# By The People? Foreign Aid and Donor-Country Democracy*

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**Abstract**

We analyse preferences for government allocations of Official Development Assistance (ODA) using new data on respondents surveyed in 24 OECD donor countries from 2005 to 2008 by Gallup International. First, we characterise supporters of foreign aid. We posit and corroborate empirically that preferences for government donations to foreign countries are negatively determined by the level of taxes an individual is obliged to pay. We also show that, at the country-level, inequality and national income increase support for foreign aid. Second, we analyse the democratic aid deficit—the difference between the level of ODA desired by citizens and the level actually donated by their government—and propose that the monetary influence of private-interest groups on policymakers extends the gap between government policy and citizens' preferences. We identify empirically this association using data on lobbying from the World Economic Forum's Global Competitiveness Report. Finally, we dismiss a 'crowding out' story as a competing hypothesis.

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## 1 Introduction

In 2010, aid flows from Development Assistance Committee (DAC) donor countries totalled $129 billion—an unprecedented high.[1] In that light, it is interesting to note that despite the emergence of a well-publicised literature on the effectiveness of foreign aid in recent years, few studies have analysed attitudes to foreign aid from the perspective of donor-country citizens. We look at preferences for government aid donations using unique micro-level data taken from a survey commissioned by the World Bank Institute and collected by Gallup International. The dataset documents the aid preferences of over 235,000 individuals across 75 countries in 2005, 2006, 2007 and 2008. First, we make some observations on the patterns of aid support. Second, we propose and test a theory of support for official aid using a simple political economy model, whereby support is decreasing in the level of taxes an individual is obliged to pay in a proportional system and, by extension, is increasing in inequality at the country-level. We then extend the theory to incorporate private-interest lobby group influences, whereby the top-income agent can 'buy' less aid from the government, thus extending the gap between popular preferences and government activity. This is supported by tests using data on the strength of interest-group lobbying from the Global Competitiveness Report of The World Economic Forum. Finally, we incorporate private aid donations into the analysis as a robustness check. In doing so, we corroborate recent evidence that government crowding-out is incomplete, and that it operates mainly though reduced fundraising activities by charitable organisations in receipt of public funding; otherwise government donations have a crowding-in effect on individual private donations.

As we indicate above, the debate on the effectiveness of foreign aid is well documented. In short, a generation of cross-country studies on aid and growth has failed to establish a clear consensus. While some studies find positive average effects of aid on growth (Hansen and Tarp, 2001), many more identify heterogeneous effects: Burnside and Dollar (2000) find that aid has a positive impact on growth in the presence of good policies; Boone (1996) finds that aid is generally

[1] More DAC aid statistics are available on the OECD website at www.oecd.org/dac

absorbed by elites, though it can increase investment within small countries; Collier and Dehn (2001) and Collier and Hoeffler (2004) respectively show that aid can somewhat mitigate the deleterious effects of export-shocks and conflict on growth; whereas Dalgaard et al. (2004) find that the effectiveness of aid varies with climate conditions. However, these findings have been strongly challenged by, inter-alia, Easterly et al. (2004), Roodman (2007a) and Rajan and Subramanian (2008). Taken together, they uncover the familiar problems of reverse causality, omitted variable bias and measurement error when instruments are scrutinised.[2] In some cases updated data is enough to confound the original findings. Review papers such as those by Roodman (2007b, 2008) broadly conclude that, given both the aggregate nature of the data and the difficulties inherent in estimating the relationship of interest, the macro-level literature is fundamentally limited. As a result, the focus has overwhelmingly turned to micro-level studies that purport to overcome these traditional pitfalls by using experimental or quasi-experimental methods to identify the specific effects of particular projects on well-defined outcomes.[3] In brief, the proliferation of these studies has diverted attention from the debate on aid and growth towards a more refined focus on the specific effects of individual projects. The results suggest that there remains a significant role for aid interventions—and aid research—in global development.

Analyses of aid supply tend to centre on the macro-level determinants of bilateral aid flows. Dudley and Montmarquette (1976) find that politically and economically strategic links appear to be the main drivers of aid. McKinley and Little (1979) broadly support this view, showing that US aid from 1960 to 1970 was more motivated by strategic interests than poverty. Maizels and Nissanke (1984) conduct a more nuanced test that reveals the 'recipient-need' rationale for multilateral aid allocations and the familiar 'donor-interest' approach to bilateral aid. Alesina and Dollar (2000) and Collier and Dollar (2002) reinforce the main thrust of the literature: political and strategic concerns mainly determine bilateral aid, and allocations would be more productive if poverty and policy played a larger role. It must be noted, however, that allocations from multilat-

[2]Some cross-country studies overcome certain measurement problems by focusing on more refined measures of aid (Clemens et al. 2004) and outcome performance (Isham and Kaufmann, 1999).

[3]See Duflo et al. (2008) for an overview of these experimental methods. A more concise account of the strengths and weaknesses of randomised trials is given by Duflo and Banerjee (2009).

eral institutions are not entirely immune from the political interests of their primary donors: Kilby (2009) finds that World Bank structural adjustment loan disbursements carry less conditionality for countries that share US voting behaviour at the United Nations; Dreher and Jensen (2007) find a comparable result for the case of IMF loans; and, in a similar vein, Dreher et al. (2009) identify a robust link between temporary UN Security Council membership and the number of World Bank projects allocated to a country.

In addition to this broad consensus, a number of auxiliary findings have emerged: Nordic countries are more likely than other donors to allocate aid on the basis of poverty (Alesina and Dollar, 2000); less populated countries receive more aid per capita (Trumbull and Wall, 1994; Burnside and Dollar, 2000); Cold War-era political support influenced donations (Lundborg, 1998), and its end precipitated a general switch from donor-interest to recipient-need models of allocation (Dollar and Levin, 2006; Lundborg, 1998); and France and the USA remain the most politically-motivated donors (Alesina and Dollar, 2000; Dollar and Levin, 2006), especially, in the latter's case, since the onset of the War on Terror (Fleck and Kilby, 2010).

Despite the convergence of these macro-level studies of bilateral aid supply to an apparently clear conclusion by the early 2000s, few studies have since explored the individual preferences of donor-country citizens for foreign aid. Chong and Gradstein (2008) and Paxton and Knack (2008) are the most similar in spirit to our analysis. The former use World Values Survey (WVS) data to show that, at the individual level, relative income is positively associated with preferences for foreign aid in probit regressions. At the country level, they find that income inequality negatively determines actual ODA disbursements. Paxton and Knack (2008) look at correlates of support for aid increases using WVS data together with an earlier version of Gallup International's Voice of The People survey. They identify correlations with largely attitudinal variables such as religiosity and positions on poverty, global affairs and institutions.

Our analysis contributes to the literature in several ways. Firstly, our unique Gallup International data provides us with a richer foundation for empirical analysis. Whereas Chong and Gradstein (2008) have two waves of WVS data (1995-1997 and 1999-2000) consisting of 10,000 observations, and Paxton and Knack (2008) have a single wave of WVS data (5,693 observations in nine

donor countries) and a single wave of Gallup data (6,194 observations in 17 countries), we avail of a more recent four-wave dataset consisting of almost 90,000 respondents from 24 donor countries. This allows us to comprehensively control for year and country fixed-effects in our individual-level regressions. Furthermore, our measure for aid preferences is based on a wide-ranging scale which gives respondents the ability to choose their preferred levels of aid as a percentage of national income. Crucially, we also make use of a survey question which measures each respondent's perception of current aid levels—something that, until now, was only proxied by actual levels of ODA as a control, an approach we later show to be extremely unsuitable due to a considerable 'aid illusion' effect.[4] This measure also contributes to the formation of a new index of aid preferences, which we call the Democratic Aid Level Preference Index (DALPI), whereby country-level measures of aid preferences are weighted by this 'illusion' effect to account for misconceptions of actual aid levels as a share of national income.

We also depart from the literature on certain other novel grounds. The nature of our aid variables allows us to study the 'democratic aid deficit', defined as the difference between the level of aid desired by citizens and the level actually donated by their government. We note a wide variation in the size of this deficit, which we show is associated with the influence of monetary transfers on policymakers. The size and variation of this deficit also indicates that the use of ODA as a proxy for citizen preferences in country-level regressions is inappropriate. This may provide one explanation for why Chong and Gradstein (2008) identify a negative relationship between *actual* ODA and inequality, while we find that inequality is a positive determinant of *desired* aid. Our data also allow us to identify separately the direct and indirect effects of government foreign aid on private contributions through the use of our perceived aid variable. To our knowledge, this is the first test of this nature, particularly in the context of foreign aid.

On the theoretical side, we take our cues from the literature on philanthropy (see Andreoni, 2006) in assuming an altruistic utility function. This assumption is consistent with our treatment of foreign aid as a donor-country public good (first noted by Hochman and Rodgers, 1969, and Kolm, 1969), as in Lahiri and Schweinberger (2006). Grossman and Helpman (1996) and Acemoglu and

[4]Indeed perceived aid and actual ODA are negatively correlated.

Robinson (2006) provide the framework for our analysis of lobby influences and the democratic aid deficit. We build on recent contributions from Andreoni and Payne (2003, 2011a and 2011b) and Name-Correa and Yildirim (2012) in our robustness section on government and private aid interactions, in which the effect of government foreign aid on private donations is deconstructed into 'fundraising' and 'classic' channels.

Our paper is structured as follows: below we describe our Voice of The People data on attitudes to aid, after which we propose and test a theory of support for foreign aid at both the micro- and macro-level; we then incorporate our analysis of the democratic aid deficit and finally conclude.

## 2 Data

We restrict the sample to the 24 donor countries in which the survey was conducted, leaving 89,718 observations over the four years from 2005 to 2008 inclusive. Our main focus in the dataset concerns individual preferences for the percentage of national income devoted to overseas aid. Respondents were asked two questions:

> (i) What share of national income does your country actually give in foreign aid to help development / poverty alleviation in other countries?

and

> (ii) What percentage in your view should it give?

Respondents could choose one of 11 categories ranging in increasing intervals from 0 to higher than 25%. We take midpoints for all categories other than the minimum (0) and maximum (25) values. The responses are labelled 'perceived aid' and 'desired aid' respectively.

Table 1 shows the sample size for each survey round, together with scores for desired aid, perceived aid and country-level 'actual aid', measured by the OECD as the ODA share of Gross National Income (GNI), averaged over all rounds for each country. Figure 1 presents a visual accompaniment to the data. Some notable patterns emerge. First, people like aid. On average, desired aid as a percentage of GNI is around eight times higher than actual levels. Citizens of rich

donor countries are prepared to support an attribution of 3.14% of GNI towards foreign aid—the average level actually attributed is 0.37%. However, people are also deluded: at 2.65% of national income, respondents' perception of official aid transfers is around seven times higher than the actual level. Nevertheless, it remains clear that, on average, citizens of DAC countries would support an increase in foreign aid.

Second, support for aid has been decreasing over time. In Figure 2, we can see that, in 2005, desired aid was over 1% higher than perceived levels; in 2008 they were almost identical. This effect is consistent across the distribution. Anti-aid 'absolutists', who we define as those who favour no transfers of aid, rose from 5.26% of the sample in 2005 to 9.41% in 2008; anti-aid 'relativists', who we define as those who believe aid should not exceed 0.2% of GNI, rose from 15.51% to 23.51%; and highly pro-aid respondents—those who favour transfers of over 1%—decreased from 58.62% to 50.78%. We find that this trend is robust to controls for many economic and other factors, perhaps reflecting a 'Gleneagles Effect': the result of a high-profile pro-aid public awareness campaign designed to influence the G8 meetings at Gleneagles, Scotland, in the summer of 2005. Actual aid levels have increased slightly as a percentage of GNI throughout this decline in support.

Third, there is considerable variation between countries in desired aid, perceived aid and actual aid. Nordic governments appear to be the most generous in terms of actual donations: Sweden, Norway and Denmark, along with Luxembourg and the Netherlands, all allocate over 0.8% of GNI to foreign aid on average, confirming that they are different not only in terms of allocation criteria, but also in terms of allocation quantities. At the other end, Korea, Poland, the Czech Republic, Turkey and the USA are the only countries in the sample to donate less than a fifth of one per cent. That fact seems not to affect citizens' perceptions of their own government's generosity, however: US citizens believe they spend over 40 times more than they actually do on foreign aid. We see this graphically in Figure 3, where in the top two panels we show country averages of desired aid and 'aid illusion', measured as perceived aid divided by actual aid. Interestingly, the most generous countries also seem to be the least deluded. Four of the five least deluded countries—Sweden, Norway, Denmark and Luxembourg—are also four of the five largest donors.

Irish citizens, meanwhile, are the most generous in terms of desired aid, with average preferences slightly higher than 6% of GNI. Germany and the UK are the only other countries to have average preferences of over 5%. The only countries where average desired aid is at 2% or lower are Finland, the Czech Republic, Korea and Austria.

However, we must exercise caution while interpreting this data. Panel 2 tells us that aid illusion varies significantly from country to country—a generous citizen, say, with an accurate grasp of national statistics may appear more parsimonious than the deluded miser. In order to overcome this bias, we construct a weighted measure of support for aid called the Democratic Aid Level Preference Index (DALPI), defined as:

$$DALPI_c = DA_c^{Med} * \frac{ODA_c}{PerA_c} \tag{1}$$

where $DA_c^{Med}$ is the median desired aid as a percentage of GNI in country c; $PerA_c$ is perceived aid, and $ODA_c$ is actual aid.[5] The DALPI allows us to order citizens' democratic preferences for foreign aid while taking aid illusion into account.[6] The revised order is presented in panel 3, where we see Sweden, Denmark, Norway, Luxembourg and Iceland as the major illusion-adjusted foreign aid supporters in the sample, whereas Poland, Portugal, Korea, USA and the Czech Republic are the lowest supporters. In the next section we turn our attention away from a descriptive analysis of the data toward a more formal explanation of support for aid.

