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### WD1308R1 - 2nd Revision

### Can poor countries lobby for more US bilateral aid?

#### Abstract

This article explores if countries can lobby the US government for the allocation of US bilateral foreign aid. We consider an informational lobby model where lobbying have two effects. First, a direct effect by informing US policymakers about their countries' needs. Second, an indirect effect on policymakers by informing them about common interests in economic or geopolitical terms. The lobbyist thus influences the decisions about the allocation of aid resources. We estimate the effect of the recipient country's lobbying agents in obtaining foreign aid. The econometric results show that lobbying positively affects the amount of bilateral aid received.

JEL Classification: F50, O19.

Keywords: Foreign Aid; Lobbying; Interest groups.

# **1** INTRODUCTION

Bilateral and multilateral aid is increasingly selective and allocated by donors on the basis of objective criteria. Three-fourths of aid agencies, including Denmark, Norway, Sweden, the United Kingdom, Ireland, and the Netherlands, have a positive relationship between their aid allocations and a measure of sound policies and institutions, after controlling for per capita GDP and population (Dollar and Levin, 2006). The US has established the Millennium Challenge in 2004 where aid is related to governance indicators. However, constructing a governance indicator is a futile task and certainly a subjective and political one. In fact, the US Congress have significant discretionary power to decide which country "deserves" US taxpayer money in the form of aid. This study explores if recipient countries' lobbying activities affects the amount of US bilateral foreign aid.

Even though many other countries engage in substantial bilateral aid, we focus on the US because this country systematically records data on lobbying activities by foreign agents through the Foreign Agent Registration Act of 1938 (FARA), and this data can be used to study the effect of lobbying on attracting foreign aid. Nevertheless, the results in this paper are also useful to understand other bilateral aid relations. In the economics literature, there are some studies on the effect of foreign lobbying on trade using data from FARA (Gawande, Krishna, and Robbins, 2006; Kee, Olarreaga and Silva, 2007; Gawande, Maloney and Montes-Rojas, 2009). These studies share the common feature that foreign lobbying is used for trade related purposes. Our study extends this literature beyond trade. The econometric results in this paper show that lobbying affects the amount of aid received, but the reverse effect (i.e. whether aid actually increases lobbying) is not statistically significant. Our results are robust to the inclusion of a rich set of controls, such as other sources of aid, bilateral trade and corruption and institutional development in the recipient country.

The amount of literature analyzing the effect of foreign aid on economic growth and the allocation of foreign aid between donor and recipient countries is staggering. References to the aid allocation literature can be found in the survey by McGilivray (2003), the book by Neumeyer (2003) and the data rich analysis by Berthelemy and Tichit (2004). The following are some salient studies that are also related to ours. Alesina and Dollar (2000) find evidence that the direction of foreign aid is dictated by political and strategic considerations, rather than by the economic needs or performance of the recipients. Alesina and Weder (2002) analyzes whether corrupt countries receive more aid. Chong, Gradstein and Calderon (2001) analyze the effect of foreign aid on inequaity and poverty. Goldsmith (2001) studies if foreign aid leads to state failure in Africa. Trumbull and Wall (1994) and Claessens, Cassimon and Van Campenhout (2009) empirically study the allocation of aid among recipient countries. Another branch of the literature, which is relevant for the study, is the degree of "US policy influence" in aid allocations. Rigorous empirical analysis of IMF's allocation policy, using alignment with the US in UN-assembly voting, started with Thacker (1999) and Barro and Lee (2005), while Andersen et al. (2006) shows that the UN-voting behavior also has a bearing on World Bank allocations. The reverse, i.e. the US use of aid to buy votes, is analyzed by Dreher et al. (2008).

The closest study to ours is Lahiri and Raimondos-Møller (2000), who argue that preferences of ethnic groups *within* the donor country influence the allocation of foreign aid. In their model lobbyists make political contributions to the political party in power, and the amount that they contribute is contingent upon the policy the government adopts. Contrary to Lahiri and Raimondos-Møller (2000) study, our study is the first to estimate the influence of the recipient country's lobbying agents in obtaining foreign aid, where the foreign agent could be both the government and private groups.

