

Predicting the Success of Economic Sanctions

ROBERT E. LOONEY AND CRAIG KNOUSE

This article assesses the predictability of the outcomes of sanctions. Specifically, do successful sanctions possess a set of conditions that are necessary and sufficient to set them apart from those that fail? If so, what are the circumstances under which a future sanction episode would be likely (and with what degree of probability) to attain its stated aims?

INTRODUCTION

Economic sanctions are coercive measures directed toward political objectives.¹ Sanctions are usually supplemented by other measures, such as the severance or restriction of diplomatic, cultural, or sporting ties. The main thrust of such measures is, of course, to weaken the economy of the target. In this sense,² sanctions can be viewed as nondestructive coercion. They are initiated against a state with the intent to change that state's behavior, while in the process maintaining the state as a viable political system.

On the surface, most sanctions appear to have clear objectives. These usually relate to changes in the behavior of the target government. The major problem with sanctions, however, is that their impact tends to be complex and often very difficult to anticipate: "The historical record shows that the effects of sanctions are unpredictable and indiscriminate: even if they produce their intended adverse economic effects, the desired political effects do not automatically follow."³

More recently, sanctions have been undertaken for purely political reasons. On 9 March 1988, the Parliament of the European Community refused to ratify three economic protocols concluded with Israel:

The objective of these protocols was mainly to protect Israel's interests following Spain's and Portugal's entry into the Common Market. The parliamentarians who did not give their assent to these agreements thought that Israel had to be punished for two reasons: first, because it refused to allow direct export of Palestinian merchandise from the West Bank and Gaza to the European Community; second, because of the attitude of the Israeli authorities towards the intifada and the harsh measures taken against the Palestinians in the course of the uprising.⁴

Whatever their objectives, economic sanctions appear to be gaining wider usage as an instrument of foreign policy. Are future sanctions likely to attain their goals, and if so, under what circumstances? A recent exhaustive study⁵ concluded that only one-third of prior sanctions can be considered as successful:

Most observers conclude that trade sanctions are not successful policy instruments. This assessment has held despite the number of countries applying sanctions. It also seems to apply regardless of the degree of economic damage inflicted on the target country, or the target country's level of economic development.⁶

In a recent review of the literature, Lindsay asks: "Yet if trade sanctions do not work, why do states continue to impose them? The answer lies less in the ignorance of government officials than in the naivete of the research on trade sanctions."⁷ And in a major study on the aforementioned European sanctions against Israel, Greilsammer observes that, despite the very favorable circumstances surrounding the sanctions:

The reasons for the lack of impact of the sanction on the government's policy in the territories are diverse: suppressing the intifada was considered by the two parties in power a vital, primary aim; within Israel, the incidence of the sanction was felt exclusively by the farmers, and the economic damage inflicted was not sufficient to unleash domestic political pressure that would bring a new policy more in accord with the norms of the Community; in Israel, the veto was successfully depicted as an attack from the outside upon the population as a whole; the actual identification with the sender states was weak.⁸

The issue of the effectiveness of sanctions again came to the fore with the Iraqi invasion of Kuwait. Proponents of a military solution to the Kuwaiti crisis asserted that there was no proof that sanctions would work. Only war, they argued, would guarantee that Iraq would get out of Kuwait, and soon. In contrast, the CIA's view⁹ was that sanctions should begin to significantly hobble Iraq's economy by the early spring of 1991.¹⁰

1. Unable to earn money through exports, Iraq should deplete its foreign reserves by the spring leaving it little cash with which to entice potential sanctions-busters who smuggle goods over rural borders.

2. Economic problems would noticeably worsen by spring as Baghdad would shift ever more of its dwindling resources to the military and struggle to keep basic services, such as electrical power, functioning regularly.

3. Grain reserves should sustain consumption at two-thirds of the pre-embargo level until the next harvest in May. But despite government incentives to increase food production, "Iraq does not have the capacity to become self-sufficient in food production by next year and even a good spring harvest will support only about half the pre-embargo levels of grain consumption."

This view was supported by recent empirical evidence suggesting that the probability of a successful conclusion to the sanctions against Iraq was 100 percent: "Even when the model is adjusted to account for Mr. Hussein's exceptionally tyrannical control, and the estimated cost is say, halved to 24 percent of GNP, the probability of success remains above 85 percent."¹¹

Given the fact that Iraq refused to leave Kuwait even after weeks of extensive bombing, it is fairly safe to say the sanctions would not have resulted in the country's compliance with the UN resolutions. Clearly, part of the problem faced by policymakers in sanctioning countries in assessing the likely effectiveness of sanctions is that past research provides little guidance. The two Middle Eastern cases we have mentioned exemplify this: in both cases the conditions for the favorable imposition of sanctions seemed present; however, in each case the sanctions largely failed to meet their stated objectives. Why?

A major problem with past research on the effectiveness of sanctions is that it is often anecdotal, with little basis established

for direct comparison of the various elements of success and failure. Does the main source of failure relate to the environment? Are sanctions more often than not applied in situations or environments where they are not the appropriate instruments for securing change? Is success or failure of a particular sanction largely a function of its objectives, with certain objectives much easier to attain than others? Unfortunately, the extant literature does little to address these questions empirically.

The purpose of this article is to fill this gap in our knowledge about the effectiveness of economic sanctions.¹² More specifically, we wish to determine if successful sanctions possess a set of conditions that are necessary and sufficient to set them apart from those that fail. If so, what are the circumstances under which a future sanction episode would be likely (and with what degree of probability) to attain its stated aims?

The results should have several policy implications. Most important, they should provide policymakers with guidance concerning the conditions in which future sanctions are likely to be effective as a foreign policy tool.

