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How Foreign Aid Can Foster Democratization in Authoritarian Regimes

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Donors in recent years have made some foreign aid conditional on progress toward democracy. This study investigates whether and how such conditionality works in practice. The promise of higher aid if the country democratizes only provides an incentive for democratization for political leaders who expect to remain in office after democratization occurs. I show that dictators with large distributional coalitions, who have a good chance of winning fair elections, tend to respond to aid by democratizing. In contrast, aid helps dictators with the smallest distributional coalitions hang on to power. I present a model that shows a dictator's decision calculus, given different a priori support coalitions and varying degrees of aid conditionality, and test the model implications with data from 190 authoritarian regimes in 101 countries from 1960 to 2002.

While most of the literature on foreign aid effectiveness focuses on how aid influences economic growth (Burnside and Dollar 2000; Easterly and Roodman 2004; Svensson 1999), recently scholars have turned their attention to the effect of aid on democratization (Djankov, Montalvo, and Reynal-Querol 2008; Dunning 2004; Goldsmith 2001; Knack 2004). Some critics of aid regimes argue that aid decreases the likelihood of democratization by contributing to the development of “bad” institutions (Brautigam and Knack 2004), or by increasing rents to those who control the state, allowing elites to exclude others from power, and thereby reducing representativeness (Djankov, Montalvo, and Reynal-Querol 2008).¹

To understand how aid affects the likelihood of democratization, I propose a theory to explain how aid enters a dictator's decision over whether or not to democratize and show empirically that aid is not always inimical to democratization. I exploit the fact that aid comes from international donors to argue that the probability of receiving future aid depends on the likelihood of a dictator surviving in power—either as a dictator or

by succeeding in competitive, multiparty elections should the dictator liberalize the regime. The basic intuition is that if future aid flows are in any way contingent on political liberalization, the likelihood of future aid declines as the dictator becomes less likely to survive political liberalization in power. Thus, dictators who stand little chance of surviving liberalization will not be swayed by promises of aid, but dictators who are likely to remain in power even if they liberalize may view the promise of future aid as an incentive to democratize. The effect of aid on democratization, therefore, will vary by factors that increase the chances of a dictator surviving political liberalization intact.

The next section briefly reviews the literature on foreign aid and democratization. The following section proposes a model of how aid enters a dictator's decision over democratization. Next, I discuss the data and methods used to test the hypotheses. I then present the results of empirical models used to test the effect of foreign aid on democratization. In the empirical section, I use two measures of the dependent variable (democratization) and multiple operationalizations

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¹Others argue that foreign aid props up dictators because Western donors value stability with dictator to democratic uncertainty (Brown 2001).

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of the key explanatory variables (aid and the size of the dictator's coalition). I conclude with a discussion of the results and implications for future research.

How Does Aid Hinder Democracy?

Consistent with critics of aid, some have found that aid is associated with decreases in institutional quality (Brautigam and Knack 2004) and democratization (Djankov, Montalvo, and Reynal-Querol 2008), or has relatively little effect (either way) on democratization or changes in political institutions (Knack 2004). There is also evidence that foreign aid increases government spending and reduces government revenue (Remmer 2004). However, others have found that aid is associated with higher levels of democracy (Goldsmith 2001), particularly during the post-Cold War period (Dunning 2004). The finding that aid reduces the likelihood of democratization (Djankov, Montalvo, and Reynal-Querol 2008; Knack 2004) has since been rehearsed in the popular press (Easterly 2006) and policy circles (Harford and Klein 2005; Islam and Coviello 2006; Kenny 2006).

One possible explanation for these contradictory findings is that researchers model the processes of democratization and institutional change in fundamentally different ways. The finding that aid is negatively associated with changes in institutional quality or democratization, for example, is the result of cross-section regressions that use the change in the democracy score from the beginning to the end of a period as the dependent variable and average foreign aid across all the years covered by each cross-section (Knack 2004). Alternatively, studies finding that aid is associated with higher levels of democracy (Dunning 2004; Goldsmith 2001) pool data across countries and over time.

The cross-section approach may be problematic for a couple of reasons. First, by taking the change in the democracy scores over several decades, the researcher necessarily averages out important variation. For example, the *changes* in Freedom House scores from 1975 to 2000 in El Salvador, Eritrea, Guatemala, Iran, Thailand, and Zimbabwe are all zero. According to a model that uses only cross-sectional data, the level of democracy in these countries did not change over those 25 years, yet these countries all experienced dramatic changes in the level of democracy—both increases as well as decreases. Because these changes are averaged out in the dependent variable used in a cross-section approach, we are unable to model this variation.

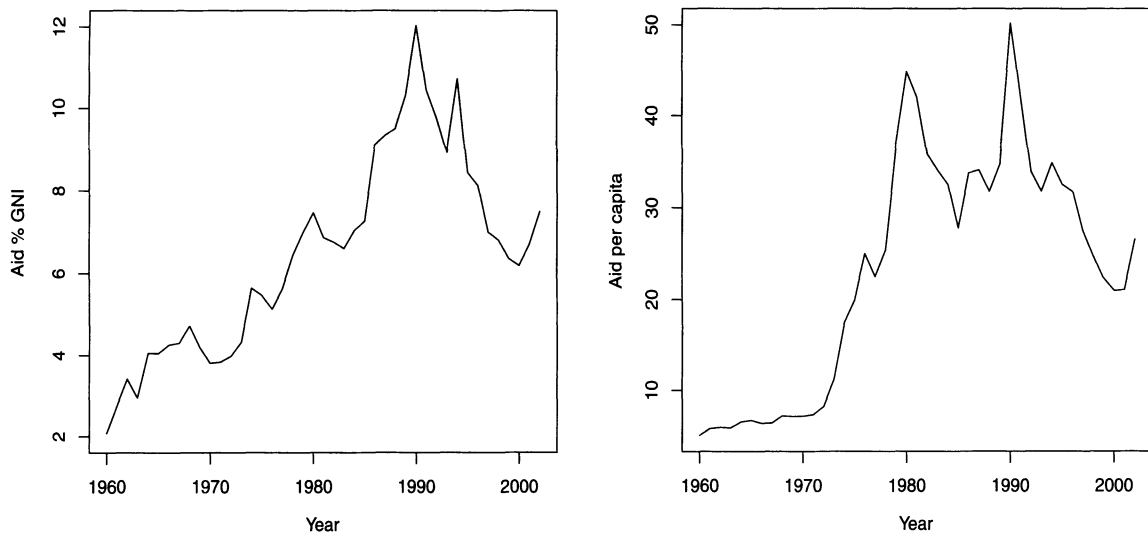
Second, the dependent variable in cross-section regressions may be extremely sensitive to the choice of *be-*

gin and *end* years. If a particular country undergoes a swift change in the level of democracy in a particular year and that year is chosen as the marker for measuring the dependent variable, then that initial year may not be a good measure of a process that we assume takes place over a period of time. For example, in 1975 Thailand had a brief interlude with democracy—sandwiched between two years of autocratic rule (1974 and 1976), while in 2000, Peru saw its first democratic elections after eight years of semiauthoritarian rule. If the chosen period were 1974 to 1999 (rather than 1975 to 2000), the observations of the dependent variable would differ dramatically for those countries.

In addition to the variation in the dependent variable over time, there is considerable variation over time in the flow of aid to developing countries. As Figure 1 shows, the end of the Cold War (1990) marked a watershed in the flow of foreign aid. Aid steadily increased from 1960 through 1990 and then abruptly declined after 1990, again increasing after 2000. We should exploit this variation in the data to understand the relationship between foreign aid and political development.

A second possibility that might explain the divergent findings for the aid-democracy relationship is that researchers may not have correctly specified the underlying causal mechanisms in their estimation equations. Most studies of aid and democracy cite a moral hazard problem as the reason why aid has a deleterious effect on the development of democratic institutions. Yet few carefully specify how the moral hazard caused by aid will influence the development of *political* institutions; nor do they directly test the implications of a political moral hazard.

Knack (2004), for example, argues that aid might reduce the need for taxation, thereby reducing the demand for democratic accountability (see Tilly 1990 and North 1990); or aid might increase the power of the president in democracies (Brautigam 2000); or aid might increase political instability by “making control of the government and aid receipts a more valuable prize”—reasoning similar to Grossman (2000). However, this research does not test these channels (taxation, presidential power, or coup attempts) of the aid curse, but simply assumes that one of the explanations must be true if a negative cross-section correlation between aid and democracy exists. Similarly, Djankov, Montalvo, and Reynal-Querol (2008) posit that aid hurts democracy because “[a] large amount of aid can reduce the incentives for democratic accountability. When revenues do not depend on the taxes raised from citizens and business, there is less incentive for accountability. At the same time corrupt government officials will try to perpetuate their rent-seeking activities by reducing the likelihood of losing power” (2008, 172). They test

FIGURE 1 Four Decades of Foreign Aid

Note: Aid averaged across all authoritarian regimes in each year.

neither “accountability” nor “rent-seeking,” but suggest one of these intervening variables can explain the relationship between foreign aid and the level of democracy. I next model a specific causal connection between foreign aid and democratization and then directly test the model implications empirically.²

A Theory of How Aid Helps Democratization

Central to the dictator’s democratization decision are two factors that affect his chance of survival as a dictator relative to his chances of remaining in power should he democratize: (1) the size of a dictator’s distributional coalition and (2) economic growth. Aid contributes to the incumbent leader’s utility under both democracy and dictatorship, but donors may reduce the amount of aid in the next period if the dictator chooses not to democratize. The promise of future aid, contingent on democratization, only provides an incentive for democratization for political leaders who expect to remain in office after democratization occurs. If dictators with large distribu-

tional coalitions are more likely to win power in a democratic election, then aid to dictators with larger coalitions provides an incentive to democratize while aid to dictators with small coalitions offers no such incentive.