This paper is organized as follows. Section 2 discusses foreign lobbying in the US. Section 3 presents the data and its sources. Section 4 presents the econometric results. The last section concludes.

## 2 FOREIGN LOBBYING IN THE US

The Foreign Agent Registration Act of 1938 (FARA) provides a legal channel for foreign governments and businesses to lobby the US government and to influence the US public opinion. The main restriction is that such foreign "principals" *must* hire an "agent" based in the US. These agents may contact the US government or engage in a public relations capacity on behalf of the foreign principal. For simplicity, we assume that the principal and the agent share a common interest and refer to them as a single individual the "lobbyist". Moreover, we consider the US Congress as the only US government agency of interest for our purposes of the allocation of bilateral aid. Through this FARA channel, lobbying by foreign governments and foreign businesses has become a large and thriving industry. Foreign lobbying is not necessarily the purview of rich countries, although it is positively correlated with the country's GDP per capita. A variety of rich and poor countries participate in lobbying activities through FARA channels. Moreover, it encompasses a wide range of activities, including lobbying those connected with the US government, lobbying the media, and incurring expenditures on promoting trade through advertising (Husted, 1991).

The model of Austen-Smith and Wright (1992, 1994) stylizes lobbying. The main premise of the model is that interest groups have private information about the consequences of a legislative decision. Suppose the interest groups are government and private agencies in countries interested in receiving foreign aid. The "policy" they care about is the allocation of US aid where the US policymakers are relatively uninformed. Austen-Smith and Wright predict that interest groups choose to lobby legislators who are "friends" or whose prior position on issues is closer to that of the lobbyists. This implies that foreign principals use FARA agents to push US policymakers' priors closer to their own.

The effect of interest groups and lobbyists on government policy has been studied in many areas. For instance, in a recent application, Facchini, Mayda and Mishra (2011) find robust evidence that both pro- and anti-immigration interest groups play a statistically significant and economically relevant role in shaping migration across sectors in the US. Using the FARA data, Gawande, Krishna, and Robbins (2006) study the impact of foreign lobbying on US protectionism and in a related vein, Kee, Olarreaga and Silva (2007) analyze whether South American lobbies succeeded in lowering US tariff preferences against those countries. In this case, foreign lobbying "buys" reduction in a partner's protectionism. The rollback of US protection confers large rents to foreign exporters, and those exporters (via the help of FARA agents) initiate the lobbying efforts (see also the model in Gawande and Bandhopadhyay, 2000). Gawande, Maloney and Montes-Rojas (2009) view foreign lobbying as informational lobbying with the intention of effectively achieving the goal of trade promotion in the context of Caribbean tourism. In this case, lobbyists compete on behalf of their clients for a large but finite pool of tourists.

The informational lobbying considered here follows the FARA studies where the US Congress decisions are affected by the common interests between the US and the foreign country. Lobbying may not have the direct purpose of attracting aid and it is in fact done by a variety of agents (eg. government agency, industry association, large private firms, ONGs) for a variety of reasons. However, on aggregate, these unrelated lobbying activities inform US policymakers about their countries' needs (e.g. earthquake, severe drought, civil war, spread of infectious diseases, production of narcotics, etc.) and about common interests in economic (trade, investment) or geopolitical terms. This new set of information from the lobbyists influences the decisions about the allocation of aid resources. Thus, the informational lobbying model pursued here predicts that, *ceteris paribus*, the US Congress prefers to allocate more bilateral aid to the countries from which citizens or associations lobbied them more. Contrary to Lahiri and Raimondos-Møller (2000) study, where ethnic groups within the donor country influence the allocation of foreign aid, we estimate the influence of the recipient country's agents in obtaining foreign aid.

