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Dealing with Tyranny: International Sanctions and the Survival of Authoritarian Rulers[1]

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This paper examines whether economic sanctions destabilize authoritarian rulers. We argue that the effect of sanctions is mediated by the type of authoritarian regime against which sanctions are imposed. Because personalist regimes and monarchies are more sensitive to the loss of external sources of revenue (such as foreign aid and taxes on trade) to fund patronage, rulers in these regimes are more likely to be destabilized by sanctions than leaders in other types of regimes. In contrast, when dominant single-party and military regimes are subject to sanctions, they increase their tax revenues and reallocate their expenditures to increase their levels of cooptation and repression. Using data on sanction episodes and authoritarian regimes from 1960 to 1997 and selection-corrected survival models, we test whether sanctions destabilize authoritarian rulers in different types of regimes. We find that personalist dictators are more vulnerable to foreign pressure than other types of dictators. We also analyze the modes of authoritarian leader exit and find that sanctions increase the likelihood of a regular and an irregular change of ruler, such as a coup, in personalist regimes. In single-party and military regimes, however, sanctions have little effect on leadership stability.

During his inaugural address in 2005, US President George W. Bush proclaimed that ''it is the policy of the United States to seek and support the growth of democratic movements and institutions in every nation and culture, with the ultimate goal of ending tyranny in our world.''[2] The general goal of ending tyranny has been shared by many of Western advanced democracies since the end of the Second World War. Yet there is little consensus over the most effective means to promote regime change and democratization.

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[2] http://www.whitehouse.gov/inaugural/ (accessed June 2008).

Democratic governments have long tried to influence political regimes and institutional development in foreign countries. One way is full military intervention and invasion. The victorious allies imposed a democratic constitution on Japan after the Second World War; and the United States is currently still struggling to consolidate the new institutional system in Iraq after the 2003 invasion. Developed democracies have also provided domestic opposition movements with financial and strategic support. For example, South African exiles and their supporters created the Anti-Apartheid Movement in London in 1959 to mobilize international support for the African National Congress and the Pan Africanist Congress. American trade unions helped finance Solidarity, the union that headed the anti-communist opposition in Poland; at the same time, international agencies refused to grant Poland any economic aid until it legalized Solidarity. Examples abound at the state level as well. The US administration had been both training and funding Iraqi anti-Hussein groups such as the Iraqi National Accord[3] and the Iraqi National Congress[4] prior to the 2003 invasion. In Europe, the Friedrich Ebert Foundation ''provided financial and other support for Socialist politicians during dictatorships in Spain and Portugal'' (Pinto-Duschinsky 1991:55).

Economic sanctions, however, are probably the most common foreign policy tool democracies use to bring about policy or institutional changes in authoritarian regimes. Askari, Forrer, Teegen, and Yang (2003) report that while there were only 12 cases of sanctions between 1914 and 1945, the number increased to over 50 during the 1990s. Most of the targets of these economic sanctions were authoritarian regimes. Further, Kaempfer, Lowenberg, and Mertens (2004) find that in 2001, 85% of US unilateral sanctions targets were countries rated as ''not free'' or ''partly free'' by Freedom House. Understanding whether and how international sanctions can effectively destabilize authoritarian rulers also has implications for current policy debates. For example, during the 2008 US presidential election campaign, candidates of both parties have discussed large-scale international sanctions against Iran as a way to deter Iranian nuclear weapons capacity and diminish Iranian influence in the Middle East. Recently, the United Nations has discussed the extension of sanctions against the Mugabe regime in Zimbabwe in the aftermath of the most recent fraudulent election and political repression.

Despite their continued use as a tool of foreign policy, there is little consensus as to whether sanctions can be effective in destabilizing authoritarian rulers (Van Bergeijk 1989; Haas 1997; Mueller and Mueller 1999; Nurnberger 2003). In fact, some of the most recent empirical studies on sanctions effectiveness find evidence that while sanctions may be effective against democracies; they are unlikely to succeed when imposed against authoritarian leaders (Nooruddin 2002; Marinov 2005; Lektzian and Souva 2007). Notable cases of sanctions failure include Iraq, Libya, and Cuba. This paper addresses the question of whether and how sanctions destabilize authoritarian rulers. We argue that the effect of sanctions on leadership stability is conditioned by the type of authoritarian rule in the target country. Specifically, personalist rulers are vulnerable to international sanctions because they are the most sensitive to the loss of external revenue to fund their patronage networks. Because leaders in these regimes typically have weak institutions such as the military and party system, they are the least capable of substituting cooptation or repression for patronage when sanctions decrease the resources available for political payoffs. Although personalist rulers can and do increase repression in response to sanctions, this is a risky and potentially counterproductive strategy that can further destabilize the regime.

[3] Funded by the Central Intelligence Agency, British intelligence, and the Saudis, the INA staged a failed coup attempt in 1996.

[4] The INC had received millions of dollars in American aid for military training.

The next section reviews the literature on autocratic stability, discussing the chief strategies dictators use to stay in power: repression and buying loyalty. The third section discusses the potential effect of international sanctions on dictators' survival and the mediating effect of authoritarian regime type in the target country. This section also provides descriptive data to show how sanctions affect patronage spending and repression in different types of authoritarian regimes. The fourth section presents the data and methodology used to test the main hypotheses linking sanctions to authoritarian stability, and the next section reports the results of the empirical tests. The final section summarizes the main findings.

Authoritarian Survival Strategies

The early literature on nondemocratic regimes focuses on repression as the main instrument to retain power, concentrating on the coercive capabilities and strategies of regimes (Friedrich and Brzezinski 1961; Arendt 1962). However, few dictators can survive using only sticks. Subsequent studies of authoritarianism analyze the trade-offs among different survival strategies dictators face once in power and the various political threats they confront (Tullock 1987). The focus turned from repression to buying loyalty and the combination of these two strategies (Wintrobe 1990, 1998; Gershenson and Grossman 2001; Gandhi and Przeworski 2006).

Central to this literature is the contention that rulers can decrease the probability of being deposed by co-opting potentially threatening political groups (Bertocchi and Spagat 2001). Most dictators do not rule in isolation, but build supporting coalitions whose loyalty is largely dependent on obtaining patronage resources or policy concessions from the dictator. As Brough and Kimenyi (1986:46) emphasized, ''to keep the coalition intact, it is necessary for the dictator to distribute benefits to the coalition.'' Some scholars focus on the size of this coalition and the type of benefits they provide (Bueno de Mequita, Smith, Siverson, and Morrow 2003), while others concentrate on the threats dictators face and the institutions they use to appease them (Gandhi and Przeworski 2007). The availability of natural resources and other non-tax revenue also figures prominently in theories of authoritarian survival precisely because these resources influence the capacity of the dictator to deliver rents, to co-opt opposition groups, and to pay for repression (Brautigam 2000; Ross 2001; Smith 2004; Ulfelder 2007; Morrison 2009).[5]

Accounts of authoritarian rule that focus on the stabilizing effects of economic growth or the institutional structure of the regime all consider the relationship between the ruler and the elites in the dictator's coalition. For example, some scholars argue that economic decline increases the risk of a coup because the incumbent loses the backing of his support coalition, members of which may back an alternative (O'Kane 1981, 1993; Johnson, Slater, and McGowan 1984; Londregan and Poole 1990; Galetovic and Sanhueza 2000). The economic payoff to the coalition that supports the incumbent regime is central to these arguments.

Institutionalists contend that legislatures and parties (Gandhi and Przeworski 2007) or the type of authoritarian system (Geddes 1999, 2003) structure the incentives facing the political actors and, hence, shape the vulnerability of the ruler and the regime itself. Distinguishing among different types of authoritarian regimes, Geddes (2003:26) argued that in military regimes, ''because most officers value the unity and capacity of the military institution more than they value holding office, they cling less tightly to power than do office holders in other forms of authoritarianism.'' Conversely, in single-party regimes all factions within the regime have incentives to cooperate with the aim of remaining in office. Furthermore, party organizations provide party members with a durable

[5] Most of the work on authoritarian breakdowns focuses on regimes and not leaders as the unit of analysis.

framework wherein to resolve differences, bargain, and advance in influence. As a result, dominant party systems generate and maintain a cohesive leadership cadre (Brownlee 2004). As Smith (2005:431) suggests,

> During ''routine'' periods, strong parties provide a means for incorporated groups to present their political and policy preferences to the regime…During periods of crisis, the crucial task of party institutions is to provide a credible guarantee to in-groups that their long-term interests will be best served by remaining loyal to the regime.

In personalist regimes, however, rival factions will remain loyal only if the payoff from supporting the ruler exceeds the expected benefits of a risky plot, since ''in contrast to single-party regimes, the leader's faction in a personalist regime may actually increase benefits to itself by excluding the rival faction from participation'' (Geddes 2004:14). Similarly, Jackson and Rosberg (1984:424) argued that under personal rule, ''the system favors the ruler and his allies and clients: its essential activity involves gaining access to a personal regime's patronage or displacing the ruler and perhaps his regime and installing another.''

Scholars of authoritarian duration and survival have thus long noted the distinct mechanisms dictators use to stay in power. In the next section, we use these insights to examine how sanctions might affect the survival strategies of dictators, with careful attention to how these strategies and capacities differ across distinct authoritarian regime types.