In the next section I build these insights into a decision-theoretic model of the dictator’s decision over whether to democratize. The model assumes that, all else equal, the dictator prefers more aid to less. One justification for this assumption is that if foreign aid is fungible (Feyzioglu, Swaroop, and Zhu 1998), more aid allows incumbents to use aid monies to pay off political challengers, fund repression or electoral campaigns, or simply pocket aid for current or future personal consumption. Fungible aid may therefore increase the probability of remaining in power and increase the utility of being in office. Second, the model assumes that, all else equal, dictators prefer not to liberalize the polity. This does not mean they will never pursue democratic reforms. Indeed, the central intuition of the model suggests that how a dictator views a possible trade of aid for liberalization will depend on how costly political liberalization is in terms of the dictator’s probability of remaining in power. If democratizing reforms are likely to lead to the incumbent losing power, aid will not be persuasive. If, however, the dictator is likely to remain even after pursuing democratic reforms, then aid may provide sufficient incentive to liberalize.

A final assumption posits that donors can credibly offer aid that is contingent on democratizing. Recent empirical work shows that during the 1990s donor countries systematically decreased aid disbursements in response

²The present study concerns the effect of foreign aid on democratization, and not “good governance” or “state capacity.” Both of these latter concepts are relevant to political development and merit investigation. However, they are analytically distinct from democracy, as they do not directly concern how power within the state is maintained and contested. The subsequent theoretical framework looks only at how aid affects the utility of democrats and dictators in power and not how they govern.

to antidemocratic behavior (Hyde and Boulding 2007). Others have suggested that multilateral institutions, such as the World Bank, use resolutions by the U.N. Commission on Human Rights as political cover to reduce aid to countries that violate human rights (Lebovic and Voeten 2008). In addition, beginning in the late 1980s and early 1990s, nearly every multilateral aid agreement contained explicit language linking foreign aid disbursement to progress towards democracy (Crawford 2001). Together, these suggest that since the end of the Cold War, foreign aid can plausibly be viewed as at least marginally contingent on political development (Dunning 2004). To capture the fact that the degree of aid conditionality can vary—both over time and donor-recipient dyad—I model conditionality as a continuous variable: the share of aid to a recipient country that the donor cuts in response to antidemocratic behavior. While the donor-recipient relationship can be fruitfully modeled as a game of strategic interaction (Stone 2004), I abstract away from the interaction between two players and concentrate on the recipient dictator's utility function to highlight how the costs of political liberalization will affect the dictator's incentives to respond to the offer of contingent aid.³

Formalizing the Argument

Let Aid be the amount of aid a dictator receives in each period where $Aid \geq 0$; and let α represent the possible decrease in aid should the dictator refuse to democratize, where $0 \leq \alpha \leq 1$. By including α , we allow for the possibility that donors cut aid to dictators who do not liberalize. If α is close to one, then the amount of aid the donor gives to the dictator (when he does not liberalize) is only slightly less than the dictator's country would receive if the dictator democratizes; in this case conditionality is implemented with a soft touch. We can interpret a small α as a world where political conditionality induces a large decrease in aid when dictators do not liberalize; in this case conditionality has a hard bite.

$$U_{Democratize} = Aid P_d$$

$$U_{NotDemocratize} = \alpha Aid P_n + \epsilon$$

Let P_d be the probability that the dictator wins an election after liberalizing the political system—what we observe as democratization—and P_n be the probability that the dictator remains in power if he chooses *not*

³Because I model the degree of conditionality as an exogenous parameter, this assumes that the dictator has perfect information about the degree of conditionality in a strategic interaction game.

to democratize. As probabilities that an event occurs, $0 < P_d < 1$ and $0 < P_n < 1$. ϵ is the dictator's unobservable, intrinsic value of not democratizing.⁴ Given these utilities, the dictator democratizes when the following condition is met:⁵

$$Aid P_d - \alpha Aid P_n > \epsilon \quad (1)$$

When an incumbent has a large distributional coalition, denoted as W , during authoritarian rule, this translates into more name recognition and a larger patronage party, which both increase the probability of winning an election, P_d , if the dictator democratizes. Following the logic of the retrospective voter, recent economic growth, denoted as G , also increases the probability the incumbent (dictator) will win a democratic election, P_d . We can then write the probability of winning the election (P_d) if the dictator democratizes as a function of economic growth (G) and the size of the distributional coalition (W).⁶ (I will return to γ in a moment.)

$$P_d = W + \gamma G \quad (2)$$

Recent economic growth increases the probability of the dictator surviving into the next period, which captures the fact that growth is one of the best predictors of authoritarian survival (Gasiowski 1995; Haggard and Kaufman 1995). The size of the dictator's distributional coalition also increases the probability that the dictator survives, P_n (Geddes 1999; Smith 2005). While Geddes argues that single-party regimes are more likely to survive because elites in these regimes prefer losing a dispute over policy or succession within the party to the party losing power (a function of party size), Smith shows that it is the extent and reach of party institutions that help them persevere through external shocks and survive in power. The variation in duration among single-party regimes, Smith shows, can be explained by the strength of party institutionalization. Thus, it is plausible that a larger authoritarian distributional coalition makes for a more durable regime.⁷ Thus, the size of the distributional coalition, W ,

⁴ ϵ is treated as a continuous random variable following a (differentiable) cumulative distribution function.

⁵Adding a constant to either side of equation (1) to reflect other factors that contribute to the democratization constraint (e.g., foreign intervention or external price shock) does not change the result because, as shown below, any constant would drop from the comparative statics of the second-order partial derivatives.

⁶Adding a constant to (2) or (3) would again not change the result because ultimately we are interested in the second-order partial of W and G w.r.t. $\partial f / \partial Aid$. The specific functional forms in (2) and (3) are not necessary, but only included for ease of interpretation. I need only assume that $\frac{\partial P_d}{\partial W} > \frac{\partial P_n}{\partial W}$ and that $\frac{\partial P_d}{\partial G} < \frac{\partial P_n}{\partial G}$ for all values of G and W .

⁷For the comparative statics results to hold, I need only assume that $\frac{\partial P_d}{\partial W} > \frac{\partial P_n}{\partial W}$, in which case it could be true that $\frac{\partial P_n}{\partial W} < 0$.

should increase the probability of surviving in office in the next period if the dictator does not democratize (P_n). We can then write P_n as a function of economic growth (G) and the size of the distributional coalition (W). (I will return to ω in a moment.)

$$P_n = G + \omega W \quad (3)$$

By including $0 < \gamma < 1$ in equation (2), we assume that economic growth is more important for the survival of a dictator in an authoritarian regime than it is for the dictator turned democratic in a free and fair election. That is, if $0 < \gamma < 1$, then we assume that while growth increases the probability of winning a democratic election, it does so at a slower rate (parameterized by γ) than growth's contribution to the survival of the dictator if he chooses not to democratize. One justification for assuming $0 < \gamma < 1$ is that in a democracy, there may be other factors, beyond simply distributing the benefits of growth, such as perceived corruption, ideology, ethnicity, or a candidate's position on social issues, that weigh into the electoral calculus.

Using similar reasoning, including $0 < \omega < 1$ in the equation for P_n allows for the possibility that the size of the authoritarian distributional coalition matters more for a dictator-turned-democrat in an election than it does for the dictator's survival as a dictator. While dictators with broad-based coalitions are generally more stable than dictators with smaller distributional coalitions (cf. Smith 2005), we also know that dictators choose the level of institutionalization and the extent of their patronage network based on the mix of resources available for their survival and the threats they face. Thus, in some instances, it is not optimal for a dictator to build the largest possible distributional coalition (Gandhi and Przeworski 2006). In a democracy, the number of supporters translates into the probability of winning a competitive election. Simply put, having the support of the majority (or plurality) should matter more in a democratic election than it does for the survival of a dictator. The assumption here is that as ω decreases, the size of the distributional coalition (W) becomes less important for the survival of a dictator relative to its importance for the survival of a democrat.

Substituting for P_d and P_n yields the following constraint for democratization:

$$Aid(W + \gamma G) - \alpha Aid(G + \omega W) > \epsilon \quad (4)$$

Rearranging the terms to isolate W and G on the left side of the inequality⁸ yields the following comparative statics

⁸Substituting and rearranging the terms yields the following: $AidW + Aid\gamma G - \alpha AidG - \alpha Aid\omega W > \epsilon \Leftrightarrow W(Aid - \alpha\omega Aid) + G(\gamma Aid - \alpha Aid) > \epsilon$.

for the conditional effect of aid on democratization:

$$(\partial f/\partial Aid)/\partial W = 1 - (\alpha\omega) \quad (5)$$

$$(\partial f/\partial Aid)/\partial G = \gamma - \alpha \quad (6)$$

$$(\partial f/\partial Aid)/\partial W > 0 \Rightarrow 1 > \alpha\omega$$

$$(\partial f/\partial Aid)/\partial G < 0 \Rightarrow \alpha > \gamma$$

The second-order partial derivative of W with respect to $\partial f/\partial Aid$ is always positive because $0 < \alpha < 1$ and $0 < \omega < 1$. This suggests that as the size of the distributional coalition increases, aid is more likely to spur democratization. The sign of the second-order partial derivative of G with respect to $\partial f/\partial Aid$, however, depends on the relative values of α and γ . If $\alpha > \gamma$, then the relationship is negative, suggesting that as growth increases, aid is less likely to spur democratization. When α is greater than γ , the bite of conditionality (the decrease in foreign aid as a result of not democratizing) is small and/or the electoral benefits of growth for the dictator turned democratic are small relative to the benefits of growth as a surviving dictator. The model suggests that the conditional effect of growth on the aid-democratization relationship is negative when conditionality is relatively meaningless and the electoral benefits of growth are small relative to survival benefits of growth for a dictator. If these conditions accurately capture the state of aid relationships, then the model yields two testable hypotheses.⁹

H1: As the size of the authoritarian distributional coalition increases, aid increases the likelihood of democratization.