Since many countries simultaneously compete for aid, lobbying may potentially have two effects: first, it may increase the amount of resources available for foreign aid for all countries; and second, it may compete with other countries for a larger portion of a given amount of aid. This paper interest lies in the net effect of lobbying on attracting aid, which is the result of a potentially non-cooperative game among recipients. Of theoretical relevance is the question of whether lobbying competition among them may be used strategically by policymakers being lobbied to capture rents without benefiting any lobbyist. The ability of the policymaker being lobbied to take advantage of lobbying competition and corner the rents is well established in the case of quid pro quo lobbying (e.g. Grossman and Helpman, 1994), but it is not clear if it holds in the case of informational lobbying (Gawande et al., 2009). In the Grossman and Helpman (1994) model the policymaker's objective function explicitly trades off public welfare for lobbying dollars, since the policy distortion that lobbies want causes welfare loss. This sets the stage for cornering rents from lobbying competition since the policymaker can now economize on the distortions and yet maximize lobbying rents. In the informational case policymaker's objective may not contain such a

trade-off at all. The policymaker loses nothing by using the information-provision by all lobbyists to update his priors and take the optimal (welfare-maximizing or poverty-reduction) actions with respect to each of them separately.

### 3 DATA

We consider two subsamples based on the recipients' GDP per capita, one for  $GDPpc \leq US$ \$5,000 (117 countries, 1500 observations) and another for  $GDPpc \leq$  US\$10,000 (141 countries, 1812 observations). Summary statistics of the variables used in the next section appear in Table 1.

The data set used in the estimation of our empirical model was assembled using reports that FARA requires the US Attorney General to make available to Congress. The report collects information about foreign agents operating within the United States. A foreign agent, in the view of the US Department of Justice, is somebody who (a) engages in political activities or acts in a public relations capacity for a foreign principal, (b) solicits or dispenses anything of value within the United States for a foreign principal, or (c) who represents the interests of a foreign principal before any agency or official of the US government. Each entry in the FARA semi-annual reports contains (i) the name and address of the foreign agent, (ii) the name of the foreign principal (usually an industry association or a government agency), (iii) the purpose of the agency, including any US government entities contacted, and (iv) amount of money paid to the agencies for their services. The results presented in this paper use data taken from the reports that covered calendar years 1997-2009. We collect each data entry provided by the US Congress and record the money spend and the nationality of the foreign agent. Some entries are not specifically associated to a country but to a region. Examples of those are regional tourism association, such as the Caribbean Tourism Association. We opted to exclude this observations rather than imputing the countries that belong to this regions for three reasons. First, the imputation method (population or GDP or other) is arbitrary. Second, intra-regional bargaining power is unknown and may vary depending on the nature of the lobby. Third, US bilateral aid is assigned on a country-basis rather than on a regionalbasis. Our data do not include expenditures spent directly by the foreign principal on media or advertising but on their agents who, in turn, informationally lobby policymakers. While the FARA reports provide information about the money paid by foreign countries and the industry they represent, they do not provide information about how that money is used to achieve its objectives in (iii). Therefore, given the informational lobbying model we use in the last section, we aggregate all lobbying expenditures by year and country.

The data obtained from the FARA registries is summarized in the Appendix in Table A1 (only for our sample of  $GDPpc \leq US$ \$10,000, 141 countries). In general countries that lobbied the most are the largest countries (China, India, Russia, etc.) and those with the closest economic and geopolitical ties with the US (i.e. Israel, Mexico, Colombia, Saudi Arabia, together with those that want to change their image in the US such as Venezuela and Libya). Moreover, lobbying per capita is higher for countries with geopolitical ties with the US (i.e. Colombia, Saudi Arabia).

Countries that lobby do not necessarily lobby all years, and in general, different foreign agents from the same country may have entries in different years. In fact, different agents of the same nationality may lobby for different and even competing reasons. A few countries in our sample of  $GDPpc \leq US$ \$10,000 have no entries for lobbying. Another issue is a country like Tibet which has independent FARA entries, but it does not have other information used in the regression analysis, and thus it is excluded from our sample. We impute a value of 1 to make the logarithm equal to 0 in those cases. Note that the fact that lobbying entries have different purposes determine that a value of 0 does not correspond to a case of sample selection.