## 3 Support for Foreign Aid

### 3.1 Model

We propose a standard political-economy model to explain individual support for ODA. As

[5] Again, we present means across the four sample years for ease of presentation.

[6] We take the median value of desired aid in order to reflect the democratic preferences of an electorate in the usual median voter theorem setting.

mentioned above, we follow the literature on philanthropy in assuming altruistic utility functions (Andreoni, 2006). Kolm (1969) and Hochman and Rogers (1969) are credited with noting that the object of altruism, in this case foreign aid, can be considered a public good. Foreign aid donations create positive externalities for altruistic agents. Further, the utility derived from foreign aid is both non-rivalrous and non-excludable. Chong and Gradstein (2008) and Lahiri and Schweinberger (2006) follow the approach in this context.[7]

We begin with a standard median voter model in which we analyse a country with a continuum of altruistic citizens, where each citizen $i \in [0, 1]$ is assumed to have income $y_i$. Average income in the society is denoted by $\overline{y} = \int_0^1 y_1 di$. We hypothesise that the political system of this economy determines a non-negative tax rate $\tau \in [0, 1]$ proportional to income, the proceeds of which are distributed as foreign aid $A$ to other countries. However, we assume it is costly to raise taxes: an aggregate cost from taxation distortions, $C(\tau)\overline{y}$, arises when the tax rate is $\tau$. The function $C(.)$ has the following properties: $C(0) = 0$, $C'(.) > 0$, $C''(.) > 0$, and $C$ is twice continuously differentiable.

The government then faces the following budget constraint:

$$A = \int_0^1 \tau y_i di - C(\tau)\overline{y} = (\tau - C(\tau))\overline{y}. \tag{2}$$

All individuals in this economy maximise the utility function $u(\hat{y_i}, A)$ (with $u_1(.), u_2(.) > 0$; $u$ is quasi-concave and twice continuously differentiable) where $\hat{y}_i$ is post-tax income $(1 - \tau)y_i$. We can express indirect utility as

$$V(y_i \mid \tau) = u[(1 - \tau)y_{i,} (\tau - C(\tau))\overline{y}]. \tag{3}$$

The preferred tax rate of $i$ can easily be derived from maximizing unconstrained indirect utility (given that, under the properties of functions $u$ and $C$, function $V$ is strictly concave and twice

[7]Our theory differs from Chong and Gradstein (2008) on three grounds: they impose an iso-elastic functional form; they include private aid due to the 'warm glow' rationale; and they do not include a cost of taxation. They arrive at a prediction for the effect of an individual's income on their optimal tax that is dependent on the elasticity of substitution. If we incorporate private aid, we also arrive at predictions that depend upon ambiguous assumptions of functional form (available on request). We view the conditions as an empirical matter.

continuously differentiable). The first order conditions are thus:

$$-u_i(.)y_i + u_2(.)(1 - C'(\tau))\overline{y} = 0 \tag{4}$$

if $\tau_i > 0$, and

$$-u_i(.)y_i + u_2(.)(1 - C'(\tau))\overline{y} \leq 0 \tag{5}$$

if $\tau_i = 0$.

**Proposition 1** *The individually optimal tax rate function $\tau(y_i)$ is decreasing in $y_i$.*

**Proof.** Using the implicit function theorem for the case of $\tau_i > 0$, we know $\tau'(y_i)$ exists and is given by

$$\tau'(y_i) = -\frac{u_1(.)}{u_2(.)C''(\tau)\overline{y}} \tag{6}$$

From the properties of functions $u$ and $C$, we can conclude that this derivative is strictly negative. ■

We simply model the political decision on $\tau$ as one subject to an open agenda (any individual can propose a new pairwise vote between any alternative and the winner from the previous vote) direct democracy. Using the median voter theorem, provided that we have single peaked preferences (from strict concavity of function $V$), the outcome of the assumed political decision will be $\tau_{Med\{y_i\}}$, the individually optimal tax rate for the median income voter.

### 3.2 Empirical Analysis

The theory lends itself to simple empirical testing using both micro and macro-level variables. From a micro-level perspective, Proposition 1 can be tested with the following empirical specification:

$$DA_{ict} = \alpha + \beta y_{ict} + X_{ict}\gamma + C_c\Theta + T_t\mu + e_{ict} \tag{7}$$

where $DA$ is desired aid for individual $i$ in country $c$ in year $t$; $y$ is income, measured subjectively and coded relative to individuals in country $c$ from 1 (bottom two quintiles) to 3 (richest quintile); $X$ is a vector of individual covariates that includes age, gender, education, employment status, religion, ideology and aid illusion; and $C$ and $T$ are country and year dummies respectively. All individual covariates are presented in Table 2 by levels of desired aid. We expect the $\beta$ coefficient to carry a negative sign, indicating that the individually optimal level of foreign aid, financed through tax revenues, is decreasing in income.

The results presented in Table 3 generally support the theory's prediction. In column (1) we see that, on average, respondents' preferred level of foreign aid is decreasing in relative income when controlling for age, gender, education and employment status. The inclusion of attitudinal and illusion controls (and the consequent loss of data) in column (2) weakens the results slightly, whereas the main specification in column (3), which incorporates country and year dummies, corroborates the theory comprehensively: income negatively determines preferences for tax-funded foreign aid.

A number of auxiliary findings in Table 3 are also interesting to note. Age and gender matter: young people and women are significantly more supportive of aid. The associations with education and unemployment presented in columns (1) and (2) are not robust to the inclusion of year and country fixed effects; nor, interestingly, are many of the links with religion. In the end, Roman Catholics, Protestants, 'other' Christians, Muslims and 'other' religions are the groups who exhibit significantly more support for foreign aid than non religious people. On the contrary, the results for ideology are robust across both specifications in which they are included: self-declared left wingers are significantly more supportive of aid then right wingers. Finally, and unsurprisingly, aid illusion leads individuals to support higher donations.

Turning to macro-level variables, the theory predicts that inequality (or, more specifically, the ratio of the mean to the median income) increases support for aid. This is because, in our framework, the extent to which the median voter earns less income than the country mean will positively determine her preferred tax rate (assuming a proportional system), and hence, the optimal

level of foreign aid for that country's citizens.[8] We can also see from the first order conditions that desired aid is predicted to be a positive function of per capita GDP (which simply increases the government budget constraint).[9] We test these propositions with the following specification:

$$DA_{ict} = a + \delta I_c + \beta y_{ict} + \varphi Y_{ct} + X_{ict}\gamma + K_{ct}\Theta + G_{ct} + T_t\mu + e_{ict} \tag{8}$$

where $I$ is inequality, measured as the ratio of the mean to the median income (both taken from the OECD)[10] in country $c$; $y$ and $X$ are as above; $Y$ is the logarithm of per capita GDP in 2000 US dollars; $K$ is a vector of standard country-level controls that contains trade openness, growth and the logarithms of population and size, all of which are taken from the World Development Indicators; $G$ is a vector of the six Worldwide Governance Indicator variables: Voice and Accountability, Stability, Government Effectiveness, Regulatory Quality, Rule of Law and Control of Corruption (Kaufmann et al., 2010), and $T$ is year. The theory predicts that both $\delta$ and $\varphi$ will be significantly larger than zero.

As the OECD provides unique 'mid 2000s' values of mean and median income for each country, we cannot include country dummies. This may raise concerns about potential omitted variable bias. For example, a country's 'taste' for redistribution may affect both its level of domestic equality as well as its citizens' preferences for foreign aid. We would argue that the predicted effect of this bias would *attenuate* $\beta$, leaving us with a conservative estimate for the effect of inequality on desired aid. Our controls for individuals' political ideology, in addition to our battery of country-level controls, goes some way towards mitigating concerns about underestimating the true effect.

In Table 4 we see from the empirical results that the theory is broadly supported across a wide range of specifications. In column (1) we include no controls for governance; in columns (2), (3) and (4) we include pairs of controls for democracy, policy and institutions respectively; in column

[8] It can be shown trivially from (4) that $d\tau/d\frac{\overline{y}}{y_i} > 0$ for the case of $\tau_i > 0$; and, by the median voter theorem, the optimal outcome is $i = i_{Med}\{y_i\}$

[9] In this case, $\dfrac{d\tau}{d\bar{y}} = \dfrac{(1 - C'(\tau))}{C''(\tau)\bar{y}} > 0$ so long as $C'(\tau) < 1$, which is a necessary condition for raising taxes.

[10] Data on real mean and real median incomes are available on in the *Income Distribution – Inequality section* (via *Social and Welfare Statistics* > *Social Protection*) of the OECD's statistical website at http://stats.oecd.org.

(5) we include all governance controls; whereas in column (6) we include only the principal component of the governance variables. Individual and other country controls, together with year dummies, are included in every regression. In all but one specification, inequality is shown to increase support for foreign aid. Similar results are obtained in Table 5 when we use the Gini coefficient (again measured by the OECD) as an alternative to the ratio of mean to median incomes. Figure 4 presents bivariate linear fits of country-level desired aid with both measures.

Our proposition on GDP is also reinforced by the data—in nine of the 12 specifications the log of per capita GDP is found to have a significantly positive effect on desired aid. In most cases the coefficient is higher than one, indicating that, on average, a 1% increase in GDP leads to an increase in desired aid of larger than 1% of national income. Interestingly, Voice and Accountability and Control of Corruption appear to have strong positive effects on aid preferences, perhaps reflecting the effects of popular confidence in a government's ability to deliver aid efficiently.

Taken together, our results show that, within countries, those who earn higher incomes, and thus pay higher levels of tax, are likely to support government aid donations less than those who pay lower levels. By extension, support for aid is higher in more unequal countries. We also find suggestive evidence to support our proposition that desired aid is larger in countries that have higher levels of GDP per capita.

## 4 Special Interest Politics and the Democratic Aid Deficit

A particularly interesting advantage of this dataset is the opportunity it affords us to examine the democratic aid deficit, which we define as the difference between citizen preferences and government allocations, or

$$DD_{ct} = DA_{ct}^{Med} - ODA_{ct}. \tag{9}$$

Note that, in calculating the measure, we subtract official aid from the median value of Desired Aid rather than the mean. This follows from the median voter theorem, which states that, if voters have single-peaked preferences, the median voter's preferred level of policy will be the chosen policy outcome. In effect, in a 'pure' democracy, we should observe $DA_{ct}^{Med} = ODA_{ct}$, i.e. $DD_{ct} = 0$.

An immediate point of interest, then, concerns the size ($\mu_{DD}$=2.89%) and variation ($\sigma_{DD}$=1.53%) of the democratic deficit. The coefficient of variation for the illusion-adjusted alternative, that is

$$\frac{\sigma_{DD^a}}{\mu_{DD^a}},\ where\ DD_{ct}^a = DD_{ct} * [\frac{ODA_{ct}}{PerA_{ct}}], \tag{10}$$

is 0.64, which, compared with the non-adjusted coefficient of 0.53, suggests that the significant variation in the democratic deficit is not simply a result of varying perceptions of aid. The extent of country-level variation is presented graphically in Figure 5, which shows the relative sizes of desired aid (blue) and actual aid (red) for each country. The red vertical line represents parity, i.e., $DD_{ct} = 0$. The ratio ranges from almost parity in Sweden to around 9:1 in Poland, Germany and Korea.

This illustration begs the question: what is causing this deficit? To answer this, we turn to the literature on special interest politics. We propose a simple extension of the theory using a Grossman and Helpman (1996, 2001) style adjustment to the government utility function, whereby the top-income-agent may transfer resources to the government in order to 'buy' lower aid (i.e., a lower tax rate $\tau$).[11]

[11] A summary of these models is presented in Acemoglu and Robinson (2006)

In this set-up, political power not only comes from an electoral mandate, but also from an individual's wealth and her marginal willingness to pay for changes in policy through bribes or campaign contributions. We assume that $n$ agents can offer the policymaker a contribution function $\hat{\gamma}^j(.)$ in order to influence the choice of tax rate $\tau$. The utility of an agent is

$$V^j(\tau) - \gamma^j(\tau), \tag{11}$$

where $V^j(\tau)$ is the utility derived by $j$ from tax rate $\tau$ and $\gamma^j(\tau)$ represents the contribution paid to the policymaker.[12] The politician in power maximises a utility function of the form

$$G(\tau) \equiv \gamma^l(\tau) + a \sum_{j=1}^{n} V^j(\tau), \tag{12}$$

where the first term is the monetary receipts of the policymaker from agent $l \in j$ and the second is the un-weighted sum of all indirect utility functions (utilitarian aggregate welfare), with $a$ representing the extent to which the politician is concerned about aggregate welfare.

We assume the following sequence: (i) agents who wish to divert the policymaker away from imposing a tax rate $\tau$ that maximises utilitarian aggregate welfare offer a payment schedule; (ii) the politician chooses $\tau$. The equilibrium of this game, composed of the contribution function $\hat{\gamma}^l(.) \in \hat{\gamma}^j(.)$ and the tax rate $\tau^*$, has the following features: $0 \leq \hat{\gamma}^l(\tau) \leq V^j(\tau)$, which implies that agents do not make contributions that give them negative utility; the politician chooses the tax rate $\tau$ that maximises his welfare given contribution function $\hat{\gamma}^l(.)$, i.e.

$$\tau^* \in \arg \max_{\tau \in [0,1]} G(\tau \mid \hat{\gamma}^l(.)) \tag{13}$$

and there are no profitable deviations for agent $l$, implying that

$$\tau^* \in \arg \max_{\tau \in [0,1]} [V^l(\tau) - \hat{\gamma}^l(\tau)) + G(\tau \mid \hat{\gamma}^l(.))]. \tag{14}$$

[12]For simplicity, agents cannot organise into groups. Relaxing this assumption does not change the results.