H2: As recent economic growth decreases, aid decreases the likelihood of democratization.

Data and Methods

To test the preceding hypotheses, I use an updated version of Geddes's (2003) data on authoritarian regimes

⁹Economic growth is not a strong determinant of survival in all types of authoritarian regimes (e.g., single-party regimes; see Smith 2005; Haggard and Kaufman 1996). In these cases, the assumption necessary for the second hypothesis, that $\alpha > \gamma$, may not be accurate. I relax this assumption by testing models where I exclude single-party regimes (those most immune to economic crises). As suggested by the model, I find that the empirical results for the second hypothesis get stronger when single-party regimes are excluded.

(Wright 2008).¹⁰ The original data were updated by including monarchies, post-Soviet regimes in Central Asia, and authoritarian regime-years for regimes that lasted fewer than three years. The updated data are grouped into four main types of authoritarian regimes: military, monarchy, personalist, and single party.

To measure coalition size, I use two variables. First, I construct an updated measure of Bueno de Mesquita and colleagues' (2003; hereafter, BDM) measure of the size of the winning coalition (*W*). This measure is a composite index based on a regime type variable from Banks's (1996) cross-national data set, and three variables from the Polity data (XRCOMP, XROPEN, and PARCOMP). BDM construct *W* by adding one point for not being a military regime (based on Banks's coding) and one point each for meeting thresholds for the three Polity variables. These latter three measure the competitiveness and openness of executive selection and whether stable parties compete at the national level. It is important to reiterate BDM's claim here that *W* is not simply a measure of democracy, as it incorporates elements of the Polity index that are not highly correlated with Polity's democracy score (Bueno de Mesquita et al. 2003; Gleditsch and Ward 1997).¹¹ The BDM data run through 1999 and contain some missingness due to uncoded regimes in the Banks data on military regimes. Therefore in the updated measure, I construct *W* using Geddes's (2003) identification of military regimes—which increases the number of observations of *W*. The updated *W* and BDM's *W* are correlated at 0.89. Subsequently, I report the results of models that test the interaction between the updated measure of *W* and *Aid*.¹²

As a second measure of coalition size, I use Geddes's (2003) classification of regime types. Single-party regimes tend to have large distributional coalitions because they frequently build large patronage parties, while military regimes typically have small distributional coalitions because they are better able to use force to remain in power. Personalist regimes (including monarchies), I posit, should have intermediate-sized distribu-

¹⁰The online supplementary material includes a list of all the country-years included in the sample (http://jgwright.bol.ucla.edu/index_files/Page357.htm) as well as the coding for authoritarian regime type.

¹¹*W* and the Polity score are correlated at about 0.38 in the samples used below. When I add POLITY2 lagged one year and the interaction between lagged POLITY2 and *Aid* as controls in Model 1, Table 2, the coefficient for the interaction between *W* and *Aid* increases from 0.044 ($p = .001$) to 0.068 ($p = .001$). This suggests that *W* is not simply a proxy for overall level of democracy. That is, it is not the case that aid is correlated with transition to democracy in more democratic authoritarian regimes.

¹²Using the original BDM data on *W* yields the same results.

TABLE 1 Regime Type and Coalition Size

Regime Type	Coalition Size Index	
	Separating Hybrids	Grouping Hybrids
Military-personal	-1.5	
Military	-1.2	-1.3
Monarchy	-.67	
Personal	-.37	-.47
Single party-military	.89	
Single party-personal	1.5	
Single party-military-personal	1.9	
Single party	3.2	2.6

BDM's <i>W</i> and Geddes's Regime Type			
W-BDM	Regime Types		
	Military	Personal	Single Party
(updated)			
0	287	0	0
1	182	844	169
2	129	375	1,269
3	2	115	278
4	0	1	39
Mean	0.83	1.25	2.09
(original)			
0	247	181	32
1	171	431	107
2	61	271	850
3	47	76	217
4	1	0	30
Mean	0.74	1.46	2.11

The weighted mean in the top panel is for each of the three main regime types: single party (grouped with the three single-party hybrids); personal (with monarchies); and military (with military-personalists). See footnote 14 for details on coalition size.

tional coalitions. Using the original data used to code regime type (Geddes 2003; Weeks 2008), I construct an index of coalition size using questions in the coding data that pertain to coalition size.¹³ The top panel of Table 1

¹³I use the answers to eight questions, where I add a point indicating larger coalition size for the first four questions and subtract a point indicating smaller coalition size for the latter four questions. This yields an index which takes on nine possible values (-4 to 4 inclusive). The questions are: (1) Was the party organized to fight for independence or lead some other mass social movement? (2) Does the party have functioning local-level organizations that do something reasonably important, such as distribute agricultural

lists the regime types and their respective coalition sizes. According to this measure, single-party regimes have the largest coalition size and military regimes the smallest.¹⁴ Thus the ordering from smallest to largest coalition is the following: *Military* < *Personalist* < *Single Party*. To capture the effect of aid in different types of authoritarian regimes, I include dummy variables for *Single Party* and *Military* regimes and then interact these with *Aid*. *Personalist* regimes (including monarchies) are the omitted category.

Table 1 also shows the distribution of W_{BDM} and $W_{updated}$ by regime type. The trichotomous measure of regime type (military, personalist [including monarch], and single party) maps well onto measures of W .¹⁵ The measure of W is only slightly less blunt than the delineation by regime type, as it takes on five ordinal values (0–4).

The regime type categories may miss some of the variation of W within regime type; that is, among single-party regimes or military regimes, the size of W may vary. The Brazilian military, for example, created a legislature and party system to foster electoral support through patronage in a manner very similar to what we see in single-party regimes. In response to the electoral defeat

credit or organize local elections? (3) Is party membership required for most government employment? (4) Does the party encompass members from more than one region, religion, ethnic group, or tribe (in heterogeneous societies)? (5) Has the leader refrained from creating a political party to support himself? (6) Does the leader lack the support of a party? (7) If there is a support party, is it limited to a few urban areas? (8) Was the successor to the first leader, or is the heir apparent, a member of the same family, clan, tribe, or minority ethnic group as the first leader? Most of the questions used to code regime type pertain to how the regime handles succession and are thus not used to measure coalition size.

¹⁴When I use the coalition index and interact it with measures of foreign aid, the interaction terms are positive and significant in all specifications. I report results using regime type as a proxy for coalition size to facilitate comparison with other research that uses regime type. Using a separate category for single-party hybrid regimes does not alter results, as the interaction between a separate hybrid dummy and aid yields roughly the same size coefficient as the interaction between pure single party and aid. In the supplementary material, I list all the single-party regimes (or single-party hybrid regimes) in the data set that democratized. All former single parties were competitive, winning at least the second largest share of seats in at least one lower house legislative election after the transition to democracy, and the vast majority (14 of 21) won at least once. Five of the parties still dominate their multiparty democracy, having won all the lower house legislative elections since the transition. In other types of dictatorships—particularly military regimes and monarchies—the dictator usually does not participate in democratic elections once the regime liberalizes. In fact, in the data used here, there is only one instance of a military dictator competing in a democratic election directly following a transition to democracy: General Roh Tae-Woo in South Korea (1986).

¹⁵The correlation between regime type and BDM's W is 0.58; between regime type and the updated measure of W , it is 0.64.

of the military-backed party (ARENA) in 1974, the military substantially increased public spending to win back electoral support. As Hunter points out, “the government’s pursuit of electoral victory entailed transforming ARENA into a ‘gigantic patronage machine’” (1997, 103). While the military-sponsored party, ARENA, met with a quick demise upon the advent of democratization, many of the former legislators from ARENA won seats in the ensuing democratic period (Hagiopan 1990). Therefore, some militaries build large patronage networks to help secure support for their own prerogatives in the postauthoritarian period. In this respect, some military regimes may have relatively large distributional coalitions similar to single-party regimes.

Conversely, other military regimes may have relatively small distributional coalitions, pursuing power largely through the use of force and securing power in the postmilitary regime through constitutional protections. For example, General Pinochet and the Chilean military did not build political support through a wide-ranging patronage system. Rather, to secure their interests in the postmilitary regime, they engineered constitutional changes to stack the electoral deck in favor of conservatives and secured continued military funding through a constitutional provision (Carey and Baldez 1999).¹⁶

The central focus of the study is to understand the effects of foreign aid, which can be measured in numerous ways (Clemens, Radalet, and Bhavnani 2004). Here, I employ two related aid measures that are most commonly used in large-N studies of foreign aid (Easterly, Levine, and Roodman 2004; Remmer 2004): *aid as a share of GNI* and *aid per capita*. Both of these measures are taken from the World Development Indicators (2006) and cover the years 1960–2002. This aid measure captures both loans and grants from all bilateral and multilateral donors, but does not include military aid. To ensure that causation runs from aid to democratization and not the other way around,¹⁷ I lag the aid variable. To ensure that I capture the current level of aid in a recipient country and not large increases or decreases in aid (or regression to the mean), I average aid over two years. The operationalization of aid therefore takes the following forms: $Aid \% GNI_{t-1,t-2}$ and $AidPerCapita_{t-1,t-2}$.

