A Political Economy of Aid

Bruce Bueno de Mesquita, Alastair Smith

Wilf Family Department of Politics

New York University

726 Broadway

New York NY 10003

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Abstract

We provide a model that characterizes how the size of a leader's support coalition and government revenues affect leader's willingness to trade aid resources for policy concessions. The model suggests that aid is efficiently allocated to promote the political survival of leaders and that aid benefits donor and recipient leaders, while harming the recipient's, but not the donor's, citizenry. A leader's willingness to grant policy concessions in exchange for aid depends upon the ease with which she can reimburse supporters for the policy concession. As coalition size increases, incumbents rely more on public goods to reward supporters, making it difficult to compensate supporters for policy concessions. Small coalition leaders, being more reliant on private goods to retain office, more readily make policy concessions to get aid. Empirical tests of bilateral aid transfers by OECD nations between 1960 and 2001 support the predictions that 1) aid is given by wealthy, large coalition systems; 2) relatively poor, small coalition systems are the most likely recipients of aid; but,

3) conditional on receiving any aid, nations receive greater amounts of aid as their coalition size, wealth and policy salience increases. The results suggest the OECD members have little humanitarian motivation for aid giving.

INTRODUCTION

United States foreign economic assistance, exclusive of funds for the reconstruction of Iraq, represents only about 0.2 percent of Gross National Product and less than 1 percent of federal budget outlays. Although the United States is the largest aid giver in dollar amounts, it often is the smallest OECD donor in terms of percentage of GNP. But then even the most generous donors in percentage terms, like Denmark and Norway, dedicate less than 1 percent of their GNP to foreign economic assistance. Looked at this way, it is difficult to anticipate that aid can do much to advance economic, social and political well-being in recipient countries and, indeed, it seems, it achieves little on these dimensions (Boone 1996; Easterly 2002). The paucity of foreign assistance donations is a focal point of current policy debate, with some arguing that the difficulty with economic assistance programs as a means to alleviate poverty is that the inputs are too modest to have a significant, lasting impact (Sachs 2005). Others, less sanguine about the prospects of reducing poverty by government-to-government transfers, disagree. They conclude that government-to-government aid is the wrong way to dispense assistance and in general that the methods used to disperse assistance are inefficient for alleviating poverty (Easterly 2006). From this perspective, the central problem with aid programs lies not in how much is given but rather how it can be given in a manner than promotes, rather than retards, economic productivity. Recipient and donor motives restrict the efficacy of aid outputs. In either case, whether the problem is with inputs, outputs, or both, the supposition behind the current debate seems to be that at least donors, and perhaps recipients also, view aid primarily as an instrument to alleviate poverty.

In contrast to these contending views about the implementation of aid policy, we offer a model and evidence that suggests that the reduction of poverty is not aid's primary function either for donors or recipients. In the view we suggest, foreign assistance programs are successful at fulfilling the agenda they are designed to advance, an agenda that one might question from a normative perspective but that nevertheless represents a rational allocation of resources and effort by both recipients and donors. In that sense, we believe the current debate about aid is somewhat misguided. Although it is certainly important to know how much aid could be efficiently absorbed into recipient economies we contend this is not the central issue shaping aid policy or aid's failure to do more to relieve poverty and general misery. Rather, we argue that the central issue lies at the intersection of the political incentives of leaders in donor and recipient countries. Indeed, we will argue that aid programs work as they do because they advance the interests of political elites both in countries that give and countries that take aid, in the process advancing a normatively desirable democratic agenda within donor countries and a normatively disheartening agenda in recipient states. In the process of advancing leader interests, aid prolongs both poverty and dictatorial regimes.

We develop and test implications of a model derived from the selectorate theory of political competition (Bueno de Mesquita et al 2003). We use the model to derive hypotheses that demonstrate that country-specific money given in aid is incentive compatible with the political survival interests of donor and recipient government leaders. In each case, aid increases the likelihood that the recipient and donor leaders will be retained in office rather than deposed and replaced by a political rival. Recipient and donor leaders seek substantive policies and resource allocations that protect their hold on power. To the extent that such policies and allocations are compatible with good economic or social performance, they will make social-welfare enhancing, "good" decisions. Yet, such instances are coincidental. If faced with a contradiction

between actions that enhance their own political welfare and actions that advance societal well-being, donor and recipient leaders will select those policies that benefit themselves.

The paper proceeds as follows. In section 2 we review the pertinent research on foreign aid, noting that no one has thus far provided a model that considers simultaneously the strategic political interests of donor elites and recipient elites; that is, the parties who must agree to give and to accept aid. Section 3 contains a simple exposition of selectorate politics, the model of political competition against which we consider the survival incentives of leaders to trade aid for policy concessions. In section 4 we present a model of foreign aid designed to answer four questions: (1) Who gives aid? (2) How much do they give? (3) Who gets aid? (4) How much do they get? Section 5 explains how we test the model's predictions while section 6 presents the empirical findings. In our concluding section we reflect on what our model and empirical results suggest about the effects of foreign aid on people in recipient countries. In doing so we explain why aid is a winning proposition for donor political elites, donor constituents and recipient political elites but it is a bane for the citizenry in most recipient countries. We use these results to suggest why it is that so many people in aid-receiving societies seem both to hate the United States government and wish that they could migrate to the United States.

LITERATURE

That aid is important in influencing recipient-government economic behavior is clear (Griffin 1970; Heller 1975). The literature on foreign aid's impact on fiscal policy and growth identifies public-sector factors that diminish the potentially beneficial impact of economic assistance programs. The most prominent negative factor is that corrupt officials tend to consume aid dollars rather than disperse them to stimulate economic growth (Boone 1996; Easterly 2002; Bueno de Mesquita et al 2003). This

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would seem to be a conundrum facing the foreign aid community. How can donors motivate recipients to use aid money to advance social welfare? President Bush's millennium challenge program – which in its first four years has disbursed less than 10 percent of its target aid increment – focuses on programs designed to improve economic freedom, invest in people, and lead to just (presumably democratic) governance.(see http://www.mcc.gov/compacts/program_procurement/index.shtml). Yet, as XXXX have shown, the political consequences of aid receipts mimic the effects of the resource curse (Gelb 1988; Humphreys 2005; Jensen and Wantchekon 2004; Ross 1999; Sachs and Warner 1995, 2001). In doing so, aid diminishes the likelihood of the just governance and democratic reforms it is supposed to motivate.

Other researchers, sensitive to the problems inherent in converting aid dollars into effective economic policies, argue implicitly that not all forms of economic assistance are equally susceptible to misuse. Mavrotas and Ouattara (2006), for instance, develop a model in which different categories of aid have different impacts on the recipient's economy. They contend that taking aid heterogeneity into account can provide guidance about the conversion of aid into public fiscal policy. Some forms of aid are less fungible and so less easily diverted to unintended uses. Although they do not explicitly address the issue of government misuse of aid, their results suggest that different forms of aid lead to different degrees of economic distortion.

While many studies examine limitations in recipient societies, another important strand of the aid literature focuses on donor interests rather than recipient abuses. McKinley and Little (1977, 1978), for instance, investigated the motivations for American and British aid giving. They found that donor interests dominate recipient needs. Others also examine donor interests but distinguish between motivations behind aid given by the United States government and economic assistance given by other states. They maintain that non-US aid giving is substantially motivated by humanitarian concerns (Lumsdaine 1993). Maizels and Nissanke (1984) distinguish

the degree of humanitarian motivation as a function of whether aid donations are bilateral or multilateral. While some aid is surely distributed to alleviate poverty and suffering – about 12 percent of US aid ostensibly is targeted specifically as humanitarian relief – the evidence suggests that humanitarian concerns are not especially prominent. For instance, the neediest states do not receive the most aid (McKinley and Little 1977, 1978) or even a disproportionately large share. In fact, the average rank order correlation between per capita income and per capita US aid receipts among aid recipients year-to-year since 1980 is only -0.03. Where a recipient is in the cross-national income pecking order seems irrelevant to how much aid they get, at least from the US. Perhaps because of findings such as this, researchers have begun to examine more closely the presumed distinction between American strategic aid giving and the alleged humanitarian motivations behind aid given by other states. In this regard it is noteworthy that significant evidence contradicts the claim that non-US aid is driven by humanitarian concerns. While some contend that Scandinavian countries in particular give foreign aid for humanitarian purposes (Lumsdaine 1993; Noel and Therien 1995), the first systematic empirical study of this question finds otherwise (Schraeder, Hook and Taylor 1998). Schraeder et al (1998) report that Swedish aid is strongly motivated by pro-socialist ideology and by trade benefits aimed at countries in which the Swedish impact can be large rather than in response to humanitarian need. Hook and Zhang (1998) similarly report that even after the Japanese government announced that it would give aid for "democratization, human rights, and restraint in military spending" (p. 1051), its aid giving is still dominated by self-interest rather than altruism.

