Optimal Sanctions[*]

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Abstract

A major power imposes targeted ("smart") sanctions directly on another country's leader (the antagonist), in addition to comprehensive sanctions such as trade embargoes. The objective is to coerce the antagonist into cooperating (e.g., terminate aggressive behavior, allow arm inspections). While targeted sanctions hurt the antagonist directly, e.g. by blocking his financial assets, comprehensive sanctions hurt him indirectly by creating social unrest. The antagonist's interests are imperfectly aligned with those of his citizens. Targeted sanctions reduce the misalignment – the "rally around the flag" effect – which makes social unrest less likely. If comprehensive sanctions are constrained by political or moral concerns then targeted sanctions must be reduced in order to trigger social unrest, making the citizens worse off. However, if social unrest is unlikely, e.g. in a totalitarian state, then comprehensive sanctions should be abolished and targeted sanctions maximized. *JEL* Codes: F5, D8.

1 Introduction

Russia's invasion of Ukraine has been met by sanctions that target President Putin, members of his inner circle, and oligarchs who control key Russian industries. In addition, the United States, Europe and their allies have cut the Russian financial system off from international markets causing the ruble

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to collapse and triggering bank runs. We develop a theoretical model which addresses the question of when and how different types of sanctions might be effective from the perspective of a major power (the protagonist) seeking to coerce another country's leader (the antagonist) into taking a cooperative action. In particular, we will contrast measures that impose costs on the population as a whole (comprehensive sanctions) with measures that target the elite ("smart" or targeted sanctions). Will sanctions unite or divide the population and the elite? What is the optimal mix of targeted and comprehensive sanctions? Do these different types of sanctions work with or against each other?

The United States has frequently imposed comprehensive economic sanctions (e.g., trade embargoes) on countries that are perceived as threats against international peace and stability. More recently, there has been a push towards targeted sanctions (blocking the elite's financial assets and transactions, restricting their ability to travel and to consume luxury goods, etc.). The recent sanctions against Russia have both targeted and comprehensive components. Similar strategies have been pursued in the past against Iran and North Korea.[1] By contrast, South Africa, Iraq and Libya faced mainly comprehensive sanctions. After the collapse of the Soviet Union, Russia used economic coercion against the newly independent states which relied on Russia to export their products, import energy and other inputs in production and transport oil and natural gas to the West (see Drezner [16]).

In general, targeted sanctions are meant to incentivize the political elite to change course by directly impacting its cost-benefit analysis. Comprehensive sanctions have an indirect purpose: to cause social and popular unrest which either destabilizes the regime or forces it to change course to avoid being destabilized. Strategic bombing of population centers in wartime is a "comprehensive" measure which is justified in a similar way: popular unrest will force the regime to seek peace or else be destabilized. However, comprehensive measures will backfire if they instead cause the population to "rally around the flag" (Ostrom and Job [32]). For example, the bombing of Buckingham Palace by the German Luftwaffe during World War II only served to endear the monarchy to the citizens.[2] Margaret Thatcher and the

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[1]Comprehensive U.S. sanctions restrict trade and damage the North Korean economy; targeted sanctions on foreign financial transactions were introduced after nuclear tests. See Reynolds and Tan [36] for an overview of sanctions on Iran, North Korea and others.

[2]Queen Elizabeth the Queen Mother said, "I am glad we have been bombed. Now we

Conservative Party gained popularity after the Brighton attack (Lanoue and Headrick [26]). In general, the citizens' behavior will depend on their beliefs about how well their government (the antagonist) represents their interests. If Russian citizens blame President Putin for their suffering, the result may be social unrest. But if they think their president is defending their country against hostile outsiders, they will rally around the flag. We model how these beliefs depend on the nature of sanctions, and how optimal sanctions take this into account.

Our model has three players: the protagonist, the antagonist, and the (representative) citizen. The antagonist has to decide whether to cooperate with the protagonist, who is either a hostile "Hawk" or a benevolent "Dove". The antagonist knows the protagonist's true type, but the citizen doesn't. In the leading interpretation of the model, the protagonist is the leader of a major power, the antagonist is the leader of another country, and the third party is the representative citizen of the antagonist's country. To be even more specific, the protagonist may be the president of the United States; the antagonist may be the president of Russia who has intervened in Ukraine, or the leader of a small country that is developing WMD. Cooperation means terminating these actions.

If the protagonist is a Dove then cooperation generates a peace-dividend. But if the protagonist is a Hawk, then cooperation puts the antagonist's country at risk. For example, Ukraine might join NATO and help the United States aggress against Russia. Without WMD, a small country may be at risk if the United States wishes to control its oil fields.[3] In addition, the antagonist derives a private benefit from the "strength" projected by non-cooperation. For example, Russia's president may take credit for restoring part of the Soviet empire; a leader of a minor power may use WMD to deter local competitors for regional influence, to control a restive population, or simply as a source of prestige.

Because of the private benefit, the antagonist's incentives are not perfectly aligned with those of the representative citizen. Both favor non-cooperation

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can look the East End in the eye" (Shew, [40], p. 76). King George VI said, "[W]e have found a new bond with them [the citizens] as Buckingham Palace has been bombed as well as their homes and nobody is immune" (Shawcross [39]).

[3]Even allowing weapons inspections may be considered risky. North Korea sees nuclear inspections "as only the first wedge in opening the entire North Korean state to penetration...The North would be accepting a sure path to change in regime and society and ultimately, state survival" (Bracken [7], p. 150).

if the protagonist is a Hawk. However, the citizen would prefer cooperation with a Dove, while the antagonist may prefer non-cooperation even in this case. The size of the private benefit is the antagonist's privately known type. If the citizen does not trust the antagonist to make the right decision, he may stage an uprising. A successful uprising can be interpreted as either removing the antagonist from office ("regime change"), or forcing him to cooperate in order to avoid losing office. However, because the citizen does not know the protagonist's true type, an uprising is a risky gamble which may put the country at risk if the protagonist is a Hawk.

The protagonist uses coercive policies (sanctions) to obtain cooperation. Targeted sanctions make the antagonist more inclined to cooperate when he knows the protagonist is a Dove. Therefore, targeted sanctions align the antagonist's interests with those of the representative citizen, making an uprising less likely – the "rally around the flag" effect. Directly incentivizing the antagonist by targeted sanctions is not possible for a Hawk, so the Hawk favors comprehensive sanctions. However, if the Hawk reveals his true type then the antagonist and the citizen will be united in favor of non-cooperation. Therefore, a separating equilibrium, where the two types use different types of policies, cannot exist.

