

CHAPTER 9

A QUANTITATIVE ANALYSIS OF ARMS EMBARGOES

Michael Brzoska

This chapter summarizes the results of a comparative analysis of arms embargoes to add a quantitative dimension to the analysis provided in the case studies. The analysis is guided by the same set of variables introduced in the introductory framework chapter. Although the information used in this chapter is less nuanced than the data used in the case studies, the larger number of cases included and the use of quantitative methods add important insights to the country case analyses.

The chapter confirms the observation made in most of the case studies that arms embargoes are frequently violated. At the same time, it also shows that the number of cases in which arms embargoes reduce arms imports is significant. However, even in such cases there is often little effect on the policy behavior of target states.

The chapter begins with a description of the methodology used for the comparative quantitative analysis. Subsequent sections are devoted to describing various aspects of the data and its analysis, beginning with the identification of successful cases of arms embargoes, and followed by the factors that increase the probability of effectiveness.

METHODOLOGY AND VARIABLES TESTED

The dependent variables for this analysis include three measures of arms embargo effectiveness, which were referred to as ‘levels of effectiveness’ in the Framework Chapter. These are the embargo’s success in causing a targeted policy change (level I effectiveness), success in changing arms flow to the target (level II effectiveness), and a measure of effectiveness to capture the arms embargo initiators satisfaction with the operation of the embargo (level III effectiveness).

The three dependent variables are tested against seven independent variables to explore their probable importance in explaining arms embargo success. The seven independent variables are each composed of various sub-variables. A total of 19 different variables are represented in the seven-variable clusters. The seven independent variables are designed to reflect the cost-benefit calculations of targeted states; the decision-making structure in targets; the evasion capacity of targets; the multilateralization of arms embargoes; the implementation of arms embargoes; countermeasures by the targeted state; and the importance of embargo objectives for the initiators (see [Appendix 1](#) for full list of dependent and independent variables and their specifications).

Both the dependent and independent variables have been standardized so they all have scores that range from 0 to 3.¹ Although the scoring is based on data collected for the respective cases, it is ultimately subjective due to the nature of the data available. The scoring criteria for each of the variables are provided in the list of variables in [Appendix 1](#). Most of the variables used in this quantitative analysis are calculated by adding the values of the sub-variables that make up each of the seven independent variable clusters. The exception is the calculation of the score for level I effectiveness, which is multiplicative (score for ‘policy changed’ times ‘cause for policy changes’).² Only integers are allowed as scores, with the exception of the sub-variable ‘cause for policy change’ which is used to calculate level I effectiveness and which can attain the values 0, 0.5, and 1.

For the three dependent variables measuring the effectiveness of arms embargoes, high scores indicate embargo success. For the independent variables hypothesized to have an influence on embargo effectiveness, a high score indicates a higher probability of sanctions success. An autocratic government for instance is hypothesized to show more resistance to outside interference than a pluralistic one. Therefore, an autocratically ruled target is scored at 0, whereas one with a pluralistic decision-making process receives a score of 1.

The main reason for the simple scoring rules is the limitations of the data. Although in theory some of the dependent and independent variables could be more fine-grained, such as the variable for reduction in arms flows, such data are hard to locate. Other data are subjective to start with, such as scoring for level III effectiveness, which measures the political satisfaction an arms embargo initiator has with an embargo – there is no numerical dataset for this variable. The scoring rules are designed to combine the various types of data used in scoring on one scale so their significance can be compared easily.

The number of arms embargo cases utilized for this chapter is a simplified version of a larger list of arms embargo regimes maintained by various international organizations, the European Union and the United States (US). Independent from that list, the basic unit used here is the embargo case. Arms embargo cases are defined by initiator, target and embargo type (stand-alone arms embargo, selective targeted sanctions, comprehensive sanctions). If any of the three parameters changes, this is counted as a new arms embargo case (Appendix 3). On this basis, a total of 74 arms embargo cases active between 1990 and 2005 are used in this study. Appendix 2 provides basic background information on each case.

Selection of variables, scoring rules and scoring procedure combine to yield variable values that only allow for fairly simple quantitative analysis. Scores for variables in individual cases often can be debated. Therefore, this analysis can only supplement the more differentiated analysis in the case studies.

RESULTS: SUCCESS RATES OF ARMS EMBARGOES

The rest of this chapter explains the results of the quantitative analysis by looking at and comparing the variables in various ways. As was to be expected from the discussion in the framework chapter, the rates of success for the three measures of effectiveness, the dependent variables, differ markedly (Table 1).

On the basis of the scoring performed for this analysis, the highest rate of success for arms embargoes is found for level II effectiveness, reduction of arms imports, at 39 percent. This is followed by 31 percent success for level III effectiveness, the initiator's satisfaction with the arms embargo. Level I effectiveness (targeted policy change) is low: on average, there was only an eight percent chance of inducing policy change in the target through an arms embargo (Table 1).

Table 1. Average Scores of Dependent and Independent Variables.

Variable	Score (0–1)	
	All arms embargoes (74)	Arms embargoes ended before 2005
Dependent variables		
Level I effectiveness (targeted policy change)	0.08	0.14
Level II effectiveness (change in arms imports)	0.39	0.60
Level III effectiveness (initiator satisfaction)	0.31	0.47
<i>Average score for dependent variables</i>	0.26	0.40
Independent variables		
Cost/benefit calculation by target	0.41	0.41
Political cost–benefit calculations	0.27	0.31
Evasion capacity of target	0.62	0.69
Multilateralization of arms embargo	0.51	0.63
Implementation of arms embargo	0.29	0.39
Countermeasures by target	0.40	0.52
Importance of embargo for initiators	0.64	0.69
<i>Average score for independent variables</i>	0.45	0.52

All Arms Embargoes in Sample

The weak results for level I effectiveness suggest that the overwhelming number of sanction regimes have little impact on target policy. For the sample of 74 arms embargo cases, no effect on target policy was recorded for 57 of them (see Table 2 for details on each case).³

Level II effectiveness, the success of reducing arms flows to the target, is comparatively higher than level I effectiveness. Arms transfers were completely or almost completely stopped in nine cases; there were major reductions in another 14 cases; and minor reductions in another 23 cases. No reduction of any significance was noted in 28 cases. Although the nature of the data used here does not allow for more than a preliminary interpretation, they suggest that arms embargoes did have, on average, limited but non-negligible effects on arms flows.

This is somewhat in contrast to a good part of the literature on arms embargoes mentioned in the introductory chapter, and even more so to the general perception of the ineffectiveness of arms embargoes. It demonstrates the mixed results of arms embargoes with respect to changing arms flows. The result is supportive neither of the view that arms embargoes are

Table 2. Ranking of the Most Successful Arms Embargoes.

Country	Sanction Initiator	Begin Year	End Year	Type of Sanction	Type of Target	Sanction Objective(s)
Ethiopia	UN	2000	2001	UN arms embargo	Government	End hostilities
Eritrea	UN	2000	2001	UN arms embargo	Government	End hostilities
Haiti	UN	1994	1994	Comprehensive economic sanctions	Government	Regime change
Sierra Leone	UN	1998	2002	UN arms embargo	Rebels	End civil war
Yugoslavia	UN	1992	1995	UN comprehensive sanctions	Government	End hostilities
Liberia	UN	1992		UN arms embargo	Government	End civil war
Yugoslavia	UN	1991	1996	UN arms embargo	Government	End hostilities
Sierra Leone	UN	1997	1998	UN arms embargo	Government	Regime change; end civil war
Libya	UN	1992	2003	UN arms embargo	Government	End support of terrorism
Yugoslavia	EU	1991	2001	EU arms embargo	Government	End hostilities
South Africa	UN	1997	1993	UN arms embargo	Government	Regime change

generally ineffective nor of the view that arms embargoes are a powerful instrument to reduce the flow of weaponry.

The political satisfaction of an arms embargo initiator (level III effectiveness) is also higher than much of previous research would suggest. As stated in the introductory chapter, this dependent variable has been designed to capture primarily domestic considerations, as well as those related to the interaction of countries other than the target. In many cases, initiators realized that a reduction of arms flows could not be achieved, often because the target was allied to a major arms supplier. Despite their inability to significantly mitigate a target's access to arms, these initiators nonetheless maintained an arms embargo to signal discontent with the target's policies.

Arms Embargoes that Ended by 2005

A majority of arms embargo cases included in the data set used here were still active in early 2005. It can be expected that these embargoes had not achieved the objectives desired by initiators, particularly not the one of targeted policy change. Their continuation might also indicate that they had been less effective in terms of reducing arms imports. In addition, at least some of these embargoes were still rather new in 2005. It is therefore interesting to distinguish between embargo cases closed by 2005 and those still active at that time.

The average significance of the variables for closed embargo cases are indeed about 50 percent higher than that of all arms embargoes combined. Closed arms embargoes have been more effective across the board, with respect to changes in arms import patterns, initiator satisfaction, and targeted policy change. However, even for closed arms embargoes, level I effectiveness (targeted policy change) is a relatively rare event, with an average score of about 14 percent.

In short, the partial success of arms embargoes in changing arms import flows and achieving narrow political objectives by initiators only seldom translated into targeted policy change.

Arms Embargo Success Cases

The three measures of effectiveness can be combined into one measure of overall embargo success. Of course, the three measures capture elements of arms embargoes, which may not be additive in individual cases. For instance, an initiator may be very satisfied with an embargo that has no effect on arms import patterns. In this case, the aggregation of the three measures would not make much sense. However, such cases seem to be rare. In the overwhelming number of cases, states that initiate arms embargoes are interested in policy change and arms import reduction as well as in gaining political capital from the imposition of an embargo.

On the basis of this measure of arms embargo success that aggregates the three measures of arms embargo effectiveness, a ranking of overall sanctions success cases can be established, as found in Table 2. A number of points emerge from this ranking. One is that UN arms embargoes as well as arms embargoes linked to other types of sanctions are high in the list. Another point is that arms embargoes with the objective to end hostilities or bring about regime change can be found here comparatively often. Other frequent arms embargo objectives such as ending support for terrorism or human rights concerns have lower success rates.

DIFFERENTIATING ARMS EMBARGO EFFECTIVENESS BY SANCTION CHARACTERISTICS

The objective of this section is to analyze how different sanctions characteristics impact arms embargo effectiveness. To do this, the data set is disaggregated in various ways: by type of initiator, type of target, type of embargo, embargo objectives, time periods, and the length of the embargo.

Success of Arms Embargoes Based on Type of Initiator

The first issue considered is whether there is a difference in effectiveness between arms embargoes initiated by the US, the EU, and the UN. As discussed in the introduction, broader participation in arms embargoes is generally hypothesized to lead to more effective embargo implementation. However, as shown in the Framework Chapter, it is also sometimes argued that a powerful champion of sanctions such as the US may be able to make a formally unilateral embargo effective.

