Foreign Aid and Policy Concessions

Bruce Bueno de Mesquita        Alastair Smith

March 31, 2004

Abstract: We examine how domestic political arrangements influence aid-for-policy deals between nations A and B. Using Bueno de Mesquita et al’s (2003) selectorate model as the basis for domestic politics in each state and McGillivray and Smith’s (2003) concept of Leader Specific Punishment as the basis for credibility commitments, we show that the amount of aid required such that the leader in a potential recipient state is willing to agree to and to credibly implement policy concessions in exchange for aid transfers increases as the potential recipient state becomes richer, the size of the winning coalition (the number of people upon who the leader depends to remain in power) increases and the size of the selectorate (the set of people from which the winning coalition is drawn) decreases. Hence domestic institutions within the potential recipient nation shape the price at which policy concessions can be bought through aid, with poor, small winning coalition and large selectorate systems being the cheapest to buy. Domestic institutions in potential donor nations determine whether or not donors enter into such agreements. In particular, the leader in the potential donor state is most likely to make an aid-for-policy deal when the size of the transfer required is small, and when the donor state is rich with a large winning coalition and a relatively small selectorate. An empirical examination of the pattern of US aid giving supports these predictions.

1 Section I: Introduction

The provision of foreign aid poses four fundamental puzzles. These are (1) who gives aid; (2) how do donors determine how much aid to give; (3) who gets aid; and (4) how much aid does each recipient get? We suggest answers to these questions based on how political institutions shape the incentives of donors and recipients. Additionally, we test implications of the theory, in the process offering evidence for the theoretical claims regarding who gives and who gets aid, and how much money donors give and recipients receive.

The principle assumption in our study is that leaders want to retain power. From this perspective, foreign aid transfers only occur when they enhance the survival of leaders in both the donor and recipient states. Although this typically means that aid improves the welfare of the average citizen in the donor state, it need not do so. Indeed, in the recipient state aid transfers often reduce the
welfare of the average citizen. This is in contrast to the view that aid is sought or given to improve the welfare of people in poor countries. In fact, we know empirically that aid has not proven to be effective in raising per capita income or other major indicators of individual and social welfare (Easterly 2002). This suggests either that aid recipients are constrained to use aid unsuccessfully as a tool to improve the well-being of their constituents; they lack the know-how to do so; or aid serves some other purpose. Our analysis probes the "other purpose" we believe aid serves: political survival.

The model we offer proposes that aid giving and getting is a strategic process in which donors purchase policy support from recipients who use at least some of the assistance to ensure that they are securely ensconced in power. In this view, aid is not expected to flow to countries whose leaders naturally favor policies that are important to the donor. Nor is aid expected to flow to countries whose leaders cannot afford politically to adopt the policies sought by a prospective donor. Rather aid is expected to flow to countries whose leaders do not inherently support the policies of a prospective donor but are willing to back those policies in exchange for aid sufficient to improve their political and economic welfare relative to survival prospects for the recipient states’ leaders in the absence of aid.

The paper proceeds as follows. In section II we review the relevant literature, making clear the contending arguments and evidence marshaled by others. In section III we examine the selectorate model of politics introduced by Bueno de Mesquita, Smith, Siverson, and Morrow (2003). Using a simple formal model of the selectorate theory we discuss the underlying logic as to how political institutions shape the policy choices of leaders and the ease with which they survive. We then propose a model of foreign aid within the context of this selectorate model. The leader of nation A can offer the leader of nation B aid in exchange for policy concessions. We characterize a Markov Perfect Equilibrium in which aid transfers depend upon the institutional arrangements in both the donor and recipient countries. We then examine the comparative static implications of the equilibria with respect to the possibility and size of aid transfers and the effect of aid transfers on the survival of leaders. In this way we suggest answers to who gives aid, how much do they give, who gets aid, and how much do they get. Section IV describes the data and variables we use while section V presents the empirical tests. Section VI offers conclusions and draws out policy implications, in the process providing an explanation for the seemingly puzzling regularity that many poor people in the world simultaneously hate the American government and wish they lived in the United States.

2 Section II: Literature

There are literatures on who gives aid and the consequences of receiving aid.
3 Section III: A Selectorate Model of Political Survival and Foreign Aid

We consider aid transfers between a potential donor, state A, and a potential recipient, state B. Decisions are not made by nations, but rather by leaders, in this case AL and BL. Political competition within each state is modeled using the selectorate model, which focuses on how political institutions shape the focus between private and public goods provision. We assume there are policy differences between the two nations. In particular, the citizens of nations A would benefit from a policy concession from nation B. AL, the leader in nation A can use aid transfer to ‘buy’ policy concessions from nation B. In particular, AL offers an aid-for-policy deal to nation B’s leader (BL). For example, during the Cold War such a policy request from the American president to the leader of Zaire might have been to adopt an anti-communist stance. Alternatively, an American president or French premier might have sought permission for US or French corporations respectively to exploit mineral rights or run a pipeline across country B. We refer to such policy concessions as pro-A policies.

If BL accepts then the aid is transferred. Leader BL then decides whether or not to implement the agreed policy concessions and leaders AL and BL are then subject to domestic political competition. The fundamental feature of our model is that leaders make aid and policy decisions with an eye as to how they influence political survival. Decisions are not taken to improve the welfare of the people, unless coincidentally this simultaneously aids survival. As we shall see, under inclusive political institutions (large W) enhancing leader survival is typically synonymous with promoting public welfare. In contrast in more exclusionary systems, there is a disconnect between the policies that promote the public’s welfare and those that enhance a leader’s survival.

Central to our model is the credibility of BL’s willingness to implement pro-A policies. In particular, having received aid on the promise of implementing a pro-A policy, leader BL prefers not to implement the policy and would prefer simply to pocket the aid money. We model this credibility issue using McGillivray and Smith’s (2000, 2003, 2004; McGillivray and Stam 2004; Guisinger and Smith 2002; Smith 2000) concept of a leader specific punishment within the context of the infinitely repeated game.

If leader BL agrees to delivery pro-A policy concessions in return for an aid transfer but after the aid transfer BL reneges on the deal with AL by not implementing a pro-A policy then BL is said to have lost her integrity. Once leader BL loses her integrity she is deemed untrustworthy and leaders in nation A refuse to offer her any future aid. However, the loss of integrity and hence the removal of aid are attached to the dishonest leader and not to the nation she represents. If the dishonest leader is removed then nation B is again eligible for aid since its new leader arrives with her integrity intact. The targeting of punishments against leaders rather than the nation they represent profoundly influences the pattern of interaction between states and is, we believe, a more accurate representation of interstate interactions than standard treatments that
consider the interests and punishment strategies of states and of leaders as if they were the same.

3.1 Selectorate politics

Before turning to the question of foreign aid, we articulate a simplified version of BdM2S2's selectorate model which will be the basis of domestic politics in both donor and recipient nations in our aid model.

The selectorate, $S$, is the set of people with a potential say in who is to be leader. The essential feature of the selectorate is that it is the pool of individuals from which a leader draws supporters to form a winning coalition, $W$. An incumbent leader must maintain the support of her winning coalition or else she is deposed.

The size of both the winning coalition and the selectorate can vary enormously across political systems.\(^1\) In democratic states the selectorate is typically all adult citizens and the winning coalition is a relatively large proportion of this selectorate. The exact proportion of the selectorate that a leader requires to retain power depends upon the electoral rules. For example, in a two party directly elected president system, 50% of the selectorate constitutes a winning coalition. In contrast, a leader only needs 25% support in a singled membered district system.\(^2\) In monarchies or military Juntas selectorates and winning coalitions are much smaller than in democracies, composed of aristocrats or military elites only. Autocratic states generally have relatively small winning coalition, although selectorate size can vary greatly. Although standard regime type classification are associated with particular configuration of selectorate and coalition size, $W$ and $S$ are inherently continuous measures. Thus, they not only allow us to distinguish between the broad and somewhat arbitrary regime classifications, they also allow us to distinguish between the institutions within each classification: as our comparison of direct election and single membered districts illustrated for the case of democracy.

Political leaders have two mechanisms to reward supporters: public goods ($x$) and private goods ($g$). Policies, such as national defense and public health, with a high public goods component provide rewards to all residents of the nation. In contrast, private goods are allocated only to those members of the winning coalition.

Of course in reality no policies are pure private or pure public goods. However, as we shall next show mathematically, the relative focus between public and private goods is strongly driven by coalition size. National defense provides an interesting policy arena to consider this relative focus. While defense satisfies the classic public goods definition of a non-excludable and non-rival good,

\(^1\)We are somewhat loose with our notation. We let $W$ represent both the set of supporter and the size of this set.

\(^2\)The need to win only half the votes in half the districts suggests that the elimination of the US electoral colleague and its replacement with direct election for President would increase the size of the President's winning coalition and reduce the private goods focus in the President’s policy agenda (BdM2S2 2003 Chapter 10).
its provision provides private goods to members of the military and defense contractors. Political leaders might use defense spending to provide lavish officers quarters and bloated procurement contracts. Alternatively, funds might be spent on the optimal combination of equipment and training, with all contracts given out through competitive bidding. While both these alternative provide some private and some public goods, the former has a much greater private focus than does the latter.

These preliminaries over we now examine BdM2S2’s basic framework. Since these results are proved elsewhere, here we focus on an intuitive description of selectorate politics. We assume all residents of a country have a basic utility function $V(x, g)$ over public and private goods. This utility function is increasing and concave in both arguments. Although the characterization of the aid equilibrium below holds for concave functions, to ease the signing of several of the comparative static results we utilize the specific utility function $V(x, g) = \sqrt{x} + \sqrt{g}$.

We assume leaders are primarily driven by office holding. For each period in office a leader receives a payoff of $\Psi$. Further, leaders gain from any state resources that they can retain for themselves. The state produces $R$ resources in each period. If the incumbent leader survives in office and spends $M$ resources then her reward for that period is $\Psi + R - M$. If she is deposed she receives a payoff of zero. Following deposition, the challenger is relabelled as the incumbent and a new challenger is selected (from an infinite pool of potential challengers).