CONCEPTUAL ISSUES

Before we can undertake any empirical assessment of past sanctions, several conceptual issues need to be addressed. It is safe to say at this point that the outcome of any sanction episode will depend on:

1. The objectives of the sanction
2. The way in which one defines success
3. The methods of implementation

In examining each of these issues, we aim to develop a framework for the empirical tests that follow.

Identification of Goals

Identification of the goals of the sender country is necessary before any assessment of the effectiveness of a particular sanc-

tion can be made. The issue is not as straightforward as one might imagine. Indeed, the literature offers a variety of approaches and definitions:

1. Doxey:¹³ Ideological, political, and economic
2. Lindsay:¹⁴ Compliance, subversion, deterrence, international or domestic symbolism
3. Weintraub:¹⁵ Formal, undisclosed, and implicit
4. Barber:¹⁶ Primary, secondary, and tertiary

There is, of course, considerable overlap in the various objectives. Also, most of these goals do not have an unambiguous operational form. Finally, objectives do change over time and that adds to the difficulty of classifying each episode.

Hufbauer and Schott categorize the various objectives used in past sanction episodes into five major groups. According to them, sanctions can be used to:

1. Change the target country's policies in a somewhat modest way. Human rights and nuclear nonproliferation cases are possible examples.
2. Undermine the target government. This could also involve, as an ancillary goal, changing the target country's policies. Examples of this type of sanction are the US campaign against Castro, and the Soviet campaign against Tito.
3. Disrupt a major military adventure. The UK sanctions against Argentina during the Falklands conflict are a good example of this situation.
4. Impair the military potential of the target country, illustrated by World Wars I and II and the COCOM sanctions against the USSR and its allies.
5. Change the target country's policies in a major way (including surrender of territory). The UN campaign against South Africa over apartheid and control of Namibia¹⁷ is a good example of this case. Each of these goals involves highly public attempts at coercion.

Definition of Success

Most of the foreign policy successes stemming from the imposition of sanctions are a matter of degree. A major problem in any study of this sort, therefore, is determining when sanctions have attained enough of their objectives to be considered successful. Doxey defines an effective sanction as "one which succeeds in producing the desired behavioral response from the individual or group to which it is communicated."¹⁸ Although apparently straightforward, this definition does not answer the question posed by Olson and others about the problems associated with compliance. Olson points out that "it is often unclear just what is being attacked by the sanctions, aside from the simplistic answer that it is the economy."¹⁹

Hufbauer and Schott provide an alternate definition of success and a formula for measuring compliance: "The success of an economic episode as viewed from the perspective of the sender country has two parts: the extent to which the policy outcome sought by the sender country was in fact achieved, and the contribution made by sanctions to a positive outcome."²⁰ Hufbauer and Schott glean their assessment of success from public statements of objectives made by policymakers. Clearly, however, the policy publicly pronounced by policymakers may not be the same as the actual goals sought in the campaign; or, those goals might shift over time.

Methods of Implementation

The methods used to implement sanctions often decide their outcome. Here, one needs to distinguish between overt and covert measures. There are many instances of coercion failing. Sanctions are a public act and often the target state lacks a way to save face in the international community if it succumbs to the pressure. Here, Weintraub may be correct in arguing that lower-profile public attempts at persuasion are more easily accomplished. Publicity is what distinguishes a sanction from a covert

coercive attempt. A sanction "cannot be arbitrary or ad hoc: its existence must be generally known, and it must be regular in its incidence."²¹ Publicity also serves a useful function in that it sometimes satisfies a domestic requirement for action.

POSITIVE VS. NEGATIVE METHODS

A distinction needs to be made about the merits of the "carrot" and "stick" approaches to sanctions. Baldwin defines the carrot approach, or positive sanctions, as "actual or promised rewards to the target country," and negative sanctions as "actual or threatened punishments to the target country."²² Many observers, such as O'Leary, Baldwin, and Wallenstein, discount the effectiveness of negative sanctions and argue that the positive approach should be the policy tool of the future. Clearly, for the positive approach to make any sense, the benefits of compliance must outweigh the cost of the bribe for good behavior; also, the reward must be rendered when the target country complies with the sender's desires.

On the other hand, a threat is only credible if it does not have to be instituted. Positive inducements may have a strengthening effect on the target economy; but what happens if the target country is a country that takes a stance of diametrical opposition to the survival of the sender country? There is some doubt that the sender would want to bolster the economy of an enemy state just for compliance with an international norm.

REASONS FOR FAILURE

Each of the factors mentioned above constitutes a reason for failure. Because compliance is difficult to obtain, success tends to be elusive. Objectives shift over time, and policymakers may be caught between conflicting goals. Often once sanctions occur, public resistance and resolve in the target state stiffen. The threat of punishment rather than the promise of a reward for compliance is also a common reason for failure. Galtung postulates that the critical variable in the success of a sanction is the vulnerability of the target country.

Another problem stems from the fact that the literature is even more vague concerning the set of conditions that are necessary for a sanction to be successful. Most authors have a long laundry list of conditions that make intuitive sense. Unfortunately, these authors give us little sense of the relative strength or importance of these factors.

The theory of sanctions is simple:²³

1. The input-output matrix of the receiving nation's economy reveals import dependence.
2. Calculations are made of the impact of partial or total boycott of selected imports.
3. A search is made for those imports yielding maximum effect with minimum boycott.
4. The ideal case would be that of a system in which total boycott of one product alone would be sufficient.