Sanctions, Patronage, and Repression

Recent empirical research on sanctions suggests that the success of sanctions varies by the target country regime type (Nooruddin 2002; Marinov 2005; Lektzian and Souva 2007). The findings in these studies suggest that sanctions are unlikely to be effective when the target regime is a nondemocracy. However, researchers have yet to distinguish empirically among different types of authoritarian rule. We explore how international sanctions affect the alternative logics of intra-elite relations and survival strategies discussed in the previous section. We agree that ''the effect of significant economic punishment is conditional on the target's regime type,'' as Lektzian and Souva (2007:841) argue, but take this analysis one step further by exploring how the effect of sanctions on dictatorial leaders' duration in power is mediated by different types of authoritarian regimes (for example, personalist, military, and single-party systems). In doing so, we build on earlier research which shows that authoritarian regime types mediate the effect of economic growth and contentious collective action on the likelihood of regime breakdown (Geddes 2003; Ulfelder 2005) and differ considerably in their propensity to initiate interstate conflict (Lai and Slater 2006; Weeks 2008).

Economists have studied the effect of sanctions on dictators' survival strategies by introducing sanctions or foreign pressure into political economy models of authoritarian rule. Kaempfer et al. (2004), for example, show that if sanctions increase the capacity of the opposition, this will reduce the repressive capacity of the dictator and possibly destabilize the regime. However, when sanctions do little to benefit the opposition, sanctions strengthen the rule of the dictator. Gershenson and Grossman's (2001) model suggests that a dictator's optimal response to increasing foreign pressure (such as international sanctions) is to increase both repression and cooptation to stay in power.

Much of the sanctions literature makes the strong assumption that dictators are able to capture the rents associated with economic sanctions and that the subsequent increase in resources available to payoff political supporters stabilizes their rule (Gershenson and Grossman 2001; Kaempfer et al. 2004; Lektzian and

Souva 2007). However, this assumption may not apply equally to all types of regimes. Some dictators may not have the capacity to capture the rents associated with international sanctions or the increase in rents may not be sufficient to compensate the losses inflicted on other revenue streams, such as foreign aid, non-tax revenue, or taxes on international trade. While we concur with the premise that more costly sanctions should increase the likelihood of success (Dashti-Gibson, Davis, and Radcliff 1997; Lektzian and Souva 2007), we argue that key to modeling sanctions effectiveness lies in understanding the relative capacity of authoritarian rulers to vary their level of cooptation and repression in response to international sanctions. If sanctions decrease government revenue and the resources available for rents, this will leave dictators less able to co-opt potential opposition forces and reward supporters. Unable to successfully co-opt the potential challengers, these dictators will resort to increasing the level of repression in the short term, especially if the consequences of losing power are particularly bad.

Cooptation with Rents

Kaempfer and Lowenberg (1988:792) argued that ''the sanctions which are most likely to precipitate the desired political change in the target country are those which concentrate income losses on groups benefiting from the target government's policy.'' Similarly, Kirshner (1997) claims that for sanctions to be effective they should focus their pressure on either the central government or the core groups whose support is essential for the regime to remain in power. Hence, it is instructive to examine the sources of political support in different types of authoritarian regimes.

The durability of rulers in personalist regimes ''depends largely on bargains among cliques with no claim to grass roots, so ruling elites are freer to ignore popular challenges'' (Ulfelder 2005:314). Neo-patrimonial regimes are typically sustained by extensive patronage networks and are thus dependent on the availability of resources to buy the loyalty of their supporting elites (Bratton and van de Walle 1994). Further, the main revenue streams funding such networks—namely, non-tax revenue, taxes on international trade, and foreign aid—are principally external and do not require citizen cooperation (Lieberman 2002; Wright 2008).[6]

This dependence on external rents and trade taxes makes personalist rulers vulnerable to economic sanctions, especially to those aimed at curtailing governments' revenues, like trade or financial sanctions (Kirshner 1997). A reduction in rents used to payoff political supporters may thus cause divisions within the elite (Olson 1979). For example, when the United States was discussing possible sanctions against Amin's regime in Uganda, Ullman (1978) argued that sanctions would be effective in undermining Amin's regime precisely because of Uganda's dependence on coffee exports for obtaining foreign exchange. This foreign exchange was crucial to Amin's strategy of providing private goods to his core group of supporters such as the army and civil servants.[7] The initial commercial boycott and subsequent trade ban contributed to weaken Amin's regime.

[6] For example, between 1960 and 2000 the average foreign aid per capita has been $33 for personalist and monarchic regimes, $25 for single-party systems, and just $13 for military regimes. If we include mixed cases according to the pure type they most seem to resemble, personalist regimes (monarchies plus personalist regimes) have received on average $33 in aid per capita; single party (pure types plus personalist/single-party hybrids and single party/military) received $30, and military regimes (military plus military/personalist) just $20.

[7] Nurnberger (1982) estimates that by 1977 coffee exports accounted for 97% of Uganda's foreign export earnings; those exports were controlled by the government-owned Coffee Marketing Board. Coffee purchases by the United States, United Kingdom, France, Japan, and West Germany accounted for 73% of Uganda's total export income.

Similarly, in the Dominican Republic, sugar exports were the main source of the Trujillo family's resources used to buy the support of core supporters, including the armed forces. In addition to other coercive measures approved by the OAS,[8] the United States restricted Dominican sugar imports in an attempt to bring about a peaceful regime change.[9] Sanctions ''signaled the weakness of the regime, constrained its resources and maneuverability, undermined its support, and emboldened opponents'' (Kirshner 1997:59). Similarly, van de Walle points out that restrictions on aid flows in Africa during the early 1990s brought about regime instability: ''with fewer resources at their disposal and an increasingly decrepit state apparatus, leaders found it harder to sustain critical clientelist networks, with the result that the old political aristocracy was more likely to fractionalize'' (Van de Walle 2001:240). Such were the cases of Hastings K. Banda in Malawi, and Mobutu Sese Seko in former Zaire.

While almost all authoritarian leaders use some form of patronage to buy support, personalist leaders may be the most sensitive to the loss of external revenue to buy support because these leaders lack strong institutions to help them rule: they typically have weak militaries and either weak or non-existent parties and legislative institutions (Wright 2008). Even with a weakened military, they may be reluctant to activate (and adequately supply) the military for fear the soldiers will organize against the leader. Thus, pursuing widespread repression when external resources available for patronage spending fall short can be a risky strategy for surviving in power. Further, because personalist leaders lack strong political institutions, they cannot make credible inter-temporal promises to their supporters. Dominant party regimes can and do make good on promises to distribute patronage in the future—particularly around election time (Magaloni 2006; Pepinsky 2007; Blaydes 2008).[10] Because of the long history of state patronage and large margin of electoral victories for dominant parties, supporters expect the party to remain in power at least in the near- to mid-term, if not indefinitely, and thus believe party promises of future support.[11] Likewise, policy concessions are less credible when dictators cannot rely on strong institutions to ensure political supporters that their demands will be met.[12] Hence, personalist rulers should have more difficulty substituting the promise of future rents or policy concessions for political rents in the current period when sanctions curtail patronage resources.

If sanctions can decrease the resources available for political payoffs, the elites' expected benefits of supporting the incumbent leader decrease, making elite defection more likely. In short, if the incumbent ruler is not able to capture sanction rents due to limited state capacity (or if these rents do not compensate the loss inflicted by the imposition of sanctions), a reduction in the flow of benefits can decrease the elites' utility from supporting the ruler and increase their expected utility from defection.

[8] Particularly, the suspension of arms sales in August 1960. These measures were extended in January 1961 to include oil, spare parts, and trucks.

[9] In 1960, when Congress voted to reassign part of the Cuban sugar quota to existing sugar exporting countries, the Eisenhower administration ignored these provisions for the Dominican Republic. To compromise with Trujillo supporters in Congress, the Eisenhower administration subsequently reassigned some of the Cuban quota to the Dominican Republic, but imposed an entrance fee to limit the benefits to Dominican sellers. Facing less opposition in Congress, the Kennedy administration reduced the Dominican Republic's sugar quota to pre-1960 levels (Schreiber 1973).

[10] This may be one reason dominant party regimes are relatively resistant to economic shocks (Haggard and Kaufman 1995: chapter 7; Geddes 1999), and typically only lose power once the state (and hence the party) contract their control over large portions of the economy (Greene 2010).

[11] Magaloni (2006) shows that older voters who experienced decades of PRI rule under a growing economy were much more likely than younger voters to support the PRI in the wake of the 1994 *peso* crisis, in part, because the older voters expected PRI rule to continue and had been long-time recipients of PRI patronage.

[12] See Gandhi and Przeworski (2006) on authoritarian institutions and policy concessions.

Leaders in single-party and military regimes also depend on patronage,[13] but they may not be as sensitive to the loss of external resources to fund it. In single-party systems, loyalty is mobilized through limited access to the decision-making process, policy concessions, and public goods. Large sectors of the population can be integrated in what Kasza (1995a:218) calls ''administered mass organizations'' that are ''formal organizations structured and managed by the state's ruling apparatus to shape mass social action for the purpose of implementing public policy.'' These organizations extend state control in many different ways, including material dependency, consumption of time, organization of support, offices and honors, and self-directed local administration (Kasza 1995a,b). With larger coalitions, dominant single-party regimes are also more likely to rely on public goods provision to retain the support of their coalition (Bueno de Mequita et al. 2003). Military regimes, on the other hand, have the greatest capacity to use repression in response to sanction-induced decreases in patronage resources (Davenport 2007). Thus, dominant single-party rulers may be better positioned to substitute policy concessions for patronage, while increasing repression when patronage resources diminish may be a much less risky strategy for leaders in military regimes.

