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Economic Sanctions in a Dictatorship Model

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ECONOMIC SANCTIONS IN A DICTATORSHIP MODEL

I. Introduction

Early works on the effectiveness of sanctions concentrated on the potential economic damages imposed by the economic sanctions. In Bayard, Pelzman and Perez-Lopez's 1983 survey of what they termed "the key issues involved in the decision to implement sanctions" (p.73), they find that the economic costs and benefits, and implementation problems of sanctions are the principal factors in studying sanctions. From their findings, they infer that multilateral sanctions are more economically effective than unilateral sanctions. Although the authors focus on the implementation issue, they do ask the question of whether or not economically effective sanctions achieve political goals.

Others who focus on the economic impacts also support the use of multilateral sanctions, if any form of sanctions is to be used at all. Frey (1984) notes the importance of the elasticities of the target nation's supply and demand curves and of that country's ability to shift production to substitute for the sanctioned goods. Black and Cooper (1987) also focus on the role of elasticities and the ratio of domestic to foreign consumption of exportables, as well as the proportion of importables produced internally, to examine the welfare effects of sanctions. Both works note the importance of cooperation among sanctioning states.

If sanctions are to be utilized, then Doxey (1982) advocates the use of multilateral sanctions, but remarks that "it is probably widely accepted that fully effective implementation of economic sanctions is not feasible anywhere without a blockade of air as well as land and (possibly) sea routes" (p.170). Consequently, she concludes that sanctions are fundamentally ineffective. The possibility of smuggling and transshipping opens the door for profiteering from the imposition of any embargoes.

Recent demonstrations against the economic sanctions imposed by the U.S. on Cuba, Iraq and Yugoslavia emphasize the long-standing deliberation that surrounds the issue of economic sanctions. These demonstrations, along with attempts by humanitarian groups to bring goods to

those countries, point to the fact that many people are interested in more than the sanctions' effectiveness in meeting their desired goals; the general public is also concerned about the effects on the people within the country. Mass suffering for these peoples can deteriorate domestic and international support for sanctions, despite the fact that those sanctions have permitted humanitarian goods to be imported. (Haass, 1997).

Van Bergeijk (1989) promotes multilateral sanctions, but notes that economic damage does not necessarily imply political change. Hufbauer, Schott and Elliott's (1990) empirical model also focuses largely on the economic effectiveness of sanctions; however, they too enter political variables into their analysis. Although sanctions may have significant economic effects on a target country's economy, this does not always result in a change in the behavior of that state's government.

Sanctions often have effects opposite to those desired by the sanctioning body (see e.g. Losman, 1979; Lindsay, 1986; Kaempfer and Lowenberg, 1986). Scolnick (1988) provides anecdotal evidence to support the fact that even when sanctions do have substantial economic effects they may adhere the populace to the government's stance. This has been termed the "rally around the flag" effect (Willett and Jalaighajar, 1983; Findlay and Lundahl, 1987). On the other hand, Kaempfer and Lowenberg (1988, 1999) take a public choice approach to show that sanctions that have weak economic effects can still ignite policy changes by signaling cooperation or disapproval to the target country's interest groups. It is, however, unclear that sanctions will consistently destabilize the ruling regime or assist its opponents (Lipton, 1988). This is partly attributable to the assumption that the sanctions are income reducing for both the groups in favor of and in opposition to the regime's policies (Kaempfer and Lowenberg, 1999). Our goal is to develop a model that can clarify the way in which economic sanctions affect domestic policies.

Several authors have alluded to the importance of opposition groups within the target regime (e.g. Reuther, 1995; Kaempfer and Lowenberg, 1999), still the effects of opposition

groups have rarely been formally modeled. Kaempfer and Lowenberg (1992) use a threshold model in a study where the result of political opposition is viewed as a public good to show how international policies can affect a target country's political outcomes. Schultz (1998) shows that the presence of an opposition party in a democratic state decreases the probability of international conflict. Van Bergeijk (1989) and Hufbauer, Schott and Elliott (1990) judge the outcome of a set of sanctions against their policy goals and find that the political success of sanctions are positively correlated with political instability in the target country. However, they largely base their measurement of the instability of the government on the variables that reflect the performance of the economy such as the unemployment and inflation rates.

According to the Department of the Treasury, the U.S. currently imposes comprehensive sanctions against the governments of Cuba, North Korea, Libya, Iraq, and The Federal Republic of Yugoslavia, Iran, Syria and Sudan¹. Nearly all of these governments can be defined as dictatorships. It seems reasonable then, that a model predicting the effects of sanctions on a target country should view that country's government as a dictatorship. As such, any opposition to the government must be modeled within the context of a dictatorship, and thus unemployment and inflation are probably poor measures of instability. It therefore appears that one appropriate model of economic sanctions might look at the political effects of any sanctions on a target country in the context of a dictatorship model that includes the presence of opposition groups to the dictator in that target country. The model should examine how the dictator's decisions affect the populace, and also the effectiveness of the sanctions given their original goals.

In this paper, we extend Wintrobe's (1990, 1998) model of dictatorship to look at the specific case where economic sanctions may be placed on a country for the purpose of altering some undesirable policy taken by the ruling regime. We analyze how sanctions artificially raise

¹ The U.S. currently has sanctions of some form against 73 different countries. We focus primarily on trade boycotts, and some of these only prohibit the export or import of a very limited number of goods. Still, a large majority of the 73 sanctioned countries may be considered dictatorships, and thus, our model seems very relevant.

the price of imports and make sanctions rents possible for domestic producers and smugglers. The ruling regime or its supporters may gain some of these rents, which allow increased control over the country, making the sanctions politically ineffective. "The result is that these groups that benefit from sanctions not only have an incentive to keep sanctions in place, but they have the support of the government to some extent" (Selden, 1999, pg.75). Although Haass (1997) finds some evidence in support of sanctions (he estimates that they work about one-third of the time), he too alludes to the possibility of rents obtained from the sanctions. "Most sanctions do not discriminate within the target country. There is a rationale for this: funds and goods can easily be moved around, and governments can often command what is in the hands of others" (p.96). Because sanctions sometimes transform state and local businesses into monopolies, the government is often in a position to acquire the sanctions rents.

Although the notion that sanctions may sometimes benefit those groups that they target has recently become more widely accepted (e.g. WSJ, 2000; Kaempfer and Lowenberg, 1999) we believe that this is the first paper to use an explicit model demonstrate how sanctions affect different segments of the population in an autocracy. Additionally, we examine how the dictator's choice of the levels of consumption and power, and the amounts of loyalty and repression used to achieve these levels are affected by the type and magnitude of sanctions, and by the nature of groups in opposition to the dictator. The nature of groups in opposition to the autocracy plays an important role in determining whether or not sanctions will be effective. In the absence of a reasonably well organized opposition group, the sanctions may only fortify the dictator's position.

The rest of the chapter is presented as follows. Section II describes Wintrobe's (1990, 1998) dictatorship model. Section III broadens the model by introducing economic sanctions and the other critical variables mentioned above. The specific case of Iraq, and to a lesser extent those of Haiti and the former Yugoslavia are examined in section IV. Section V concludes.