Although the two types of protagonist disagree over coercive policies, there is a pooling equilibrium which is best for each type in the following sense: the expected payoff for each type is greater than in any other pooling equilibrium. Moreover, this pooling equilibrium satisfies standard equilibrium refinements. The coercive policy chosen in this equilibrium is the *optimal coercive policy*. Being best for each type, this policy also maximizes the protagonist's *ex ante* expected payoff. We characterize the optimal coercive policy and show how it depends on the parameters. In the most interesting case, there are two possibilities. The optimal coercive policy is either a *targeted policy*, with maximum targeted sanctions but no comprehensive sanctions, or a *comprehensive policy*, with maximum comprehensive sanctions and limited targeted sanctions. The targeted policy maximizes the antagonist's incentive to cooperate; the comprehensive policy maximizes the representative citizen's incentive. Encouraging cooperation by both simultaneously is infeasible.

The comprehensive policy aims to provoke an uprising. This is the optimal coercive policy if the antagonist is unlikely to cooperate voluntarily, but an uprising has a good chance of success. The comprehensive policy

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employs only weak targeted sanctions, making sure the antagonist's and the citizen's interests are sufficiently misaligned to prevent the "rally around the flag" effect. Comprehensive and targeted sanctions are complements: if, for exogenous reasons, the protagonist is forced to soften the comprehensive sanctions, targeted sanctions must be reduced even further to prevent the citizen from rallying around the flag. This makes the antagonist less inclined to cooperate with a a Dove, making the peace dividend less likely and the representative citizen worse off.

If the optimal coercive policy is the targeted policy, then comprehensive sanctions should be abolished and targeted sanctions maximized. The aim is to elicit cooperation from the antagonist without provoking an uprising. The targeted policy is optimal if an uprising is difficult to provoke or unlikely to succeed, and if the antagonist is not too unwilling to cooperate voluntarily. It is also likely to be optimal if the "rally around the flag" effect is very strong, since in this case the targeted sanctions would have to be severely limited in a comprehensive policy. An uprising is difficult to provoke if the protagonist is *ex ante* likely to be a hostile Hawk, or if the peace-dividend is small. An uprising is unlikely to succeed in highly authoritarian countries. Thus, the comprehensive policy is more likely to be optimal against democratic countries. The representative citizen prefers a targeted policy, not only because he dislikes comprehensive sanctions, but also because targeted sanctions incentivize the antagonist to cooperate with a Dove. In this sense, the representative citizen may benefit from living in a less democratic country.

The optimal comprehensive policy corresponds to a pooling equilibrium where both types of protagonist refrain from using targeted sanctions. This equilibrium exists because the antagonist's type (i.e., his private benefit from non-cooperation) is his private information. Indeed, if a benevolent protagonist (a Dove) knows that the antagonist can be induced to cooperate with targeted sanctions, then they will be used and this breaks the pooling equilibrium. In Section 7, we show that if the protagonist knows the antagonist's type, then the best equilibrium for the protagonist is separating, i.e., the Hawk and the Dove choose different coercive policies. If the protagonist is a Dove and the antagonist's private benefit from non-cooperation is not too big, then the protagonist induces cooperation by targeted sanctions. Otherwise, the protagonist tries to provoke an uprising, insofar as this is possible. Ex ante, this separating equilibrium is worse for the protagonist than the optimal comprehensive policy, so he prefers to be uninformed about the an-

tagonist's type.

Our model is a principal multi-agent model with moral hazard and asymmetric information, where the key action is controlled by one agent directly and another agent indirectly. It can be applied to other settings with a similar structure. Consider a rebel group (the protagonist) which uses terrorism to coerce the government (the antagonist). If the rebel group has truly circumscribed motives (a Dove), then cooperation (e.g., power-sharing) will lead to peaceful coexistence (the peace dividend). But if the rebel group has hostile intent (a Hawk), then cooperation may lead to a slippery slope where the rebel group eventually takes over completely and violates citizens' rights. The government is better informed about the rebel group's true motives than the representative citizen is. The rebel group faces the strategic choice of targeted versus comprehensive measures. It may directly target the government in order to persuade it to share power or relinquish control of territory. Alternatively, it may attack the population at large in order to destabilize the government. For example, the I.R.A. staged "spectaculars" or "massive attacks with maximum impact" such as the bombing of a military procession and a military band in Hyde Park and Regent's Park in 1982 (Foxwell [20]). These attacks harmed both civilians and soldiers. The I.R.A. also bombed Prime Minister Margaret Thatcher and her Cabinet in Brighton in 1984, killing or injuring members of the ruling Conservative Party. The Taliban and other insurgents have attacked civilians, but also government officials.[4]

2   Related Literature

Kaempfer, Lowenberg and Mertens [24] argued that regime sympathizers may benefit from broad-based trade sanctions, making them even more loyal to the regime. In addition, severe economic sanctions may make uprisings less likely, because an impoverished population is easier to police and repress.[5] Peksen and Drury [35] show empirically that authoritarian regimes often react to sanctions by increasing repression, and this increase is greater for comprehensive than for targeted sanctions. We could generalize our model

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[4]See the U.N. report [44] on civilian casualties and Sediqi [37].

[5]This argument suggests that an autocratic leader may have an incentive to deliberately make his country impoverished.

to take these effects into account. However, if these effects are so strong that comprehensive sanctions cannot possibly trigger an uprising (for example, because repression becomes very easy), then our model is no longer relevant. Our model captures a scenario where a population that is hurt by comprehensive sanctions can take actions that produce a non-trivial probability of regime change.

Major and McGann [28] argue that sanctions that hurt the general population may be very effective, since previously indifferent agents may try to change their country's current policy in order to escape the sanctions. However, they do not consider the key issue we focus on, namely, how *beliefs about the state of the world* determine whether they *want* their country to change policy. In our model, the representative citizen may either oppose the current regime or rally around the flag, depending on whether he thinks the current policy (say, developing WMD) is appropriate in the current state of the world (are the foreigners hostile?). Principal-agent models of labor coercion (Acemoglu and Wolitzky [1]) or indirect control (Padró i Miquel and Yared [33]) also do not allow for the channels we study as they are concerned with other interesting issues such as labor incentives and optimal size of mutually costly punishments given limited commitment.