Most observers believe that the ideal set of conditions would involve a receiving nation characterized by:

1. Imports have a very high loading on important sectors of its economy.
2. There is no internal substitute for these imports.
3. A high loading of the important imports comes from the sending nation(s); there are no external substitutes for these imports, so that the receiving nation cannot threaten to change trade partners.
4. Imports make up a very small part of the export of the sending nation(s), and there are no easily available substitutes for them.
5. Exports from the receiving nation can easily be obtained elsewhere.
6. The trade relations of the receiving nation can easily be supervised (as when the receiving nation is an island).²⁴

As Galtung notes, the case in which these conditions exist is usually where the target country is a small economic satellite of a major economic power. In such a case, perhaps 75 percent and possibly even 90 percent of both exports and imports of the small country may be with the large country. At the same time.

this trade volume may still be less than 1 percent of the large country's total trade.²⁵ Clearly, in the Galtung case sanctions fail because few countries reach this level of vulnerability.

A number of other factors contribute to the inability of sanctions to achieve their aims. Most often they involve problems of agreement and implementation among the imposing states. Failure can also occur because of failure to appreciate the reactions inside the target state and too much reliance on a naive theory of economic pressure leading to political disintegration.²⁶

Although it is difficult to evaluate the effects of sanctions applied in the past (because of the differing objectives of the imposing states and because the application of punitive measures cannot always be isolated from simultaneously occurring international events), there are many instances where sanctions have proved ineffective. Britain and France were largely responsible for the failure of sanctions imposed against Italy in 1935; they did not want to take any action that might alienate Mussolini and force closer Italian-German ties. Britain, in other words, feared aggression in Europe more than Italian aggression in Africa. This is a case where it was impossible to isolate sanctions from other (more important) international objectives.

The sanctions campaign led by the United States against Cuba in the early 1960s similarly did not topple the communist government of Fidel Castro. In fact, sanctions had the reverse effect in that they helped to consolidate Castro's political position and, if anything, strengthened internal support for the regime.²⁷ Simultaneously, the imposition of sanctions opened up opportunities for Russian involvement. Consequently, Cuba moved entirely into the communist sphere, and the United States was left with almost no economic leverage to influence events in that country.

The more recent enforcement of the UN-backed economic boycott against the former Rhodesian government also proved ineffective. The Security Council applied sanctions against Rhodesia a year after Rhodesia had declared independence (11 November 1965). They failed largely because they were not upheld by South Africa, while simultaneously Rhodesian conservative elements increased their support for the survival of the regime. Ian Smith's government succeeded in softening the impact of the economic sanctions, by stockpiling, finding alter-

nate markets and supplies, and diversifying the economy. In the ten years after Rhodesia's declaring independence the volume of industrial production rose by 88 percent; and from 1963 to 1970 the range of output increased from 602 products to 3,837. Sanctions therefore spurred development of a surprisingly self-sufficient indigenous economy.

Although advocates of economic coercion point out that sanctions by the Organization of American States against the Dominican Republic (begun in 1961) were an important factor in toppling the Trujillo regime, the period during which sanctions were applied was far too short to isolate their economic effects. Trujillo, who was assassinated in 1961, was immensely unpopular within and outside the Dominican Republic.

Economic sanctions against Yugoslavia and Albania by the Soviet Union and East European countries, the economic boycott against Israel by the Arab countries, as well as economic warfare against North Korea and China by the United Nations all proved ineffectual, although for different reasons.

Miller²⁸ still claims that there is considerable evidence that while the US boycott of Ugandan coffee failed, nonetheless sanctions proved devastating to the Ugandan economy and helped set in motion the events that led to the fall of the Idi Amin regime. In that respect, US sanctions were indeed successful. However, Miller concedes that the Ugandan case provides little guidance as to how similar steps might ultimately affect other countries such as Iran, the Soviet Union, or South Africa. The stated actions and objectives of the different boycotts are far too dissimilar for any meaningful comparison. This brings to the fore the whole question of the efficiency of selective sanctions.

OPERATIONAL CONSIDERATIONS

The considerations we have outlined provide the basis for the selection of variables for statistical tests that follow. The failure (or success) of sanctions seems to be dependent on a wide spectrum of factors.

Inadequate international enforcement has been one of the main reasons for past failures of sanctions. States that are members of the international body may prefer to avoid or post-

pone decisions to enforce sanctions because they will not bear the accompanying risks and costs. The weaker the system (because of the diversity of values), the more likely are doubts and hesitations. It is therefore unrealistic to expect all countries to cooperate fully in imposing a total embargo against a target state. The lack of universality of application has indeed been a major cause of the failure of sanctions in the cases mentioned above. The existence of nonparticipating countries often drastically lessened the target state's vulnerability to external economic pressures and so eroded the psychological effects of the sanctions policy.

A second important factor in the inability of sanctions to achieve their objectives has been the failure of the imposing states to anticipate fully the response within the target state. The assumption that there is a proportional relationship between economic deprivation and political disintegration has in most cases proved to be a fallacy. Political collapse in the wake of economic disaster has been the exception rather than the rule. Indeed, economic sanctions have generally had the opposite effect by creating a sense of solidarity in the target state, similar to wartime spirit of resistance.²⁹ Most countries that have been subjected to economic pressure have grown more reluctant to accept change and the population more ready to bear economic punishment.

Third, history has shown that most states implement safeguards to soften the impact of sanctions. Methods used are stockpiling, finding other markets, diversifying the economic structure of the country, buying illegally even when proved to be more expensive, and diverting the economic effects away from the politically dominant social groups.

The scant success achieved by imposing states also results from the inequitable burden of costs. Some imposing countries have more to lose than others and therefore feel that the price they have to pay is not proportionate. Countries that have to pay the highest price resent the universal implementation of economic warfare the most and are therefore more likely to evade it. Within countries, some sectors of the economy will be affected more than others, leading to feelings of resentment among those who have to pay the highest price.