II. The Dictatorship Model

In Wintrobe's (1990, 1998) general dictatorship model, the relationship between the ruler and his subjects is such that there are benefits to both parties from political exchanges, but there is no guarantee on either side that pledges and commitments will be enforced. This is what Wintrobe calls "the dictator's dilemma". The autocrat must take into account the collective actions of his people, which are the result of rational, individual utility-maximization. The dictator attempts to ameliorate this dilemma by either tying his fate to his subjects, or by putting his people in a position where they pose less of a threat.

A dictator is often viewed as employing the tool of repression to stay in power and accumulate wealth, so it can be construed that a dictator derives utility from both power and personal consumption. Kirkpatrick (1982) as well as others² have explained periods of immense popularity for totalitarian governments by implying that the citizens of those states are "brainwashed" by their governments, suggesting that repression takes place against thought as well as action. There are two problems with modeling behavior in this way. One problem is that if propaganda works for a government during one period, why would it fail for that same government in another? A second problem with putting ideology in the model is that it is not very well understood. Friedrich and Brzezinski (1965) indicate that the people in totalitarian societies are extremely suspicious of what their governments report to them. Wintrobe rejects ideology as an explanatory variable for autocracies when he states:

[Kirkpatrick (1982)] writes, 'But have they [the Politburo leaders] managed to reform human consciousness? Have they managed to educate Soviet citizens so that they would freely choose to behave according to the norms of Soviet culture *if the constraints of coercion were removed?* The answer of course is that we do not know.' After the fall of communism in the Soviet Union and Eastern Europe, it appears that we do know the answer to this question, and it is "no" (Wintrobe, 1998, pg.45).

² See also Tullock (1987) and Friedrich and Brzezinski (1965).

Although the idea that the citizenry's belief system can be altered to coincide with the goals of the state is rejected, it is assumed that the dictator can gain the loyal support of some important people by awarding them political rents. Therefore, in this model, the dictator has two inputs to use in the production of power, loyalty and repression.

The tool of repression produces power for the dictator by eliminating opposition to the regime's ideologies and policies. Repression results in a deadweight loss to the nation's economy because resources must be diverted in order to produce repressive legislation, enforce the legislation, and punish any delinquents. Thus, the price of repression includes the costs of maintaining a police force, prisons and the judicial system.

Loyalty is viewed as a capital asset accrued to assist in the performance of political exchanges. Any individual or group receiving rent from a political party can infer that the same party will be supportive in the future. "Because the rents can be withdrawn, politicians are justified in their belief that the favored group will provide the politicians with loyal support in return" (Wintrobe, 1998, pg.32). Each citizen wants to maximize his or her expected return on loyalty taking into account the risk of investing his or her loyalty in different groups. The people may devote (possibly in secret) their loyalties to any potential or existing opposition leaders, or to the dictator.

Loyalty may be obtained by the dictator through gifts such as the construction of new buildings or dams or simply by extending governmental contracts or other favors to certain individuals or groups. "The production of loyalty involves the creation of a belief on the part of the citizenry that the dictator can be counted on to look after their interests" (Wintrobe, 1998, pg.49-50). This means that the cost of loyalty must also include the cost of proper communication between the dictator and his people. The economy suffers a deadweight loss from the creation of loyalty because resources must be spent to generate and distribute the political rents.

The levels of repression and loyalty are not independent of one another. An increase in repression may take the form of an increase in the array of banned conduct, the level of enforcement, or the extent of the punishments. All of these affect a person's loyalty "portfolio". Anyone against the government is offering loyalty to some potential alternative to the government. If the degree of repression rises then the expected return on this asset declines because the risk goes up. This can be viewed as an increase in the price of investing loyalty in an opposition group; with this price increase, there will exist a substitution effect as well as an income effect.

The substitution effect entails the citizen investing more loyalty in the ruling regime and less in any opposition group, which implies that the supply of loyalty to the dictator will increase with the level of repression. With an increase in repression applied by the dictator, the likelihood that any citizen will be the target of some punishment increases, as might the size of the potential sentence. This happens even if the individual is a loyal supporter of the regime. Therefore, any increase in repression constitutes a decrease in the individual's wealth, and we get the typical income effect. It is reasonable to suppose that for most people the income effect will be small at low levels of repression. Thus, we can assume that the supply of loyalty is a positive function of the level of repression, or equally, the price of obtaining loyalty is negatively related to the level of repression (Wintrobe, 1998).

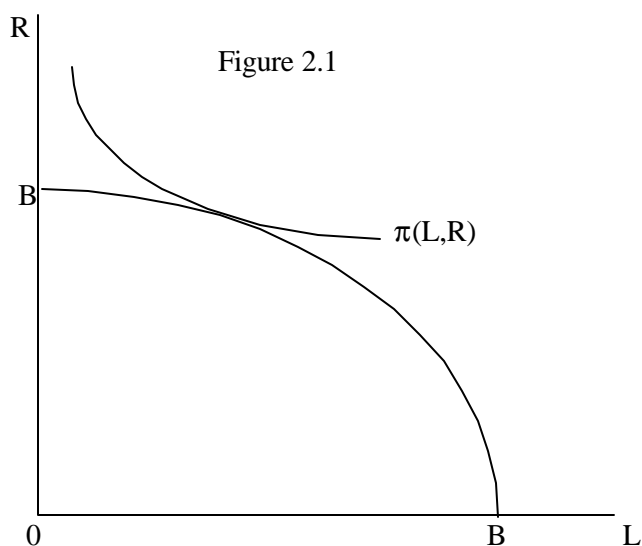
The dictator will choose the amounts of repression and loyalty that minimize his costs of maintaining some given level of power. This problem may be expressed as:

$$\min_{R,L} . P^L(R, L^S, E) \cdot L + P^R \cdot R \quad \text{s.t.} \quad \pi^* = \pi(L, R). \quad (1)$$

Where P^L is the price of loyalty, which depends on the level of repression, R , as discussed above. It also depends on the amount of loyalty supplied, L^S , which we expect to be positively related to

the price because of the diminishing returns in gaining loyalty.³ Finally, the price of loyalty will depend on E , the nation's economic performance. If the regime performs better economically than expected, the value of political exchanges with the government increases, and thus, the dictator's price of loyalty declines.

The production of power is represented by $\pi(L, R)$ where π is the level of power. We assume π to be well-behaved, meaning $\pi_L > 0$, $\pi_R > 0$, $\pi_{LL} < 0$, $\pi_{RR} < 0$, $\pi_{LR} > 0$ (as discussed, there is some complementarity between repression and loyalty). The dictator's cost minimization problem is demonstrated in figure 2.1 below.



For any given budget, BB , the dictator will want to achieve the maximum amount of power. This occurs where the ratio of the marginal products equals the ratio of marginal costs in the production of power. This will be greater (or less) than the ratio of the input prices because the

³ "The demand price, the price paid for a unit of loyalty capital by the dictator differs from the supply price, the price received by suppliers of loyalty because the former includes all costs incurred by the dictator to create and maintain loyalty, whereas the latter includes only the portion actually received by the suppliers of loyalty" (Wintrobe, 1998, pg.50). Normally, the two prices will move together so we will assume that the ratio P^{LD}/P^{LS} is fixed so the superscripts D and S can be dropped to simplify notation.

marginal cost of repression is less than its price given that an increase in repression decreases the price of loyalty.