The equilibrium can be simplified to the solution of the weighted sum of utilities, for which we only need to assume differentiable contribution functions. The first order conditions from the above two expressions respectively give:

$$\frac{d\gamma^l(\tau)}{d\tau} + a\sum_{j=1}^{n}\frac{dV^j(\tau)}{d\tau} = 0 \tag{15}$$

and

$$\frac{dV^l(\tau)}{d\tau} - \frac{d\hat{\gamma}^l(\tau)}{d\tau} + \frac{d\hat{\gamma}^l(\tau)}{d\tau} + a\sum_{j=1}^{n}\frac{dV^j(\tau)}{d\tau} = 0. \tag{16}$$

Combining these expressions obtains

$$\frac{d\hat{\gamma}^l(\tau)}{d\tau} = \frac{dV^l(\tau)}{d\tau}, \tag{17}$$

which gives us two important implications. First, it shows that $l$ is willing to pay the marginal benefit for a change in the tax rate. As the largest beneficiary of a change in the tax rate in a proportional system is by definition the highest income earner, we can deduce that $l$ is the top-income agent $r$.[13] Second, we can now substitute the first term in the policymaker's objective function and write the resulting tax rate from this game as the solution of

$$\arg\max_{\tau\in[0,1]} V^r(\tau) + a\sum_{j=1}^{n}V^j(\tau) = (1+a)V^r(\tau) + a(\sum_{j=1}^{a}V^j(\tau) - V^r(\tau)), \tag{18}$$

which implies that, to the extent that money can influence politics (i.e. as $a$ decreases), the resulting level of aid chosen by the government will tend towards the richest agent's preferred rate. In our application, the rich prefer a lower $\tau$ (for reasons shown in Section 4.2), and hence a lower level of foreign aid donations $A$ than the median voter's preferred choice. We are left with a clear empirical proposition: the influence of money on politics will directly decrease the level of aid donated by governments.

[13] We dismiss the influence of the bottom-income agent.

### 4.1 Estimation

To test this proposition, we turn to the Executive Opinion Survey (EOS) from the World Economic Forum's Global Competitiveness Report 2004-2005.[14] The EOS is a mail-based survey of executives from an average of 84 firms of widely varying sizes, sectors, and types of ownerships in 104 countries. We limit the data to the relevant donor countries in our analysis, and average responses to the questions on various forms of state capture at the country level, presented in Appendix Table A1.[15]

We argue that these variables proxy well for the influence of monetary donations, both legal and illegal, on policy outcomes in the sample countries. We propose that by lowering actual aid, these lobbying activities explain variation in the democratic aid deficit across countries. Figure 6 presents graphical corroboration. In a linear fit, all seven lobbying variable are clearly negatively correlated with actual aid.

Figure 7 highlights very clearly how well the theory is reflected in the data: when countries are split by the median value of actual aid (y-axis) and the mean lobbying score (x-axis), only four countries are marginally outside the two appropriate quadrants. The vast majority of countries have either a combination of clean politics and high foreign aid (e.g. Northern European countries), or a combination of malleable policy makers and low foreign aid (bottom right quadrant).

To formally test the theory, we use the following specification:

$$ODA_{ct} = a + \varphi L_c + \varsigma DA_{ct}^{Med} + K_{ct}\theta + G_{ct}\vartheta + T_t\mu + e_{ct} \tag{19}$$

where $ODA_{ct}$ is actual aid for country $c$ in year $t$; $L$ is a lobbying variable; $DA_{ct}^{Med}$ is the median value of desired aid in each country-year; and $K$, $G$, and $T$ are as above. As $L$ is increasing in lobbying activity, we expect $\varphi$ to be negative. In line with our theory, we also expect $\varsigma$ to

[14] Firms are stratified by size and sector. More information on the Executive Opinion Survey is available in Kaufmann and Vicente (2011) and on the official website at http://bit.ly/90RE67. The most recent sampling procedures are described on page 77 of the Global Competitiveness Report at http://www3.weforum.org/docs/WEF_GCR_Report_2011-12.pdf

[15] Country averages are presented in Table 6

be positive. Again, in the absence of temporal variation in $L$, we cannot control for country-level fixed effects. We rely instead on the $K$ and $G$ vectors to control for potentially confounding factors.

In Tables 7 to 10 we see broad support for the theory across various specifications. Table 7 presents the most rudimentary specification, which omits all potential correlates of desired aid other than the perceived aid control. We see that all seven lobby variables are strong negative predictors of actual aid. The evidence for the impact of desired aid is less convincing however, showing a significant positive effect in only three of the nine specifications.

In Table 8 we include country-level controls and find similar level of support for the influence of money on aid policy. We also see that the inclusion of these controls removes any statistically relevant effect of desired aid. To explain this, we propose that the impact of the median voter's preference on policy outcomes is dependent on the fluidity of democracy in any given country. It is reasonable to assume that the responsiveness of a government to its citizens is by definition a prerequisite for the median voter's preference to determine the level of aid chosen by the policymaker. This may extend beyond the case of lobbying as measured by our seven variables, and so in Table 9 we interact the median voter's preference with the Voice and Accountability variable from the World Governance Indicators.

This adjustment reveals a large and significantly positive effect of voter preferences in the presence of democracy. Perhaps unusually, the independent effects of desired aid are largely negative. These results are tempered somewhat in Table 10, which shows that, with added country controls, the interaction term is significant only in the specifications where lobbying is either absent, measured by private influence or measured by bribery.[16]

In all specifications, however, the effectiveness and prevalence of monetary contributions to policymakers is a strong negative determinant of DAC government aid donations. Taking the principal component as the primary scale of lobby influence, we show that an increase of one standard deviation leads to a decrease in foreign aid by almost 0.08 GNI percentage points—a

[16]The inclusion of the principal component of the other WGI governance variables does not significantly change the findings. They are omitted due to possible collinearity with our main explanatory variable. We use Voice and Accountability as our measure of democracy in light of an almost complete lack of variation in the Polity alternative for our sample countries.

higher proportional impact than any other variable, including GDP growth, trade and democracy.

### 4.2 Robustness: Private Aid and Crowding Out

The inclusion of a measure for private aid contributions in the 2006 survey round allows us to test an alternative explanation for our lobbying result. If government aid fully crowds out private aid, it could be optimal for governments to reduce ODA in countries where there are high preferences for private aid donations. If these are the same countries in which lobbies most affect policy, then it may be the case that this channel explains our result. We test this by addressing two questions: (i) does government ODA fully crowd out private contributions to foreign aid? And (ii) do citizens exhibit higher preferences for private aid in countries with high lobby scores? Our analysis is facilitated by the following survey question:

> Over the past year, what share of your household income was spent on private aid/charities for helping in developing countries?

The answers are coded using the same scale as that used for the previous aid measures. We refer to the variable as 'private aid'.

#### *4.2.1 Crowding Out*

We begin by testing for crowding out. The traditional argument states that increased government expenditure on foreign aid reduces private donations, as people optimally withdraw their direct contributions once they are obliged to donate to charities through involuntary taxes (Warr, 1982, Bergstrom et al., 1986). However, empirical evidence from Andreoni and Payne (2011a) presents a more complex picture. Using a panel of US charitable organisations, they observe that government grants crowd out private donations by around 76%; that is, each marginal dollar received from the government leads to a reduction in revenues from private donors by 76 cents.

They decompose the crowding out of donations into two channels: the classic (direct) channel, as described above; and the fundraising (indirect) channel, through which government grants to charities reduce their fundraising activities, and, as a consequence, private donations. They find no evidence of classic crowding out. Rather, they find that indirect crowding out is around 80%, whereas the direct effect of government grants is a crowding in of 4%. In effect, a $1000 government grant to a charity causes individuals to donate a further $40, while simultaneously causing the charity to forego fundraising activities that would have yielded $800 of private revenues.[17] Furthermore, the crowding-out estimate is an upper bound, as it does not account for the fall in costs associated with less fundraising activities. Accounting for this leads the authors to revise the indirect effect from 80% to 66%, resulting in an overall crowding out effect of around 62%.

An explanation for these results is described by Andreoni and Payne (2011b) and, more formally, by Name-Correa and Yildirim (2012). Three main actors interact in a game for the allocation of foreign aid—the government, who spends tax revenues on foreign aid through charitable organisations; charitable organisations, who solicit funds from government and individuals for reallocation abroad; and individuals who pay taxes and also donate to charity (Andreoni, 2006; List, 2011).

Charities compete with each other for donations. Citizens are concerned with the effectiveness of their donation—or the 'quality' of the charity—on which they only have partial information. Individuals are also sensitive to the costs of donating, which can be reduced through fundraising activities by charities, such as soliciting donations in person or over the phone. Fundraising can also provide information that can attract donors. However, excessive fundraising is wasteful, and can potentially deter donors (Rose-Ackerman, 1982; Okten and Weisbrod, 2000).

Grants from government can have two possible direct effects on individual donations. The first, described above, leads to the withdrawal of private donations in response to the imposition of an involuntary tax to fund charities (direct crowding out). But given that individuals only

[17]Similar results are found in Andreoni and Payne (2003) and (2011b). In the latter, richer data from a Canadian panel allow the authors to decompose further the sources of crowding out. The largest effect is attributed to reduced special fundraising activities, such as gala events or sponsorships. A significant effect is also attributed to a decline in grants from foundations and other charities.

have partial information on the quality of charities, the fact that one was successful in applying for government support may convey a positive signal that could provoke giving (Andreoni, 1998, 2006; Vesterlund, 2003). The empirical literature outlined above suggests that the signalling effect dominates any direct crowding out effect.

Finally, individuals do not give unless they are solicited directly (Meer and Rosen, 2011; Andreoni and Rao, 2011; and Andreoni et al, 2011 provide evidence of this effect) and fundraising, all else equal, is an undesirable activity that charities would rather eschew in order to devote resources to their stated mission. Under these assumptions, Name-Correa and Yildirim (2012) predict that government grants should result in lower fundraising efforts and incomplete crowding out, i.e., a reduction in private donations of less than unity.

#### *4.2.2 Estimation*

We test this proposition using the following specification:

$$PrivA_{ic} = a + \psi ODA + \lambda PerA_{ic} + X_{ic}\zeta + K_c\theta + G_c\vartheta + e_{ic}, \tag{20}$$

where $PrivA_{ic}$ is the share of household income spent on private foreign aid in a 12-month period from 2005 to 2006.

We are in a position to offer a novel test of the theoretical predictions on the interactions between public and private aid, as outlined above. By including measures of both official aid and individuals' perceived aid, we are able to reasonably decouple the indirect and direct effects of government aid on private donations. The coefficient $\lambda$ describes individuals' direct reaction to their perceived changes in government aid. A negative $\lambda$ indicates that, as individuals perceive government funding for foreign aid to be increasing, they adjust their voluntary contributions downward, providing corroboration of the classic case. A positive $\lambda$ would provide confirmation of a dominant crowding in effect, in which perceived government support of charities reduces informational asymmetries by providing individuals with a signal of quality, as in Andreoni and Payne (2011a, 2011b). A statistically insignificant $\lambda$ may reflect a 'warm-glow' motive for giving.

This occurs when individuals are not solely motivated by the welfare of the recipient. Rather, they derive utility directly from the act of donating aid, perhaps due to the enjoyment of gratitude or the relief of guilt.[18] To the extent that warm glow motives dominate purely altruistic ones, private donations are more likely to be independent of government aid.

We note the particular importance of our measure for perceived aid here, as its negative correlation with actual aid (-0.044) clearly indicates that the latter would be an inappropriate explanatory variable in a regression that seeks to identify individuals' *direct* reactions to changes in government aid. To our knowledge, this is the first study of its kind to use such a measure. On the contrary, actual aid is an apt measure for our test of indirect crowding out. Charities are acutely aware of their own revenues from government; a negative $\psi$ indicates that they reduce fundraising activities and solicitations for contributions in response to an increase in government grants, which in turn leads to less private donations. Our control for individuals' direct reactions allows us to be confident in this type of interpretation. If this effect exhibits full crowding out, i.e., if $\psi \leq -1$, then the possibility remains that the alternative hypothesis outlined above is explaining our result.

*Other correlates*

This specification also allows us a look at other individual correlates of private aid donations. Evidence from US tax returns by Randolph (1995) and Auten et al. (2002), amongst others, estimate permanent income elasticities of demand for all private charitable giving of between 0.87 and 1.14, although only 1.1% of all US private household charitable contributions are allocated to foreign aid (Andreoni, 2006). Using data from the Center on Philanthropy Panel Study (COPPS), List (2012) finds that charitable contributions as a percentage of household income is U-shaped. A combination of four explanations is offered for this observation: poor people donate significantly higher shares of their income to religious organisations; young, highly-educated individuals with low current incomes expect their wages to rise in future, and can thus afford to donate more; a

[18] Andreoni (2006) ascribes the foundation of this type of model to Becker (1974), Cornes and Sandler (1984), Steinberg (1987) and Andreoni (1989, 1990).

large fraction of high-percentage donors are high-asset, retired members of society who contribute according to their accumulated wealth rather than their current income; and, at the other end of the income distribution, a very small number of top income earners donate exceptional amounts to charity.[19]

While we do not have the panel data necessary to advance this particular strand of literature, we can offer insights into whether or not these findings can are applicable to spending on foreign aid. We can observe the effect of religion and education on private donations using the above specification, while the third explanation seems to be given some weight by Figure 8, in which we can see a clear increase in the share of low income earners amongst those who contribute at the higher end of the distribution, suggesting that low-income, high-wealth individuals constitute a significant proportion of high-transfer donors. The categorical nature of our income variable limits somewhat our detection of the final effect.