Another theory of the interaction between international and domestic politics was proposed by Di Lonardo, Sun and Tyson [14]. If it is commonly known that the interests of the domestic opposition are misaligned with those of a foreign power, then the targeted country's leader can economize on domestic security and yet be more likely to stay in power, because the opposition knows that an uprising may trigger a foreign intervention. The key force in our model is that representative citizen of the targeted country does *not* know what motivates the major power. Thus, the models capture rather different scenarios. While Di Lonardo, Sun and Tyson [14] may describe the conflict between President Assad of Syria and ISIS (a domestic opposition whose interests are misaligned with those of the U.S.), our model may better capture some aspects of the current situation in Russia (where the Russian citizens don't know whether their interests are better aligned with the interests of the U.S. or with those of their own leaders).[6]

Whang, McLean and Kuberski [45] considered a model of sanction threats.

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[6]In a complementary analysis, Di Lonardo and Tyson [15] allow for disagreement between a protagonist leader and an elite. They show that domestic conflict can undercut the effectiveness of deterrence as either dovish elites or dovish leaders face pathological incentives.

Importantly, they treat the targeted country as a unitary actor, while we focus on the interaction between the political elite and the population, and how to optimally manipulate their divergent interests. Eaton and Engers [19] and Spaniel and Smith [41] allow asymmetric information between a protagonist and an antagonist with private information of their resolve. The sanctions may fail if the antagonist's resolve is strong. In contrast, we focus on the beliefs of a third party, the representative citizen of the antagonist's country, who does not know if the protagonist is hostile or benevolent.

Empirical research shows that sanctions have a mixed record. Years of debilitating comprehensive sanctions did eventually lead South Africa to end apartheid. Iran did agree to limit its nuclear program, and open it up to monitoring, after comprehensive and targeted sanctions. But severe sanctions against Iraq did not lead to the desired outcome. In a dataset consisting of 115 cases between 1914 and 1990, Hufbauer et.al. [22] found that sanctions were successful in a third of these cases.[7]

The empirical literature has also investigated the relative efficacy of different kinds of sanctions. Several studies concluded that if the targeted nation is a democracy, then comprehensive sanctions are more likely to succeed than targeted sanctions (Allen, ([2], [3]), Bolks and Al-Sowayel [6], Brooks [8], Lektzian and Souva [27]). After reviewing the United Nations sanctions of the 1990's, Cortright and Lopez ([12], p. 8) concluded that "the obvious conclusion is that comprehensive sanctions are more effective than targeted or selective measures. Where economic and social impact have been greatest, political effects have also been most significant". Empirical evidence supports the hypothesis that comprehensive sanctions cause social unrest (Allen [3]) and even regime change (Marinov [29]). Some studies have found that financial sanctions can be more effective than trade sanctions (Shagabutdinova and Berejikian [38]). But overall, the empirical literature does not seem to justify the recent push towards targeted sanctions. Drezner [18] concludes, based on a review of the empirical literature, that policymakers and scholars

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[7]But Pape [34] re-examined these cases and argued that the success rate was much lower, mainly because many of the "successes" could be attributed to the use or threat of force. Drezner [16] argued, however, that sanctions may be more successful than it appears in these datasets. In many cases, the *threat* of sanctions causes a change in behavior: "If the target prefers conceding to incurring the cost of sanctions, it has an incentive to acquiesce before the imposition of sanctions" (Drezner, [16], p.644). These successful cases do not appear as such in the datasets because the sanctions are not actually imposed.

need to look beyond targeted sanctions, with specific attention to the domestic political constraints of non-democratic countries. Our model contributes to this agenda.

In our alternative interpretation of the model, the protagonist is a rebel group who can attack government buildings or market places (or both). The group's chosen tactics drive the interaction between the targeted government and the representative citizen, who are asymmetrically informed about the group's motives. As far as we know, this problem was not previously studied in the literature on rebel group tactics – this literature has asked questions that are interesting but quite different from our main focus. Kydd and Walter [25] provide a useful taxonomy of the objectives and strategies or terrorist groups. For example, different groups may compete for support from a domestic audience which does not know which group would best represent it against a foreign power. Bueno de Mesquita [9] studies factors that might cause a terrorist organization to split into extreme and moderate factions. Bueno de Mesquita [10] allows a rebel organization to choose between conventional tactics (warfare), unconventional tactics (guerilla attacks), or to withdraw from conflict entirely. He studies how the optimal method to mobilize the population varies with the outside option of not joining a rebel group. He finds an interesting non-monotonicity: when outside options are very good, no-one will mobilize so the rebel group withdraws from conflict, but when options are very bad, mobilization is high so the rebel group uses conventional tactics. Only when options are intermediate does the rebel group use unconventional tactics.

3   The Game

3.1   Players and Actions

There are three players. Player P, the Protagonist, is the leader of a major power, country P. Player A, the Antagonist, is the leader of country A. Player C the representative Citizen of country A. Player P wants player A to make a cooperative decision (i.e., to cooperate with player P).[8] We think of non-

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[8]In the alternative interpretation mentioned above, there is only one country, country A. Player P is the leader of a rebel group, player A is the head of the government of country A, player C its representative citizen, and the cooperative decision is sharing power with the rebels.

cooperation as a status quo where country A does something player B dislikes (e.g., develops WMD). The cooperative decision is to change this behavior. For now, we take as given that coercive measures (sanctions) have already been imposed by player P. Player P's choice of coercive measures will be considered in Section 6.

Player C may attempt to change the status quo by an uprising. If the uprising is successful then player A is removed from office ("regime change"). It will become evident that the only reason for player C to start an uprising is that, from player C's perspective, player A is biased in favor of non-cooperation. Therefore, we assume without loss of generality that the cooperative decision will be taken after a successful uprising.[9] If there is no uprising, then player C in effect delegates decision making to player A.

At the end of the game, player P can take a hostile action. The major power may attempt to subjugate the other country in order to control its natural resources or to fundamentally change its political system.

3.2 Time-line

The three players play the following three-stage game.

Stage 1: Player C chooses whether or not to attempt an uprising. If an uprising is attempted, it is successful with probability $\alpha \in (0, 1)$.

Stage 2: If there was a successful uprising in stage 1 then the cooperative action is implemented. Otherwise, player A chooses whether or not to take the cooperative action.

Stage 3: Player P may decide to take the hostile action.