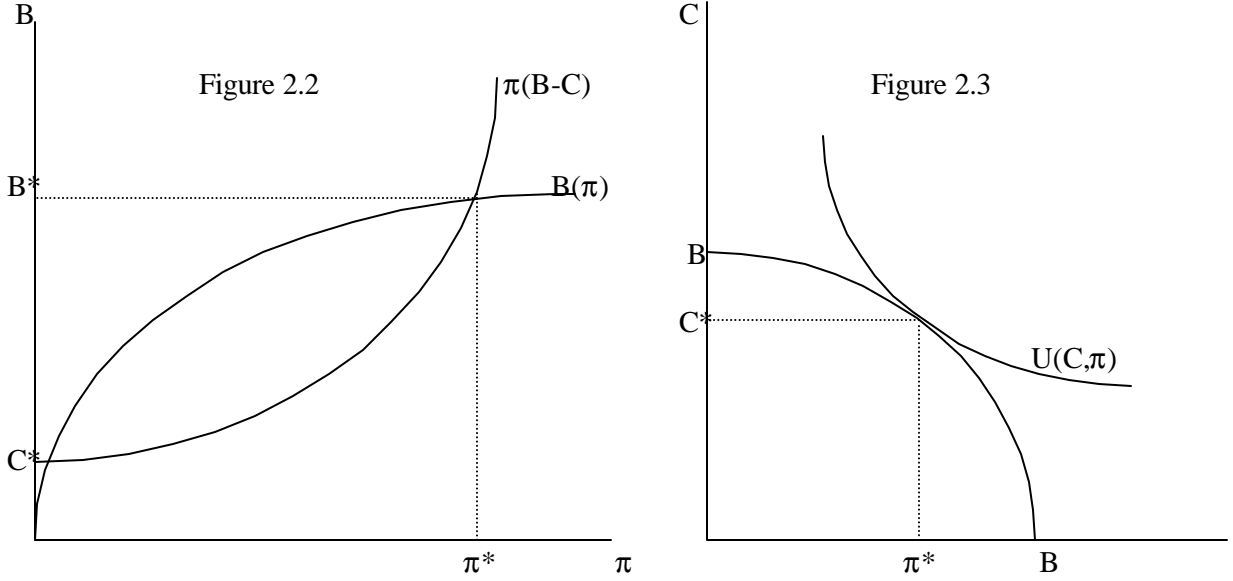
The dictator chooses consumption and power to maximize his utility subject to the constraint that the amount spent on consumption and power must be equal to his budget. Thus, the dictator solves:

$$\text{Max. } U=U(C,\pi) \quad \text{s.t.} \quad B(\mathbf{p}) = P^p \cdot \mathbf{p}(B - C) + C \quad (2)$$

where B is the dictator's budget and P^p is the price of power, which will be explained in a moment. Consumption is the numeraire. The left hand side of equation 2, the dictator's budget, is obtained through his use of power by collecting taxes, confiscating property, selling licenses, etc. We should expect B_π to be positive for the most part because as the dictator uses his power to collect taxes and the like he should be able to gain more revenues. It is possible that at some larger levels of power the appropriation of funds from the public will harm the economy enough that B_π will be negative. We will restrict our model to look at the areas where B_π is positive.⁴

Power is obtained by spending money to repress the public or to gain loyalty, thus it is represented on the right-hand side of the budget constraint by $\pi(B-C)$, as in Wintrobe (1998). It is reasonable to assume that more money spent will result in more power, but that there are diminishing returns. The dictator's choice can then be represented by the two figures below.

⁴ There are many examples where B_π may be negative, and the sign of B_π is important in determining the type of dictatorship and what ratio of repression to loyalty the dictator will use. For a detailed discussion on the effects B_π see Wintrobe, 1998. We abstract from these results somewhat here to focus on the role of sanctions and opposition groups, but one should keep in mind the possible effects of a negative B_π as we continue our analysis.



In figure 2.3, the budget curve BB represents the amount of the budget B^* that is derived in figure 2.2.

The first order conditions to the dictator's maximization problem give:

$$\frac{U_p}{U_c} = P^p + \mathbf{p} \cdot P_p^p - B_p \quad (3)$$

The price of power, P^p , will depend on the regime's ability to convert loyalty and repression into power, and on the costs of repressing the public and gaining loyalty. As a result, the solution to the dictator's cost minimization problem will give the price of power. The first order conditions from the minimization problem yield:

$$\frac{\mathbf{p}_L}{\mathbf{p}_R} = \frac{P^L + P_L^L \cdot L}{P^R + P_R^L \cdot L} \quad (4)$$

$$\text{So the price of power is given by: } P^p = \frac{P^R + P_R^L \cdot L}{\mathbf{p}_R} = \frac{P^L + P_L^L \cdot L}{\mathbf{p}_L} \quad (5)$$

Note that because the price of consumption is one, the slope of the budget line in figure 2.3 is simply the right-hand side of (3). Therefore, $P^p + \mathbf{p} \cdot P_p^p - B_p$ is the true amount of extra power that can be obtained by spending one more dollar on power, which is also the slope of the $\pi(B-C)$

curve in figure 2.2. Thus, any increase in the price of power results in an increase in the slope of the $\pi(B-C)$ curve.

In this dictatorship model, the ruler essentially chooses some level of consumption and power (his budget is determined by his choice of power and $B(\pi)$). He then chooses the optimal mix of repression and loyalty to minimize his costs of producing his chosen level of power (Wintrobe, 1998).

III. Economic Sanctions

To examine the effects of economic sanctions imposed on a dictatorship, we need to add two variables to the model: the type and magnitude of sanctions, and the nature of groups in opposition to the dictator. We define s , the type and magnitude of sanctions imposed, so that it will be larger the greater the change in the terms of trade caused by any sanctions. Therefore, we can assume that s will be higher if the scope of the sanctions is broader, or if the sanctions are multilateral as opposed to unilateral (Kaempfer and Lowenberg, 1999).

We will subsequently define q as the "level" of opposition. A higher q implies either more opposition or more efficient opposition groups. An example of a difference in efficiency is if there are two equally sized opposition groups, one is based in the capital and the other in a border town. The latter may be better able to benefit from imposed sanctions by smuggling goods into and out of the country. Significant smuggling profits have been made along the Serbia-Romania and Serbia-Bulgaria borders.⁵ Although in this instance most of these sanctions rents have benefited Serbian-owned firms, it is possible that strong opposition groups could reap the rewards of smuggling as well.

⁵ See *Wall Street Journal*, June 7, 1994, p. A1.

In our model, the dictator has no control over s or q ⁶, but the inclusion of sanctions and opposition groups will affect his choices of consumption and power, as well as the levels of repression and loyalty. The level of sanctions and the opposition will affect the autocrat's problem in several ways: they affect the dictator's ability to obtain revenues, and they affect the prices of repression and loyalty.

The amount of the dictator's budget will depend on any rents that the dictator may extract from the sanctions. It is nearly impossible to perfectly implement economic sanctions; embargoes and boycotts are normally easy to circumvent (Adler-Karlson, 1995). Trade sanctions raise the price of imports above the world price generating rents for domestic producers and smugglers. A boycott on exports suppresses the target country's export prices below world prices, which establishes the possibility for profiteering by transshipping or by middlemen who can buy goods cheaply in the target country and then sell them at world prices. Thus, sanctions create the opportunity for firms or individuals to profit by "arbitraging" between world prices and the terms of trade in the target country. The existence of sanctions leads to the creation of 'sanctions rents' that come about because the sanctions alter the terms of trade. Any increased sanctions will increase the spread between the target-nation's prices and world prices, subsequently amplifying the arbitrage profits that are made from any remaining (and often illegal) trade (Kaempfer and Lowenberg, 1999).