The data presented in Table 3 confirm the hypothesis that a higher degree of multilateralism improved embargo effectiveness. Among the 74 arms embargo cases in our sample, 29 were initiated by the US independent of UN sanctions. Of these 29 US initiated sanction cases, only two led to minor success with respect to targeted policy change (level I effectiveness), in Libya and Indonesia. Some reductions in arms imports by the target (level II effectiveness) occurred in 15 of these 29 cases. However, most of these reductions were minor (the only case of a significant reduction was the arms embargo against Ethiopia, a special case as discussed in the country case study included in this book).

For arms embargoes initiated exclusively by the US, level II effectiveness received a score of 23 percent success. This is well below the 39 percent level II effectiveness for the entire sample of 74 cases. A similar result is obtained for level III effectiveness, where 16 percent of US arms embargoes were successful compared with 31 percent for the overall sample.

Success rates for the 15 EU-initiated sanction cases in the sample are higher than they were for solely US arms embargoes. For both level I effectiveness (targeted policy change) and level II effectiveness (arms import reductions), success rates are in the same range as for the entire sample of 74 cases, although targeted policy change is slightly below the overall rate. The

Table 3. Average Success Rates of Arms Embargoes by Initiator.

	Targeted Policy change (Level I) (%)	Change in Arms Imports (Level II) (%)	Initiator Satisfaction (Level III) (%)	Number of Sanction Cases
UN sanctions	15	57	48	27
EU sanctions	7	42	31	15
US sanctions	2	23	16	29
Other initiators				3

EU success rate for change in arms import patterns was 42 percent and includes three cases of total cessation in arms imports (Eritrea, Ethiopia, Yugoslavia), two cases of major change (Afghanistan and Iraq, with a score of two out of three) and six cases with minor change in arms imports. No change in arms imports was recorded in five cases.

UN arms embargoes have the best record in terms of effectiveness as measured in this study. Still, the success rate for level I effectiveness (targeted policy change) remains low at 15 percent. The score for level II effectiveness (reductions in arms import patterns) is much higher than for all arms embargoes combined at 57 percent. This includes eight cases of total cessation in arms imports (Eritrea, Ethiopia, two sanction cases in Haiti, Iraq and three sanction cases in Yugoslavia); eight cases of major change (Afghanistan, Angola, Liberia, Libya, South Africa, two cases in Sierra Leone and Sudan); minor changes in six cases; and no changes in five cases.

The data presented here support the hypothesis that multilateralization has made past arms embargoes more effective. US sanctions score lowest on all measures of arms embargo effectiveness, and UN arms embargoes score highest.

Success of Arms Embargoes Based on Type of Objective

Arms embargoes differ with respect to their objectives. In the data set used here, the identification has been limited to major objectives of arms embargoes as stipulated in relevant documents mandating these sanctions. Many arms embargoes are designed to serve a host of objectives, some explicit and others less obvious. However, in most cases one objective stands out.

For classification purposes, all objectives used to analyze arms embargo cases are aggregated into six groups, listed in Table 4. The sanctions objectives evaluated include human rights, end of hostilities, end support of terrorism, end of civil war, regime change, and change in nuclear policies.

There are notable differences in the effectiveness of arms embargoes when the objective of the embargo is considered, as illustrated in Table 4. Yet these variations need further analysis. For instance, there are only three examples of arms embargoes having the objective to change nuclear policies, which makes a very small sample.

One interesting discovery is that arms embargoes with the objective to end civil wars have the highest rate of success with respect to targeted policy

Table 4. Average Success Rates of Arms Embargoes by Sanctions Objective.

	Targeted Policy Change (Level I) (%)	Change in Arms Imports (Level II) (%)	Initiator Satisfaction (Level III) (%)	Number of Sanction Cases
Human rights	6	22	28	12
End of hostilities in interstate wars	8	52	32	20
End support of terrorism	10	40	30	10
End of civil war	12	37	38	20
Regime change	4	48	30	9
Change in nuclear policies	0	11	0	3

change (level I effectiveness) – in this case the preferred policy being peace. But this rate of success is still low at 12 percent.

Among the objectives identified in Table 4, the end of hostilities in interstate wars has the highest score with respect to change in arms import patterns. The success of the various arms embargo cases associated with the war in the former Yugoslavia and between Eritrea and Ethiopia are the major causes for this result, but also illustrate that there is a weak connection, if any, between success in reducing arms inflows to a target and achieving a targeted policy change. This relative success for reducing arms imports did little to change policies in the target states. Although it is debatable whether the comprehensive sanctions against the FRY induced the government of President Milosevic to negotiate and agree to the Peace Accords of Dayton in 1995, there is no indication that the fact that these sanctions also included arms had any effect (see the country case study included in this book). In the Eritrea and Ethiopia case, both sides were well armed when the arms embargoes began to bite, and they ended the war before there were any notable shortages (see the country case study included in this book).

Success of Arms Embargoes Based on Type of Sanction

Arms embargoes in this study have been divided into four types of sanctions: voluntary embargoes, mandatory embargoes, comprehensive embargoes, and targeted embargoes.

Six of the cases analyzed were voluntary arms embargoes, with the UN and the Organization for Security and Cooperation in Europe (OSCE) as

Table 5. Average Success Rates of Arms Embargoes by Sanctions Type.

	Targeted Policy Change (Level I) (%)	Change in Arms Imports (Level II) (%)	Initiator Satisfaction (Level III) (%)	Number of Sanction Cases
Voluntary arms embargo	0	11	11	6
Mandatory arms embargo	6	38	29	45
Comprehensive sanctions	13	48	30	9
Arms embargo element in targeted sanctions package	17	50	48	14

initiators. These had very low success rates. Forty-five of the 74 cases were mandatory arms embargoes, implemented as isolated measures. These had success rates similar to the overall rate associated with all arms embargoes – this is not surprising considering that the mandatory arms embargoes constitute the majority of cases.

Comprehensive sanctions include embargoes on arms transfers because they cover all trade, whereas targeted sanctions seek to add other instruments, such as financial asset freezes to the effort to reduce arms transfers. Both types of ‘stronger’ sanctions have higher rates of success with respect to changes in arms import patterns, 48 and 50 percent, respectively (Table 5). Although they were definitely more likely to produce targeted policy change than the other types of sanctions, level I effectiveness remained low, with 13 and 17 percent, respectively. This again confirms the observation that targeted policy changes do not necessarily follow in cases where arms imports are significantly reduced.

Success of Arms Embargoes Based on Type of Target

Traditionally, arms embargoes have targeted governments. Increasingly however, arms embargoes have targeted rebel groups, or particularly in civil war situations, both rebels and governments.

Rebel groups were the sole targets in eight cases out of the complete sample of 74 arms embargo cases used in this study and include sanctions directed at Afghanistan, Angola, Congo DR, Rwanda, and Sierra Leone. Success rates on all three levels of effectiveness are significantly higher than average when rebel groups are the targets. This result has to be qualified, however, because of the low number of cases, and also because most of the

Table 6. Average Success Rates of Arms Embargoes by Type of Target.

	Targeted Policy Change (Level I) (%)	Change in Arms Imports (Level II) (%)	Initiator Satisfaction (Level III) (%)	Number of Sanction Cases
Government	8	33	28	41
Rebels	15	54	46	8
All parties	6	45	31	25

cases have been fairly recent, thus falling into a period of improved arms embargo implementation, as reported later.

Arms embargoes targeting governments have had lower rates of success. This study cannot answer the question of whether low scores are caused by the fact that targets were governments – who could have stronger capabilities to evade sanctions and to ignore arms restrictions – or whether the reasons for lower scores lie elsewhere, for instance in the objectives of arms embargoes. Arms embargoes targeting governments were mostly aimed at ending hostilities in interstate wars or achieving policy change with respect to human rights in target states – both of these objectives had low success rates (Table 6).

Success of Arms Embargoes Based on Time Period

The number of arms embargoes active at any given time has grown when measured in five-year periods. From 2000–2004, 62 arms embargoes were active, compared to 56 in the period between 1995 and 1999 and 45 in the period 1990–1994. A total of 15 arms embargo cases included started before 1990 (and continued after 1990).⁴

Success rates of arms embargoes have not changed much over the four periods distinguished in Table 7. Although the scores for level II and level III effectiveness rose slightly, the increases were not large.

Success of Arms Embargoes Based on whether They Are ‘Old’ or ‘New’

The results look somewhat different if, instead of time periods in which embargoes were active, the time periods in which arms embargoes began is analyzed (Table 8).

Table 7. Average Success Rates of Arms Embargoes by Time Period.

	Targeted Policy Change (Level I) (%)	Change in Arms Imports (Level II) (%)	Initiator Satisfaction (Level III) (%)	Number of Sanction Cases
Before 1990	10	27	20	15
1990–1994	9	31	28	45
1995–1999	10	33	28	56
2000–2004	7	35	27	62

Table 8. Average Success Rates of Arms Embargoes by Year of Sanction Case Began.

	Targeted Policy Change (Level I) (%)	Change in Arms Imports (Level II) (%)	Initiator Satisfaction (Level III) (%)	Number of Sanction Cases
Before 1990	8	23	21	13
1990–1994	9	33	30	31
1995–1999	11	47	35	19
2000 and later	2	61	39	11

Arms embargoes begun in more recent five-year periods have significantly higher rates of level II effectiveness than arms embargoes begun in the earlier five-year periods. However, this has not increased level I effectiveness (targeted policy change), which has actually gone down in the most recent years analyzed.

The rise in level II effectiveness and fall in level I effectiveness in the 21st century is influenced by many factors, including changes in the types of sanctions and their objectives, as well as characteristics of targets and initiators. Still, it seems safe to conclude that arms embargoes have increasingly had ‘teeth’ in recent years, in the sense of leading to changes in arms import patterns.

Success of Arms Embargoes Based on Length of Sanctions

These considerations lead to the question of whether long-running arms embargoes are more successful than those with shorter life spans. Data presented in Table 9 indicate that this is indeed the case for level I effectiveness, targeted policy change, but not for the other two measures of arms embargo

Table 9. Average Success Rates of Arms Embargoes by Their Duration.

Success Rates by Age (years)	Targeted Policy Change (Level I) (%)	Change in Arms Imports (Level II) (%)	Initiator Satisfaction (Level III) (%)	Number of Sanction Cases
0	0	100	100	1
1	8	53	50	10
2	0	67	22	3
3	14	78	33	6
4	17	50	67	2
5	11	56	44	3
6–10	25	50	42	4
11–15	28	56	44	3
16–20	33	50	83	2
Still active	3	22	18	40

success. Without further discussion on the causes of policy changes in targets, it is not possible to discern the importance of arms embargoes for bringing such change about. The likelihood a policy change will occur regardless of whether or not there is an arms embargo present increases with time. That is, policies are likely to change over time whether or not there is an arms embargo. Still, the results presented here support the proposition that changes in arms import patterns, which are present in a majority of closed arms embargo cases, take time to influence policy making in targeted countries.