In addition to these direct payoffs, BdM2S2 suppose that a leader might prefer to form her coalition with certain selectors rather than others. In BdM2S2’s terminology, we assume leaders have idiosyncratic affinities for selectors. In particular, we assume that each leader (and challenger) has an ordering over all selectors. Ex ante, all possible affinity orderings are equally likely. Leaders are not driven primarily by these affinity concerns. However, all else equal, as a secondary consideration leaders prefer a coalition of selectors with whom they have the high affinity compared to a coalition of low affinity selectors.

Following BdM2S2, we assume that initially a challenger’s affinities are unknown. However, should the challenger attain office then his affinities are revealed and become common knowledge. Although by necessity, a challenger needs to attract the support of members of the incumbent’s coalition to come to power, once established a leader can rearrange her coalition around her most preferred selectors. This creates a risk for members of the incumbent’s coalition who contemplate defection to the challenger. While in the current period the challenger might offer them greater benefits than the incumbent, upon attaining power, if the challenger has greater affinity for other selectors then the supporter risks being replaced. While a selector’s support might have been vital in bring the challenger to power, this does not guarantee the supporter a place in the challenger’s long term coalition and private goods benefits that come with such membership.

The selectorate politics game is infinitely repeated. All players have a common discount factor $\delta$. The stage game is as follows:
1) The incumbent forms a coalition with the $W$ highest affinity selectors. The challenger forms a coalition of size $W$, which includes at least one member of the incumbent’s coalition.

2) The incumbent, $L$, and the challenger, $C$, each propose public and private goods allocations ($x_L, g_L$ and $x_c, g_c$, respectively) subject to the budget constraint $px + Wg \leq R$.

3) The selectors choose between the incumbent and the challenger. If the incumbent retains the support of her $W$ supporters then she retains power; otherwise she is removed.

4) The affinity order of the leader (either the existing incumbent or the challenger if the incumbent was deposed) is revealed.

The challenger’s objective is to attain office. Given the budget constraint $px + Wg \leq R$, in the current period the challenger can do no better than offer to maximize the rewards she offers her supporters: $\max_{p \in \mathbb{R}, x \in \mathbb{R}^+} V(x, g)$ subject to $px + Wg \leq R$. The variable $p$ is the price of public goods. Coalition size, $W$, serves the role of a price for private goods as it indicates the number of individuals who receive goodies. Let $x^*$ and $g^*$ be the levels of public and private goods that satisfy this maximization. For interior solutions (which we focus on), this implies the first order condition $\frac{V_p(x^*, g^*)}{p} = \frac{V_g(x^*, g^*)}{g}$, which yields BIM2S2 primary result concerning coalition size and the public/private focus of policy. As the size of the winning coalition ($W$) increases then leaders produce more public goods. A quick insight into this results can be obtained from remembering that coalition size is effectively the price of private goods. As this price increases then leaders substitute private goods for the now relatively cheaper public goods.

Next we define the indirect utility function $v(m, W)$ as the utility level that leaders provide their coalition given that they spend $m$ resources optimally on a coalition of size $W$: $v(m, W) = \max_{p \in \mathbb{R}, x \in \mathbb{R}^+} V(x, g)$ subject to $px + Wg \leq m$. Given the associated optimal public and private goods allocations, it is also useful to define, $u(m, W)$, as the utility level from receiving only the public goods portion of this optimal allocation: $u(m, W) = V(x^*, 0)$. This payoff, $u(m, W)$, is what selectors outside the winning coalition receive when the leader spends $m$ resources on her coalition of size $W$.

BIM2S2 characterize a Markov Perfect Equilibrium in which the incumbent leader survives and spends $m^*$ resources optimally rewarding her coalition in each period. To characterize $m^*$ we start by considering the best possible offer that a challenger can offer in his attempt to attain power. In the current period, the challenger can offer no more than to spend all available resources optimally on her coalition. This produces the immediate rewards of $v(R, W)$. Should the challenger succeed in his bid for power then in the next period he becomes the incumbent and spends $m^*$ resources on the $W$ selectors with whom he has the highest affinity. Since comparatively little is known about the challenger’s affinities, supporters in the current winning coalition have only a $\frac{1}{m^*}$ chance of being included in the challenger’s long term coalition. That is to say, each selector has a $W/S$ chance of being one of
the $W$ highest affinity types in the selectorate $S$. Since the challenger will spend $m^*$ resources in each future period then the net present value of defecting to the challenger is $v(R,W) + \sum_{t=1}^{\infty} \delta^t \left[ \frac{W}{S} v(m^*, W) + (1 - \frac{W}{S}) u(m^*, W) \right]$

$$= v(R,W) + \frac{\delta}{1-\delta} \left[ \frac{W}{S} v(m^*, W) + (1 - \frac{W}{S}) u(m^*, W) \right].$$

In contrast to the challenger, the incumbent does not face a commitment problem with respect to future inclusion in the winning coalition. Since the incumbent’s affinities are known and she is already selecting her highest affinity selectors, members of her coalition know they will continue to receive private goods. This creates an incumbency advantage for the incumbent. While she can promise access to private goods with certainty, the challenger can only offer private goods probabilistically (with probability $\frac{W}{S}$ to be specific). The size of the incumbency advantage depends upon value of private goods and the risk of exclusion from future private goods. When $W$ is small then policy has a highly private focus and so access to private goods is particularly valuable. Additionally, when $W$ is small and $S$ is large the prospects of obtaining these valuable rewards under the challenger become remote and so supporters of the incumbent become loyal.

We started our analysis of selectorate politics by supposing the incumbent spent $m^*$ resources in each period and survived. We now calculate the size of this resource expenditure. For members of the incumbent’s coalition, retaining the incumbent is worth $v(m^*, W) + \delta v(m^*, W) + \delta^2 v(m^*, W) + \ldots = v(m^*, W) \frac{1}{1-\delta}$. Providing this level of rewards is at least as great as the challenger’s best offer then the incumbent survives. In particular, since the incumbent wants to minimize expenditures she spends just enough to equal the challenger’s best offer. This yields the following incumbency condition:

$$v(m^*, W) \frac{1}{1-\delta} = v(R,W) + \frac{\delta}{1-\delta} \left[ \frac{W}{S} v(m^*, W) + (1 - \frac{W}{S}) u(m^*, W) \right]$$

(1)

This incumbency condition provides the basis of the analysis that follows so we pause to examine it in more detail. Equation 1 ensure that the incumbent just matches what the challenger can offer. If the incumbent spends less then the challenger could, in expectation, offer L’s supporters more and they would defect. If the incumbent spends more than $m^*$, then she wastes resources that she could have retained for her own discretionary uses.

Unlike the incumbent, whose coalition is already composed of her highest affinity supporters, when the challenger forms a coalition in an attempt to come to power, the challenger can not commit to retaining all the members in her transitory coalition in her long term coalition. This fear of exclusion and its consequential loss of private goods enable the incumbent to spend less than challenger offers to spending in the immediate period and still survive. The amount of discretionary resources that the incumbent can retain, $R - m^*$, provides a useful metric for the easy of survival. When coalition size is large, and hence private goods are relatively unimportant, then the incumbency advantage is small and $R - m^*$ is small. There is little slack in the system, so even a rel-
atively modest exogenous shock could leave the incumbent in a position of no longer being able to match the challenger’s best offer.

In contrast, when W is small private goods are more important relative to public goods. This engenders a loyalty norm, particularly when S is large since the prospects of obtaining private goods through long term membership of the challenger’s coalition becomes more remote. Under this circumstance, the incumbent spends less resources and retains more discretionary resources for herself, i.e. $R - m^*$ is large. This large difference between what the incumbent must pay out ($m^*$) and available resources ($R$) mean the incumbent can survive even relatively large shocks, since there is sufficient slack in the system to allow for additional compensation.

3.2 Foreign Aid in Selectorate Politics

We consider relations between a potential donor, A, and potential recipient, B and we index variables below by A or B to indicate to which nation they apply. Specifically, there is some policy issue $z$ in nation B that the peoples of nations A and B disagree about. By default, leaders in nation B would set this issue to their citizen’s preferred policy. However, in exchange for a transfer of resources in the form of aid, the leadership of nation B might accept an aid-for-policy deal.

In our aid game the leader of nation A (AL) offers the leader of nation B (BL) an aid-for-policy deal, $\rho$. If leader BL accepts the deal then $r = \rho$ resources are transferred from nation A to nation B. Following any aid transfers, domestic political competition occurs according B&MS’s selectorate model.

In selectorate politics, all leaders seek to increase the difference between available resources ($R$) and what they must spend to survive ($m^*$). Increasing this difference increases a leader’s survival and provides more discretionary resources. The conditions under which aid-for-policy deals enhance the welfare of leaders in both A and B depends upon institutional configurations in both nations.

Our theory shows that potential recipients with large coalitions are typically unwilling to make policy concessions in exchange for aid. For leaders of small coalition nations this trade is often attractive. In small W systems public goods are relatively unimportant since leader survival depends upon the welfare of only a small group. Leaders in such systems can use aid to compensate supporters with additional private goods for the loss they experience from a shift to a pro-A policy. Such a trade-off is unattractive for leaders in large W systems. The large size of W means that many people must be compensated for the imposition of a pro-A policy. Unless the aid transfer is huge, such a deal is unlikely to be beneficial for the incumbent in the recipient state. The incentives in the donor state are largely reversed. While no leader likes to give up resources, if coalition size in A is large, then policy concessions from nation B compensate a large number of the incumbent’s supporters in A.
3.3 The Aid Game

The nations have leaders, AL and BL, and challengers, AC and BC. In addition to the private and public goods of the selectorate model, we model a single addition policy choice, \( z \), in nation B. This policy can take two values, \( z \in \{0, 1\} \), where we might think of \( z = 1 \) as a pro-A policy, and \( z = 0 \) as the default policy that everyone in nation B prefers. Specifically, we assume that in addition to rewards from public and private goods, all selectors in nation B receive a payoff of \( \sigma_B > 0 \) if their preferred policy of \( z = 0 \). If, however, their leader adopts a pro-A policy they do not receive this additional benefit. If nation B adopts a pro-A position, \( z = 1 \), then all selectors in nation A receive \( \sigma_A \).