Using government consumption as a measure of the level of cooptation and rent delivery suggests that personalist regimes are the most ''patronage-intensive.'' Government consumption as a share of the GDP under personalist systems and monarchies is 6% higher, on average, than single-party regimes and 15% higher than military regimes.[14] So, contrary to the argument that small coalition dictators should be the most vulnerable to sanctions, we argue that if sanctions are well directed toward reducing elites' access to rents (Dashti-Gibson et al. 1997), international sanctions are most likely to undermine authoritarian rule in personalist (and monarchic) dictatorships. In this line, Falk (1992:33) argues that ''the maximum impact of human rights pressures, absent enforcement mechanisms, is to isolate a target government, perhaps denying it some of the benefits of trade and aid.''

Single-party and military regimes and rulers may not be as sensitive to a small reduction in their supportive coalitions and their external rents as personalist ones. Descriptive data on revenue composition show that, once under sanctions, single-party and military regimes are better able to shift fiscal pressure from one stream to another, a capacity that may stem from their greater control over the territory and the population. Figure 1 shows aid receipts, non-tax revenue, and various streams of tax revenue for different types of regimes, under sanction and not under sanction. The imposition of sanctions in personalist regimes translates into sharp reductions of aid receipts and revenues from taxes on international trade and non-tax revenues, which constitute their main sources of revenues.[15] Besides, it is apparent that personalist rulers cannot generate new revenue streams due to their limited state capacity. Conversely, single-party and military regimes increase both their tax and non-tax revenues when targeted by sanctions. Non-tax revenue increases despite the loss of foreign aid. The increase in tax revenue in single-party and military regimes appears to come from increased taxes on goods and services, which are less likely to be affected by sanction-induced economic decline than taxes on income and profits.

In Figure 2, we use different categories of government spending (a proxy for cooptation) to examine how different types of regimes respond to sanctions. Expenditures on goods and services (including wages and salaries for government employees) and on subsidies and transfers (including pension and welfare

[13] Even militaries can be quite adept at buying the support of key elite or the mass public with patronage. For example, Hunter argues the Brazilian military's attempt to ensure electoral victory after 1974 meant ''transforming ARENA into a 'gigantic patronage machine''' (1997:103).

[14] To obtain these figures, we regress logged government consumption as a share of GDP on regime type, log(GDP per capita), and oil and gas rents per capita.

[15] Data on revenue composition are taken from the World Bank's *World Development Indicators*. Aid figures are expressed as a percentage of GNI.

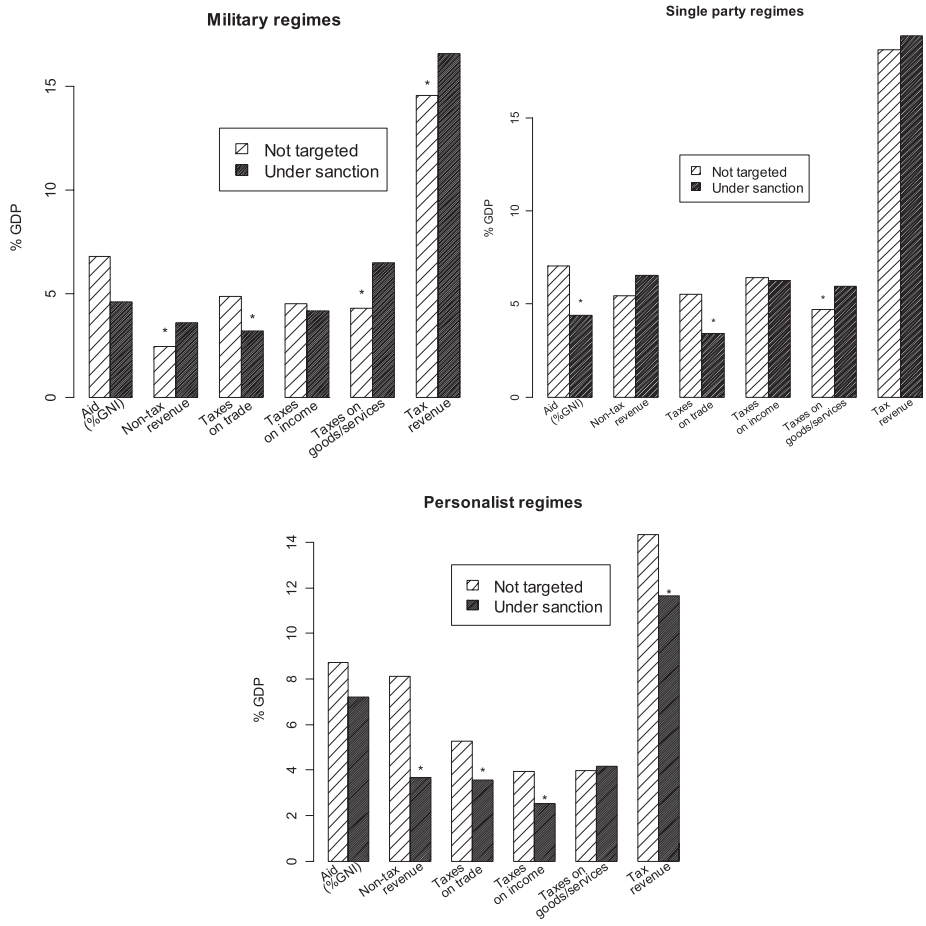

FIG 1. Revenue Composition (as a % of GDP), by Regime Type and Economic Sanctions (*Notes.* *Difference in means is statistically different from zero at the .01 level.)

programs for individuals and subsidies to firms) proxy for short-term expenditures useful as political payoffs, while capital expenditures capture spending on longer-term goals such as economic development. Two patterns emerge. First, all rulers reduce capital expenditures, as leaders under sanctions shift resources from long-term development and investment programs to current spending and consumption.[16] Yet, consistent with the expectation that sanctions shift spending the most in personalist regimes, we observe the largest decrease in capital expenditures in personalist regimes (falling from 8.29% to 3.27%). This may occur because as sanctions reduce the revenues available to personalist rulers, they reallocate resources to minimize the cuts in other categories of spending, particularly subsidies and transfers.[17] Second, spending on both goods/services and subsidies/transfers decreases in personalist regimes under sanctions, again consistent with the expectation that sanctions limit the patronage capacity of rulers in these regimes.

[16] Public investment may also constitute a method of distributing rents, potentially increasing corruption (Robinson and Torvik 2005).

[17] In fact, it seems that personalist regimes try to minimize the cuts in the subsidies category, as it is the only one for which the *t*-test is not significant when we compare the averages under economic sanctions and not under sanctions. The very limited existing data on military expenditures (as a percentage of the GNI, from WDI) indicates that personalist rulers cut spending on this category when targeted by sanctions as well, while single-party and military regimes increase them.

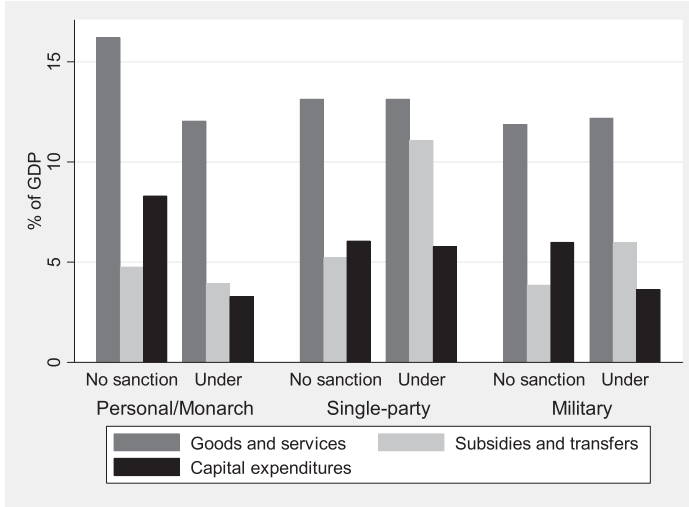

Fig 2. Cooptation, Sanctions, and Regime Type: Government Expenditures (% of the GDP) (*Notes.* The decrease in goods/services and capital spending in personalist regimes is statistically different from zero at the .01 level. The increase in spending on subsidies in single-party and military regimes is statistically different from zero. Finally, the decrease in capital expenditures in military regimes is statistically significant.)

However, rulers in both single-party and military regimes under sanctions increase spending on goods/services and subsidies/transfers, suggesting that sanctions may increase their need to co-opt. The higher degree of inclusiveness in single-party regimes may explain why sanctions lead them to concentrate spending increases on subsidies and transfers, which predominantly benefit supporting social sectors, such as the urban classes and business elites. Expenditures on goods and services show a similar pattern, increasing under sanctions in both single-party and military regimes. These descriptive data suggest that leaders in these two types of regimes prioritize cooptation over investment when under sanctions.