For arms embargoes implemented for less than three years, the success rate for targeted policy change is low. Success rates are considerably higher for closed arms embargoes that ran for more than five years, with the highest rates of success noted for the longest running arms embargoes (Libya/EU 18 years, South Africa 16 years, Iraq/UN 13 years, Libya/UN 11 years).

Even for long-running arms embargoes, however, changes in targeted policies remain low, and may not even be the result of the embargoes. There are a number of arms embargo cases that have been active longer than 10 years without having any discernible impact on targeted policies. Interestingly, these are all US embargoes (North Korea, Cuba, Libya's first embargo case, Iran Vietnam, Myanmar/Burma and China) with the exception of the EU arms embargo against China.

Correlates of Arms Embargo Success

This section analyzes the seven clusters of independent variables discussed in the introductory chapter to determine the significance of their impact on

Table 10. Statistically Significant Correlation Coefficients.

Level of Effectiveness Independent variable clusters	Targeted Policy Change (Level I)	Arms Import Reduction (Level II)	Initiator Satisfaction (Level III)	Overall Effectiveness Measure (Average Levels 1–3)
Average of scores of independent variables	Significant	Significant		Significant
Cost–benefit calculation in target (A)				
Decision-making structure in target (B)	Significant			
Evasion capacity/ activity of target (C)				
Multilatera- lization of arms embargo (D)		Significant	Significant	Significant
Implementation of arms embargo (E)		Significant		Significant
Countermeasures by targets (F)		Significant		Significant
Importance of embargo objectives for initiators (G)		Significant		

Note: Correlation coefficients of independent variables significant at 95% level in bivariate estimation.

arms embargo effectiveness (see [Appendix 1](#) for full list of variables). To establish the strength of association between the variables measuring arms embargo effectiveness, bivariate correlations were calculated between each independent variable and all three measures of embargo effectiveness (see [Table 10](#) for list of statistically significant correlation coefficients and [Appendix 2](#) for estimated coefficients).

Bivariate estimations are a relatively simple method to analyze correlations and are therefore limited in their analytical depth. For instance, they cannot establish relative weights of independent variables. However, because the data used here are limited to begin with, a more sophisticated method of data analysis seems inappropriate.

Independent Variables and Targeted Policy Change (Level I Effectiveness)

As mentioned earlier, policy change in the direction desired by the sanction initiator that is caused at least in part by an arms embargo was a rare event.

Among the seven independent variable clusters that potentially could have impacted targeted policy change, only the ‘decision-making structure in target’ variable is statistically significant. About 34 percent of the variance in the dependent variable is explained by the decision-making structure of a target state.

*Independent Variables and Reductions in Arms Imports
(Level II Effectiveness)*

Although the independent variables do not robustly account for level I effectiveness (targeted policy change), some of the independent variables are powerful in explaining the scoring variance for level II effectiveness (reductions in arms imports). The highest regression coefficients are measured for the variable clusters that capture the multilateralization of arms embargoes, implementation of arms embargoes, countermeasures by targets and the importance of embargo objectives for initiators. The correlation coefficients for these four clusters of independent variables are significant at the 99 percent level.

Another variable cluster with significance above the 95-percent threshold is the one composed to reflect the decision-making structure in a target (variable cluster B). Not significant are the cost–benefit calculations of a target and the evasion capacity of a target. The independent variable clusters included in the analysis here explains almost 70 percent of variance for level II effectiveness, changes in arms import patterns. The list of independent variables used here thus appear well selected to explain the success of arms embargoes in reducing arms flows. In summary, multilateral arms embargoes that are implemented efficaciously, with limited countermeasure options for a target and objectives that are high on the agenda of the initiators, are most likely to be associated with reductions in arms flows. The capacity of the target to find alternative suppliers and the importance of arms to the target seem to have little influence on arms flows.

Looking at the actors who shape embargo success at this level, the analysis implies that the reduction of arms flows is primarily determined by factors exogenous to the target, not by the target itself. If initiators are successful in promoting the embargo to other countries, and particularly in getting others to implement the embargo, arms flows are significantly reduced. This seems to be true even in cases where targets are economically powerful.

Independent Variables and Initiator Satisfaction (Level III Effectiveness)

Only the multilateralization of arms embargoes (independent variable cluster D) is statistically significant for explaining the level of initiator satisfaction with an embargo. Other variable clusters with significance just below the 95-percent threshold are the decision-making structure in a target (B), implementation (E) and countermeasures available to a target (F) – although these coefficients are too low to derive any firm conclusions. No statistical relationship exists between initiator satisfaction and the variable clusters that capture the cost–benefit calculations of a target (A), evasion capacity of target (C), and the importance of arms embargoes for initiators (G).

The low level of explanation for this dependent variable by the independent variables included in the analysis may be explained by a number of factors. First, the scoring for initiator satisfaction is particularly subjective and therefore the data may not be reliable. Second, the list of independent variables may not be appropriate; it is possible that additional variables are needed, although it is not obvious which additional variables to include. A third factor that may explain the low correlation between initiator satisfaction and the independent variables used is the low level of policy change induced in targets – that is, initiators may be unsatisfied with arms embargoes (low level III effectiveness) because they rarely actually lead to policy change. Multilateralization of sanctions, the only significant independent variable, may be seen as at least opening the opportunity for effective sanction implementation in the future. Apart from the multilateralization of sanction, much of the success in achieving initiator objectives appears to be determined by particular circumstances in initiator countries, which are difficult to capture with structural variables of the kind used here.

Independent Variables and Overall Sanctions Success

Strong associations are found for the combined index of arms embargo effectiveness and a number of the independent variable clusters. Regression coefficients are high for variable clusters that capture the multilateralization of arms embargoes and the implementation of arms embargoes, while the variable that captures countermeasures by a target is still within 95 percent significance. Cluster G (importance of embargo objectives for initiators) is close to the 95 percent level of significance. No statistically significant

correlation is found for variable clusters the measure the cost–benefit calculations in a target, the decision-making structure of a target, or the evasion capacity/activity of a target.

Overall, more independent variables are significant for the average of the three indicators of sanction effectiveness than for any one of the indicators by itself. This is not surprising because the variables were chosen to catch all explanations for all three levels of sanctions effectiveness. This result indicates that the broad approach to explain sanctions chosen here yields good results. Although not significant in many cases when considering a single measure of sanction success, the explanatory power of this study's approach accumulates with the combined measure of sanctions success.

Similar to the results for level II effectiveness (arms import reductions), variables shaped by external actors are more significant than the influences internal to the target. Multilateralization and implementation of arms embargoes, as well as initiator interest in sanctions, factors linked to external actors, emerge as three of the four clusters, which have the strongest explanatory power. Cluster F (countermeasures by target) is shaped by the targeted actor but also is strongly related to the outside world, as it catches the economic and political power of targets to find alternative arms suppliers. Among the other factors primarily reflecting domestic situations in targets, cluster B (decision-making structure in target) explains a fairly high, though not statistically significant, share of variance in initiator satisfaction with an embargo. The other independent variables have very little explanatory power.

Independent Variables

We now turn to an examination of the various clusters of independent variables and their explanatory power.

Cost–benefit calculations in target (variable cluster A) attempts to measure the likelihood that a target will yield to an arms embargo. Variable cluster A includes three sub-variables: importance of sanctioned behaviour to target; general importance of arms imports to target; and relation between behaviour and arms imports. If the target places little value on the sanctioned behavior, views arms imports as important, and there is a notable relationship between the targeted behavior and arms imports, it is assumed an arms embargo will have a higher chance to succeed.

This study, however, finds no statistically significant effect of the variables collected to represent cost–benefit calculations in a target on arms embargo effectiveness.

There are a few potential reasons for this result. First, again, is the issue of data: scores for the variables in cluster A are rather subjective estimates. The second possibility is that this independent variable is inherently linked to targeted policy change through sanctions, a rather rare event. The third is that variables chosen here may not properly reflect cost–benefit relations and the corresponding decision making in target states.

The variables chosen, in addition to being subjective, may not reflect the changing dynamics of target behavior under sanctions, particularly the ‘rallying round the flag’ effect. As several of the case studies show and is emphasized in the sanctions literature, targets often harden targeted policies rather than change them to appease the sanctions initiator. This is because targets may have invested political capital and are afraid to ‘lose face’ and domestic legitimacy by standing down. In the end, the result obtained in this analysis strengthens the view that sanctions affect costs and benefits in targets in ways more complex and dynamic than can be described with the simple variables chosen here.

Decision-making structure in target (variable cluster B) attempts to capture how the internal political infrastructure of a target will affect the various measures of embargo effectiveness. It includes three sub-variables: decision-making structure of the target (autocratic or participatory); symbolic importance of an arms embargo for the target; and relations between the arms embargo and other initiator policies.

The variable cluster decision-making structure in a target is weak in explaining variance in arms embargoes, with the exception of level I effectiveness (targeted policy change). It is, as mentioned, the only statistically significant independent variable cluster for this particular dependent variable.

Evasion capacity/activity of a target (variable cluster C) attempts to explain how a target’s ability to evade an embargo’s ability to mitigate arms imports affects the three measures of embargo success used in this study. It includes two sub-variables: the level of domestic arms production and the lead-time before an arms embargo that would allow the target country to prepare for the embargo’s effects.

The coefficients for this variable carry the expected sign in all estimations, but the explanatory power is small never coming close to statistical significance as defined here. Why this outcome? Again, as in the case of the other two independent variables already discussed, data issues, the low incidence of policy change, as well as the ‘rally around the flag’ effect may be important.⁵

Multilateralization of arms embargoes (variable cluster D) is a measure of both whether an embargo is multilateral and whether the initiator is a powerful state (e.g., the US and the EU). Variable cluster D has three

sub-variables: power/importance of initiators; type of arms embargo (US, EU, or multilateral); and whether both the initiators and other important states share the objectives of an arms embargo. Hypothesized sanctions successes would be cases of multilateral arms embargoes initiated by powerful states where the objectives are shared by the various initiators and other important states.

The multilateralization of an arms embargo has the highest level of statistical significance for three of the four independent variables, with the exceptional case being targeted policy change. Multilateralization explains more than 50 percent of the variance in overall sanctions success and around 40 percent of variance in reductions in arms flows (level II effectiveness) and initiator satisfaction with arms embargoes (level III effectiveness).

