

WHO'S AFRAID OF FOREIGN AID? THE DONORS' PERSPECTIVE

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Abstract

With efforts across the industrial countries to increase the amount of foreign aid mounting, it is important to understand its determinants. This paper examines the factors affecting the support for foreign aid among voters in donor countries. A simple theoretical model, which considers an endogenous determination of official and private aid flows, relates individual income to aid support through the elasticity of substitution and also suggests that government efficiency is an important factor in this regard. The empirical analysis of individual attitudes, based on the World Values Surveys, reveals that satisfaction with own government performance and individual relative income are positively related to the willingness to provide foreign aid. Furthermore, when using donor country data we find that aid is adversely affected by government inefficiency and income inequality.

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1. Introduction

For many developing countries foreign aid constitutes a significant part, often in excess of ten percent or more, of their national income, see the World Bank Development Report, 2005a. In contrast, it is a relatively miniscule item in the donor countries' national accounts. Despite the recognition that donations to poor countries may serve the rich countries' interests – either because of strategic, economic or humanitarian concerns – and many pledges by rich countries' governments to significantly increase their amounts, flows of foreign aid from any given country do not typically exceed one percent of the national product.¹

Because of the belief that foreign aid may be essential for maintaining minimal living standards in poor countries, providing immediate humanitarian relief, or even spur investment and growth, international agencies, NGOs, and other organizations have been conducting for years vigorous campaigns to enhance its flows – with very limited success. It appears, therefore, that the relatively small amount of aid is a reflection of deeply rooted priorities, ideologies or political forces in donor countries. Indeed, the calibrations in Kopczuk et al., 2003, show that the actual levels of foreign aid relative to domestic income transfers correspond to citizens in rich countries attaching the welfare of citizens in poor countries only 1/2000 of the weight assigned to the welfare of their own poor.

Additionally, the amount of foreign aid differs significantly across the donor countries. For example, official development assistance constitutes around one percent of the GDP in Denmark, Sweden, and the Netherlands, but only one tenth of a percent in the United States; the total amount of aid (including, in particular, private flows) reaches almost two percent of the GDP in Sweden and

the Netherlands, but only a quarter of a percent in the United States, see Table 6.3 in USAID, 2004, and the World Bank Development Report, 2005a.

It is, therefore, important to have a better understanding of the forces that shape the overall levels of aid flows and their differences across countries. To this end, this paper offers a political economy model of international giving, where politically determined amount of official aid interacts with private donations.² While the weight assigned to foreign aid by the citizens in rich countries obviously plays a crucial role in the analysis as one would expect from Kopczuk et al., 2003, we identify additional potentially important elements. Thus, the perceived inefficiency of the recipient countries' use of aid as well as domestic government's inefficiency can potentially shape the political support for foreign aid. Yet another element is incomes. While generally ambiguous, under empirically plausible assumptions on preferences, the income effect implies that more affluent individuals should be no less supportive of aid – and likely more so – than poorer individuals. This also implies that in the resulting equilibrium, richer countries are more generous and that the lower is the degree of income inequality, hence, the more well off is the politically decisive voter, the higher is the level of political support for more generous giving. We also consider the case of multiple donors identifying a free riding effect, which implies an inverse relationship between the number of donors and the amount of aid provided by an individual donor country.

Our empirical findings are consistent with the model's predictions. The empirical analysis of individual attitudes, based on the World Values Surveys, reveals that satisfaction with the government performance and individual income are positively related to the willingness to provide foreign aid. This, in particular, implies that more efficient and less corrupt governments would be more conducive to public support for foreign aid. Further, the analysis of actual foreign aid flows

¹ At recent international forums, calls were made for each donor country to increase its aid commitment up to 0.7 percent of its national income, but the plan is yet to be implemented in full.

reveals that they are linked with domestic government corruption and income inequality, as predicted by the model.

Earlier theoretical work Dudley and Montmarquette, 1976, Mosley, 1985, and Hatzipanayotou and Michael, 1995, contains valuable insights as to the modeling of foreign aid. In particular, some of these papers emphasize its public good aspect from the donors' perspective. The recent paper by Lahiri and Schweinberger, 2006, focuses on the interaction between government and private aid. We extend their political economy analysis to the standard majority voting framework while incorporating the "warm glow" motive for giving. More importantly, perhaps, we also incorporate factors neglected in the above literature, which nevertheless may have empirical significance such as government inefficiencies described above.

The existing empirical literature on foreign aid has been almost entirely devoted to the issues of aid allocation and the effects of aid in receiving countries, see e.g., Alesina and Dollar, 2000, Alesina and Weder, 2002, Boone, 1996, Burnside and Dollar, 2000, Collier and Dollar, 2002, and a critical survey in Easterly, 2003. Our empirical focus is different in considering the attitudes toward foreign aid in donor countries and in this sense, it should be viewed as complementary to the existing line of research. Knack and Rahman, 2006, also consider donor incentives to provide aid, focusing on interactions among multiple donors; here, instead, the focus is on the donor country's characteristics that are more or less conducive to aid. Other work has previously used survey data to study views on international flows, in particular, migration, see e.g., Mayda, 2005; the empirical part of this paper is complementary to that work.

The paper is organized as follows. The next section describes the basic theoretical framework, which is then followed by its analysis in Section 3. The empirical part begins in Section

² In the United States, at least, an argument is often made that, whereas the amount of official aid is relatively small, private flows more than compensate for this, see USAID, 2004. Private flows of aid often constitute a significant aid component, about two thirds of the total aid in the United States, but only around a quarter in Denmark and France.

4 with the description of the data, followed by their analysis in Section 5; finally, Section 6 concludes.