The failure of sanctions in the past does not imply, of course, that their costs are always negligible. Lindsay proposes

that sanctions fail because of the effect that publicity has on the goals of compliance and subversion, even though publicity has a positive effect on the goals of international and domestic symbolism. Ellings believes that the failures are attributable to the change in the structural trends of the global system; he concludes that sanctions must be understood on a case-by-case basis (within the context of the international system). Doxey concentrates on the problem of international enforcement as the main cause of failure.

Hufbauer and Schott list several limitations of sanctions:

1. The means used may not be adequate for the task.
2. The sanctions themselves may create an antidote.
3. Allies of the target country may support its cause, or there may be a backlash abroad and at home to the initiation of sanctions.

Each of these explanations for failure of sanctions has intuitive validity.

EMPIRICAL ANALYSIS

Clearly, sanctions work or fail for a variety of reasons. One tentative hypothesis is that the outcome is multidimensional; there are elements leading to success and to failure in any individual case. Whether or not a specific sanction succeeds or fails depends on the existence of some combination of positive factors. These must be sufficient to offset those elements tending to undermine the policies of the sanctioning states. "Success" in this sense does not necessarily involve one unique set of circumstances; instead we may imagine several factors in differing combinations that would lead to a positive (or negative) outcome.

Three elements are necessary to test our hypothesis:

1. An acceptable measure of success
2. A set of hypothesized conditions concerning successful sanctions
3. A method of testing the relations between these conditions and the outcome of sanctions

The sanction literature we have surveyed has sought simplifying strategies to assess sanctions. Simplification has merit, but it can lead to the overlooking of useful information.

One common oversimplified approach is to seek a single differentiating trait or set of traits to characterize sets of sanctions. Here, sanctions are arbitrarily classed as successful or unsuccessful and then attention focused on only those items for which the groups had statistically significant differences. Although it provides some useful insights, there are serious conceptual problems with this approach. By analyzing and interpreting each characteristic associated with a set of sanctions independently from other facets, this approach obviously ignores the multidimensional nature of sanctions.

Another approach that also may prove insufficient examines the relationships among the characteristics associated with past sanctions to find the profile of successful and unsuccessful episodes. Comparisons and contrasts of a new sanction situation are then made on this basis. For example, using this approach successful sanctions may have a profile where the United States or other large industrial nation(s) has dealt with a smaller developing country. Here, success was more likely if the target country did not receive aid from another industrial country. Using this profile, we might regard a potentially successful sanction situation as likely to fail if it did not fit this profile.

Both the above strategies, however, are likely to result in poor predictions simply because the characteristics of successful sanctions are not particularly uniform with respect to any single measure. Besides, it appears that they may be compensatory in nature (i.e., one favorable characteristic may well affect another, unfavorable characteristic). It is probable that even highly differentiating conditions can be moderated by minimally accessible or adequate levels on other conditions, or environments.

Is there an alternative to these highly oversimplified strategies? A successful line of analysis should:

1. Consider all pertinent data from each sanction episode, while considering individual differences that are certain to exist within each performance group

2. Provide estimates of the likelihood that the sanctions under consideration will obtain a prespecified level of success—an especially critical facet if the assessment procedure is to be of value to policymakers
3. Provide feedback concerning the appropriateness of the data themselves

One analytical approach to the assessment of sanctions is multiple discriminant analysis (MDA).³⁰ In past research, MDA has often focused on profile relationships among several groups. However, the technique can classify individuals into a group. Here we make use of this specific aspect of MDA: its ability to provide the best statistical basis (in a least-squares sense) for computing estimates of the specific probabilities of a new sanction to achieve prespecified performance levels. In summary, the focus here is on individuals and not groups.

By way of review, MDA is a statistical procedure that results in the reduction of the multiple (profile) measurements to one or more additive combinations of those scores. These combinations or composite scores are important because they provide the basis for deriving performance probabilities.

As a first step, MDA calculates a set of weights based on the characteristics associated with each sanction. These weights minimize the differences in the composite scores of the sanction cases in the same performance groups (successful and unsuccessful) and maximize differences among groups. This composite score is the single best identification of a future sanction's probable group membership.

Estimation

As noted above, a critical first step in the MDA approach is the prior classification of sanctions into groups: successful and unsuccessful. In part we have avoided several controversies in the classification of sanction outcomes by simply using Hufbauer and Schott's classification scheme. It is unlikely that any further analysis of the historical record would significantly improve on their assessments about incidents of success or failure.

Hufbauer and Schott's classification scheme is based on the multiplication of a policy result indicator (1—failed outcome to 4—successful outcome) by a sanction contribution indicator (1—negative contribution to 4—significant contribution). The resulting index yields a success score from 1 to 16. For purposes of classification for the discriminant analysis, successful sanctions have scores higher than 7. Conversely, those with scores lower than 8 were classified as failures.

The second step is the selection of variables for the MDA. Here the variables³¹ selected were mentioned in the literature as likely to have a bearing on the eventual outcome of any individual sanction. The variable chosen on this basis fell into four broad groups:³² (1) economic variables, (2) political variables, (3) geographical variables, and (4) military variables (see Table 1).

The first step in the analysis was to factor analyze the variables listed above. Thus through determining common variance among them, it was possible to reduce the number of independent variables for the discriminant analysis, and to select variables largely uncorrelated with one another. For this purpose, we selected the principal components method of factor analysis (with each factor having an eigenvalue of at least 1.0). The seven factors that met this criterion were then orthogonally rotated using Kaiser's varimax procedure. These factors collectively accounted for 87.3 percent of the total variance in the matrix.

The variables with the highest loading on each factor were: (1) PERIOD, (2) SGNP, (3) COST/CAPITA, (4) SREGION, (5) COST/TARGET, (6) INTLHELP, and (7) STABILITY.

