

# Foreign Aid and Government Survival

Elena V. McLean and Taehee Whang

How does foreign aid affect government stability? Previous research presents mixed answers to this question. We start with the largely uncontroversial finding that donor interests are major determinants of aid allocation. Donors may use aid to support loyal government leaders; on the other hand, aid suspensions are a form of foreign economic pressure on recipient governments. This foreign policy tool can only work if it generates political costs or benefits for the leaders of recipient countries. Consequently, the leader of a government that comes under pressure (when the donor suspends aid disbursements) should be more likely to lose office than a leader who does not, or a leader who receives additional aid. This article presents a theoretical argument linking changes in foreign assistance levels to government instability. We test an observable implication of the theoretical argument using cross-country time-series data on economic aid and recipient leaders' political survival.

Key Words: foreign aid, government survival, leadership turnover

*John F Kennedy: "The Aid program is just as important as any military spending we do abroad. You cannot separate guns from roads and schools when it comes to resisting Communist subversion in under-developed countries" (Statement by the President on Foreign Aid, September 19, 1962).*

*"We have been able to hold this line against this internal subversion by the*

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This work was supported by the National Research Foundation of Korea Grant funded by the Korean Government (NRF-2013S1A3A2055081). The authors are listed in alphabetical order and made equal contributions.

*Communists, as well as the external threat of military invasion, because for many years the United States has assisted these countries in meeting their own problems. ... If we stop helping them, they stand on the razor edge today. If we stop helping them, they will become ripe for internal subversion and a Communist takeover” (Broadcast Remarks on Trade and Foreign Aid, September 23, 1962).*

Foreign aid plays a significant role in economies of developing countries, providing a significant share of GDP (for instance, on average more than 10% of GDP of sub-Saharan countries comes from economic assistance). However, multiple studies have demonstrated that aid does very little, if anything, to improve the economic and social environment in recipient countries. Aid may not be effective at alleviating poverty, it may not foster economic growth, it may produce a negative impact on domestic governance and the rule of law, and it may undermine domestic savings and investment by fueling consumption (Alesina and Dollar 2000; Burnside and Dollar 2000; Dalgaard and Hansen 2001; Knack 2001; Svensson 2003; Easterly 2001; Boone 1996). Despite this apparent ineffectiveness in reaching developmental and other socioeconomic goals, aid continues flowing from developed countries to poorer parts of the world. We argue that the key to explaining this puzzle lies in the objectives that donor countries pursue when allocating aid. One of the main motivations for providing economic assistance is to support recipient countries’ leadership and increase its ability to remain in office. On the flipside, aid suspensions can be used to punish recipient leaders for non-compliance or policies inconsistent with donor preferences. Therefore, this article focuses on developing a nuanced explanation of the link between political goals of economic assistance and its consequences for recipient countries’ leadership turnover.

Previous studies have recognized that analyzing foreign aid and its effectiveness requires acknowledging that donor states do not pursue purely altruistic goals – i.e. poverty alleviation, support of economic growth, or implementation of social and economic reforms. Morgenthau (1962) was one of the first to point out that “a policy of foreign aid is no different from diplomatic or military policy or propaganda. They are all weapons in the political armory of the nation” (Morgenthau 1962, 309), i.e. aid giving is motivated by self-interest rather than recipient needs. Numerous empirical studies lend support to Morgenthau’s view by demonstrating that donors’ aid allocation decisions are heavily, if not exclusively, driven by the donors’ political interests. For instance, in their study of motivations behind U.S. and British foreign assistance, McKinlay and Little (1977) and McKinlay and

Little (1978) report that results of their empirical tests tend to support the argument that donor interests dominate recipient needs. Even though some economic aid may be given with the goal of alleviating poverty and addressing humanitarian concerns, the poorest countries do not receive the most assistance (McKinlay and Little 1977; 1978). Maizels and Nissanke (1984) and Trumbull and Wall (1994) report similar findings. Alesina and Dollar (2000) also find that, unlike foreign direct investment that tends to flow into countries with good economic policies, foreign aid is distributed mostly without any regard for economic policies of recipient governments. Aid allocation is influenced by the political interests of the donor country. Recent studies of foreign aid politics increasingly emphasize the role of foreign aid as a vehicle of foreign influence (Stone 2006; Bueno de Mesquita and Smith 2007; Kono and Montinola 2009; Licht 2010; Bermeo 2011; Ahmed 2012; Steinwand 2015).