We assume leader BL receives a payoff of \( \Sigma_B \) for implementing her nation’s preferred policy (\( z = 0 \)) and leader AL receives a payoff of \( \Sigma_A \) should BL implement a pro-A policy. We might think of \( \Sigma_i \) as simply \( \sigma_i \); alternatively we might suppose leaders get additional psychic value from being responsible for implementing their nation’s preferred policy. None of our analyses rest on this distinction between selectors and leaders’ payoffs for policy. For the comparative statics we assume \( \frac{\Sigma_A}{\Sigma_B} = \xi > 0 \).

In the basic selectorate model the Markovian state variable described the affinity ordering of the leader. In the aid game we extend the state space to encompass the affinity ordering of both nations’ leaders and an additional state variable that describes the integrity of leader BL: \( X = A_A \times A_B \times I \) where \( \alpha_{AL} \in A_A \) is an affinity ordering over all members of the selectorate in nation A for leader AL, \( \alpha_{BL} \in A_B \) is the affinity ordering of BL and \( I \) represents the integrity of BL. Until a leader comes to power all affinity orderings are equally likely. Hence if \( \alpha_{Ac} \) is the challenger in nation A then \( \Pr(\alpha_{Ac} = a) = \Pr(\alpha_{Ac} = a') \) for all \( a, a' \in A_A \). The situation in nation B is analogous.

The third component of the state variable refers to the integrity of leader BL: \( I = \{H, D\} \). Initially all leaders are assumed to be honest, or have integrity, \( I = H \). However, if leader BL accepts aid in an aid-for-policy deal but then fails to implement the pro-A policy then leader BL loses her integrity, \( I = D \). Once her integrity is gone, BL remains dishonest for the rest of the game, \( I = D \). To preserve the focus on leaders we assume that leader BL is only obligated to deliver pro-A policy in exchange for aid to leader AL. Should leader AL be removed then any agreement dies with AL and BL is free to implement any chosen policy without jeopardizing her integrity. Alternatively, we might have supposed that BL is obligated to nation A rather than to AL per se. Adopting this assumption changes the results little. While it modifies condition \( L \) defined below, the comparative statics remain unchanged.

The game is infinitely repeated with a common discount factor \( \delta \). The stage game is given below:

1) **AL offers aid**: AL offers BL an aid-for-policy deal. Such a deal is a transfer of \( \rho \) resources in exchange for a pro-A policy \( \rho \geq 0 \).

2) **BL accepts or rejects the aid offer**. If BL accepts \( \rho \) then the aid transfer is made, \( r = \rho \). Otherwise, no aid transfer is made and \( r = 0 \).

3) **Domestic Competition in nation A**: AL forms a coalition with the \( W_A \)
highest affinity members of the selectorate $S_A$. The challenger forms a coalition of size $W_A$ which includes at least one member of AL’s coalition. Leader AL and challenger AC propose policy and spending levels, $(x_{AL}, g_{AL})$ and $(x_{AC}, g_{AC})$ respectively subject to the budget constraint $px_i + g_i W_A \leq R_A - r$ for $i = AL, AC$.

Selectors in A pick a leader (either incumbent AL or the challenger AC). The incumbent is deposed if any member of her coalition supports the challenger; otherwise she survives.

4) Domestic Competition in nation B: BL forms a coalition with the $W_B$ members of the selectorate which whom she has the highest affinity. BL offers $g_{BL}, x_{BL}, z_{BL}$ subject to the budget constraint $W g_{BL} + px_{BL} \leq R_B + r$. BC forms a coalition of size $W_B$ which includes at least one member of BL’s coalition. BC offers $g_{BC}, x_{BC}, z_{BC}$ subject to budget constraint $W g_{BC} + px_{BC} \leq R_B + r$.

The selectors in B choose. The incumbent, BL, is deposed if any member of her coalition supports the challenger; otherwise she survives.

5) Update state variables: The affinities of each leader is revealed. Should a challenger come to power they are relabeled as AL or BL, as appropriate, and a new challenger is chosen from an infinite pool of potential challengers. Further the integrity of leader BL is updated according to the following rule. If the incumbent, BL, is replaced then integrity is restored to honesty: $I = H$. If incumbent leader BL is dishonest and she survives then she remains dishonest, $I = D$. If leader BL is initially honest, $I = H$, then BL remains honest unless BL accepts aid from leader AL, leader AL survives and BL fails to implement the pro-A policy. Under this latter contingency leader BL becomes dishonest: $I = D$. Note that since we are assuming that deals are between leaders, if leader AL is removed from office then leader BL has no obligation to implement the deal to protect her integrity.

3.4 A Foreign Aid Equilibrium

We characterize a Markov Perfect Equilibrium utilizing leader specific punishments in which leader AL transfers $r$ resources to BL and both leaders survive in office. We also characterize the conditions under which such aid transfers are possible.

Although the formal statement of the equilibrium is somewhat convoluted, the underlying ideas are straightforward. Provided that BL is honest ($I = H$), AL offers $r^*$ aid which is accepted. Following the aid transfers BL implements the pro-A policy $z = 1$, and AL and BL each spend the minimal amount of resources, $m_{Ar^*}$ and $m_{Br^*}$ respectively, to just match the best possible offer of the challenger, as described in the basic selectorate model above.

If leader BL is dishonest ($I = D$) then AL never offers aid, $\rho = 0$. If ever offered any aid, then a dishonest BL accepts the aid but never implements the pro-A policy. The threat of aid withdrawal is leader specific. If leader BL is deposed then the challenger that replaces her is regarded as honest ($I = H$). The challenger becomes more attractive to the selectors if he re-establishes integrity. Following the replacement of a dishonest leader with an honest challenger aid transfers resume, swelling the pool of resources from which supporters are re-
warded. The desire to maintain future aid is what ensures that the incumbent BL implements the pro-A policy having accepted an aid-for-policy deal.

In the equilibrium four conditions govern the range of parameters over which aid-for-policy deals occur. The resources that AL offers in any aid-for-policy deal must satisfy the criteria that BL wants to 1) accept the deal offered (Condition \( K(r^*) \geq 0 \)) and 2) having accepted the deal, BL must prefer to implement the deal rather than renege (Condition \( J(r^*) \geq 0 \)). As we derive below, condition \( K \) ensures that leader BL prefers to accept the current deal rather than decline aid and play the selectorate game without a larger resource pool. Condition \( J \), which is again formally derived below, ensures that once BL accepts the aid deal, she prefers to implement the pro-A policy rather than renege on the policy agreement, lose her integrity and thereby play all future interactions of the game without access to foreign aid.

Leader AL will offer the smallest aid package that will be both acceptable and implementable to BL. In equilibrium, this ensures that one of the conditions \( K \) or \( J \) is a binding constraint and so is satisfied with equality. These conditions provide the minimal size of aid donations required by AL to obtain the desired pro-A policy concessions from BL. The conditions \( O(r^*) \geq 0 \) and \( L(r^*) \geq 0 \), derived below, ensure leader AL is willing to make the required resource transfer in the form of aid. If condition \( O \) is not satisfied then in the long run the aid-for-policy trade-off is not beneficial for leader AL. Condition \( L \) ensures that in the immediate period AL prefers to make the aid-for-policy deal rather than postpone the deal until the next period. These four constraints directly address the four puzzles with which we began.

Seletorate institutions and other parameters in the model shape the size of the aid payment required for BL to accept and implement the pro-A policy: conditions \( K \) and \( J \). Institutions also shape whether AL is willing to pay these costs to obtain pro-A policy concessions: conditions \( O \) and \( L \). Therefore, by characterizing the equilibrium and examining its comparative statics, we obtain predictions as to how much aid is given (if it is given: conditions \( K \) and \( J \)), and whether aid is given at all (conditions \( O \) and \( L \)).

Proposition 1: There exists a MPE with \( r^* \) aid transfers utilizing leader specific strategies if \( O(r^*) \equiv m_{ADO} - r^* - m_{Ar} + \Sigma_A \geq 0 \), \( L(r^*) = m_{A0} - r^* - m_{Ar} + \Sigma_A \geq 0 \), \( K(r^*) = r^* - m_{Br} + m_{BO} - \Sigma_B \geq 0 \), \( J(r^*) = \delta m_{Br} + (1 - \delta)m_{BD} - \Sigma_B + \delta m_{BD} \geq 0 \) and one of the constraints \( K(r^*) = 0 \) or \( J(r^*) = 0 \) holds with equality, where

\[
v(m_{Ar}, W_A) + \sigma_A + \frac{\delta}{1 - \delta}v(m_{Ar}, W_A) + \frac{\delta}{1 - \delta}v(R_A - r^*, W_A) - \delta Z_{AC} = 0
\]  
(2)

\[
v(m_{ADO}, W_A) + \frac{\delta}{1 - \delta}v(m_{ADO}, W_A) - v(R_A, W_A) - \delta Z_{ACD} = 0
\]  
(3)

\[
v(m_{A0}, W_A) + \frac{\delta}{1 - \delta}v(m_{Ar}, W_A) + \frac{\delta}{1 - \delta}v(R_A, W_A) - \delta Z_{AC} = 0
\]  
(4)
\[ F \equiv v(m_{Br^*}, W_B) + \frac{\delta}{1 - \delta} (m_{Br^*}, W_B) - v(R_B + r^*, W_B) - \sigma_B - \delta Z_{BC} = 0 \quad (5) \]
\[ v(m_{BD^0}, W_B) + \frac{\delta}{1 - \delta} v(m_{Br^*}, W_B) - v(R_B, W_B) - \delta Z_{BC} = 0 \quad (6) \]
\[ v(m_{BD^0}, W_B) + \frac{\delta}{1 - \delta} \sigma_B + \frac{\delta}{1 - \delta} v(m_{BD^0}, W_B) - v(R_B, W_B) - \delta Z_{BC} = 0 \quad (7) \]
\[ v(m_{BD^0}, W_B) + \frac{\delta}{1 - \delta} \sigma_B + \frac{\delta}{1 - \delta} v(m_{BD^0}, W_B) - v(R_B, W_B) - \delta Z_{BC} = 0 \quad (8) \]
\[ Z_{AC} = \frac{1}{1 - \delta} \left( \frac{W_A}{S_A} v(m_{A^r*}, W_A) + (1 - \frac{W_A}{S_A}) u(m_{A^r*}, W_A) + \sigma_A \right), \quad Z_{ACD} = \frac{1}{1 - \delta} \left( \frac{W_A}{S_A} v(m_{AD^0}, W_A) + (1 - \frac{W_A}{S_A}) u(m_{AD^0}, W_A) \right), \quad \text{and} \quad Z_{BC} = \frac{1}{1 - \delta} \left( \frac{W_A}{S_A} v(m_{Br^*}, W_B) + (1 - \frac{W_A}{S_A}) u(m_{Br^*}, W_B) \right). \]