Implementation of arms embargoes (variable cluster E) is almost as strong in explaining arms embargo success as the variable cluster representing multilateralization. This is not surprising as these two variables are somewhat complementary. Implementation measures how effectively an arms embargo is enforced by initiator states and includes three sub-variables: capability of an initiator to implement/enforce an arms embargo; the pressure placed on states that are not among the initiators to support an embargo; and the monitoring an arms embargo.

The correlation coefficient for the implementation variable is significant for level II effectiveness (reductions of arms flows) as well as the overall measure of sanctions success and comes close to 95-percent significance for level III effectiveness (initiator satisfaction). Even for level I effectiveness (policy change), the implementation of arms embargoes is not completely irrelevant, explaining about 17 percent of variance.

Countermeasures by targets (variable cluster F) aims to capture the financial and political means available to the target to evade arms embargoes. Variable cluster F includes two sub-variables: the economic power/financial means of a target and the political power/influence of a target states' allies who are non-participants in an embargo.

Countermeasures by targets explain much of the variance in level II effectiveness (reductions in arms imports) as well as overall sanctions success. This variable cluster corresponds to both variable clusters D (multilateralization) and E (implementation) in valuing the political alliances of targets, while also addressing the economic power of targets that allows them to evade embargoes. Its explanatory power, however, is lower than that of the variable clusters D (multilateralization) and E (implementation). Again, data issues may influence this outcome. Alternatively, this could be the result of a general conclusion that can be drawn

from the entire analysis: factors that are influenced by sanction initiators are more important than those influenced by targets in the analysis of level II effectiveness (reductions of arms flows).

Importance of embargo objectives for initiators (independent variable cluster G) measures initiator-related issues that potentially impact arms embargo effectiveness. It includes three sub-variables: strength of the domestic lobby in support of an arms embargo in the initiator state; significance of the arms embargo for an initiator's foreign policy; and prominence of the initiator as an arms supplier.

The importance of embargo objectives for initiators only yields statistically significant correlation coefficients for level II effectiveness (reductions of arms flows). It does not provide much explanation for level III effectiveness, the measure of arms embargo success it was designed to capture.

It is possible that the data used for this variable cluster are too unreliable, and the variable therefore fails to capture the relevant influences. In addition, the explanation given for the overall weak results for level III effectiveness (initiator satisfaction) seems to be convincing: satisfaction appears to result primarily from policy change, which is not often the result of arms embargoes – because arms embargoes rarely lead to targeted policy change (low level I effectiveness), initiators are seldom satisfied with an arms embargo (causing low level III effectiveness). The high rates of success for effectiveness level II (reductions in arms imports) seem to matter less.

CONCLUSION

This quantitative analysis of a sample of 74 arms embargo cases strengthens and differentiates some of the results obtained in the case studies. Among the most important results are that arms embargoes have had, on average, notable effects on arms import patterns. Although no arms embargo has been 100 percent effective, the majority of arms embargoes induced at least some reduction in arms imports, with a good number having significant effects. This fact tends to get lost in many arms embargo case studies where an excessively high standard of embargo success is set, such as the total cessation of all of arms and ammunition imports.

However, changes in arms import patterns, whether major or minor, have on average had rather little impact on targeted policies. Targeted states and groups have most often continued to pursue the policies the initiators aimed to alter, and when targets did change policies, it was often for reasons other than external manipulation through arms embargoes.

This study makes it clear that the link between arms supplies and targeted policy change is weak. Although the analysis in this chapter does not thoroughly explain why arms embargoes often fail to induce targeted policy change, the case studies provide ample insight why this is so: targets adopt their military forces and styles of war to the level of arms and ammunition available. Targeted states and groups will also often stock up weapons and ammunition before a sanctions period. Several of the case studies indicate that embargoes often come very late in the game and that more timely reactions might increase the likelihood that sanctions have some effect on policy change.

At the same time, case studies and data analysis indicate that the relationship between arms embargoes and targeted policy change becomes closer over time. Although the contribution of arms embargoes to such policy change is often hard to discern, it is plausible to assume that the reduction of arms flows requires time to take hold and thus have an influence on targeted policy change. As stocks of arms and ammunition are depleted, concerns over decreases in firepower grow and with them, at least in a number of cases, the willingness to change targeted policies. Compared to effects on arms import patterns, however, even the success rates for changing targeted policies with long-running arms embargoes remain low.

The data confirm the hypothesis that multilateral arms embargoes are more successful than unilateral ones. Multilateralization increases supplier satisfaction with an embargo, raises the likelihood of significant changes in arms import patterns, and increases the hope by the initiators that a policy change will take place in the target (although such policy change is most often not realized).

Related to multilateralization is arms embargo implementation, a higher rate of participation among countries and a stronger effort at implementation by participants increases the effectiveness of arms embargoes with respect to reducing arms imports by targets.

Arms embargo implementation has improved over time, at least with respect to changing arms import patterns, because initiators have become smarter in terms of multilateralization and improving implementation. There has not, however, been a corresponding improvement in the success rate of targeted policy change.

From this study we can conclude that the success of arms embargoes ultimately remains limited, particularly when policy change is the ultimate objective. However, policy change does not seem to be the primary goal by initiators in all, or even most cases; instead, multilateralization of national restrictions and success in significantly changing arms import patterns also seem to be valued by embargo initiators.

Variables designed to capture the expected efforts of targets to counter arms embargoes have little explanatory power. Neither the importance of a particular policy to a target, availability of countermeasures nor the decision-making structure in the target can explain much variance in the effectiveness of sanctions. In combination, all these factors have some effect, but it is not very strong.

Arms embargoes are clearly more effective when they are consistently embedded with other measures. This becomes clear from the case studies and is confirmed in the data analysis presented here. Arms embargoes that are part of a larger sanctions package have a higher rate of success, including with respect to targeted policy change. In addition, longer-running arms embargoes are in general more successful than short-lived ones.

This may then be the most important policy lesson from this exercise: arms embargoes in and of themselves will seldom lead to policy change by targeted elites or groups. Arms embargoes are instead most effective when utilized as an element of larger policy packages. In addition, there needs to be a long time period allotted for implementation of an embargo so as to increase the possibilities for success. Arms embargoes very seldom have had effects on targeted policies before their fifth year of implementation. Arms embargoes appear to need time to develop ‘teeth’; however, not all arms embargoes will grow sufficiently sharp teeth.

NOTES

1. Both independent and dependent variables are summed for various analytical purposes. In addition, for much of the data presentation later, scores for independent and dependent variables are recalculated as percentages, thus ranging from 0 to 100.

2. This resembles the procedure of measuring success in Economic Sanctions Reconsidered by Gary C. Hufbauer, Jeffrey J. Schott and Kimberly A. Elliott, International Institute for Economics, Washington DC, 1990.

3. The 17 cases where an arms embargo had some effect on target policies range from strong effects in Angola (UN sanctions 1993–2003) to some effects in Haiti (UN sanctions in 1994), Burundi (Regional sanctions 1996–1999), Sierra Leone (UN sanctions 1998–2002), Liberia (UN from 1992), Sierra Leone (UN 1997–1998), Libya (UN 1992–2003), South Africa (UN 1977–1993), DR Congo (regionally limited; UN from 2003) and minor effects in Yugoslavia (UN 1992, 1995), Iraq (UN 1990–2003), Sudan (UN from 2004), Indonesia (EU sanctions 1999, 2000), and Indonesia (US sanctions from 1999).

4. The US mandated numerous arms embargoes before 1990 which are not included here as they were not active after 1990. The UN also mandated a number of

voluntary and one mandatory arms embargo (within the Rhodesia sanctions of 1963) which are excluded for the same reason.

5. The rally around the flag effect was discussed in the introduction chapter of this book, and signals the “us” versus “them” mentality that is often fostered by sanctions in targets (similar to wars).

APPENDIX 1. LIST OF DEPENDENT AND INDEPENDENT VARIABLES

Dependent Variables:

EL I: Level I Effectiveness:

Targeted policy change

- 0 no detectable change with respect to targeted policy
- 1 some change with respect to targeted policy
- 2 major change with respect to targeted policy
- 3 targeted change occurring within reasonable period of time

Causes of targeted policy change (multiply with factor for targeted policy change)

- 0 no relation to arms embargo
- 0.5 some relation to arms embargo
- 1 arms embargo major factor in policy change

EL II: Level II Effectiveness:

Arms supplies to target

- 1 some, but minor, reduction in arms imports by target, some change in supplier composition, some increase in price of weapons, some change in military behavior necessary because of reduced arms imports
- 2 major reductions in arms imports by target, major change in supplier composition, major increase in price of weapons, major change in military behavior necessary because of reduced arms imports
- 3 no significant arms imports post arms embargo

EL III: Level III Effectiveness:

Satisfaction of arms embargo initiator(s)

- 0 None of objectives of initiator(s) met
- 1 Some of objectives of initiator(s) met, some initiator(s) satisfied
- 2 Objectives of initiator(s) mostly reached
- 3 Objectives of initiator(s) fully reached

*Independent Variables**A: Cost-Benefit Calculations in Target (Variables 1–3 Additive)*

1. Importance of sanctioned behavior to target
 - 0 Importance high
 - 1 Importance low
2. General importance of arms imports to target
 - 0 Importance low
 - 1 importance high
3. Relation between behavior and arms imports
 - 0 no relation
 - 1 notable relation

B: Decision-Making Structure in Target (Variables 4–6 Additive)

4. Decision-making structure
 - 0 autocratic decision-making
 - 1 participatory decision-making
5. Symbolic importance of arms embargo for target
 - 0 low symbolic importance of arms embargoes
 - 1 high symbolic importance of arms embargoes
6. “Embeddedness” of arms embargo in other initiator policies
 - 0 little relation between arms embargoes and other policies
 - 1 arms embargoes consistent with other initiator policies/additional (targeted) sanctions in place

C: Evasion Capacity/Activity of Target (Variables 7 and 8 Additive)

7. Domestic arms production
 - 0 major and growing arms production
 - 1 some domestic arms production
 - 2 no significant domestic arms production
8. Lead-time to arms production/length of preparation prior to arms embargo
 - 0 long lead-time
 - 1 insignificant lead-time

D: Multilateralization of Arms Embargo (Variables 9–11 Additive)

9. Power/importance of initiator(s)
 - 0 less important state(s)
 - 1 major power(s)

10. Type of arms embargo
0 US or EU, voluntary multilateral
1 multilateral (UN)
11. Objectives of arms embargo shared by initiator(s) and additional important state(s)?
0 differing, or unclear, objectives
1 common objectives

E: Implementation of Arms Embargo (Variables 12–14 Additive)