If donor interests play such a significant role in aid allocation, aid should make recipient countries more willing to cooperate with their donors, and that can occur if aid disbursements generate sufficient benefits to recipient governments, whereas aid suspensions impose significant costs on these governments. This points to the difference between the economic benefits a country receives as a whole and the political benefits that the country's leader derives from aid. For a variety of reasons additional aid may increase the ruler's benefits without a corresponding improvement in the socioeconomic situation in the country. For example, leaders may be able to redistribute budget resources in a way that would strengthen their hold on power rather than address social and economic needs of the country. Existing aid research shows that development aid may be fungible, i.e. since most aid is given for specific projects or reforms, the government redirects its own resources to address other, more pressing needs (Pack and Pack 1993; Feyzioglu, Swaroop and Zhu 1998). Therefore, aid effectively relaxes recipient governments' budget constraints.

Political survival is one of the highest priorities for a government leader. Governments of developing countries frequently face the danger of being replaced – peacefully or violently – by domestic opposition groups and may use additional resources to bribe such groups to secure their acceptance of the political status quo, or to build up security forces to prevent or suppress political challenges. There is a small but rapidly growing body of work that investigates the relationship between foreign aid and domestic conflict (de Mesquita and Smith 2009; 2010; Escriba-Folch and Wright 2010; Quiroz Flores and Smith 2013; Wright, Frantz and Geddes 2015). For instance, Collier and Hoeffler (2002) test the link between international assistance and an extreme form of domestic power struggle – civil war. They find that aid does not have a direct effect on the proba-

bility of civil war outbreaks, but through its effect on the growth rate and dependence on primary commodity exports, aid reduces the risk of domestic conflict. Aid can also succeed in mitigating the effect of negative economic shocks, thereby reducing the likelihood of a civil war onset (Savun and Tirone 2012). Nielsen et al. (2011) extend this research by showing that conflict becomes more likely when there are severe and sudden drops in aid inflows – such aid shocks generate a commitment problem between the government and rebel forces and, as a result, violent conflict breaks out. However, others conclude that increases in international aid can also make civil conflict more likely because additional resources controlled by the government increase the attractiveness of capturing the state from the challengers' perspective (Grossman 1992; Azam 1995).

Overall, the literature to date has done a careful job of assessing empirical evidence. However, most of these empirical tests have not been tied to an explicit theory. A significant theoretical contribution in this area has been made by Bueno de Mesquita and Smith (2007) who build on the selectorate model of politics introduced by Bueno de Mesquita et al. (2003) to develop a formal model that treats aid giving and getting as a strategic process, in which donors buy policy support from recipients who use at least some of the assistance to ensure that they remain in power. Based on this approach, aid is expected to flow to countries whose leaders do not inherently agree with the donor's preferred policies but are willing to adopt them in exchange for aid transfers. Such aid transfers must be sufficiently large to improve the recipient leaders' survival chances relative to the probability of remaining in office in the absence of foreign aid.

Our argument is different from Bueno de Mesquita and Smith's approach in that we view aid as a tool to secure in office loyal government leaders and destabilize leaders who do not serve donors' political interests rather than a payment for specific policy concessions. This economic instrument would only be used with such a clear donor-interest bias if it generates political benefits for donor countries. Specifically, for donors to be willing to give more aid, they should receive the benefit of increased government stability in the recipient country. Alternatively, donors should be more willing to suspend aid and risk antagonizing the leader of the recipient country if they expect to benefit from political instability and leader turnover. The emphasis on changing levels of economic assistance is important, as recipient countries become dependent on aid transfers and treat them as part of their budget revenues. Therefore, reductions in aid flows decrease the resources available to governments, while increased aid transfers relax governments' budget constraints.