**Corollary 1** The equilibrium has the following characteristics.

**BL honest (I = H):**

If leader BL is honest (I = H) then leader AL offers leader BL aid transfer \( \rho = r^* \), which leader BL accepts. If AL offers \( \rho = r \) such that either \((J(r) \equiv -1 - \delta)m_{Br} + \delta r^* - \delta m_{Br^*} + (1 - \delta)m_{Br - D} - \Sigma_B + \delta m_{BD^0} \geq 0 \) and \( K(r) = r - m_{Br} + m_{BD} - \Sigma_B \geq 0 \) or \((J(r) < 0 \text{ and } K(r) < J(r) \geq 0) \) then BL accepts the offer. Otherwise aid is rejected.

If no aid transfer takes place \((r = 0) \) then BL implements policy \( z = 0 \) and leaders AL and BL spend \( m_{I0} \) and \( m_{DO} \) respectively. If BL accepts aid \( r \) and leader AL is removed then BL implements policy \( z = 0 \) and BL spends \( m_{BR} \). If BL accepts aid \( r \) and leader AL is not removed then if \((J(r) \geq 0 \text{ BL implements policy } z = 1 \text{ and AL and BL spend } m_{Ar} \text{ and } m_{Br} \) respectively and if \((J(r) < 0 \text{ then BL implements policy } z = 0 \text{ and AL and BL spend } m_{ADr} \text{ and } m_{BDr} \) respectively.

**BL dishonest (I = D):**

If leader BL is dishonest (I = D) then leader AL offers no aid. Should any aid be offered then leader BL accepts the aid but does not implement the pro-A policy. Given no aid, leaders AL and BL spend \( m_{AD^0} \) and \( m_{BD^0} \) respectively which solve equations 3 and 8. If \( r \) aid is transferred then leaders AL and BL spend \( m_{ADr} \) and \( m_{BDr} \) respectively which solve equations 10 and 7.

\[ v(m_{Ar}, W_A) + \sigma_A + \frac{\delta}{1 - \delta} v(m_{A^r*}, W_A) + \frac{\delta}{1 - \delta} \sigma_A - v(R_A - r, W_A) - \delta Z_{AC} = 0 \quad (9) \]
\[ v(m_{ADr}, W_A) + \frac{\delta}{1 - \delta} v(m_{AD^0}, W_A) - v(R_A - r, W_A) - \delta Z_{ACD} = 0 \quad (10) \]
Before characterizing the above equilibrium, we discuss a few general features of our approach that will reduce unnecessary notation. First, optimality in dynamic programming requires that only single move deviations followed by subsequent play as specified by the equilibrium path are the only deviations that need be considered. Given that consideration of complex deviations are unnecessary, we do not index states, strategies or payoffs by time. Second, we do not characterize the policy choices of leaders explicitly. Rather we characterize their spending via the indirect utility function \( v(M, W) \), which assumes the optimal mix of public and private goods for the given coalition size. Third, we consider a selectorate strategy that picks the incumbent over the challenger provided that the expected payoffs from the incumbent are at least as large as the expected payoffs from the challenger: such a strategy is a best response. In the equilibrium we characterize, the incumbent spends just enough to match the best possible offer that the challenger can make. This behavior creates incumbency conditions analogous to equation 1 that characterize the spending decisions of leaders under all contingent circumstances. By setting spending to match the challenger’s best offer the incumbent survives and pockets the slack between the available resources and the level of spending required to survive. Finally, in characterizing spending decisions off the equilibrium path we assume that the leader can always survive. Since the leader can survive on the equilibrium path, any defection that has the leader removed obviously can not be a best response.

**Dishonest State: \( I = D \)**  We start by considering the dishonest case, \( I = D \). Follow aid transfer \( r \), the available budget in nation B is \( R_B + r \). Given that in future periods any challenger who succeeds in coming to office will form a winning coalition with his \( W_B \) most preferred supporters from \( S_B \), each selector has a \( W_B/S_B \) chance of being included in future winning coalitions. Once in office, the challenger will be offered \( r^* \) aid transfers which he accepts. He will then implement policy \( z = 1 \) and spends \( m_{Br} \) resources to reward his coalition. Hence the best possible offer that the challenger can offer in the current period is to spend all \( R_B + r \) resources optimally and offer and implement the selectors’ most preferred policy \( z = 0 \). This largest possible offer has expected value \( v(R_B + r, W_B) + \sigma_B + \delta Z_{BC} \), where \( Z_{BC} = \frac{1}{1-\delta}(\frac{W_B}{S_B}v(m_{Br}, W_B) + (1 - \frac{W_B}{S_B})u(m_{Br}, W_B)) \).

Should BL survive then, given that \( I = D \), in every future period BL receives no offers of aid and will spend \( m_{BBD} \) on her coalition and offer the selectors’ most
preferred policy. Hence the continuation value associated with retaining the incumbent for current members of her coalition is \( v(m_B, W_B) + \sigma_B + \frac{\delta}{1-\delta}(\sigma_B + v(m_B D_0, W_B)) \). Given the selectors’ strategy of retaining the incumbent unless the challenger offers higher expected rewards, the incumbent survives providing \( v(m_B, W_B) + \sigma_B + \frac{\delta}{1-\delta}(\sigma_B + v(m_B D_0, W_B)) \geq v(R_B + r, W_B) + \sigma_B + \delta Z_B C \).

Since BL maximizes her payoff by satisfying this incumbency constraint with equality, \( m_{BDr} \) is characterized by equation 7. If BL implements a pro-A policy she must spend additional resources to satisfy the incumbency condition. Since this does not affect her integrity it can not be a best response. If no aid transfer is made \((r = 0)\) then equation 7 solves for the spending level \( m_{BD0}\) (equation 8). Despite her tarnished record \((I = D)\), leader BL survives providing \( m_{BD0} \leq R_B \) and \( m_{BDr} \leq R_B + r \). If these conditions are not met then BL spends all available resources optimally.

We now consider leader AL’s strategy when \( I = D \). We shall focus only on the case where BL can survive \((m_{BD0} \leq R_B \text{ and } m_{BDr} \leq R_B + r)\). The case where B can not survive follows by a similar argument.

**AL strategy given \( I = D \)** Suppose no aid transfer has been made \( r = 0 \). Given BL’s dishonest status BL will never implement a pro-A policy and no aid transfers occur in future periods. Should AC come to power he will choose the \( W_A \) selectors with the highest affinity to form his coalition. Hence, for a selector in AL’s coalition the probability of inclusion in a future winning coalition is \( W_A/S_A \). Challenger AC’s best possible offer is to spend all available resources optimally: \( v(R_A, W_A) + \delta Z_{ACD} \) where \( Z_{ACD} = \frac{1}{1-\delta}(\frac{W_A}{S_A}v(m_{AD0}, W_A) + (1 - \frac{W_A}{S_A})u(m_{AD0}, W_A)) \). To match this best possible challenge and minimize expenditure, AL will choose \( m_{AD0} \) given by equation 3.

If leader BL could not survive the current period then BL’s integrity will be restored by leader replacement and equation 3 should be modified to \( v(m_{AD0}, W_A) + \frac{\delta}{1-\delta}(v(m_{ADr}, W_A) - v(R_A, W_A)) - \delta Z_{ACD} = 0 \), where \( Z_{ACD} = \frac{1}{1-\delta}(\sigma_A + \frac{W_A}{S_A}v(m_{ADr}, W_A) + (1 - \frac{W_A}{S_A})u(m_{ADr}, W_A)) \).

Now suppose AL offered aid \( \rho = r \) to a dishonest BL who accepted. The available resources in nation A become \( R_A - r \). BL does not implement pro-A policy in the current, or any other, period. Hence in order to survive AL spends \( m_{ADr} \) that just matches the best possible offer by the challenger, as given by the incumbency constraint in equation 10.3

Finally, we show that offering aid is never optimal when BL is dishonest. If AL offers aid \( \rho = r \) then it is always accepted by BL, but BL never implements a pro-A policy. Hence AL payoff from offering aid is \( \Psi + R_A - r - m_{ADr} + \frac{\delta}{1-\delta}(\Psi + R_A - m_{AD0}) \), where \( m_{ADr} \) is given by 10. Concavity in \( v(m, W) \) ensures that AL’s payoff is decreasing in \( r \). Hence AL never makes offers to dishonest

3Note if leader BL could not survive the current period then \( Z_{ACD} = \frac{1}{1-\delta}(\sigma_A + \frac{W_A}{S_A}v(m_{ADr}, W_A) + (1 - \frac{W_A}{S_A})u(m_{ADr}, W_A)) \); if BL could survive the current period by not subsequent period \((m_{BDr} \leq R_B + r \text{ and } m_{BD0} > R_B)\) then \( Z_{ACD} = \frac{W_A}{S_A}v(m_{AD0}, W_A) + (1 - \frac{W_A}{S_A})u(m_{AD0}, W_A) + \frac{\delta}{1-\delta}(\sigma_A + \frac{W_A}{S_A}v(m_{ADr}, W_A) + (1 - \frac{W_A}{S_A})u(m_{ADr}, W_A)) \).
BL’s.