2. Basic Framework

Consider an economy populated by a continuum of individuals indexed i , whose measure is normalized to one.³ The individuals differ only in terms of their initial income endowment, y_i , whose distribution is exogenously given, and are assumed to derive utility from private consumption c_i ; from the aggregate amount of donated foreign aid, A ; and from their private donation, z_i , which captures the warm glow motive for giving. The modeling approach that perceives foreign aid as a public good is quite standard, see, for example, Dudley and Montmarquette, 1976, Hatzipanayotou and Michael, 1995, and, Lahiri and Schweinberger, 2006, who similarly distinguish between government-provided and private aid. It also reflects the idea that, whatever the motivation is (strategic or humanitarian), foreign aid is often perceived as a national interest – see, e.g., USAID, 2004, which outlines the basic philosophy of aid from the US perspective. The incorporation of the warm glow has become standard in the related literature on public goods provision, see Andreoni, 1989, 1990.

Thus, the individual preferences are

$$U(c_i) + V(A) + W(z_i) \tag{1}$$

where U , V and W satisfy the standard assumptions and, in particular, are monotonic and concave.⁴

Income is allocated between consumption, paying taxes to finance the official or publicly provided aid, as well as private aid donations. We assume that a proportional income tax is used to

³ While the main analysis considers one donor-one recipient framework, an extension in the appendix exhibits a richer environment.

⁴ The separability assumption, while substantially simplifying the analysis, is not essential.

finance official aid and let T , $0 \leq T \leq 1$, denote the tax rate. Then, normalizing prices to unity, the individual budget constraints can be written as:

$$y_i = c_i + Ty_i + z_i \tag{2}$$

Letting Y denote the aggregate income and Z – the aggregate amount of private aid, the total amount of donation is

$$A = TY + Z \tag{3}$$

The decision on the amount of official aid, or alternatively, on the tax rate used to finance this aid, is made collectively, by a majority vote among the individual voters; it is then followed by the individually made decisions on the allocation of the disposable income between consumption and private donations of aid. The political economic equilibrium consists of the majority-supported tax rate and individual optimal donations which are mutually consistent.

The assumption that a democratic vote determines the amount of official aid is especially apt in our context where the donor countries are all exclusively democratic. Indeed, the assumed responsiveness of collective decisions to individual attitudes also constitutes one of the rationales behind the empirical focus on the attitudes' data below.

3. Analysis

The analysis proceeds backwards. Suppose first that the tax rate is exogenously given and consider the individual allocations of disposable income between consumption and private aid. The optimal individual allocation maximizes the utility (1) subject to (2), (3). The first order condition is

$$-U'(c_i) + W'(z_i) = 0 \quad (4)$$

whose solution can be written as

$$c_i = h(y_i(1-T)), z_i = y_i(1-T) - h(y_i(1-T)) \quad (5)$$

where $0 < h' < 1$; so that, integrating across the individuals,

$$Z = Y(1-T) - \int h(y_i(1-T)) di \quad (6)$$

and

$$A = TY + Z = TY + Y(1-T) - \int h(y_i(1-T)) di \quad (7)$$

Differentiating we obtain:

$$dA/dT = \int h'(y_i(1-T)) y_i di > 0 \quad (8)$$

This result implies that the crowding out of private donations by official aid is incomplete, so that a marginal increase in the official aid is not fully offset by a corresponding decrease in private aid, thus causing an increase in the overall amount of aid.

Suppose now that, in anticipation of the private donation equilibrium as described above, the individuals vote on the tax rate. The preferred tax rate for individual i satisfies the first order condition:

$$-U'(c_i) y_i + V'(A) dA/dT \leq 0 \quad (9)$$

where dA/dT is given by (8); and (9) is strictly negative if $T = 0$.

In general, the relationship between individual income and foreign aid preferences is complex. To facilitate its understanding, suppose that the all sub-utilities are isoelastic functions, so that (1) has the form

$$c_i^{1-\sigma}/(1-\sigma) + \alpha A^{1-\sigma}/(1-\sigma) + \beta z_i^{1-\sigma}/(1-\sigma), \quad \alpha, \beta > 0 \quad (1')$$

The parameter α reflects the taste for foreign aid as such, whereas β represents the warm glow motive from making a donation. When $\sigma > (<) 1$, the elasticity of substitution is smaller (larger) than unity; $\sigma=1$ corresponds to the case of logarithmic preferences.

Straightforward calculations reveal then that, for a given tax rate,

$$\begin{aligned} c_i &= \beta^{-1/\sigma} y_i(1-T) / (1 + \beta^{-1/\sigma}), \quad z_i = y_i(1-T) / (1 + \beta^{-1/\sigma}), \quad Z = Y(1-T) / (1 + \beta^{-1/\sigma}), \\ A &= TY + Y(1-T) / (1 + \beta^{1/\sigma}) \end{aligned} \quad (10)$$

The first order condition for the tax rate (9) in this case takes the form

$$\begin{aligned} -c_i^{-\sigma} y_i + \alpha A^{-\sigma} (Y + dZ/dT) &= -c_i^{-\sigma} y_i + \alpha A^{-\sigma} Y (1 - 1/(1 + \beta^{-1/\sigma})) = \\ -[\beta^{-1/\sigma} y_i(1-T) / (1 + \beta^{-1/\sigma})]^{-\sigma} y_i + \alpha [TY + Y(1-T) / (1 + \beta^{-1/\sigma})]^{-\sigma} Y (1 - 1/(1 + \beta^{-1/\sigma})) &\leq 0 \end{aligned} \quad (11)$$

where the second line is obtained by substituting from (10); this condition can be rewritten as follows:

$$-(1-T)^{-\sigma} (y_i/Y)^{1-\sigma} + \alpha [T + (1-T) / (1 + \beta^{-1/\sigma})]^{-\sigma} \leq 0 \quad (12)$$

Differentiation of the left hand side in (12) reveals that the second order condition holds, implying that the individual preferences are single peaked, implying that the political economic equilibrium exists, and the median voter is decisive in determining the political outcome.