Whether given for humanitarian purposes or for strategic reasons, it does not follow that aid cannot also be effective at ending or at least diminishing poverty. Burnside and Dollar (2000) report that while aid allocations are not strongly influenced by the quality of development policies, good development policies in conjunction with aid

lead to better economic performance. Alesina and Dollar (2000) press the issue of aid benefits further. They contrast the flow of aid with that of foreign direct investment, finding a sharp distinction between the use of FDI and foreign aid. Countries with good economic policies tend to attract significant foreign investment. Foreign aid, in contrast, is allocated largely without regard to economic policy and in regard to the political and strategic considerations of the donor. That still leaves open the question of whether donor interests reinforce good economic policy, run counter to it, or are orthogonal to the policies pursued by recipients. One might interpret the findings by Alesina and Dollar (2000) as implying a selection effect in aid giving: countries with better prospects for growth attract FDI, leaving only the inferior candidates for growth to receive aid. If correct, that, of course, would help explain why aid seems so ineffective in promoting growth, although it seems contrary to the zero correlation between per capita income and aid receipts. The model we develop suggests that while there are important selection effects at work in aid giving, the particular selection effect implied by Alesina and Dollar's (2000) finding is secondary to determining who gets aid or how much they get and so is unlikely to be the explanation for the poor translation of aid into growth.

The model developed in the next section suggests that even if a donor is interested in the implementation of good policies in recipient countries, most of the time that interest will be dominated by other considerations. Much of the time, aid giving best serves donor and recipient interests when its policy consequences run against normatively desirable outcomes such as the reduction of poverty. Indeed, the model suggests that aid is most likely to produce the primary ends sought by donors when recipients are free to divert assistance funds to their personal accounts or those of their politically loyal cronies.

The literature to date has done a careful job of assessing the empirical record. It has looked at donor motivations. It has separately looked at recipient motivations.

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The evidence, however, has not been tied to an explicit, general theory that can explain aid giving and getting by simultaneously investigating the strategic interests and interplay of donors and recipients. We attempt to build on the important insights from the empirical literature by constructing a game theoretic model that helps sort out the fundamentals of aid while also leading to novel, testable hypotheses.

A SELECTORATE MODEL OF POLITICAL SURVIVAL

Before turning to our model of foreign aid, we briefly summarize the selectorate theory (Bueno de Mesquita et al 2003) on which our approach to foreign aid is built. This theory assumes that political leaders seek to maximize their tenure in office. The theory conceives of all polities as being dependent on two institutions, the selectorate and the winning coalition. 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. 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 presidential system, about 50% of the selectorate constitutes a winning coalition. In contrast, a leader in a single member district, first-past-the-post parliamentary system only needs about 25% support – half the votes in half the districts– to control the government. In monarchies or military juntas selectorates and winning coalitions are much smaller than in democracies, typically being composed of aristocrats or military elites and key bureaucrats. Autocratic states generally have relatively small winning coalitions, although selectorate size can vary greatly. Rigged electoral systems, for

instance, have a small coalition but often have a large selectorate. Although standard regime type classifications are associated with particular configurations of selectorate and coalition size, S and W are inherently continuous measures. Thus, they not only allow us to distinguish between broad and somewhat arbitrary regime classifications, they also allow, in principle, distinctions between the institutions within each classification; as illustrated by our comparison of presidential and parliamentary democracies.

In the selectorate theory, incumbents face political rivals and need to maintain the support of their coalition or be deposed. To buy their coalition's support, leaders allocate the state's available resources (R) between private goods (z) and public goods (g). The essential difference between these two forms of policy provisions is that while the latter provides benefits to all members of society, the former enriches only those members of the coalition to whom they are allocated.

Of course in reality no public policy is either a pure private or public good. However, one of the essential features of selectorate theory is that coalition size shapes the relative private/public focus of policy. For instance, while a clean environment is a public good, environmental policy regulation can focus on either the provision of a clean environment (a public good) or opportunities for securing bribes and restricting market competition to generate monopoly rents (private goods). Leaders, motivated by a desire to retain office, provide those policies that best reward their coalition members. When coalition size is small leaders can generate high levels of benefits for their supporters by predominately channeling state resources into the provision of private goods. However, as coalition size increases private goods become an increasingly expensive mechanism for rewarding supporters and so leaders shift their policy allocations towards a greater provision of public goods.

Coalition size affects the relative focus of public policy. Large coalition systems encourage efficient public policy; small coalition systems promote cronyism, corruption

and graft. These differences are not engendered by different motivations. Leaders in all forms of political system seek the same thing, survival in office. Political institutions determine which types of policy allocations best allow leaders to fulfill this goal.

The types of policies induced by political institutions affect the ease with which leaders fulfill their survival objectives. In large coalition systems political survival is relatively difficult. Since most of the policy rewards are in the form of public goods which benefit selectors whether or not they are in the winning coalition, supporters jeopardize only the small private portion of the rewards they receive if they defect from the incumbent. In contrast, in small coalition systems the private goods focus engenders a loyalty norm. When a new leader attains office he requires the support of only W of the S potential supporters. When W is small (and particular when S is large), each supporter has only a relatively low probability of being included in the new coalition. Since in small W systems private goods provisions are valuable and the prospects of obtaining them under alternative leadership are relatively low (W/S), supporters in small coalition systems tend to be loyal.

AID-FOR-POLICY DEALS

Against this back drop of selectorate political competition we now consider aid transfers between a potential donor, state A, and a potential recipient, state B. Aid decisions are made by leaders, not nations, in this case AL and BL. We conceive of aid deals as the granting of policy concessions by the recipient in exchange for cash (or in-kind) transfers by the donor. Throughout we index variables relating nations A and B with subscript A and B respectively. The winning coalition and selectorate size in nations A and B are W_A, W_B, S_A and S_B. Initially leader AL has R_A resources at her disposal to provide private and public goods. Government resources in nation B are R_B. Aid-for-policy deals arise from the possibility of AL transferring some of

her resources to BL in exchange for policy concessions.

The leaders use resources to provide private (z) and public (g) goods for their supporters. Each selector has an additively separable utility function over these goods: $V(g, z) = v(g) + u(z)$, where $v()$ and $u()$ are continuous, concave utility functions and $u(0) = 0$. The price of providing public goods is p. Winning coalition size provides an implicit price for private goods as it characterizes the number of selectors who receive private goods. Given resources R, leaders' policy allocations are subject to the budget constraint, $pg + Wz \leq R$.

In addition to private and public goods selectors care about their leader's performance on all other issues relative to a potential political rival, θ. For the purposes of this paper we do not explicitly model a leader's performance on these other issues, treating it instead as a random variable with distribution $F(x) = \Pr(\theta \leq x)$, where $F(x)$ has full support.

The final component in a selector's evaluation is whether their leader obtained or made a foreign policy concession. The citizens in nation A prefer that nation B adopt a pro-A policy rather than B's inherently preferred policy. We consider a single discrete policy concession. The value of this concession depends upon the salience of the issue. If leader BL grants AL a policy concession in exchange for aid, then each citizen in nation A receives the benefit σ_A and each citizen in B suffers the cost σ_B associated with the pro-A policy. We can now state the Aid-for-policy game.

Aid-for-policy Game

1) AL can offer BL a transfer ρ, where $\rho \in [0, R_A - k]$, in exchange for a pro-A policy.

2) BL decides whether or not to accept. If BL accepts then the pro-A policy is implemented and $r = \rho$ resources are transferred from nation A to nation B. In addition nation A pays a transaction cost of k resources to implement the deal.

3) Political competition occurs in nations A and B, as follows: (i) Leaders AL

and BL allocate their available resources between private (z) and public goods (g). (ii) In each nation, θ, the leader's performance on all other issues is revealed. (iii) Selectors chose their leader. The incumbent is deposed if any of her coalition members chooses not to support her; otherwise the incumbent survives. Selectors receive the continuation payoff Q if a new leader is chosen.

Selectorate Political Competition

We commence our analysis by formally examining the provision of private and public goods in the absence of aid-for-policy deals. We consider the allocation decision from the perspective of a generic leader L since the motivations and decision making processes are inherently the same in both donor and recipient states. If leader L provides g public and z private goods then her supporters' payoffs are $v(g) + u(z) + \theta$, that is the value of the public and private goods which the leader provides and L's performance on all other issues. Alternatively, L's supporters can abandon her, precipitating her ouster. In this stripped down representation of the selectorate theory, we model the expected payoff associated with a challenger coming to office as Q. Bueno de Mesquita et al (2002, 2003) provide characterizations of Q derived in the context of an infinitely repeated game.