All actions in the three stages are publicly observed.[10] We think of players A and C as belonging to country A. If the cooperative action was implemented in stage 2, either because there was a successful uprising or player A decided to cooperate, then we say that country A cooperates (or is cooper-

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[9]Alternatively, "successful uprising" may signify social and political unrest which causes player A to cooperate without actually losing office. The conclusions would be the same. For simplicity, we refer to a successful uprising as "regime change".

[10]The assumption that the decision to cooperate is publicly observed may seem strong but it is not, at least in the applications we are interested in. There is no point in disarming unless this is verified so that sanctions can be lifted. Hence, we may assume a country which disarms will allow weapons inspections to verify it. See Baliga and Sjöström [4] for an environment where "strategic ambiguity" about cooperation or its lack can reduce arms proliferation and increase welfare.

ative). Otherwise, country A is said to have chosen non-cooperation (or is non-cooperative).

In a different version of the model, player A would first decide whether to cooperate, then player C decides whether to attempt an uprising. This alternative time-line yields the same basic insights as the current version, which is chosen for ease of exposition.

4   Types, Payoffs and Beliefs

4.1   The Protagonist

Player P has two possible types, Hawk (H) and Dove (D). His type is denoted $\theta_P \in \{H, D\}$. A key aspect of our model is that player A knows something about player P that player C doesn't know. This is a reasonable assumption: citizens are often poorly informed about the nature of external threats, while a government can use espionage, expert advisors, diplomacy and other forms of information gathering to become better informed. For simplicity, we assume players P and A know the true θ_P. Player C thinks $\theta_P = H$ with probability h, where $0 < h < 1$.[11]

Both types of player P want country A to cooperate, but for different reasons. Roughly speaking, the Dove wants peace and the Hawk wants war. That is, a dovish major power wants country A to withdraw troops or disarm (i.e., to cooperate) so that the two countries can coexist peacefully. A hawkish major power wants country A to cooperate so that it can exploit country A's weakness. To be more precise, if country A is non-cooperative, then both types of player P get payoff -1 from taking the hostile action, and 0 otherwise. If country A is cooperative, then a hawkish player P (with $\theta_P = H$) gets +1 if he takes the hostile action and 0 otherwise; a dovish player P (with $\theta_P = D$) gets 0 if he takes the hostile action and +1 otherwise.[12] Thus, dovish player P will never choose the hostile action. Hawkish player P will choose the hostile action if and only if country A cooperates.[13]

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[11]More generally, we could assume players A and C observe noisy signals that are correlated with player P's type. This would complicate the exposition without adding new insights.

[12]For simplicity, we assume regime change *per se* does not have any value to player P. It does have indirect value, as an instrument for ensuring that country A cooperates. In the Conclusion, we discuss the implications of dropping this assumption.

[13]Actions are strategic substitutes for player P in the sense that aggressive behavior

4.2 The Antagonist

If there is a successful uprising then player A takes no action and his payoff is normalized to zero. If there is not a successful uprising and player A does not cooperate then he gets a private benefit θ_A ("strength") and incurs a cost $t \geq 0$ from targeted sanctions.[14] If player P chooses the hostile action then player A incurs a cost $\Omega_A > 0$.

Only player A knows the true value of θ_A.[15] Players P and C think θ_A is distributed on $[0, \bar{\theta}]$ with cumulative distribution function F. We assume F is differentiable and strictly increasing on $[0, \bar{\theta}]$, with $F(0) = 0$ and $F(\bar{\theta}) = 1$. The two types, θ_P and θ_A, are uncorrelated.

To rule out uninteresting corner solutions where cooperation is guaranteed, we make the reasonable assumption that the cost of non-cooperation is less than both the maximum possible private benefit and the cost of the hostile action.

Assumption 1: $t < \bar{\theta}$ and $t < \Omega_A$.

Concretely, θ_A might represent the antagonist's benefit from building a position as a superpower that can dominate weaker neighbors. Turning a neighbor into a vassal state confers strength and perhaps helps deter a revolution. A successful weapons program has similar effects.

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by player A makes player P less likely to aggress. However, one type (the Dove) has a dominant strategy not to be aggressive. Baliga and Sjöström [5] study a model where players can choose to be aggressive or not, and find that actions tend to be strategic substitutes when the cost of conflict is high.

[14]Sanctions are lifted if country A cooperates, but remain in place otherwise. For now, the value of t is considered a fixed parameter. Player P's choice of t will be endogenized in Section 6.

[15]Thus, there is an asymmetry: players A and P both know θ_P but only player A knows θ_A. For example, country A may be a secretive dictatorship, while country P is a democratic country with free press (which provides information about the preferences of the political elite). However, the citizens of country A have limited resources and their search activities may be censored, so they find it hard to obtain information about country P (player C does not know θ_P). In Section 7 we consider the symmetric case, where players A and P both know both θ_A and θ_P.

4.3 The Representative Citizen

If country A does not cooperate, then player C incurs a cost $c \geq 0$ from comprehensive sanctions.[16] If country A cooperates and player P chooses the hostile action, then player C incurs a cost $\Omega_C > 0$. If country A cooperates and player P does not choose the hostile action, then player C gets a benefit $\lambda > 0$, a "peace dividend". The peace dividend λ includes the value of resources freed up by ending an invasion or a weapons program and from the return of trade.

To rule out the uninteresting possibility that player C *always* wants cooperation, we make the reasonable assumption that the cost Ω_C of a hostile action is quite large, both compared to the cost c of non-cooperation and the "peace dividend" λ:

Assumption 2: $\Omega_C > c$ and $h\Omega_C > (1 - h)\lambda$.

In the alternative interpretation of the model, dovish and hawkish rebel groups have limited and extreme objectives, respectively. In reality, the rebel group's "type" may be determined by an internal power struggle between a dovish wing and a hawkish wing. For example, the I.R.A. had a moderate political arm Sinn Fein as well as an violent extremist arm. The latter found the former to be lacking in its embrace of Catholic doctrine.[17] The Palestinian resistance to Israel has some who are willing to coexist in peace and others, like Hamas, who are committed to continuing resistance.[18] Uncertainty about the rebel group's type was the main concern in negotiations with the Taliban (International Crisis Group [23]): Did they mainly seek U.S. withdrawal, or did they seek imposition of extreme Islamic law with violations of women's and minority rights? Despite this uncertainty, it is plausible that a government knows more about a rebel group's internal power struggles that

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[16]Again, sanctions are lifted only if country A cooperates. For now, the value of c is taken as given. Player P's choice of c will be endogenized in Section 6.