The next step in the analysis was to introduce these variables one by one in a discriminant analysis of our total sample of sanctions (the 105 cases listed in Hufbauer and Schott)³³ to find the maximum separation of the successful sanction group from those events previously classified as failures. The results (Table 2) were somewhat disappointing, with only 78 percent of the sanctions correctly identified by the discriminating variables. In other words, a framework based on the seven variables listed above enabled us to predict the correct outcome of future sanctions three out of four times.

Table 1
Variables Used in the Analysis

Economic variables
(a) cost of the sanction ³⁴ to the target country (COST/TGT)
(b) cost as a percentage of gross national product (COST/GNP)
(c) cost per capita (COST/CAPITA)
(d) trade linkage ³⁵ (TRADE)
(e) GNP ratio: sender to target (GNPRATIO)
(f) type of sanction ³⁶ (TYPE)
(g) cost to the sender (COSTSENDER)
(h) sender's GNP (SGNP)
(i) target's GNP (TGNP)
(j) sender industry ³⁷ (SINDUS)
(k) target industry (TINDUS)
(l) target export concentration ³⁸ (TCON)
(m) target commodity concentration ³⁹ (TCOMM)
(n) target import concentration ⁴⁰ (TIMPORT)
(o) target merchandise export index ⁴¹ (TMEX)
Political variables
(a) companion policies ⁴² (COMPOLICY)
(b) international cooperation with the sender ⁴³ (INTCO)
(c) international assistance to the target ⁴⁴ (INTLHELP)
(d) sanction period ⁴⁵ (PERIOD)
(e) health and stability index ⁴⁶ (STABILITY)
(f) prior relations index ⁴⁷ (PRIOR)
(g) target government ⁴⁸ (TGOVT)
Geographic variables
(a) sender population (SPOP)
(b) target population (TPOP)
(c) target area (TAREA)
(d) sender area (SAREA)
(e) target urbanization ⁴⁹ (URBN)
(f) target higher education index ⁵⁰ (EDUCATION)
(g) target region ⁵¹ (TREGION)
(h) sender region (SREGION)

Table 1 (cont'd.)

Military variables
(a) target armed forces ⁵² (TARMED)
(b) sender armed forces (SARMED)
(c) sender is an arms producer ⁵³ (SPROD)
(d) target is an arms producer (TPROD)

Table 2
Factors Associated With Successful Sanctions:
Preliminary Discriminant Analysis Results

Grouping	Significant discriminating variables	Total/number misclassified	Predictability (percentage)
Total sample	PERIOD SGNP COST/CAPITA SREGION COST/TGT STABILITY INTLHELP	102/23	78.0
Pre-World War II	INTCO TREGION PERIOD	10/1	90.0
Post-World War II cases	COST/CAPITA INTLHELP SGNP SREGION COST/TGT STABILITY	86/15	82.5

(cont'd.)

Table 2 (cont'd.)

Grouping	Significant discriminating variables	Total/number misclassified	Predictability (percentage)
Non-US-instigated sanctions	COST/GNP STABILITY COST/TGT TARMED IMCOM TRADE SPOP	28/7	75.0
US-instigated sanctions	SARMED COST/SENDER COST/TGT SGNP PERIOD COST/CAPITA	67/14	79.0

Data sources: G. Hufbauer and J. Schott, *Economic Sanctions Reconsidered* (Washington: Institute for International Economics, 1985); World Bank, *World Development Report* (New York: Oxford University Press, various issues); C. Taylor and D. Jodice, *World Handbook of Political and Social Indicators*, 3rd ed. (New Haven: Yale University Press, 1983).

Next, to find if our predictability of future sanctions could be increased, the analysis focused on several subgroupings of cases. Here, the literature provides some guidance about grouping that might produce significant differences:

1. Pre-World War II vs. post-World War II cases. The assumption is that the post-World War II cases occurred much more frequently and as such applied in situations less likely to be successful.

2. Non-US-instigated sanctions vs. US-instigated sanctions. The assumption is that the United States, as the most powerful economy through most of the period under consideration, would be more likely to achieve success than smaller, less influential countries.

In each case, the methodology used was identical with our analysis of the total sample: (1) the subgroup of sanction cases were factor analyzed, (2) variables loading most heavily on each factor were selected for a discriminant analysis, and (3) the stepwise discriminant analysis classified sanctions as successful or unsuccessful for comparison with that of the groupings based on Hufbauer and Schott's classification.

Again the results were not particularly encouraging (Table 2). Although the analysis correctly identified 9 out of 10 pre-World War I cases, it incorrectly identified 15 out of 86 post-World War II cases. Similarly, 7 out of 28 non-US-instigated sanctions were misclassified, as were 14 out of 67 instigated by the United States.

An investigation was also made of several other subgroupings in an attempt to improve the degree of predictability. Logically, the objectives of the sanctions themselves should influence the intensity of the methods used in implementation, the presumption here being that the will of the sanctioning country and that of the target country is a function of the stakes involved.

Hufbauer and Schott list five major objectives: (1) modest change in target policies, (2) destabilization of target governments, (3) disruption of military adventures, (4) impairment of military potential, and (5) other major changes in target policy. As in the cases above, factor and stepwise discriminant analysis examined the extent to which successful sanctions could be differentiated from those that failed.

The first grouping based on objectives of the target country involves modest changes in the target country's policies. These episodes begin with the United Kingdom vs. USSR in 1933, and end with the United States vs. Zimbabwe in 1983. The three statistically significant variables used in differentiating between successful and unsuccessful cases were: (1) companion policies, (2) sender's GNP, and (3) sender's region. However, these variables classified nine countries incorrectly (Table 3). Also, the probability of classification of those countries correctly grouped was not particularly high.