Repression

Figures 1 and 2 suggest that personalist rulers suffer the most revenue loss under sanctions, and thus cannot increase expenditures on goods and services and subsidies and transfers. If sanctions decrease a personalist dictator's resources available to payoff political supporters, these leaders may face difficulties in maintaining their loyalty payments, leaving them to increase repression. Yet, increasing repression may be counterproductive for a number of reasons. First, because most of the population is already excluded from the political process, the perception that repression may extend to a member of the already narrow supporting coalition can sharply increase (Gershenson and Grossman 2001). Second, personalist rulers are also the least likely to have complete control over the army and are thus less able to mobilize the military to systematically repress opponents for fear that this military mobilization may itself threaten the ruler (Geddes 2008).[18] Finally, some argue that high levels of repression may trigger a

[18] In Romania in December 1989, for example, the military sided with opposition protests that were triggered by President Ceaucescu's order to fire on anti-regime demonstrators in Timisoara. In response, Ceaucescu and his wife fled the capital, Bucharest, in a helicopter. Faking an engine failure, the pilot landed and the couple was captured by the armed forces. On December 25, the two were condemned to death by a military court on a range of charges, included genocide. Both were executed by firing squad.

''backlash'' so that dissidents react strongly to extremely harsh coercion (Francisco 1995; Rasler 1996).[19]

Personalist rulers are also the most likely to face particularly bad outcomes once they exit from power. In personalist regimes, the dictator rarely cedes power peacefully and is most often displaced via a coup. In contrast, leaders in military regimes can often return to the barracks if they can successfully negotiate a transition to a civilian government. Leaders of dominant single-party regimes rarely lose power in a coup and often win power in a subsequent election even after they step down from the executive. Thus, personalist dictators are more likely to endure a particularly nasty fate once they leave power—relative to leaders in other types of regimes. A brief look at the data bears this out. Conditional on having exited, only 19% of personalist rulers live in their home country unpunished, while over 50% of single-party and military rulers meet the same (good) fate. Given this disparity, it is unsurprising that personalist rulers are also more likely than rulers in other regime types to face punishment, exile, or assassination when exiting.[20] Thus, even though mobilizing the military to pursue repression is a risky option for personalist rulers with little room to maneuver due to the loss of revenue and rent resources, they nonetheless have a strong incentive to pursue this option to stay in power, as exiting carries many of its own risks.

In Figure 3, we examine the average repression levels for different types of regimes, under and not under sanctions. To measure repression, we use Hafner-Burton and Tsutsui's (2007) index of state repression, which combines information from different existing political terror scales. The scale ranges from 1 to 5, where 5 is the maximum level of repression.[21] While Wood (2008) finds that sanctions generally increase repression, especially in nondemocracies, our descriptive data indicate that the largest increases in repression in response to international pressures are found among personalist regimes, which, when under sanctions, reach repression levels similar to those found in military regimes. Given the marked decrease in the availability of patronage rents and, consequently, in their capacity to reward loyalty, these data suggest that personalist rulers increase repression to retain power. Increasing repression, unlike building institutions that facilitate cooptation, can be an immediate response to the loss of patronage resources because, as Wintrobe (1998:47) notes, ''repression is variable in the short as well as the long-run.'' Second, military regimes are the most ''repression-intensive'' of all regime types. Their coercive capacity makes them better-equipped to deal with potential sudden increases in opposition due to international coercion and poor economic performance. Moreover, if economic sanctions exacerbate protest, the military may renew its resolve to retain power with the aim of preserving public order (Ulfelder 2005). Single-party regimes increase the degree of their repressiveness as well, but less so than personalist regimes. Given the increases in redistributive spending, this data suggests that single-party regimes are less likely to rely on repression. Their levels of repression are on average the lowest, regardless of whether they are targeted by sanctions.[22]

To summarize, single-party and military regimes conform to the expectation that dictators under sanctions should increase both cooptation and repression

[19] India's economic sanctions against Nepal as a response to King Birendra's arms purchases from China in the late 1980s had a similar effect. The embargo hurt the population, and student riots rapidly spread. After violent clashes with the security forces a large pro-democratic demonstration in the capital lead the King to legalize political parties and a new transitional government was appointed. See a previous version of Marinov (2005).

[20] These data are from Goemans, Gleditsch, and Chiozza (2009).

[21] While we cannot make a causal argument with the descriptive data, we lag the measure of sanctions 1 year to mitigate against the possibility that the data simply show that repression causes sanctions.

[22] This point echoes Davenport's (2007) findings on repression.

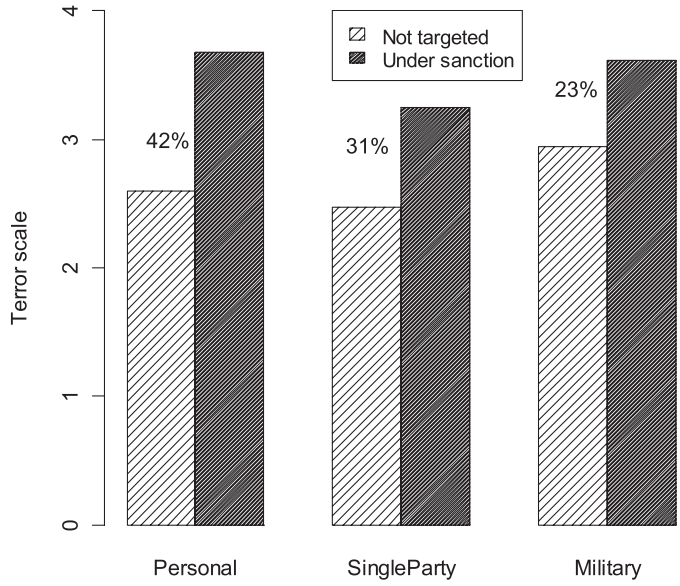

Fig 3. Averaged Repression, by Authoritarian Regime Type and Sanctions
(*Notes.* Numbers listed are the percent increase in repression level, under sanctions. The difference in means for each regime type is statistically different from zero at the .0001 level.)

(Gershenson and Grossman 2001; Kaempfer et al. 2004). Evidence from the descriptive data suggests that rulers in these regimes are unlikely to be destabilized by sanctions because they can adequately compensate for any sanction-induced political costs by diverting resources to repression and further cooptation. If these regimes can still collect revenue from alternative sources and increase expenditures and repression, the imposition of sanctions may be ineffective in de-stabilizing these dictators. In personalist regimes, however, international sanctions are associated with a decrease in patronage rents. Further, if sanctions force rulers in these regimes to increase repression, mobilizing the military may backfire because they typically do not fully control the army. Consequently, we expect economic sanctions to be effective in destabilizing authoritarian rulers only in personalist regimes.

Hypothesis: : *Sanctions are more likely to destabilize leaders in personalist regimes than other types of regimes.*

Data and Methods

Data on sanction episodes are taken from Marinov's (2005) replication data set, which updates the Hufbauer, Schott, and Elliott's (1990) data set in country-year format.[23] The variable *Sanction* can take two values: 1 if a country has been targeted by economic sanctions in a given year, 0 if not. We lag the sanctions variable 1 year. Moreover, we correct those instances for which lagged sanctions variable takes value 0 and it is just capturing the absence of a sanction on the previous leader, but then in the next current year the new leader is targeted by a sanction.

[23] The main results hold if we use a measure of economic sanctions from the TIES data set (''Threat and Imposition of Sanctions'' Cliff Morgan, Valentin Krustev, Navin Bapat: http://www.unc.edu/bapat/TIES.htm). Marinov's updated sanctions variable and the TIES variable for sanctions are correlated at 0.41.

The classification of authoritarian regime types is based on the typology developed by Geddes (1999, 2003) and which has been recently extended and updated by Wright (2008). We have recoded the data into three basic categories for our baseline models. First, we group the monarchic and personalist regimes into a category named ''personalist.'' Recent work on political institutions in authoritarian regimes shows that monarchies as well as personalist regimes share a common pool of socioeconomic determinants (Wright 2008). The second category is ''single party'' and includes pure single-party regimes and single-party hybrid regimes.[24] The third category includes military and military/personalist regimes. This categorization developed by Geddes captures the main distinctions between different types of regimes and has been used extensively in previous research (Milner and Kubota 2005; Lai and Slater 2006; Davenport 2007; Weeks 2008).

We control for the log GDP per capita, its annual growth rate, and the log of a country's population. These variables are taken from Maddison's (2006) data set, which has the most extensive time series economic data for authoritarian countries, particularly for years before 1990. *Growth* is the moving average of growth in the previous two years.[25] We also control for the possibility that sanctions are the result of a conflict or that they are applied to support foreign military intervention (Pape 1997). Hence, we include a dummy ''foreign war'' which indicates whether the country is a belligerent in an inter-state war. This variable is from the Correlates of War project.

Regarding institutions and regime history, we include a series of dummy variables that summarize the current institutions of the authoritarian regime as well as the previous regime existing in the country.[26] The variable *Previous Democracy*, which is intended to gauge the potential strength of the pro-democratic civil opposition, takes a value of 1 if the preceding regime was democratic and 0 otherwise. Similarly, the variable *Previous Colony* is coded 1 if the country was under colonial administration prior to the current regime, 0 otherwise. This variable controls for the possibility that many leaders who became heads of government after their anti-colonial activism might deter other elite members—particularly in the military—from challenging their position. Further, when state structure was still weak after independence, the process of elite substitution and government stability may have been extremely dependent on loyalty to the new ruler. We also include an index of religious fractionalization to control for the possibility that more diverse countries prove more unstable.[27] Finally, we include the yearly proportion of authoritarian regimes existing within the same geographical region to control for potential international trends in democratization and potential inter-regime cooperation. The aim of including this variable is to test whether ruler change and liberalization can be the result of a diffusion process, especially at the regional level (Gleditsch and Ward 2006). A dummy for the *Cold War* years takes a value of 1 for all the years between 1946 and 1990 and 0 otherwise.