We build on insights from the existing empirical literature to construct a simplified model capturing donor-recipient interactions and the effect of these inter-

actions on the ability of recipient countries' leaders to stay in office. The formal presentation of our argument helps to sort out the fundamentals of the relationship between aid allocations and government stability, while also yielding an important observable implication presented as a testable hypothesis. We then provide an empirical evaluation of the hypothesis using data on government leaders' office tenure and fluctuations in economic aid received by these governments.

## MODELING AID AND DOMESTIC CONFLICT

In modeling the relationship between changes in aid levels and the likelihood of government leadership turnover, we focus on the donor's pursuit of its political interests and on the measures that the recipient government's leader takes to ward off challenges to his hold on office. The donor country (D) can help the incumbent government secure its position by offering aid  $a \geq 0$ , or weaken the incumbent by offering less aid than in the previous period, i.e.,  $a < 0$ . The domestic group (C) then chooses whether it will challenge the government or not. The decision not to challenge the government can be interpreted in different ways. In democratic countries the decision not to challenge may mean that a potential presidential candidate will stay out of a race or join the incumbent's camp. Alternatively, in countries with autocratic regimes opposition forces' decision not to challenge may mean their agreement not to initiate guerilla warfare or coup attempts. The decision to challenge, then, means that the group launches a violent or non-violent campaign to replace the current government.

The outcome of such a challenge is determined by the relative resource endowments of the two sides. The government leader has access to state resources  $r_G > 0$ . Since a foreign government controls this source of G's revenue and may provide either more aid than in the previous period or less, the leader's resources and, as a result, the probability that G prevails in the conflict, are affected by the donor's decision on aid allocation  $a \in \mathbb{R}$ .<sup>1</sup> When  $a \geq 0$ , the donor provides at least as much money as in the past; otherwise, the recipient country's budget shrinks as a result of aid cuts. Thus, the probability that the challenger prevails in the conflict is defined as  $\frac{r_C}{r_G + a}$ , where  $a$  is economic aid relative to previous funding levels,  $r_G$  is government resources, and  $r_C$  represents resources available to the challenger. We assume that the challenger's resources are less than government resources,

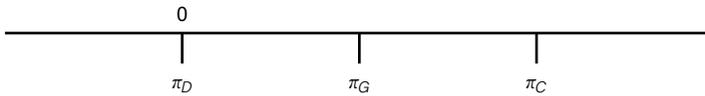
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<sup>1</sup> Note that  $a$  has a lower bound,  $\underline{a}$ , that represents the difference in aid amounts between the current period and the previous period.

regardless of fluctuations in economic assistance, i.e.  $r_C < r_G + a, \forall a \in \mathbb{R}$ . In addition, the challenger must pay a cost if it initiates domestic conflict ( $k_C > 0$ ).

The role of the donor's economic assistance to the government is twofold. On the one hand, additional resources made available to the government leader enable him to make a more attractive offer to the challenger and prevent domestic conflict. On the other hand, even if additional aid does not help to avoid a challenge, the increase in aid reduces the challenger's probability of winning. In return, the donor benefits from stabilizing the political situation in a recipient country with a loyal government leader. We conceptualize the level of the incumbent leader's loyalty as the distance between the donor's ideal policy point, or  $\pi_D$ , which we normalize by making it equal to 0, and the incumbent's ideal policy point, or  $\pi_G$ . Similarly, the challenger's ideal point is  $\pi_C$ . Figure 1 illustrates how the three actors' ideal points can be located in one-dimensional policy space, which captures the actors' closeness in terms of their foreign policy preferences. Therefore, the donor considers how close the positions of the two possible gov-

Figure 1. Actors' Ideal Policy Points

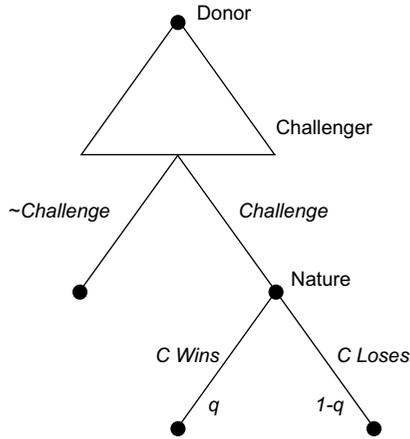


ernment leaders are to its own and uses this information in its aid allocation decision. This modeling approach allows us to incorporate a well-established empirical finding that donor nations are motivated mostly by political considerations in their aid allocation decisions.