Leader L survives in office provided that $v(g) + u(z) + \theta \geq Q$. This occurs with probability $\Pr(\theta \geq Q - v(g) - u(z)) = 1 - F(Q - v(g) - u(z))$. L's primary goal of political survival is best achieved by maximizing the rewards she gives her supporters given her available resources: $\max_{g,z} v(g) + u(z)$ subject to the budget constraint $pg + zW \leq R$. This maximization implies the first order condition:

$$u_z(z) - \frac{W}{p}v_g(g) = 0, \text{ where } g = \frac{R - zW}{p} \tag{1}$$

We use $(g^*, z^*) = (g^*(R, W), z^*(R, W))$ to represent these optimal policies, using

the latter notation when we want to emphasize the dependence on resources and coalition size.

Political survival is paramount. We now examine the conditions under which exchanges of resources for policy concessions improve political survival.

Aid-for-Policy Deals

Suppose AL offers BL ρ resources in exchange for switching to a pro-A policy. If BL accepts the deal then she increases her available resources from R_B to $R_B + \rho$ but imposes the cost of $-\sigma_B$ on her supporters (and the rest of the citizens in nation B). Given that she optimally allocates her resources over private and public goods, her coalition's welfare under the contingencies that she rejects and accepts aid are $v(g^*(R_B, W_B)) + u(z^*(R_B, W_B))$ and $v(g^*(R_B + \rho, W_B)) + u(z^*(R_B + \rho, W_B)) - \sigma_B$. We define $\rho_B^* = \rho_B^*(\sigma_B, R_B, W_B)$ as the minimum level of aid that leader BL with resources R_B beholden to a coalition of size W_B would accept in return for an aid concession of salience σ_B.[1] That is, $\rho_B^*(\sigma_B, R_B, W_B)$ is the size of ρ that solves $v(g^*(R_B, W_B)) + u(z^*(R_B, W_B)) = v(g^*(R_B + \rho, W_B)) + u(z^*(R_B + \rho, W_B)) - \sigma_B$. If BL accepted a small aid package then it would jeopardize her survival relative to no aid.

The size of this minimal aid package depends upon salience, resources and institutions. In particular, $\frac{d\rho_B^*}{d\sigma_B} > 0$, $\frac{d\rho_B^*}{dR_B} > 0$ and $\frac{d\rho_B^*}{dW_B} > 0$. This is to say, the size of the

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[1] Alternatively, we might assume that leader BL inherently cares about the policy and suffers the cost $-\Sigma_B$ for the imposition of the pro-A policy and receives an office holding benefit of Ψ. In this case BL requires that $-\Psi F(Q - v(g^*(R_B + \rho, W_B)) - u(z^*(R_B + \rho, W_B)) + \sigma_B) - \Sigma_B \geq -\Psi F(Q - v(g^*(R_B, W_B)) - u(z^*(R_B, W_B)))$. The comparative statics with respect to σ_B, W_B and R_B remain unchanged; however, BL's inherent concern for the policy enables her to extract additional resources which means her survival is strictly improved should she make an aid for policy deal. The size of this improvement is increasing in Σ_B. It is perhaps not surprising that leaders claim adherence to extreme policies.

minimum aid package required to purchase concessions from BL becomes larger as the policy concessions sought become less palatable to her supporters; as her resource base increases; and as her coalition increases in size.[2]

Next we characterize the maximum level of aid that AL is willing to pay for concessions. If AL offers ρ resources to BL and BL accepts then AL gains the policy concession worth σ_A to her supporters, but at the cost of forgoing the domestic rewards that could be financed with $\rho + k$ resources. If AL trades aid for policy then her coalition's payoff is $v(g^*(R_A - \rho - k, W_A)) + u(z^*(R_A - \rho - k, W_A)) + \sigma_A$. If no aid-for-policy deal is struck then her coalition's payoff is $v(g^*(R_A, W_A)) + u(z^*(R_A, W_A))$. AL only offers aid deals which improve her survival prospects. Therefore, the maximum amount of aid, $\widehat{\rho_A} = \widehat{\rho_A}(\sigma_A, R_A, W_A)$, which leader AL (with resources R_A and coalition size W_A) would pay to buy concessions worth σ_A solves $v(g^*(R_A - \widehat{\rho_A} - k, W_A)) + u(z^*(R_A - \widehat{\rho_A} - k, W_A)) + \sigma_A = v(g^*(R_A, W_A)) + u(z^*(R_A, W_A))$.

This equation allows us to characterize the aid deals AL is willing to offer. The more valuable the concessions are the more AL is willing to pay: $\frac{d\widehat{\rho_A}}{d\sigma_A} > 0$. Leader AL is also willing to pay more when she has a large coalition and plentiful resources: $\frac{d\widehat{\rho_A}}{dW_A} > 0$ and $\frac{d\widehat{\rho_A}}{dR_A} > 0$.[3] The transaction costs involved in implementing even very small aid-for-policy deals mean that AL will not attempt to buy concessions of very low value since the transaction costs outweigh the value of the concession.

We are now ready to state our main proposition defining the Subgame Perfect

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[2] The minimal aid deal satisfies the following identity: $I = v(g^*(R_B + \rho^*, W_B)) + u(z^*(R_B + \rho^*, W_B)) - \sigma_B - v(g^*(R_B, W_B)) - u(z^*(R_B, W_B))$. Since $I_{\sigma_B} < 0$, $I_\rho = \frac{dv(g^*(R_B+\rho^*,W_B))+u(z^*(R_B+\rho^*,W_B))}{dR} > 0$, $I_{R_B} = \frac{dv(g^*(R_B+\rho^*,W_B))+u(z^*(R_B+\rho^*,W_B))-v(g^*(R_B,W_B))-u(z^*(R_B,W_B))}{dR} < 0$ (by concavity $\frac{d(v(\frac{R-z^*W}{p})+u(z^*))}{dR} = \frac{v_g(\frac{R-z^*W}{p})}{p}$) and $I_{W_B} = \frac{v(g^*(R_B+\rho^*,W_B))-v(g^*(R_B,W_B))+u(z^*(R_B+\rho^*,W_B))-u(z^*(R_B,W_B))}{dW_B} < 0$ (because $\frac{d^2v(\frac{R-Wz^*}{p})+u(z^*)}{dRdW} = \frac{v_{gg}(g)}{p}\frac{dg}{dW} < 0$),the compartive statics are $\frac{d\rho^*}{d\sigma_B} > 0$, $\frac{d\rho^*}{dR_B} > 0$, and $\frac{d\rho^*}{dW_B} > 0$.

[3] These comparative statics are derived in a similar way to those for leader BL, footnote 2.

Equilibrium in the aid-for-policy game. This equilibrium characterizes both whether aid for policy deals are made in exchange for the pro-A policy, and if so what is the size of these deals.

Proposition 1: If $\widehat{\rho_A} \geq \rho_B^*$ then AL offers an aid-for-policy deal $\rho = \rho_B^*$; otherwise AL does not offer an Aid-for-Policy deal. Leader BL accepts the aid-for-policy deal if and only if $\rho \geq \rho_B^*$.

The proof of this claim follows directly from the characterization of best responses above. The selectors depose their leader iff $v(g) + u(z) + \theta < Q$. Given this retention decision, leaders spend all available resources optimally. Leader BL only accepts aid-for-policy deals if they improve her survival prospects (i.e. $\rho \geq \rho_B^*$). AL only offers an aid-for-policy deal if it improves her survival ($\rho \leq \widehat{\rho_A}$) and when such deals are possible she offers the smallest possible amount of aid concession since her survival is decreasing in ρ.

The Comparative Statics of Aid Transfers

The proposition characterizes the likelihood and size of aid-for-policy deals. The size of any aid transfer is increasing in the salience of the concessions in nation B (σ_B), the resources available to leader BL (R_B) and the size of the coalition to which BL is beholden (W_B). Aid transfers are most likely to take place when the size of the aid donation required to purchase the concession from BL is small and when nation A has abundant resources and a large coalition (large R_A and W_A).

When the policy concession has high salience in the recipient nation, σ_B, aid-for-policy deals are less likely because the recipient requires a high price to grant the policy concession. Therefore, in such circumstances if a policy for aid deal is struck the aid package is likely to be large. High policy salience in the donor nation, σ_A, of course, makes aid-for-policy deals more likely.

If leader BL accepts an aid-for-policy deal she must compensate her supporters

for the imposition of a policy they inherently dislike. Leader BL requires fewer aid resources for this compensation when nation B is relatively poor and when coalition size is small. Coalition size determines the number of supporters who must be compensated for the imposition of the pro-A policy. When leader BL is beholden to only a few supporters she can readily buy their tolerance through the disbursement of private goods. The aid money, of course, is a pool that can be used for just that purpose. As coalition size increases, more people must be compensated to secure their acquiescence to the pro-A policy. Compensation for this growing number of supporters requires greater resources and a shift in focus towards the provision of public goods. As a consequence of this latter factor, aid receipts in large coalition systems are more likely to be spent on the provision of public goods than is the case in small coalition systems. But, because policy concessions are more expensive to gain from large coalition recipients, large coalition states are relatively unlikely to receive aid at all.