12. Capability of initiator(s) to implement/enforce arms embargo
0 low capabilities in some important countries (neighbors, arms suppliers)
1 overall good capability
13. Pressure on/support for non-initiator(s)
0 little pressure, support for non-initiator(s)
1 strong pressure, support for non-initiator(s)
14. Effectiveness of monitoring of arms embargo
0 no effective monitoring
1 effective international monitoring

F: Countermeasures by Target (Variables 15, 16 Additive)

15. Economic power/financial means of target
0 target able to muster substantial finance for arms importation
1 target limited in its financial means
2 target seriously financially constrained
16. Power/influence of non-participants
0 target with strong and important allies
1 target widely isolated or without major allies

G: Importance of Embargo Objectives for Initiator(s) (Variable 17–19 Additive)

17. Domestic constituency in initiating state(s)
0 weak domestic constituency, lobbying groups
1 strong domestic lobby
18. Foreign policy importance of arms embargo objectives for initiator(s)
0 importance low
1 importance high
19. (Dominant) initiator(s) type of arms supplier
0 “restraint” supplier
1 economic or hegemonic supplier

**APPENDIX 2. CORRELATION TABLES FOR CLUSTERS
OF INDEPENDENT VARIABLES**

Dependent Variables: Levels of Effectiveness

Average of Scores of Independent Variable	A	B	C	D	E	F	G
<i>Average of three levels of effectives</i>							
Correlation coefficient	0.890	0.266	0.230	0.495	0.355	0.340	0.320
r-square	0.555	0.120	0.080	0.511	0.363	0.291	0.172
Standard error	0.136	0.192	0.196	0.143	0.163	0.172	0.186
F-test	0.131	0.025	0.083	0.002	0.000	0.000	0.027
<i>Level I effectiveness (targeted policy change)</i>							
Correlation coefficient	0.499	0.351	0.048	0.213	0.233	0.071	0.197
r-square	0.284	0.341	0.006	0.154	0.255	0.021	0.106
Standard error	0.136	0.130	0.160	0.147	0.138	0.158	0.151
F-test	0.579	0.000	0.000	0.000	0.000	0.000	0.000
<i>Level II effectiveness (arms import reduction)</i>							
Correlation coefficient	1.514	0.405	0.363	0.782	0.624	0.653	0.638
r-square	0.513	0.089	0.063	0.408	0.358	0.342	0.219
Standard error	0.252	0.345	0.350	0.278	0.290	0.293	0.320
F-test	0.000	0.010	0.002	0.085	0.721	0.349	0.009
<i>Level III effectiveness (initiator satisfaction)</i>							
Correlation coefficient	1.155	0.391	0.328	0.702	0.441	0.368	0.321
r-square	0.357	0.100	0.062	0.394	0.215	0.130	0.066
Standard error	0.265	0.313	0.320	0.257	0.293	0.308	0.319
F-test	0.000	0.068	0.019	0.339	0.678	0.868	0.062

Note: Italic, correlation coefficient significant at 95 percent level.

APPENDIX 3. ARMS EMBARGO CASES

To better inform our analysis, this section contains brief descriptions of the arms embargoes listed in Table A1. The short descriptions that follow are summaries of arms embargo regimes listed by targeted country.

Afghanistan: The various arms embargoes against forces in Afghanistan did not have notable effects on the policies of the targets. Although the 1996 voluntary arms embargo did not reduce arms flows to forces in Afghanistan, later embargoes against the Taliban resulted in lower levels of arms inflows. The major remaining provider continued to be Pakistan. Efforts by states supporting the arms embargoes to convince Pakistani leaders to enforce the arms embargo more strictly met with only limited success. Evasion capacity of the targets was small and so was the availability of countermeasures, but sanctioned policies were of overriding importance to the targets. Despite the lack of effect on the ground, sanctions served signaling purposes, particular after the end of Taliban rule in 2001.

Angola: The sanctions against the União Nacional para la Independência Total de Angola (UNITA) rebels were ultimately successful in ending the civil war. Government forces were victorious, partly because of the highly imbalanced supply of arms. The arms supply to UNITA decreased over the lifetime of the embargo, while government forces continued to be well armed. Another element that crippled UNITA was targeted financial sanctions that deprived UNITA of critical funding and thus the capacity to counter the arms embargo. It took the main initiators of the sanctions, Portugal, other EU states, Canada and the US, considerable time to build a strong implementation regime for the embargo, which used partly new measures such as the first effective UN expert group report.

Armenia/Azerbaijan: During the war between the two countries, both the OSCE and the UN asked all supplier countries to abstain from arms deliveries to the warring parties. However, these voluntary arms embargoes, while observed by both the EU and the US, were not adhered to by a number of major supporters of the two countries, particularly Russia (Armenia) and Turkey (Azerbaijan). A tighter arms embargo may have had the potential to influence decision making in both countries, as the importance of arms imports was high and evasion capacities were low. However, with the war being of great importance to both countries, and no strong political backing of the arms embargoes by the initiators, the effect of the arms embargo remained very limited.

Belarus: The US arms embargo had no effect except to reinforce other signals of US disapproval of Belarussian domestic politics. The armed

forces in Belarus were well equipped, and the country had major arms production facilities. Furthermore, Russia remained a supplier despite US protests.

Burundi: The arms embargo, as part of a comprehensive trade sanctions regime, was not initiated by major arms suppliers, but rather by neighboring countries. Still, it led to a marked decline in arms imports and an increase in the cost of weapons imported. Major arms suppliers supported the policies of neighboring countries; and neighboring countries had some capacity to control borders and thus limit arms flows. Even though weapons continued to come to Burundi, the military activities of both the government and the opposition were hampered. This also decreased their capacity for counter-measures. However, the embargo was successful primarily because the sanctioned policies were highly contentious within the political groupings in Burundi. Even the comparatively limited effect of the arms embargo thus contributed to policy change.

China: The EU and the US were notable arms suppliers to China before the arms embargoes of 1989. However, China was largely self-sufficient in arms production. Chinese evasion capacity further increased in the early 1990s due to growing Russian willingness to supply modern military equipment. The arms embargoes were thus largely symbolic and could have little real impact unless the US and the EU placed significant political pressure on Russia to also ban the supply of weapons to China.

Cuba: Although the US embargo was upheld by many other countries and Cuba had little evasion capacity, the embargo regime had little effect because the Soviet Union supplied most of the weapons the Cuban government asked for free of charge during the Cold War. After the end of the Cold War, the US was more successful in limiting flows of arms to Cuba, including from Russia. However, even though the sanctions regime has not led to policy change, the impact of US policies on Cuban rulers has been influential due to the growing military obsolescence of Cuban arms.

Cyprus: The US arms embargo had little effect in a situation where other suppliers could be found. It was aimed as a signal toward the Cyprus government, without much ambition by the US government to get other suppliers involved.

Eritrea/Ethiopia: The EU, US, and UN voluntary arms embargoes early in the conflict between the two countries did little to decrease arms flows because other suppliers continued to deliver weapons. In fact, arms imports from countries such as Russia increased. A mandatory UN arms embargo was possible only shortly before the end of the conflict. This embargo led to an end to almost all deliveries; however, because of the previous high level of

arms imports, it is unlikely that the mandatory arms embargo had any effect on decision making in either of Eritrea or Ethiopia.

Georgia: A voluntary UN arms embargo against the warring parties in Georgia in 1993 had no effect on arms flows and no effect on decision making by the parties involved in the country's civil war.

Haiti: After the military overthrow of the elected government of President Aristide, successive types of embargoes, first by the US and then by the UN, led to increasing isolation of the country. Arms imports, which had been low already, quickly came to a halt. Still, the military junta only gave in when the arms embargo turned into comprehensive economic sanctions and the US threatened military invasion. In the case of Haiti, the direct effects of the arms embargo are particularly difficult to disentangle from the effects of the comprehensive economic sanctions and the threat of invasion, policy measures with which the arms embargo was close aligned.

India: A US arms embargo between 1998 and 2001 was hardly more than a symbolic measure as the main suppliers to the Indian armed forces were Russia and European countries. Although some of the European suppliers such as Germany reduced arms supplies in the wake of the Indian nuclear test of May 1998, the Indian armed forces nonetheless had little difficulty importing the military equipment they desired.

Indonesia: Massive human rights violations before independence of Timor Leste in 1999 led to EU and US arms embargoes. Indonesian arms imports plummeted, but it is not clear to what extent this was due to the embargoes. European countries and the US had been important suppliers to the Indonesian armed forces, but the country was also in deep economic crisis during this period and, after the end of the Suharto-regime, the allocation of resources to the military was intensely debated. Although seen as a strong political signal, the arms embargoes had little effect on the capabilities of the Indonesian armed forces, which had large stocks of weapons and ammunition and could also rely on domestic production for the first years of the new decade. The EU embargo was also quickly lifted, leading to some substitution of early US supplies.

Iran: Although only the US has maintained a formal arms embargo against the Islamic Republic of Iran, other suppliers have also operated with some restraint since the beginning of the 1990s due largely to pressure from the US. It is not likely, however, that the US arms embargo had any influence on Iranian human rights or foreign policies.

Iraq: Imports of weapons by Iraq came to a virtual halt after August 1990. As one element of the overall sanctions regime imposed after the end of the Gulf War of 1990/1991, the arms embargo contributed to the package

of measures designed to force Iraq to cooperate with the international community. Although the record of Iraqi compliance is debated, it seems clear that it led to containment and disarmament, and thus reached the originally postulated goals. It is not possible to single out the specific effects of the provisions on arms within the overall sanctions package.

Liberia: The UN arms embargo against Liberia was long seen as the epitome of sanctions success, along with the Angolan case. Although it took longer than in the Angolan case, and never was as biting, the Liberia arms embargo regime also went through various stages and became increasingly effective. In the end, it seems to have contributed decisively in limiting the military capabilities of the government forces and thus to a negotiated settlement that brought an end to the conflict.

Libya: Libya was a major arms importer in the 1970s and 1980s, with most of the weapons coming from European countries and Russia. When the EU instituted an arms embargo, Russia became an even more important supplier. When the UN finally decided on an arms embargo, Libyan arsenals were already well stocked. However, beginning in the 1990s, the lack of spare parts became noticeable, particularly in the air force (there was also a parallel flight ban with major impacts on Libyan air traffic). After a long embargo period Libyan military equipment had seriously deteriorated, a factor that seems to have contributed to changes in Libyan policies, both with respect to international terrorism and non-proliferation.

Myanmar/Burma: Human rights policies of the ruling junta in Burma have not changed over the periods in which the EU and US operated arms embargoes. Neither of the embargo senders had been an important supplier of arms to Burma. China, on the other hand, the main supplier, continued to sell without regard to the US and EU embargoes.

