* 41(1): 59–91.
- Doxey, Margaret, 1980, 'Economic Sanctions and International Enforcement', London:Oxford University Press.
- Drezner, Daniel, 1999, 'The Sanctions Paradox: Economic Statecraft and International Relations', Volume 65 of *Cambridge Studies in International Relations*, Cambridge University Press.
- Drury, Cooper, 2000, 'U.S. Presidents and the Use of Economic Sanctions', *Presidential Studies Quarterly* 30, no. 4, Center for the Study of the Presidency.
- Drury, Cooper, 1998, 'Revisiting economic sanctions reconsidered', *Journal of Peace Research*, Vol. 35, No. 4 : 497-509, SAGE Publication LTD.
- Eyler, Rober, 2007, 'Economic Sanctions: International Policy and Political Economy at Work (International Policy & Politic)', Palgrave Macmillan.
- Fisk, D. 2000, 'Economic sanctions: The Cuba embargo revisited. In *Sanctions as*

- economic statecraft: Theory and practice', edited S. Chan and A. Drury, 65-85.
London: Macmillan.
- Galtung, Johan, 1967, 'On the effects of International Economic Sanctions : With Examples from the Case of Rhodesia, World Politics', Volume 19, Issue 3, 378-416.
- Hart, Robert, 2000. 'Democracy and the Successful Use of Economic Sanctions', Political Research Quarterly 53(2): 267–284.
- Heckman, James, 1997, 'Instrumental Variables : A study of Implicit Behavioral Assumptions Used in Making Program Evaluations', Journal of Human Resources, Vol.32, No.3, University of Wisconsin Press.
- Hufbauer, Gary & Jeffrey, Schott & Kimberly Elliott , 1990, 'Economic sanctions reconsidered: History and current policy', Washington, DC: Institute for International Economics.
- Kaempfer, William and Anton, Lowenberg, 1989. 'The Theory of International Economic Sanctions: A Public Choice Approach: Reply, American Economic Review 79(5): 1304–1306.
- Kaempfer, William and Anton, Lowenberg, 1989, 'Sanctioning South Africa : the politics', Cato Journal, Vol. 8, No. 3, New York: Cambridge University Press.
- Kaempfer, William and Anton, Lowenberg, 2007, 'The political economy of economic sanctions, Handbook of Defense Economics', volume 2.
- Maoz, Zeev, and Russett, Bruce, 1993, 'Normative and structural causes of democratic peace 1946–1986'. American Political Science Review 87: 624-38.
- Marshall, Monty and Jaggers, Keith, 2002 , 'Polity IV Project: Political Regime

Characteristics and Transitions, 1800-2011', Center for International Development and Conflict Management, University of Maryland, College Park.

Nooruddin, Irfan, 2002, Modeling selection bias in studies of sanctions efficacy, International Interactions, 28:59-75, Taylor&Francis.

Vanderbush, W., and P. J. Haney, 1999, 'Policy toward Cuba in the Clinton administration', Political Science Quarterly 114:387-408.

Zinnes, Dinna, 2004, 'Constructing political logic : The democratic peace puzzle, Journal of Conflict Resolution', 48:430, SAGE Inc.