Table 3
Modest Changes in Target Country Policies

Sender/target	Classification	Percentage correct
UK vs. USSR, 1933	successful	86.9
US/UK vs. Mexico, 1938	successful	85.9
USSR vs. Australia, 1954	unsuccessful	63.8
US/UK vs. Egypt, 1956	successful	96.1
US vs. Ceylon, 1961	successful	74.9
USSR vs. Romania, 1962	unsuccessful	66.6
US vs. UAR, 1963	successful	72.7
France vs. Tunisia, 1964	successful	50.5
US vs. Chile, 1965	successful	67.5
US vs. India, 1965	successful	69.8
US vs. Peru, 1968	unsuccessful	36.7*
US vs. Peru, 1968	successful	63.3
US vs. South Korea, 1973	unsuccessful	58.5
US vs. Chile, 1973	unsuccessful	62.8
Canada vs. India, 1974	unsuccessful	15.6*
Canada vs. Pakistan, 1974	unsuccessful	16.6*
US/Canada vs. South Korea, 1974	successful	35.9*
US vs. USSR, 1975	unsuccessful	62.3
US vs. Eastern Europe, 1975	successful	37.2*
US vs. South Africa, 1975	unsuccessful	62.8
US vs. Uruguay, 1976	unsuccessful	68.7
US vs. Taiwan, 1976	successful	31.2*
US vs. Ethiopia, 1976	unsuccessful	68.8
US vs. Paraguay, 1977	unsuccessful	75.1
US vs. Guatemala, 1977	unsuccessful	75.2
US vs. Argentina, 1977	unsuccessful	76.0
Canada vs. Japan, 1977	successful	83.4
US vs. El Salvador, 1977	unsuccessful	75.1
US vs. Brazil, 1978	successful	24.9*
China vs. Albania, 1978	unsuccessful	47.8*
US vs. Brazil, 1978	unsuccessful	81.7

(cont'd.)

Table 3 (cont'd.)

Sender/target	Classification	Percentage correct
US vs. Argentina, 1978	unsuccessful	82.0
US vs. India, 1978	unsuccessful	81.9
US vs. USSR, 1978	unsuccessful	86.9
US vs. Iran, 1979	successful	93.5
US vs. Pakistan, 1979	unsuccessful	86.9
Arab League vs. Canada, 1979	successful	24.1*
US vs. Bolivia, 1979	unsuccessful	86.9
US vs. Iraq, 1980	unsuccessful	51.1
Netherlands vs. Surinam, 1982	successful	51.2
South Africa vs. Lesotho, 1982	successful	99.6
Australia vs. France, 1983	unsuccessful	80.5
US vs. USSR, 1983	unsuccessful	94.0
US vs. Zimbabwe, 1983	unsuccessful	94.2

Notes: * represents misclassified case. Variables used in discriminant analysis: (1) companion policies, (2) sender GNP, and (3) sender region.

The second set of sanction objectives involves those with the intent of destabilization of the target government. This grouping begins with United Kingdom vs. Russia in 1918, and ends with United States/OECS vs. Grenada in 1983. Here, six variables derived from the factor analysis were significant in the differentiating process (Table 4), with only one case being incorrectly classified (the United States vs. Argentina in 1944).

Table 4
Modest Changes in Target Country Policies

Sender/target	Classification	Percentage correct
UK vs. Russia, 1918	unsuccessful	100.0
US vs. Argentina, 1944	unsuccessful	9.0*
USSR vs. Yugoslavia, 1948	unsuccessful	99.9
UK/US vs. Iran, 1951	successful	99.9
US vs. Laos, 1956	successful	99.9
USSR vs. Finland, 1958	successful	90.9
US vs. Dominican Rep., 1969	successful	99.9
US vs. Cuba, 1960	unsuccessful	99.9
USSR vs. Albania, 1961	unsuccessful	99.8
US vs. Brazil, 1962	successful	92.3
US vs. Indonesia, 1963	unsuccessful	95.3
US vs. South Vietnam, 1963	successful	99.9
US vs. Chile, 1970	successful	99.9
US/UK vs. Uganda, 1972	successful	94.7
US vs. Nicaragua, 1977	successful	93.9
US vs. Libya, 1978	unsuccessful	99.6
US vs. Nicaragua, 1981	unsuccessful	99.9

Notes: * represents misclassified case. Variables used in discriminant analysis: (1) international assistance to target, (2) prior relations index, and (3) trade linkage.

Disruption of military adventures (other than major wars) was the third grouping based on objectives of the sanctioning states. This grouping begins with the League of Nations vs. Yugoslavia in 1921, and ends with the United Kingdom vs. Argentina in 1982. For this group of sanctions, the factor analysis produced two significant, differing variables: target higher education index and the target region. These two variables produced only one misclassified case (Table 5).

Table 5
Disruption of Military Adventures
(other than major wars)

Sender/target	Classification	Percentage correct
League vs. Yugoslavia, 1921	successful	99.5
League vs. Greece, 1925	successful	67.0*
League vs. Paraguay, 1932	unsuccessful	97.4
League vs. Italy, 1935	unsuccessful	67.7
US vs. Japan, 1940	unsuccessful	12.5*
US vs. Netherlands, 1948	successful	98.7
US vs. China, 1949	unsuccessful	99.3
US vs. UK/France, 1956	successful	86.7
France vs. Tunisia, 1957	unsuccessful	99.4
US vs. Cuba, 1960	unsuccessful	99.9
US vs. India/Pakistan, 1971	unsuccessful	97.9
US vs. Turkey, 1974	unsuccessful	83.7
China vs. Vietnam, 1978	unsuccessful	99.7
UK vs. Argentina, 1982	successful	99.3

Notes: * represents misclassified case. Variables used in discriminant analysis: (1) target higher education index, and (2) target region.