I measure democratization in two ways. First, I use regime transition (to democracy and to a subsequent

¹⁶The mean level of the updated W measure for the Chilean military regimes is much lower (0.12) than for the Brazilian regime (1.5).

¹⁷Donors sometimes reward countries that have recently democratized, and/or send aid, in the form of democracy assistance, to help conduct an election. In either of these scenarios, democratization would cause aid.

dictatorship). I employ a time-series, cross-section (TSCS) multinomial logit model with controls for time dependence.¹⁸ I model both the transition to a subsequent authoritarian regime and democratization as separate “failure” outcomes in a multinomial logit model, a similar strategy to that used by Gleditsch and Chuong (2004). A polity under the rule of a particular authoritarian regime, A_0 , at $t = 0$ can have one of three outcomes in the next period, $t = 1$: (1) transition to another autocracy, $A_{2,t=1}$, (2) remain under the rule of $A_{t=1}$, or (3) democratize, $D_{t=1}$. Previous work on democratization that models transitions between non-democracies and democracies (Alvarez et al. 2000; Epstein and O’Halloran 2006; Gandhi and Przeworski 2007) groups together the first two outcomes, failing to distinguish between authoritarian regime survival (A_1) and transition to another autocracy (A_2). Similarly, previous research on the authoritarian regime survival that focuses only on the survival of particular regimes (Brownlee 2005; Geddes 1999) groups together the first and the last outcomes, and does not distinguish between transition to a subsequent autocracy (A_2) and transition to democracy (D). A multinomial logit model estimates the likelihood of transitions to both a subsequent autocracy (coded -1) and a new democracy (coded 1), with regime survival (A) as the base category (coded 0). Because we are interested in democratization, I only report the results for transitions to a new democracy.¹⁹

As a robustness check, I also test models using a dependent variable from the Polity score. I calculate a binary indicator variable (*DPolity*) coded one for a three-point (or more) positive change in the Polity score from the previous year. This dependent variable is similar to that used by Smith (2004) and Morrison (2009) except that I only count positive changes in the Polity score. Substantively, this measure of democratization captures movement towards democracy that occurs within the

duration of an authoritarian regime. For example, *DPolity* captures the movement towards democracy in Brazil in 1974 when the military government opened the political system by accepting the successful election of opposition candidates in lower house and Senate elections.²⁰ Accordingly, the Polity score for the first 10 years of the regime is (-9) , increasing to (-4) in 1974. Similarly, in the former Zaire, Mobutu conceded to multiparty elections in 1992, though most observers contend they were meaningless in the sense that no challenger had any realistic probability of winning.²¹ While Mobutu liberalized the polity, this did not mark the end of his regime, but the advent of perhaps the most destructive period of his regime.²² This political opening is captured in the Polity scores: from 1965, when Mobutu gained control over most of the territory (of the then Congo), the Polity score is (-9) or (-8) until 1991, rising to (0) in 1992.

Finally, a binary measure marking the year of a transition to democracy does not capture the fact that democratization is a process that can occur over several years. The *DPolity* measure addresses this concern by marking multiyear transitions. For example, the transition to democracy in Croatia in 2000 is measured as an increase in the Polity score from -5 in 1998 to 1 in 1999 and a further increase to 7 in 2000. Thus *DPolity* marks both 1999 and 2000 as years of democratization while the binary measure of transition to democracy only scores a one in 2000. Measuring democracy in this manner thus picks up the variation in “democraticness” of a polity within the lifetime of an authoritarian regime, as well as a full-fledged transition to democracy, even if that transition takes place over several years.

The control variables I include are the following: log of GDP per capita as a measure of the level of development, recent economic growth, the mean level of neighboring countries’ Polity scores, and conflict.²³ I include *Log(GDPpc)* because the literature on political development has long argued that level of development may affect democratization (Alvarez et al. 2000; Burkhart and Lewis-Beck 1994; Lipset 1959), and there is some evidence that poor countries are more likely to receive aid

¹⁸Beck and Katz (1998) point out that the parametric duration models (e.g., Weibull) and the TSCS logit model are the same models, if one properly controls for time dependence in the logit estimation. To allow for time dependence to vary by regime type, I include both time polynomials—*Lifetime*, *Lifetime*², and *Lifetime*³ (Carter and Signorino 2008)—and their interaction with regime type or *W*. LR-tests consistently indicate that including the interactions between the time polynomials and regime type (or *W*) improves the fit of the model. This approach is similar to modeling nonproportional hazards in Cox duration models by including interaction between time and particular covariates (Box-Steffensmeier, Reiter, and Zorn 2003).

¹⁹The results for transition to a subsequent dictatorship are not reported but are available from the author. The largely null results for this part of the multinomial model suggest there is no clear and robust pattern for how aid affects the transition to a subsequent dictatorship.

²⁰See Hunter (1997, 37) and Skidmore (1988, 173).

²¹Schatzberg writes of political liberalization: “[s]eemingly overnight, hundreds of political parties appeared (some with regime financing). . . . The opposition, however, remained largely fragmented. Many oppositionists could not resist the regime’s blandishments and rallied to it—for a price” (1997, 74).

²²Mobutu was forced from power (in Kinshasa) in 1997.

²³*Log(GDPpc)* and *Growth* are from Maddison (2006), and *Conflict* is from Gleditsch et al. 2002.

than rich countries.²⁴ Poor economic growth is one of the leading causes of regime collapse (Gasiowski 1995; Geddes 1999), and recent growth may be correlated with aid receipts. To ensure that causation runs in the right direction and that I capture short-term growth outcomes and not regression to the mean dynamics, I include lagged growth averaged over the past two years: $Growth_{t-1,t-2}$. There is a growing literature suggesting that the diffusion of democracy and linkages with democracies can spur the process of democratization (Gleditsch and Ward 2006). To control for the possibility that the foreign aid may simply be picking up the effect of the global diffusion of democracy, I include *Neighbor Polity*, which is the mean value of the Polity score in countries with capitol cities within 2,000 km of the target country's capitol.²⁵ Finally, we know that some types of regimes are more prone to conflict than others (Weeks 2008) and that conflict may destabilize authoritarian regimes, so I include *Conflict*, lagged one year, to ensure that regime types are not simply a proxy for conflict.²⁶

To address concerns of omitted variable bias, it would be ideal to include country fixed effects. However, there are many countries in the sample that do not experience a transition to democracy. Including fixed effects would entail dropping these countries from the sample because there is no variation in the dependent variable for those countries. Dropping these observations would induce severe sample selection bias by examining only countries with observed transitions to democracy. As a next-best approach, we can include random effects (RE) in the model.²⁷ In unreported RE models, the main results remain. However, I do not report these results because likelihood ratio tests indicate that the share of total error variance due to unit effects is not statistically different from zero. In the final empirical section, I address endogeneity concerns using two-stage least squares models

²⁴Alesina and Dollar (2000) argue that the evidence that bilateral donors give to poorer countries can be accounted for by the relative income of donors' respective colonies.

²⁵I thank Xun Cao for sharing distance data. Using 1,000 km or 3,000 km does not alter the results.

²⁶*Conflict* is an ordinal variable that delineates three levels of conflict intensity: minor conflict (<25 deaths/year), intermediate conflict (<1,000 deaths/year), and war (>1,000 deaths/year). While this variable is largely insignificant in estimating the probability of transition to democracy—what I report below—it is an important and highly significant control for estimating the probability of transition to a subsequent dictatorship—not reported.

²⁷The results of RE models are reported in online supplementary material. Including region dummies does not alter the results reported in Table 2.

with instruments for aid and by lagging the aid variable further back in time.

Results

Table 2 reports the main results. The first four columns report models using W as the measure of coalition size; the latter four columns use regime type. Odd-numbered columns exclude the interaction between *Aid* and *Growth*, while even-numbered columns include this variable. In the first four columns, the interaction between W and *Aid* is positive and statistically different from zero, suggesting that foreign aid's effect on democratization becomes more positive as coalition size increases. In the latter four columns the coefficients for the interaction between *Military* and *Aid* is negative and significant, while the interaction between *Single party* and *Aid* is positive and significant. The coefficient for *Aid* in these models estimates the effect of aid on democratization in personalist regimes (the omitted regime category) and is positive. The bottom panel of Table 2 reports the linear combination of the coefficients for *Aid* and the interaction with regime type, which can be interpreted as the effect of aid on democratization in those regimes. The coefficients for $\beta_{Aid|SingleParty}$ ²⁸ are all positive and statistically significant at conventional levels, suggesting that aid to single-party regimes increases the likelihood of democratization. The coefficients for $\beta_{Aid|Military}$ are negative and statistically significant in all specifications, suggesting that aid to military regimes decreases the probability of democratization. The pattern revealed in the data indicates that the likelihood of democratization differs by regime type: $P(Democracy)|Aid \Rightarrow SingleParty > P(Democracy)|Aid \Rightarrow Personalist > P(Democracy)|Aid \Rightarrow Military$. The evidence in this table for coalition size (measured as either W or regime type) and its interaction with *Aid* is consistent with Hypothesis 1, suggesting that foreign aid is more likely to foster democratization, the larger the incumbent regime's coalition size.