It follows from differentiating (12) that the preferred tax rate increases (decreases) with the relative individual income depending on whether the elasticity of substitution is greater (is smaller) than unity. Because in any case, tax preferences depend monotonically on individual income, in the political equilibrium, the median income voter is decisive, and the equilibrium condition is

$$-(1-T)^{-\sigma} (y_m/Y)^{1-\sigma} + \alpha[T + (1-T) / (1 + \beta^{1/\sigma})]^{-\sigma} \leq 0 \quad (13)$$

where y_m is the median income. The ratio y_m/Y will be interpreted as being inversely related to income inequality (as would, for example, be the case with lognormal income distribution).

The above analysis bears implications for the resulting amounts of private aid. The relative share of private aid out of the total amount of aid is $Z/A = 1/[1 + T(1+\beta^{1/\sigma})/(1-T)]$, which clearly decreases in T . Since total aid is an increasing function of the tax rate, this implies a negative relationship between the amount of total aid and the share of private aid in it.

To summarize,

Proposition 1. Support for government-provided foreign aid increases (decreases) with income depending on whether the elasticity of substitution is greater (smaller) than one. Correspondingly, in the resulting political economic equilibrium income inequality reduces the political support for official aid when the elasticity of substitution is greater than one; enhances it when the elasticity of substitution is smaller than one; and is irrelevant in the case of logarithmic preferences. The share of private aid out of total is a decreasing function of the tax rate used to provide aid financing.

Some related research strongly suggests that the elasticity of substitution in many applications just slightly exceeds one. Thus, Bergstrom and Goodman, 1973, in a seminal study, estimate the income elasticity of the demand for public good to be around $2/3$, and the price elasticity is estimated to be around $-1/4$. This then would imply that richer people are more supportive of higher official aid, despite their increased tax obligations, and that income inequality enhances its political support. A subsequent micro survey study, Gramlich and Rubinfeld, 1982, generally concurs with these results, noting that the support for more public spending increases with income, but the relationship is only marginally significant. This literature leads us to interpret the empirically relevant values of the parameter σ as marginally exceeding one. From (10), the aggregate amount of foreign aid then depends positively on the aggregate income in the donor economy and negatively on the degree of its inequality; and the relative share of private aid depends positively on income inequality.

Government inefficiencies

Inefficiencies both of the donor government and of the recipient government may potentially affect the donor country's citizens to provide aid. In particular, one often articulated reason for the limited amount of aid is its inefficient use by the recipients. Government corruption, lack of accountability and transparency, bureaucratic incompetence – all these may give rise to a wasteful allocation of aid from the donor's perspective, which, in turn, may have an effect on aid decisions. Indeed, the recipient countries' inefficiencies have often been cited as reasons to withhold aid.

To study the effect of such inefficiencies on the equilibrium donations, we now suppose existence of a wedge between the amount of aid and its effective quantity. The simplest way to do this is by assuming that a share, $(1-\varepsilon)$, of aid does not reach its designed destination (such as the poor in recipient countries). In other words, the effective amount of aid, from which the donors

derive utility, is now

$$A = \alpha(TY + Z) \quad (3')$$

While this assumption does not change the equilibrium in private donations, the individual preferences over the tax rate are now modified as follows:

$$-(1-T)^{-\sigma} (y_i/Y)^{1-\sigma} + \alpha \varepsilon^{1-\sigma} [T + (1-T) / (1 + \beta^{-1/\sigma})]^{-\sigma} \leq 0 \quad (12')$$

and differentiation reveals that the preferred (hence, the equilibrium) tax rate decreases, increases or remains unchanged as a function of the inefficiency parameter depending on whether $\sigma > 1$ (< 1 ; $= 1$). Inefficiency has both income and substitutions effects. While the latter works to decrease the preferred amount of aid, the former works in the opposite direction of increasing the aid so as to compensate for the waste.

Thus, in general, surprisingly perhaps, the effect of inefficiency on the preferred amount of aid is ambiguous. In the logarithmic case, $\sigma=1$, for example, the two factors just cancel each other – which is consistent with the empirical findings in Alesina and Dollar, 2000, and Alesina and Weder, 2002, who report that corruption in the recipient countries does not stop the flow of aid there; this will also be corroborated in the empirical analysis below.

Alternatively, another factor affecting willingness to provide aid is the relative inefficiency of *own* government relatively to private giving. In the United States, for example, there is much skepticism as to how effective the government can be in delivering foreign aid, and this is the frequent obstacle to enhancing its amount as voiced in the public debate. Thus, suppose that a dollar of government taxes generates a lower amount of aid than private donations. This would imply that the aggregate amount of aid can be written as

$$A = \gamma TY + Z, 0 < \gamma < 1 \quad (3'')$$

One interpretation of such relative inefficiency has to do with productive efficiency, whereby the government, because of bureaucratic corruption, rent seeking etc., is less efficient in supplying aid than private donors are. Alternatively, the specification in (3'') can also be conceived as a reduced form of a model with distortive tax effects, say, in the labor market.⁵

Again, such waste leaves private aid equilibrium unchanged; but the individual tax preferences now have the following form:

$$-[\beta^{-1/\sigma}(1-T) / (1 + \beta^{-1/\sigma})]^{-\sigma} (y_i/Y)^{1-\sigma} + \alpha[\gamma T + (1-T) / (1 + \beta^{-1/\sigma})]^{-\sigma} (\gamma - 1 / (1 + \beta^{-1/\sigma})) \leq 0 \quad (12'')$$

In general, the relationship between the government inefficiency parameter γ and the preferred tax rate is complex and is mediated by the additional parameters. When the elasticity of substitution is close to one, however, differentiation of (12'') reveals that government inefficiency reduces the preferred tax rate, hence aid.

Proposition 2. For empirically plausible values of the elasticity of substitution, the amount of aid is not very sensitive with respect to its use efficiency by the recipient country, but is negatively related to own government inefficiency.