*Results: OLS and Tobit*

We present the OLS estimates of specification (20) in Table 12. Our main focus in these models is on perceived aid and actual aid. The results in both specifications show that crowding out is incomplete: focusing on column (2), which includes a set of controls for country governance, we can see that the effect of a 1 percentage point increase in ODA as a share of GNI decreases private donations as a share of household income by 0.84 of a percentage point. The results also provide strong support for the theories of indirect crowding out and direct crowding in posited above. A percentage point increase in perceived aid increases private giving by almost a tenth of a percentage point. This implies that classic crowding out is not a plausible explanation for the negative effect of government aid on private donations, leaving the fundraising channel as the most probable explanation—charities decrease fundraising activities in response to increased revenues from the government, leading to a drop in private donations. However, when individuals perceive an increase in government spending on foreign aid, they view it as a positive signal, and accordingly

[19]List cites a Bank of America "High Net Worth Philanthropy" study conducted by the Center for Philanthropy at Indiana University in 2005, which found that 56.5% of total donations were attributed to the wealthiest 2.3% of contributors.

increase their own donations.

Looking at the other correlates, we find no significant effect of income on private aid, though we do find some support for the propositions outlined by List (2011). Respondents in the highest education category (who are also younger than other respondents) spend a higher share of their income on aid. Recoding the religion variables to a single binary measure that indicates whether or not an individual is religious, we find that non-religious respondents donate a fifth of a percentage point less of their income to charities than others.[20] Decomposing this measure, we see that Protestants donate significantly more private aid than non-religious respondents, despite having preferences for lower publicly funded foreign aid (Table 3, column 2).[21] Muslims donate significantly more than any other religious group—most probably in the form of remittances. The coefficients on age provide support for a U-shape relationship, as those aged between 30 and 50 donate a significantly lower share of their income to foreign aid than those aged lower than thirty, and respondents over 65 donate significantly more than those between 30 and 65. On average, retired respondents donate less than full- or part-time workers, controlling for age. Political ideology does not affect private giving: left-wingers are no more likely to spend on foreign aid than right-wingers, despite preferring higher government spending.

We also run an alternative estimation to account for issues pertaining to functional form. Over 40% of respondents (7,288 of 18,117 in total) report donating no share of their income to foreign aid whatsoever. This necessitates a Tobit estimation to account for the censored data at zero. Running a Tobit regression on specification (20) gives us similar results to OLS, with a fundraising crowd out of -0.747 percentage points ($p = 0.04$) and a direct crowd-in of 0.096 ($p = 0$).[22] We note also that this estimation generates significantly positive coefficients for income: medium/medium high earners, on average, donate 0.18 ($p = 0.01$) more percentage points of their income than low/medium low earners, while the coefficient for the high group is 0.22 ($p = 0.02$). This is in contrast to our OLS results, which reveal no significant impact of income on private aid. Results

[20] Unreported.

[21] This comparison is chosen as neither model includes country fixed effects.

[22] These are marginal effects.

on age, education, gender, religion and other controls are broadly in line with OLS results. Specifying an upper limit at 25—the highest value on the scale—does not change the results.[23]

*Measurement, fundraising costs and instrumental variables*

Before we settle on an interpretation of these results, there are a number of significant concerns which we must address. The first one is related to our measures for government and private aid. In Andreoni and Payne's analyses of crowding out (2003, 2011a, 2011b), both government grants and revenue from individual donors were measured in dollars. The reported crowding out result was thus simply obtained by observing the dollar-for-dollar effect of a marginal increase in government grants. In our case, however, ODA is measured as a percentage of GNI, while private aid is measured as a percentage of total household income. As the GNI of an economy is significantly larger than aggregated household incomes, the absolute magnitude of our result is biased upwards.

To account for this, we must multiply the $\psi$ and $\lambda$ coefficients by the average ratio of household income to GNI per capita in our sample. We turn to the OECD's *Society at a Glance* social indicators (OECD, 2011) to obtain a measure for household income in each of our sample countries. Specifically, we record the annual median equivalised disposable household income for each country in 2007, as the data does not exist for 2006. We then express this as a share of each country's corresponding GNI per capita (taken from the World Development Indicators), and find a sample mean of 0.599, with a standard deviation of 0.074.[24]

Second, we recall from Andreoni and Payne (2011a) that, while a reduction in fundraising activities caused by government grants may indeed lower a charity's revenues, it also lowers its costs. In light of this, the authors lower their estimate of indirect crowding out from 80% to 66% (or by 0.175 of the initial effect). We interpret this with caution, as it is estimated from data on domestic charities in the USA, and does not necessarily describe the displacement of charity fundraising costs in our sample.

[23]Tobit results are not reported.

[24]Both measures use current prices and PPPs.

Accounting for the first source of bias adjusts our estimate for indirect crowding out to $-0.84 * 0.599 = -0.503$; and our estimate for the direct effect changes to $0.092 * 0.599 = 0.055$. Further adjusting the indirect effect to account for reduced fundraising costs gives a crowding out effect of $-0.503 * (1 - 0.175) = -0.415$.[25]

However, we argue that OLS estimates in this case are likely to be biased toward zero. It is easy to imagine cases where omitted variables such as natural disasters, famines or other humanitarian crises could be simultaneously influencing private aid, government aid and even charity fundraising. To account for this, we need an instrument for our actual aid variable—a determinant of government aid that is uncorrelated with the error term. Using panel data on charities, Andreoni and Payne exploited subnational variation in political representation in the US (2011a) and Canada (2011b) to arrive at the estimates reported above. As those were of a substantially higher magnitude than their initial OLS estimates, addressing this problem is particularly important in the context of this robustness check.

For our cross-country data, we instead look to our own results in Section 4.1 for an instrument, where we show clearly that lobbying activities have a substantially negative impact on government aid. We take this as a basis for our first stage regression, using the principal component of our vector of lobbying variables as an instrument. We assume that this variable is independent of the second-stage error term and is thus an appropriate instrument, noting that this specification includes controls for several country and individual level variables, as well as a comprehensive set of WGI governance measures.

We can also see from Table 10 that two other variables—the log of population and trade openness—are potentially valid instruments, as they clearly influence official aid (perhaps reflecting the 'donor-interest' strategic motives uncovered in the literature on bilateral donations, as discussed in Section 1), while arguably they are unlikely to be correlated with the error term. Nevertheless, we present them only for robustness purposes; the lobbying variable is our main instrument. Our IV

[25] In the interest of prudence, we use our OLS estimate rather than our Tobit estimate as a base.

two stage least squares specification is as follows:

$$ODA_c = a_1 + IV_c\omega + X_{ic}\gamma_1 + K_c\theta_1 + G_c\vartheta_1 + u_{ic} \tag{21}$$

$$PrivA_{ic} = a_2 + \Psi_{IV}ODA'_c + X_{ic}\gamma_2 + K_c\theta_2 + G_c\vartheta_2 + e_{ic}, \tag{22}$$

where $IV_c$ is a vector of our three instrumental variables, $ODA_c^{'}$ represents first stage predicted values, and the $X_{ic}$ vector of individual controls now includes income, education and perceived aid.

We present the results in Table 12. In columns (1) and (2), we see the IV results using all three instruments. The IV estimate of $-0.845$ is a modest increase (in absolute terms) on the OLS estimate. An advantage of having more than one instrument is the ability to conduct tests for overidentification, which can give us an indication as to whether our instruments are valid.[26] Here, the rejection of the overidentification test casts doubt on the joint suitability of the three instruments. When we drop the trade instrument in columns (3) and (4) we see a clearer picture: the coefficient is significantly larger at $-1.220$, while the lobbying and population variables are strong first stage predictors and do not appear to violate the exclusion restriction. The final two columns underline the consistency of our preferred instrument across all six specifications.[27] Our results on income, education and perceived aid are also notably consistent.

As predicted, we are left with a larger crowding out effect once we use an IV approach. We present in Table 13 a summary of our nine estimates of indirect crowding out. We begin with our three basic estimates: OLS, IV1 using the lobbying variable, and IV2 using both log population and lobbying. Each coefficient is presented unadjusted, adjusted for scale, and adjusted for scale and displaced fundraising costs. Our preferred result of $-0.566$, where we use the fully adjusted IV1 estimate, suggests that crowding out is unlikely to be total.

[26] However, we are unable to run this with clustered standard errors, as our number of clusters (21 countries) is insufficient to calculate the robust covariance matrix. We thus present two columns for each specification: one with clustered standard errors, and another with robust standard errors and overidentification test statistics.

[27] Our lobby variable is our clearly preferred instrument, as we have no theoretical explanation for the first stage relationships exhibited by our other two instrumental variables—as mentioned above, we include them only as robustness checks.

#### 4.2.3 *Aid preferences in 'high lobby' countries*

Despite showing that government aid is highly unlikely to displace completely private aid, we continue nonetheless to the second part of the robustness exercise to check whether or not the public appetite for private aid is particularly high in countries where the monetary influence on policy makers is high. Recall that, if crowding out is total, then it may be optimal for governments to withdraw ODA in countries with a high observable demand for private aid. If these are the same countries that score highly on our lobby scale, then it may be the case that this channel explains our main lobby result in Section 4.1.

In Figure 9, we show graphical evidence that countries with higher lobby scores are no more likely to exhibit a high demand for either government or private aid donations. We include both measures in case citizens mistakenly express their appetite for private aid while answering the survey question on desired ODA. Citizens in countries to the right spend higher shares of their household incomes on private aid contributions, while citizens in countries higher up the y-axis demand more government ODA.

Each observation is attributed a shade of grey to indicate the corresponding decile in the distribution of mean lobby scores. The darker the shade, the higher is the mean lobby score. We can see clearly that high lobby countries are found in 'low aid' areas at least as much as in 'high aid' areas. The corresponding correlation scores (Corr(private aid, lobbying) = -0.068; Corr(desired aid, lobbying) = -0.057) confirm that governments in fact observe a slightly lower demand for ODA and lower expenditure on private donations in high lobby countries.

Taken together, the results in this subsection give us confidence in our interpretation of the effects of lobby influence on ODA. We have shown that, where policy makers are influenced by money, they choose a level of foreign aid significantly lower than the preference of the median voter. Further, we can rule out an explanation wherein governments of high lobby countries lower ODA in reaction to high demand for aid and the existence of complete crowding out.

## 5 Conclusion

Using data from Gallup International, we observe that support for aid amongst citizens of OECD countries is, on average, higher than actual levels of ODA, notwithstanding a considerable 'illusion' effect. We show that, within countries, those who earn higher incomes are less likely to support government aid donations than those who earn low levels. At the country level, support for aid is higher in countries that have more inequality and higher GDP per capita. We demonstrate that the democratic aid deficit—the difference between citizens' desired levels of aid transfers and the level chosen by their government—is extended by private lobbying activities. Finally, we show that the 'crowding out' of individual voluntary contributions by government aid does not explain this result. Crowding out is incomplete, and the effect is likely to operate largely through reduced fundraising activities by charitable organisations in receipt of government funding—the direct effect is in fact positive.

As far as policy implications are concerned, the paper shows that those interested in increasing government-funded foreign aid donations should be concerned with publicising the current share of GNI that is spent on aid (in light of widespread 'illusion') and addressing the influence of private donations on policy-makers. Moreover, our final analysis suggests that a policy prescribed by Andreoni and Payne (2011a), whereby governments provide matching grants to charities in proportion to their private revenue, should be extended to charities operating abroad. This could assuage the effects of crowding out through the fundraising channel and increase the overall amount of aid sent to developing countries.

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Table 1: Sample Sizes and Mean Values for Aid Variables by Country

| | 2005 | 2006 | 2007 | 2008 | Desired Aid | Perceived Aid | Actual Aid |
|---|---|---|---|---|---|---|---|
| AUT | 669 | 969 | 804 | 826 | 1.989 | 2.040 | 0.478 |
| | | | | | (3.404) | (3.976) | (0.033) |
| CAN | 1001 | 1000 | 1007 | 1012 | 4.684 | 3.345 | 0.313 |
| | | | | | (5.999) | (5.483) | (0.023) |
| CZR | 500 | 1000 | 1000 | 1000 | 1.511 | 1.995 | 0.116 |
| | | | | | (3.001) | (3.825) | (0.005) |
| DNK | 500 | 500 | 1118 | 1069 | 2.713 | 2.122 | 0.812 |
| | | | | | (4.098) | (3.555) | (0.007) |
| FIN | 1289 | 1249 | 1154 | 1267 | 1.321 | 0.763 | 0.423 |
| | | | | | (2.574) | (1.712) | (0.029) |
| FRA | 1003 | 1012 | 1000 | . | 3.618 | 2.959 | 0.440 |
| | | | | | (5.001) | (4.819) | (0.042) |
| GER | 500 | 505 | 500 | 503 | 5.600 | 4.406 | 0.368 |
| | | | | | (6.451) | (6.139) | (0.008) |
| GRC | 500 | 1000 | 1000 | 1000 | 2.849 | 1.684 | 0.181 |
| | | | | | (5.308) | (3.955) | (0.020) |
| ICE | 500 | 1018 | 1081 | 1084 | 2.849 | 0.986 | 0.317 |
| | | | | | (4.143) | (1.986) | (0.103) |
| IRL | 500 | . | 1020 | . | 5.957 | 3.671 | 0.507 |
| | | | | | (7.062) | (5.943) | (0.061) |
| ITA | 502 | 988 | 1000 | 1001 | 4.727 | 2.626 | 0.216 |
| | | | | | (6.557) | (5.251) | (0.033) |
| JPN | 2393 | 1203 | 1200 | 1200 | 3.453 | 5.755 | 0.234 |
| | | | | | (5.208) | (7.395) | (0.046) |
| KOR | 1515 | 1504 | 1001 | 1519 | 1.995 | 1.799 | 0.078 |
| | | | | | (3.909) | (3.868) | (0.020) |
| LUX | 582 | 528 | 504 | 532 | 2.735 | 2.642 | 0.890 |
| | | | | | (3.880) | (4.016) | (0.067) |
| NLD | 549 | 1000 | 1009 | 1031 | 2.944 | 3.596 | 0.809 |
| | | | | | (4.509) | (5.231) | (0.006) |
| NOR | 510 | 1008 | 1006 | 1000 | 2.040 | 2.120 | 0.912 |
| | | | | | (2.849) | (3.462) | (0.031) |
| POL | 908 | 1021 | 1048 | 1024 | 2.154 | 1.331 | 0.086 |
| | | | | | (4.286) | (3.558) | (0.011) |
| PRT | 520 | 1000 | 1000 | 1000 | 4.570 | 3.506 | 0.230 |
| | | | | | (7.395) | (6.614) | (0.026) |
| SPN | 500 | 1000 | 1000 | 500 | 3.893 | 1.544 | 0.350 |
| | | | | | (6.310) | (3.739) | (0.056) |
| SWE | . | 1000 | 1000 | 1000 | 2.322 | 1.558 | 0.977 |
| | | | | | (3.718) | (2.747) | (0.037) |