US Foreign Aid is taken from the US Overseas Loans and Grants, U.S. Bureau of Census International Database. See http://gbk.eads.usaidallnet.gov/data/ fast-facts.html for an overview. This database comprises several programs. Total US assistance is disaggregated into *economic* and *military* assistance. Each component, however, may not be exclusive and it seems rather arbitrary. For instance, the programs "Nonproliferation, Anti-Terrorism, Demining and Related" or "Narcotic Control" might have an effect both on military capabilities and in poverty reduction. Moreover, *military* assistance is closely related to direct expenditures on the country, such as in Afghanistan, Colombia and Iraq. Thus, we aggregate total aid and we do not pursue an analysis by type of aid. US aid is given to governmental institutions and private individuals, such as NGOs. Total US Assistance is summarized in the Appendix Table A1 for the sample of countries used in the regression results below,  $GDPpc \leq US$ \$10,000, 141 countries. As we did for lobbying we impute a value of 1 to make the logarithm equal to 0 in those cases with no aid. However, in our sample only 57 observations have a value of 0 aid, and this correspond to a few countries for some years: Bhutan, Fiji, Iran, Lybia, Montenegro and Serbia.

GDP, population, net official development assistance (ODA) and corruption index are taken from the World Development Indicators. ODA consists of disbursements of loans made on concessional terms (net of repayments of principal) and grants by official agencies of the members of the Development Assistance Committee (DAC), by multilateral institutions, and by non-DAC countries to promote economic development and welfare in countries and territories in the DAC list of ODA recipients. It includes loans with a grant element of at least 25 percent (calculated at a rate of discount of 10 percent). US trade variables are obtained from the US Department of Commerce, Bureau of the Census, Foreign Trade.

We also consider the Corruption Control, produced by the World Bank and that measures the extent to which public power is exercised for private gain, including petty and grand forms of corruption, as well as "capture" of the state by elites and private interests. It is coded from -2.5 to 2.5 with higher values corresponding with better governance outcomes. This index is selected because it comprises the larger number of countries (it has values for our sample of 141 countries) and years. It has a strong correlation with other indexes with less observations, such as Rule of Law (from the World Bank; it measures the extent to which agents have confidence in and abide by the rules of society, in particular the quality of contract enforcement, the police, and the courts, as well as the likelihood of crime and violence) and the Corruption Perceptions Index (CPI) produced by Transparency International measures the perceived level of public-sector corruption.

US trade variables (bilateral exports and imports) are obtained from the US Department of Commerce, Bureau of the Census, Foreign Trade. Finally, alignment with the US in UN-assembly voting is taken from the United Nations General Assembly Voting Data mantained by Georgetown University, Department of Government (http://dvn.iq.harvard.edu/dvn/dv/Voeten/faces/study/StudyPage.xhtml?studyId= 38311&versionNumber=1&tab=files). We compute the proportion of votes where each country coincides with the US on the General Assembly on an annual basis.

Recipient countries' needs are captured by aggregate data for all distasters, all countries on an annual basis, estimated damage costs (U\$S), from the Emergency Events Database (http://www.emdat.be/). We transform the data to real terms and computed the log value (imputing a value of 1 for the nonexistent log of 0). This variable is now defined as *Disaster*.