4. Data

Empirically, the predictions of the model can be approached from two perspectives, individual attitudes with respect to foreign aid in donor countries, and actual aid disbursement. On the former,

our data source is the World Value Survey (WVS), which is a world wide survey carried out by the Inter-university Consortium for Political and Social Research (ICPSR) that comprises individual cross national data on a wide variety of topics, such as the economy, politics, foreign policy, identity, as well as on socio-economic background of individual respondents and his or her attitudes on several topics. Data come from face to face interviews to a sampling universe of adult citizens 15 years old and older from over 81 developed and developing countries. Our empirical work focuses on donor countries only⁶. Still, our sample is composed of more than 10,000 individuals that were surveyed in two waves, during 1995-1997 and during 1999-2000⁷.

⁵ Analysis of a fully specified model which contains labor market distortion does not generate any different insights and is available from the authors upon request.

⁶ We replicated all our empirical tests using the full sample and including a donor country dummy. The results are very similar. These findings can be provided upon request.

⁷ The sample design and field work was done by professional survey organizations, typically members of Gallup. In other cases, it was carried out by national academies of sciences or university based institutes. Each sample has a multi stage design and random selection of sampling points after stratification by region and degree of urbanization. National samples were used in all countries, but some of them were done just using country sub samples (Russia, Northern Ireland, Chile, Puerto Rico, Argentina, India, Nigeria, China). The response rates have a large variability, varying from 25% in Spain to 95% in Slovakia. To correct for the sample design and the response rate, sample weights were constructed with specific criteria on each country. We use the most recent wave of this survey, the fourth wave, taken between 1999 and 2000, although we are able to enlarge our sample appending to our data set the third wave of the same survey (1995-1997) for the countries that were not included in the fourth wave.

Table 1. Variable Description**A. Cross-Country Individual-Level World Value Surveys Data**

Do you think that this country should provide more or less economic aid to poorer countries?	Some people favor, and others are against, having this country provide economic aid to poorer countries. Do you think that this country should provide more or less economic aid to poorer countries? 1 A lot less than do now; 2 Somewhat less than we do now; 3 About the right amount/same; 4 Somewhat more than we do now; 5 A lot more than we do now. Source: World Value Surveys (2006)
Agree with your country giving more aid to poorer countries	Variable that takes the value of one when people think that their country should give "a lot more then now" or "somewhat more then they do now" with respect to development assistance; and zero otherwise (including those who responded "don't know"). Source: World Value Surveys (2006)
Income deciles	A scale of incomes in which the household falls into, before taxes and other deductions. This variable takes values from 0 to 10, being zero the lowest decile and 10 the highest. The data is recollected in local currency, scaled and then aggregated so the deciles represent a country level income raking. Source: World Value Surveys (2006)
Satisfaction with people in office	How satisfied are you with the way the people now in national office are handling the country's affairs? Would you say you are 1 Very dissatisfied 2 Fairly dissatisfied 3 Fairly satisfied 4 Very satisfied Source: World Value Surveys (2006)
Confidence in the government	Could you tell me how much confidence you have in the government in your capital: is it a great deal of confidence, quite a lot of confidence, not very much confidence or none at all? 1 Non at all 2 Not very much 3 Quite a lot 4 A great deal. Source: World Value Surveys (2006)
Tax revenue	Average tax revenue as a percentage of gross domestic product for 1990-1995. Source: World Development Indicators (World Bank, 2005b)
Age	Respondent's age. Source: World Value Surveys (2006)
Gender	Gender of the respondent. Male = 1. Source: World Value Surveys (2006)
Educational attainment	What is the highest educational level that you have attained? 1 = Incomplete primary; 2 = Complete primary; 3=Incomplete secondary; 4= Complete secondary; 5= University without degree; 6= university with degree Source: World Value Surveys (2006)

B. Panel Regressions Using Country-Level Foreign Aid Data

Foreign Aid	Defined as Overseas Development Assistance by OECD. In particular, we use the log of the amount donated from country j to country i in year t, expressed in thousands of PPP real 1995 US dollars. The data is available annually for the period 1973-2002. Source: OECD (2006)
Real GDP, donor country	Real GDP Per Capita donor economy expressed in thousands of real 1995 US\$. The data is available annually for the period 1973-2002. Source: World Development Indicators (World Bank, 2005b)
Gini coefficient., donor country	Gini coefficient of the donor economy. The data is available for the period 1973-2002. Source: World Development Indicators (World Bank, 2005b)
Gini coefficient, recipient country	Gini coefficient of the recipient economy. The data is available for the period 1973-2002. Source: World Development Indicators (World Bank, 2005b)
Tax revenues, donor country	Tax revenue as a percentage of gross domestic product for donor country for the period 1973-2002. Source: World Development Indicators (World Bank, 2005b)
Corruption, donor country	Corruption index of the donor country. (Range 0 - 6; 6 = less risk), the data is available for the period 1982 – 2002. Source: ICRG (2006)
Corruption, recipient country	Corruption index of the recipient country. (Range 0 - 6; 6 = less risk), the data is available for the period 1982 – 2002. Source: ICRG (2006)
Number of donors	Number of donor countries from which each recipient country received donations in year t. Source: OECD (2006)

Our particular interest is set on the questions regarding to people's opinion toward foreign aid and its management by the government. Specifically, the key dependent variable comes from the following question: "Some people favor, and others are against, having this country provide economic aid to poorer countries. Do you think that this country should provide more or less economic aid to poorer countries?" Based on the analytical model above, the explanatory variables considered are, among others, the income decile, income inequality, government efficiency as reflected by the degree of corruption, government performance, and several others detailed below. Table 1 shows the definitions and questions of the variables employed. All the regressions include country fixed effects as well as standard errors adjusted for clustering on country⁸. Table 2 provides basic summary statistics of all the variables employed.

⁸ When using country-level variables the application of fixed effects is obviously unnecessary. Also, notice that fixed effects estimates of ordered probits may lead to inconsistent estimates. However, as explained by Mayda (2005) this is not an issue with the World Value Surveys data as they cover many individuals for each country.