Table 1: Sample Sizes and Mean Values for Aid Variables by Country

| | 2005 | 2006 | 2007 | 2008 | Desired Aid | Perceived Aid | Actual Aid |
|---|---|---|---|---|---|---|---|
| SWI | 500 | 1000 | 1037 | 1005 | 3.983 | 3.330 | 0.407 |
| | | | | | (5.432) | (5.148) | (0.026) |
| TUR | 2036 | 2045 | 2015 | 2004 | 2.378 | 1.055 | 0.138 |
| | | | | | (5.466) | (3.434) | (0.038) |
| UK | 1031 | 1025 | 1000 | 1009 | 5.520 | 4.420 | 0.443 |
| | | | | | (7.190) | (6.841) | (0.055) |
| USA | 504 | 1022 | 1019 | 1000 | 3.190 | 7.516 | 0.184 |
| | | | | | (5.589) | (9.316) | (0.022) |
| Mean | 827 | 1026 | 1022 | 1027 | 3.142 | 2.65 | 0.371 |
| | | | | | (5.21) | (5.082) | (0.264) |
| Observations | 19012 | 23597 | 24523 | 22586 | 63024 | 55864 | 89718 |

Standard deviations are in parentheses. For desired aid and perceived aid, standard deviations are over time and across individuals; for Actual Aid, they are for the country-level average over time

Table 2: Mean Values by Desired Aid

| | | | | | Education | | | Employment | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Desired Aid | N | Ideology L(1) - R(5) | Age (1-4) | Income (1-3) | None / Basic | Secondary | High | Working | Unemp. | Not Working | Retired |
| 0 | 4575 | 3.23 | 2.26 | 1.6 | 0.3 | 0.47 | 0.23 | 0.56 | 0.07 | 0.18 | 0.19 |
| 0.05 | 3344 | 3.22 | 2.26 | 1.68 | 0.22 | 0.52 | 0.26 | 0.64 | 0.05 | 0.16 | 0.15 |
| 0.15 | 4193 | 3.18 | 2.27 | 1.71 | 0.2 | 0.52 | 0.29 | 0.63 | 0.04 | 0.17 | 0.16 |
| 0.35 | 5680 | 3.11 | 2.29 | 1.81 | 0.16 | 0.52 | 0.32 | 0.64 | 0.47 | 0.15 | 0.16 |
| 0.75 | 11116 | 3.03 | 2.36 | 1.83 | 0.15 | 0.49 | 0.36 | 0.63 | 0.04 | 0.14 | 0.18 |
| 1.5 | 11983 | 2.94 | 2.32 | 1.85 | 0.13 | 0.49 | 0.38 | 0.63 | 0.04 | 0.15 | 0.17 |
| 2.5 | 6048 | 2.88 | 2.29 | 1.81 | 0.14 | 0.47 | 0.38 | 0.61 | 0.04 | 0.17 | 0.17 |
| 4 | 6398 | 2.84 | 2.25 | 1.84 | 0.12 | 0.47 | 0.4 | 0.61 | 0.04 | 0.17 | 0.18 |
| 7.5 | 5415 | 2.83 | 2.2 | 1.79 | 0.13 | 0.47 | 0.4 | 0.6 | 0.05 | 0.18 | 0.16 |
| 17.5 | 2563 | 2.82 | 2.03 | 1.7 | 0.18 | 0.5 | 0.32 | 0.57 | 0.06 | 0.23 | 0.13 |
| 25 | 1709 | 2.93 | 1.97 | 1.6 | 0.23 | 0.5 | 0.27 | 0.56 | 0.08 | 0.23 | 0.13 |
| Full Sample | 89718 | 3.00 | 2.26 | 1.73 | 0.21 | 0.49 | 0.3 | 0.59 | 0.05 | 0.19 | 0.17 |

Table 3: Desired Aid and Income

| | (1) | (2) | (3) |
|---|---|---|---|
| | | Desired Aid | |
| Income: Medium / Medium High | -0.138*** | -0.038 | -0.102* |
| | (0.051) | (0.056) | (0.055) |
| Income: High | -0.317*** | -0.157** | -0.191*** |
| | (0.062) | (0.067) | (0.067) |
| Age: 30-50 | -1.008*** | -0.934*** | -0.859*** |
| | (0.071) | (0.081) | (0.078) |
| Age 51-65 | -1.219*** | -1.229*** | -1.181*** |
| | (0.077) | (0.086) | (0.082) |
| Age 65+ | -1.329*** | -1.283*** | -1.236*** |
| | (0.105) | (0.116) | (0.112) |
| Male | -0.849*** | -0.649*** | -0.652*** |
| | (0.046) | (0.051) | (0.049) |
| Education: Secondary | 0.020 | 0.070 | -0.012 |
| | (0.069) | (0.078) | (0.077) |
| Education: Higher Level | 0.237*** | 0.265*** | -0.022 |
| | (0.074) | (0.082) | (0.081) |
| Employment: Unemployed | 0.561*** | 0.438*** | 0.161 |
| | (0.127) | (0.139) | (0.137) |
| Employment: Not Working | -0.070 | -0.015 | 0.067 |
| | (0.075) | (0.085) | (0.082) |
| Employment: Retired | 0.173** | 0.189** | 0.074 |
| | (0.077) | (0.081) | (0.079) |
| Religion: Roman Catholic | | 0.971*** | 0.205** |
| | | (0.071) | (0.081) |
| Religion: Russian / Eastern Orth. | | 0.758* | 0.405 |
| | | (0.396) | (0.370) |
| Religion: Protestant | | 0.370*** | 0.187*** |
| | | (0.059) | (0.065) |
| Religion: Other Christian | | 0.760*** | 0.454*** |
| | | (0.098) | (0.124) |
| Religion: Hindu | | 2.452** | 1.323 |
| | | (1.076) | (1.078) |
| Religion: Muslim | | -0.142 | 0.815* |
| | | (0.120) | (0.494) |
| Religion: Jewish | | 1.265** | 0.830 |
| | | (0.557) | (0.558) |
| Religion: Buddhist | | -0.355*** | 0.005 |
| | | (0.122) | (0.145) |
| Religion: Other | | 1.136*** | 0.329** |
| | | (0.163) | (0.160) |

Table 3: Desired Aid and Income

| | (1) | (2) | (3) |
|---|---|---|---|
| | | Desired Aid | |
| Ideology: Left | | -0.589*** | -0.791*** |
| | | (0.137) | (0.133) |
| Ideology: Centre | | -1.251*** | -1.133*** |
| | | (0.136) | (0.132) |
| Ideology: Right | | -1.355*** | -1.293*** |
| | | (0.137) | (0.133) |
| Ideology: Very Right | | -1.693*** | -1.374*** |
| | | (0.163) | (0.157) |
| Illusion | | 0.060*** | 0.064*** |
| | | (0.002) | (0.003) |
| Year FE | No | No | Yes |
| Country FE | No | No | Yes |
| Observations | 51,584 | 35,458 | 35,458 |
| R-squared | 0.017 | 0.128 | 0.193 |

Robust standard errors in parentheses. All models estimated by OLS. Omitted categories: Income: Low/Medium Low; Age: < 30; Education: No Education; Only Basic Education; Employment: Working Full/Part Time; Religion: None; Ideology: Very Left Wing. ***Significant at the 1% level; **Significant at the 5% level; *Significant at the 10% level.

Table 4: Ratio of Mean to Median Income and Desired Aid

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| | | | Desired Aid | | | |
| Mean:Median Income | 7.567* | 8.014** | 4.374 | 8.101** | 5.608* | 8.720** |
| | (4.328) | (3.033) | (4.166) | (3.878) | (3.054) | (3.870) |
| Log GDP | 1.313** | 0.523 | 1.217** | 1.194** | 0.997* | 0.936 |
| | (0.539) | (0.600) | (0.584) | (0.570) | (0.530) | (0.644) |
| Log Population | 0.166 | 0.243 | 0.075 | 0.258 | 0.364 | 0.232 |
| | (0.180) | (0.194) | (0.161) | (0.161) | (0.219) | (0.181) |
| Log Size | -0.116 | -0.170 | -0.092 | -0.109 | -0.119 | -0.161 |
| | (0.269) | (0.270) | (0.268) | (0.253) | (0.272) | (0.262) |
| Trade Openness | 0.001 | -0.001 | -0.003 | 0.001 | -0.001 | -0.001 |
| | (0.006) | (0.005) | (0.005) | (0.005) | (0.005) | (0.005) |
| Growth | -0.108 | 0.035 | -0.076 | -0.002 | 0.123 | -0.076 |
| | (0.121) | (0.108) | (0.113) | (0.113) | (0.103) | (0.122) |
| Democracy: Voice and Accountability | | 3.194*** | | | 4.166*** | |
| | | (0.753) | | | (0.935) | |
| Democracy: Stability | | -0.912 | | | -0.496 | |
| | | (0.695) | | | (0.682) | |
| Policy: Government Effectiveness | | | -1.363** | | -0.936 | |
| | | | (0.652) | | (1.075) | |
| Policy: Regulatory Quality | | | 1.947*** | | -0.321 | |
| | | | (0.609) | | (0.903) | |
| Institutions: Rule of Law | | | | -2.687** | -2.713* | |
| | | | | (1.096) | (1.514) | |
| Institutions: Corruption | | | | 2.037** | 1.563* | |
| | | | | (0.823) | (0.815) | |
| Principal component | | | | | | 0.199 |
| | | | | | | (0.191) |
| Observations | 33,771 | 33,771 | 33,771 | 33,771 | 33,771 | 33,771 |
| R-squared | 0.155 | 0.164 | 0.159 | 0.161 | 0.171 | 0.157 |

Standard errors are clustered at the country level. ***Significant at the 1% level; **Significant at the 5% level; *Significant at the 10% level.

Table 5: Gini and Desired Aid

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| | | | Desired Aid | | | |
| Gini | 11.151** | 9.118* | 9.421 | 10.905** | 4.384 | 11.284** |
| | (4.320) | (4.718) | (5.725) | (4.298) | (6.385) | (4.247) |
| Log GDP | 1.389** | 0.830 | 1.254** | 1.287** | 1.053* | 1.171* |
| | (0.524) | (0.613) | (0.594) | (0.574) | (0.514) | (0.647) |
| Log Population | 0.122 | 0.130 | 0.094 | 0.221 | 0.248 | 0.169 |
| | (0.174) | (0.222) | (0.165) | (0.150) | (0.243) | (0.187) |
| Log Size | -0.209 | -0.198 | -0.191 | -0.166 | -0.111 | -0.230 |
| | (0.350) | (0.340) | (0.357) | (0.329) | (0.327) | (0.345) |
| Trade Openness | -0.005 | -0.005 | -0.006 | -0.004 | -0.003 | -0.005 |
| | (0.008) | (0.007) | (0.007) | (0.007) | (0.006) | (0.007) |
| Growth | 0.014 | 0.090 | 0.004 | 0.128 | 0.119 | 0.038 |
| | (0.165) | (0.158) | (0.167) | (0.157) | (0.154) | (0.160) |
| Democracy: Voice and Accountability | | 2.391** | | | 3.603** | |
| | | (1.027) | | | (1.466) | |
| Democracy: Stability | | -1.043 | | | -0.734 | |
| | | (1.019) | | | (1.082) | |
| Policy: Government Effectiveness | | | -0.477 | | -0.896 | |
| | | | (0.970) | | (0.900) | |
| Policy: Regulatory Quality | | | 0.891 | | -0.045 | |
| | | | (1.130) | | (1.178) | |
| Institutions: Rule of Law | | | | -2.906** | -2.618 | |
| | | | | (1.189) | (1.651) | |
| Institutions: Corruption | | | | 2.127** | 1.435 | |
| | | | | (0.954) | (0.856) | |
| Scores for component 1 | | | | | | 0.127 |
| | | | | | | (0.180) |
| Observations | 29,025 | 29,025 | 29,025 | 29,025 | 29,025 | 29,025 |
| R-squared | 0.162 | 0.166 | 0.162 | 0.168 | 0.172 | 0.162 |

Standard errors are clustered at the country level. ***Significant at the 1% level; **Significant at the 5% level; *Significant at the 10% level.