# 4 ECONOMETRIC RESULTS

### (a) Econometric models

Our interest lies in evaluating the link between foreign lobbying and foreign aid for the period 1997-2009. Consider a panel data model of the form

$$ln(Aid_{i,t}) = \beta ln(Lobby_{i,t-1}) + \gamma X_{i,t} + \mu_i + \delta_t + \epsilon_{i,t}, \tag{1}$$

where *i* denotes country, *t* year, *Aid* foreign aid, *Lobby* represents the FARA lobbying variable, X a set of additional control variables, and  $(\mu, \delta, \epsilon)$  an error components model with country- and time-specific effects. Country fixed-effects are intended to capture country's characteristics that cannot be controlled for using available covariates. Year fixed-effects capture the business cycle in the US and global events (such as 9/11), which affect the availability of resources and the US government preferences for their allocation. See Trumbull and Wall (1994), Hansen and Tarp (2001) and Claessens, Cassimon and Van Campenhout (2009) for a discussion about the importance of using a fixed-effects specification. All covariates are lagged one period to account for the fact that aid allocation decisions in the US Congress are based on past information and that they are expected to have a certain delay. The preferred specification uses one lag. Alternative specifications where we include two (or more) lags of all the variables instead of one, that is t-1 and t-2, reported similar results (not reported but available from the Author upon request). For all variables, the coefficient corresponding to t-2 is not significant while that of t-1is similar to the reduced specification with one lag.

Nominal variables are deflated to constant 2000 US dollars using the US GDP deflator and are used in logarithm. The proposed specification uses the variables in logs and real terms but with no other standardization. Alternative specifications could use the variables in per capita or in GDP terms. In the baseline model we include the lagged value of the logarithm of GDP (deflated to constant 2000 US dollars),  $ln(GDP_{i,t-1})$ , and the logarithm of population,  $ln(POP_{i,t-1})$ . As a result  $\beta$  measures the elasticity of the effect on aid of increasing lobbying, conditional on a given country size, given by the joint consideration of population and GDP. Comparable results are obtained if we consider the variables in per capita or GDP terms (not reported but available from the Author upon request).

Although model (1) would determine whether lobbying affects aid, a dynamic specification is more appropriate for this particular sample. First, aid programs are likely to show significant persistence. Aid programs usually spread over several years once they start (in particular for multiannual programs), and similar to investment models, they may include fixed costs (setting up an agency to administer the funds, contacting local agents or governments, etc.) before the program starts working. In our short panel 1997-2009 where yearly data is used this persistence is significant. Second, a recent application of the effect of FARA lobbying in a related context by Gawande et al. (2009) proposes to use a dynamic specification to account for the fact that lobbying has both a short-run and long-run effect. Therefore, the proposed dynamic model is

$$ln(Aid_{i,t}) = \alpha ln(Aid_{i,t-1}) + \beta ln(Lobby_{i,t-1}) + \gamma X_{i,t} + \mu_i + \delta_t + \epsilon_{i,t}.$$
 (2)

The long-run effect of *Lobby* on *Aid* is  $\frac{\beta}{1-\alpha}$ .

In dynamic panel data models with unobserved effects, the treatment of the initial observations is an important theoretical and practical problem. As is well known, the usual within estimator is inconsistent, and can be badly biased. We thus follow the Anderson and Hsiao (1981) and Arellano and Bond (1991) strategy by taking first order differences and using lagged values of the dependent variable and other covariates in levels to instrument the autoregressive dependent variable. These instruments are also valid for other potential endogenous variables. Thus we also use instruments for the lobbying variable while we consider that all other covariates (population, GDP, year dummies) are exogenous. In particular, we implement the Blundell and Bond (1998) system GMM estimator that incorporates information from the levels regression instrumented with lagged differences and has better bias properties. The validity of this econometric method depends on the suitability of the instruments. We report Hansen tests for over identification restrictions and Arellano and Bond (1991) test AR(2) for second order serial correlation of the residuals. In all cases, the tests cannot reject the null hypothesis of validity of the Blundell and Bond (1998) instrumental variables strategy.