A low resource base means leaders normally provide relatively few rewards. As such, the marginal value of additional rewards, such as those that could be financed through an aid transfer, is higher. As resource levels grow, leaders provide greater levels of rewards. This diminishes the marginal value of the additional rewards that a leader can purchase with aid resources. Therefore, to provide the same compensation for the imposition of a pro-A policy, a resource-rich recipient requires more aid than does a resource poor recipient, making aid less likely to be forthcoming, but more lucrative if it is donated.

Political institutions, government resources and the salience of the policy to the potential recipient shape the necessary size of any aid-for-policy deal. Whether a deal takes place depends upon whether the value of the policy concessions, σ_A, improve leader AL's prospects for political survival more than the value of the public and private goods that could have been bought with the resources needed to pay for the

aid, ρ, and any transactions costs, k, borne in shifting money out of the domestic economy and into foreign assistance. Leader AL is most likely to pay the required costs to obtain policy concessions when she is beholden to a large coalition (large W_A), when she has access to numerous resources (large R_A) and when the concessions are valuable to her supporters (large σ_A).

Donor states are typically rich, large coalition systems. Leaders in rich systems spend heavily to provide rewards. High levels of expenditures mean that the marginal value of rewards to supporters in such polities is low relative to that in a poor system. It is therefore leaders in rich systems that are more likely to forego the domestic private and public goods that could be purchased with prospective aid dollars in order, instead, to purchase policy concessions from abroad. They can get more policy bang for the marginal buck when spending it in a relatively resource poor society whose leader is prepared to be policy compliant in exchange for survival-enhancing aid money. Additionally, it is leaders of large coalition systems that also find being donors to gain policy deals most attractive. If the coalition size in a donor state is relatively small, then using resources to purchase policy abroad diverts a relatively large amount of benefits from each of an incumbent leader's essential supporters. But in a large coalition society, coalition members enjoy benefits mostly in the form of public goods. The marginal cost in foregone benefits is more readily made up by purchasing significant policy concessions abroad. Indeed, this is part of the job of a democratic leader. Such leaders are accountable to their constituents at home and not for the welfare of citizens elsewhere. They can purchase valued policy compliance most easily and cheaply from non-democratic, small coalition polities and, according to the model, they do so even though they recognize that small coalition recipients have institutionally-induced incentives to use the aid money as private rewards to their key backers rather than as money to promote public welfare such as alleviating poverty.

We illustrate the logic of the argument by considering the failure of US attempts to buy policy concessions from Turkey. In the run up to the 2003 invasion of Iraq, the US sought the rights to base US troops in the predominately Muslim nation of Turkey. Such rights were of value for the US because a second, Northern, front would have improved its ability to engage the Iraqi army on favorable terms. Although Turkey is allied with the US through NATO, the idea of assisting a predominately Christian nation to invade a fellow Muslim nation was domestically unpopular. During negotiations in February 2003, the US offered Turkey $6 billion in grants and up to $20 billion in loan guarantees. Given Turkey's population of approximately 70 million, these aid totals amounted to approximately $370 per capita.[4] The Turkish government is relatively democratic. On Polity's -10 to +10 democracy-autocracy scale it scored 7 in 2003 (Marshall, Jaggers and Gurr 2002). It was also relatively wealthy with a gross domestic product of $240billion (current US$, World Bank Development Indicators, 2005). The Turkish leaders needed to compensate a substantial proportion of a relatively wealthy population through increased policy rewards. Although the magnitude of the US's offer would have allowed the Turkish leaders to direct more than a thousand dollars towards each of their supporters, it was not enough to compensate them for the sought-after concession.

As a thought experiment, suppose Turkey had been a corrupt electoral system and so rather than needing the support of say half of the registered electorate (i.e., about 20 million of 40 million registered voters), its leaders needed only the support of 1% of the selectorate (i.e., 400,000 out of 40 million), a percentage considerably larger than the size of the winning coalition in, for example, North Korea (interviews with Ken Gause, Dae-Sook Suh, Katy Oh Hassig and other North Korea specialists). While under democratic rule, the US's offer would allow a Turkish leader to direct an additional $1300 to each of his essential supporters, under the small coalition setting

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[4]cnn.com. Turkey holds out for extra U.S. aid over Iraq. February 18th 2003.

the leader could provide each supporter with $65,000, an amount more likely to elicit support for the government even if it had allowed a US invasion of Iraq through Turkey. Under such an institutional setting, it is far more likely that the US could have acquired Turkish acquiesce, and at a much lower price. After all, cutting the aid package in half would still yield more than $30,000 per small coalition member.

DATA AND VARIABLES USED

The theory predicts that the size of aid-for-policy deals is increasing in σ_B, R_B and W_B. The likelihoods of an aid deal being reached, that is of AL being willing to offer enough aid to gain agreement from BL, is decreasing in the size of the aid required by the recipient and increasing in σ_A, R_A and W_A. In the next section we test these predictions using bilateral OECD data for essentially all countries during the years 1960-2001 (OECD 2003a,b). The data are organized by country-pair years where the countries are the prospective recipient (B) and the prospective donor (A; i.e., each of the OECD members). Because there is a division of opinion in the literature about whether countries other than the United States give aid primarily for altruistic purposes while the US is said to give aid for strategic reasons we test the theory for all OECD countries and also for all OECD countries while separating US choices with a dummy variable, US, coded 1 for those observations in which the prospective donor is the United States and coded 0 otherwise. We also construct interaction terms, as explained below, to capture any differences in how the US fits the theory or alternative explanations compared to other OECD member states.

Our empirical investigation focuses first on how much aid recipients get, if they get any. Any prospective donor must make this calculation first before deciding whether to give aid or not as that determination depends on how expensive the desired policy concessions are expected to be. Then, having determined the cost, we assess the likelihood that a prospective recipient receives foreign assistance from a prospective

donor. We measure the size of bilateral aid donations as the logarithm of total gross economic aid in constant US dollars.[5] This dependent variable is called lnAid. When we turn to answering the question, "Who gets aid", the dependent variable, GetAid, is a dummy coded as 1 for each bilateral prospective donor-recipient pair that resulted in aid being given in the year in question and coded as 0 otherwise.

The theory indicates that the amount of aid, if any, received is a function of the coalition size in the recipient regime; the resources at the disposal of the recipient government; and the salience for the recipient. Whether aid is given at all depends on these same variables (although with the predicted effect being the opposite) as well as the coalition size in the donor regime, the resources at the prospective donor's disposal and the salience of the concessions for the donor. We now describe how each of these variables is estimated.

Coalition size, W_A and W_B, are estimated using Bueno de Mesquita et al's (2003) five point measure of winning coalition size. W is normalized to vary between 0 and 1, with 1 representing the most democratic countries and 0 the most autocratic. The estimate of winning coalition size relies on the Polity data (Marshall, Jagger and Gurr 2006) components REGTYPE (regime type), XRCOMP (the competitiveness of executive recruitment), XROPEN (the openness of executive recruitment), and PARCOMP (competitiveness of participation). One point is added to the index of W for each of the following conditions: if the REGTYPE is non-military, if XRCOMP is greater than or equal to 2 (meaning the chief executive is not chosen by heredity or in rigged, unopposed elections), if XROPEN is greater than 2 and if PARCOMP equal 5 (indicating the presence of a competitive party system). See Bueno de Mesquita et al (2003) for details and justification of this variable.

R_B and R_A respectively measure government revenue for recipient nation B and prospective donor A. As such, R_B is the resources available to BL and R_A is the

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[5]US Department of Commerce. 2003.

resources that can be used by AL. We construct these resource variables as the log-arithm of the governments share of GDP using data from the Penn World Series (Heston et al 2002). In particular, we estimate R_B and R_A as the logarithm of the product of population, per capita GDP (rgdpch) and the government's share of GDP (kg).

When we specify our econometric model we deviate from the simplified theoretical model by including a quadratic term for R_B to control for the possibility of non-linearity in the amount of aid agreed to between BL and AL in exchange for policy concessions. The theory assumes a single policy concession but, of course, in reality there are a variety of deals that can be struck between the leaders of nations A and B. If leader AL is not willing to buy the full concession from BL when the cost is very high (as is likely when R_B is large enough) then perhaps she buys a smaller, and hence cheaper, concession. When confronted by a resource rich recipient, the donor might have to settle for smaller, less expensive concessions. For example, as we discussed earlier, although the US was not prepared to pay the price Turkey sought to allow US troops to invade Iraq through Turkey, the Turkish government allowed the US to base some troops in Turkey and organize missions to rescue downed pilot and other similar operations. The search for "bargain" policy concessions dampens the observed relationship between resources and the size of aid deals.