Nigeria: The EU supplemented a number of policy measures designed to signal discontent to the ruling Nigerian military regime about their human and civil rights policies with an arms embargo. European countries had been the major suppliers to the Nigerian military before the embargo. However, it was fairly simple for the Nigerian military to substitute the EU with other suppliers. It can still be surmised that the arms embargo had some effect in finally bringing the military regime down, as one element within the overall strategies of the EU, the US and the Commonwealth countries.

North Korea: North Korea's large domestic defense industry is by far the most important supplier to the North Korean military. Although military technology imports played a role in modernizing production and products until the early 1990s, nearly complete autarky marks North Korean procurement since that time.

Pakistan: The US was Pakistan's main arms supplier during the 1960s and 1970s. Later other suppliers, particularly China, became important. Arms transfer relations between Pakistan and the US have been up and down since the 1960s. Although Pakistani dependence on US arms imports has been high, Pakistani arms supplies have not faced long-term disruption by US arms embargoes since they have been quickly lifted due to deference to US strategic interests.

Rwanda: Arms embargoes against Rwanda have had very little effect. The UN arms embargo came very late in the civil war of 1994, and only after the genocide. It was soon lifted against the government and shifted to the Hutu militia's operation in eastern District Republic of the Congo (DRC). Government forces thus could legally re-supply quickly, while in the DRC arms transfer control was very limited.

Sierra Leone: The arms embargoes on Sierra Leone, first against an illegitimate government and later against opposition forces, became more effective over time when combined with other sanctions. In the end, the embargo helped to bring the warring parties to the negotiating table, and thus end the civil war.

Somalia: The Somali arms embargo has been ineffective in changing the country's chaotic situation. Arms inflows decreased; however, this was largely due to reduced demand by various armed groups in the country. In addition, Somalia continued to be a transit for weapons into the region. Most of the supply consists of small arms that come in small consignments from Arab countries. Despite some measures to improve arms embargo implementation post-September 11, 2001, the Somali arms embargo continues to be marked by low levels of enforcement.

South Africa: The mandatory UN arms embargo of 1977 had a long gestation period during which South Africa built up a capable domestic arms industry. This industry continued to benefit from technology inflows that were only partially and belatedly sanctioned. However, with the arms embargo getting tighter over time, the South African arms industry increasingly lost its ability to produce modern weapons. This was one, albeit a minor one, of the factors shifting the balance in the ruling white South African elite toward negotiations with the representatives of the black majority.

Sudan: Sudan has seen various periods of sanctions, including arms embargoes, primarily aimed as a response to human rights violations. However, at least until 2004, these sanctions had little effect on the targeted Sudanese government. They also did not affect arms flows that predominantly came from China and Eastern European countries, which did not

participate in the arms embargoes. The UN arms embargo of 2004, however, was accompanied by reduced arms inflows and a greater willingness of the Sudanese government to negotiate with the international community. Nonetheless, there was little change in Sudan's actual behavior over the Darfur crisis, which triggered this particular embargo.

Syria: Only the US has placed official arms embargoes against Syria, based on accusations of Syrian human rights violations and support for international terrorism. In addition, European countries, which had earlier supplied weapons to Syria, stopped most deliveries beginning in the 1980s. As long as Syria had the resources to pay, Russia and other Eastern European suppliers stepped in, so that there was no direct effect of the Western restrictions on the level of Syrian arms imports. It is debatable whether Syria changed policies with respect to human rights and support of international terrorism over time, but it also is not very convincing to argue that the US arms embargo had much influence on these policies.

Vietnam: The US arms embargo, accompanied by more subtle restrictions from other Western suppliers similar to an embargo, had little effect on the level of Vietnamese arms imports because Russia was and continues to provide arms. Still, one can argue that as part of a package of Western restrictive measures, the arms embargo helped contribute to some major policy changes in Vietnam, particularly with respect to economic and human rights policies. At best, however, this contribution was minor.

Yemen: Neither the US nor the voluntary UN arms embargo of 1994 did much to change arms flows to Yemen. Although the conflict between North and South Yemen ceased and the country reunited while the arms embargoes were in place, it is far fetched to argue that the arms embargoes more than marginally contributed to the peace process. It could be argued that the UN arms embargo sent a signal of discontent, which included traditional suppliers such as Russia. However, this is easily discredited by the fact that it was not possible for the UN Security Council to agree on a mandatory arms embargo, which instead sent a signal that UN opposition was not very strong.

Yugoslavia: The Yugoslavia arms embargoes have at best a mixed implementation record but still had some major effects on policies in and around the region. The embargo proved ineffective against Croatia and Bosnia, largely because of more or less open embargo evasion by minor suppliers clandestinely supported by the US. Serbia, whose arms imports were largely reduced and whose domestic arms industry suffered from the lack of input components, lost some of its initial advantages on the battlefield. This arguably helped to bring the Serb government to the

negotiating table and thus contributed to peace in 1995. Later sanctions in the wake of the Kosovo crisis were again asymmetric on the ground in that they were fairly effective against the better-armed Serbia but did not stop deliveries to the Kosovo Liberation Army. The outcome of the crisis, which the arms embargo did not help to prevent, was an escalation of the crisis, contrary to the intentions of the embargo senders.

Zaire: Arms embargoes against Zaire were largely ineffective, both on the ground and in relation to targeted human rights policies. The main difficulties for embargo implementation were twofold: first, neighboring countries, with the help of Eastern European suppliers, substituted earlier arms and technology flows from Western Europe and the US; second, the porous borders of the nation allowed commercial dealers to evade arms embargoes.

Zimbabwe: The EU arms embargo led to a partial shift of arms supplies toward China and Eastern European countries. Overall, there was no reduction in arms imports. There was also no change in the direction desired by sanction senders of the incriminated policies of the government.

Table A1. List of Arms Embargo Cases.

Country	Sanctions by	Begin Year	End Year	Type of Sanctions	Target*	Sanctions Objective
Afghanistan	UN	1996		Voluntary UN arms embargo	All parties	End of civil war; human rights
Afghanistan	UN	2000		UN arms embargo	Taliban	End of support for terrorism; extradition of Usama bin Laden
Afghanistan	EU	1996	2001	EU arms embargo	All parties	End of civil war
Afghanistan	EU	2001		EU arms embargo	Taliban	End of support for terrorism
Afghanistan	US	1996	2001	US arms embargo	All parties	End of civil war
Afghanistan	US	2001		US arms embargo	All non- government groups	End of support for terrorism
Angola	UN	1993	2003	UN arms embargo	UNITA	End of civil war
Armenia	OSCE	1992		Voluntary OSCE arms embargo		End of hostilities
Armenia	UN	1993		Voluntary UN arms embargo		End of hostilities
Armenia	US	1993		US arms embargo		End of hostilities
Azerbaijan	OSCE	1992		Voluntary OSCE arms embargo		End of hostilities
Azerbaijan	UN	1993		Voluntary UN arms embargo		End of hostilities
Azerbaijan	US	1993		US arms embargo		End of hostilities
Belarus	US	1993		US arms embargo		End of hostilities
Burundi	Regional	1996	1999	Comprehensive economic sanctions		Regime change End of civil war

China PR	EU	1999	EU arms embargo	Ituri and Southern Kivu	Human rights
China PR	US	1999	US arms embargo		Human rights
Congo DR	UN	2003	UN arms embargo		End of civil war
Cuba	US	1958	US arms embargo		Regime change
Cuba	US	1962	US comprehensive sanctions		Regime change
Cyprus	US	1992	US arms embargo		End of hostilities
Eritrea	EU	1999	EU arms embargo	2001	End of hostilities
Eritrea	UN	1999	Voluntary UN arms embargo	2000	End of hostilities
Eritrea	UN	2000	UN arms embargo	2001	End of hostilities
Ethiopia	US	1998	US arms embargo	2001	End of hostilities
Ethiopia	EU	1999	EU arms embargo	2001	End of hostilities
Ethiopia	UN	1999	Voluntary UN arms embargo	2000	End of hostilities
Ethiopia	UN	2000	UN arms embargo	2001	End of hostilities
Georgia	UN	1993	Voluntary UN arms embargo		End of hostilities
Haiti	US	1991	US arms embargo		Regime change
Haiti	UN	1993	UN arms embargo		Regime change
Haiti	UN	1994	Comprehensive economic sanctions		Regime change
India	US	1998	US arms embargo	2001	Change in nuclear policies
Indonesia	EU	1999	EU arms embargo	2000	Human rights
Indonesia	US	1999	US arms embargo		Human rights
Iran	US	1984	US arms embargo		End support of terrorism
Iran	US	1995	US comprehensive sanctions		End support of terrorism, change nuclear policies

Table A1. (Continued)

Country	Sanctions by	Begin Year	End Year	Type of Sanctions	Target*	Sanctions Objective
Iraq	UN	1990	2003	UN comprehensive sanctions		End of occupation of Kuwait, verification of WMD
Iraq	EU	2003	2004	EU arms embargo		Disarmament Containment of hostilities
Liberia	UN	1992		UN arms embargo		End of civil war
Libya	UN	1992	2003	UN arms embargo		End support of terrorism
Libya	EU	1986	2004	EU arms embargo		End support of terrorism
Libya	US	1978		US arms embargo		End support of terrorism
Myanmar/Burma	EU	1991		EU arms embargo		Human rights
Myanmar/Burma	US	1988		US arms embargo		Human rights
Nigeria	EU	1995	1999	EU arms embargo		Human rights
North Korea	US	1950		US comprehensive sanctions		Regime change
Pakistan	US	1979	1981	US arms embargo		Change in nuclear policies
Pakistan	US	1990	2001	US arms embargo		Change in nuclear policies
Rwanda	UN	1994	1995	UN arms embargo		End civil war, stop human rights violations
Rwanda	UN	1995		UN arms embargo	Hutu groups	End hostilities
Rwanda	US	1994	2003	US arms embargo		End hostilities
Rwanda	US	2003	2004	US arms embargo	Non- governmental forces	End hostilities

Sierra Leone	UN	1997	1998	UN arms embargo	Rebels	Regime change; end of civil war
Sierra Leone	UN	1998	2002	UN arms embargo		End of civil war
Somalia	UN	1992		UN arms embargo		End of civil war
South Africa	UN	1977	1993	UN arms embargo		Regime change
Sudan	UN	2004		UN arms embargo		Human rights, end of civil war
Sudan	EU	1994		EU arms embargo		Human rights, end of civil war
Sudan	US	1992		US arms embargo		Human rights, end of civil war
Sudan	US	1997		US comprehensive sanctions		Human rights, end of civil war
Syria	EU	1986	1994	EU arms embargo		End support of terrorism
Syria	US	1991		US arms embargo		End support of terrorism
Vietnam	US	1984		US arms embargo		Regime change
Yemen	UN	1994		UN voluntary arms embargo		End of hostilities
Yemen	US	1992		US arms embargo		End of hostilities
Yugoslavia	UN	1991	1996	UN arms embargo		End of hostilities
Yugoslavia	UN	1992	1995	UN comprehensive sanctions		End of hostilities
Yugoslavia	UN	1998	2001	UN arms embargo		End of hostilities
Yugoslavia	EU	1991	2001	EU arms embargo		End of hostilities
Zaire	US	1993		US arms embargo		Human rights
Zaire	EU	1993		EU arms embargo		Human rights
Zimbabwe	EU	2002		EU arms embargo		Human rights
Zimbabwe	US	2002		US arms embargo		Human rights

*Unless government.