Table 2. Summary Statistics**A. Cross-Country Individual-Level World Value Surveys Data**

Variable	Obs	Mean	Std. Dev.	Min	Max
This country should provide more or less economic aid to poorer countries?	10370	3.34	1.21	1.00	5.00
Agree with more aid	11070	0.62	0.48	0.00	1.00
Income decile	8823	5.30	2.70	1.00	10.00
Tax revenues	11070	0.24	0.06	0.17	0.32
Satisfaction with people in office	10667	2.37	0.78	1.00	4.00
Confidence in the government	9739	2.25	0.79	1.00	4.00
Age	11048	44.81	17.05	15.00	97.00
Gender (Male =1)	11067	0.46	0.50	0.00	1.00
Educational attainment	10926	3.89	1.35	1.00	6.00

B. Panel Country-Level Foreign Aid Data

Foreign Aid	8001	14.15	1.15	9.83	16.52
Real GDP, donor country	8001	25289.79	6147.52	10398.93	44426.11
Gini coefficient donor country	8001	31.01	5.48	19.60	49.59
Gini coefficient, recipient country	2262	44.27	9.77	19.30	74.61
Tax revenues, donor country	7931	28.75	9.05	11.19	44.21
Corruption, donor country	8001	5.47	0.78	3.00	6.00
Corruption, recipient country	8001	2.77	1.14	0.00	6.00
Number of donors	8001	10.67	3.59	1.00	18.00

The second dataset employed in this paper is from the OECD (2006) and comprises foreign aid data provided by official agencies, including state and local governments, or their executing agencies. In particular, we use the series official development assistance (ODA) which is based on the standard definition of aid according to the Development Assistance Committee of the OECD. It takes into account grants and concessional loans net of repayment of previous aid loans and treats forgiveness of past loans as current aid. In general, it is considered a reasonable measure of the actual transfer to liquidity-constrained governments. For this variable we have annual data for 22 donor countries for the period 1973-2002⁹. All the measures of foreign aid used are in 1995 U.S. dollar. In particular, we assemble a bilateral relation-level data set, which consists of about 8,000 observations that gives account of any bilateral foreign aid relation from the available 22 industrial countries to each country in the rest of the world¹⁰. The definitions of the variables employed in this second dataset are also shown in Table 1, and summary statistics are provided in the lower panel of Table 2.

5. Hypotheses and results

The analytical framework generates several main predictions. For one, it predicts that an individual's income has a positive effect on her willingness to enhance foreign aid, and a derived

⁹ Another aid indicator is effective development assistance (Chang et al., 1998). This measure includes the grant element of aid and excludes the loan component of concessional loans which are made at extremely low interest rates, The correlation between official development assistance and effective development assistance is extremely high, about 0.94. A third concept of aid is based on country commitments, which reflects firm obligation, expressed in writing and backed by the necessary funds, undertaken by an official donor to provide specified assistance to a recipient country or a multilateral organization. Commitments are provided by OECD (2006)

¹⁰ The donor countries are: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Japan, Luxembourg, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom, United States.

result then is that income inequality reduces public demand for aid. Also, an increase in government-sponsored aid results in an overall larger amount of aid. Additionally, the model generates a negative relationship between the own government's inefficiency and the willingness to disburse aid, while not discerning a negative aid effect of the recipient government's inefficiency. Finally, free riding incentives imply that with multiple donors, the amount of aid by an individual donor country is reduced. Our econometric results are designed to test these propositions and are presented in Tables 3 and 4 for the individual-level data and in Tables 5 and 6 for the country-level data.

5.1. Individual-level attitudes' data

While our dependent variable has five categories, we first use a very simple approach by re-categorizing this variable as a binary variable that responds to the statement: "*agree with more aid?*" This proxy is constructed by assigning the value of one to the responses of those who say that their country should give either *a lot more* or *somewhat more* aid to poorer countries, and the value of zero otherwise¹¹. This allows a straightforward interpretation of the coefficients for the probit estimates (Mayda, 2005). As can be seen from Table 3, consistent with the predictions in Proposition 1, we find that agreement with foreign aid is an increasing function of the income level proxied by individual income deciles. When including this variable we obtain positive and highly significant coefficients: moving from one income decile to the next increases the probability of agreeing with the provision of more foreign aid between 0.7 percent and 1.5 percent.

Own government inefficiencies have a bearing on the attitude of the people towards development aid, consistent with Proposition 2. Specifically, we include the variables "*satisfaction with people in office*" and "*confidence in the government*", for both obtaining positive and

statistically significant coefficients.

Table 3. Cross-Country Probits: Marginal Effects

	Agree with your country giving more aid to poorer countries			
Income decile	0.015 (0.004)***	0.014 (0.003)***	0.014 (0.003)***	0.007 (0.002)***
Tax revenues		0.763 (1.086)	2.315 (0.740)***	2.491 (0.811)***
Satisfaction with people in office			0.068 (0.026)***	0.067 (0.025)***
Confidence in the government			0.050 (0.020)**	0.055 (0.017)***
Age				-0.002 (0.001)***
Gender (Male=1)				0.021 (0.014)
Educational attainment				0.025 (0.010)**
Observations	8883	8883	7471	7361
Pseudo R2	0.01	0.01	0.05	0.06
Log pseudo likelihood	-6060.92	-6030.24	-4789.36	-4680.83

The dependent variable takes the value of one when people think that their country should give "a lot more than now" or "somewhat more than they do now" with respect to development assistance; and zero otherwise (including those who responded "don't know"). Robust standard errors in parentheses. Standard errors adjusted for clustering on country. * significant at 10%; ** significant at 5%; *** significant at 1%. Because of data limitations in the WVS surveys the number of observations drops when including the variables "satisfaction with people in office" and "confidence in the government".

In Table 3 we also include tax revenues treating this variable as a proxy for government's involvement in aid. The reason for using this imperfect variable is that the data pertaining to the decomposition of aid into official and private sources are very limited.¹² The inclusion of this variable yields a positive and statistically significant coefficient in all the specifications. Furthermore, we follow some recent work that uses World Value Surveys data and include a specification that considers some basic individual characteristics (Mayda and Rodrik, 2005; Mayda,

¹¹ The response "do not know" is included here. Exclusion of this category does not affect the results.