[17]I.R.A. member Gerry McGeough said: "You would never get a leader of Sinn Fein condemning abortion, homosexual "marriage" or anything of that nature. I, as an Irish nationalist and Catholic, never want to see the day when there are abortion clinics in every market town in Ireland. But looking around there is no political grouping willing to take a stance against that" (McDonald [30]).

[18]See Kydd and Walter [25] for many relevant examples and also an analysis of how extremist might deliberately try to sabotage peace negotiations. Bueno de Mesquita [9] studies factors that feed into increasing extremism.

the representative citizen, as the government has spies and informants and other sources of information. Then, t and c represent the cost of attacks against the government and the average citizen, respectively, which are only terminated if there is a power-sharing deal. The peace dividend λ includes the value of resources released by ending counter-insurgency warfare, and θ_A represents the benefit of "looking tough" when dealing with rebels (which might give electoral or other advantages).

5   Equilibrium

We solve the three stage game by backward induction and find the unique Perfect Bayesian Equilibrium. At stage 3, player P will take the hostile action if and only if $\theta_P = H$ and country A cooperates. Now consider stage 2. Suppose there was no successful uprising, so player A makes a decision at stage 2. Recall that player A knows θ_P. If $\theta_P = H$ then player A will get $-\Omega_A$ if he cooperates at stage 2 and $\theta_A - t$ if he does not. Since $\theta_A \geq 0$ and $\Omega_A > t$ by Assumption 1, player A will surely choose non-cooperation in order to deter the Hawk from taking the hostile action.

If $\theta_P = D$ then there is no threat of a hostile action from player P. Player A will get 0 if he cooperates, and $\theta_A - t$ if he doesn't. Thus, player A will cooperate if and only if $\theta_A - t < 0$. The probability that player A will cooperate when $\theta_P = D$ is

$$\Pr\left\{\theta_A < t\right\} = F(t). \tag{1}$$

Since player C thinks $\theta_P = D$ with probability $1 - h$, he thinks player A will cooperate at stage 2 with probability $(1-h)F(t)$. If player A cooperates then player C's payoff is λ, otherwise it is $-c$. (Note that player A never cooperates when $\theta_P = H$). Thus, if there is no successful uprising at stage 1 then player C's expected payoff is

$$(1 - h)F(t)\lambda + [1 - (1 - h)F(t)]\,(-c) = -c + (1 - h)F(t)\,(\lambda + c) \tag{2}$$

If there is a successful uprising then country A will cooperate, and player C gets $-\Omega_C$ if $\theta_P = H$ and λ if $\theta_P = D$. Thus, player C's expected payoff is

$$-h\Omega_C + (1 - h)\lambda \tag{3}$$

Hence, player C prefers to start an uprising in stage 1 if and only if [19]

$$-h\Omega_C + (1-h)\lambda \geq -c + (1-h)F(t)(\lambda + c) \qquad (4)$$

If $c < h\Omega_C - (1-h)\lambda$ then (4) is violated for all $t \geq 0$, so there can be no uprising in this case. If $c \geq h\Omega_C - (1-h)\lambda$ then (4) holds if and only if $t \leq \tau(c)$, where $\tau(c)$ satisfies

$$F(\tau(c)) = \frac{c - h\Omega_C + (1-h)\lambda}{(1-h)(\lambda + c)}. \qquad (5)$$

Because $c < \Omega_C$, the right hand side of (5) is less than 1, so $0 \leq \tau(c) < \bar{\theta}$. If $t > \tau(c)$, there is no incentive to start an uprising as player A's incentives are already well-aligned with player C's. Player C wants cooperation with player P if and only if player P is a Dove. If $t > \tau(c)$ then the probability h that player P is a Hawk and the probability $F(t)$ that player A cooperates with a Dove are enough to discourage an uprising, given comprehensive sanctions c. This is the manifestation of the rally around the flag effect.

To summarize:

Proposition 1 *The three-stage game has a unique PBE. If $c \geq h\Omega_C - (1-h)\lambda$ and $t \leq \tau(c)$ then there is an uprising; country A cooperates with probability $\alpha + (1-\alpha)F(t)$ if $\theta_P = D$ and with probability α if $\theta_P = H$. Otherwise there is no uprising; country A cooperates with probability $F(t)$ if $\theta_P = D$ and with probability 0 if $\theta_P = H$.*

Note that

$$\tau'(c) \equiv \frac{h}{1-h} \frac{\Omega_C + \lambda}{(\lambda + c)^2} \frac{1}{F'(\tau(c))} > 0.$$

If comprehensive sanctions are high, then player C has a big incentive to engage in an uprising even if targeted sanctions are high. But when comprehensive sanctions are low, player C has no such incentive as player A's incentives to cooperate are already well-aligned with player C's. Therefore, targeted sanctions have to be lower, so player A will not in effect do player C's bidding, for player C to have the incentive to start an uprising.

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[19]We assume an uprising, whether successful or not, has no direct cost to player C. Thus, when deciding whether or not to start an uprising, player C can assume the uprising will be successful, since if it is unsuccessful he gains or loses nothing from the attempt. This is why α does not appear in (4). A direct cost could be added without adding any insights.

6   Optimal Coercive Policy

We now endogenize the choice of coercive interventions by adding an initial stage, stage 0, to the game. In stage 0, the protagonist makes a publicly observed choice of $(t, c) \in [0, \bar{t}] \times [0, \bar{c}]$. The remaining stages 1,2 and 3 are as described above. Thus, targeted interventions impose a cost t on player A, and comprehensive interventions impose a cost c on player C, unless country A cooperates.[20] Assume $\bar{t}$ and $\bar{c}$ satisfy Assumptions 1 and 2, so the analysis of Section 5 applies.

In a *separating* (perfect Bayesian) equilibrium, player P reveals his true type by choosing (t_H, c_H) when he is Hawk and $(t_D, c_D) \neq (t_H, c_H)$ when he is a Dove. By Assumption 2, there is no uprising following (t_H, c_H), because player C does not want cooperation with a Hawk. But player C would respond to (t_D, c_D) with an uprising because he strictly prefers cooperation with a Dove, and without an uprising there is always a positive probability that player A refuses to cooperate (see Section 4.2). But then the Hawk prefers to announce (t_D, c_D) at stage 0, because it makes it more likely that country A will cooperate. This shows that no separating equilibrium exists.