Table 6: Mean Lobby Scores by Country, 1 (Low) to 7 (High)

| | L1: Financial Honesty | L2: Bias | L3: Illegal Donations | L4: Effect of Contributions | L5: Budget Corruption | L6: Bribery | L7: Private Influence | Mean Lobby |
|---|---|---|---|---|---|---|---|---|
| AUT | 4.000 | 3.930 | 2.940 | 3.450 | 2.240 | 2.160 | 2.940 | 3.094 |
| CAN | 4.990 | 4.520 | 3.480 | 3.900 | 3.180 | 2.520 | 3.880 | 3.781 |
| CZR | 5.850 | 4.920 | 4.960 | 3.980 | 5.230 | 3.630 | 4.800 | 4.767 |
| DNK | 2.160 | 2.520 | 1.440 | 2.040 | 1.480 | 1.370 | 2.950 | 1.994 |
| FIN | 2.270 | 2.610 | 1.920 | 2.290 | 1.390 | 1.480 | 3.000 | 2.137 |
| FRA | 5.030 | 3.950 | 3.850 | 3.710 | 3.070 | 2.550 | 3.990 | 3.736 |
| GER | 4.200 | 3.480 | 3.920 | 3.080 | 2.270 | 2.050 | 3.210 | 3.173 |
| GRC | 5.210 | 5.240 | 4.780 | 4.670 | 4.070 | 3.710 | 4.240 | 4.560 |
| ICE | 2.400 | 2.790 | 1.960 | 2.520 | 1.460 | 1.320 | 2.780 | 2.176 |
| IRL | 5.320 | 3.800 | 4.410 | 4.450 | 2.500 | 2.520 | 3.470 | 3.781 |
| ITA | 6.020 | 5.200 | 5.280 | 4.590 | 4.620 | 3.290 | 3.750 | 4.679 |
| JPN | 4.870 | 3.640 | 3.470 | 4.070 | 3.220 | 2.400 | 2.840 | 3.501 |
| KOR | 6.310 | 4.590 | 5.320 | 4.660 | 4.440 | 3.800 | 3.510 | 4.661 |
| LUX | 2.410 | 3.500 | 2.500 | 2.440 | 2.320 | 2.070 | 3.810 | 2.721 |
| NLD | 2.820 | 3.080 | 1.800 | 1.730 | 2.040 | 2.030 | 2.890 | 2.341 |
| NOR | 2.390 | 2.390 | 1.740 | 2.300 | 1.570 | 1.700 | 2.280 | 2.053 |
| POL | 6.470 | 5.870 | 5.240 | 5.090 | 5.330 | 4.450 | 4.670 | 5.303 |
| PRT | 4.780 | 3.980 | 4.440 | 3.700 | 2.950 | 2.510 | 3.680 | 3.720 |
| SPN | 4.390 | 4.250 | 4.410 | 4.120 | 3.050 | 3.020 | 3.390 | 3.804 |
| SWE | 3.450 | 2.680 | 1.900 | 1.950 | 1.700 | 1.600 | 4.120 | 2.486 |
| SWI | 2.940 | 3.410 | 2.300 | 2.990 | 1.860 | 2.070 | 3.380 | 2.707 |
| TUR | 5.710 | 5.110 | 5.220 | 4.920 | 5.060 | 4.220 | 4.620 | 4.980 |
| UK | 3.610 | 3.020 | 2.240 | 2.440 | 1.790 | 1.870 | 3.200 | 2.596 |
| USA | 4.130 | 3.990 | 3.270 | 4.550 | 2.490 | 2.770 | 4.090 | 3.613 |
| Mean | 4.239 | 3.853 | 3.450 | 3.485 | 2.889 | 2.546 | 3.562 | 3.432 |
| S.D. | 1.389 | 0.967 | 1.336 | 1.060 | 1.269 | 0.899 | 0.658 | 1.018 |

Table 7: Actual Aid and Lobbying

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | Actual Aid | | | | |
| Lobby Variable: | None | L1: Financial Dishonesty | L2: Bias | L3: Illegal Donations | L4: Effect of Contributions | L5: Budget Corruption | L6 Bribery | L7: Private Influence | L8: Principal Component |
| | | -0.145*** | -0.209*** | -0.157*** | -0.213*** | -0.156*** | -0.220*** | -0.195*** | -0.083*** |
| | | (0.016) | (0.022) | (0.015) | (0.018) | (0.018) | (0.027) | (0.038) | (0.009) |
| Desired Aid | 0.081*** | 0.037** | 0.020 | 0.033** | 0.004 | 0.004 | -0.007 | 0.038 | 0.009 |
| | (0.025) | (0.018) | (0.018) | (0.016) | (0.020) | (0.019) | (0.019) | (0.023) | (0.017) |
| Perceived Aid | -0.025* | -0.016 | -0.026** | -0.026** | -0.002 | -0.029** | -0.023* | -0.024* | -0.021* |
| | (0.012) | (0.012) | (0.011) | (0.011) | (0.008) | (0.013) | (0.012) | (0.013) | (0.011) |
| Observations | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 |
| R-squared | 0.065 | 0.576 | 0.564 | 0.616 | 0.666 | 0.519 | 0.511 | 0.270 | 0.592 |

Robust standard errors in parentheses. ***Significant at the 1% level; **Significant at the 5% level; *Significant at the 10% level.

Table 8: Actual Aid and Lobbying (with Controls)

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | Actual Aid | | | | |
| Lobby Variable: | None | L1: Financial Dishonesty | L2: Bias | L3: Illegal Donations | L4: Effect of Contributions | L5: Budget Corruption | L6: Bribery | L7: Private Influence | L8: Principal Component |
| | | -0.127*** | -0.185*** | -0.150*** | -0.165*** | -0.150*** | -0.194*** | -0.093 | -0.084*** |
| | | (0.022) | (0.030) | (0.019) | (0.025) | (0.025) | (0.043) | (0.071) | (0.012) |
| Desired Aid | -0.006 | 0.010 | -0.006 | 0.016 | -0.017 | -0.021 | -0.029 | -0.011 | -0.010 |
| | (0.018) | (0.019) | (0.018) | (0.016) | (0.019) | (0.020) | (0.020) | (0.018) | (0.018) |
| Perceived Aid | -0.049** | -0.039*** | -0.044*** | -0.047*** | -0.040*** | -0.041*** | -0.049*** | -0.043** | -0.041*** |
| | (0.019) | (0.014) | (0.014) | (0.012) | (0.013) | (0.014) | (0.016) | (0.019) | (0.012) |
| Log GDP | 0.249*** | 0.052 | 0.052 | 0.031 | 0.145*** | 0.013 | 0.088 | 0.171** | 0.015 |
| | (0.059) | (0.052) | (0.053) | (0.048) | (0.049) | (0.056) | (0.064) | (0.075) | (0.048) |
| Mean:Median Income | -0.122 | -0.262 | -0.024 | 0.035 | 0.180 | -0.299 | -0.049 | -0.118 | -0.064 |
| | (0.463) | (0.308) | (0.325) | (0.304) | (0.324) | (0.335) | (0.357) | (0.453) | (0.302) |
| Log Population | 0.012 | 0.052** | 0.041** | 0.052*** | 0.044** | 0.047** | 0.062** | 0.013 | 0.053*** |
| | (0.026) | (0.020) | (0.020) | (0.018) | (0.020) | (0.020) | (0.024) | (0.025) | (0.019) |
| Log Size | 0.003 | 0.008 | 0.017 | -0.000 | 0.015 | 0.009 | 0.002 | 0.023 | 0.017 |
| | (0.021) | (0.016) | (0.015) | (0.016) | (0.015) | (0.016) | (0.016) | (0.021) | (0.016) |
| Trade Openness | 0.002*** | 0.002*** | 0.003*** | 0.003*** | 0.002*** | 0.003*** | 0.003*** | 0.003*** | 0.003*** |
| | (0.001) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.001) | (0.000) |
| Growth | -0.041** | -0.033** | -0.034*** | -0.034*** | -0.019 | -0.030** | -0.020 | -0.041** | -0.027** |
| | (0.017) | (0.013) | (0.013) | (0.012) | (0.013) | (0.014) | (0.015) | (0.017) | (0.013) |
| Observations | 86 | 86 | 86 | 86 | 86 | 86 | 86 | 86 | 86 |
| R-squared | 0.600 | 0.720 | 0.742 | 0.768 | 0.763 | 0.710 | 0.684 | 0.615 | 0.748 |

Robust standard errors in parentheses. ***Significant at the 1% level; **Significant at the 5% level; *Significant at the 10% level.

Table 9: Aid, Lobbying and Democracy

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | Actual Aid | | | | |
| Lobby Variable: | None | L1: Financial Dishonesty | L2: Bias | L3: Illegal Donations | L4: Effect of Contributions | L5: Budget Corruption | L6 Bribery | L7: Private Influence | L8: Principal Component |
| | | -0.105*** | -0.143*** | -0.126*** | -0.187*** | -0.097*** | -0.136*** | -0.077* | -0.064*** |
| | | (0.022) | (0.027) | (0.021) | (0.027) | (0.025) | (0.043) | (0.044) | (0.012) |
| Desired Aid | -0.356*** | -0.123* | -0.190*** | -0.107 | -0.105 | -0.231*** | -0.265*** | -0.366*** | -0.176*** |
| | (0.078) | (0.071) | (0.071) | (0.069) | (0.066) | (0.080) | (0.075) | (0.068) | (0.066) |
| Democracy: V&A | 0.306*** | 0.115** | 0.126** | 0.069 | 0.031 | 0.118* | 0.099 | 0.230*** | 0.058 |
| | (0.069) | (0.057) | (0.056) | (0.051) | (0.051) | (0.070) | (0.081) | (0.085) | (0.060) |
| Desired Aid * V&A | 0.236*** | 0.093** | 0.128*** | 0.085* | 0.071 | 0.151*** | 0.171*** | 0.241*** | 0.120*** |
| | (0.053) | (0.046) | (0.046) | (0.045) | (0.046) | (0.052) | (0.048) | (0.046) | (0.043) |
| Perceived Aid | -0.011 | -0.013 | -0.018 | -0.021* | -0.001 | -0.019 | -0.015 | -0.011 | -0.016 |
| | (0.011) | (0.012) | (0.012) | (0.012) | (0.008) | (0.014) | (0.012) | (0.011) | (0.011) |
| Observations | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 |
| R-squared | 0.496 | 0.601 | 0.610 | 0.629 | 0.673 | 0.560 | 0.554 | 0.519 | 0.611 |

Robust standard errors in parentheses. ***Significant at the 1% level; **Significant at the 5% level; *Significant at the 10% level.

Table 10: Aid, Lobbying and Democracy (with Controls)

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | Actual Aid | | | | |
| Lobby Variable: | None | L1: Financial Dishonesty | L2: Bias | L3: Illegal Donations | L4: Effect of Contributions | L5: Budget Corruption | L6 Bribery | L7: Private Influence | L8: Principal Component |
| | | -0.108*** | -0.163*** | -0.145*** | -0.157*** | -0.134*** | -0.153*** | -0.064 | -0.078*** |
| | | (0.028) | (0.036) | (0.027) | (0.032) | (0.036) | (0.055) | (0.070) | (0.016) |
| Desired Aid | -0.377*** | -0.143 | -0.141 | -0.042 | -0.150* | -0.166 | -0.268*** | -0.363*** | -0.117 |
| | (0.091) | (0.099) | (0.093) | (0.098) | (0.086) | (0.109) | (0.095) | (0.092) | (0.090) |
| Democracy: V&A | 0.080 | 0.025 | 0.035 | -0.025 | -0.066 | -0.052 | -0.021 | 0.069 | -0.036 |
| | (0.079) | (0.070) | (0.080) | (0.064) | (0.075) | (0.086) | (0.088) | (0.082) | (0.073) |
| Desired Aid * V&A | 0.242*** | 0.099 | 0.088 | 0.040 | 0.092 | 0.100 | 0.163** | 0.232*** | 0.073 |
| | (0.058) | (0.064) | (0.061) | (0.063) | (0.058) | (0.071) | (0.062) | (0.060) | (0.059) |
| Perceived Aid | -0.059*** | -0.045*** | -0.049*** | -0.047*** | -0.040*** | -0.042*** | -0.052*** | -0.054*** | -0.041*** |
| | (0.018) | (0.014) | (0.014) | (0.012) | (0.013) | (0.013) | (0.016) | (0.018) | (0.012) |
| Log GDP | 0.246*** | 0.081 | 0.075 | 0.040 | 0.156*** | 0.043 | 0.126* | 0.193** | 0.034 |
| | (0.061) | (0.056) | (0.055) | (0.054) | (0.049) | (0.066) | (0.065) | (0.075) | (0.051) |
| Mean:Median Income | 0.188 | -0.127 | 0.087 | 0.012 | 0.108 | -0.305 | 0.008 | 0.164 | -0.083 |
| | (0.463) | (0.317) | (0.367) | (0.309) | (0.334) | (0.354) | (0.381) | (0.452) | (0.314) |
| Log Population | 0.064*** | 0.066*** | 0.057** | 0.053*** | 0.048** | 0.052** | 0.075*** | 0.061** | 0.057*** |
| | (0.024) | (0.021) | (0.022) | (0.020) | (0.022) | (0.021) | (0.024) | (0.023) | (0.020) |
| Log Size | -0.013 | 0.001 | 0.009 | -0.001 | 0.012 | 0.005 | -0.006 | 0.002 | 0.014 |
| | (0.019) | (0.016) | (0.016) | (0.016) | (0.016) | (0.017) | (0.017) | (0.021) | (0.016) |
| Trade Openness | 0.002*** | 0.002*** | 0.003*** | 0.003*** | 0.002*** | 0.003*** | 0.002*** | 0.002*** | 0.003*** |
| | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.001) | (0.000) |
| Growth | -0.020 | -0.026* | -0.027* | -0.034** | -0.019 | -0.029* | -0.016 | -0.022 | -0.026* |
| | (0.017) | (0.014) | (0.014) | (0.014) | (0.014) | (0.015) | (0.016) | (0.017) | (0.014) |
| Observations | 86 | 86 | 86 | 86 | 86 | 86 | 86 | 86 | 86 |
| R-squared | 0.664 | 0.728 | 0.749 | 0.769 | 0.768 | 0.716 | 0.702 | 0.672 | 0.752 |

Robust standard errors in parentheses. ***Significant at the 1% level; **Significant at the 5% level; *Significant at the 10% level.