If the government is in a position to organize domestic industry so that it may gain monopoly or monopsony status, it will garner most of the sanctions rents. If an embargo is placed only on specific items over which the autocrat cannot exercise monopoly power then his sanctions rents will be small. It has also been shown (Kaempfer and Lowenberg, 1999) that multilateral sanctions may lead to more sanctions rents being garnered by the dictator.

⁶ An interesting, but very involved, extension that will be pursued in a subsequent paper is when the dictator is assumed to have some control over q through his use of repression.

Given that the autocrat initially had sufficient power, he could alter the terms of trade himself by imposing trade restrictions, and thereby gain similar rents without sanctions. However, for obvious reasons, this would almost certainly lead to a rise in the dictator's price of loyalty. It may also increase the price of repression because groups opposed to the trade restrictions may try to subvert the legislation. As will be demonstrated shortly, the imposition of sanctions allows the dictator to gain rents from a change in the terms of trade possibly without the increase in the price of loyalty. In addition, if the ruler enacts trade limits to alter the terms of trade and gain rents, then the costs of imposing and enforcing these restrictions are borne by his regime. As a result, the rents may be much smaller than those made possible by sanctions imposed by other countries.

In our model, any additional embargo increases s and results in larger terms of trade changes. Because of the greater terms of trade effects, there are more possibilities for the autocrat to gain sanctions rents, so any increase in s should increase the dictator's budget. At the same time, it seems reasonable to assume that the sanctions will have some negative effect on the target nation's economy, which would have a negative effect on the dictator's ability to collect income-tax revenues.⁷ In the following, we will assume that the effect of the gains in sanctions rents on the dictator's budget outweighs the negative impact on his budget from the decline in economic performance. This may often be the case because most autocratic governments do not rely heavily on income taxes for revenues, and the sanctions rents effect is more direct.

The dictator's budget is also affected by the level of opposition, q . As opposition groups grow in number or become more efficient, the dictator's ability to obtain revenues through different types of taxes or confiscation diminishes because a more efficient opposition force is better able to avoid these taxes. Thus, in our model, the dictator's budget will take the form:

$$B = B(\mathbf{p}, q, s), \text{ where } B_q \text{ is negative and } B_s \text{ is positive.}$$

⁷ The size of the sanction's impact on the nation's economy will depend on several factors. For a survey of these see: HSE (1990), and Elliott (1995).

Sanctions will directly affect the price of loyalty in several ways. The sanctioned country's citizens may view the dictator as being weaker when the sanctions are imposed, and the sanctions may encourage citizens to oppose the leader because they know they have outside support. This would tend to increase the price of loyalty. In contrast, the general public may feel oppressed by the sanctioning countries and rally to their leader's cause. This 'rally around the flag' effect will certainly decrease the price of loyalty. This effect may be enhanced if multilateral sanctions are imposed by groups (such as the UN) that have member countries that oppose the sanctions. This might send a signal to the target country that they have outside support despite their "objectionable" policy. It is highly probable that groups close to the dictator may ally themselves further to seek for themselves some of the rents from sanctions. This would have an exceptionally negative impact on the price of loyalty for those, often powerful, groups. In sum, (abstracting from any influence s may have on the price of loyalty's other explanatory variables) an increase in the level of sanctions has the potential to move the price of loyalty in either direction.

The level of opposition will affect the price of loyalty in that we expect the price of loyalty to rise as q rises because the expected returns to investing in any opposition groups will rise if those groups are larger or more efficient. Therefore, $P^L = P^L(R, L^S, E, q, s)$ and we can expect P_q^L to be positive.

In our model, the costs of repression will depend on the type and severity of sanctions and on the nature of opposition groups, as well as Wintrobe's (1998) traditional costs. The price of repression depends on the resources that must be diverted in order produce repressive legislation, enforce the legislation, and punish any person or group offending the legislation. The amount of resources used to enforce the laws of the regime will certainly rise as q rises, as might the cost of punishing those who break the laws because with an increase in q there may be a need for more trials, jails and executions. The level of sanctions may have a direct effect on the price

of repression if the inputs used in repression are themselves sanctioned causing the costs of oppressing the populace to rise. Thus, $P^R = P^R(E, q, s)$, and abstracting from any effects that the level of sanctions has on q , we can assume that P_q^R and P_s^R are positive. As we will see shortly, sanctions will also have indirect effects on P^R and P^L .

Our model is unique in two additional ways. As explained earlier, it is possible that some groups opposing the government may potentially gain some of the rents made possible by the imposition of the sanctions. It is, therefore, reasonable to assume that the level of q may rise with the level of s depending on the initial status of the opposition groups. Kaempfer, Lowenberg, Mocan and Topyan (1995) have shown that domestic black anti-apartheid groups in South Africa were able to better organize themselves because of the sanctions imposed against South Africa in the 1970s and 1980s. Although it may be the case that opposition groups are weak or non-existent, the likelihood that the sanctions would *directly* further their plight is small. Thus, we consider q_s to be non-negative.

As stated previously, the level of sanctions will also affect the performance of the target state's economy; E is a negative function of s . In contrast to the Wintrobe model, we suppose that the price of repression is directly affected by the nation's economic performance. Immiserizing the general public suggests that it will have a smaller amount of resources that could be used to oppose the regime. It is realistic to assume that in this scenario the masses would be easier to police because of the increased poverty, therefore the price of repression would fall. It can also be presumed that any decline in economic performance will embitter the citizenry toward the government and thereby also raise the price of loyalty.⁸ Therefore, s has two separate indirect effects on each of the prices of the inputs into the production of power.

⁸ It is feasible that sanctions could have a negative effect on the price of loyalty in much the same way that they increase the price of repression, but because we subsequently consider the consequences when P_s^L is both positive and negative, we can ignore that possibility here.

The total effects of sanctions on power's input prices are best summed up in the following derivatives:

$$P_s^R = \frac{\partial P^R}{\partial E} \cdot \frac{\partial E}{\partial s} + \frac{\partial P^R}{\partial q} \cdot \frac{\partial q}{\partial s} + \frac{\partial P^R}{\partial s} \quad (6)$$

(+) (-) (+) (+) (+)

$$P_s^L = \frac{\partial P^L}{\partial E} \cdot \frac{\partial E}{\partial s} + \frac{\partial P^L}{\partial q} \cdot \frac{\partial q}{\partial s} + \frac{\partial P^L}{\partial s} \quad (7)$$

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In our model, the dictator's problem becomes:

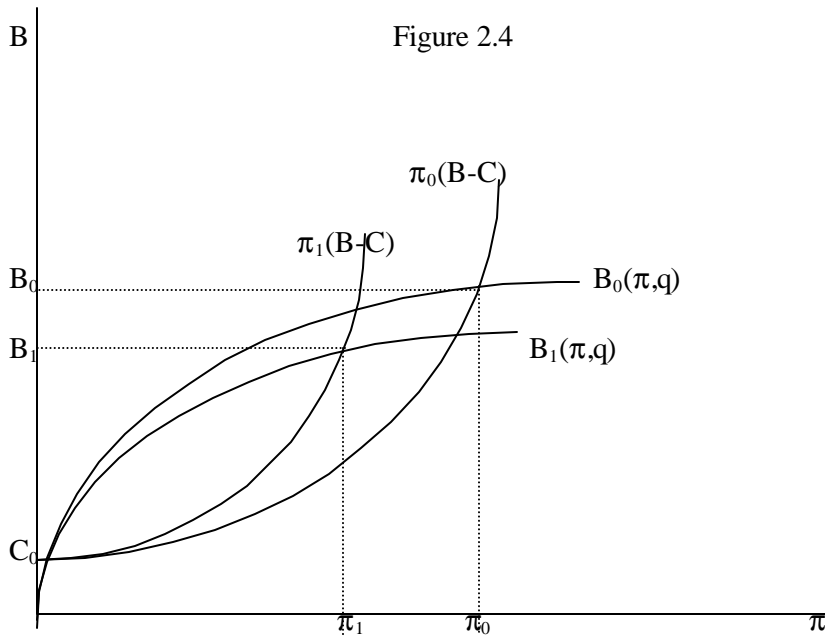
$$\max_{C, \mathbf{p}} . U(C, \mathbf{p}) \text{ s.t. } B(\mathbf{p}, q, s) = P^P \cdot \mathbf{p}(B - C) + C . \quad (8)$$

And he minimizes the price he pays for his chosen level of power by solving:

$$\min_{R, L} . P^L(R, L^S, q, s, E) \cdot L + P^R(q, s) \cdot R \text{ s.t. } \mathbf{p}^* = \mathbf{p}(L, R) . \quad (9)$$

When analyzing the effects of economic sanctions on a target country, it is instructive to initially show what an increase in q and s will do individually, ignoring the effects that any changes in the sanctions will have on the level of opposition groups. We will then be able to understand the overall effects of a change in the size or type of sanction imposed more clearly. We first look at how a larger q affects the dictator's budget, his choices of consumption and power, and subsequently the amounts of repression and loyalty utilized.

We know that $B_q < 0$, which causes the budget curve to shift down and have a diminished slope. P_q^R and P_q^L are positive which causes the price of power to rise, and therefore, the slope $\pi(B-C)$ will also rise. This situation is illustrated in figure 2.4 below. The dictator initially has a budget of B_0 and chooses C_0 and π_0 . An increase in q leaves him at B_1 , C_0 and π_1 .



The decrease in the dictator's budget has a pure wealth effect on the dictator's choices of consumption and power, but the change in the price of power resulting from the increase in the prices of loyalty and repression will have both a substitution and income effect. The substitution effect will induce the dictator to consume more and employ less power, and the income effect will cause a reduction in both of the dictator's utility inputs. In the graph it is assumed that the sum of the effects on consumption is zero. Note that the decrease in power further magnifies q 's effect on the dictator's budget until we reach the new equilibrium.⁹

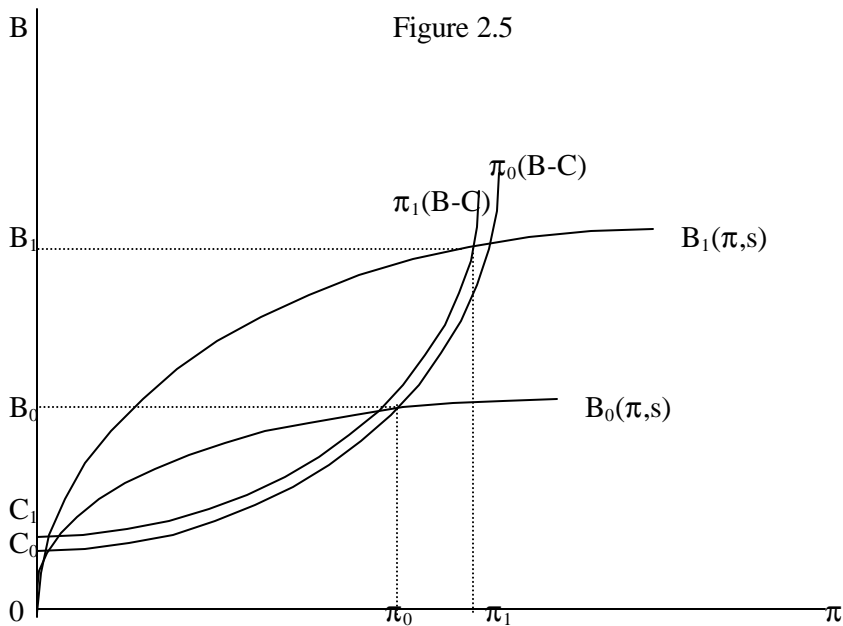
The decrease in the amount of power applied must also result in a decrease in the utilization of power's inputs, loyalty and repression. Any change in the relative amounts of loyalty and repression will depend on the relative change in their prices. It is possible that the price of repression may be very sensitive to q , which might occur if the opposition groups are extremist in nature or if they become mobile and therefore, difficult to police. In this instance, we would not expect the price of loyalty to change much if q increased because it is highly doubtful that the majority of the citizenry could all become physically mobile at once. It might be difficult

⁹ This magnification effect is always present, but we will give it no further mention.

for them to ally themselves with the opposition group. In this case, we would expect the overall level of repression to fall relative to the amount of loyalty.

Alternatively, if there existed a situation where opposition groups were more clandestine and centrally located, then the cost of repressing them would not rise much but the price of loyalty may increase significantly with the efficacy of these covert groups. In this case, we would see the dictator use relatively more repression. Keep in mind that any change in the level of repression has income and substitution effects on the supply of loyalty as well.

We now examine the consequences of administering or increasing sanctions on a target country abstracting from the effects on opposition groups. Here, B_s is positive, while P_s^R and P_s^L may be positive or negative. The effects of an increase in s are shown in figure 2.5 below.



For expositional simplicity, in the graph we assume that the net effect on the prices of loyalty and repression is zero (i.e. $P_E^L \cdot E_s + P_s^L = 0$ and $P_E^R \cdot E_s + P_s^R = 0$). The sanctions-rent effect on the dictator's budget results in a shift up to B_1 . This change in the budget has only

wealth effects on consumption and the application of power, which both rise, so consumption must increase and we see a parallel shift in $\pi(B-C)$. The increase in power, in turn, brings about a rise in the use of both repression and loyalty.

Now we are in a good position to discuss the *net* effects of the imposition or increase of sanctions against a target country. There are two distinct scenarios. The opposition groups might be in a poor position to gain sanctions rents, which would be likely if the opposition groups were small and centrally located so they could not take advantage of any of the potential sanctions rents. Here q_s is zero or not significantly greater than zero. Alternatively, the opposition groups as well as the dictator may gain sanctions rents. In this case, the sanctions help the opposition groups so q_s is positive.

A. *Case I: $q_s > 0$.*

There are two effects on the dictator's budget: the increase in his budget due to the gain in his own sanctions rents, and the decrease in $B(\mathbf{p}, q, s)$ due to the increase in q . In this example, we assume that the sanctions increase q enough so that the net effect on the budget is negative. Because we are assuming that the increase in q is significant, we can also suppose that P_s^R is positive. Even with q_s considerably positive, the effects of sanctions on the price of loyalty will depend largely on the mind-set of the people, and the state of the economy. If the general population rejects the dictator as a result of the sanctions then the dictator's price of loyalty will almost certainly increase. The rise in the price of power inputs increase the price of power and the $\pi(B-C)$ curve becomes steeper, and the fall in the dictator's budget shifts the $B(\mathbf{p}, q, s)$ curve downward. If we again assume that the net effects on consumption are zero, then this situation is graphically identical to figure 2.4.