We measure saliences using a variety of variables. For ease of language we shall assign each of these variables as a determinant of either the donor or the recipient's salience. However, we recognize there this is considerable overlap and concessions that are highly salient for the donor are also likely to be salient for the recipient, and vice versa. Recipient salience is measured with a dummy variable, Cold War, coded as 1 during the years up to and including 1989 and 0 after. We believe that taking aid from OECD members (allies of the United States) was a costly signal during the cold war regarding which side the recipient chose. As such, the recipient's salience for

taking aid from the US or another OECD member during the cold war was expected to be elevated, meaning that aid was less likely to be given but if given it would be a greater amount than after the cold war. Unfortunately we do not have data on Soviet aid giving so we cannot control for the extent to which Soviet aid served as a substitute for US or other OECD-member assistance.

For prospective donors, the salience of the policy concession sought from BL is measured with three indicators: Distance, Population, and Colony. Distance is estimated as the logarithm of the distance in miles between each prospective recipient and each prospective OECD donor. Population is measured as the logarithm of the prospective recipient country's population in millions as reported by Penn World Tables. Colony is a dummy variable coded as 1 if the potential recipient country had been a colony of the prospective donor. The general idea is that policy concessions from geographically closer, more populace countries are valued more than comparable concessions from small distant countries. Similarly former colonies hold higher salience for donors than do states with which they had no special prior relationship.

In addition, to control for the primary alternative explanation of aid policy, namely humanitarianism, in some models we also include variables whose association with aid should be determined by this alternative explanation. If aid is given for humanitarian rather than strategic reasons we should expect strategic considerations such as trade relations and military alignment to have little impact on spending. We should, of course, also expect aid recipients to be needy. Government revenue, a critical variable in the model, is highly correlated with the joint effects of population size and per capita income, making the inclusion of per capita income as an estimate of need problematic in the tests. Instead, we estimate need as the crude death rate in the recipient country using the World Bank Development Indicators (World Bank 2004). If aid is given to improve quality of life then the crude death rate, referred to as Death Rate and measured as deaths per 1000 people, should be a good indicator of

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polities in need. A high death rate is associated with poor health care, poor sanitation and drinking water, too few physicians, immunizations, inadequate education, and so forth. Altruistic donors should be especially likely to give aid to countries with a high death rate and they should be likely to give more aid the worse the death rate is.

We estimate the effects of trade with the logarithm of the value of trade imports and exports between each dyad consisting of prospective recipient B and prospective donor A. These data, labeled Trade, are taken from Gleditsch (2002). Likewise, in some analyses we also control for the national security relationship between each pair, A and B, based on Bueno de Mesquita's (1975, 1981) method of estimating shared security policy interests. He devised a method to estimate the similarity of A's and B's pattern of military alliance commitments with all other states in the world each year. This has been shown in numerous studies to be strongly associated with how reliable alliance commitments prove to be (for instance Kim 1989; Bennett 2003; Oneal 1999). We refer to this variable as Alignment. It can vary between -1 and +1 and in our data set actually varies between -0.35 and +1. In the models that include Alignment, we also include Alignment squared. The assumption behind this is that there is no reason to buy policy concessions from friends and it is too expensive to purchase concessions from bitter enemies. Countries whose alignment score with the prospective donor are in the neutral range around a value of 0 are most susceptible to making security-based aid for policy deals. The Alignment data, based on Kendall's tauB, are drawn from EUGene (Bennett and Stam 2003). [6]

W_B, R_B, the death rate in B, trade with B, and alignment with B are each lagged

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[6]We do not use the alternative measure, S, devised by Signorino and Ritter (1999) because that measure, when calculated on a global set of dyadic alliance portfolios is highly skewed toward large positive values, with the minimum value rapidly approaching the maximum value of 1 as the number of nations included in the calculation increases. Bueno de Mesquita's (1975) indicator approaches a minimum of 0 from below and achieves a maximum of 1 as the number of nations included in the calculation approaches infinity.

by 1 year to capture the information A's government would have had at the time it decided whether to give aid and if so, how much to give to B. Eliminating the lag does not change the results. When we distinguish patterns for the United States from the rest of the OECD members, we include interaction terms for the US and W_B, R_B, R_A (i.e., US resources), distance, population, cold war, death rate, trade and alignment.

Table 1 provides a summary of key variables. It is evident from these summary statistics that the United States is more likely to give foreign aid than are the rest of the OECD governments. Less surprisingly given the wealth of the United States, when the US gives aid it gives more than any other country. But, as noted at the outset of this study, this is true in absolute terms but is not true relative to the size of the economy. In other respects, the US and the OECD look alike in terms of the theoretically interesting characteristics of prospective and actual recipients.

Table 1 about here

As can be seen in Table 2, the independent variables are only weakly correlated with each other. The only exception, not surprisingly, is the correlation between R_B and the recipient's population. Clearly governments with larger populations are in a position to extract more revenue, all else equal. By and large, the bivariate correlations among the independent variables are less than ± 0.10.

Table 2 about here

Our tests consist of three fixed-effects regression[7] models that examine the theory in the context of the amount of aid given and three logit models in the context of whether aid is given at all. The first model in each instance reflects the essential variables in the theory. The second model then adds dummy variable interaction terms to separate the effects of the relevant variables when the United States is the

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[7]We use stata 9's fixed effects regression, specifying the potential recipients as the fixed effects, and add dummy variables for each OECD member with the exception of the United Kingdom which we treat as the excluded category.

(prospective) donor from the effects for the rest of the OECD. The third model in each case expands to include the control variables and their interaction with the US. In keeping with the logic of the theoretical model, when we assess how much aid is given we include fixed effects for each of the donors and each of the recipients to push our theory hard in terms of temporal change. We do not include fixed effects for the logit analyses concerning who gets aid as there the prospective donor and recipient characteristics are exactly what we are attempting to identify theoretically. Finally, we note that as W_B and R_B rise, our ability to observe aid-for-policy deals becomes censored and we typically observe only "bargain" aid packages. As W_B and R_B increase the observed aid deals become increasingly drawn only from the left tail of the price distribution. In the appendix we derive the nature of the bias. This analysis suggests that while probit or logit analyses of whether aid is given are appropriate, the sample selection problem means that our analyses of how much aid is given should be considered indicative of general trends rather than consistent estimates.

RESULTS

The theory leads to the expectation that more aid flows to larger coalition, relatively wealthy recipients for whom the concession sought are salient. It also leads us to expect that because the cost is higher the likelihood of receiving aid decreases as the prospective recipient's coalition gets larger; its resource base increases and the salience of the policy concessions sought from it increase. Donors are more likely to give when the prospective recipient's coalition is small, its resources are few, its salience is low but the donor's salience for the policy concession is high, the donor's coalition is large and the donor's resource base is large. From the perspective of the potential recipient's characteristics, who gets and how much they get depend on the same factors but with opposite effects.

Table 3 tests the hypotheses regarding how much aid recipients receive. The results

are consistent with the theoretical expectations. In each of the three models, more aid flows to larger coalition regimes. As government revenues increase in recipient regimes, so too does the amount of aid received. As anticipated, this is true up to a turning point after which the presumed expense of policy concessions leads donors and recipients to agree on more limited arrangements.

Salience also has the expected effects. Countries geographically closer to the donor receive more, as do former colonies and countries with larger populations. When we control for the US, then the remainder of OECD aid giving appears to be unaffected by the change from the Cold War to the post-Cold War period. Security alignments matters to the OECD members in the expected manner. Those recipients who are in the approximate middle of the alignment range – that is, those whose military alliance patterns are neither very similar nor very dissimilar to that of the donor – receive the most aid. Similarly, trade relations matter. OECD members give more aid to governments in countries that maintain significant trade relations with them than to governments in countries that do not. Surprisingly, at least for those who subscribe to the idea that donors other than the United States give money in response to needs (Lumsdaine 1993; Noel and Therien 1995), the association between a country's crude death rate and the amount of aid it receives from non-US OECD members is statistically significant, but negative, not positive. Those with greater need receive less OECD assistance than those whose needs are less dire.

Table 3 about here

The OECD picture seems to support the theoretical claims in favor of aid-for-policy deals rather than the view that non-US donors give for humanitarian purposes. Trade and security interests increase aid receipts; need does not. Now we turn to the findings for the US. After summarizing the key statistical results, we reflect further on what the analysis suggests about altruistic, humanitarian aid.

The general pattern for the amount of assistance provided by the United States to

recipient countries largely follows the pattern for the rest of the OECD, and this is true even if we delete Egypt and Israel – the two largest US aid recipients – from the analysis. The main difference between the United States and the rest of the OECD donors is in magnitude, but not in kind. For instance, both the OECD governments and the United States, as expected, give more assistance to large coalition recipients. Model 3 indicates that the amount the United States gives in response to an increase in coalition size is substantially greater than that of other OECD members (although model 2 indicates no significant difference in how US and non-US donors respond to the recipient's coalition size). This is not surprising since the United States has a larger economy than any of the other OECD states. Perhaps for the same reason, the United States "buys" policy deals that are higher priced as reflected by the fact that US donations do not start to decline until the recipient government's revenue passes the 75th percentile. The rest of the OECD begins to decrease the amount of their aid donations when recipient government revenues are around the 20th percentile. This tapering off at a much earlier level may be why so many believe non-US donors give altruistically, based on needs rather than attributing the differences in aid giving to the greater ability of the United States to pay for policy concessions even from relatively well-off polities. For the non-US OECD donors, even a quite modest level of recipient revenue is sufficient for bilateral assistance to decline suggesting that the non-US OECD members concentrate their giving on the poor. But the humanitarian account is difficult to square with the non-US donors' negative pattern of assistance when measured against crude death rates in recipient states. That result lends greater credence to the contention that the OECD aid givers other than the US are not acting more altruistically than the US.