**No aid equilibrium** We pause for a moment since the above logic developed in the context of a dishonest BL ensures the existence of a MPE in which aid transfer never take place. In the no aid MPE leader AL never offers aid and leader BL always accepts aid but never implements pro-A policy. Such an equilibrium exists under all conditions and the spending levels on the equilibrium path \( m_{A0} \) and \( m_{B0} \) are given by the following incumbency constraints:

\[
\begin{align*}
    v(m_{A0}, W_A) + \delta v(m_{A0}, W_A) - v(R_A, W_A) - \delta v(m_{A0}, W_A) + (1 - \frac{W_A}{S_A}) v(m_{A0}, W_A) &= 0 \\
    v(m_{B0}, W_B) + \delta v(m_{B0}, W_B) - v(R_B, W_B) - \delta v(m_{B0}, W_B) + (1 - \frac{W_B}{S_B}) v(m_{B0}, W_B) &= 0.
\end{align*}
\]

**3.4.2 Honest BL (I = H).**

On the equilibrium path, A offers aid \( \rho = r^* \) which BL accepts. If AL survives then BL implements a pro-A policy, spends \( m_{Br} \) and survives. We start by characterizing the challenger BC’s best possible offer following aid transfer \( r \). This best offer is to optimally spend all available resources and implement nation B’s preferred anti-A policy \((z = 0)\). Should BC become leader in the next period he will be offered \( r^* \) aid which he will accept and form a coalition of the \( W_B \) highest affinity selectors. Hence, for every selector in BC’s transitional coalition the expected value of BC coming to power is \( v(R_B + r, W_B) + \sigma_B + \delta Z_{BC} \), where \( Z_{BC} = \frac{1}{1 - \delta} (\frac{W_B}{S_B} u(m_{Br} + W_B) + (1 - \frac{W_B}{S_B}) u(m_{Br}, W_B)) \).

To survive BL must match this best possible offer by the challenger: \((m_{Br}, W_B) + \frac{1}{1 - \delta} (m_{Br}, W_B) \geq v(R_B + r, W_B) + \sigma_B + \delta Z_{BC} \). This yields equation 11 and when equated at \( r = r^* \) yields equation 5.

We now examine the minimum spending that is necessary by BL to survive under each possible contingency.

First, suppose no aid \((r = 0)\) transfer occurred. Under this circumstance, BL’s integrity is not affected by her policy choice. Hence she chooses \( z = 0 \) since this is the policy she prefers and lowers what she must spend on her supporters. In particular, BL spends \( m_{B0} \) given by equation 6.

Suppose aid transfer \( r \) has occurred and leader AL survives. If BL implements the pro-A policy \( z = 1 \) then she retains her integrity. She then offers to spend \( m_{Br} \), the minimum expenditure to match the best possible offer of the challenger. This yields a payoff of \( \Psi + R_B + r - m_{Br} + \frac{\delta}{1 - \delta} (\Psi + R_B + r^* - m_{Br*}) \) where \( m_{Br} \) satisfies 11.

If following transfer \( r \) leader AL survives and BL implements policy \( z = 0 \) then she destroys her integrity and will never be offered aid again \((I = D \text{ in all future periods})\). The maximum payoff she can receive under this scenario is \( \Psi + R_B + r - m_{BrD} + \frac{\delta}{1 - \delta} (\Psi + R_B - m_{B0D} + \Sigma_B) \) where \( m_{BrD} \) satisfies equation 7. Hence, having accepted aid transfer \( r \) and if AL survives, BL implements pro-A policy iff \( -m_{Br} + \frac{\delta}{1 - \delta} (r^* - m_{Br*}) \geq m_{BrD} - \frac{1}{1 - \delta} \Sigma_B + \frac{\delta}{1 - \delta} m_{B0D} \). We write this as
the constraint \( J(r) \equiv -(1-\delta)m_{Br} + \delta r^* - \delta m_{Br^*} + (1-\delta)m_{BrD} - \Sigma_B + \delta m_{BDo} \geq 0 \).

If following aid transfer \( r \) leader AL with whom BL made the deal is removed then by our assumption that deals are between leaders then BL need not implement a pro-A policy to retain her integrity. Thus, she set policy to \( z = 0 \) and minimizes spending to \( m_{BHR} \) which satisfies the equation 12.

Note that since leader AL is never disposed in the equilibrium we characterize, the assumption that BL’s obligation is to AL rather than nation A is mute. Assuming B’s obligation was to nation A would leave the characterization of B’s behavior unchanged.

Next, we consider BL’s decision to accept the foreign aid offer \( \rho = r \). If BL accepts the offer and \( J(r) \geq 0 \) then BL’s maximizes her payoff by just matching the best offer of the challenger by spending \( m_{Br} \) as given by equation 11. This yields a payoff of \( \Psi + R_B + r - m_{Br} + \frac{\delta}{1-\delta}(\Psi + R_B + r^* - m_{Br^*}) \).

Alternatively if BL rejects the offer then her payoff is \( \Psi + R_B + m_{Bo} + \Sigma_B + \frac{\delta}{1-\delta}(\Psi + R_B + r^* - m_{Br^*}) \). Hence if \( J(r) \geq 0 \) then BL accepts aid if and only if \( K(r) = r - m_{Br} + m_{Bo} - \Sigma_B \geq 0 \).

If \( J(r) < 0 \) then having accepted aid, BL implement \( z = 0 \) and loses her integrity. Under this circumstance BL’s payoff from accepting aid is \( \Psi + R_B + r - m_{BrD} + \Sigma_B + \frac{\delta}{1-\delta}(\Psi + R_B - m_{BDo} + \Sigma_B) \). Hence if \( J(r) < 0 \) BL accepts aid if \( K2(r) \equiv r + m_{Bo} - m_{BrD} + \frac{\delta}{1-\delta}(\Sigma_B - m_{BDo} + m_{Br^*} - r^*) \geq 0 \). Note that \( K(r) = J(r) + K2(r) \).

Hence if \( J(r) \geq 0 \) and \( K(r) \geq 0 \) then BL accepts aid and implements policy. If \( J(r) \geq 0 \) and \( K(r) < 0 \) then BL refuses aid, although she would have implemented policy had she accepted aid. If \( J(r) < 0 \) and \( K2(r) \geq 0 \) then BL accepts aid but does not implement aid. If \( J(r) < 0 \) and \( K2(r) < 0 \) then BL refuses aid.

**AL strategy given** \( I = H \). If AL offers aid \( \rho = r \) such that \( J(r) \geq 0 \) and \( K(r) \geq 0 \) then BL accepts such an offer and implements \( z = 1 \). If the challenger attains office then BL implement \( z = 0 \) and AC’s best possible effort is to spend all available resources optimal. Hence AC’s best possible offer is \( v(R_A - r) + \frac{\delta}{1-\delta}v(m_{Ar^*}, W_A) + (1 - \frac{\delta}{1-\delta})u(m_{Ar^*}, W_A) + \sigma_A \). The incumbent spends enough to match this optimal offer: \( v(m_{Ar}, W_A) + \sigma_A + \frac{\delta}{1-\delta}v(m_{Ar^*}, W_A) + \frac{\delta}{1-\delta}\sigma_A \). Hence this yields equation 9 which solves for \( m_{Ar^*} \). At \( r = r^* \) this equation becomes 2 which solves for \( m_{Ar^*} \). A’s payoff from offering \( \rho = r \) is \( \Psi + R_A - r - m_{Ar} + \Sigma_A + \frac{\delta}{1-\delta}(\Psi + R_A - r^* - m_{Ar^*} + \Sigma_A) \).

We next show that under this circumstance AL’s payoff is decreasing with respect to \( r \). Hence if AL is going to offer aid that will be excepted to result in pro-A policy implementation then A will always use the smallest aid transfer such that this occurs. \( \frac{d}{dr}(\Psi + R_A - r - m_{Ar} + \Sigma_A + \frac{\delta}{1-\delta}(\Psi + R_A - r^* - m_{Ar^*} + \Sigma_A)) = \frac{d}{dr}(-r - m_{Ar}) = -1 - \frac{dm_{Ar}}{dr} \). Since \( \frac{dm_{Ar}}{dr} = -\frac{v_u(R_A - r, W_A)}{v_B(m_{Ar}, W_A)} \), the concavity of \( v(m, W) \) ensures that \( 0 > \frac{dm_{Ar}}{dr} > -1 \).

In order that AL’s strategy is a best response, if AL offers aid that is accepted
with pro-A policy implementation it must be case that either constraint $J(r) \geq 0$ or constraint $K(r) \geq 0$ is binding. Let $r^{**}$ be the smallest aid transfer that satisfies $J(r^{**}) \geq 0$ and $K(r^{**}) \geq 0$. However by the stationarity of MPE, $r^* = r^{**}$.

We now consider defections to aid offers less than $r^{**}$. Suppose AL offers aid $r$ such that either $K(r) < 0$ and $J(r) \geq 0$ or $K2(r) < 0$ and $J(r) < 0$. Such an offer always exists, $\rho = 0$ for instance. AL’s payoff is $\Psi + R_A - m_{A0} + \frac{\delta}{1-\rho} (\Psi + R_A - r^* - m_{A^{r^*}} + \Sigma_A)$, where $m_{A0}$ solves equation 4.

In order that AL prefers to offer $\rho = r \geq r^*$ aid such that $J(r) \geq 0$ and $K(r) \geq 0$ (i.e. aid that is accepted and pro-A policy implemented) it must be that case that $(\Psi + R_A - r - m_{A^{r^*}} + \Sigma_A + \frac{\delta}{1-\rho} (\Psi + R_A - r^* - m_{A^{r^*}} + \Sigma_A)) \geq \Psi + R_A - m_{A0} + \frac{\delta}{1-\rho} (\Psi + R_A - r^* - m_{A^{r^*}} + \Sigma_A)$, which implies the following constraint holds: $L(r) = m_{A0} - r - m_{A^{r^*}} + \Sigma_A \geq 0$.