Turning to the results for the interaction between *Aid* and *Growth*, the coefficients for this term are negative in all four (even-numbered) models and statistically significant in three of the four.²⁹ This negative coefficient suggests that as economic growth increases

²⁸For ease of interpretation, I will take $\beta_{Aid|SingleParty}$ to mean $\beta_{Aid} + \beta_{Aid*SingleParty}$.

²⁹The coefficient for this interaction term is statistically significant in column 8 (unreported) if we exclude decade dummies.

TABLE 2 Aid and Transition to Democracy, by Regime Type

	Aid % GNI		Aid per Capita		Aid % GNI		Aid per Capita	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Aid	-0.042 (0.04)	-0.068 (0.05)	-0.011 (0.01)	-0.014 (0.01)	0.026** (0.01)	0.016+ (0.01)	0.007** (0.00)	0.008** (0.00)
W	-0.501** (0.18)	-0.485** (0.15)	-0.331 (0.22)	-0.295 (0.23)				
W * Aid	0.034+ (0.02)	0.042* (0.02)	0.011+ (0.01)	0.012* (0.00)				
Growth * Aid		-0.256+ (0.15)		-0.108* (0.05)		-0.285** (0.10)		-0.062 (0.05)
Single party * Aid					0.038** (0.01)	0.042** (0.01)	0.022** (0.00)	0.021** (0.00)
Military * Aid					-0.134** (0.02)	-0.136** (0.02)	-0.034** (0.00)	-0.036** (0.01)
Single party					-2.503** (0.56)	-2.649** (0.58)	-1.577* (0.69)	-1.826* (0.81)
Military					1.881** (0.37)	1.775** (0.44)	1.363+ (0.71)	1.210 (0.79)
Neighbor polity	0.147* (0.07)	0.141* (0.07)	0.128** (0.05)	0.126** (0.05)	0.137** (0.04)	0.133** (0.04)	0.149** (0.03)	0.151** (0.03)
Conflict	0.087 (0.24)	0.084 (0.23)	0.039 (0.24)	0.042 (0.23)	-0.012 (0.35)	-0.023 (0.34)	-0.113 (0.34)	-0.109 (0.34)
Log(GDPpc)	0.032 (0.08)	-0.011 (0.09)	-0.002 (0.21)	0.009 (0.21)	-0.289* (0.12)	-0.307* (0.13)	-0.289 (0.21)	-0.289 (0.21)
Growth	-6.178** (1.05)	-4.118+ (2.25)	-5.794** (1.72)	-3.292 (2.93)	-9.543* (4.51)	-7.659 (5.76)	-8.505+ (4.63)	-7.195 (5.49)
Log likelihood	-496.9	-495.5	-560.1	-559.2	-470.2	-469.0	-538.3	-537.7
Observations	2,435	2,435	2,788	2,788	2,436	2,436	2,808	2,808
$\beta_{Aid} + \beta_{Single\ Party * Aid}$					0.065** (0.002)	0.058** (0.003)	0.029** (0.000)	0.029** (0.000)
$\beta_{Aid} + \beta_{Military * Aid}$					-0.108** (0.014)	-0.120** (0.011)	-0.027** (0.012)	-0.028** (0.005)

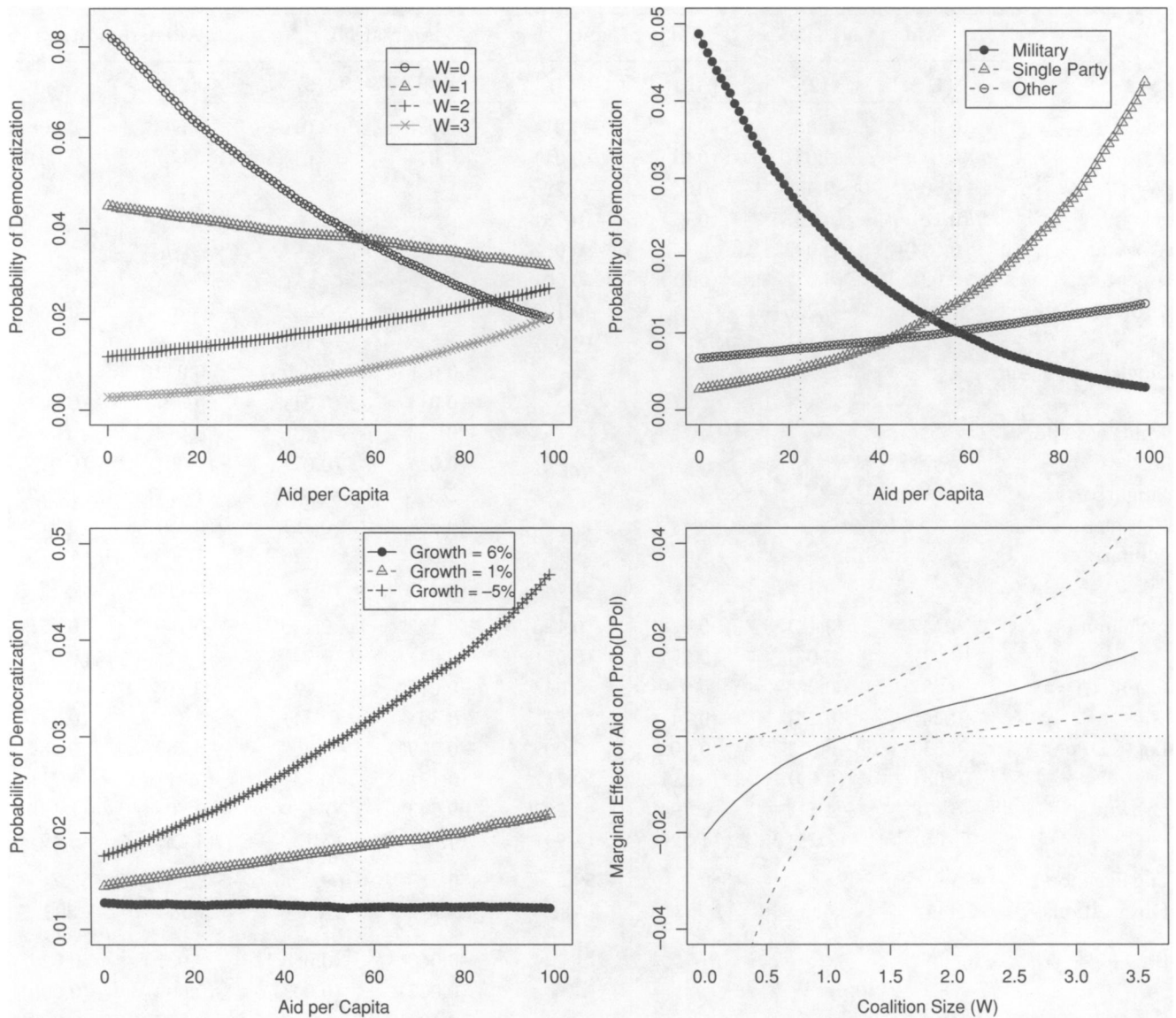
+ $p < 0.10$; * $p < 0.05$; ** $p < 0.01$; Multinomial logit with standard errors clustered on regime; only results for democratization outcome reported. Time polynomials, the interactions between time polynomials and W (or regime types), and decade dummies included in all models, but not reported. Aid is the moving average of aid over the last two periods.

in the recipient regime, aid is less likely to be associated with democratization, consistent with Hypothesis 2. Recall that the measure of *Growth* is the lagged, two-year moving average of economic growth, which means that it is the recent growth record of the autocratic regime that conditions the effect of aid on democratization. As suggested earlier, one reason for this relationship may be that as dictators successfully grow their economies they face less internal pressure for democratization and thus are less likely to succumb to external pressure, in the form of aid conditionality, to democratize.

To understand the substantive effect of coalition size on the aid-democratization relationship, the upper panels of Figure 2 plot the simulated predicted value of the likelihood of democratization across a range of aid levels, for each value of W (left panel) and for each of the regime types (right panel).³⁰ The upper-left panel illustrates how

³⁰ Simulations are the median predicted probability of democratization ($DV = 1$). Simulations set all continuous variables at their mean values and set conflict and all decade dummies to zero (indicating the time period is the 1990s). For each value of W and for each regime type, the duration polynomials and their interactions with W (or regime type) are set at the mean level for that

FIGURE 2 Foreign Aid and Democratization



Notes: Upper-left panel: foreign aid and democratization by coalition size (model 2.4, footnote 30). Upper-right panel: foreign aid and democratization by regime type (model 2.8, footnote 30). Lower-left panel: foreign aid and democratization, by growth (model 2.4, footnote 30). Lower-right panel: marginal effect of a two standard deviation increase in foreign per capita on the probability of democratization (DPol), by coalition size (model 4.4, footnote 31).

foreign aid decreases the likelihood of democratization in regimes with small coalitions ($W = 0$ and $W = 1$), while aid increases the prospects of democratization in regimes with large coalitions ($W = 2$ and $W = 3$). Increasing aid from zero to two standard deviations above zero in

particular value. This allows the simulations to vary the duration effects on survival by coalition size. Vertical lines are the mean aid value and the mean plus one standard deviation (Tomz, Wittenberg, and King 2000).

large coalition regimes ($W = 3$) more than quadruples the likelihood of democratization, from 0.2% to 0.9%. These regimes, overall, have a lower probability of transitioning to democracy, but aid substantially increases these prospects. Conversely, while small coalition regimes (mostly military regimes) are the most likely to transition to democracy, increasing aid diminishes this prospect. This same increase in foreign aid (from zero to \$57 per capita) decreases the likelihood of democratization by more than half—from 8.3% to 3.7%.