It is also possible that sanctions' effect on the resources available for patronage may vary when the targeted country produces highly valued resources with concentrated supply sources and inelastic demand, such as oil.[28] This may be the main reason why sanctions failed to destabilize Hussein's regime in Iraq. Even in the event of sanctions, the inelasticity of demand for oil gives oil-importing

[24] These include single party/military, single party/personalist, and single party/military/personalist. See Geddes (2003) for details on the distinctions between different hybrid types.

[25] See Gasiorowski (1995).

[26] The variables described in this paragraph are updated from Przeworski, Alvarez, Antonio Cheibub, and Limongi's (2000) ACLP.

[27] Using ethnic fractionalization indices in lieu of religious fractionalization resulted in the same findings.

[28] In contrast, it was relatively easy for the United States to reassign sugar quotas to Brazil and Mexico when sugar imports from Trujillo's Dominican Republic and Cuba were restricted in 1960 and 1961.

countries a strong incentive to defect from a coalition imposing coercive restrictions.[29] We control for the presence of oil resources using Humphreys' (2005) measure of per capita oil reserves in a given year multiplied by the oil price index for that year.[30]

We use a binary dependent variable, *Ruler Exit*, which indicates whether a dictator loses power in a given year. This variable is coded 1 if the incumbent ruler is replaced that year, and 0 if the dictator remains in power in a given year. Leaders who died in power from natural causes are right-censored, and hence coded 0. In the second part of the analysis, we disaggregate *Ruler Exit* by establishing whether the ruler was replaced through regular or irregular means (Goemans et al. 2009). We use logistic regression to analyze the likelihood of autocratic failure, and multinomial logit to analyze the type of failure—whether the mode of exit was regular or irregular. To control for time dependence in the duration models, we include polynomial transformations of the duration of the leader-spell up to time t.[31] We report standard errors clustered on leader.

Because the coding of regime types and sanctions are by country-year, we use this as the unit of analysis. For some highly unstable countries, there are multiple leader-failures in a given year; however, we do not have data on sanctions directed at each specific leader in those years. Thus, using leader-year as the unit of analysis results in adding multiple failure observations to the data for a particular year, inflating the number of failure outcomes relative to the number of non-failure outcomes. Thus, our estimation of the country-data provides a more conservative estimate than analysis of leader-year data. When we analyze the leader-year data, the results are much stronger than those reported below. Henceforth, we discuss leader failure, but in reality our analysis addresses the probability of leader failure within a given year.

Empirical Analysis

Autocratic Survival and Foreign Pressure

The conditional nature of our hypotheses requires the use of interaction models. Therefore, we multiply the dummies created for each type of authoritarian regime by *Sanctions*. Table 1 reports the results of the duration models. The estimates reveal that the effect of international sanctions varies by the target country's authoritarian regime type.

In column 1, we report the baseline model without any interactions. The coefficient of the *Sanctions* dummy is small, negative, and indistinguishable from 0. This result is consistent with Lektzian and Souva's (2007) finding that economic sanctions are unlikely to be effective when targeting nondemocratic regimes. However, once we include the interaction between *Sanctions* and regime type,

[29] For example, the reliance of oil importing countries on Libyan oil exports may have pre-empted the imposition of comprehensive sanctions (including an oil embargo) against Muammar al-Gaddafi's regime in the mid 1990s after it refused to extradite the two agents allegedly involved in the Lockerbie airplane terrorist attack. Even while under international sanctions in the 1990s, Hussein's regime in Iraq was able to continue selling oil to countries such as Egypt, Turkey, Jordan, and Syria. The US Government Accountability Office (GAO) report revealed that Iraq illicitly exported 30,000–40,000 barrels per day through the Persian Gulf in May 2002 with the cooperation of Iran (GAO 2002). At the same time, 180,000–250,000 barrels per day were exported through Syria, and a further 40,000–80,000 barrels per day through Turkey. According to the Independent Inquiry Committee (IIC) into the UN Oil-for-Food Programme (OFFP), Hussein's regime earned over $11 billion from illicit oil sales from 1990 to 2003. An estimated $1.8 billion was earned from kickbacks and surcharges on OFFP contracts and sales. These rents accrued directly to Hussein's regime (unlike income from legal exports, which was controlled by the UN), enabling him to payoff his supporters and hold onto power until the 2003 invasion (*The Economist*, July 7, 2001, 45–46).

[30] We log per capita oil revenue to mute the influence of outliers. We also use the log of Ross' data on oil and gas rents in a robustness test (Ross 2008), with similar results.

[31] See Carter and Signorino (2007). Using cubic splines, as suggested by Beck, Katz, and Tucker (1998) yields similar results.

the results reveal why sanctions appear to be ineffective in the first column. In columns 2–7, the coefficient for sanctions[32] is positive and statistically significant, suggesting that sanctions destabilize rulers most dependent on patronage rents, namely, personalist autocrats. This result is consistent with our main hypothesis. In single-party and military regimes, the effect of sanctions is measured by adding the coefficients for the respective interaction term to the coefficient for *Sanctions*. For example, in column 2, the effect of sanctions in military regimes is given by: −1.33 + 0.759 = −0.571. This coefficient is statistically different from 0 at the 0.10 level, suggesting that sanctions have some positive effect on leadership survival in military regimes. The effect is much weaker and not significant for single-party regimes.

The effect of sanctions on personalist dictators' survival is stronger after introducing the interaction with oil rents (columns 3 and 5–8), and also after interacting regime type with past economic performance (columns 4–7).[33] The effect of sanctions in single-party regimes remains negligible, while the impact of sanctions on military leaders' duration is positive and significant in columns 4 and 8. In column 6, we exclude monarchies to ensure that the results are not driven by grouping monarchies with personalist regimes. In column 7, we include ''triple-threat'' regimes in the single-party category. Again, this does not alter the main result.

Finally, in column 8, we include an interaction of the regime type variables with the Cold War dummy as some regimes were receiving support from superpowers during the period 1945–1990, which helped stabilize their rule, especially, anti-communist military regimes. The results are in line with this expectation. Personalist regimes are shown to have been particularly unstable during the Cold War years. The inclusion of this interaction makes our main result stronger: the sanctions dummy gets significant at the maximum level, while the negative effect of sanctions on military leaders' likelihood of exit becomes significant at the 0.10 level.[34]

Table 2 reports the probabilities of leader exit estimated from the results in the second, fifth, and eighth models in Table 1. In all models, the likelihood that a personalist ruler will lose power more than doubles when economic sanctions are in place. In single-party regimes, sanctions decrease the likelihood of leader exit by <1%—a small and statistically insignificant difference. Sanctions decrease the likelihood of leadership turnover in military regimes by between 7% (models 2 and 5) and 13% (model 8). This difference is not statistically significant in model 2, but it is in models 5 and 8. This suggests that sanctions help stabilize military leaders, perhaps because these leaders have greater repressive capacity than other regimes or are better able to generate a ''rally around the flag'' effect.

In columns 1, 2, and 4, when we do not interact sanctions with oil, we find that oil rents reduce the risk of being unseated (although not significantly), a result consistent with the empirical literature on oil and autocratic stability (Brough and Kimenyi 1986; Ross 2001; Smith 2004; Gandhi and Przeworski 2006; Escribà-Folch 2007; Ulfelder 2007; Morrison 2009). One interpretation of this finding is that oil rents provide autocrats with abundant patronage resources with which they can buy support. The interaction between sanctions and oil rents in columns 3 and 5–8 are all negative but not statistically significant.[35]

[32] The reference category is *personalist* regimes, so the coefficient for *Sanctions* reflects the effect of sanctions in these regimes.

[33] The inclusion of this interaction is theoretically motivated. Thus, Geddes argues that ''some kinds of authoritarianism are more dependent on economic performance than others'' (2004:4). Economic crises tend to cause division within the regime ruling elite over how to respond to it. Military regimes are particularly vulnerable to factionalism as military officers place a higher value on the unity, hierarchy, discipline, and corporate interests of the ilitary than on retaining power. Disagreements among officers will prompt the military to go back to the barracks in order to preserve the unity and discipline of the armed forces.

[34] The coefficient for military rulers is in this case: 1.19–1.81 = −0.620.

[35] These results hold when we use an alternative measure of oil rents (Ross 2008).