The System GMM estimator may suffer however from instrument proliferation when all possible instruments are used in the GMM. This leads to the non-rejection of the overidentification tests (Hansen test is weak as the number of instrument increases, see Bowsher, 2002). A proposed solution in the literature is to reduce the number of instruments by reducing the number of lags, or by collapsing some of the instruments (see Roodman, 2009). We follow this strategy and report Roodman (2009, pp.148-149) collapsed instruments System GMM estimator (this is implemented by the option collapse in STATA), and we produce a separate table where different System GMM estimators are compared in order to check the robustness of the results. In particular, the System GMM estimator where only the first available lag is used (i.e. for the lag difference of the dependent and endogenous variables, the lag 2, i.e. t - 2, is used as an instrument) and not additional instruments are constructed, and the full Blundell and Bond (1998) estimator with the maximum number of instruments. In each case I report the number of instruments constructed by the GMM estimator.

### (b) Results

Table 2 studies the effect of FARA lobbying on *Total US Assistance* for  $GDPpc \leq US$ \$5,000 and  $GDPpc \leq US$ \$10,000 for the simplest baseline model. For both subsamples, the FE static estimation in columns (1) and (4) show a positive and statistically significant effect of FARA. These estimates suggest that increasing lobbying activities by 1% increases aid on average by 0.03%. The dynamic panel data specification shows that aid disbursements are persistent with an autoregressive coefficient of 0.463 and 0.509 for for  $GDPpc \leq US$ \$5,000 and  $GDPpc \leq US$ \$10,000, respectively. In these cases columns (2) and (5) show that the short run effect of lobbying reduces to about 0.02 in both specifications (with a significane level of about 10%) but the long-run effect corresponds to 0.036 (=0.0307/(1-0.463)) and 0.044 (=0.0217/(10.5090) for  $GDPpc \leq US$ \$5,000 and  $GDPpc \leq US$ \$10,000, respectively. However, note that this estimates are potentially biased and therefore, as discussed above, the preferred specification is the System GMM estimator of collapsed instruments of Roodman (2009), columns (3) and (6). This estimator produces larger short run effects of 0.0408 and 0.0439 and long run effects of 0.0689 (=0.0408/(1-0.408)) and 0.754 (=0.0439/(1-0.417)) for  $GDPpc \leq US$ \$5,000 and  $GDPpc \leq US$ \$10,000, respectively. Thus increasing lobbying expenditures by 1% increases aid receipts in the long run by 0.07%.  $ln(GDP_{i,t-1})$  has a negative effect on ln(Aid) which determines that poorer countries receive more aid. Moreover,  $ln(POP_{i,t-1})$  has the expected positive sign. The Arellano-Bond AR(2) and the Hansen tests show that the instrumentation strategy is valid.

In order to check the robustness of the GMM estimator we compare it with other System GMM estimators. Table 3 computes the estimates in Table 2 together with other alternative instrumentation strategies discussed above. The Roodman (2009) estimator appears in column Collapsed; the System GMM specification where only the first lag is used in the GMM instruments is denoted by the column labelled 1 lag, and the Blundell and Bond (1998) estimator with all possible instruments appears in columns Full. The Collapsed method has the lowest number of instruments generated by the GMM method, while the full Blundell and Bond (1998) System GMM estimator has the highest. In all cases the short run effect of lobbying and the coefficient of the lagged dependent variable are positive and statistically significant. The Collapsed method has the lowest number of instruments generated by the GMM strategy, the Full the highest number, and the 1 lag is in between. The Hansen tests cannot reject the validity of the generated instruments. Overall this suggests that there is an unequivocal positive effect of lobbying on aid, and the GMM strategy in Roodman (2009)-Collapsed is valid. This is our preferred estimator.

A potential problem of our estimates is endogeneity in lobbying. Although lobbying is lagged one period and it is treated as endogenous in the Blundell-Bond estimator (and thus lagged values of itself are used as instrumental variables), there may still be a potential strategic effect of lobbying that relates to future aid. Unfortunately, there are no suitable instrumental variables that work for our case. Other studies that used FARA lobbying and develop instrumental variables to control for potential endogeneity exploit inter-industry variation in lobbying activities (Gawande, Krishna and Robbins, 2006; Kee, Olarreaga and Silva, 2007; Gawande, Maloney and Montes-Rojas, 2009) or factor shares and political economy variables (Gawande and Bandhopadhyay, 2000). The former, when aggregated at the country level, is not statistically significant in the first stage, reflecting weak instruments. The latter cannot be justified for our particular case of foreign aid. Thus, in order to check for the validity of our estimates, we use a Granger-causality-type analysis, where we consider the reverse specification, that is we evaluate whether aid has a significant effect on lobbying. This method, however, tests for a weaker type of causality than IV methods.