The upper-right panel shows how aid affects democratization, by regime type. In military regimes, there is a clear negative relationship between aid and the likelihood of democratization. In single-party regimes, however, this relationship is reversed. A two standard deviation increase in aid in these regimes increases the prospects of democratization from 0.3% to 1.4%. Again, democratization is a low-likelihood event in these regimes, but foreign aid substantially increases its chances. These findings are consistent with the theory outlined above. However, given the striking negative effect of aid on democratization in military regimes, a further interpretation is that military regimes are likely to use aid to repress democratic opposition.

The effect of aid on democratization also varies by the level of recipient country growth, as shown in the lower-left panel.³¹ In regimes with a recent record of strong growth, aid has no effect on the likelihood of democratization: the line for *Growth* = 6% is slightly negative, but not statistically different from zero (not shown). In countries experiencing poor growth (*Growth* = -5%), however, aid nearly doubles the likelihood of democratization, increasing it from 1.7% to 3.1%. This evidence is consistent with the second hypothesis and suggests that donors may have the most leverage when authoritarian regimes experience poor growth.

Table 3 uses *DPolity* as the dependent variable. Recall that this is a binary variable that indicates whether there has been an increase of three points or more in the Polity score from the previous year. These models all include the lagged value of the Polity score, but all the results hold when excluding this variable. These results mirror those reported in the previous table. The coefficient for the interaction between *Aid* and *W* in the first four columns is positive and significant; the same is true for the coefficients for the interactions between *Single party* and *Aid*, while those for *Military* and *Aid* are negative and significant. Again, the linear combinations of *Aid* and its interaction with regime type reported in the bottom panel are all statistically significant and in the expected direction. Aid in military regimes reduces the likelihood of democratization, while aid in single-party regimes has the opposite effect. The lower-right panel of Figure 2 depicts the marginal effect of a two standard deviation increase in aid per capita on the likelihood of movement towards democratization (*DPolity*), by coalition size (*W*). At very low levels of *W*, this increase in foreign aid actually decreases the likelihood of political liberalization. In contrast, when *W* is greater than two, this aid increase has

a positive and statistically significant effect on the likelihood of movement towards democracy. These results indicate that the main finding is robust to an alternative specification of the dependent variable. The results for the interaction between *Aid* and *Growth* also largely confirm those reported earlier. In three of the four models, this coefficient is negative and statistically significant.

Aid and Democratization During and After the Cold War

Dunning (2004) shows that the positive effect of aid on democracy in Africa only occurs after 1986 because the threat of Western donors revoking aid was credible only during that period. Client states knew that during the Cold War donors would not rescind aid because the other superpower bloc would simply fill the gap. The theory proposed here is based on the likelihood of future aid, which, I argue, is determined by the domestic politics of the recipient country. The difference between the Cold War and the post-Cold War periods should be captured in the model parameter which reflects the stringency of aid conditionality. If conditionality has more bite during the post-Cold War period, this means that α is smaller and the main results for $\partial f / \partial Aid / \partial W$ should be stronger. Recall that the model predicts that as the size of the dictator's support coalition increases, the effect of aid on the likelihood of democratization increases:

$$(\partial f / \partial Aid) / \partial W > 0 \Rightarrow 1 > \alpha \omega \quad (7)$$

As conditionality increases during the post-Cold War period, α decreases and $(\partial f / \partial Aid) / \partial W$ increases. Modeling how the conditional effect of coalition size on the aid-democracy relationship varies during and after the Cold War period, therefore, enables us to test the theory as we vary the conditionality constraint, α .³² This yields the following hypothesis:

H3: The size of the dictator's support coalition (*W*) should have a larger effect on the aid-democratization relationship during the post-Cold War period than during the previous period.

³²An alternative way to examine variation in conditionality would be to exclude particular country-years that are egregious violations of the conditionality assumption (e.g., Egypt after the Camp David Accords and Pakistan; Bearce and Tirone 2008). I tested models that exclude Egypt and Pakistan from the data and find that the results are almost exactly the same. The reason is that Egypt never democratizes (excluding Egypt only drops zero values for the dependent variable), and Pakistan is coded as a small coalition military regime where the empirical results suggest that aid decreases the likelihood of democratization.

³¹See previous footnote. Simulations based on model 2.4. *W* set to the sample mean: 1.65.

TABLE 3 Aid and a Change in Polity

	Aid % GNI		Aid per Capita		Aid % GNI		Aid per Capita	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Polity _{t-1}	0.036 (0.06)	0.036 (0.06)	0.035 (0.04)	0.034 (0.05)	-0.015 (0.02)	-0.003 (0.03)	0.006 (0.02)	0.016 (0.02)
Aid	-0.008 (0.02)	-0.011 (0.02)	-0.004 (0.01)	-0.005 (0.01)	0.023** (0.00)	0.018** (0.00)	0.006** (0.00)	0.006** (0.00)
W	-1.117* (0.44)	-1.121* (0.44)	-1.137** (0.34)	-1.134** (0.35)				
W * Aid	0.017** (0.01)	0.018** (0.01)	0.007* (0.00)	0.007* (0.00)				
Growth * Aid		-0.071** (0.02)		-0.073** (0.01)		-0.060 (0.08)		-0.051+ (0.03)
Single party * Aid					0.014** (0.00)	0.018** (0.00)	0.009** (0.00)	0.008** (0.00)
Military * Aid					-0.060** (0.00)	-0.058** (0.00)	-0.020** (0.00)	-0.022** (0.00)
Single party					0.282 (0.19)	0.235 (0.20)	-0.151 (0.21)	-0.130 (0.19)
Military					1.493** (0.19)	1.476** (0.15)	1.434** (0.27)	1.477** (0.19)
Neighbor polity	0.085* (0.04)	0.084* (0.04)	0.065** (0.01)	0.066** (0.01)	0.097** (0.02)	0.115** (0.03)	0.082** (0.03)	0.103** (0.03)
Conflict	0.212** (0.07)	0.214** (0.07)	0.168 (0.10)	0.170+ (0.10)	0.176 (0.17)	0.159 (0.16)	0.112 (0.21)	0.107 (0.22)
Log(GDPpc)	-0.185 (0.18)	-0.189 (0.18)	-0.222 (0.22)	-0.219 (0.22)	-0.441** (0.05)	-0.533** (0.04)	-0.466** (0.12)	-0.537** (0.07)
Growth	-6.676** (0.85)	-6.034** (1.05)	-6.133** (1.87)	-4.450* (2.03)	-7.906** (2.40)	-6.631** (2.40)	-6.648+ (3.46)	-4.977 (3.50)
Log likelihood	-389.978	-389.828	-417.778	-416.912	-382.916	-388.278	-414.115	-418.242
Observations	2,419	2,419	2,762	2,762	2,420	2,420	2,765	2,765
$\beta_{Aid} + \beta_{SingleParty * Aid}$					0.037** (0.000)	0.037** (0.000)	0.015** (0.000)	0.014** (0.000)
$\beta_{Aid} + \beta_{Military * Aid}$					-0.037** (0.000)	-0.039** (0.003)	-0.014** (0.000)	-0.015** (0.000)

+ p < 0.10; *p < 0.05; **p < 0.01; Dependent variable is a binary indicator for whether the polity score increased by at least three points from the previous year. Logit with standard errors clustered on regime. Time polynomials, the interactions between time polynomials and W (or regime types), and decade dummies included in all models, but not reported. Aid is the moving average of aid over the last two periods.

To test this hypothesis, I use a model similar to that in Table 2 with *W* as the measure of coalition size. First, I log the aid variable to blunt the effect of any potential outliers. I then replace the decade dummies with a *Cold War* dummy variable, which is coded one for every year from 1960 to 1986, inclusive. As Dunning (2004) argues, the 1987 breakpoint should capture the fact that the Soviet Union had largely ended its financial support to client

states in the developing world by the mid-1980s.³³ These changes to the main specification are reported in the odd-numbered columns. Logging aid and including the *Cold War* dummy does not change the results.

³³The results remain substantively the same when I use 1989 or 1990 as the breakpoint.

To test whether the interaction term between *Aid* and *W* varies from the Cold War period to the post-Cold War period, I include a triple-interaction term ($ColdWar * W * Aid$) and the constituent double interactions ($ColdWar * W$ and $ColdWar * Aid$; Brambor, Clark, and Golder 2006). These models are reported in the even-numbered columns. First, note that the interaction between *W* and *Aid* is positive and statistically significant in all four models. We can interpret this coefficient as the effect of *Aid* conditional on *W* in the post-Cold War period ($ColdWar = 0$). This suggests that coalition size positively conditions the effect of aid on the likelihood of democratization during this period. Adding the coefficient for the triple-interaction term to the interaction between *Aid* and *W* provides an estimate of the effect of *Aid* conditional on *W* during the Cold War period: $\beta_{W*Aid} + \beta_{ColdWar*W*Aid}$. The linear combination of these two coefficients, given in the bottom panel, is negative in three of the four models. This suggests that, in contrast to the post-Cold War period, increasing coalition size may have actually lessened the chances that aid would foster democratization during the Cold War period.