Table 1. The Effect of Sanctions on Autocratic Survival (Logistic Regression)

Independent variables	*(1)*	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*	*(7)*	*(8)*
Sanction$_{t-1}$	−0.133 (0.222)	0.759† (0.432)	0.969* (0.454)	0.941* (0.440)	1.10* (0.459)	1.06* (0.472)	1.08* (0.462)	1.19** (0.460)
Sanction$_{t-1}$*Single party		−0.878 (0.536)	−1.02† (0.529)	−1.09* (0.548)	−1.19* (0.541)	−1.14* (0.549)	−1.13* (0.532)	−1.26* (0.538)
Sanction$_{t-1}$*Military		−1.33* (0.546)	−1.47** (0.567)	−1.57** (0.561)	−1.66** (0.575)	−1.60** (0.583)	−1.63** (0.570)	−1.81** (0.590)
Single party	0.188 (0.179)	0.278 (0.188)	0.286 (0.188)	0.350† (0.192)	0.352† (0.192)	0.144 (0.208)	0.295 (0.188)	0.927 (0.568)
Military	1.11** (0.231)	1.30** (0.247)	1.32** (0.249)	1.39** (0.259)	1.40** (0.260)	1.26** (0.262)	1.38** (0.256)	2.38** (0.675)
Log oil rents (pc)	−0.007 (0.043)	−0.011 (0.046)	0.012 (0.047)	−0.016 (0.044)	0.004 (0.046)	0.029 (0.054)	−0.0001 (0.045)	0.007 (0.047)
Sanction$_{t-1}$*Log oil rents			−0.128 (0.116)		−0.112 (0.112)	−0.170 (0.111)	−0.081 (0.108)	−0.141 (0.114)
Log(GDP pc)	−0.137 (0.109)	−0.142 (0.112)	−0.149 (0.114)	−0.125 (0.114)	−0.132 (0.116)	−0.061 (0.123)	−0.111 (0.114)	−0.137 (0.117)
Economic growth$_{t-1,t-2}$	−0.494 (1.38)	−0.324 (1.40)	−0.533 (1.39)	3.41 (2.33)	3.06 (2.33)	3.07 (2.45)	3.16 (2.30)	−0.728 (1.42)
Growth*Single party				−5.53† (3.21)	−5.32† (3.19)	−5.58† (3.27)	−4.94 (3.17)	
Growth*Military				−6.13† (3.24)	−5.83† (3.25)	−6.15† (3.36)	−5.70† (3.21)	
Log(population)	0.036 (0.054)	0.035 (0.056)	0.032 (0.056)	0.041 (0.056)	0.038 (0.056)	0.031 (0.057)	0.027 (0.055)	0.034 (0.056)
Dictatorships in region	−0.726† (0.372)	−0.738† (0.384)	−0.725† (0.386)	−0.648† (0.388)	−0.642† (0.390)	−0.518 (0.418)	−0.665† (0.376)	−0.695† (0.392)
Previous democracy	−0.421† (0.249)	−0.423† (0.249)	−0.413† (0.250)	−0.417† (0.250)	−0.409 (0.251)	−0.466† (0.251)	−0.406 (0.248)	−0.353 (0.251)
Previous colony	−0.546** (0.183)	−0.577** (0.184)	−0.586** (0.184)	−0.594** (0.185)	−0.600** (0.185)	−0.564** (0.191)	−0.534** (0.182)	−0.605** (0.185)
Religious diversity	0.029 (0.348)	0.044 (0.350)	0.016 (0.353)	0.031 (0.352)	0.008 (0.355)	−0.208 (0.355)	0.047 (0.355)	0.026 (0.352)
Cold War	0.245 (0.264)	0.279 (0.265)	0.268 (0.266)	0.260 (0.265)	0.251 (0.266)	0.164 (0.274)	0.282 (0.257)	0.885† (0.486)
Cold War*Single party								−0.702 (0.591)
Cold War*Military								−1.17† (0.713)
Foreign War	0.302 (0.399)	0.173 (0.420)	0.262 (0.401)	0.158 (0.422)	0.238 (0.404)	0.259 (0.409)	0.157 (0.391)	0.247 (0.402)
Time	−0.167** (0.047)	−0.162** (0.047)	−0.157** (0.047)	−0.155** (0.047)	−0.152** (0.047)	−0.200** (0.062)	−0.166** (0.046)	−0.157** (0.047)
Time^2	0.006* (0.002)	0.006* (0.002)	0.005* (0.002)	0.005* (0.002)	0.005* (0.002)	0.010* (0.004)	0.006* (0.002)	0.005* (0.002)
Time^3	−0.000† (0.000)	−0.000† (0.000)	−0.000 (0.000)	−0.000 (0.000)	−0.000 (0.000)	−0.000† (0.000)	−0.000† (0.000)	−0.000† (0.000)
Log likelihood	−716.585	−713.473	−712.830	−711.639	−711.152	−664.459	−736.201	−711.112
Observations	2,807	2,807	2,807	2,807	2,807	2,466	2,949	2,807
Sample	Baseline	Baseline	Baseline	Baseline	Baseline	No monarchies	Include triple-threat in single-party category	Baseline

(*Notes.* Dependent variable is Ruler Exit. Standard errors are clustered on leader. $^{\dagger}p < .10$; *$p < .05$; **$p < .01$.)

TABLE 2. The Predicted Effect of Sanctions on the Autocrat's Likelihood of Losing Power

Pr(*y* = *RulerExit*), *Sanctions* = *x* *OtherVars* = *mean/median*	*Personalist/Monarch*	*Single party*	*Military*
Column 2			
Not targeted	4.27%	6.07%	19.20%
Targeted by sanctions	9.29%	5.62%	12.19%
Difference	5.0%* (0.036)	−0.4% (0.017)	−7.0% (0.039)
Column 5			
Not targeted	4.28%	6.01%	19.06%
Targeted by sanctions	10.78%	5.31%	11.74%
Difference	6.2%* (0.035)	−0.7% (0.017)	−7.5%* (0.041)
Column 8			
Not targeted	4.19%	8.47%	36.80%
Targeted by sanctions	11.13%	7.57%	23.49%
Difference	7.01%* (0.038)	−0.9% (0.022)	−13.33%* (0.078)

(*Notes.* Probabilities obtained from results in columns 2, 5 and 8, Table 1. Standard errors are given in parentheses. The control variables are held constant at their sample mean/median, except for oil rents, growth, and the time variables, which are set to the mean within each regime type. *$p < .10$ [two-tailed test].)

The control variables yield results in line with our expectations and the existing literature.[36] Good economic performance lowers the risk of autocratic turnover although not significantly; and, as models 4–7 show, growth affects regimes in different ways. The positive effect on duration is only found in single party and, especially, in military regimes. This result is in line with Geddes' (2004) previous findings, according to which military regimes were shown to be more sensitive to economic downturns. The international context, captured by the regional proportion of authoritarian regimes, stabilizes dictators. Consistent with Geddes' (1999, 2003) research, we find that leaders in military regimes are more likely to fail, all else being equal, than leaders in other regime types. Last, dictators in regimes that were previously democracies or colonies are more stable. This finding suggests that past institutions affect the stability of autocratic leaders.

Further Tests

To check the robustness of these findings, we test two different types of models: a Cox proportional hazards model and a fixed-effects model. The Cox model assumes that the effect of a change in a particular covariate remains constant over time. However, violations of this proportionality assumption may bias parameter estimates, so we checked for the possibility of non-proportionality among the individual covariates and in a global test. Both tests indicated the presence of non-proportionality. Following Box-Steffensmeier, Reiter, and Zorn (2003), we include interactions between non-proportional covariates[37] and the logged square-root of time.[38] In column 2, we test a fixed-effects logit model with the aim of controlling not only for political-economic factors but also for the country-specific likelihood of ruler stability. This is the strategy pursued by

[36] We also tested models that excluded all the control variables listed in the lower panel of Table 1. These tests yielded even stronger results for our hypotheses than those reported in Table 1. We also tested models where we add controls for civil war and neighboring democracy. This latter control measures the percentage of neighboring countries with capitol cities within 2,000 km of the target country that are democracies.

[37] The chi-square values and (*p*-values) of the offending covariates are: *Log*(*GDPpc*) = 26.68 (0.000); *LogOilRents* = 13.30 (0.0003); *LogOilRents***Sanction* = 13.48 (0.0002); *PreviousDemocracy* = 5.80 (0.016). For the global test, $\chi^2 = 49.96$ (0.0001). We use the Brelow method for ties and report coefficients (not hazard ratios) with standard errors clustered on leader.

[38] The main results remain if we exclude all of these interaction terms except *Log*(*sqrt*(*Time*))**LogGDP*(*pc*).

Marinov (2005). In the fixed-effects model, we dropped variables that do not vary much over time. Finally, we test a model that adds controls for foreign aid dependency and trade to alleviate concerns that the main result for personalist regimes is driven by the higher dependency on foreign economic resources in these regimes. Table 3 reports the results of these models, revealing similar patterns as those reported in Table 1. None of these results are dependent on the inclusion or exclusion of the interaction between regime type and growth.

Modeling Selection

As Marinov (2005) emphasizes and Nooruddin (2002) shows, selection bias may arise in the study of sanctions for two reasons. First, senders may systematically target some regimes because they are more vulnerable to foreign pressure or because some regimes may be more repressive. Second, selection bias can occur if rulers self-select into sanctions or conflict episodes. The first mechanism is likely to depend on observable factors like political-economic conditions observed by the sender (and, consequently, by researchers). In the second case, though, self-selection may be unobservable to researchers because autocrats select on factors that only targeted rulers can actually observe, such as the resolve of the leader.

One way of dealing with selection is to estimate a two-stage Heckman model, which has the advantage of controlling for both observable factors that senders use to target dictators and the unobservable factors influencing leaders' self-selection into conflicts. We use a probit model in the first stage to estimate the probability of being under sanctions or not under sanctions.[39] The second-stage estimates the duration model and includes the inverse Mill's ratios computed from the first-stage regressions. Then, for each value ($j \in [Sanctions, NoSanctions]$) of the dependent variable in the first stage, we estimate the second-stage equation including the respective Mill's ratios. The coefficients obtained through this method are unbiased and allow us to calculate the predicted probability of losing power of each first-stage outcome ($\hat{p}(y_j = \text{RulerExit})$) for the whole sample and for each of the sanction settings of interest. Table 4 reports the mean values of the predicted probabilities of ruler exit using all observations and dividing the sample into personal and non-personal rulers. We also show the differences in means and the *t*-statistics from one-sided tests.