Now consider *pooling* (perfect Bayesian) equilibria, where player P chooses the same (t, c) regardless of type. Along the equilibrium path, player C's stage 1 beliefs about player P must equal the prior beliefs, since no information is revealed at stage 0. Off the equilibrium path, player C's beliefs about player P may differ from the prior. But player C's beliefs about player A must always equal the prior, because player P's choice at stage 0 cannot signal player A's type, even out of equilibrium. We are interested in the best pooling equilibrium for player P. If player P is indifferent, then we break the tie using the Pareto criterion, which amounts to breaking ties in favor of the citizen.

One might expect player P's types to disagree about the best equilibrium. However, among all pooling equilibria there is one that is best for both the Hawk and the Dove. The coercive policy (t, c) chosen by both types in this equilibrium maximizes each type's expected payoff over all equilibria. This turns out to be the same policy (t, c) that maximizes the Dove's expected

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[20]We assume the interventions do not have any direct cost for player P. In reality, country P may also suffer from, for example, trade sanctions imposed on country A. As long as these costs are not too great, they will not change our analysis, so we set them equal to zero for simplicity.

payoff over all $(t, c) \in [0, \bar{t}] \times [0, \bar{c}]$, when (t, c) is exogenously given as in Section 5.[21] Also, this equilibrium satisfies reasonable restrictions on out of equilibrium beliefs.

There are two cases that lead to trivial conclusions. First, if $\bar{c}$ is very small, specifically $\bar{c} < h\Omega_C - (1 - h)\lambda$, then Proposition 1 implies that an uprising is impossible, and the best policy for both types is $(\bar{t}, 0)$. Second, if $\bar{c}$ is very big, specifically $\bar{c} \geq \tau^{-1}(\bar{t})$ so that $\tau(\bar{c}) \geq \bar{t}$, then player P can get his bliss point: $(\bar{t}, \hat{c})$ such that $\tau(\hat{c}) = \bar{t}$ will result in an uprising with maximum targeted sanctions $\bar{t}$. This is clearly the best policy for both of player P's types.

From now on we focus on the non-trivial case where $\bar{c}$ is in the intermediate range where the following *uprising feasibility condition* holds:

$$h\Omega_C - (1 - h)\lambda \leq \bar{c} < \tau^{-1}(\bar{t}) \tag{6}$$

In this case, it is possible to provoke an uprising, but there is a trade-off: for an uprising to occur, the targeted measures must be reduced below $\bar{t}$ to counteract the rally around the flag effect.

The only justification for imposing comprehensive measures is to provoke an uprising. By Proposition 1, an uprising occurs if $c \geq h\Omega_C - (1 - h)\lambda$ and $t \leq \tau(c)$. If $t < \tau(c)$ (which implies $c > 0$) then reducing c slightly makes player C better off without eliminating his incentive to start an uprising. Thus, if (c, t) is Pareto optimal and there is an uprising, then $t = \tau(c)$. Moreover, raising both c and t until c has reached the upper bound $\bar{c}$ will make both types of player P better off. Thus, the best policy which provokes an uprising is $(\tau(\bar{c}), \bar{c})$, where $\tau(\bar{c}) < \bar{t}$ since we assume (6) holds. Since comprehensive measures are maximized at $c = \bar{c}$, we refer to $(\tau(\bar{c}), \bar{c})$ as the *comprehensive policy*. It gives the Dove an expected payoff

$$\alpha + (1 - \alpha)F(\tau(\bar{c})) \tag{7}$$

since his payoff equals the probability of cooperation. Note that this is the sum of two terms: the probability that the uprising is successful (and so brings about cooperation), and the probability that there is no successful uprising times the probability that player A cooperates voluntarily.

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[21] That is, find the $(t, c) \in [0, \bar{t}] \times [0, \bar{c}]$ that maximizes the Dove's expected payoff, assuming the policy is exogenously given as in Section 5, not chosen by player P. It turns out that for both types to choose this policy is a pooling equilibrium.

If (c, t) is such that no uprising occurs, then comprehensive measures do nothing to help player P, and Pareto optimality requires $c = 0$. To encourage player A to cooperate, targeted measures should be maximized. Thus, the best policy which does *not* provoke an uprising is $(\bar{t}, 0)$. Since the comprehensive measures are eliminated, but the targeted measures are maximized, we refer to $(\bar{t}, 0)$ as the *targeted policy*. Since there is no uprising, the Dove's expected payoff is

$$F(\bar{t}) \tag{8}$$

A Dove prefers the comprehensive policy $(\tau(\bar{c}), \bar{c})$ to the targeted policy $(\bar{t}, 0)$ if and only if (7) exceeds (8), i.e.,

$$\alpha + (1 - \alpha)F(\tau(\bar{c})) \geq F(\bar{t})$$

Using (5), this is equivalent to the *comprehensive sanctions feasibility condition*

$$\bar{c} \geq \frac{h(1 - \alpha)\Omega_C - (1 - h)(1 - F(\bar{t}))\lambda}{1 - h\alpha - (1 - h)F(\bar{t})} \tag{9}$$

A Hawk can only get cooperation if there is an uprising, so he surely prefers the comprehensive policy. Thus, if inequality (9) holds then both types prefer the comprehensive policy. Moreover, this policy can be supported by the (plausible) out-of-equilibrium beliefs that if player P deviates from the comprehensive policy at stage 0, then he is the Hawk (so there is no uprising). Thus, if inequality (9) holds then the optimal coercive policy is the comprehensive policy. If the comprehensive sanctions feasibility condition (9) is violated, then there is disagreement: the Hawk prefers the comprehensive over the targeted policy while the Dove have the opposite preference. In this case, there is no pooling equilibrium which implements the comprehensive policy $(\tau(\bar{c}), \bar{c})$. The reason is that the Dove can unilaterally deviate to the targeted policy $(\bar{t}, 0)$ and benefit. There is no out-of-equilibrium belief that player C could have about player P's type that would make the deviation unprofitable. Hence, there is in fact no disagreement over pooling equilibria: $(\bar{t}, 0)$ is the preferred pooling equilibrium policy for both types when the comprehensive sanctions feasibility condition (9) is violated. Again, this is supported by the (reasonable) out-of-equilibrium beliefs that if player P deviates at stage 0, then he is the Hawk. Thus, if the comprehensive sanctions feasibility condition (9) is violated then the optimal coercive policy is the targeted policy. In general, the optimal coercive policy is the Dove's most

preferred policy if payoffs are derived as in Section 5 (with exogenously given policies).