Another way to interpret these results is to simply add the appropriate coefficients to isolate the marginal effect of aid on democratization under various conditions. These are reported in the bottom panel of Table 4. For example, if we add $\beta_{Aid} + \beta_{Aid*W} * 1 + \beta_{Aid*ColdWar} * 0 + \beta_{Aid*W*ColdWar} * 0$, we get the marginal effect of aid on democratization during the post-Cold War period when $W = 1$. In column 2, the value of this coefficient is 0.136 ($SE = 0.364$). Adding $\beta_{Aid} + \beta_{Aid*W} * 3 + \beta_{Aid*ColdWar} * 0 + \beta_{Aid*W*ColdWar} * 0$ yields an estimate of the marginal effect of aid when $W = 3$ during the post-Cold War period. In column 2, this value is 0.768** ($SE = 0.158$), which is positive and statistically different from zero.³⁴ Consistent with the third hypothesis, this indicates that, during the post-Cold War period, aid increased the likelihood of democratization when the coalition size was large, but not when it was small.

When we repeat this exercise for the Cold War period, the results suggest that, if anything, increasing coalition size exacerbates the negative relationship between aid and democratization. In three of the four models, increasing *W* from 1 to 3 during the Cold War makes the coefficient for *Aid* more negative. This suggests that, again consistent with Hypothesis 3, *W* does not positively condition the relationship between aid and democratization. One interpretation of this finding is that donors could not credibly condition foreign aid on democratizing reforms during

the Cold War because superpower dynamics meant Western countries were reluctant to rescind aid from a client state for fear of losing that state to the Soviet sphere of influence. Overall, the results for the Cold War and post-Cold War period are consistent with the hypothesis that when aid conditionality strengthens, the size of the dictator's survival coalition should have a greater effect on the aid-democratization relationship.

Addressing Endogeneity

This section addresses concerns about endogeneity with two types of tests: two-stage models with instruments for aid and models using aid measured as the two-year moving average lagged over the previous 3–4, 5–6, and 7–8 years. The literature on aid and economic growth uses instruments for aid in two-stage regressions because aid is endogenous: growth performance in the recipient country can affect the level of aid received. Aid may also be endogenous to the process of democratization, wherein donors observe movement towards democratization and reward this behavior with more aid. Frey and Schneider (1986), for example, find some evidence from the 1970s and early 1980s that politically stable countries receive more aid. Similarly, there is evidence that bilateral donors decrease aid flows when they observe antidemocratic behavior such as a coup, political violence, reduction in political liberties, or election fraud (Hyde and Boulding 2008). Even though I have lagged aid in all the previous specifications, it is still possible that this measure is endogenous.

The fact that donors are strategic suggests that the naive models used thus far may suffer from selection bias. To get unbiased estimates of the effect of IMF program participation on economic growth, for example, Vreeland (2003) uses two-stage Heckman selection models.³⁵ In a selection framework (Heckman), we suppose that the sample of countries that receive aid is biased. That is, selection into the sample is correlated with the outcome of interest—in the present analysis, democratization.

³⁵Bueno de Mesquita and Smith (2007) use a Heckman model to estimate whether countries with larger distributional coalitions, *W*, receive more U.S. aid. Their empirical estimates, using both naive and two-stage estimates, indicate that countries with larger distributional coalitions receive, on average, more U.S. foreign aid than countries with smaller distributional coalitions. Using aid from all OECD countries (and controlling for $\log(\text{GDPpc})$, $\log(\text{population})$, alliance with United States and country and year fixed effects), I find that *W* is not a statistically significant determinant of aid receipts (not reported).

³⁴The difference between these two coefficients is 0.631 ($SE = 0.225$), which is statistically different from zero.

TABLE 4 Cold War

Dep. Variable	Aid % GNI (1–4)				Aid per Capita (5–8)			
	Democratization		D.Polity		Democratization		D.Polity	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
W * Aid	0.433** (0.06)	0.316* (0.12)	0.243** (0.03)	0.222** (0.08)	0.376** (0.12)	0.251+ (0.14)	0.254** (0.05)	0.274* (0.13)
Cold War * W * Aid		-0.478 (0.67)		-0.463* (0.21)		-0.047 (0.49)		-0.299 (0.23)
Cold War * Aid		-0.240 (0.49)		-0.042 (0.08)		-0.220 (0.40)		-0.150 (0.29)
Cold War * W		-0.170 (1.11)		0.205 (0.36)		-0.592 (1.75)		0.530 (0.75)
Aid	-0.440* (0.21)	-0.179 (0.48)	-0.293 (0.19)	-0.128 (0.33)	-0.323** (0.11)	-0.083 (0.28)	-0.201** (0.07)	-0.026 (0.30)
W	-1.019** (0.33)	-0.591* (0.25)	-1.458** (0.49)	-1.194+ (0.65)	-1.119* (0.50)	-0.660 (0.67)	-1.627** (0.45)	-1.668* (0.81)
Cold War	-0.640** (0.14)	0.580 (1.61)	-0.319 (0.23)	0.258 (0.59)	-0.669** (0.10)	0.643 (1.91)	-0.364 (0.32)	0.276 (1.15)
Neighbor polity	0.151+ (0.09)	0.156+ (0.08)	0.083+ (0.04)	0.090* (0.04)	0.127* (0.06)	0.129* (0.05)	0.066** (0.01)	0.072** (0.01)
Conflict	0.105 (0.28)	0.108 (0.30)	0.181+ (0.09)	0.176+ (0.10)	0.072 (0.26)	0.079 (0.27)	0.163 (0.11)	0.167 (0.11)
Log(GDPpc)	0.080 (0.11)	-0.042 (0.12)	-0.252** (0.09)	-0.316** (0.09)	0.010 (0.22)	-0.010 (0.25)	-0.224 (0.21)	-0.218 (0.20)
Growth	-6.416** (1.06)	-5.532** (0.97)	-5.926** (0.86)	-5.541** (0.82)	-6.074** (1.23)	-5.804** (1.18)	-5.596** (1.84)	-5.885** (1.73)
Polity _{t-1}			0.038 (0.06)	0.030 (0.06)			0.035 (0.05)	0.028 (0.05)
Log Likelihood	-497.753	-493.889	-391.953	-387.439	-560.546	-557.902	-417.983	-414.036
Observations	2,435	2,435	2,419	2,419	2,788	2,788	2,762	2,762
$\beta_{W*Aid} + \beta_{ColdWar*W*Aid}$		-0.162 (0.550)		-0.242 (0.181)		0.203 (0.385)		-0.025 (0.171)
$\beta_{Aid} W = 1,$ post-Cold War		0.136 (0.364)		0.093 (0.266)		0.167 (0.139)		0.248 (0.210)
$\beta_{Aid} W = 3,$ post-Cold War		0.768** (0.158)		0.537** (0.167)		0.668** (0.171)		0.796** (0.234)
$\beta_{Aid} W = 1,$ Cold War		-0.581 (0.527)		-0.412 (0.325)		-0.100 (0.249)		-0.201 (0.172)
$\beta_{Aid} W = 3,$ Cold War		-0.906 (1.578)		-0.895 (0.732)		0.307 (0.992)		-0.252 (0.472)

+ p < 0.10; *p < 0.05; **p < 0.01. *Democratization* ≡ dependent variable is a binary measure of democratization. *DPolity* ≡ dependent variable is a binary indicator for whether the Polity score increased by three or more points from the previous year. Multinomial logit or logit estimation with standard errors clustered on regime. Aid is *logged*, lagged two-year moving average. Time polynomials, the interactions between time polynomials and W, and decade dummies included in all models, but not reported.

Without correcting for selection, we could get a biased estimate of β . To solve this problem, we estimate a selection parameter λ (really a rescaling of the data to account for nonrandom selection) and add λ to the second-stage equation.

To resolve the endogeneity problem in a two-stage framework, we estimate first-stage models of the endogenous regressors and calculate the predicted value of the endogenous regressors. If the instruments are exogenous, then we are left with a measure of the endogenous

regressor that strips away any of the reverse causation, producing unbiased estimates. Both techniques, IV/2SLS and selection models, address bias in the β estimates. Thinking of the selection problem first actually helps in choosing instruments for 2SLS models. Sifting through potential identifying regressors in the literature on selection for the first stage of a selection model gives us a head start on good instruments for 2SLS—if they are exogenous to the outcome of interest (democratization).

I test a two-stage equation in the following manner. First, I regress lagged aid on all the explanatory variables in the base model (X) plus some exogenous instruments (Z). I then calculate the predicted values from this equation (\hat{Y}_{Aid}), as well as the residuals (μ). Next, I multiply \hat{Y}_{Aid} by W to create the interaction term ($\hat{Y}_{Aid} * W$). Finally, I insert the instrumented aid variable and the interaction with W into the base model:³⁶

$$Aid_{i,t} = X_{i,t} + Z_{i,t} + \mu_{i,t} \quad (8)$$

$$Democratization = \hat{Y}_{Aid} + \hat{Y}_{Aid} * W + X + \epsilon \quad (9)$$

For this two-stage equation to be consistent and unbiased, the instruments need to meet two criteria: (1) they must covary with the endogenous variable and (2) the errors in the first stage (μ) must be orthogonal to the errors in the second stage (ϵ). To assess the first criterion, I calculate the partial- R^2 of the excluded instruments in the first-stage equation to determine the “amount” of variation in aid the instruments explain. The typical rule of thumb is that the instruments should have a partial- R^2 of at least 0.10 (Shea 1997).³⁷ I also report the p-value on the coefficient for the residuals (μ) from the first stage (1) when included in the second-stage equation (2).³⁸ If these coefficient values for μ in the second stage are not statistically different from zero ($p_\mu > 0.10$), this suggests the residuals are orthogonal to the dependent variable.