Table 4 studies the reverse effect of Total US Assistance on FARA lobbying, that is,  $ln(Lobby_{i,t}) = \alpha ln(Lobby_{i,t-1}) + \beta ln(Aid_{i,t-1}) + \gamma X_{i,t} + \mu_i + \delta_t + \epsilon_{i,t}$ . The idea is that if lobbying activities are caused by aid, past aid should be a predictor of future lobbying activities. Foreign aid has been shown to increase government spending and to reduce revenue generation (see Remmer, 2004), and thus aid could affect lobbying spending. In this case the effect of US assistance is in general positive but not statistically significant. Therefore, we can rule out a double causation mechanism where aid incentivises recipient countries to lobby more or aid money is used for lobbying activities. The results also confirm that conditional on population size richer countries lobby more.

### (c) Robustness checks

Several robustness checks are carried out. We consider different specifications where additional covariates that has been found to be significant causes of aid in the literature are included in the model. These additional covariates thus control for potential biases arising because of omitted variables, that is variables that affect both aid and lobbying, and that may be producing the effects in Table 2. The table reports only the preferred GMM specification. The results appear in Table 5.

In our model of informational lobbying, both aid and lobbying reflect common interests between the US and the recipient country. We thus include additional controls that capture this common interest. First, Dreher et al. (2008) argue that US aid buys voting compliance in the UN General Assembly (see also Wang, 1999).

Then we include the average annual agreement of the recipient country and the US  $(agreeUSA_{i,t})$ , and include this variable in the regression analysis. Second, bilateral trade between the US and the recipient country is also a good measure of common links as this reflects commercial interest between residents in both countries. On this, Kee, Olarreaga and Silva (2007) show that lobbying is significantly related to trade. For this we include  $\frac{X_{i,t-1}+M_{i,t-1}}{GDP_{i,t-1}}$ , where X and M correspond to exports and imports, respectively, of the recipient country to and from the US. Furthermore, as suggested by an anonymous referee, lobbying activities could also be related to attracting foreign aid based on the countries' needs after natural or other significant disasters. Thus, controlling for disasters would determine whether lobbying has an effect on aid not related to the countries' needs in times of emergency. Columns (1)and (2) consider the inclusion of the three variables discussed in the last paragraph. In this case the coefficient of aid is 0.015 for  $GDPpc \leq US$ \$5,000 (not statistically significant) and 0.020 for  $GDPpc \leq US$ \$10,000 (statistically significant at the 10%) level). This is half the coefficient value estimated in Table 2. Then, lobbying is related to common interest and needs-based foreign aid (the coefficient is reduced compared to the baseline regression coefficients), but controlling for needs-based aid does not eliminate the effect of foreign aid. *agreeUSA* is positive in both cases and statistically significant in the first sub-sample only. Trade is significant in both cases, reflecting the fact that bilateral aid flows towards countries with large commercial ties with the US. The constructed variable reflecting disasters is positive in both cases, although not statistically significant.