The fourth set of groupings based on objectives involve cases that fall under the goal of impairment of military potential (including major wars). This grouping begins with the United Kingdom vs. Germany in 1941, and ends with the United States vs. the Soviet Union in 1981. Three variables proved to be sufficient to differentiate between success and failure in attaining the desired objective: (1) cost to the target, (2) type of sanction, and (3) cost to the sender. They predicted the correct outcome in each case, and produced a probability of correct placement of 100 percent in each case (Table 6).

Table 6
Impairment of Military Potential
(including major wars)

Sender/target	Classification	Percentage correct
UK vs. Germany, 1914	successful	100.0
Alliance vs. Ger./Japan, 1939	successful	100.0
Arabs vs. Israel, 1946	unsuccessful	100.0
US/COCOM vs. USSR, 1948	unsuccessful	100.0
US vs. China, 1949	unsuccessful	100.0
US/UN vs. North Korea, 1950	unsuccessful	100.0
US/S. Vietnam vs. N. Vietnam, 1954	unsuccessful	100.0
USSR vs. China, 1960	unsuccessful	100.0
US vs. USSR, 1980	unsuccessful	100.0
US vs. USSR, 1981	unsuccessful	100.0

Note: Variables used in discriminant analysis: (1) cost to the target, (2) type of sanction, and (3) cost to the sender.

The final grouping by objective involves the goal of achieving major changes in target country policies. Historically, this grouping begins with United States vs. Japan in 1917, and ends with the sanction of the European Community vs. Turkey in 1981. Five variables identified by the factor analysis were statistically significant in differentiating this group of sanctions: (1) cost as a percentage of GNP, (2) cost to the target, (3) trade linkage, (4) cost per capita, and (5) type of sanction. These five variables resulted in a perfect classification scheme (Table 7). As with impairment of military potential, the probability of placement in the correct category for each case was 100 percent.

Table 7
Other Changes in Target Country Policies
(including surrender of territory)

Sender/target	Classification	Percentage correct
UK vs. Japan, 1917	unsuccessful	100.0
India vs. Hyderabad, 1948	successful	100.0
USSR vs. US/UK/France, 1948	unsuccessful	100.0
India vs. Portugal, 1954	unsuccessful	100.0
Spain vs. UK, 1954	unsuccessful	100.0
US vs. Israel, 1956	unsuccessful	100.0
Indonesia vs. Neth., 1957	unsuccessful	100.0
Allies vs. GDR, 1961	unsuccessful	100.0
Indonesia vs. Malaysia, 1963	unsuccessful	100.0
UN vs. South Africa, 1963	unsuccessful	100.0
UN vs. Portugal, 1963	unsuccessful	100.0
US vs. Arab League, 1965	unsuccessful	100.0
Nigeria vs. Biafra, 1967	successful	100.0
Arab League vs. US/Neth., 1973	successful	100.0
Arab League vs. Egypt, 1978	unsuccessful	100.0
US vs. Portugal, 1981	unsuccessful	100.0
EC vs. Turkey, 1981	unsuccessful	100.0

Note: Variables used in discriminant analysis: (1) cost as a percentage of GNP, (2) cost to the target, (3) trade linkage, (4) cost per capita, and (5) type of sanction.

CONCLUSIONS

The foregoing analysis suggests that it is very difficult to predict the outcome of sanctions. No one common thread is present in the cases that were successful (or unsuccessful, for that matter). Countries today have only about a 75 percent chance of predicting the outcome of sanctions. Clearly, predicting the degree of success on the Hufbauer and Schott scale would be even more problematic.

On the other hand, it appears that our predictive capability increases significantly when the objectives of the sanctions are known. In fact, this predictive capability reaches 100 percent in several important categories. Apparently, having information about the costs of the sanctions, together with information on trade linkages, would be sufficient to predict the outcome of the event with nearly 100 percent accuracy for sanctions involving impairment of military potential, and those involving other major changes in the target country's policies.

There is one major caveat: in a context broader than the one defined above, sanctions may well fail in a foreign policy objective, but still be classed as a success by the government (and public opinion).⁵⁴ This could easily occur if they meet public demands for "strong" action or, alternatively, if they stave off demands to use military force. This aside, the distressing finding from the above analysis is that in most instances there is not a common element assuring success.

In each of the other groupings, sanctions appear to involve a set of variables that are unique to that type of sanction. Even then they are incapable of providing 100 percent accuracy in classification. Interestingly enough, as the importance of the objective increases, our ability to predict the likely outcome increases. This lends credence to the assertion that the will of the sanctioning states is critical. The determination of these countries to pursue their actions against the target may, in the final assessment, be the most important element determining the ultimate outcome of the sanctions.

Finally, until the time of 100 percent predictability comes, policymakers should realize that only 34 percent of the sanctions since 1914 have (by our definition of success) been successful. To initiate a sanction that has a small chance of success in the first place is poor policy. It is even poorer policy to initiate sanctions without clearly defining their objectives; this simply increases the likelihood that they will be applied in situations where the chances of failure are even greater.

NOTES

1. There is a rapidly growing literature in the area. See, e.g.: M. S. Daoudi and M. S. Dajani, *Economic Sanctions: Ideals and Experience* (London: Routledge

& Kegan Paul, 1983); Margaret P. Doxey, *International Sanctions in Contemporary Perspective* (New York: St. Martin's, 1987); David Baldwin, *Economic Statecraft* (Princeton: Princeton University Press, 1985); Barry Carter, *International Economic Sanctions: Improving the Haphazard U.S. Legal Regime* (Cambridge: Cambridge University Press, 1988); M. S. Daoudi and M. S. Dajani, *Economic Diplomacy: Embargo Leverage and World Politics* (Boulder, Col.: Westview Press, 1985). See also the special issue on international economic sanctions in *Harvard International Review* (June/July 1988).