Suppose AL offers aid $r$ such that $K2(r) \geq 0$ and $J(r) < 0$. AL’s payoff is $\Psi + R_A - r - m_{A^{Dr}} + \frac{\delta}{1-\rho} (\Psi + R_A - m_{A^{Do}})$, where $m_{A^{Dr}}$ solves 10. This payoff is decreasing in $r$, so AL wants to minimize her offer if it will be accepted without pro-A policy implementation: $\sup_r (-r - m_{A^{Dr}}) = -m_{A^{Do}}$. Note this is an upper bound, not a maximum, since unless $r > 0$ BL’s integrity cannot be tarnished. Additionally $K2(r)$ might be negative as $r \to +0$, so BL does not accept the aid.

Hence if $\Psi + R_A - m_{A^{Do}} + \frac{\delta}{1-\rho} (\Psi + R_A - m_{A^{Do}}) \leq \Psi + R_A - r - m_{A^{r^*}} + \Sigma_A + \frac{\delta}{1-\rho} (\Psi + R_A - r^* - m_{A^{r^*}} + \Sigma_A)$ for $r = r^*$ then AL prefers to offer $r^*$, which is accepted and the pro-A policy is implemented rather than offer any level of aid that is accepted without pro-A policy implementation. Condition $O \equiv m_{A^{Do}} - r^* - m_{A^{r^*}} + \Sigma_A \geq 0$ is sufficient (although not necessary as $\lim_{r \to 0} K2(0)$ could be negative). Informally this condition states that leader AL prefers aid transfer in every period rather than never having aid transfers. Thus, we have shown that providing either $(J(r^*)) \geq 0$, $K(r^*) = 0$ or $(J(r^*)) = 0$, $K(r^*) \geq 0$, and $O \equiv m_{A^{Do}} - r^* - m_{A^{r^*}} + \Sigma_A \geq 0$ and $L(r^*) \geq 0$ the aid equilibrium is a MPE since all players play best responses given the strategies of all other players and the state variable. QED.

The aid equilibrium characterizes the size of aid transfers, $r^*$. In particular, $r^*$ is the minimum size of transfer such that both $J(r^*) \geq 0$ and $K(r^*) \geq 0$. Through the use of comparative statics for this system of equations we find how institutions affect the size of aid transfers.

Proposition 2: If aid-for-policy transfers occur then the size of aid transfers ($r^*$) increases as B’s winning coalition ($W_B$) increases in size ($\frac{dr^*}{dW_B} > 0$); $r^*$ decreases as B’s selectorate ($S_B$) increases in size ($\frac{dr^*}{dS_B} < 0$); $r^*$ increases as the salience of the pro-A policy issue ($\sigma_B$) increases in nation B ($\frac{dr^*}{d\sigma_B} > 0$); and $r^*$ decreases as players become more patient ($\frac{dr^*}{d\sigma} < 0$).

Unfortunately, we have been unable to analytically sign the comparative statics of $r^*$ with respect to $R_B$ when $K$ is the binding constraint. However when $J$ is the binding constraint then $\frac{dr^*}{dJ_B} > 0$. Simulations suggest this result holds when $K$ is the binding constraint. Hence we conjecture that $\frac{dr^*}{dK_B} > 0$. 

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Proposition 2 characterizes how the size of aid transfers depend upon institutions and other parameters. However, aid-for-policy deal do not occur unless AL desires them. In particular, aid transfers require that conditions $O$ and $L$ are met.

Proposition 3: The probability that an aid-for-policy deal occurs increases as the size of aid decreases ($\frac{dL}{dR} < 0$, $\frac{dO}{dR} < 0$); the probability of an aid transfer increases as $W_A$ increases ($\frac{dL}{dW_A} > 0$, $\frac{dO}{dW_A} > 0$); the probability of an aid transfer increases as $S_A$ decreases ($\frac{dL}{dS_A} < 0$, $\frac{dO}{dS_A} < 0$); the probability of an aid transfer increases as the value of the pro-A policy ($\sigma_A$) increases ($\frac{dL}{d\sigma_A} > 0$, $\frac{dO}{d\sigma_A} > 0$); and the probability of an aid transfer increases as players becomes less patient ($\frac{dL}{d\delta} < 0$, $\frac{dO}{d\delta} < 0$).

Unfortunately we have not been able to analytically sign the comparative statics $\frac{dO}{dR_A}$ and $\frac{dL}{dR_A}$. However, given simulation results we conjecture that AL’s willingness for an aid-for-policy deal is increasing in A’s resources ($\frac{dO}{dW_A} > 0$, $\frac{dL}{dW_A} > 0$).

In the next section we test these predictions using US aid data. However, before doing so we pause to examine the normative implications of our model by examining the welfare effects of foreign aid.

In order that the leader of a recipient nation is will to enter into an aid-for-policy deal, the aid transfers must improve the leader’s survival prospects. In order that this occurs, the leader uses some of the additional resources provided through aid to compensate her coalition for the imposition of pro-A policy. Additionally since aid increases the total resource pool it also increases what challengers can potentially offer. Overall the incumbent spends more and generates a higher level of welfare for her coalition than would be the case in the absence of foreign aid.

Those outside the winning coalition are often made worse off by foreign aid, particularly in small coalition systems. For citizens outside of W, aid-for-policy brings about some increase in rewards since the leader spends more on providing rewards for her supporters. Unfortunately, when W is small much of this additional compensation comes in the form of private goods that those outside W do not share in. Hence when W is small the improvements in government provided benefits are unlikely to offset the losses imposed through the imposition of a pro-A policy. We should expect that aid donors are unpopular amongst the general public in many recipient countries and that this dislike increases as the size of the aid transfers increase and as the recipient’s winning coalition size decreases. Given the lack of systematic data we do not compare attitudes towards donor nations here.

Aid donation improves welfare in the donor nation. Obtaining policy concessions in exchange for aid improves the welfare of the winning coalition and enhances leader survival. If it did not do so then the leader would not make aid donations. Aid also improves the welfare of those outside of the winning coalition. These residents gain from the pro-A policy. Although the reduction in resources reduces the provision of public goods, these losses are less than those experienced by members of the winning coalition who also lose private goods.
4 Tests

4.1 Data and Method

We test our theoretical predictions using US aid transfers. The U.S. Agency for International Development (USAID) prepared a report on U.S. Overseas Loans and Grants, Obligations and Loan Authorizations July 1, 1945 - September 30, 2001. This publication is popularly known as "The Greenbook". This document breaks down US aid into a number of categories. For example it differentiates between economic and military aid and between loans and grants. We convert these data into constant US dollars using the US department of commerce’s NIPA tables. For the analyses contained here we focus only on total economic aid, total military aid and total economic and military aid.

Our analyses examine both whether any aid was given and extent of the aid if it was given. The theory predicts these two processes are related. We utilize Heckman (1979) regression to simultaneously assess the questions of whether any aid is given, and if so how much? Heckman regression is a two equation model (Greene 2003, 782-787). The first equation is the regression equation

\[ y_{it} = x_{it}\beta + \varepsilon_{1it}, \]

where \( y_{it} \) is the dependent variable, in this case the level of aid, \( x_{it} \) is a vector of independent variables and \( \varepsilon_{1it} \) is a stochastic error assumed to be normally distributed with mean zero and variance \( \sigma^2 \). This is of course the classic regression setup. The second equation is the selection equation which assesses whether the dependent variable is observed. In this context, the selection equation estimates whether any aid takes place and takes the form of a probit model, where the positive aid transfers are observed if latent variable \( u_{it} = z_{it}\gamma + \varepsilon_{2it} \) is positive. If the latent variable is negative then no aid is observed. \( z_{it} \) represents a vector of independent variable and the stochastic error \( \varepsilon_{2it} \) is assumed normally distributed with a mean of zero and (for identification purposes) a variance of one. Since theory suggests the regression equation and selection equation are related, the stochastic errors are correlated with a correlation coefficient of \( \rho \).

Throughout we use STATA 8's maximum likelihood implementation of the Heckman model. We cluster our observations by region-year fixed effects. Our theory suggests that the factors that influence the size of aid also influence whether aid is given. This means that any variable in \( x_{it} \) also belongs in \( z_{it} \). This unfortunately leads to weak identification since our model is identified only through the functional form of the model and not through any exclusion restrictions. Separate estimates of the selection and regression equation produces similar results.

We obtain economic and demographic data from the Penn World tables (Heston, Summers and Aten 2002). In particular we use these data to construct the variables \( \ln(GDP_{t-1}) \), \( \ln(\text{population}) \) and USWorld. The first variable is the logarithm of the size of the recipient state’s Gross Domestic Product in constant $US for the previous year. We examine the previous year’s GDP since in many cases aid is a significant portion of a donor state’s GDP.\(^4\) The

\(^4\)We do not report lagged versions of other variables, however, switching between lagged
variable $ln(\text{population})$ is the population size in the potential recipient. USworld measures the US's share of world GDP.