Proposition 2 *Suppose the* uprising feasibility condition *(6) holds. The optimal coercive policy for (both types of) player P is the comprehensive policy* $(\tau(\bar{c}), \bar{c})$ *if the* comprehensive sanctions feasibility condition *(9) holds, and the targeted policy* $(\bar{t}, 0)$ *otherwise.*

An analysis of the comprehensive sanctions feasibility condition (9) reveals that the comprehensive policy $(\tau(\bar{c}), \bar{c})$ is more likely to be optimal if Ω_C is small, h is small, λ is big and α is big. Player C is less concerned by player P's hostility if the costs Ω_C are small and the chance h that player P is a Hawk is small. Furthermore, these expected costs might be curtailed by a possible peace dividend λ if player A cooperates when player P is a Dove. These factors reduce the rally-round-the-flag effect and hence favor the comprehensive policy.

A higher α signifies that the population is more able to influence political decisions. This also favors the comprehensive policy. Thus, countries that are more democratic in this sense would be more likely to have comprehensive interventions imposed on them. Other things being equal, citizens might be better off under a *less* democratic government, as they would then be less likely to face comprehensive sanctions. From the perspective of our model, comprehensive sanctions created enough domestic pressure to end apartheid in South Africa, but white citizens might have been better off if their government had been known not to care about such pressure.

Next consider changes in $\bar{c}$. Consider a status quo scenario without significant restrictions on comprehensive interventions, so the comprehensive sanctions feasibility condition (9) holds with strict inequality.[22] The optimal policy is the comprehensive policy $(\tau(\bar{c}), \bar{c})$, whereby the protagonist hopes to trigger a successful uprising. Now suppose the comprehensive interventions are restricted for some exogenous reason: $\bar{c}$ falls by an amount small enough that the comprehensive sanctions feasibility condition (9) still holds.[23] In

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[22]In the leading interpretation, there is no significant public opinion within the major power that makes it hard to impose tough comprehensive sanctions. In the case of the rebel group, it feels unconstrained in its use of violence against the general population.

[23]In democratic nations, public opinion may impose constraints on comprehensive sanctions. Constraints may also be due to technological factors. During World War II, German bombing of British population centers at first seemed to reduce public support for the war

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the optimal policy, targeted measures also fall, because $\tau'(\bar{c}) > 0$. Intuitively, for an uprising to occur the antagonist must be sufficiently biased in favor of non-cooperation, and this is accomplished by relaxing the targeted measures. Thus, a small exogenous reduction in the comprehensive measures leads to less, not more, targeted interventions in the optimal policy. In this sense, the two measures are complements. Player A is made better off by the restriction on comprehensive measures, because the targeted measures are reduced. However, the citizen is not made better off. If $(t, c) = (\tau(\bar{c}), \bar{c})$ then, using (2), (3) and (5), player C's expected payoff is

$$\alpha \times (h(-\Omega_C) + (1 - h)\lambda) + (1 - \alpha) \times (-\bar{c} + (1 - h)F(\tau(\bar{c}))(\lambda + \bar{c}))$$
$$= h(-\Omega_C) + (1 - h)\lambda$$

which is independent of $\bar{c}$. Thus, restricting the comprehensive measures does not increase player C's expected payoff. Holding t constant, the fall in $\bar{c}$ would indeed make player C better off. However, the protagonist's optimal policy changes, so t also falls which makes player C worse off. The two effects balance.

Now suppose $\bar{c}$ falls by an amount large enough that the comprehensive sanctions feasibility condition (9) is no longer satisfied. Provoking an uprising is no longer optimal for the protagonist: targeted measures would have to be reduced by so much that the antagonist would be very unlikely to cooperate voluntarily. It is better to maximize the targeted measures and forget about the uprising. That is, the optimal policy is the targeted policy $(t, c) = (\bar{t}, 0)$. Switching to a targeted policy makes player A worse off, but player C is strictly better off. In summary, there is a non-monotonicity: a small reduction in $\bar{c}$ leads to a relaxation of the targeted measures, but a large fall in $\bar{c}$ leads to a tightening of the targeted measures.

7 Symmetric Information

So far we have assumed player A knows player P's type, but player P does not know player A's type. But, while Russia might monitor media and think tanks and hack the U.S. government, equally the U.S. governments might

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effort. However, until the development of the V-2 rocket Hitler did not have the military technology to hurt the British population sufficiently. The V-2 came too late to have a significant impact, and targeting the elite made the British rally around the flag.

learn the Russian leadership's motives and ambitions via their own hacking and spy operations.

In this section, we consider a symmetric situation where players P and A know each other's types. Player C still does not know either type. We show two results. First, for some parameter values the best equilibrium for both types of player P is separating, in the sense that the Hawk and the Dove choose different coercive policies. Second, player P might actually prefer to be uninformed about player A's type, as the information undercuts his ability to use comprehensive measures to provoke an uprising.

If player P is a Dove and knows that player A's type satisfies $\theta_A \leq \bar{t}$, then he can make sure country A cooperates by imposing a targeted coercive policy $(\bar{t}, 0)$. Therefore, in any equilibrium, dovish player P must get a payoff $+1$ when $\theta_A \leq \bar{t}$. On the other hand, if $\theta_A > \bar{t}$ then the only way to get country A to cooperate is to provoke an uprising – if this is possible. The following equilibrium is therefore the best possible for player P. If $\theta_P = D$ and $\theta_A \leq \bar{t}$, then player P chooses the policy $(\bar{t}, 0)$. Otherwise, player P chooses $(0, \tilde{c})$, where $\tilde{c}$ is the smallest comprehensive measure that provokes an uprising. Feasibility requires $\tilde{c} \leq \bar{c}$, which we check later. If there is no successful uprising, then player A chooses the cooperative action if and only if $\theta_P = D$ and $t \geq \theta_A$. If player P chooses $(\bar{t}, 0)$ then player C concludes that $\theta_P = D$ and $\theta_A \leq \bar{t}$ and does not start an uprising (because he thinks player A will cooperate anyway). If player P chooses an off-the-equilibrium-path policy, then player C believes that $\theta_P = H$, and again he does not start an uprising. Finally, if player C observes that player P chose $(0, \tilde{c})$, then Bayes' Rule implies that $\theta_P = H$ with probability