Here, if the goal of the sanctions is to ease repression on the general population, then they would be successful because the levels of power and repression unambiguously fall. The dictator

may also no longer be able to achieve the minimum level of power necessary to stay in control, and thus be deposed. Note, however, that if the sanctions were such that the dictator gained sufficient rents to increase his budget, the effects of the increase in P^p could be completely negated.

In contrast to the people rejecting the dictator, the general public may feel oppressed by the sanctioning countries and rally to their leader's cause. It is possible that the 'rally around the flag effect' dominates the effect of q on loyalty causing P^L to fall. Scolnick (1988) heavily promotes this possibility,¹⁰ noting that even in the face of extensive domestic conflict it is unlikely that the groups will be so mutually hostile that they cannot join forces against a common danger¹¹. In this case, there will be a shift away from the use of repression and towards loyalty. This effect will be partially negated by the substitution effect that the decline in the use of repression has on the supply of loyalty. It is highly probable that groups close to the dictator may ally themselves further to seek for themselves some of the rents from sanctions, this would have an exceptionally negative impact on the price of loyalty for those often powerful groups. This would lead to income and substitution effects on consumption and power, an increase in the utilization of loyalty as an input to the production of power, and possibly an increase in repression. Note that the level of repression might still decrease due to the substitution effect from the fall in P^L .

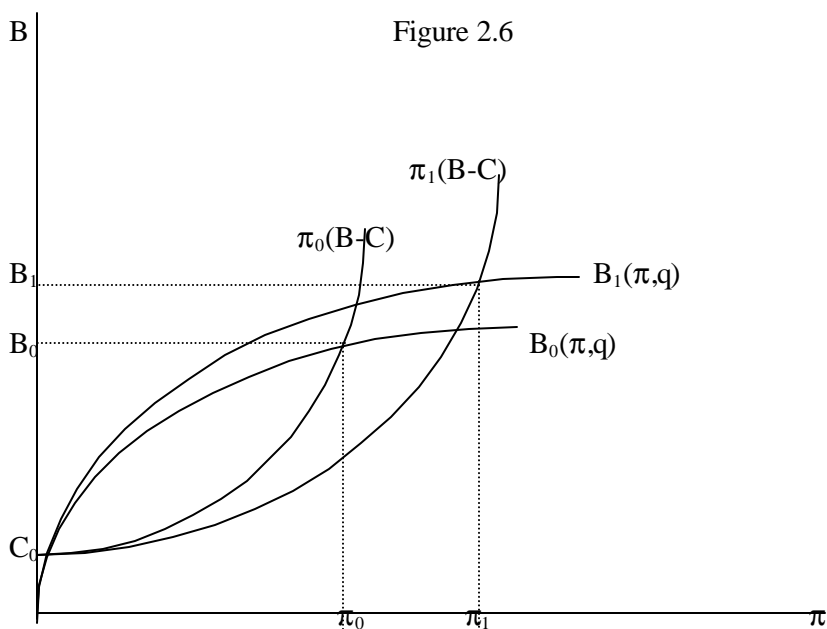
B. Case II: $q_s @ 0$.

When q_s is small, the sanctions-rents effect on the dictator's budget dominates and $B(\mathbf{p}, q, s)$ shifts up. It is realistic to assume that in this scenario the masses would be easier to police because of the increased poverty, therefore we assume that P^R falls. Once again, the

¹⁰ As do Doxey (1982) and Adler-Karlson (1982).

¹¹ Note that this effect would not materialize if the dictator had tried to gain rents for himself by imposing trade policies such as import or export tariffs or quotas, or if he had imposed the sanctions internally.

effects of sanctions on the price of loyalty will depend largely on the nation's economy and its political culture. If we assume that the 'rally around the flag effect' dominates then P^L falls, and the two price effects cause P^π to fall. This situation is pictured in figure 2.6.



We have again assumed that there is a zero net effect on consumption. Power will unambiguously increase along with the levels of loyalty and repression. Any relative change between R and L will depend on the relative changes in their prices and on the substitution and income effects on P^L from the change in repression. It is clear that in this setting, the sanctions do not adversely affect the dictator and the common people suffer.

Once more, it is possible that the conditions necessary for increased public support of the government due to the sanctions¹² are not met. Here, P^L rises, so there will be a shift away from the use of loyalty as an input in the production of power; the level of repression will rise significantly to somewhat offset the effect that the increase in P^L has on the supply of loyalty. In

¹² See Scolnick (1988) for a survey of these conditions.

this instance, we might still see the price of power fall. This possibility is obviously the worst scenario for the populace of the target country.

IV. Application: Iraq, Haiti, and the Former Yugoslavia

We will test the model's usefulness by examining three cases where economic sanctions have been used to try and alter some of the regime's policies; we will focus mainly on Iraq, but comment briefly on the former Yugoslavia, and Haiti.

On August 6, 1990, the UN Security Council passed resolution 661, imposing economic sanctions on Iraq, which prohibited any exports from Iraq or Kuwait (which was under Iraqi control at the time). After the Gulf War, the UN Security Council passed Resolution 687 (the cease-fire resolution) stating that economic sanctions on both imports and exports (except goods used for medical purposes, and foodstuffs) would remain intact until Iraq complied with the other requirements stated in the resolution. The Security Council later passed a resolution making it possible for Iraq to export oil in return for foodstuffs and medical supplies (Reuther, 1995).

There were (and are) several stated goals sought by imposing the post-cease-fire sanctions. Among other goals, these include maintaining a safe border for Kuwait, eliminating Iraq's weapons of mass destruction, and "forcing" Iraq to eschew terrorism. There may be other goals not directly stated in the UN resolutions such as the devastation of the Iraqi economy to induce the removal of Saddam Hussein from office.

Our model focuses not only on whether sanctions are successful or not with respect to their stated goals, but also on sanctions-induced political behavior within the target country. Specifically we concentrate on the changes in political repression and in the structure of any potential opposition to the existing government. According to our model, the application of sanctions on Iraq should have an effect on potential opposition groups in Iraq. They should also affect Saddam Hussein's budget, the prices of loyalty and repression that he faces, the price of

power, the amount of power and consumption chosen, and ultimately the level of repression in Iraq.

The main potential opposition groups in Iraq since Saddam Hussein came to power in 1979 have been the Revolutionary Command Council (RCC), the Shi'ite majority, the Kurds in northern Iraq, and to a much lesser extent, the Madan in the south. Saddam virtually wiped out the RCC, a faction of his own ruling Ba'ath party shortly after he took control, and has had an on-again off-again war with the Kurds. Saddam executed Mohammed Baqir al-Sadir and al-Sadir's sister Bint al-Huda (two symbols of the Shi'ites' opposition in Iraq) in 1980 only a few months prior to launching full-scale war operations against Iran (al-Khalil, 1989).

The Shi'ite majority, the only opposition group in any position to overthrow Saddam failed in a coup attempt shortly after the Gulf War. Since that time Saddam has, in a sense, limited Iraq's "effective" territory by withdrawing from the northern regions, which are now controlled by the Kurds. In conjunction with his withdrawal, Saddam initiated a virtually impregnable embargo north of the military's secured regions; unlike the UN sanctions this embargo includes food and medical supplies (Reuther, 1995). Essentially, Saddam has now made the Kurds more of an external enemy than an internal opposition group.