Our measures of winning coalition and selectorate size in the recipient state come from BLM2S2 (2003). Institutional arrangements with the US are constant across the domain of our study. They measure winning coalition size, $W$, as a composite index based on the variables REGTYPE, XRCOMP, XROPE, and PARCOMP from the Arthur Banks (2002) data. These data are also commonly reported by Polity IV (Marshall, Jaggers and Gurr 2002). When REGTYPE is not missing data and is not equal to codes 2 or 3 so that the regime type was not a military or military/civilian regime, $W$ receives one point. Military regimes are assumed to have particularly small coalitions and so are not credited with an increment in coalition size through the indicator of $W$. When XRCOMP, the competitiveness of executive recruitment, is larger than or equal to code 2 then another point is assigned to $W$. An XRCOMP code of 1 means that the chief executive was selected by heredity or in rigged, unopposed elections, suggesting dependence on few people. Code values of 2 and 3 refer to greater degrees of responsiveness to supporters, indicating a larger winning coalition. XROPE, the openness of executive recruitment, contributes an additional point to $W$ if the executive is recruited in a more open setting than heredity (that is, if the variable’s value is greater than 2). Executives who are recruited in an open political process are more likely to depend on a larger coalition than are those recruited through heredity or through the military. Finally, one more point can be contributed to the index of $W$ if PARCOMP, competitiveness of participation, is coded as a 5, meaning that "there are relatively stable and enduring political groups which regularly compete for political influence at the national level" (Polity II, p. 18). This variable is used to indicate a larger coalition on the supposition that stable and enduring political groups would not persist unless they believed they had an opportunity to influence incumbent leaders; that is, they have a possibility of being part of a winning coalition. The indicator of $W$ is then divided by 4 to create a five point scale for $W$ taking the possible values $0, .25, .5, .75$, and 1. Selectorate size is measured as LEGSELEC, the selection procedure for the legislature. This variable is also normalized as a three point scale between 0 and 1.

We also include a number of control variables. The Cold War was epitomized by rivalry between the US and its western allies and the USSR and its eastern block allies. This rivalry often manifested itself as a competition between the two sides to buy influence within the third world, with the particular policies often being sought being an anti-communist stance and a pro-communist stance respectively. In contrast, following the collapse Soviet Union (we code the Cold War as ending in 1989) this rivalry has diminished. We anticipate this has had important consequences for aid donation. During the Cold War it is likely the US’s anti-communist policy demands had high salience for both the US and the potential recipient. According to our model such high levels of salience require a

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and contemporary variables does not alter our findings for GDP or other variables.
5 These data are available electronically at http://www.nyu.edu/gasr/dept/politics/data.shtml.
large aid package if the policy consequence are to be obtained. High salience also increases the desirability of attaining the policy concession. Hence we expect higher levels of aid during the Cold War when aid is given. The prediction as to whether the US is more likely to give aid is ambiguous. The relatively higher salience of the issue increases the desirability of obtaining concessions but it also increases the price of buying these concessions. The rivalry aspect of the Cold War is expected to further deepen these effects.

In our formal model the donor state pays the recipient just sufficient aid to make the leader in the potential recipient just willing to accept the aid-for-policy deal. Although not formally modeled, the presence of rival donors bidding for mutually exclusive policy concessions increases the bargaining leverage of the recipient state's leader. The recipient leader can increase her demands for aid until one of the rivals is no longer willing to pay more. At this point the other rival gains their desired policy, but only a cost that exhausts its rival's willingness to pay. This extension to the model suggests that the US is less likely to give aid to any given state during the cold war, since it might be the loser in the bidding war. However, should it win the bidding war and give aid then it probably has to give a high level of aid to more than match the Soviet's highest bid.

Our formal model considered leader deposition within the context of the state's institutional arrangements. However, these are not the only threats to a leader's tenure (BdM2S2 2003, chapters 8 and 9). Leaders risk deposition from extra-institutional influences such as foreign states or revolutions and civil wars. When the leader of a recipient state risks extra-institutional deposition the US might be prepared to provide her with additional resources to reduce such risks. As witnessed during the Korean and Vietnam wars, the US is willing to pour large amounts of resources and even direct military force to preserve a regime that is willing and able to pursue policies favorable the US. To measure these extra-institutional risks to tenure we use Arthur Banks' index of conflict in the recipient state: ConflictIndex. The index is composed as follows: Multiply the value of the number of Assassinations by 24, General Strikes by 43, Guerrilla Warfare by 46, Government Crises by 48, Purges by 86, Riots by 102, Revolutions by 148, Anti-Government Demonstrations by 200. This raw variable has a mean value of 2706 and its maximum value in our data is 94325. We normalize the variable by dividing by 100,000. This normalized variable takes values between 0 and just less than 1.

We pay particular attention to ConflictIndex with respect to military aid. We also interact this variable with recipient's coalition size (W) and disposition towards the US, $\tau_B$. The variable $\tau_B$ is Bueno de Mesquita's (1981) measure of similarity in alliance portfolios. Bueno de Mesquita assumes that if two states have exactly the same alliance partners then their interests are highly aligned and $\tau_B = 1$. In contrast if states have disparate allies then they are less likely to share the same interests and policy goals. By way of comparison, at the height of the Cold War the $\tau_B$ score between the US and USSR was around -0.30.

\footnote{We obtained these $\tau_B$ scores using Scott VBennett and Allan Stam’s EUGene software.}
We anticipate the US is likely to give military aid to states experiencing high level of conflict when that state is highly aligned with the US and when its winning coalition is small. The US has the greatest interest in preserving the institutions and leadership in such nations because these are precisely the states in which the US can cheaply buy loyalty to its policies. The US has much less interest in providing military aid to preserve the institutions and leadership in states with large coalitions or states that are aligned against it. It is expensive to buy policy concessions in such states. Indeed the US has itself used both direct military intervention (for instance in the Dominican Republic in 1965) and covert action (for instance in Chile in 19XX) to transform large W systems aligned against the US into small coalition systems whose adherence to US policy goals can be more easily bought.

It is tempting to extend the use of the $\tau_B$ measure of friendliness between states to consider economic aid rather than simply military aid. However, we believe such an extension would be a mistake as it is difficult to discern whether aid leads to a shift in alignment closer to the US or whether the US gives more aid to its friends. For our analysis of economic aid, we opt for a bare-bones model specification. Although the inclusion of such factors as $\tau_B$ scores, time trend variables or complicated interactive increase the explained variance, their inclusion is on shaky theoretical ground and their inclusion or exclusion does not alter the substantive conclusions.

5 Results

Table 1 considers economic aid. Model 1 provides a direct representation of the theoretical variables of interest. The theory suggest the US is most likely to give aid to states with small winning coalitions and large selectorates. The significant negative coefficient on the coalition size variable and the significant positive coefficient on the selectorate variable strongly supports this conclusion.

For instance, if US share of world GDP is taken at its average then in a nation of 50 million people with a large selectorate and a per capita income of $3000, the probability that a large coalition nation ($W = 1$) receives aid is 70%. However, a corresponding small coalition state ($W = 0$) receives aid an 88% probability.

The theory anticipates the opposite signs on these variables in the regression equation. It requires more aid to buy policy in a large W system, so conditional upon aid occurring, increasing the recipient state’s coalition size increases the amount of aid given. The significant positive coefficient on W in the regression equation indicates that if other factors are held constant then going from smallest to largest coalition system increase the level of US aid by about 40%. This pattern of aid donation is consistent across both models in table 1 and the three models in table 2 which examine military and total economic and military aid.

The theory predicts that as the resources available to the leader in the recipient state increase then aid becomes less likely, but should aid occur then the size of the aid increases. Unfortunately, we have no direct measure of the re-
sources available to the leader. However, such resources are likely to be related to the size of the economy, which we measure using the logarithm of lagged GDP. Additionally, we include population size. Population affects aid in a variety of ways. At one level it is an alternative measure of resources available. In conjunction with GDP, it also plays a key role as a control variable for the level of need for economic assistance. Further, policy concessions from large states are more likely to be important to the donor state that policy concessions from small states. Hence population size relates to salience.

Both models in table 1 indicate that aid is more likely to be given to large population poor states than to small population rich states. Conditional upon aid being given, large population poor states are likely to be given the most aid. Of course increasing a state's size in terms of population typically also increases its GDP. To gain an intuition as to the trade off between wealth, population size and national income, we consider a number of examples. If, for instance, a nation increases its per capita income from $500 to $1000 this reduces aid levels by about 8%. Per capita wealth also affects the chance of receiving aid. If the $500 GDP per capita state initially had a 50% chance of receiving aid then the doubling of its wealth reduces the chance of receiving aid to such an increase in aid would reduce the chance of receiving aid to 28%. If per capita income is held constant then a doubling of population size increases the expected size of any aid given by about 42%. Such a doubling in size has only a minimal effect in decreasing the likelihood of aid.

The theory predicts that as the resources of the donor state increase then it is more likely to give aid and likely to give more aid. We parameterize the US resources with the variable USworld, which measures the US's GDP as a percentage of world GDP. We anticipate this variable to have a positive coefficient in both the regression and selection equation. These prediction is borne out with significant coefficients in both equations in all models except model 1, in which the coefficient in the selection equation is insignificant.

Model 2 includes a dummy variable for the Cold War. We speculate that anti-communist policy concessions that the US often sought during this period were high salience policies in both the recipient and the US. As such any aid transfers made during the cold war where likely to be large in magnitude. This prediction is borne out by the positive coefficient in the regression equation. During the Cold War aid transfers were about 40% higher than during the post-Cold War era. Although the formal model suggests an ambiguous effect for the Cold War variable in the selection equation, our informal arguments about the rival nature of the Cold War suggested the US would be less likely to give aid to any given state during the Cold War since the USSR might out bid its willingness to buy influence. This appears to be the case with a significant negative coefficient on the Cold War variable in the selection equation.

The pattern of US economic aid shown in models 1 and 2 fits the theoretical predictions. We now turn to an examination of military aid and total economic and military aid. These results are shown in table 2. With regards to the variables already discussed in table 1, the results in table 2 are similar. Therefore, we move directly to consider of additional variables in table 2.
Model 3, which examines military aid, includes the ConflictIndex variable. The significant positive coefficient in both the regression and the selection equations suggests that as the level of violence in the recipient state increases then the US is both more likely to give aid and to give more aid. Model 4 dissects this effect further examining which states facing domestic violence the US is likely to help most. Model 4 introduces the $\tau_B$ measure of the recipient state’s alignment with the US and interactions the ConflictIndex with both $\tau_B$ and coalition size. The effects of these variables are particularly significant in the selection equation. The US is most likely to give military aid to small coalition states that are aligned with the US and which are experiencing high levels of domestic conflict. As the theory predicts, it is in these states that the US has the greatest interest in preserving the institutions and leaders. Table 3 estimates the probability of the US given aid to a recipient state based upon coalition size, alignment with the US and level of domestic conflict.