Whereas the cold war was largely irrelevant to the non-US donors, it profoundly influenced aid giving by the United States. US donations were substantially lower during the 1990-2001 period than they were during the cold war years. As noted

earlier, President Bush's Millennium Challenge Grants call for much more to be spent on foreign aid but so far a small minority of those funds have been spent.

As with the rest of the OECD, US aid increases for recipients who are geographically closer, whose population is large (although the US responds to population size at a flatter rate than do the other OECD members), and who trade more with the US (as with population, the positive impact of trade is relatively dampened for the US compared to other OECD donors, but it remains significantly positive).

In common with the rest of the OECD, the US is likely to give more aid to relatively neutral nations rather than those that are strongly aligned either with or against it. Although the US and non-US donors given most to the similarly aligned nations– the neutrals–, the drop off in the amount of aid for closely aligned states or bitter enemies is larger for the US. Finally, whereas OECD aid-giving diminishes with need, as measured by the crude death rate, US aid giving appears to be needs blind. The United States does not give more to needy countries but neither does it give less as the rest of the OECD appears to do. This may simply reflect the greater wealth of the United States.

Perhaps the fundamental question regarding humanitarian aid giving concerns whether aid is given to relieve need as distinct from how much aid is given for that purpose. However before turning to that question, we summarize our key findings regarding the amount of aid given with a set of scatter plots. Figure 1 divides recipient countries into five groups based on their coalition size (W_B). In each of the five scatter plots, the horizontal axis is the logarithm of the revenue of the recipient government, R_B. We expect and we see positive slopes both for the non-US OECD donors and for the United States except when we reach the level of aid recipients in the largest coalition category. This is the group whose price is likely to be too high for most donors to be able to purchase more than a limited set of policy concessions.

Figure 1 about here

According to the theory, those leaders who require high levels of aid before being willing to provide policy concessions are, for that very reason, less likely to receive any aid. Therefore, those least likely to receive aid are large coalition "democratic" governments with high government revenues and for whom the policies at stake are highly salient. Table 4, which contains logit analyses of whether any aid is given, supports these predictions. The results are robust across the models even if we delete Egypt and Israel, the aid recipients most transparently receiving aid in exchange for a policy agreement, most notably the Camp David peace agreement.

Large coalition regimes are significantly less likely to receive aid from OECD donors than are small coalition, more autocratic, governments. However, contrary to expectations, the United States, according to model 5, does not choose aid recipients on the basis of coalition size in the prospective recipient regime. What is more, according to model 6, the United States actually is more likely to give assistance to larger coalition, more democratic governments than it is to more autocratic regimes. This holds true even when Israel is taken out of the sample. This seeming anomaly may reflect the extraordinary resource base at the disposal of the United States government. Given that foreign aid is so cheap – recall that the United States spends only about 0.2 percent of GNP on aid – it may be that even large coalition states are not out of the price range of the United States.

As with the size of the prospective recipient's coalition, so too with regard to the prospective recipient's government resources, OECD donors are significantly less likely to give aid to revenue-rich regimes than to revenue-poor regimes. Models 5 and 6 indicate this drop off in willingness to give is particularly strong for the United States. All donors, as expected by the theory, seem more prepared to give aid when their own resources are larger than when they are smaller. Likewise, they are more likely to give aid when their coalition is large than when it is small although this result should be taken more as anecdotal evidence than as systematic evidence since,

with the exception of Spain, Portugal, and Greece for a part of the period investigated here, all of the donor governments had the maximum coalition score of 1 so that there is little variance in W_A. The coalition size indicator did not vary at all for the United States. This is consistent with expectations. The theory predicts a selection bias. Prospective donors who lead small coalition regimes are predicted not to become donors.[8]

An important difference between the US as a donor and the rest of the OECD is evident when examining the dummy variable for the cold war years. Perhaps because they were US allies and could afford to free ride on American security-policy spending or perhaps because purchasing security alignment with the OECD and US was too expensive, non-US donors were particularly unlikely to give aid during the years 1960-1989 as compared to the post-cold war period. The United States, however, was neither more nor less likely to give aid during the cold war period than after that time. The price for purchasing an anti-Soviet stance may have been too high for the rest of the OECD members but apparently it was not too high for the US. At least, it was not a critical factor in American aid giving decisions.

As with the amount of aid, larger trade relations with a prospective donor raised that country's salience in the eyes of would-be givers and so increased the prospects of receiving aid. This is also true for the US as a donor although the likelihood of trade partners receiving aid was not as elevated when the US was the prospective donor as when the donor was from another OECD country (i.e., 0.41*LTrade - 0.20US*LTrade > 0, chi squared = 24.46).

Table 4, in conjunction with table 3, helps sort out the extent to which aid giving is needs based. We saw that the non-US OECD members gave less to those with the greatest need while the US was needs blind in the amount of aid it gave. Table 4

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[8]Here again it is a pity that we do not have data on Soviet aid to see whether their aid packages were sufficiently small and scarce to reinforce the results for the OECD countries.

shows that the OECD members other than the United States not only give less to the needy, but also are less likely to give at all to needy countries. In contrast, the United States is more likely to give to countries with a significantly elevated mortality rate. Chi squared for the effect of the lagged death rate on the likelihood of US aid giving is 23.69 and the coefficient is strongly positive (-0.01 Lag(Death Rate) + 0.09 US*Lag(Death Rate)). Although scholars such as Lumsdaine (1993) have argued to the contrary, our analyses suggest that the US is more motivated by humanitarian concerns than other OECD donors.

Overall, the theory seems to fit the data well. While 56% of prospective recipient-years result in a country receiving aid, the theory sorts them out sufficiently well that it correctly categorizes over 70% of cases, resulting in a proportionate reduction in error of between 40 and 45%. Each of the logit analyses yields a signal to noise ratio of over 80%, indicating that as the estimated probability of getting aid increases so too does the set of cases that actually received aid.

CONCLUSIONS

Current debate about foreign aid revolves around three questions: is too little given to make a difference; is an increase in aid donations a mistake unless donors first institute means to prevent corruption by recipient leaders; do donors give assistance for humanitarian reasons or for domestic gains. We proposed and tested a formal model that helps illuminate answers to these questions. By positing that recipient and donor leaders are each motivated to maximize their political survival prospects we derived predictions about optimal aid decisions with regard to giving and getting aid and with regard to the amounts given and taken. We showed that the theoretical results were largely consistent with data for bilateral OECD aid giving between 1960 and 2001.

The results indicate that the amount of aid given and to whom it is given are both

consistent with the decisions expected from political leaders who are motivated to enhance their political survival. As such, aid giving appears to be driven by institutionally induced considerations in recipient and donor nations and only incidentally by needs. Thus the answer to the first question posed above is that the right amount of aid is given for the purposes that motivate donors and recipients even if this is suboptimal from the perspective of alleviating poverty.

The second question focuses attention on the corrupt uses to which aid money is often put. The theory and data analysis suggest that these corrupt uses by small coalition, autocratic leaders, are an essential, if not necessarily conscious, part of the decision by donors to give aid, as well as being in the more obvious interest of corrupt leaders in receiving aid. Large-coalition donors depend on effective policy implementation for their political survival. They find it easiest to purchase policy concessions from small coalition leaders who rely on cronyism and corruption as those leaders can best afford to sacrifice their own society's public-goods oriented policies to stay in power.

Humanitarianism, as indicated by crude death rates, seem at the margin to motivate US aid giving although not how much the US gives. Such concerns do not seem to significantly influence decisions by the rest of the members of the OECD. They, like the US, give aid to large, geographically proximate states, especially those with whom they maintain trade relations or whose security alignments may be up for grabs. The neediest do not receive the most; rather, those whose policy compliance can be purchased at an affordable price apparently are offered aid and agree to take it.