The following simple game captures these interactions, as Figure 2 shows:

1. The donor country offers economic aid  $a$ .
2. After the recipient country receives the allocated aid, the challenger has two courses of action available: it can choose to accept the status quo and not challenge the government leader, or the challenger can initiate conflict in order to replace the government.
3. If a challenge is initiated, Nature moves last to determine which side prevails in the conflict. The challenger wins with probability  $q$ , and loses with probability  $1-q$ .

Figure 2. The Aid and Domestic Conflict Game



When the challenger chooses whether or not it will accept the status quo and let the current leader remain in office, the challenger takes into account its probability of prevailing in a conflict with the government, the benefit that it will derive if it gains control over the state, and the cost of the challenge. As the size of the challenger’s resources,  $r_C$ , increases, so does its probability of winning ( $q = \frac{r_C}{r_G+a}$ ), and the confrontation path becomes more attractive. On the other hand, a higher cost of conflict ( $k_C$ ) decreases the utility of challenging the government. Aid has a similar effect: as the amount of aid received by the government,  $a$ , increases, the challenger’s probability of winning,  $\frac{r_C}{r_G+a}$ , declines, which makes conflict a less attractive choice for the challenger. Then the challenger’s preferences are given by

$$U_C = \begin{cases} -|\pi_G - \pi_C| & \text{if the challenger chooses not to challenge} \\ -|\pi_G - \pi_C| \cdot (1-q) - k_C & \text{if the challenger chooses to challenge} \end{cases}$$

We assume that the donor is motivated by two considerations. The donor benefits when leaders whose policy positions are closer to that of the donor hold office in other countries and, consequently, seeks to support them through aid transfers. At the same time, the donor government does not have unlimited resources at its disposal and derives disutility when it transfers resources to a foreign government. Thus, the donor’s preferences are given by

$$U_D = \begin{cases} -\pi_G - a & \text{if the challenger chooses not to challenge} \\ q(-\pi_C) + (1-q)(-\pi_G) - a & \text{if the challenger chooses to challenge} \end{cases}$$

The game has a unique subgame-perfect equilibrium. Before presenting the equilibrium strategies, we define two threshold conditions that will be useful for specifying the equilibrium strategies. Specifically, the “challenge threshold” is defined by

$$c^* = \left( \frac{r_C}{r_G + a} \right) \cdot |\pi_G - \pi_C| - k_C \tag{1}$$

The “political security threshold” is defined by

$$a^* = \left( \frac{r_C}{k_C} \right) \cdot |\pi_G - \pi_C| - r_G \tag{2}$$

The following strategy profile constitutes the subgame-perfect equilibrium of this game:

- Challenger:** *If  $c^* \geq 0$ , challenge.*  
*If  $c^* < 0$ , do not challenge.*
- Donor:** *If  $c^* < 0$ , set  $a = \underline{a}$ .*  
*If  $c^* \geq 0$  and  $\pi_G > \pi_C$ , set  $a = \underline{a}$ .*  
*If  $c^* \geq 0$  and  $\pi_G \leq \pi_C$ , set  $a = a^*$ .*

Consider the intuition underlying this equilibrium. Because challenging the government leader is costly and leads to winning with some probability that may be less than 1, the challenger is willing to accept the status quo when the balance of capabilities shifts in the government’s favor. Such a shift can result from economic assistance, as well as other contributions to the government’s resources. The likelihood of challenge also depends directly on the costliness of conflict, and the challenger’s benefit from capturing control over the state, which is represented by the distance in the policy positions of the government and the challenger. The “challenge threshold” ( $c^*$ ) captures this trade-off. As long as this threshold is below zero, the challenger prefers to avoid conflict. This means that, when the cost of confrontation,  $k_C$ , is sufficiently high relative to the benefits that could be potentially gained through a challenge, the challenger will not initiate conflict, even if the government received no aid from the donor.