The probabilities in Table 4 confirm the findings from our naive models. The baseline sample mirrors the sample we have used throughout; in the expanded sample, we drop a number of variables in the selection equation (see the Appendix) to substantially increase the sample size. This does not affect the main results. Sanctions have little effect on rulers' duration when no interaction with the type of regime is considered; although the mean difference is significant in the model using the baseline sample, the difference is quite small—less than 1%. In personalist regimes, sanctions have a strong and positive effect of leaders' probability of losing power (over 4%). We have grouped rulers governing single-party and military regimes as their patterns were quite similar and to increase the number of observations. The selection-corrected results suggest that sanctions in these regimes are counterproductive, as they lengthen dictators' tenure.

[39] Results from the first-stage models are available in the Appendix. In a second specification aimed at maximizing sample size, we suppress some of the controls with less observations. The results of the first-stage equations suggest that personalist regimes are the least likely to be targeted by sanctions. To square this fact with the main finding of our analysis that sanctions are the most effective at destabilizing personalist rulers, it is important to note that not all sanctions are aimed at destabilizing the target country leader. Many sanctions may be symbolic, aimed at pleasing a domestic constituency in the sending country (Rowe 2001; Hufbauer, Schott, Elliott, and Oegg 2007). Other sanctions may have a much more narrow goal such as reducing the military capacity of the target country (Hufbauer et al. 2007).

TABLE 3. The Effect of Sanctions on Autocrats' Stability

Model	*Cox PH*	*Fixed-effects*	*Logit*
Independent variables	*(1)*	*(2)*	*(3)*
$Sanction_{t-1}$	1.29** (0.447)	1.23* (0.573)	1.03* (0.463)
$Sanction_{t-1}$*Single party	−1.15* (0.516)	−0.782 (0.681)	−0.275 (0.575)
$Sanction_{t-1}$*Military	−1.91** (0.535)	−1.40* (0.666)	−1.59** (0.584)
Single party	0.532* (0.217)	0.419 (0.337)	0.362 (0.243)
Military	1.59** (0.278)	1.49** (0.346)	1.59** (0.315)
Log oil rents (pc)	−0.344** (0.079)	−0.012 (0.131)	−0.035 (0.063)
$Sanction_{t-1}$*Log oil rents	0.394 (0.144)	−0.128 (0.145)	−0.052 (0.121)
Log(GDP pc)	1.16** (0.148)	1.50** (0.435)	−0.187 (0.171)
Economic $growth_{t-1,t-2}$	3.56† (2.10)	3.30 (3.16)	2.38 (3.18)
Growth*Single party	−4.48 (2.95)	−8.04† (4.22)	−3.11 (4.22)
Growth*Military	−8.34** (3.09)	−9.06* (4.53)	−5.05 (4.04)
Log(population)	−0.050 (0.062)	−0.425 (0.534)	0.0007 (0.089)
Dictatorships in region	−0.779* (0.322)	−1.94* (0.930)	−1.05* (0.526)
Previous democracy	−1.06** (0.330)		−0.557† (0.300)
Previous colony	−0.457* (0.205)		−0.427 (0.272)
Religious diversity	−0.161 (0.383)		−0.066 (0.440)
Cold War	0.198 (0.257)	0.240 (0.389)	0.422 (0.314)
Foreign War	0.456 (0.322)	0.361 (0.445)	0.241 (0.560)
Log(sqrt(Time))*LogGDP	−1.84** (0.126)		
Log(sqrt(Time))*PrevDem	0.966* (0.450)		
Log(sqrt(Time))*Oil rents	0.543** (0.084)		
Log(sqrt(Time))*OilRents*Sanction	−0.889* (0.366)		
Trade % GDP			−0.001 (0.003)
Aid per capita			−0.005 (0.004)
Log likelihood	−1181.309	−512.524	−509.044
Observations	2,805	2,079	1,961

(*Notes.* Dependent variable is Ruler Exit. Standard errors are given in parentheses. Time polynomials are included in columns 2 and 3 but not reported to save space. $^{\dagger}p < .10$; $*p < .05$; $**p < .01$.)

Autocratic Modes of Exit

So far, we have argued that sanctions weaken authoritarian regimes and alter the calculus of the elite within the regime by reducing the amount of patronage rents available to the ruler. Personalist rulers are most susceptible to this type of pressure because they are the most dependent on patronage resources to stay in power. Sanctions may also cause social unrest if domestic opposition mobilizes against

TABLE 4. Selection-Corrected Probabilities of Ruler Exit

	$\hat{p}(y_j = RulerExit)$			
	Not targeted	*Under Sanctions*	*Difference*	*t-Test*
Baseline sample (N = 2,742)				
All Observations	8.4%	7.9%	−0.004	2.25*
Personalist/Monarchy	5.1%	9.3%	0.042	16.67**
Single party/Military	10.3%	7.1%	−0.031	12.24**
Expanded sample (N = 3,590)				
All Observations	8.19%	8.17%	−0.0002	0.123
Personalist/Monarchy	4.9%	9.7%	0.048	20.20**
Single party/Military	9.9%	7.3%	0.026	10.68**

(*Notes.* Mean predicted probability of event reported in each cell of the first two columns. Expanded sample includes 'triple-threat' regimes in the single-party category. $*p < .05$; $**p < .01$.)

the regime in response to sanction-induced economic scarcity. Social unrest and economic insecurity may also trigger military intervention against the ruler, particularly if the ruler needs patronage resources to keep the army in the barracks. On the other hand, as Bratton and van de Walle contend, personalist rulers ''resist political openings for as long as possible and seek to manage the process of transition only after it has been forced on them'' (1997:83). This was the case of Hastings K. Banda (Malawi), who under donors' pressure and financial sanctions decided to hold a referendum on his regime and presidency in June 1993. Sixty-four percent voted in favor of multi-partyism. Thus, it is plausible that sanctions might affect personalist rulers' stability by increasing the likelihood of both a regular as well as an irregular transfer of power. This proposition parallels our earlier hypothesis that sanctions destabilize personalist' dictators because these regimes are most dependent on patronage rents to stay in power. To test this proposition, we use the variable *Exit Mode*, from the *Archigos* database (Goemans et al. 2009). This variable indicates whether the leader lost office as a result of (i) an irregular transfer (like a coup, a putsch, a revolt, or an assassination); (ii) a regular transfer (such as a resignation, pact transitions, regulated successions, and so on); or (iii) whether the leader was deposed by a foreign state or died while still in office. We use a model similar to those in Table 1 to test whether sanctions affect the type of exit, again mediated by regime type. Because the dependent variable takes multiple discrete values, we estimate multinomial logistic regressions, with duration polynomials to control for time dependence and standard errors clustered on leader.

Table 5 reports the results of two models, the first with the interaction between regime type and economic growth and the second with the interaction between regime type and the Cold War dummy. The general pattern we have seen up to this point persists: the coefficients for *Sanction* are positive, while the coefficients for the interaction between *Sanction* and regime type are negative.[40] The size of the coefficients for *Sanction* is larger (and significant) for regular than irregular types of exit.[41]

Table 6 summarizes the predicted probabilities of each mode of exit using the results from model 1 of Table 5. In personalist regimes, sanctions increase the likelihood of regular exit by more than 3% while increasing the likelihood of irregular exit by 3%. The sanction-induced absolute increase in the risk of irregular exit is much higher because the overall level of risk of irregular removal, regardless of sanctions, is much higher as well. Sanctions have almost no effect on the stability of single-party leaders. Military dictators, however, are less likely to exit (particularly an irregular exit) when under sanctions, though this difference is not statistically different from 0. Increased cooptation may allow military rulers to reduce the risk of elite splits that might be conducive to a peaceful transfer of power to civilians, and military rulers' relatively high capacity for repression may reduce the likelihood of irregular exits. Overall, the pattern in Table 6 is consistent with the proposition that sanctions are most likely to destabilize a personalist ruler by increasing the risk of both a regular and an irregular transfer of power.

The effect of some of the control variables change when we disaggregate the dependent variable into regular and irregular exits from power. For instance, development (GDP per capita) and population increase the likelihood of regular changes but they reduce the probability of putsches, coups, revolutions, and assassinations. Single-party regimes are more likely than personalist to have regular exit, but no more or less likely to suffer irregular exit. One of the functions of

[40] The results remain if we exclude monarchies or include ''triple-threat'' regimes in single-party category.

[41] When both interactions (between regime type and growth and Cold War) are added, the sanctions dummy reaches statistical significance in predicting irregular exits as well at the 0.10 level. These results are available from the authors.