After the 1991 uprising, which had a large support base in Basra, Saddam imprisoned many of the Madan and is forcing the rest to move into controlled communities (Edwards, 1999). It would seem that Saddam is aware of the important role that opposition groups play on the degree of success of sanctions in view of the fact that he has tried to eliminate them altogether. Opposition groups within the "effective" territory are now weak and in no position to gain rents from smuggling.¹³ Therefore, the nature of our variable q in Iraq in the 1990s is such that q is

¹³ Most smuggling of goods into (and to a lesser extent out of) Iraq is done through Jordan and Turkey and the government controlled region around Basra. The Shi'ites in the south are in a poor position to gain any sanctions rents, although they are supported somewhat by the UN.

zero. In addition, indirectly, the sanctions effect on the economy debilitates even further the already feeble opposition situation.

Observers say that trade sanctions may have cut Iraq's revenues by 90 percent; at the same time inflation has soared to record highs.¹⁴ Although Iraq's economy has been devastated, and general living standards have declined, the Iraqi security, intelligence, military, and clans loyal to the Ba'ath have prospered, largely on embargo-defying trade (Edwards, 1999). This too follows results predicted by our model. Those in a position to do so may further ally themselves with the leader to gain some of the sanctions rents, which decreases the price of loyalty for these important and often powerful groups. The Iraqi government and its support groups have put themselves in a position to acquire any sanctions rents, and these will be significant, especially if the smuggling includes oil and petroleum products. Indeed, "the illegal oil trade is critical to keeping the Hussein regime in power, as well as maintaining the ruling clan's luxurious lifestyle" (Selden, 1999, pg.87). We will assume the net effect on the price of loyalty in Iraq to be zero (P^L increasing for the general population, but decreasing for more powerful factions loyal to Saddam), but it would not affect the consistency of our model in explaining the effects of sanctions in Iraq if P^L shifted moderately in either direction.

Recently, the extent of smuggling into and out of Iraq has largely increased due to a relaxed attitude towards the embargo by many of the sanctioning nations. As a result, Iraq's economy has been improving, and more groups are benefiting from the sanctions rents. "Business has been booming for the past year, ever since oil prices began their steady ascent and revenue from smuggled Iraqi crude began to seep deeper into the economy" (WSJ, 2000).

Our model does a good job in explaining this recent turn of events. As enforcement of the sanctions has become more lax, increased opportunities for smuggling and sanctions rents have further increased Saddam's budget. At the same time the drop in enforcement may improve

¹⁴ "In 1993, the unofficial inflation rate was running about 4,000 percent over prices in August 1990" (Reuther, 1995, pg. 126).

Iraq's economy decreasing the price of loyalty {see equation (7)}. As the regimes budget increases and more power is desired, a lower price of loyalty will cause the sanctions rents to be spread out over an increasing part of the population. "The regime has gotten so fat on sanctions that it feels it can let others get in on the action" (WSJ, 2000). We should note that it is not possible to make all groups in the target nation better off without removing the sanctions. Some groups will still be impoverished and in Iraq, most of the population is still suffering from the sanctions.

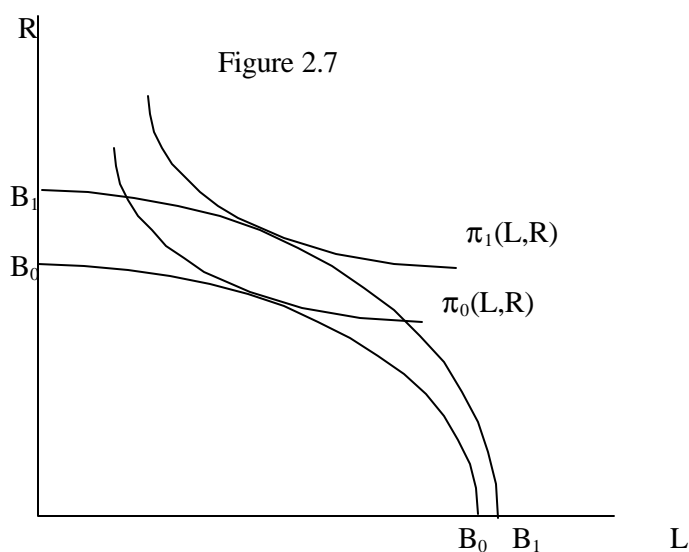
The increase in sanctions rents combined with the decrease in q certainly raises Saddam's budget. Also, the poverty imposed on the populace linked, with the decrease in q , leads to a decrease in the price of repression. It is much easier to control the people when they are destitute, in Iraq's case a "society that used to revel in politics is not only subdued and silent, but profoundly apolitical." (al-Khalil, 1989, pg.274). Because of the state of opposition groups in Iraq, it follows that immiserizing the population may actually aid Saddam by allowing the price of repression to fall further. This fact is demonstrated by the fact that Saddam opted not to take advantage of the food-for-oil option afforded him in UN Resolution 706 (Reuther, 1995). It is uncertain that even if the sanctions were lifted, Saddam would relent in the oppression of the majority of his people because this would raise his price of repression without any certain immediate effects on the supply of loyalty.

The large decrease in the price of repression also decreases Saddam's price of power. The increased budget has a pure income effect on both power and consumption, but the change in the price of power has both income and substitution effects. Given Saddam's reclusiveness, it is hard to say whether the substitution or the income effect has dominated, as any change in his consumption is uncertain.¹⁵ Certainly his use of power has risen. We must emphasize the

¹⁵ It should be noted, though, that the sanctions have not hindered the construction of new palaces (Edwards, 1999 and Lopez, 1998).

distinction here that power refers to the dictator's employment of power within his own country and not his level of power relative to the rest of the world.

In sum, given the initial state of q , our model predicts that sanctions should further hinder any resistance to the regime, increase the budget, decrease the price of repression and have ambiguous effects on P^L , thereby decreasing the price of power. The level of repression should rise along with the level of power while any change in consumption is ambiguous. Graphically, the results are the same as those shown in figure 2.6. Figure 2.7 shows the effects on repression and loyalty. A zero subscript describes the pre-sanctions environment, and post-sanctions results are given a 1 subscript. The levels of power and repression obviously increase; the effect on loyalty is ambiguous.



Although our model shows that the sanctions against Iraq have enhanced Saddam Hussein's power and furthered the repression of his people, we do not wish to imply that the sanctions are altogether ineffectual. As Bayard, Pelzman, and Perez-Lopez (1983) have noted, the objectives of sanctions may in part be to slow military development, or simply to show displeasure toward the target government without any intent to cause significant change. The

sanctions against Iraq have certainly diminished Saddam's ability to rebuild his previously formidable war machine despite the Iraqi regime's efforts to smuggle military technology and necessary inputs for weapons of mass destruction. Although the people of Iraq are certainly worse off (some 500,000 deaths have been attributed to the sanctions between 1990 and 1997), the Kurds, Iranians, Kuwaitis and even the people of Saudi Arabia and Israel are surely better off because of Saddam's reduced capacity to terrorize them. (Lopez, 1998).