¹² We ran panel cross-country regressions with whatever limited data we have been able to collect (World Bank, 2005a); the qualitative results being similar to the ones reported here.

2005). We find that more educated and younger people are more prone to agree with an increase in foreign aid, whereas gender differences are not statistically significant¹³.

Table 4A. Cross-Country Ordered Probits

	Do you think that this country should provide more or less economic aid to poorer countries?			
Income decile	0.032 (0.007)***	0.029 (0.008)***	0.028 (0.008)***	0.011 (0.006)*
Tax revenues		2.343 (1.538)	4.238 (1.824)**	4.698 (2.013)**
Satisfaction with people in office			0.128 (0.046)***	0.125 (0.045)***
Confidence in the government			0.155 (0.040)***	0.166 (0.034)***
Age				-0.004 (0.002)***
Gender (Male =1)				-0.015 (0.040)
Educational attainment				0.071 (0.037)*
Observations	8297	8297	7061	6958
Pseudo R-sq.	0.01	0.01	0.03	0.03

Robust standard errors in parentheses. Standard errors adjusted for clustering on country. * significant at 10%; ** significant at 5%; *** significant at 1%. Because of data limitations in the WVS surveys the number of observations drops when including the variables “satisfaction with people in office” and “confidence in the government”.

¹³ Some recent work (see Guiso et al., 2003) suggests that religiosity matters for attitudes toward a variety of issues including giving. As the WVS contains questions about religious attitudes, we also tested these attitudes in the donor country as an additional explanatory variable. This variable is weakly statistically significant and is very sensitive to changes in specification; also, its inclusion does not change any of our findings.

Table 4B. Cross-Country Ordered Probits: Marginal Effects

	Do you think that this country should provide more or less economic aid to poorer countries?					
	A lot less	Somewhat less	About the right amount	Somewhat more	A lot more	
Income decile	-0.0017 (0.0007) *	-0.0026 (0.0015) **	0.0000 (0.0000)	0.0021 (0.0008) ***	0.0022 (0.0014)	
Tax revenues	-0.6851 (0.2648) **	-1.0873 (0.5165) ***	-0.0024 (0.003)	0.8598 (0.412) **	0.9150 (0.431) **	
Satisfaction with people in office	-0.0182 (0.0061) ***	-0.0288 (0.0114) ***	-0.0001 (0.0001)	0.0228 (0.0101) **	0.0243 (0.0091) ***	
Confidence in the government	-0.0241 (0.0075) ***	-0.0383 (0.0078) ***	-0.0001 (0.0001)	0.0303 (0.0124) **	0.0322 (0.0047) ***	
Age	0.0006 (0.0002) ***	0.0010 (0.0004) ***	0.0000 (0.0000)	-0.0008 (0.0003) **	-0.0008 (0.0003) **	
Gender (Male = 1)	0.0023 (0.0056)	0.0036 (0.0093)	0.0000 (0.0000)	-0.0028 (0.0069)	-0.0030 (0.008)	
Educational attainment	-0.0103 (0.0055) *	-0.0164 (0.0085) *	0.0000 (0.0001)	0.0129 (0.0066) **	0.0138 (0.0081) *	
Observations	577	1,866	440	3,251	824	

Robust standard errors in parentheses. Standard errors adjusted for clustering on country. * significant at 10%; ** significant at 5%;

*** significant at 1%

Since the original question from which we created our aid agreement dummy has five categories, we also run corresponding ordered probits.¹⁴ Table 4 shows the coefficients for the same regressions run in Table 3. Table 4B shows the marginal coefficients after running the model with the most complete specification (see the last column in Table 3)¹⁵. The results reinforce what we have been stating so far. Notice that, given the fact that we are estimating an ordered probit, the signs of the changes in $Pr(Y_i=1)$ and $Pr(Y_i=5)$ are unambiguous. For instance, under the assumption that the coefficients of the regression are positive, the model predicts that $Pr(Y_i=1)$ must decline and $Pr(Y_i=5)$ must increase. Similarly, when the coefficients of the regression are negative, the probability of the first category is expected to increase while that of the fifth category is expected to decline¹⁶.

The consistency of the signs and the statistical significance of most of the regressors along the categories in Table 4B is noteworthy. For instance, as expected, the coefficients of income deciles are negative and statistically significant for the categories that agree with giving less aid. Also, as expected the categories agreeing with more aid are positive and statistically significant. In other words, richer individuals have a higher probability of agreeing with giving more aid to poorer countries. On the other hand, the marginal effects in the case of our government efficiency proxies (*satisfaction with people in office* and *confidence in the government*) follow the exact opposite pattern, being negative for the first two categories and positive for the two latter ones, which is consistent with the results shown in Table 3 and, more importantly, with the predictions of

¹⁴ A technical appendix available upon request provides further details on this analysis.

¹⁵ All the specifications ran show similar results than those found in tables 5 and 6. To save space we do not show all the marginal coefficient of the ordered probit, but they are available upon request to the authors.

¹⁶ In this context, the marginal effects are interpreted as the partial derivatives of the probability with respect to an exogenous variable when the variable is not a dummy. On the other hand, when the variable is discrete, we analyze the marginal effect on the whole distribution by computing $Pr(Y_i=j)$ over the range of $\beta'x$ with the two extreme values of the binary variable. The marginal effect is equal to the difference in these values.

Proposition 2 in the model. Similarly, an increase in the tax revenues gives us a higher approval of the increases in development aid.