At the aid allocation stage, the donor considers the likelihood of domestic conflict in the recipient country and aims to maximize its own benefits of economic assistance. The donor prefers to have a leader, whose foreign policy preferences are as close as possible to the donor's own policy position, in charge of the government in the recipient country; thus, the donor compares the benefit derived from the current government leader remaining in office with the benefit of replacing him with the challenger. Given that we normalized the donor's policy position at 0, the donor compares the distance to the incumbent's position (i.e.,  $-\pi_G$ ) and the distance to the challenger's position (i.e.,  $-\pi_C$ ). If the donor recognizes that the challenge threshold has not been met, and hence no challenge will take place, the donor expects to receive  $-\pi_G - a$  with certainty. Hence, the donor will prefer to set  $a = \underline{a}$  to receive its highest possible utility in this case. On the other hand, in the scenario when a challenge is a possibility, the donor weighs two possible outcomes when choosing the amount of aid to be allocated. If the donor sets the aid level at the political security threshold, i.e., at  $a^*$ , it will prevent domestic conflict in the recipient country, and its payoff will be  $-\pi_G - a^*$ . If, on the other hand, the donor gives less than  $a^*$ , it can minimize its costs of disbursing aid by setting  $a = \underline{a}$ . In this case, the challenger will initiate conflict, in which it will prevail with probability  $q$ .

Taken together, this implies that the donor will only choose to disburse aid to prevent a challenge. One critical factor that determines whether the donor will in fact prefer to allocate the required amount of aid is the incumbent government's foreign policy position relative to that of the challenger. If the incumbent is not aligned with the donor sufficiently closely, i.e., the challenger's position is closer to the donor's ( $\pi_C - \pi_G < 0$ ), the donor is willing to trigger a challenge because this may lead to a replacement of a leader of low political importance with a new, more loyal political leader. This argument assumes that the donor government cares about the alignment of its policy preferences with those of the leadership in the recipient country. The donor could still care about concessions on specific policy issues, even if the recipient government is completely opposed to the donor's interests; however, the recipient's loyalty benefits the donor across multiple issue areas and throughout extended periods of time, while such a leader remains in power.

The following testable hypothesis presents an important observable implication of our theoretical argument:

**Hypothesis:** *An increase in economic assistance should have a positive effect on the leader's likelihood of remaining in office.*

## EMPIRICAL ANALYSIS

We now turn to the empirical test of the hypothesis formulated in the previous section. We focus on the effect of development aid on leadership change in recipient countries. We first describe our data and methods used in this section, and then report and discuss our findings. In brief, our empirical analysis lends significant support to our main theoretical expectation: we find that additional aid disbursements are associated with a lower probability of leader turnover.

### DATA AND METHODS

We collect two types of information to be able to conduct a test of our hypothesis: country-level data on socioeconomic and political factors that could affect leader turnover, and leader-level data on various characteristics of country leaders. Our data set comprises information on 147 countries in the period from 1960 through 2004; hence, the total number of observations is 6,615. However, due to missing information on some of our variables, the sample size reduces to 4,573 in Model 1, which only includes the main explanatory variable, and to 4,179 in Model 2, which includes all control variables.

### DEPENDENT VARIABLE: LEADERSHIP TURNOVER

The source of data on government leaders is “Archigos: A Database on Political Leaders” compiled by Goemans, Gleditsch and Chiozza (2006). Archigos provides information on the leaders of 188 countries for the period between 1875-2004.<sup>2</sup> The Archigos dataset is formatted to record the date on which a leader came to power and was replaced, which allows for multiple leaders in a given country in a given year. Information on a leader’s age and time in office, as well as other individual characteristics, is also available. To be able to use these data in our analysis, we drop instances in which more than one leader held office during a given year. In such cases, our dataset retains a single country-year observation, which records that a leadership change occurred. This dataset format is more convenient than the original Archigos format because information on economic aid as well as other variables is available on the annual basis only. Also note that leaders sometimes leave office due to death or restrictions on the number of