Four groups are influenced by aid for policy deals in our model. Of these four groups, the model indicates and the evidence seems to support the notion that three are generally beneficiaries from aid and one is doubly harmed. Donors are typically large coalition systems. That is, they tend to have democratically elected leaders. Constituents in donor states benefit from aid. The deals their leaders strike are ori-

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ented toward obtaining policy concessions they want from aid recipients. Indeed, analyses of Congressional voting on foreign aid bills indicates that support is especially likely in constituencies that benefit from aid either because they have many residents from aid-receiving countries or because they have industries that benefit from aid arrangements (Milner and Tingley 2006). Because the aid deals satisfy domestic constituents in the donor country, they improve the survival prospects of donor leaders. Likewise, recipient leaders benefit from aid deals. That is why they agree to them. Aid gives them a source of revenue that does not require additional taxes on citizens. Since these leaders generally represent small coalition regimes their political survival is enhanced by channeling funds into rent-seeking opportunities and other private rewards for their cronies. To obtain foreign aid funds, however, these leaders must adopt unpopular policies. The United States, for example, has been giving Egypt substantial aid since that country's regime signed the Camp David peace agreement with Israel, a decidedly unpopular and costly policy at home. Since 9/11 the United States has given substantial aid to Pakistan in exchange for that country's support in the war on terrorism. There is, of course, no need to give foreign aid to regimes who freely pursue policies desired by prospective donors. Because the policies that are adopted are unpopular at home citizens in recipient countries are harmed by aid.

The harm to the domestic residents in recipient countries is two-fold. First, they get policies they would rather not have. Second, the aid helps their autocratic incumbent leadership survive and continue to pursue unpopular policies in the future. Thus from their perspective they get "bad policies" and "bad leaders". Indeed, although not explored here, another selectorate model and evidence indicates that foreign aid, just like oil or other contributors to the resource curse, also decreases the likelihood of a regime becoming more democratic and increases the risk that it will become less so (XXXX).

With these consequences in mind, it is little wonder that citizens of countries receiving aid frequently harbor great dislikes for donor governments. In the donors they – apparently correctly – see regimes that for their own benefit diminish the welfare of many people in recipient countries. The United States is the largest and most nearly ubiquitous donor. As such it is little wonder that it attracts so much enmity around the world. And yet, because donor regimes are large coalition governments, donor regimes produce vast quantities of welfare-enhancing public goods within their own societies. Citizens in donor states enjoy these great benefits and citizens in recipient states surely envy those who enjoy such a high quality of life. The very factors that make democratic governments give aid disproportionately to autocratic regimes also make democracies exceedingly attractive places to become immigrants from the perspective of those residents of recipient states who seek the opportunity to escape their government-imposed misery. Thus it seems to be that so many residents of public-goods poor recipient societies resent foreign aid donors and yet wish that they could become residents in the public-goods rich donor societies.

APPENDIX

In this section we derive the likelihood function associated with the theoretical model. This analysis suggests that although standard discrete choice models, such as logit or probit, are appropriate to analyze whether aid is given, standard regression approaches to estimating the amount of aid are problematic. We derive our econometric model using a standard latent variable formulation, where y_A^* represents the maximum amount leader AL would pay for a concession and y_B^* represents the minimum amount leader BL requires before agreeing to an aid deal. Given an appropriate logarithmic transformation to account for magnitude effects, the formal model maps into our econometric model with $y_A^* = \ln \widehat{\rho_A}$ and $y_B^* = \ln \rho_B^*$. We observe economic aid, $y = y_B^*$, only if $y_A^* \geq y_B^*$.

Suppose a standard linear approach: $y_A^* = x_A \beta_A + \varepsilon_A$ and $y_B^* = x_B \beta_B + \varepsilon_B$, where $(\varepsilon_A, \varepsilon_B)$ are error terms which we assume are bivariately normally distributed with mean zero and variance $\begin{pmatrix} \sigma_A^2 & \sigma_{AB} \\ \sigma_{AB} & \sigma_B^2 \end{pmatrix}$. We next derive the likelihood function associated with this model for observations of aid giving and non-aid giving.

If aid is observed, $y > 0$, then $y_B^* \leq y_A^*$, which implies that $\varepsilon_B \leq x_A \beta_A - x_B \beta_B + \varepsilon_A$. Therefore the errors, ε_B, on observations of aid giving are truncated and lie in the interval $(-\infty, x_A \beta_A - x_B \beta_B + \varepsilon_A)$. Unfortunately this makes the likelihood very difficult to calculate because the right truncation is stochastic and therefore we must integrate ε_A out. Given ε_A, the distribution of $\varepsilon_B = y - x_B \beta_B$ is normal with mean $\varepsilon_A \sigma_{AB} / \sigma_A^2$ and variance $\sigma_B^2 (1 - (\sigma_{AB} / \sigma_A \sigma_B)^2)$. Therefore the probability density of observing y aid given x_A and x_B is $f(y|x_A, x_B) = \int_{-\infty}^{\infty} \dfrac{\phi\left(\frac{y - x_B \beta_B - \varepsilon_A \sigma_{AB} / \sigma_A^2}{\sqrt{\sigma_B^2 (1 - (\sigma_{AB} / \sigma_A \sigma_B)^2)}}\right)}{\Phi\left(\frac{x_A \beta_A - x_B \beta_B + \varepsilon_A}{\sqrt{\sigma_B^2 (1 - (\sigma_{AB} / \sigma_A \sigma_B)^2)}}\right)} \phi\left(\frac{\varepsilon_A}{\sigma_A}\right) d\varepsilon_A$, where Φ and ϕ are the standard normal distribution and density.

By way of comparison, the standard regression framework, $y = z\gamma + \upsilon$, where $E[\upsilon^2] = \sigma_\upsilon^2$ has a likelihood function of $\phi(\frac{y - z\gamma}{\sigma_\upsilon})$. Thus, the coefficient estimates reported in table 3 are inconsistent.

The situation is less problematic for observations of no-aid giving. No aid implies $y_A^* < y_B^*$. The contribution to the likelihood function from such observations is captured by $\Pr(y_A^* < y_B^*) = \Pr(\varepsilon_A - \varepsilon_B < x_B \beta_B - x_A \beta_A)$. Since $E[\varepsilon_A - \varepsilon_B] = 0$ and $E[(\varepsilon_A - \varepsilon_B)^2] = \sigma_A^2 + \sigma_B^2 - 2\sigma_{AB}$, $\Pr(y_A^* < y_B^*) = \Phi(\frac{x_B \beta_B - x_A \beta_A}{\sigma_A^2 + \sigma_B^2 - 2\sigma_{AB}})$, where $\Phi()$ is the standard normal distribution. This formulation is reminiscent of a standard probit model where the ratio of the beta coefficient and the square root of the variance can only be identified up to a normalizing constant. In particular, the standard assumption is that the variance of the error term in the latent variable formulation is one. Thus, provided that the variables appropriate for assessing AL's willingness to pay (i.e. the x_A's) and BL's minimum concession (i.e. the x_B's) are both included in the specification, standard discrete choice models such as logit or probit, are appropriate

for assessing whether aid is given.

The likelihoods derived above provide a potential means to simultaneously estimate both whether aid is given and how much. Unfortunately, there is no simple way to calculate the integral for cases of aid donation. Hence rather than use a maximum likelihood approach, we estimated the model using a Markov Chain Monte Carlo approach. Unfortunately, our Monte Carlo studies suggest that the algorithm often performs poorly. We believe these problems stem from limits in numerical accuracy in our random number generators. In Monte Carlo studies with simulated data, if one parameter in the model is fixed then the others can be reliably recovered using MCMC techniques. Unfortunately, without the anchor of fixing one parameter, the Markov chain tends to drift towards ever higher variance and beta parameters.

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Table 1: Summary Statistics for Key Theoretical Variables

Variable	N	Mean	Std. Dev	US: N	US:B's Mean	US: B's Std. Dev.
GetAid	137412	42.74	0.494	6,246	61.6	
lnAid	58734	0.401	2.51	3,845	2.932	1.88
Lagged W_B	130438	0.504	0.254	529	0.504	0.254
Lagged R_B	89408	7.92	1.83	4064	7.92	1.83
W_A	130460	0.958	0.163	6246	1	0
R_A	127848	9.98	1.51	6088	13.44	0.24
Ln(Distance)	130704	8.30	0.62	5970	8.45	0.59
Colony	137412	0.027	0.163	6246	0.012	0.108
Ln(Population$_B$)	89738	1.68	1.88	4079	1.68	1.88

Table 2: Bivariate Correlations Amongst Key Variables

N = 78351	Lag W$_B$	Lag R$_B$	W$_A$	R$_A$	Cold War	ln(Distance)	Colony
Lag W$_B$	1						
Lag R$_B$	0.05	1					
W$_A$	0.02	0.06	1				
R$_A$	0	0.03	0.12	1			
Cold War	-0.17	-0.18	-0.15	-0.04	1		
ln(Distance)	0.06	-0.02	0.07	0.03	0.1	1	
Colony	-0.01	-0.03	-0.02	0.14	0	-0.06	1
ln(Population$_B$)	-0.11	0.86	0.01	0.01	-0.08	-0.01	-0.02