The economic crisis in the Balkans and Eastern Europe in the eighties combined with the sanctions imposed against Yugoslavia (which was in the process of creating a new state), cultivated the autonomist attitude that led to current Yugoslav President Slobodan Milosevic's rise to power (Woodward, 1995). Further sanctions-induced adversity among the populace had similar effects to those experienced in Iraq; the general public had fewer resources to devote to opposition politics. The professional middle class fled the country, while the economically privileged made large profits by sharing the sanctions rents through smuggling and direct subsidies. The regime was able to increase its ability to obtain rents by again impressing state-run monopolies and recentralizing the distribution of goods. The government is also in a position to select which industries will receive subsidies causing surviving domestic businesses to give their support to the state's policies in hopes of receiving an even greater share of the sanctions rents Kaempfer and Lowenberg (1999). The out-of-work poor have found employment in the army which could foster their convictions against "western prejudice" (Woodward, 1995). In addition, "half-hearted enforcement opened an opportunity for smugglers to generate huge profits in the illegal gasoline trade, transferring a tremendous amount of wealth to the Serbian criminal and black market interests" (Selden, 1999, pg.75).

Each of these outcomes is well explained within the context of our model given that q is initially such that q_s is close to zero. In this instance, our model expects the price of repression to fall, as the regime and its supporters reap a significant portion of the sanctions rents, and the opposition groups to be indirectly further diminished in power because of the sanctions. Each of

these results is consistent with stylized facts noted above. In addition, the notion that the Serbs are being "persecuted" by the western industrialized countries has induced the "rally around the flag effect", which lowers the price of loyalty and only increases Milosevic's power. In sum, the sanctions appear to have enhanced the success of the ruling party, as the model would predict.

In Haiti, in the early nineties, the situation was slightly different. When the coup d'etat of 1991 sent President Jean-Bertrand Aristide into exile, the new military leaders forced out a president that was elected with 67 percent of the vote in the 1990 election that drew a record number of voters. Certainly there was strong opposition to the new dictatorship. At the outset, the sanctions had the support of the majority of the Haitian populace (Werleigh, 1995). The early embargoes against Haiti proved to be ineffective because of massive sanctions violations chiefly on the part of the Dominican Republic. This highlights a fact pointed out by Doxey (1982) and Kaempfer and Lowenberg (1998), that as restrictions are tightened, the terms of trade change causes a greater incentive for both smugglers and participating countries to circumvent the sanctions. Relations between the governments of Haiti and the Dominican Republic had historically been very good. If sanctions-busting groups within the target country must buy from and sell to only a few sources, then a larger share of the rents will go to that source. Hence, as a result of the sanctions, firms in the Dominican Republic were able to make huge profits by circumventing the sanctions. It is for this reason that the Dominican government "turned a blind eye toward those violating the embargo" (Werleigh, 1995).

The autocracy, being a military regime on an island, was in an excellent position to gain the sanctions rents. The coup leaders broadened the puppet government establishing more positions for members of political groups in opposition to Aristide, and political repression rose significantly. In 1993, when the UN finally added an oil and arms embargo to the sanctions and was able to tighten enforcement, the ruling regime caved in and signed the Governors Island Accord which called for Aristide's return to office within four months (Werleigh, 1995). Although the UN made the mistake of withdrawing the sanctions prematurely, causing the

Haitian military leaders to renege on their agreement, the sanctions employed in 1993 should be thought of as successful because they brought the coup leaders to the bargaining table.

Our model can also account for the Haitian situation. Although the level of opposition was high, the groups opposed to the military regime did not control any of the borders or ports and therefore could gain none of the sanctions rents. Therefore, the sanctions could not directly aid the opposition groups ($q_s \cong 0$), and may even have indirectly harmed them. The government gained all of the abundant smuggling profits and repression increased. When more comprehensive sanctions were applied it reduced the rents to all factions, thereby making the government vulnerable. Haiti in 1993 represents the special case where the sanctions were applied (or had the potential to be applied) to the point where the negative effect on the dictatorship's budget due to the decrease in E , the economic performance, outweighed the positive effects on the budget from the few remaining sanctions rents.

V. Conclusions

Virtually all of the sanctions literature that contains explicit models ignores the fact that the majority of sanctions are imposed against autocratic regimes. In addition, most previous works give, at best, anecdotal evidence about the importance of opposition groups. The present paper has reviewed the issue of economic sanctions in the context of a dictatorship model to examine not only the efficacy of the sanctions, but the political consequences in the target country as well. We find economic sanctions may increase the budget of the dictator, and thus strengthen his position, if he is able to gain some of the profits made possible by the change in the terms of trade, which result from the imposition of the sanctions. This fact has recently become more apparent in light of the effects of sanctions on Iraq and the former Yugoslavia, but our model shows explicitly why these effects occur readily in an autocracy. It has also been demonstrated that if the dictator imposed these changes in the terms of trade himself, he would

incur the costs of enforcement and thus realize fewer net gains. In addition he would experience an increase in P_L that could potentially lead to a loss in power.

We contend that the nature of any factions within the target country that are in opposition to the ruling regime play an instrumental role on the effectiveness of any sanctions imposed. It has been shown that sanctions may help these opposition groups ($q_s > 0$), and thereby weaken the regime's position and diminish the amount of political repression present within the target country. This is supported by evidence from Kaempfer and Lowenberg (1999, p.52): "the black resistance fighters in Rhodesia, Solidarity in Poland, and anti-Communists in Nicaragua were perhaps the greatest beneficiaries of the sanctions campaigns aimed at those countries."

Because the initial situation in the target country is vital in determining the overall effects of sanctions, we support Van Bergeijk's (1987) contention that it is important to review the potential value of applying economic sanctions on a case-by-case basis. Our model reveals that there are instances where sanctions may play a central role in affecting some objectionable policy in the target nation. Therefore it is not surprising that we do find cases where sanctions have been effective (e.g. the demise of the Allende regime in Chile). Indeed, Hufbauer, Schott, and Elliott (1990) showed more than one-third of the sanctions episodes they reviewed were "successful". To that end, we must reject the idea (Doxey, 1982; Adler-Karlson, 1982 and others) that all sanctions are ineffectual.

The results of our model also support Kaempfer and Lowenberg (1999) and Hufbauer, Schott and Elliott (1990) in that unilateral sanctions may sometimes be preferable to multilateral sanctions. In a situation where the dictator is in a position to collect the majority of sanctions rents, but where sanctions send a signal to opposition groups that they have outside support, unilateral sanctions might increase P^L and P^R without significantly increasing the dictator's budget thereby reducing his overall level of power and decreasing the use of repression on the populace. Unilateral sanctions can send strong signals to target countries with close cultural ties to the sanctioning country without causing the large terms of trade effects that multilateral sanctions

cause, and subsequently allowing the autocrat to garner fewer sanctions rents than with multilateral sanctions (Kaempfer and Lowenberg, 1999).

Kaempfer and Lowenberg (1986 and 1988) have shown that sanctions are the result of political pressures in the sanctioning country. If the role of sanctions is to appease certain pressure groups at home, unilateral sanctions may succeed while causing the least amount of harm to the general population in the target country. Again, this is because unilateral sanctions will have smaller terms of trade effects than multilateral sanctions and therefore allow fewer sanctions rents to be gained by the dictator

As noted above, an interesting but rather involved extension would examine the effects of sanctions when the dictator has some control over the level of opposition to his regime. Although it would create a circular relationship problem, q could be a function of repression or the price of repression. This approach does appear to have some merit if we consider the case of Iraq. Saddam Hussein seems have had a great deal of influence over the groups in Iraq which are (or were) a threat to his power.

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