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<sup>2</sup> The dataset is available at <http://privatewww.essex.ac.uk/ksg/archigos.html>. Our dataset is based on the previous version of Archigos – version 2.9. The most current version, i.e., version 4.0 (31 August 2015), extends the coverage to the period from 1875 through the end of 2014. However, we did not use this version because other data sources still limit the time period we can study: the first year of the World Development Indicators is 1960, while the last year of the Threat and Imposition of Economic Sanctions dataset is 2005.

times a leader can return to office, but these departures are not relevant for the purposes of testing our hypothesis. Therefore, to test the effect of fluctuations in aid flows, as well as other economic and political factors, on leader survival in office, we treat these types of leader departures as non-failures in our analysis. Hence, the dependent variable in our model, *Failure*, takes the value of '1' when a leader is forced out of office, and '0' when a leader remains in power.

#### MAIN EXPLANATORY VARIABLE: CHANGE IN ECONOMIC AID

We test our theoretical prediction using data on economic assistance received by each recipient country. The World Bank's World Development Indicators data set provides information on various aid flows for the period between 1960-2015.<sup>3</sup> We restrict our focus to net official development assistance (ODA) and official aid received, expressed in constant 2012 U.S. dollars. This variable captures disbursements of loans made on concessional terms and grants by official agencies of DAC governments,<sup>4</sup> by multilateral organizations, and by non-DAC countries with the goal of promoting economic development and reducing poverty in countries and territories in the DAC list of ODA recipients. It includes loans with a grant element of 25 percent or more. Net official aid refers to aid flows provided under terms and conditions similar to those for ODA, but do not necessarily pursue the development objective. We first calculate the difference between aid in a given year and aid in the previous year. We then divide the resulting variable by the recipient's GDP to make this measure comparable across recipient economies of different size.

#### CONTROL VARIABLES

In addition to the main explanatory variable (*Aid change/ GDP*), we control for a range of political and economic factors that can affect leadership change. Existing research identifies a number of determinants of domestic political instability and leadership turnover. In particular, we start with the leadership failure model specified by Marinov (2005) and include several regressors, such as ongoing economic sanctions, militarized interstate disputes (MIDs), GDP per capita (logged), economic growth, leader's age, the number of previous times in office, and the interaction of democracy and the number of years the leader has been in office (logged). In addition, following Debs and Goemans (2010), we include indicators capturing ongoing civil wars, population size (logged), and (ir)regular

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<sup>3</sup> The data set is available at <http://databank.worldbank.org/data>. (31 August, 2015).

<sup>4</sup> DAC is the Development Assistance Committee of the Organisation for Economic Co-operation and Development (OECD).

entry into office.

We turn to the Threat and Imposition of Economic Sanctions (TIES) dataset<sup>5</sup> for information on economic sanctions (Morgan, Bapat and Kobayashi 2014). Our variable, *Economic sanctions*, takes the value of '1' if the recipient experiences an ongoing sanction episode, and '0' otherwise. Economic coercion is expected to increase the likelihood of leadership change (Marinov 2005). Militarized conflicts should have a similar destabilizing effect on leaders (de Mesquita and Siverson 1995); hence, we include dummy variables for interstate and intrastate conflict in our analysis. The interstate dispute variable, *MID*, equals '1' if the Militarized Interstate Dispute dataset indicates that the country experienced a dispute during that year, and '0' otherwise (Ghosn, Palmer and Bremer 2004). The intrastate conflict variable, *Civil war*, takes the value of '1' in the years when the country was involved in an intrastate war, and '0' otherwise. The UCDP/PRIO Armed Conflict Dataset is the source of information on civil conflicts (Gleditsch et al. 2002).

Our empirical analysis also includes three socioeconomic variables drawn from the Penn World Tables: *GDP per capita* (logged), *Population* (logged), and *Economic growth* control for the influence of economic conditions in the recipient country. Existing research suggests that worsening economic conditions tend to undermine government stability (Londregan and Poole 1990; Chiozza and Goemans 2004a). Similarly, we expect political institutions to determine the frequency and regularity of leadership change in a given country: previous research reports that autocratic leaders tend to be less likely to leave office overtime, while democratic leaders' likelihood of survival in office decreases overtime. Hence, we code a binary variable, *Democracy*, to capture information on a given country's political regime. The source of the data is the Polity IV dataset (Marshall, Gurr and Jaggers 2013). The democracy dummy takes the value of '1' for democratic regimes and '0' otherwise. We define countries with Polity scores of at least 6 as democracies.