2. C. L. Brown-John, *Multilateral Sanctions in International Law: A Comparative Analysis* (New York: Praeger, 1975), p. 1

3. Michael Holman, "The Uncertain Impact of Sanctions Against Pretoria," *Financial Times*, 20 January 1988, p. 4.

4. Ilan Greilsammer, *European Sanctions Revisited*, Policy Studies No. 31 (Jerusalem: Leonard Davis Institute for International Relations, Hebrew University of Jerusalem), p. 1.

5. Gary Hufbauer and Jeffrey Schott, *Economic Sanctions Reconsidered: History and Current Policy* (Washington: Institute for International Economics, 1985), p. 80.

6. James Lindsay, "Trade Sanctions as Policy Instruments," *International Studies Quarterly*, 1986, p. 153.

7. *Ibid.*

8. Greilsammer, *European Sanctions Revisited*, p. 57.

9. "Director of C.I.A. Sees the Iraqi Armed Forces Weakening in Three to Nine Months," *New York Times*, 16 December 1991, p. A1.

10. *Ibid.*

11. Gary C. Hufbauer and Kimberly A. Elliot, "Sanctions Will Bite—and Soon," *New York Times*, 14 January 1991, p. A15.

12. The analysis below is confined to economic sanctions. In large part this focus stems from the fact that the bulk of the data base used in the analysis below came from Hufbauer and Schott, *Economic Sanctions*, who dealt exclusively with economic sanctions. As such, their analysis did not include cases of arms embargoes or unofficial boycotts. Clearly, in many instances boycotts are indistinguishable from economic sanctions and certainly have the potential to be just as effective as economic sanctions. See, e.g. Signe Landgren, *Embargo Disimplemented: South Africa's Military Industry* (New York: Oxford University Press, 1989), ch. 2.

13. Margaret Doxey, *Economic Sanctions and International Enforcement* (New York: Oxford University Press, 1980), p. 3.

14. Lindsay, "Trade Sanctions," p. 153.

15. Sidney Weintraub, ed., *Economic Coercion and United States Foreign Policy* (Boulder, Col., 1982), pp. 47-48.

16. Barber, p. 370.

17. Hufbauer and Schott, *Economic Sanctions*, p. 29.

18. Margaret Doxey, "International Sanctions: A Framework for Analysis With Special Reference to the UN and Southern Africa," *International Organization*, Summer 1972, p. 529.

19. Richard Stuart Olson, "Economic Coercion in World Politics," *World Politics*, July 1979, p. 474.

20. Hufbauer and Schott, *Economic Sanctions*, p. 32.

21. A. L. Epstein, "Sanctions," *International Encyclopedia of the Social Sciences*.

22. David Baldwin, "The Power of Positive Sanctions," *World Politics*, October 1971, p. 23.

23. John Galtung, "On the Effects of International Economic Sanctions: With Examples From the Case of Rhodesia," *World Politics*, 1967, p. 384.

24. *Ibid.*, p. 384

25. *Ibid.*, p. 385

26. Barber, p. 384.

27. N. Ashford, "South Africa and the Threat of Economic Sanctions," *Optima*, p. 139.

28. Judith Miller, "When Sanctions Worked," *Foreign Policy*, Summer 1980, p. 119.

29. Barber, p. 376.

30. Cf. James Klett, *Applied Multivariate Analysis* (New York: McGraw-Hill, 1972).

31. In cases such as the Arab League or the United Nations, figures were derived by aggregating values, e.g., population of the leading participants.

32. Most of these variables are taken directly from Hufbauer and Schott's statistical appendices; other sources are listed in Table 1. The dates of the variables were chosen to coincide as closely as possible to that of the associated sanction episode.

33. Because of missing data, 3 of the original 105 cases were omitted from the analysis.

34. As computed in Hufbauer and Schott, *Economic Sanctions*, Appendix B.

35. The percentage of the target country's with the sender country.

36. Economic sanctions were broken into export sanctions, import sanctions, and financial sanctions.

37. Percentage of industrial output in GNP.

38. Percentage of total merchandise exports accounted for by the three leading exports.

39. Percentage of merchandise exports accounted for by commodities.

40. Percentage of imports in GNP.

41. Percentage of exports in GNP.

42. Companion policies refer to covert action, quasi-military operations, and regular military action.

43. International cooperation with sender, on an index scale of 1 to 4, indicates the degree of assistance received by the principal sender country in applying sanctions: (1) no cooperation, (2) minor cooperation, (3) modest cooperation, (4) significant cooperation.

44. International assistance to target was judged to exist when another country (usually a major power) extended significant economic or military assistance to the target country. The mere transshipment of goods subject to sanction was not counted here as assistance.

45. The sanctions period represents the rounded number of years, from the first official threat or event to conclusion.

46. Health and stability is an index, scaled from 1 to 3, that reports the target country's overall economic health and political stability (abstracting from sanctions) during the sanctions episode: (1) distressed country, (2) country with significant problems, (3) strong and stable country.

47. Prior relations is an index scaled from 1 to 3, which measures the degree of warmth before the sanctions episode, in overall relations between

target and sender country: (1) antagonistic, (2) neutral, (3) cordial.

48. Whether a civilian or noncivilian government.

49. Percentage of population in urban areas (over 50,000 population).

50. Percentage of school-age population in secondary and higher levels of education.

51. Advanced or developing country.

52. Per 1,000 population.

53. Capable of producing at least one major weapon system. Cf. Stephanie Neuman, "International Stratification and Third World Military Industries," *International Organization*, Winter 1984, pp. 167-198.

54. I would like to thank an anonymous referee for suggesting this qualification.