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CHAPTER 10

PUTTING TEETH IN THE TIGER: POLICY CONCLUSIONS FOR EFFECTIVE ARMS EMBARGOES

Michael Brzoska and George A. Lopez

The case studies presented in this book, as well as in the quantitative analysis, illustrate the difficulties that the general public, as well as decision-makers, have with arms embargoes: These measures hardly ever achieve the ending of internal war or a complete change in the behavior of the targeted states or group. Arms and supplies have been getting through to violent actors in most cases and combating forces seldom seem to need to stop fighting for lack of supplies.

The case studies also demonstrate, however, that in a good number of cases arms embargoes do have noticeable effects on arms supply patterns. There is also strong evidence that the implementation of arms embargoes has improved since the mid-1990s. Arms embargoes are increasingly having effects. These effects can primarily be seen in arms supply patterns. Generally, UN and other multilateral arms embargoes lead to some, and in some cases substantial reductions in arms imports by targeted states and groups. Arms supply shifts from established arms exports to new sources, generally supplying less modern and less advanced type of weapons. Open trade is supplanted by clandestine and circuitous re-supply.

The changes in arms-import patterns also influence warfare on the ground. Forces tend to shift to fighting with less-advanced weapons and in

sporadic, short battles. Increasingly, civilians are targeted. Arms embargoes thus demonstrate similar effects to those found in 'new wars' (Kaldor, 1999). On the one hand, we are not surprised that many of the cases of 'new wars', such as those in former Yugoslavia, Angola, Sierra Leone and Liberia, occur under arms embargoes. On the other hand, arms embargoes are only one element leading to the shifts in warfare marking 'new wars', such as the dominance of small arms and light weapons, sporadic fighting and the large ratio of civilian victims of warfare. In some of the archetypal 'new wars', such as in the Congo, multilateral arms embargoes only came about after many years of 'dirty fighting'. And with lucrative contraband trade in commodities fueling the cycle of arms and violence, targeted commodity sanctions may be as essential, if not more powerful, than an arms embargo to produce an end to war-making.

The shift towards such fighting lessens the dependence on external arms supplies. But as in particular the case of the sanctions against UNITA in Angola proves, it does not eliminate the needs for re-supply, particularly with ammunitions. Fighting forces can reduce demand for arms substantially and still continue to fight, but they cannot go on forever. Thus, the question of whether arms embargoes are able to cut off weapon supplies remains relevant – but the likelihood that fighting will actually cease drops with the adoption of strategies of low-intensity war fighting.

What then to make of arms embargoes? Do they serve a purpose when their main effects are to change arms supplies and war-fighting patterns, but very seldom have the desired political effects of ending wars or changing a target's policies? How can arms embargoes be improved in a way that has the effects desired by those deciding to impose such arms embargoes?

This chapter will review some of the suggestions made in the earlier and more recent literature on arms embargoes in light of the analysis presented in this book. The discussion follows the distinction between various levels of effectiveness laid out in the introductory framework chapter, but starting with the third level of sender satisfaction and working back to the first level of changing target policies.

ACHIEVING THE POLITICAL OBJECTIVES OF ARMS EMBARGOES

Arms embargoes in themselves are not able to achieve political goals. At least in the past, they neither stopped wars, nor did they change the political behavior of the targeted states or groups.

In none of the cases studied in this book did restrictions on arms supplies stop a war. It is more debatable, for instance in the cases of Angola, Liberia and Sierra Leone, whether arms embargoes made wars shorter or reduced violence. However, and probably more significant, these arms embargoes were embedded in broader policy measures, including additional sanctions. The wars in Angola, Liberia and Sierra Leone were shortened by packages of international policies in which arms embargoes had an important place. The prime reaction to arms embargoes, however, was first an expansion of efforts to obtain arms, and, when arms embargoes became to be better enforced and financial sanctions were added, changes in war-fighting with the goal to reduce the dependence on external weapons supplies.

Major lessons can be learned from the few cases where the imposition of arms embargoes was correlated with the attainment of political objectives:

- Arms embargoes had a greater chance of correlation with the achievement of policy objectives when combined with other sanctions. Arms embargoes should be part of larger packages of policy measures, aiming to achieve the desired policy objectives. Stand-alone arms embargoes have very little chance of achieving policy outcomes.
- Reductions in arms flows are important. They are one element in decision-making over the continuation of the targeted behavior. However, decision-making needs to be influenced on more scores than the difficulties to receive weapons. International policies aimed at changing the behavior of states or groups therefore cannot rely on arms embargoes, but rather needs to be supplemented with other measures.
- Combinations of sanctions are one instrument that can enhance the effectiveness of arms embargoes. Packages of 'smart' sanctions, including financial sanctions, travel bans, other commodity bans, and, in the case of Liberia, 'secondary sanctions', contributed to the achievement of policy objectives in Angola, Liberia and Sierra Leone. Comprehensive economic sanctions, including arms embargoes, also had effects in the desired directions in the cases of Yugoslavia before the Dayton Peace Agreement and Iraq.
- Arms embargoes were more likely to contribute to the achievement of the desired policy outcome, when they were applied asymmetrical, that is, when only one side in a conflict was embargoed, whereas the other side was allowed to receive weapons. Sanctioned groups were increasingly put at a military disadvantage in Angola, Liberia and Sierra Leone. Furthermore, prior sanctions make subsequent external military action more likely to be quickly successful. The government of Saddam Hussein

in Iraq and the Taliban in Afghanistan came to a quick end, partly, because troops were not well armed when attacked. In the Kosovo war of 1999, Serbian troops, after many years of arms embargoes, also were not well armed.

Recent studies by SIPRI and the sanctions project at Uppsala substantiate a number of these ‘findings’ but also add a dimension that is substantially new: that in cases of Sierra Leone and Liberia, when UN peacekeepers and other regional actors were involved in monitoring and enforcing the arms restrictions, their success and political relevance increased substantially (Fruchart, Holtom, Wezeman, Strandow, & Wallenstein, 2007).

STOPPING ARMS FLOWS

Arms embargoes are supposed to work through strictly limiting the availability of weapons to targeted states or groups. But targets react. One of the usual effects of arms embargoes, therefore, is an increase in the level of resources devoted to arms purchases if additional resources in the targeted state are available. Fundamental microeconomic theory implies that increased demand and reduced supply will lead to a higher price for weapons and a reduction in the quantities exchanged, with exact quantities depending on the shifts in demand and supply curves as well as their slopes. The case studies provide some evidence, though no solid data on rises in the prices of weapons for targeted states and groups. What is well documented, is that arms suppliers of various sorts are attracted by the opportunities to make money though illicit deliveries provided by arms embargoes.

The change in arms supplies is most noticeable for UN arms embargoes. Embargoes by the EU and the US also had some effects – weapons from these embargoing entities were greatly reduced in all relevant cases – however, the ‘ripple’ effects stopped short of making unilateral arms embargoes similar to multilateral ones. Among ‘embargo breakers’ noticeable in the cases studied in this book, three groups stand out:

- *Governments allied to the target.* Most embargoed states or groups had friends willing to, at least covertly, supply arms, act as transshipment state or help in some other way. Examples include Pakistan for the Afghanistan embargo, Burkina Faso for the Liberia sanctions and China for the Burma embargo. Governments have very seldom admitted to behavior in violation of arms embargoes. This was not because they had to fear actions by the UN Security Council or other initiators of arms embargoes.

So far, only one government, Liberia in 2002, was reprimanded by the Security Council for violation of a UN arms embargo or lack of national implementation of a UN arms embargo. For instance, although an expert committee that investigated the arms embargo against Angola (UNITA) named a number of governments such as Burkina Faso, Ivory Coast and Rwanda, no secondary sanctions followed. Judging by its past record, chances are low that the Security Council will actually reprimand a government because of the violation of an embargo. What governments fear most is public exposure for arms embargo violations. A number of governments have experienced the 'shaming power' of international NGOs and the media. Arms embargo violations are material for headlines and can influence international perception of a government's behavior in international affairs.

- *Private arms dealers and brokers.* The business of arms embargo breaking is predominantly done by small-scale arms dealers. Some of these such as Victor Bout gained prominence during the 1990s. He was involved in shipping and selling arms to several of the embargoed groups and states in Africa. Although private persons and small companies have predominantly been the sanction violators, they have benefited from a lack of government oversight and control, and, in some cases, direct government support. Skepticism is warranted toward official statements that governments were not aware of any violations of arms embargoes affected by private persons, but it is true that oversight and enforcement capabilities are poor in many countries.
- *Arms-producing states without proper export control.* Most of the weapons supplied in defiance of arms embargoes during the 1990s came from East European states such as Bulgaria, Serbia and Ukraine. The arms were then shipped to embargoed states and groups by private dealers. The lack of control often begins at the weapon stocks under the control of armed forces, extends to production facilities and goes on to border controls. Not all countries have put much emphasis in enforcing UN arms embargoes. Violations seem more likely to originate from countries where the economic pressure to export weapons is especially strong. Bulgaria and Ukraine, both with sizeable arms industries but in difficult economic circumstances, were quite often alleged to be sources of weapons that reach targeted states or groups. In fact, loopholes in national laws, weak enforcement of the law, gaps in border patrol, etc. have been major problems of implementation of all arms embargoes. Because data are limited, it cannot be said with certainty, whether targeted states and group are spending more on arms imports when embargoed. UNITA in Angola

is one case where expenditures for arms seem to have increased considerably over time. In other cases, however, such as Burma or Afghanistan, this does not seem to have been so.

A potential mitigating factor for the effectiveness of arms embargoes are domestic weapon production capabilities. Few of the countries studied in this book had the option to shift from imports to domestic production. Even in these cases such as Serbia and Iraq, there is no strong evidence that this made a difference. It seems that in both cases, domestic arms industries were capable of producing some items but not the spectrum of equipment needed by the armed forces. At least, both armed forces were badly equipped after several years of sanctions, as witnessed during the Kosovo and the Second Iraq war.