Table 11: Private Aid, Crowding In and Crowding Out

| | (1) | (2) |
|---|---|---|
| | Desired Aid | |
| Actual Aid | -0.528* | -0.840** |
| | (0.303) | (0.309) |
| Perceived Aid | 0.089*** | 0.092*** |
| | (0.017) | (0.017) |
| Income: Medium / Medium High | 0.035 | 0.043 |
| | (0.061) | (0.046) |
| Income: High | 0.022 | 0.032 |
| | (0.101) | (0.069) |
| Age: 30-50 | -0.260** | -0.247** |
| | (0.109) | (0.106) |
| Age 51-65 | -0.105 | -0.093 |
| | (0.110) | (0.118) |
| Age 65+ | 0.195 | 0.180 |
| | (0.120) | (0.131) |
| Male | -0.071 | -0.059 |
| | (0.071) | (0.072) |
| Education: Secondary | 0.140 | 0.129 |
| | (0.090) | (0.085) |
| Education: Higher Level | 0.398** | 0.417*** |
| | (0.147) | (0.138) |
| Employment: Unemployed | -0.027 | -0.153 |
| | (0.157) | (0.105) |
| Employment: Not Working | 0.013 | 0.056 |
| | (0.101) | (0.100) |
| Employment: Retired | -0.185** | -0.171** |
| | (0.086) | (0.079) |
| Religion: Roman Catholic | 0.226* | 0.102 |
| | (0.113) | (0.118) |
| Religion: Russian / Eastern Orth. | 0.125 | -0.152 |
| | (0.214) | (0.272) |
| Religion: Protestant | 0.333* | 0.273* |
| | (0.163) | (0.137) |
| Religion: Other Christian | 0.529** | 0.520** |
| | (0.247) | (0.201) |
| Religion: Hindu | -0.415* | -0.562** |
| | (0.213) | (0.208) |
| Religion: Muslim | 1.295** | 1.566** |
| | (0.484) | (0.653) |
| Religion: Jewish | 0.546 | 0.510 |
| | (0.863) | (0.829) |
| Religion: Buddhist | -0.419 | 0.117 |
| | (0.327) | (0.181) |

Table 11: Private Aid, Crowding In and Crowding Out

| | (1) | (2) |
|---|---|---|
| | Desired Aid | |
| Religion: Other | 0.229 | 0.083 |
| | (0.221) | (0.220) |
| Ideology: Left | 0.094 | 0.062 |
| | (0.109) | (0.093) |
| Ideology: Centre | -0.117 | -0.078 |
| | (0.103) | (0.106) |
| Ideology: Right | -0.046 | -0.044 |
| | (0.124) | (0.116) |
| Ideology: Very Right | -0.115 | -0.087 |
| | (0.176) | (0.171) |
| Log GDP | 0.233 | -0.055 |
| | (0.285) | (0.319) |
| Log Population | 0.025 | -0.069 |
| | (0.060) | (0.106) |
| Log Size | -0.002 | 0.017 |
| | (0.089) | (0.070) |
| Trade Openness | 0.003 | 0.003 |
| | (0.003) | (0.002) |
| Growth | -0.166 | -0.103 |
| | (0.107) | (0.161) |
| Mean:Median Income | -0.230 | -1.739 |
| | (1.814) | (2.167) |
| Democracy: Voice and Accountability | | 1.566* |
| | | (0.799) |
| Democracy: Stability | | -1.202*** |
| | | (0.369) |
| Policy: Government Effectiveness | | 0.283 |
| | | (0.534) |
| Policy: Regulatory Quality | | 0.697 |
| | | (0.584) |
| Institutions: Rule of Law | | -1.122* |
| | | (0.607) |
| Institutions: Corruption | | 0.455 |
| | | (0.518) |
| Observations | 8,492 | 8,492 |
| R-squared | 0.055 | 0.066 |

Standard errors clustered at the country level in parentheses. Omitted categories are Income: Low / Medium Low; Age $< 30$; Education: No Education / Only Basic Education; Employment: Working Full/Part Time; Religion: None; Ideology: Very Left Wing. ***Significant at the 1% level; **Significant at the 5% level; *Significant at the 10% level.

Table 12: Private Aid and Crowding Out: Instrumental Variable 2SLS Estimation

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| | | | Private Aid | | | |
| Actual Aid | -0.845** | -0.845*** | -1.220** | -1.220*** | -1.146** | -1.146*** |
| | (0.340) | (0.221) | (0.503) | (0.260) | (0.552) | (0.295) |
| Perceived Aid | 0.091*** | 0.091*** | 0.091*** | 0.091*** | 0.091*** | 0.091*** |
| | (0.016) | (0.013) | (0.016) | (0.013) | (0.016) | (0.013) |
| Income: Medium / Medium High | 0.042 | 0.042 | 0.044 | 0.044 | 0.043 | 0.043 |
| | (0.045) | (0.064) | (0.045) | (0.064) | (0.045) | (0.064) |
| Income: High | 0.032 | 0.032 | 0.026 | 0.026 | 0.029 | 0.029 |
| | (0.070) | (0.081) | (0.071) | (0.081) | (0.068) | (0.080) |
| Education: Secondary | 0.130 | 0.130 | 0.124 | 0.124 | 0.127 | 0.127 |
| | (0.082) | (0.082) | (0.082) | (0.082) | (0.082) | (0.082) |
| Education: Higher Level | 0.420*** | 0.420*** | 0.409*** | 0.409*** | 0.413*** | 0.413*** |
| | (0.133) | (0.093) | (0.132) | (0.093) | (0.136) | (0.094) |
| Individual Controls | Yes | Yes | Yes | Yes | Yes | Yes |
| Country Controls | Yes | Yes | Yes | Yes | Yes | Yes |
| Governance Controls | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 8,492 | 8,492 | 8,492 | 8,492 | 8,492 | 8,492 |
| R-squared | 0.065 | 0.065 | 0.065 | 0.065 | 0.066 | 0.066 |
| First stage coefficients and statistics | | | | | | |
| Lobby PC | -0.197*** | -0.197*** | -0.197*** | -0.197*** | -0.197*** | -0.197*** |
| | (0.036) | (0.002) | (0.036) | (0.002) | (0.036) | (0.002) |
| Log Population | 0.065 | 0.065*** | 0.065 | 0.065*** | | |
| | (0.071) | (0.004) | (0.072) | (0.004) | | |
| Trade | 0.004*** | 0.004*** | | | | |
| | (0.000) | (0.000) | | | | |
| F-test of instruments | 38.69 | 7183.93 | 15.35 | 5463.19 | 29.39 | 9240.29 |
| | (0) | (0) | (0) | (0) | (0) | (0) |
| Overidentification test for instruments | | | | | | |
| Hansen J statistic | | 6.740 | | 0.259 | | |
| (p-value) | | (0.034) | | (0.611) | | |
| Clustered s.e. | No | Yes | No | Yes | No | Yes |

Robust standard errors clustered at country level in parentheses, unless stated otherwise. ***Significant at the 1% level; **Significant at the 5% level; *Significant at the 10% level.

Table 13: Indirect Crowding Out

| Estimator | Coefficient | Adjust: measurement | Adjust: measurement and fundraising |
|---|---|---|---|
| | $\psi$ | $\psi * 0.599$ | $(\psi * 0.599)(1 - 0.175)$ |
| OLS | -0.84 | -0.503 | -0.301 |
| IV $2SLS_1$ | -1.146 | -0.686 | -0.566 |
| IV $2SLS_2$ | -1.22 | -0.731 | -0.603 |

Appendix Table A1: Lobby variables

| | | | |
|---|---|---|---|
| Lobby 1: Financial Dishonesty | Public trust in the financial honesty of politicians is: | | |
| | Very high | 1 2 3 4 5 6 7 | Very low |
| Lobby 2: Bias | When deciding on policies and contracts, government officials: | | |
| | Are neutral among firms and individuals | 1 2 3 4 5 6 7 | Usually favour well-connected firms and individuals |
| Lobby 3: Illegal Donations | How common are illegal donations to political parties in your country? | | |
| | Never occur | 1 2 3 4 5 6 7 | Common |
| Lobby 4: Effect of Contributions | To what extent do legal contributions to political parties have a direct influence on specific public policy outcomes? | | |
| | Little direct influence on policy | 1 2 3 4 5 6 7 | Very close link between donations and policy |
| Lobby 5: Budget Corruption | In your country, diversion of public funds to companies, individuals or groups due to corruption | | |
| | Never occurs | 1 2 3 4 5 6 7 | Is common |
| Lobby 6: Bribery | In your industry, how commonly would you estimate that firms make undocumented extra payments or bribes connected with the following: Influencing of laws and policies, regulations or decrees to favour selected business interests | | |
| | Never occur | 1 2 3 4 5 6 7 | Common |
| Lobby 7: Private Influence | How much influence do you think the individuals or firms with close personal ties to political leaders actually had on recently enacted national laws and regulations that have a substantial impact on your business? | | |
| | No influence at all | 1 2 3 4 5 6 7 | Enormous influence |

Source: Executive Opinion Survey (EOS), Global Competitiveness Report 2004-2005 (World Economic Forum).