We also account for several leader-specific factors that could affect the leader's ability to remain in office. In particular, we include the following variables from the Archigos dataset: *Age*, *Times in office*, and *Irregular entry*. Chiozza and Goemans (2004b) find that as leaders become older, they are more likely to exit office; however, the number of previous times in office reduces the likelihood of exit. *Irregular entry* is a dummy variable, which equals '1' for leaders who assumed political office through irregular political means (e.g., as a result of a foreign intervention or a domestic coup) and '0' for leaders who entered office

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<sup>5</sup> The dataset is available at <https://www.unc.edu/bapat/TIES.htm>. (31 August, 2015)

through a regular process. Leaders who entered office through irregular means tend to have a higher replacement risk, all else being equal. Finally, we control for the number of years a leader has been in power (*Years in office*) and interact this variable with democracy. While political experience may help a leader to remain in power, the effect of democratic politics is likely to reduce the benefit of experience. Table 1 shows summary statistics of the variables used in our analysis.

**Table 1. Summary Statistics**

	Mean	Std. Dev.	Min	Max
Leadership change	0.156	0.363	0	1
Aid change/GDP	3.954	68.759	-1238.843	2100.191
Economic sanctions	0.210	0.407	0	1
MID	0.313	0.464	0	1
GDP per capita (log)	7.542	1.362	3.871	10.902
Population (log)	8.666	1.876	2.812	14.074
Economic growth	0.078	0.113	-0.678	4.124
Civil war	0.077	0.267	0	1
Democracy dummy	0.329	0.470	0	1
Age	56.621	11.538	17	92
Years in office (log)	7.425	1.057	1.792	9.740
Times in office	0.147	0.445	0	4
Irregular entry	0.243	0.429	0	1

To conduct an empirical test of the observable implication of our argument, we specify a model that tests whether changes in aid flows affect recipient leaders' ability to remain in power and evaluates the size of this effect. The regression estimates a leader's risk of losing power in a given year with changing levels of economic assistance. The estimation procedure that we use is logistic regression. We cluster standard errors by recipient country, and include the number of years that a given leader has been in office, as well as cubic polynomial approximation to account for temporal dynamics in our model of leadership turnover (Carter and Signorino 2010).

## RESULTS AND DISCUSSION

Table 2 reports our estimation results. Both models show significant empirical support for Hypothesis 1: A leader who is subject to economic pressure in the

form of reduced aid is at a higher risk of losing office. The result is statistically significant at the .05 level and is robust to the inclusion of a broad range of factors that could have an impact on leaders' tenure in office, such as involvement in an interstate or intrastate conflict and economic sanctions, which have been previously shown to affect leaders' duration in office. This finding is consistent with our argument that a donor's decision to disburse less aid can destabilize government leaders by reducing the amount of resources at their disposal. Specifically, the predicted risk of losing office is only 0.13 when the aid change variable is set at its mean value, while all the other controls are fixed at their means. The likelihood of leadership turnover goes up to 0.15 when *Aid change/GDP* is set at one standard deviation below its mean and to 0.60 for the minimum value of this explanatory variable, all else being equal. This suggests that donor countries can dramatically undermine a leader's ability to remain in office by withdrawing economic assistance.