Table 3: Determinants of the Amount of Aid Given

DV: lnAid	Model 1	Model 2	Model 3
Lag(W_B)	0.14 (0.043) 0.001	0.15 (0.044) 0.001	0.13 (0.067) 0.053
Lag(R_B)	0.78 (0.075) 0.000	0.68 (0.076) 0.000	1.08 (0.119) 0.000
Lag(R_B)^2	-0.05 (0.004) 0.000	-0.04 (0.004) 0.000	-0.09 (0.007) 0.000
ln(Distance)	-1.10 (0.022) 0.000	-1.14 (0.025) 0.000	-0.61 (0.040) 0.000
Cold War	0.08 (0.027) 0.002	0.03 (0.027) 0.331	0.04 (0.041) 0.313
Colony	2.84 (0.043) 0.000	2.82 (0.043) 0.000	2.14 (0.065) 0.000
ln(Population$_B$)	1.74 (0.066) 0.000	1.78 (0.065) 0.000	1.22 (0.117) 0.000
Lag(Death Rate)			-0.02 (0.007) 0.008
Lag(Trade)			0.48 (0.016) 0.000
Lag(Alignment)			0.40 (0.157) 0.010
Lag(Alignment)^2			-1.46 (0.206) 0.000
US	3.14 (.045) 0.000	-4.87 (0.844) 0.000	1.83 (1.406) 0.192
US*Lag(W_B)		-0.06 (0.121) 0.649	0.48 (0.179) 0.007
US*Lag(R_B)		1.03 (0.141) 0.000	1.80 (0.202) 0.000
US*(Lag(R_B)^2		-0.05 (0.008) 0.000	-0.06 (0.011) 0.000
US*ln(Distance)		0.31 (0.062) 0.000	-0.97 (0.122) 0.000
US*Cold War		1.10 (0.070) 0.000	1.20 (0.099) 0.000
US*ln(Population$_B$)		-0.06 (0.039) 0.122	-0.35 (0.063) 0.000
US*Lag(Trade)			-0.40 (0.041) 0.000
US*Lag(Alignment)			-0.37 (0.393) 0.348
US*Lag(Alignment)^2			-2.42 (0.713) 0.001
US*Lag(Death Rate)			0.02 (0.011) 0.169
Constant	2.61 (.370) 0.000	3.34 (.386) 0.000	-1.18 (0.656) 0.072
Fixed Effects, Recipients	122	122	120
Fixed Effects, Donors	21	21	21
N; R^2	44895; 0.31	44895; 0.31	20671; 0.39
RB Turning Point	7.765	7.599	5.772
US*'RB Turning Point		8.875	9.528
Alignment Turning Point			0.138: Neutral Relations
US*Alignment Turning Point			0.031: Neutral Relations

Figure 1: Aid, Recipient Government Revenue, and Coalition Size. (For each coalition size (W_B), lnAid versus Lagged R_B, with best linear fit lines and 95% confidence intervals for all OECD nations (lower line) and the US (upper line)).
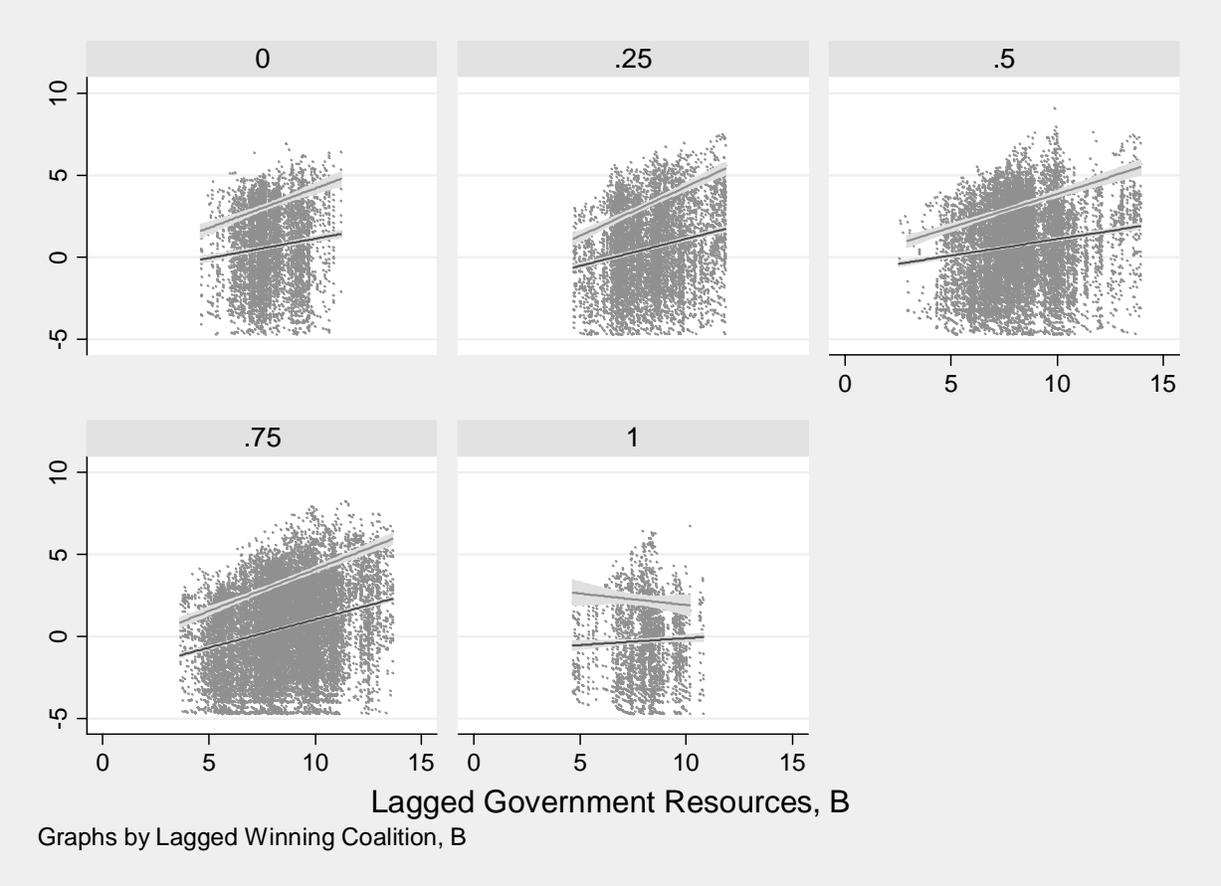

Graphs by Lagged Winning Coalition, B

Table 4: Who Gives Aid and Who Gets Aid?

DV: GetAid	Model 4	Model 5	Model 6
Lag(W_B)	-0.09 (0.033) 0.009	-0.09 (0.034) 0.010	-0.53 (0.056) 0.000
Lag(R_B)	-0.07 (0.010) 0.000	-0.05 (0.010) 0.000	-0.40 (0.022) 0.000
W_A	10.62 (0.544) 0.000	10.54 (0.54) 0.000	20.99 (2.839) 0.000
R_A	0.60 (0.007) 0.000	0.66 (0.007) 0.000	0.43 (0.013) 0.000
ln(Distance)	-0.27 (0.015) 0.000	-0.27 (0.016) 0.000	0.11 (0.026) 0.000
Cold War	-1.10 (0.020) 0.000	-1.13 (0.020) 0.000	-1.10 (0.032) 0.000
Colony	1.45 (0.067) 0.000	1.36 (0.067) 0.000	0.43 (0.098) 0.000
ln($Population_B$)	0.37 (0.010) 0.000	0.35 (0.010) 0.000	0.38 (0.019) 0.000
Lag(Death Rate)			-0.01 (0.003) 0.005
Lag(Trade)			0.41 (0.014) 0.000
Lag(Alignment)			0.73 (0.184) 0.000
Lag(Alignment)^2			-0.60 (0.246) 0.014
US		-16.27 (3.968) 0.000	-7.00 (6.95) 0.314
US*Lag(W_B)		0.08 (0.173) 0.628	1.11 (0.285) 0.000
US*Lag(R_B)		-0.74 (0.057) 0.000	-0.49 (0.107) 0.000
US*R_A		1.64 (0.293) 0.000	0.83 (0.499) 0.095
US*ln(Distance)		-0.34 (0.080) 0.000	-0.40 (0.152) 0.008
US*Cold War		1.25 (0.147) 0.000	0.97 (0.213) 0.000
US*ln($Population_B$)		0.63 (0.056) 0.000	0.36 (0.092) 0.000
US*Lag(Trade)			-0.20 (0.045) 0.000
US*Lag(Alignment)			0.33 (0.583) 0.567
US*Lag(Alignment)^2			-1.20 (1.002) 0.232
US*Lag(Death Rate)			0.09 (0.017) 0.000
Constant	-13.46	-14.10	-23.07 (2.854) 0.000
Number of Observations	78351	78351	32794
Chi Squared	25970	26593	11971
Pseudo R^2	0.24	0.24	0.27
Percent Predicted Correctly	73%	73%	74%
Proportionate Reduction in Error	45%	44%	42%