$$h^* = \frac{h}{h + (1 - h)(1 - F(\bar{t}))}. \tag{10}$$

We need to make sure that player C is willing to start an uprising when he observes $(0, \tilde{c})$. If there is a successful uprising then his expected payoff is

$$-h^* \Omega_C + (1 - h^*)\lambda.$$

If there is no successful uprising following $(0, \tilde{c})$, then player C's expected payoff is $-\tilde{c}$, because he expects that player A will choose non-cooperation (since either $\theta_P = H$ or $\theta_P = D$ and $\theta_A > \bar{t}$). Thus, the smallest comprehensive intervention such that player C is willing to start an uprising satisfies

$$-h^* \Omega_C + (1 - h^*)\lambda = -\tilde{c}. \tag{11}$$

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Feasibility requires $\tilde{c} \leq \bar{c}$. Using (5) and (10), we see that $\tilde{c}$ given by (11) satisfies the feasibility condition if and only if $\tau(\bar{c}) \geq \bar{t}$.

Thus, if $\tau(\bar{c}) \geq \bar{t}$, then we have found player P's optimal policy (i.e., the best equilibrium for both Hawk and Dove). Player P imposes targeted measures if he is a Dove and player A can be incentivized to cooperate, and comprehensive measures otherwise. Player C does not learn player P's type when player P imposes comprehensive measures. However, he does know that a dovish player P only uses comprehensive measures when it is impossible to get player A to cooperate voluntarily, so unless there is a successful uprising there is no hope of any peace dividend. If $\tau(\bar{c}) \geq \bar{t}$, then it is possible to implement sufficiently strong comprehensive measures, incentivizing player C to start an uprising in order to potentially release a peace dividend.

If $\tau(\bar{c}) < \bar{t}$, then the fact that player P knows θ_A makes it impossible for player P to provoke an uprising. If player P did not know θ_A, then the Dove could prevent player C from rallying around the flag by setting $c = \bar{c}$ and $t = \tau(\bar{c}) < \bar{t}$. Player A would not cooperate voluntarily when $\theta_P = D$ and $\theta_A \in (\tau(\bar{c}), \bar{t}]$, making it more likely that a successful uprising would release a peace dividend. This would give player C an incentive to start an uprising. But when player P does know θ_A, player P will always make sure that player A cooperates voluntarily when $\theta_A \leq \bar{t}$. Since player C knows this, it is no longer possible to avoid the rally-around-the-flag effect by reducing the targeted measures below $\bar{t}$. Therefore, if player P knows player A's type and $\tau(\bar{c}) < \bar{t}$, uprisings can never occur. Moreover, player A will not cooperate voluntarily if either $\theta_P = H$ or $\theta_A > \bar{t}$, so player P might as well set $c = t = 0$ in this case.

To summarize:

Proposition 3 *If player P knows θ_A then the optimal coercive policy for (both types of) player P is as follows. When $\theta_P = D$ and $\theta_A \leq \bar{t}$ set $(t, c) = (\bar{t}, 0)$. In all other situations, set $(t, c) = (0, \tilde{c})$ if $\tau(\bar{c}) \geq \bar{t}$ and $(t, c) = (0, 0)$ if $\tau(\bar{c}) < \bar{t}$ (where $\tilde{c}$ is defined by equation (11)).*

It follows that knowing θ_A can make player P worse off. Suppose $0 \leq \tau(\bar{c}) < \bar{t}$, and the comprehensive coercive policy is optimal when player P is uninformed about θ_A (as in Section 6). This policy is no longer implementable when player P knows θ_A (and player C knows that player P knows θ_A). Hence, both types of player P are worse off knowing θ_A. Player P cannot commit to ignore information he has about player A's type. Therefore, if

player P is a Dove, and knows that player A can be incentivized to cooperate ($\theta_A \leq \bar{t}$), then he will surely exploit this fact by imposing targeted measures. Intuitively, the antagonist's "political bias" is small. If player P tries to provoke an uprising by comprehensive measures, then player C concludes that player P is likely to be be a Hawk, causing player C to rally around the flag. If a comprehensive coercive policy is optimal, then in order to provoke an uprising player P must make it publicly known that he is not gathering information about the antagonist – this creates a de facto commitment not to exploit any knowledge of θ_A. In view of (9), he should not gather information about antagonists who are less likely to be hostile, where the peace dividend is likely to be big and where an uprising is more likely to be successful.

8   Concluding Discussion

Major powers often use sanctions to coerce antagonists to cooperate. But, at least in democracies, there are political and moral constraints on the severity of comprehensive sanctions such as trade embargoes. Therefore, policy discussions have focussed on replacing comprehensive with targeted ("smart") sanctions (e.g., Drezner [18]). Since disarmament requires either voluntary cooperation by the antagonist or a successful uprising, the idea that targeted sanctions can substitute for comprehensive sanctions seems intuitive. However, if comprehensive measures must be softened, then the protagonist has two options. He can either try to provoke social unrest by eliminating targeted measures, which increases the antagonist's "political bias". In this case, comprehensive and targeted interventions are complements, not substitutes. Or, he can give up on creating social unrest, and switch to a targeted policy which abolishes comprehensive measures. Proposition 2 shows that the optimal choice depends on parameters such as Ω_C, h, λ and α. For example, against more democratic countries (high α), the targeted policy is less likely to be optimal. Proposition 2 suggests that empirical studies of the relative efficacy of different kinds of sanctions may have a selection bias. For example, comprehensive sanctions are more likely to be imposed on more democratic countries (high α) and on countries with a large peace-dividend (high λ).

We made the stark assumption that the protagonist's only objective is to get cooperation. A "Neoconservative Dove" might desire regime change (perhaps signifying a new political system) for its own sake. The optimal

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policy would encourage uprisings by maximum comprehensive interventions. Targeted and comprehensive interventions would still be complements, as this property does not depend on the protagonist's preferences. At the other extreme, a "Realist Dove", who fears the unintended consequences of regime change, would minimize comprehensive interventions.

In our alternative interpretation, we assumed that a dovish rebel group would share power even if there is a regime change. But it is possible that power-sharing would become impossible in this case. A successful uprising will then always lead to the hostile action being taken by the rebel group. This is never beneficial for the citizens so comprehensive interventions never work. A rebel group which cannot credibly show that it will not become hostile after regime change must use targeted interventions to achieve its ends.

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