Both the case studies and the quantitative analysis indicate that the implementation of arms embargoes has improved in the new century. One reason is that states owning or producing arms have improved their export controls. Although there are still sources of weapons for private arms dealers, these are not as abundant as they were in the late 1990s. Private arms dealers are also under stronger supervision than they were a few years ago, in most countries. Another reason is that the monitoring of arms embargoes by the UN has had growing importance in raising international awareness over sanction busting, mainly through the work of active sanction committees and special investigative missions. These are now a regular feature of UN arms embargoes. A watershed in international attention to sanctions compliance seems to have been the UN Secretary General's report on conflicts in Africa (S/1998/318). But the UN's monitoring capacity remain hampered by the unwillingness of governments to provide much information, especially intelligence information, a lack of resources available and rules of procedure such as unanimity in committees established by the Security Council.

Arms embargoes have been least effective in Africa in the 1990s. Small arms were widely available on black markets in various parts of the continent and neighboring countries had very limited means to stop trade, even if they were prepared to do so. African arms embargoes lacked enforcement on the ground, especially in the African cases of the 1990s. The realities of the markets for small arms and surplus major weapons would have required a much stronger investment into enforcement capabilities in many countries, ranging from preventing corrupt officials from signing false end-user certificates to more effective border control.

Numerous proposals have been made to improve the effectiveness of arms embargoes. Obviously, the first issue that needs to be addressed is commitment to arms embargoes. Most proposals for reform assume that governments actually want arms embargoes to be effective. If that was not the case, as in the example of Yugoslavia from 1992 or unilateral arms embargoes, improvements in effectiveness will be difficult to achieve, as the crucial actors to make them more effective, national governments have no, or limited, interests in doing so. The best proposals for reform are worthless if they do not have the political support of governments which are the only actors capable of regulating the trade in arms and related goods.

Sometimes the view is expressed that political will is all that is lacking, that it would be sufficient if governments efficiently used the instruments available. However, this view underestimates the complexities of multilateral arms transfer restraints as well as the practical problems of implementation. Governments need to be able to be clear about what the embargo covers, with respect to goods and destinations. No government with a sizeable arms industry will voluntarily impede more export business than the minimum required by an embargo. Governments also need to be capable of implementing an embargo, in legal terms, as well as with respect to practical means of implementation, such as border controls. Proposals for reform cannot substitute lacking political will, but they can help increase effectiveness of arms embargoes which have been agreed upon in the Security Council.

Laws and regulations need to be properly enforced, and many governments, for instance in Africa, lack these capabilities. And, as Lamb (2007) notes, outside the European Union there is little national legislative coordination with regional or UN actors in a way that would both enhance enforcement and increase the political priority of making sanctions work. The threat of the law, even where it exists in authoritative print, becomes empty if there is no enforcement of proper licensing procedures for arms sales, no consistent checks of end-user certificates, loose border controls, unguarded international airports and so on.

Improved law enforcement has limited value if it does not result in high costs for violators. This concerns violators in the neighborhood of targeted states, but often also arms dealers, brokers and financiers in countries far away from the targeted state. A first requirement that unfortunately is not met in all states is that the violation of arms embargoes carries severe punishments. To be able to convict, courts need to have sufficient evidence. Especially in cases that involve actors in several countries, it is often difficult and time consuming to collect and accumulate the evidence. International

cooperation in prosecution of violators of arms embargoes, for instance through Interpol, has so far been limited mostly to the industrialized countries. A more concerted effort to coordinate prosecution might help raise the probability that violators are actually punished. This is the purview of police forces and other crime prevention units; however, their work might benefit from closer cooperation with organizations concerned with monitoring arms embargoes.

As law enforcement and prosecution are far from perfect, monitoring of arms embargoes is essential to assess the impacts and effectiveness of an arms embargo but also to improve adherence through the exposure of suspected violators. Fear of exposure will deter sanctions breaking by both states and private actors, especially if it becomes the basis for punitive action.

A number of suggestions have been made to further strengthen the UN's capabilities to monitor arms embargoes, but there has been no agreement on how this would best be done. Proposals range from establishing a new UN body in charge of verifying various multilateral arms-related agreements and provisions to placing UN sanction monitors at crucial transit points, to strengthening the number and expertise of the UN Secretariat's professional staff, which is in charge of supporting the Security Council's work on embargoes (Knight, 1998; Brzoska, 2001; Bondi, 2001; Wallenstein, Staibano, & Eriksson, 2002).

In addition to some improvement in monitoring at the UN, there has been an increased interest and capacity by NGOs to improve compliance with arms embargoes. As several of the case studies show, NGOs, such as Human Rights Watch, International Alert, Global Witness and International Crisis Group, are a major source for information about sanctions busting. There are limits to the information-gathering activities of NGOs. They have limited resources and capacities. Also, they have agendas in addition to monitoring an embargo, which may influence the direction of their research efforts. As embargo violations do have potential 'shame power', the media has also been interested in investigating and publishing allegations.

IMPROVING SENDER SATISFACTION

Sender satisfaction with arms embargoes is closely related to success both with respect to achieving substantial reductions in arms flows to the targeted state or group and the achievement of policy objectives.

The frequent use of arms embargoes in the early 1990s undermined rather than reinforced the trust in arms embargoes as 'smart sanctions'. It was

frequently questioned whether arms embargoes ever had, and even can have under current circumstances, the desired effect of reducing the targeted state's or group's ability to threaten or break the peace, or perform acts of aggression (Tierney, 2005).

The improvement in arms embargo implementation since the late 1990s that was documented both in a number of case studies and the quantitative chapter has not led to a reassessment of arms embargoes. Arms embargoes continue to be seen primarily as a very public form of self-restraint with little effect on targets.

Although this is true for many arms embargoes, it is not true for all. As argued earlier, arms embargoes that are part of larger policy measures and are well-implemented do have effects in the desired direction. Solitary arms embargoes, particularly if not multilateral but mandated by one country only, however, are largely symbolical measures, even when they are mandated by powerful entities such as the United States or the European Union. The embargoes against Burma and Rwanda are cases in point.

The political commitment to a UN arms embargo can only come about through the interplay of national political debates and international diplomatic negotiations. These debates benefit from a clearer understanding of what the objectives and likely effects of an arms embargo under discussion are. The list of objectives of arms embargoes has been expanded beyond a narrow interpretation of the maintenance and restoration of international peace and security in Chapter VII of the UN Charter and includes, for instance, the fight against international terrorism and against severe violations of human rights in the case of Rwanda. This is in line with the international reassessment of the foundations of peace and security and the role of the UN. However, there has been no parallel reassessment of what arms embargoes can actually achieve in cases where the fighting power of military forces is not a major issue. Correspondingly, observers find a long list of functions that arms embargoes have actually had to fulfill, ranging from punishment of sanctioned behavior to domestic symbolism in targeting countries. Arms embargoes that are primarily perceived as a politically motivated substitute to more stringent actions are not likely to become effective.

In addition to clearer understanding of the objectives of an arms embargo under discussion, as the basis for agreement on its imposition, more effort into the analysis of the likely effects might help to improve arms embargoes. In fact, objectives and likely effects need to be seen together, as part of the larger assessment of costs and benefits of arms embargoes mentioned earlier. Net costs for the targeted and targeting states, including likely adaptive

action by targets and opportunity costs for inaction, or more stringent action by targeting states, need to be analyzed together to make sure that the embargo is 'smart'.

The cost argument makes it clear that commitment not only has a political side, it also has an economic one. Costs are higher to some states than others. Arms embargoes are especially costly to states that do not have much to export besides weapons, and those with weak governments, including weak laws, law enforcement capabilities and border controls.

CONCLUSIONS

The obvious deficits in arms embargo implementation have led the Security Council and other relevant actors since the mid-1990s to adopt a few measures designed to improve the effectiveness of arms embargoes, such as changes in the work of sanction committees, and the authorization of special missions. However, they have been slow in implementing more far reaching proposals, some of which were presented earlier, even when they came from bodies instituted by the Security Council, such as the International Commission on Inquiry on Rwanda, or as part of a package with a wider scope, such as its resolution on the promotion of durable peace and sustainable development in Africa (UN Sec Res 1196/1998).

There is a long list of measures that would put more teeth into arms embargoes, such as more commitment, common understanding of resolutions, better national implementation, closing of loopholes in national laws, strengthening of legal and administrative authority in supplier and neighboring countries, improved border monitoring, better information gathering and accumulation at the UN, better coordination with similar activities by NGOs, at the state level and by regional organizations and the use of investigative missions to uncover and report on violations of arms embargoes. The scope of reforms deemed necessary may differ among experts, but the direction is clear: more commitment by states, more government oversight, more resources at the UN, especially of a creative kind as has been manifest in the case of Liberia.

Our general acknowledgement of the poor effectiveness of arms embargoes and measures necessary for reform will not automatically lead to the necessary changes. Reforms will only come about if there is sufficient political pressure to implement them. NGOs have been very successful in highlighting the deficits of arms embargoes and have had some success in making arms embargo more effective, for instance through instigating

special missions. Some governments have also pushed for reform, for instance in sanction committees. The UN Secretariat itself has lobbied for many improvements (United Nations Sanctions Secretariat, 1999). But many governments remain unwilling to support reforms, for many reasons, ranging from disinterest in the matter to unwillingness to give the UN more resources in this field.

Initiatives not directly aimed at arms embargoes but at certain aspects of the arms trade - for instance on illegal arms trade, small arms and practical disarmament - have had an important bearing on the effectiveness of embargoes through their goal to stem the flow of arms which are difficult to control. It is also a good sign that a number of regional organizations and groups of states have shown an increased interest in matters of arms transfer control. Especially promising in this respect is the example of the small arms moratorium of a number of West African states. In general, 'practical disarmament' that aims at the collection and elimination of weapons, especially small arms, enhances the chances for sanction success in neighboring countries. It can also serve as an incentive to third countries to participate in arms embargoes.

Arms embargoes remain a potentially potent tool of the international community to help in efforts to prevent, deescalate and stop wars, when sanctions are taken seriously. The embargoes against Yugoslavia and Iraq are cases in point. Arms embargoes attained an image of being largely cosmetic because of poor implementation and enforcement, in a number of cases, but also changes in the way many wars were fought and resupplied. Some improvement is discernable on both fronts: implementation and enforcement is taken more seriously than before and the trade in small arms and light weapons is getting much international attention. More needs to be done, however, to substantially increase the chances that all arms embargoes are effective, including better arms export controls in many supplier countries, improved border control in states neighboring targeted states, more effective monitoring and a greater linkage to other UN actions such as the deployment of peace-keepers in conflict zones.

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