TABLE 5. Dictators' Mode of Exit and Economic Sanctions (Multinomial Logit)

	PR (*Y* = *RegularExit*)		*PR* (*Y* = *IrregularExit*)	
Independent variables	*(1)*	*(2)*	*(1)*	*(2)*
Sanction_{t-1}	2.51** (0.879)	2.36** (0.874)	0.739 (0.527)	0.844 (0.534)
Sanction_{t-1}*Single party	−3.01** (0.935)	−2.82** (0.921)	−0.561 (0.661)	−0.638 (0.660)
Sanction_{t-1}*Military	−3.04** (1.00)	−2.96** (1.00)	−1.20† (0.664)	−1.36* (0.693)
Single party	1.87** (0.441)	2.36* (1.16)	−0.251 (0.253)	0.413 (0.732)
Military	2.54** (0.514)	3.83** (1.32)	1.20** (0.296)	1.94* (0.768)
Log oil rents (pc)	−0.058 (0.076)	−0.059 (0.079)	0.080 (0.065)	0.084 (0.066)
Sanction_{t-1}*Log oil rents	−0.097 (0.181)	−0.141 (0.192)	−0.097 (0.142)	−0.121 (0.143)
Log(GDP pc)	0.318† (0.175)	0.322† (0.179)	−0.558** (0.156)	−0.563** (0.158)
Economic $\text{growth}_{t-1,\ t-2}$	8.73** (3.05)	−1.85 (1.99)	2.30 (2.68)	0.002 (1.83)
Growth*Single party	−12.26** (3.82)		−4.69 (4.48)	
Growth*Military	−13.58* (5.37)		−3.09 (3.69)	
Log(population)	0.231** (0.084)	0.227** (0.083)	−0.192* (0.076)	−0.196* (0.077)
Dictatorships in region	−0.696 (0.603)	−0.837 (0.606)	−0.915† (0.490)	−0.953* (0.485)
Previous democracy	−1.10** (0.430)	−0.987* (0.435)	0.082 (0.301)	0.123 (0.302)
Previous colony	−0.904** (0.352)	−0.899** (0.348)	−0.370 (0.227)	−0.374† (0.228)
Religious diversity	−0.057 (0.635)	−0.053 (0.632)	−0.104 (0.445)	−0.093 (0.439)
Cold War	0.202 (0.415)	1.13 (1.12)	0.394 (0.345)	0.885† (0.522)
Cold War*Single party		−0.838 (1.17)		−0.785 (0.758)
Cold War*Military		−1.79 (1.39)		−0.860 (0.802)
Foreign War	−0.478 (0.858)	−0.433 (0.877)	0.681 (0.425)	0.695† (0.421)
Time	−0.230* (0.104)	−0.231* (0.104)	−0.164** (0.056)	−0.169** (0.056)
Time^2	0.013† (0.007)	0.013† (0.007)	0.007* (0.002)	0.007* (0.002)
Time^3	−0.0002† (0.000)	−0.000† (0.000)	−0.000† (0.000)	−0.000* (0.000)
Log likelihood	−817.712		−818.410	
Observations	2,807		2,807	

(*Notes.* Standard errors are given in parentheses. Errors are clustered on leader. †$p < .10$; *$p < .05$; **$p < .01$.)

TABLE 6. Predicted Probabilities of Regular and Irregular Exit by Regime Type and Sanction

	$\hat{p}(y_j = \text{(RegularExit)}$			$\hat{p}(y_j = \text{(IrregularExit)}$		
Sanction?	*Personalist*	*Single party*	*Military*	*Personalist*	*Single party*	*Military*
Model 1						
Not targeted	0.3%	2.6%	6.2%	3.3%	2.4%	11.2%
Under sanctions	4.0%	1.6%	4.3%	6.3%	2.9%	7.7%
Difference	3.7%*	−1.0%	−1.9%	2.9%	0.4%	−3.5%
	(0.031)	(0.008)	(0.028)	(0.027)	(0.012)	(0.030)

(*Notes.* Mean predicted probability of event reported in each cell. Standard errors are given in parentheses. The control variables are held constant at their sample mean/median, except for oil rents, growth, and the time variables, which are set to the mean within each regime type. *$p < .10$ [two-tailed test].)

single-party systems is to regulate leadership succession and access to power in order to facilitate cooperation among those already in power. This explains why regular changes are more frequent in single-party regimes than irregular exits. However, military dictators still face the highest risk of being replaced through both types of exits, again consistent with Geddes' (1999, 2003) findings for regime duration.

Concluding Remarks

Sanctions are one of the most widely used mechanisms of international pressure, and are often viewed as a potentially effective means to achieve foreign policy

goals. While the imposition of sanctions by governments and international organizations against authoritarian regimes has increased over time, we still know little about whether and how sanctions affect the stability of authoritarian rulers. This article is an attempt to fill this gap in our understanding of international economic coercion by thinking about how sanctions affect the economic resources necessary for dictators to stay in power. Our main contribution is to disaggregate authoritarian leaders to understand how sanctions affect stability in different types of regimes.

Our theoretical argument emphasizes that sanctions can reduce a dictator's ability to obtain patronage rents from external sources. Authoritarian regimes under sanctions suffer significant losses in revenue from foreign aid, taxes on international trade, and other forms of non-tax revenue. The detrimental effect of sanctions on sources of patronage is particularly acute in personalist dictatorships, which we argue have limited state capacity to compensate for this loss by increasing revenue collection from alternative streams. Further, personalist rulers are less capable of substituting cooptation for patronage. Personalist regimes typically have weak institutions, making cooptation less effective and promises of future rents less credible. Responding to a sanction-induced loss of patronage resources with repression may be counterproductive in these regimes because repression can increase the perception of threat on the part of elites in the supporting coalition, precisely when the benefits of such support are shrinking. Finally, because personalist rulers are the least likely to have full control over the army, mobilizing the military in response to domestic opposition entails substantial risks that the military will intervene against the incumbent.

In contrast, single-party and military regimes are able to increase their revenues even when targeted by sanctions, by shifting fiscal pressure from one stream to an alternative one (specifically, taxes on goods and services). This allows them to maintain cooptation while they increase repression to thwart the domestic opposition that reduced economic performance and international support may generate. Single-party regimes typically have strong parties and credible institutions which make cooptation more feasible, while military rulers can most effectively use repression. Departing from these facts, we hypothesized that sanctions would be effective in destabilizing personalist dictators, but would have little effect or possibly be counterproductive in single-party and military dictatorships.

Our results are generally consistent with the main hypothesis. We find that sanctions increase autocrats' likelihood of losing power in personalist regimes, but that sanctions are either ineffective or counterproductive in single-party and military regimes.[42] We also show that sanctions are less destabilizing in oil-producing countries, perhaps because demand for oil is highly inelastic in most sanction-sending countries, making them reluctant to disrupt energy supplies. When we examine the modes by which authoritarian leaders are deposed, we find that sanctions increase the likelihood of both irregular and regular exits from power in personalist regimes.

While the recent empirical literature on sanctions effectiveness suggests that sanctions are unlikely to destabilize dictators (Nooruddin 2002; Marinov 2005; Lektzian and Souva 2007), we offer a more nuanced account. We show that sanctions can destabilize some, but not all dictators. Our findings point toward two conclusions. First, if sanctions are to be effective in destabilizing dictators, they should strike at revenue sources the dictator needs to stay in power. This

[42] In unreported results, we find that military rulers are sensitive to arms imports, while rulers in other types of regimes generally are not (single-party rulers are in some specifications). While this finding merits further research, initially we interpret it to suggest that even though economic sanctions generally are ineffective in destabilizing military rulers, cutting military aid and exports may be effective in these cases. We thank an anonymous reviewer for raising this point.

suggestion is consistent with Kirshner's (1997) contention that we should look at how sanctions affect the central government's grip on power in the targeted country and its key support groups. Second, if sending countries want sanctions against dictators to be more than expressions of disapproval, senders should consider how the targeted dictator is likely to respond. Here our contribution is more novel. Our results suggest that many dictators, even when they incur a sanction-induced reduction in patronage resources, can compensate for this loss by increasing revenues from other streams or by substituting cooptation for patronage. In personalist regimes, however, when sanctions deplete the resources available for patronage, dictators cannot adequately adjust and are thus likely to face destabilizing pressure.

Appendix: Selection Equations for Sanctions

Independent variables	*(1)*	*(2)*
Log(oil rents)	0.044† (0.023)	
% Trade with democracies	−2.09** (0.189)	
Log(GDP pc)	0.250** (0.054)	0.240** (0.044)
Log(population)		0.295** (0.024)
Single party	0.244** (0.088)	0.468** (0.073)
Military	0.550** (0.110)	0.416** (0.097)
Cold War	−0.065 (0.172)	−0.682** (0.128)
Previous colony	−0.879** (0.095)	−0.251** (0.083)
Foreign war	0.926** (0.164)	0.435** (0.131)
Civil war	0.445** (0.103)	0.501** (0.088)
Democracies in the world	5.28** (0.753)	0.761 (0.524)
Sub-Saharan Africa	0.923** (0.316)	0.357 (0.220)
North Africa	1.63** (0.327)	0.677** (0.220)
Middle East	0.065 (0.337)	0.289 (0.214)
Central Asia	−0.114 (0.366)	0.113 (0.292)
Central America/Caribbean	1.06** (0.323)	0.955** (0.224)
East Asia	1.00** (0.320)	0.360 (0.224)
South America	0.840** (0.326)	0.163 (0.221)
Central/East Europe	0.501 (0.319)	0.413† (0.212)
Log likelihood	−996.879	−1359.72
Observations	2,742	3,590

(*Notes.* Dependent variable is Sanction. Standard errors are given in parentheses. †$p < .10$; *$p < .05$; **$p < .01$.)

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