**Table 2. The Effect of Aid Changes on Leaders' Tenure in Office**

	Model 1	Model 2		Model 1	Model 2
Aid change/GDP	<b>-0.002</b> (0.001)	<b>-0.002</b> (0.001)	Years in office		<b>-0.861</b> (0.071)
Economic sanctions		<b>0.232</b> (0.107)	Years in office*democracy		<b>0.320</b> (0.153)
MID		-0.172 (0.106)	Times in office		0.106 (0.082)
GDP per capita		0.030 (0.049)	Irregular entry		<b>0.268</b> (0.113)
Population		0.054 (0.034)	$t$	0.030 (0.025)	0.040 (0.026)
Economic growth		<b>-1.606</b> (0.508)	$t^2$	-0.001 (0.001)	-0.001 (0.001)
Civil war		<b>0.403</b> (0.131)	$t^3$	0.000 (0.000)	0.000 (0.000)
Democracy		-1.614 (1.060)	Constant	<b>-2.136</b> (0.173)	<b>2.866</b> (0.704)
Age		0.005 (0.005)	N	4573	4179

Note: Logistic regressions; clustered standard errors in parentheses; Dependent variable: **Leadership change**;  $p < 0.05$ , two-tailed test, when in bold.

To illustrate the substantive significance of this result, we compare the change in predicted leadership turnover caused by fluctuations in aid flows to the effect of other explanatory variables, which reach statistical significance at convention-

al levels in our analysis. As expected, the likelihood of leader change increases when economic sanctions are imposed against the country, when the country experiences a civil war, and when the leader assumed the office through irregular means. Each one of these factors is coded as a binary variable; hence, we investigate their effects by comparing the probability of observing leadership turnover when values of these variables change from '0' to '1', while holding the remaining regressors fixed at their means. An imposition of economic sanctions increases the likelihood of leader replacement from 0.13 to 0.15; similarly, entering office through an irregular process means the leader's likelihood of being removed from office goes up to 0.15. Finally, involvement in a civil war results in the replacement likelihood of 0.17.

Two other explanatory variables that reach statistical significance have a negative relationship with the probability of leadership turnover. Specifically, we find that deteriorating economic conditions weaken leaders' political prospects: when all other regressors are fixed at their mean values, the predicted likelihood of leader replacement increases from 0.13 to 0.30 if we change the GDP growth variable from its mean (i.e., 0.08 or a very modest level of economic growth) to its minimum (-0.67, which represents a situation of economic recession). We also find that political experience matters - i.e., country leaders who have spent more time in office experience a lower risk of being replaced. If we change the leader's (logged) tenure in office from its mean to the maximum, the predicted probability of leadership change declines from 0.13 to 0.02, all else being equal. Note that the interaction term between this variable and the democracy dummy is also statistically significant, but has a positive coefficient. Our calculations of predicted probabilities of leadership turnover suggest that democratic leaders are somewhat more likely to be removed than their non-democratic counterparts: a democratic leader's predicted probability of removal is 0.19, compared to a non-democratic leader's probability of 0.11, given that all other regressors are set at their mean values.

## CONCLUSION

The objective of this article was to investigate the relationship between changes in aid allocations and recipient leaders' political survival. Based on the assumption that donors care about securing loyal government leaders in recipient countries, we developed a theoretical argument that led us to the expectation that changes in foreign assistance would be negatively correlated with leadership turnover. In particular, when donors are willing to increase their aid contribu-

tions, the risk of losing office should decrease for the leader of the recipient country. When, on the contrary, donors lower aid disbursements, aid cuts should have a destabilizing effect on the recipient country, i.e. the likelihood of leadership turnover should be higher.

The results of the empirical analysis reported in the article lend substantial support to our argument. Aid suspensions significantly increase the risk of losing office. In fact, no other control variable included in our model specification has a similar level of substantive effect on the predicted probability of leadership change. Therefore, economic assistance appears to be an effective foreign policy tool, assuming that aid allocations are driven primarily by donor interests rather than recipient needs.

One important extension of this research should relax the assumption regarding donor interests as the main motivating force of aid allocations. Such a change would allow incorporating recipient needs into the model to examine how donors' altruistic motivations affect the interactions studied in this article and the likelihood of leadership turnover. In addition, future research needs to consider recipient leaders' strategies in anticipation of aid suspensions. The focus of this article is on the donor-recipient relationship; yet, this dyadic relationship is likely influenced by other donors, which can replace lost aid and contribute to political stability in the recipient country.

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[Received June 1, 2016; Revised June 24, 2016; Accepted July 29, 2016]