5.2. Actual foreign aid disbursements

Our results with respect to attitudes toward aid are complemented with actual foreign aid disbursement at the country level. As described above, to do this, we employ an annual unbalanced panel of bilateral relationships for the period 1973-2002. We run a fixed effects model at the bilateral relationship level controlling for year dummies of the amount of each project in real 1995 thousands of US dollars against our variables of interest, and the findings are shown in Table 5. According to Proposition 1, we should expect a positive sign on gross domestic product and a negative sign on the income inequality of the donor country, which is precisely what we obtain. Both variables yield coefficient signs that are statistically significant at one percent regardless of the specification employed. Richer and more egalitarian countries are more prone to provide higher amounts of aid than poorer and unequal societies.¹⁷

¹⁷ An interesting and somewhat puzzling result is the independence found between recipient's level of inequality and the amount of foreign aid. One may have expected to see bigger amounts of foreign aid flowing to more unequal countries, although, when we include the recipient's Gini coefficient, as shown in the first column and sixth column in Table 5, we find no statistical significance at conventional levels.

Table 5. Panel Regressions Using Foreign Aid Bilateral Data

	Foreign Aid					
Real GDP, donor country	0.0001 (0.0000)***	0.0001 (0.0000)***	0.0001 (0.0000)***	0.0001 (0.0000)***	0.0001 (0.0000)***	0.0001 (0.0000)***
Gini coefficient., donor country	-0.0099 (0.0020)***	-0.0085 (0.0011)***	-0.0073 (0.0011)***	-0.0085 (0.0011)***	-0.0073 (0.0011)***	-0.0074 (0.0024)***
Gini coefficient., recipient country	-0.0003 (0.0015)					0.0003 (0.0022)
Corruption, donor country		0.0757 (0.0155)***	0.0814 (0.0173)***	0.0757 (0.0154)***	0.0814 (0.0173)***	0.0966 (0.0292)***
Corruption, recipient country		0.0081 (0.0075)	0.0091 (0.0076)	0.0093 (0.0074)	0.0091 (0.0076)	0.0352 (0.0170)*
Tax revenues, donor country			0.0212 (0.0023)***		0.0212 (0.0023)***	0.0169 (0.0054)***
Number of donor countries			-0.0123 (0.0026)***	-0.0126 (0.0026)***	-0.0123 (0.0026)***	-0.0124 (0.0062)**
Constant	12.7447 (0.1520)***	11.6664 (0.1050)***	11.2238 (0.1343)***	11.7720 (0.1079)***	11.2238 (0.1343)***	9.9077 (0.3340)***
Observations	3329	8001	7931	8001	7931	2235
Number of panelid	1066	1370	1366	1370	1366	805
R-squared	0.35	0.31	0.32	0.31	0.32	0.35
F test	10442.97	183.64	151.95	175.76	151.95	30.60
Rho	0.93	0.95	0.95	0.95	0.95	0.95

Foreign aid data are from OECD (2006). Robust standard errors in parentheses. Standard errors adjusted for clustering on country. * significant at 10%; ** significant at 5%; *** significant at 1%. Because of data limitations the number of observations drops drastically when including the Gini coefficient of the recipient country.

To test for the effects of government inefficiencies, in the second column in Table 5 we include the corruption index for the recipient as well as for the donor country. Here we obtain a positive and statistically significant coefficient for the latter and a non-statistically significant one for the former. This means that the amount of aid is significantly and negatively affected by the corruption in the donor country, but is not affected at all by the inefficiencies in the recipient country¹⁸. Analogous to the findings based on attitudes, tax revenues in the donor country have a positive and highly statistically significant coefficient in all specifications. We also test the effects of multiple donors on individual country's aid giving. In the third column in Table 5 we control for the number of donors that each recipient country has in each year for the period under consideration. Remarkably, we obtain a negative and statistically significant coefficient, which reinforces the idea of free riding in foreign aid donations: as the number of donors increases, the total amount of aid given by each country tends to be lower.¹⁹

Finally, we also employ dynamic panel data techniques (Arellano and Bond, 1991, Arellano and Bover, 1995) to minimize possible simultaneity or reverse causation problems. By using this method we estimate a regression equation in differences and a regression equation in levels simultaneously, with each equation using its own specific set of instrumental variables. The consistency of the GMM estimator depends on whether lagged values of the explanatory variables are valid instruments in the regression. We address this issue by considering two specification tests in this regard: the test for autocorrelation on the differenced error terms and the Hansen test of over

¹⁸ The latter part of the results is consistent with previous findings by Alesina and Dollar, 2000, and Alesina and Weder, 2002.

¹⁹ See also Knack and Rahman, 2006, for similar results.

identification of restrictions²⁰.

²⁰ A technical appendix available on request contains further explanatory details.

Table 6. Dynamic Panel Data Regressions Using Foreign Aid Bilateral Data

	Foreign Aid				
Real GDP, donor country	0.0000 (0.0000)	0.0001 (0.0000)***	0.0000 (0.0000)	0.0001 (0.0000)***	0.0002 (0.0000)***
Gini coefficient., donor country	-0.0124 (0.0043)***	-0.0128 (0.0018)***	-0.0082 (0.0038)**	-0.0129 (0.0018)***	-0.0171 (0.0049)***
Gini coefficient., recipient country					-0.0029 (0.0034)
Corruption, donor country	0.6426 (0.1518)***	0.2864 (0.0707)***	0.5893 (0.1567)***	0.2824 (0.0715)***	0.3799 (0.1696)**
Corruption, recipient country	-0.2964 (0.0707)***	-0.0032 (0.0307)	-0.2737 (0.0608)***	-0.0077 (0.0319)	-0.0136 (0.0256)
Tax revenues, donor country		0.0029 (0.0006)***		0.0028 (0.0006)***	0.0020 (0.0005)**
Number of donor countries			-0.0511 (0.0169)***	-0.0311 (0.0080)***	-0.0015 (0.0112)*
Constant	2.1170 (0.6279)***	1.1661 (0.2063)***	1.9532 (0.7185)***	1.6588 (0.2772)***	2.4369 (0.4880)***
Observations	3560	3560	3560	3560	1053
Number of panelid	665	665	665	665	400
Hansen test of overidentification restrictions	427.73	651.10	402.10	622.58	302.50
Prob > chi2	0.00	0.76	0.00	0.93	1.00
Test for AR(1)	-7.38	-9.58	-7.43	-9.77	-3.90
Test for AR(2)	-1.56	0.21	0.04	0.63	-0.64

Foreign aid data are from OECD (2006). Robust standard errors in parentheses. Standard errors adjusted for clustering on country. * significant at 10%; ** significant at 5%; *** significant at 1%. Because of data limitations the number of observations drops drastically when including the Gini coefficient of the recipient country.