As the table dramatically shows, the US also certainly provides military aid to small coalition states aligned with it who experience significant conflict. In comparison, states which experience little conflict, have large coalition size or who unaligned with the US have practically no prospects of receiving US military aid.

Model 5 replicates model 4 but examines total economic and military aid.

Table 3: Comparison for the probability that the US provides any military aid (selection equation) by coalition size, alignment with the US and level of domestic conflict (evaluated for $S = 1$, population = 5M, per capita GDP = $10000$, Cold War=1 and US World=.2)

$$F(W, C, \tau) = \text{NormalDist}(8.751 + .288 \cdot 1 - .923\ln(10000 \cdot 5) + .787\ln(5) - .36 + 1.19 \cdot .2 - 1.06W - 2.154C + .861\tau + .472W \cdot \tau + 7.444W \cdot C + 27.049\tau \cdot C - 31.205W \cdot \tau \cdot C)$$

<table>
<thead>
<tr>
<th></th>
<th>W=0</th>
<th>W=1</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Conflict (C = .5)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aligned with US: $\tau_B = 1$</td>
<td>$F(0, .5, 1) = 1.0$</td>
<td>$F(1, .5, 1) = 0.84303$</td>
</tr>
<tr>
<td>Unaligned with US: $\tau_B = 0$</td>
<td>$F(0, .5, 0) = 0.18942$</td>
<td>$F(1, .5, 0) = 0.90262$</td>
</tr>
<tr>
<td>Low Conflict (C = 0)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aligned with US: $\tau_B = 1$</td>
<td>$F(0, 0, 1) = 0.85497$</td>
<td>$F(1, 0, 1) = 0.68081$</td>
</tr>
<tr>
<td>Unaligned with US: $\tau_B = 0$</td>
<td>$F(0, 0, 0) = 0.57808$</td>
<td>$F(1, 0, 0) = 0.19406$</td>
</tr>
</tbody>
</table>

6 Conclusions

By modeling aid-for-policy motives for aid donation in the context of selectorate politics we derive hypotheses as to how domestic political institution and other factors both whether aid is given and the size of aid donation. Empirical tests of US aid programs supports these predictions.
7 References


Heston, Alan., Robert Summers and Bettina Aten, Penn World Table Version 6.1, Center for International Comparisons at the University of Pennsylvania (CICUP), October 2002.


McGillivray, Fiona and Alastair Smith. 2000 “Trust and Cooperation
through Agent Specific Punishments.” International Organization. 54,4 Autumn 2000, p. 809-824.


selection equation
NormalDist(7.775 − 0.643 * 1 + .288 * 1 − .825 * ln(500 * 50) + .767 * ln(50) − .146 * (.357))

regression equation
a = exp(3.946 + .316 * 1 + .09 * 1 − .109 * ln(1000 * 50) + .616 * ln(50) + .3295 * (.357))
<table>
<thead>
<tr>
<th></th>
<th>Model 1</th>
<th></th>
<th>Model 2</th>
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<tr>
<td></td>
<td>Ln(Economic Aid)</td>
<td>Selection: Was there any Economic Aid?</td>
<td>Ln(Economic Aid)</td>
<td>Selection: Was there any Economic Aid?</td>
</tr>
<tr>
<td>Winning Coalition (W)</td>
<td>0.316 (0.136)*</td>
<td>-0.643 (0.120)**</td>
<td>0.369 (0.140)**</td>
<td>-0.713 (0.118)**</td>
</tr>
<tr>
<td>Selectorate size</td>
<td>0.09 (-0.087)</td>
<td>0.288 (0.105)**</td>
<td>0.127 (-0.087)</td>
<td>0.255 (0.105)*</td>
</tr>
<tr>
<td>Ln(GDP_{t-1})</td>
<td>-0.109 (0.054)*</td>
<td>-0.825 (0.042)**</td>
<td>-0.116 (0.056)*</td>
<td>-0.825 (0.042)**</td>
</tr>
<tr>
<td>Ln(Population)</td>
<td>0.616 (0.054)**</td>
<td>0.767 (0.046)**</td>
<td>0.629 (0.054)**</td>
<td>0.764 (0.047)**</td>
</tr>
<tr>
<td>USworld</td>
<td>3.295 (0.871)**</td>
<td>-0.146 (-0.448)</td>
<td>2.179 (1.073)*</td>
<td>1.142 (0.497)*</td>
</tr>
<tr>
<td>ColdWar</td>
<td></td>
<td></td>
<td>0.342 (0.131)**</td>
<td>-0.394 (0.093)**</td>
</tr>
<tr>
<td>Constant</td>
<td>3.946 (0.553)**</td>
<td>7.775 (0.391)**</td>
<td>4.06 (0.571)**</td>
<td>7.694 (0.386)**</td>
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<tr>
<td>Sigma</td>
<td>1.727 (.037)</td>
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<td>1.721 (.037)</td>
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<tr>
<td>Rho (correlation)</td>
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<td>-.197 (.038)**</td>
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<td>Observations</td>
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<td>4885</td>
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Robust standard errors in parentheses:

significant at 5%; ** significant at 1% (two tailed tests)
<table>
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<tr>
<th></th>
<th>Model 3</th>
<th>Model 4</th>
<th>Model 5</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>Ln(Military Aid)</td>
<td>Ln(Military Aid)</td>
<td>Ln(Total Aid)</td>
</tr>
<tr>
<td>Winning Coalition (W)</td>
<td><strong>0.481 (0.149)</strong></td>
<td>-0.644 (0.125)**</td>
<td><strong>0.499 (0.170)</strong></td>
</tr>
<tr>
<td></td>
<td>(-0.103)</td>
<td>(0.105)**</td>
<td>(-0.099)</td>
</tr>
<tr>
<td>Selectorate (S)</td>
<td>0.143 (-0.103)</td>
<td>0.234 (0.105)**</td>
<td>0.29 (0.109)**</td>
</tr>
<tr>
<td>Ln(GDP_{t-1})</td>
<td>-0.122 (-0.062)</td>
<td>-0.713 (0.038)**</td>
<td>-0.304 (0.079)**</td>
</tr>
<tr>
<td></td>
<td>(-0.062)</td>
<td>(-0.038)**</td>
<td>(0.079)**</td>
</tr>
<tr>
<td>Ln(Population)</td>
<td><strong>0.682 (0.058)</strong></td>
<td><strong>0.642 (0.044)</strong></td>
<td><strong>0.843 (0.071)</strong></td>
</tr>
<tr>
<td></td>
<td>(0.058)**</td>
<td>(0.044)**</td>
<td>(0.071)**</td>
</tr>
<tr>
<td>USworld</td>
<td><strong>4.804 (1.323)</strong></td>
<td><strong>1.704 (0.469)</strong></td>
<td><strong>3.477 (1.298)</strong></td>
</tr>
<tr>
<td></td>
<td>(1.323)**</td>
<td>(0.469)**</td>
<td>(1.298)**</td>
</tr>
<tr>
<td>ColdWar</td>
<td><strong>0.512 (0.157)</strong></td>
<td><strong>-0.472 (0.087)</strong></td>
<td><strong>0.03 (-0.173)</strong></td>
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<td></td>
<td>(0.157)**</td>
<td>(0.087)**</td>
<td>(-0.173)</td>
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<tr>
<td>ConflictIndex_{t-1}</td>
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<td><strong>2.538 (0.663)</strong></td>
<td><strong>0.351 (-1.823)</strong></td>
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<tr>
<td></td>
<td>(0.629)**</td>
<td>(0.663)**</td>
<td>(-1.823)</td>
</tr>
<tr>
<td>TB</td>
<td><strong>0.988 (0.205)</strong></td>
<td><strong>0.861 (0.244)</strong></td>
<td><strong>1.077 (0.200)</strong></td>
</tr>
<tr>
<td></td>
<td>(0.205)**</td>
<td>(0.244)**</td>
<td>(0.200)**</td>
</tr>
<tr>
<td>W* TB</td>
<td>-0.555 (-0.331)</td>
<td>0.472 (-0.315)</td>
<td>-0.671 (-0.297)*</td>
</tr>
<tr>
<td></td>
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<td>(-0.297)</td>
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<tr>
<td>W* ConflictIndex_{t-1}</td>
<td>2.058 (-2.30)</td>
<td><strong>7.444 (1.977)</strong></td>
<td>2.602 (-2.861)</td>
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<td>(-2.30)</td>
<td>(1.977)**</td>
<td>(-2.861)</td>
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<tr>
<td>TB * ConflictIndex_{t-1}</td>
<td>-5.091 (-3.328)</td>
<td><strong>27.049 (5.379)</strong></td>
<td><strong>-4.838 (-3.202)</strong></td>
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<td></td>
<td>(-3.328)</td>
<td>(5.379)**</td>
<td>(-3.202)</td>
</tr>
<tr>
<td>W* TB * ConflictIndex_{t-1}</td>
<td>2.942 (-5.441)</td>
<td><strong>-31.265 (6.544)</strong></td>
<td><strong>1.611 (-5.822)</strong></td>
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<tr>
<td></td>
<td>(-5.441)</td>
<td>(6.544)**</td>
<td>(-5.822)</td>
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<tr>
<td>Constant</td>
<td><strong>3.009 (0.633)</strong></td>
<td><strong>6.741 (0.346)</strong></td>
<td><strong>8.751 (0.390)</strong></td>
</tr>
<tr>
<td></td>
<td>(0.633)**</td>
<td>(0.346)**</td>
<td>(0.390)**</td>
</tr>
<tr>
<td>Rho: correlation</td>
<td>-.158 (.034)</td>
<td>-.128 (.062)*</td>
<td>-.1468 (.043)**</td>
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Robust standard errors in parentheses: * significant at 5%; ** significant at 1% (two tailed test)