I use life expectancy, log(population), and a dummy for Guinea-Bissau as instruments for *Aid* (%GNI). Including the dummy for Guinea-Bissau reflects the fact that it is a recipient of large amounts of aid according to this measure.³⁹ For *Aidpercapita*, I use log(population) and a dummy for Jordan. Life expectancy is a ‘need’ criterion by which donors may distribute aid, and countries

³⁶ W is included in X .

³⁷ An alternative method is to report the F-test of the instruments (only) in the first stage. Typically, this is a weaker test.

³⁸ This is the same as the Wald-test of exogeneity that STATA reports for the `< ivprobit >` command with a two-step estimator.

³⁹ In the literature on aid and economic growth, researchers typically include a dummy variable for Egypt as an instrument for the same reason.

TABLE 5 Second-Stage IV Regressions

Aid Measure	% GNI	Per Capita
$W * Aid$	0.070* (0.03)	0.037* (0.01)
Aid	-0.170 (0.12)	-0.048* (0.02)
W	-0.868 (0.75)	-0.884 (0.75)
Neighbor polity	0.117* (0.05)	0.104+ (0.05)
Conflict	0.003 (0.22)	0.002 (0.19)
Log(GDPpc)	-0.311 (0.49)	-0.009 (0.21)
Growth	-5.937* (2.59)	-6.308** (2.12)
Log likelihood	-494.6	-557.0
Observations	2,399	2,750
p_μ -value	0.17	0.57
Partial R^2	0.319	0.316

+ $p < 0.10$; * $p < 0.05$; ** $p < 0.01$. Dependent variable is a binary measure of democratization. Multinomial logit with standard errors clustered on regime. Aid is the moving average lagged over the previous two years. Time polynomials, the interactions between time polynomials and W , and decade dummies included in all models, but not reported. Instruments for *Aid* in column 1: *Log(population)*, *Guineau Bissau*, *Life expectancy*, *Life expectancy-squared*; in column 2: *Jordan*, *Life expectancy*.

with small populations are more likely to receive large amounts of aid relative to their size because a fixed donor aid budget will have a greater marginal impact in a smaller economy.

Table 5 reports the results of two second-stage equations that use instruments for aid. In both models, the partial- R^2 is greater than 0.30, indicating that the instruments explain a considerable amount of variation in aid in these samples. The p-value for the first-stage errors (μ) is greater than 0.10, suggesting that the instruments are in fact exogenous. The coefficient for the interaction between *Aid* and W is positive and statistically significant in both models—a finding that parallels the results in Table 2. The coefficients for the interaction term are generally larger in the two-stage model than those reported earlier. This suggests that accounting for endogeneity improves the strength of the main result.

A second way to address endogeneity is to create a longer lag on the aid variable (Bearce and Tirone 2008). In Table 6, I report the coefficients for the interaction between W and *Aid* for models similar to those in 2.1, 2.3,

TABLE 6 Further Aid Lags

Years Lagged	Coefficient for $W * Aid$			
	Democratization		D.Polity	
	Dep. Variable	Aid Measure	% GNI	Per Capita
1 & 2	0.034+	0.011+	0.017*	0.007*
	(0.02)	(0.00)	(0.01)	(0.00)
3 & 4	0.036+	0.009*	0.023**	0.006*
	(0.02)	(0.00)	(0.00)	(0.00)
5 & 6	0.030+	0.009*	0.023**	0.005
	(0.02)	(0.00)	(0.01)	(0.00)
7 & 8	0.024	0.009*	0.024*	0.005
	(0.02)	(0.00)	(0.01)	(0.01)

+ $p < 0.10$; * $p < 0.05$; ** $p < 0.01$. *Democratization* \equiv dependent variable is a binary measure of democratization. *D.Polity* \equiv dependent variable is a binary indicator for whether the Polity score increased by three or more points from the previous year. Multinomial logit or logit estimation with standard errors clustered on regime. Aid is lagged two-year moving average. Only coefficients for $W * Aid$ reported. Models similar to 2.1, 2.3, 3.1, and 3.3.

3.1, and 3.3. Instead of using the lagged moving average of aid over the previous two years, though, I substitute the following pairs of lagged years: 3–4, 5–6, 7–8. Using longer lags generally does not significantly change the results. Losing statistical significance in the longer lag specifications may result from smaller sample sizes, as many regimes—particularly small coalition military regimes—do not survive longer than seven years. In short, though, these results suggest that the main findings are not due simply to the choice of lagging the variable over the previous two years.

Discussion

From Friedman (1958) and Bauer (1971) to recent World Bank policy briefs (Harford and Klein 2005; Islam and Coviello 2006; Kenny 2006), critics of foreign aid have argued that aid impedes democratization because it keeps in power dictators who, without aid, would presumably fail, or better yet, democratize. Critics of foreign aid have long cited Joseph Desire Mobutu's regime in the former Zaire as a prominent example of a brutal dictator kept in power with Western aid.⁴⁰ There is little doubt that Mobutu received large sums of aid; that he stayed in power for many

⁴⁰See, for example, Heckleman and Knack: "during the Cold War. . . corrupt regimes such as Mobutu's in Congo-Zaire were propped up by aid" (2005, 15). For a dissenting view, see Lancaster (1999, 497), who argues that Mobutu did not need Western aid to survive,

years after economic crisis beset the country in the early 1990s; and that he personally confiscated much of the country's wealth, which was funded in part by foreign aid (Schatzberg 1988; Wrong 2000). However, if for every long-lived dictator who receives generous foreign aid there are many short-lived dictators who receive equally generous amounts of aid, then it becomes more difficult to point to aid as the cause of durable dictatorships. For example, during the 33 years of Mobutu's rule (1965–97), the former Zaire received, on average, 3.6% of GNI in aid. The even more durable, but certainly less brutal one-party state in Botswana received over 10% of GNI per year during that same period. In contrast, the series of short-lived military regimes that ruled Benin from independence until 1972, when Kerekou solidified power, received over 5% of GNI in aid per year.⁴¹ Put in the context of other dictatorships, the assertion that Mobutu's aid dependency was instrumental to his survival does not look so obvious. In this article, I have looked at nearly every dictatorship in the developing world since 1960—capturing both the durable dictators and the short-lived regimes. By considering all dictatorships, and not just the most prominent or the most durable, we get a different answer than by simply looking at the few Mobutus of the world.

To understand whether foreign aid helps or hinders democratization, I modeled the dictator's decision calculus with regard to democratization. In doing so, I have largely ignored a key component of the aid game—namely the donor's objectives. Concerning these objectives, scholars of foreign aid have come to some fairly robust conclusions about which countries get foreign aid and why. In short, we know that bilateral donors are more likely to give aid to trade partners, former colonies, and strategic allies (Alesina and Dollar 2000), while multilateral donors are more likely to give aid to countries with a good history of growth and political stability (Schraeder, Hook, and Taylor 1998). Recently, scholars have shown that donors also favor politically salient recipients, particularly countries that sit as rotating members of the U.N. Security Council (Kuziemko and Werker 2006). However, other scholars find that aid distribution follows a more altruistic, or at least a more competent, pattern: aid to poorly governed countries mostly takes the form of disaster relief, while aid to better-governed countries is predominantly development aid (Bermeo 2008). Further, there is evidence from the 1990s that bilateral donors decrease

as it represented only a small fraction of the resources available to him.

⁴¹Benin suffered through five distinct military regimes from 1960 to 1972, none ruling for longer than four years.

aid in response to antidemocratic behavior in recipient countries (Hyde and Boulding 2008).

These findings concerning donor motivations, however, do not challenge my results. For the results of the theoretical model in this article to hold, I need only assume a minimal level of aid conditionality on the part of donors. The fact that the empirical results are stronger during the post-Cold War period, when presumably conditionality was more meaningful, suggests that the theoretical implications of the model are quite plausible. In addition, while one might argue that the empirical results in this article are potentially biased because I have not explicitly modeled selection into the sample of aid recipients, or the sample of highly aid-dependent countries (Vreeland 2003), the two-stage models can account for potential selection bias. The fact that the two-stage models produce even stronger results than the naive models suggests that if selection biases the results, it actually works to strengthen the implications of the theoretical model. I do not take this to mean that modeling donor behavior is unimportant. However, the two-stage models and the subperiod results indicate that the implications of the theoretical model are robust.

This brings us to perhaps the most important limitation of this present study: the fact that the aid data are from Western donors. During the Cold War period, both Western and communist donors often gave aid precisely to counter the aid given by the other superpower bloc. Sometimes Western aid was delivered simultaneously with communist aid, as in Tanzania, and in other cases, the aid was given sequentially by each of the superpower blocs, as in Ethiopia. Fully modeling donor behavior would require an aid game that accounts for the strategies of two rival donors and the recipient country—that is, at least three distinct players. Empirically testing a model of donor behavior would thus require, at a minimum, systematic time-series, cross-section data on Soviet and Chinese aid. Unfortunately, collecting Soviet and Chinese aid data that are consistent over time and with measures of Western aid is beyond the scope of this study.

From a policy perspective, though, the insights from this study are still important because ultimately they are based on the experience of Western aid. Knowing, for example, that foreign aid to single-party regimes may not deter democratization, but in fact encourage it, while aid to military regimes is likely to entrench their rule, can help donors decipher which countries should be eligible for foreign aid. It also puts an onus on donors not to simply use democracy as a hard constraint for entering the pool of potential aid recipients, since aid to some types of dictators may actually be persuasive.

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