The findings, presented in Table 6, reinforce the previous results as well as the predictions of our theoretical model. Richer and more egalitarian countries, as measured by the real GDP and Gini coefficient respectively, give higher amounts of aid. We also find a negative and statistically significant association between the levels of corruption and the amounts of aid given. On the other hand, recipient country characteristics do not seem to affect the amounts of aid given. In fact, these amounts are not significantly associated with the level of corruption or the income inequality observed in the recipient country. Finally, and as was showed in Table 5, we find support for the free-rider hypothesis as there is a significant and negative association between the number of donors and the amounts of aid given.

6. Conclusions

Recently industrial countries have been hard pressed to reconsider their foreign aid policies by focusing on good policies and good institutions in the recipient countries and some influential research has studied the efficiency of aid disbursement in this regard. Interestingly, no attention has been given to the possible determinants of aid giving in donor countries despite the commonplace policymakers' rhetoric to enhance it. Given the relatively small amounts of foreign aid flows, it is important to understand their determinants. This paper examines the factors affecting the support for foreign aid among voters in donor countries.

The stylized theoretical model, which considers an endogenous determination of official and private aid flows, suggests that own government efficiency is an important factor in this regard, and also relates individual income to aid support through the elasticity of substitution, which has the

implication that income inequality is detrimental for a political support for foreign aid. The empirical analysis of individual attitudes, based on the World Values Surveys, reveals that satisfaction with the own government performance and individual income are positively related to the willingness to provide foreign aid. Furthermore, consistent with these results, when using donor country data we find that aid is linked with inequality, corruption and taxes in donor countries, but has little relationship with the economic conditions in the receiving country. It is noteworthy – and contradictory to received wisdom - that aid generosity is mainly affected by own government's efficiency and less by the recipient one. Interestingly, we also find that the reticence of countries in providing more aid to poor countries has an economic bearing as countries free ride on the donations of the rest.

Appendix: Multiple Donors

While the basic framework above focuses on a single donor case, in reality many industrialized countries are active donors, sometimes with overlapping interests. For example, cases of humanitarian aid are typically viewed similarly as a public good by potential donors, and sometimes there is alignment of donors' strategic interests, such as in the case for the aid to Russia in the 1990s.

These considerations imply that an extension of the above model to the case of multiple donor countries may be realistic. To simplify matters, we assume away the warm glow motive, $\beta=0$, which implies that there will be no private donations, $Z=0$. Thus, suppose there are K donor countries, indexed k , and for simplicity normalize the population in each country to measure one. Letting the subscript ik refer to individual i in country k , a citizens' preferences are represented as follows:

$$c_{ik}^{1-\sigma}/(1-\sigma) + \alpha A^{1-\sigma}/(1-\sigma) \quad (14)$$

The aggregate amount of aid, A , is then as follows:

$$A = \sum_{k=1}^K T_k Y_k \quad (15)$$

where Y_k is the aggregate income level in country k .

The initial distributions of income in each country are exogenously given, and the individual budget constraints are as follows:

$$y_{ik} = c_{ik} + T_k y_{ik} \quad (16)$$

In each country, a majority vote is independently conducted to determine the amount of official aid. The equilibrium consists of the majority-supported tax rates for each donor country which are also mutually consistent with respect to each other. While countries occasionally try to coordinate the amount of giving – such are, for example, the recent attempts in the European Union to coordinate foreign aid among the individual member countries – most of the aid giving is carried out independently by the donors. Thus, the non-cooperative view of foreign aid policies seems to be an accurate description of the institutional reality.

Differentiation of (14) subject to (15) and (16) yields the individually preferred tax level in a donor country:

$$-y_{ik}^{1-\sigma} (1-T_k)^{-\sigma} + \alpha \left(\sum_{k=1}^K T_k Y_k \right)^{-\sigma} Y_k \leq 0 \quad (17)$$

and the second order condition holds. (17) is strictly negative when the preferred tax rate is zero. Clearly, given the tax choices in other countries, the tax preference in country k is a monotonic function (increasing or decreasing, depending on the elasticity of substitution) of income. Let then $T_{mk}(T_{-k})$ denote the preferred choice of country k 's median voter for any configuration of tax choices in other countries – the best reaction function - and consider the vector of taxes satisfying:

$$-y_{mk}^{1-\sigma} (1-T_{mk})^{-\sigma} + \alpha \left(\sum_{k=1}^K T_{mk} Y_k \right)^{-\sigma} Y_k \leq 0 \quad (18)$$

Because the tax rates belong to the unit interval and given the concavity of the utility function, there exists a unique solution of (18). These tax rates are the preferred choices of the majority of each country's population given the tax rates in other countries, hence constitute the equilibrium. It should also be clear that, because of the free riding problem, this equilibrium can be improved upon from the perspective of all countries' majorities through universal marginal aid increases.²¹ Moreover, the number of donor countries is

²¹ An especially stark interpretation of this result is obtained in the case of logarithmic preferences as then the equilibrium tax rates are independent of country incomes, see (25) with $\sigma=1$. In this case, the equilibrium is Pareto inefficient from the donors' perspective, and, in particular, an improvement is obtained by a universal marginal increase in aid.

detrimental for the amount of aid each country is willing to provide. A simple way to see that is by replicating the world economy, so that, say, we have K twin donor countries - $2K$ altogether. From (17), this will reduce the preferred tax rate in each country, hence, at equilibrium.

This result may explain the relative failure of mobilizing efforts for massive humanitarian aid, where many donors' altruistic interests potentially overlap.²²

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²² A further extension of this framework to the case of multiple recipients was presented in the previous version of the paper and is available upon request.

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