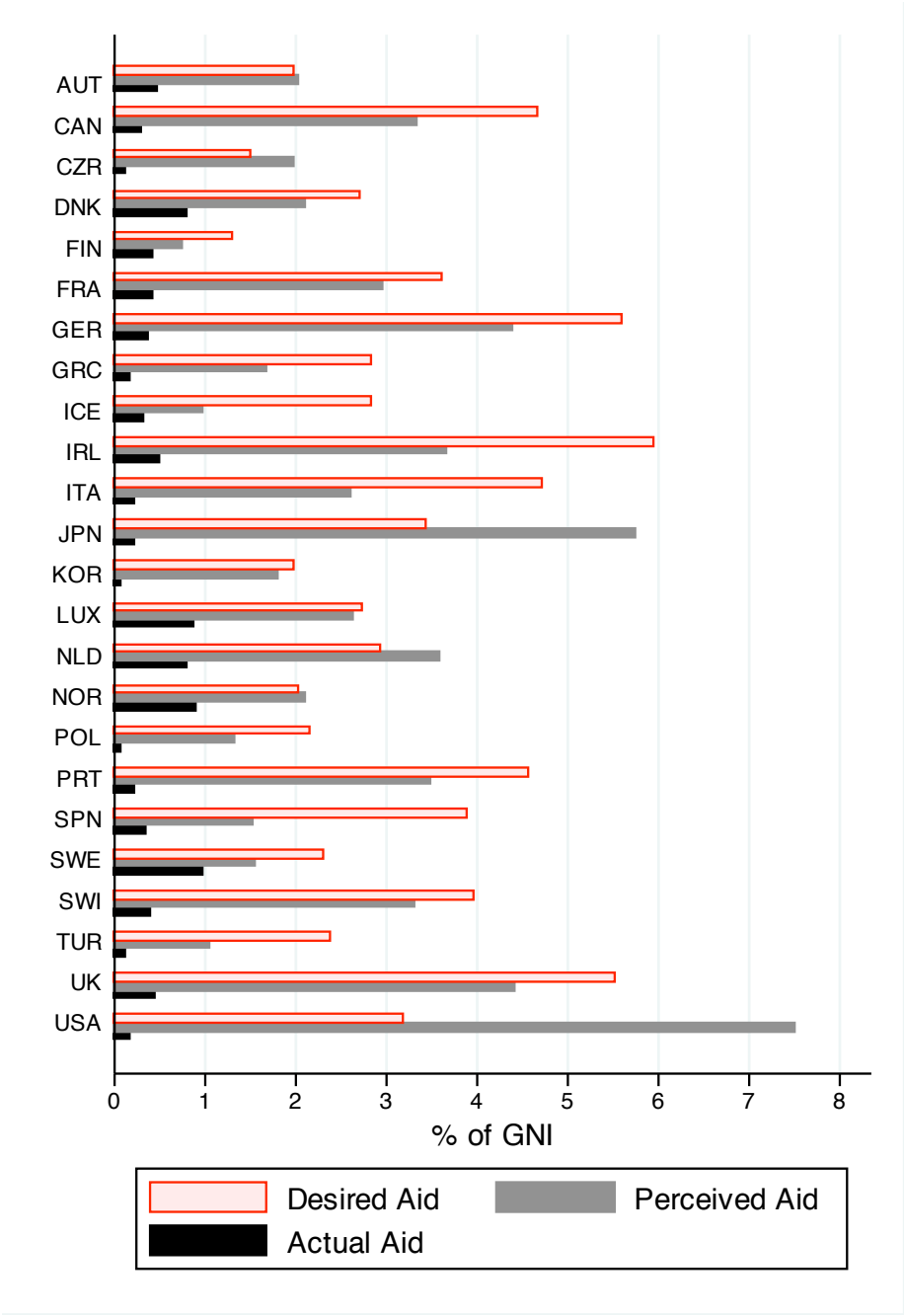


Figure 1: Sample mean of aid variables by country

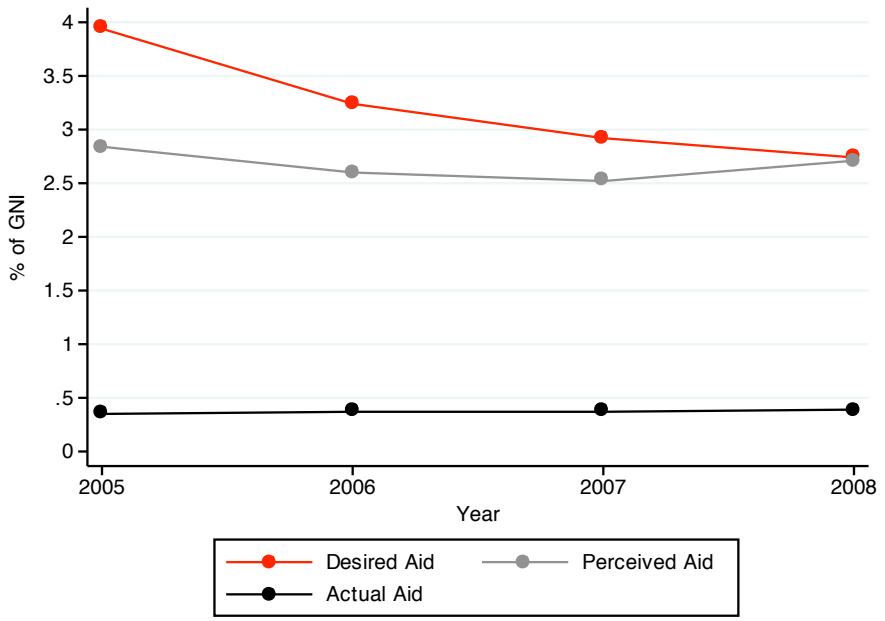


Figure 2: Sample mean of aid variables by year

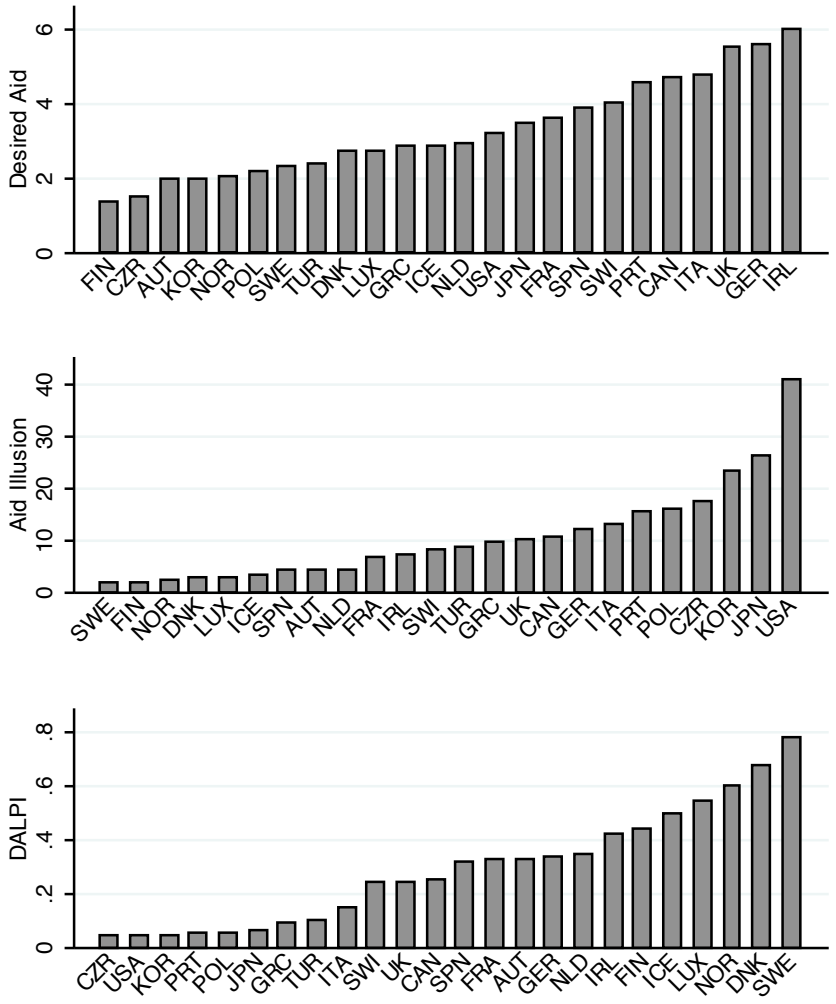


Figure 3: Desired Aid, Aid Illusion and DALPI by country

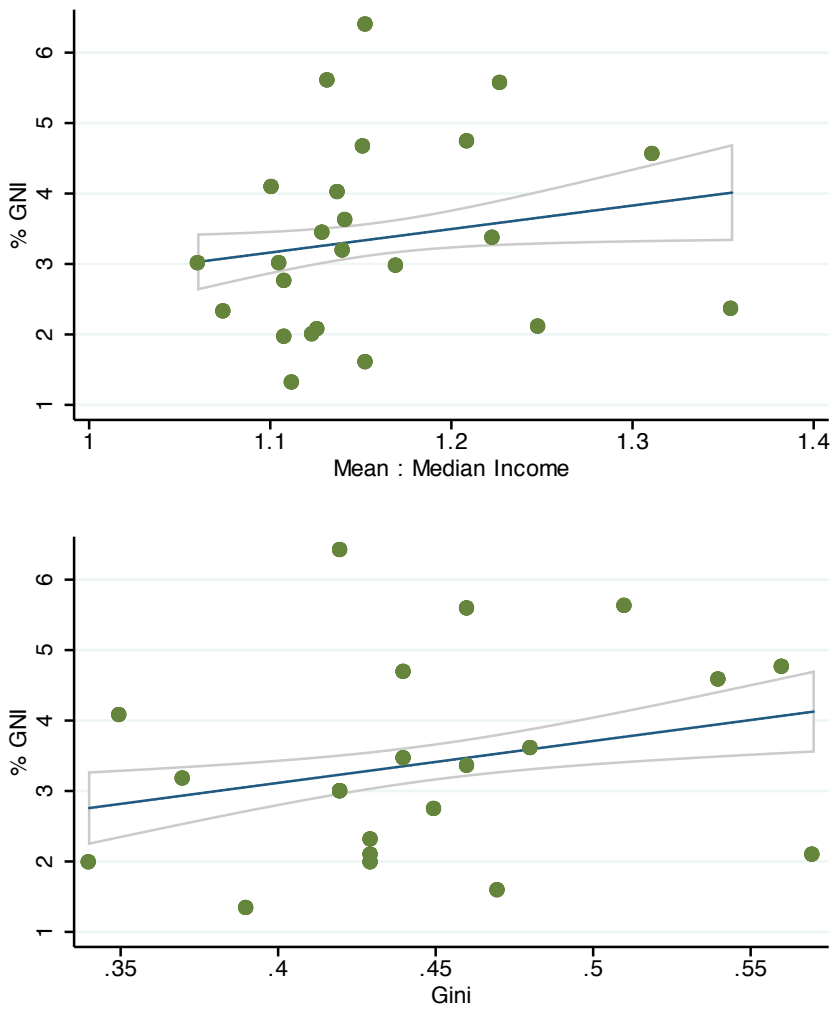


Figure 4: Inequality and Desired Aid (country means), linear fit and 90% confidence intervals

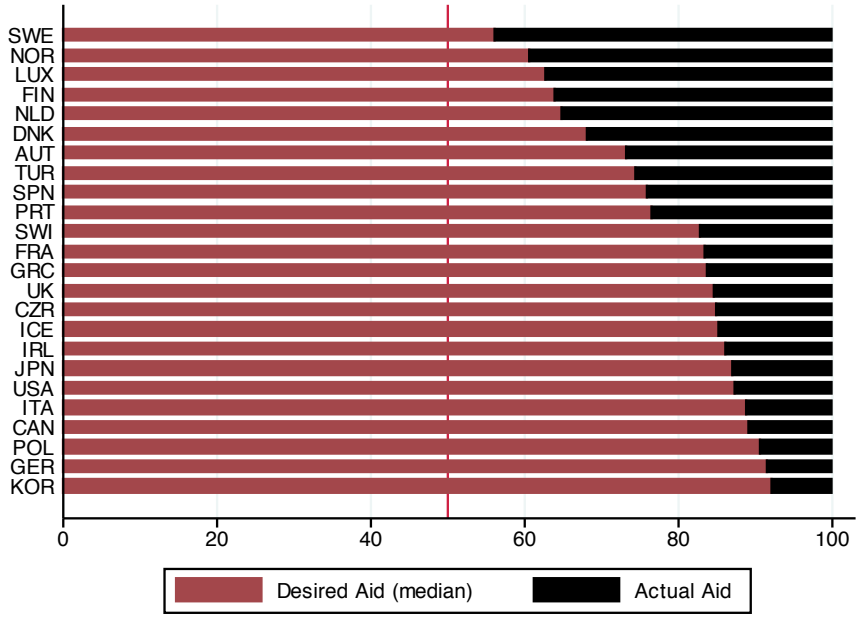


Figure 5: Democratic Aid Deficit

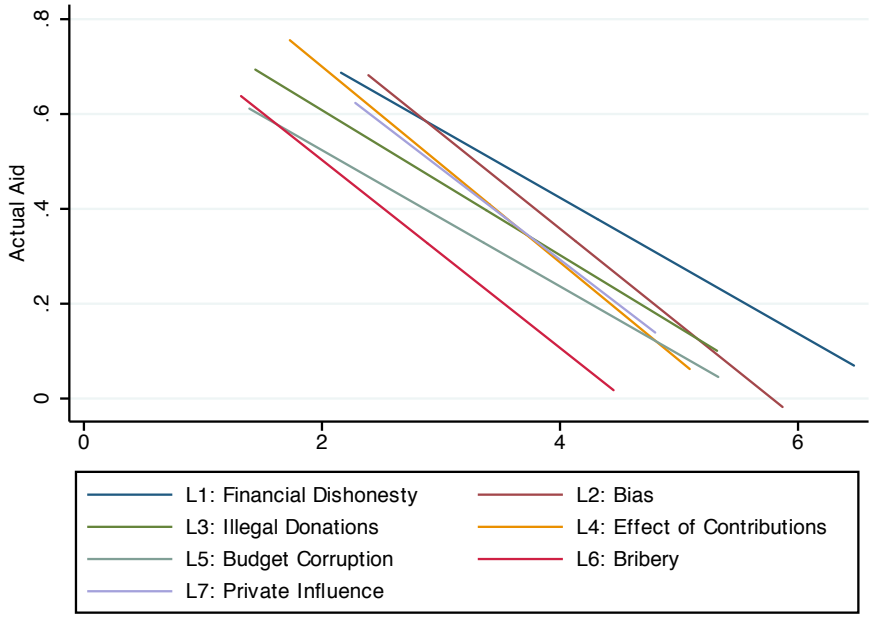


Figure 6: Lobbying and Actual Aid

Figure 7: Actual Aid and Lobby score by country with median split

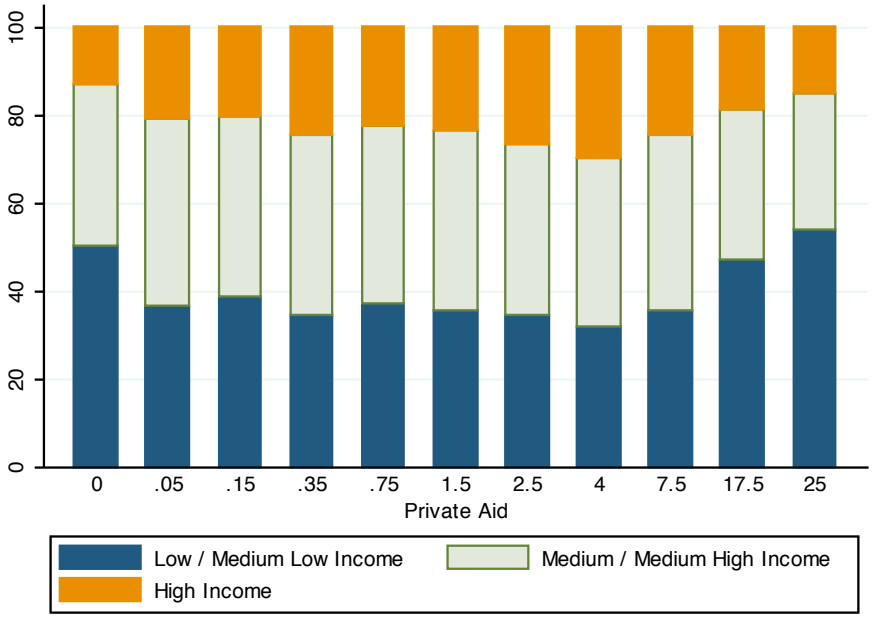


Figure 8: Share of Income groups by Private Aid

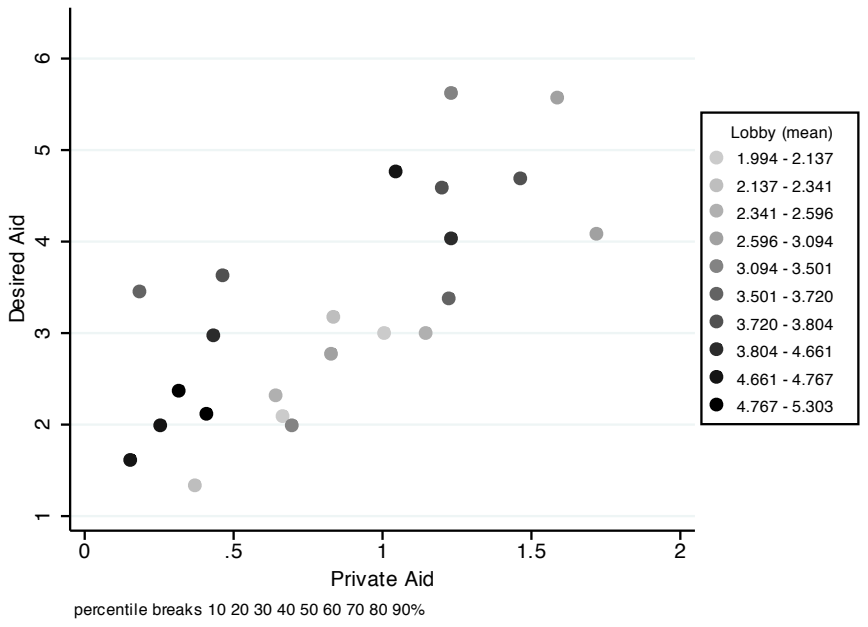


Figure 9: Private Aid and Desired Aid by Lobby scores