As discussed above, lobbying-for-aid is a potential non-cooperative game. In Table 5, columns (3)-(4), we also consider an alternative specification where we add the lagged logarithm of net official development assistance (ODA),  $ln(ODA_{i,t-1})$ , in order to control for assistance from other sources other than bilateral US assistance. Moreover we include the amount of lobbying simulataneously made by other countries (ln(OthersLobby)), constructed in the same way as the variable ln(Lobby)). Both variables are included to control for general equilibrium effects. The first controls for potential substitution and complementarity with aid from other sources (i.e. multilateral institutions, Europe, Japan, etc.). The second accounts for the fact that increasing lobbying may induce other countries to increase it as well, with a potential zero effect if the total aid available does not change and only the allocation among recipient countries is modified. Thus, including the latter variable would provide the effect of lobbying on aid conditional on the amount of lobbying made by other countries. The inclusion of these variables does not significantly affect the coefficient estimate of lobbying, which slightly reduces to 0.035 and 0.040, for each sub-sample respectively. In these regressions both ln(ODA) and ln(OthersLobby)are not statistically significant.

Finally, we use Corruption Control index as a proxy for "good governance" of the potential recipient country. As argued in the Introduction, the US established in 2004 new rules to allocate aid on the basis of governance indicators of the recipient country. Thus, if the allocation of aid follows pre-established rules, and in particular, if it only depends on the governance indicators of the recipient country, then it cannot be influenced by foreign lobbying. We use this index as a proxy for the information available to the US Congress related to the country governance. (Similar results are obtained by other governance indicators.) The results appear in Table 5, columns (5)-(6). The econometric results still show that foreign lobbying has a positive and significant effect on bilateral US aid. Note that the effect of the index is positive (it is coded from -2.5 to 2.5 with higher values corresponding with better governance outcomes) but it is not statistically significant in both GMM specifications. These results are in line with Alesina and Weder (2002) as there is no evidence that less (or more) corrupt governments receive more foreign aid. Those authors stress that "the United States appears to favor democracies, but seems to pay no attention to quality of government of receiving countries" (p.1136). (See Wright, 2009, for a theoretical discussion.)

# 5 DISCUSSION AND SUGGESTIONS FOR FUTURE RESEARCH

There are many gaps in the economics and political science literature regarding the pattern of foreign aid followed by donors. This paper contributes to this literature by showing that foreign lobbying in the US has a statistically significant effect for attracting US foreign bilateral aid, and thus the allocation of aid may not follow a purely objective criterion. Recipient countries have a channel to influence the allocation of resources. This channel is different from Lahiri and Raimondos-Møller (2000) study, where ethnic groups *within* the donor country influence the allocation of foreign aid. This paper extends the effect extends the effect of foreign lobbying beyond policy of trade (Gawande, Krishna, and Robbins, 2006; Kee, Olarreaga and Silva, 2007; Gawande, Maloney and Montes-Rojas, 2009), and thus shows that foreign lobbying can be an effective tool to influence other international policy variables.

Given that aid could be a significant source of funds with respect to the recipient's country GDP, this determines that the lobbying channel cannot be ignored. Increasing lobbying by 1% may increase US assistance up to 0.075% in the long run. The effect of lobbying remains after controlling for a rich set of controls, including common interests, recipient country needs for aid, aid from other donors and governance indicators.

Of theoretical relevance is the question of whether the more countries that participate in lobbying, competition among them may be used strategically by policymakers being lobbied to capture rents without benefiting any lobby. While that outcome is likely with quid pro quo lobbying (Grossman and Helpman, 1994), it remains to be demonstrated within the informational lobbying framework used here. Partial results in this paper shows that the effect of lobbying remains the same after controlling by other's countries lobbying amount. Moreover, it shows that the effect of lobbying is robust to the amount of foreign aid made by other donors. Finally, it shows that foreign aid does not cause recipient countries to lobby more.

Further research is needed to evaluate the effect of lobbying on a program by program basis. As argued in this paper, US Foreign Assistance classification of aid programs into economic and military assistance is difficult to justify and it seems arbitrary. For instance, focusing on military programs could contribute to understanding of the effect of US assistance on military conflicts and related effects on their neighbors. Moreover, additional research is needed to evaluate if economic and military assistance are substitutes or complements.

This study is further motivated to shed light on the large literature on the effect of foreign aid on economic growth. Burnside and Dollar (2000, 2004) study shows that foreign aid positively affects growth in developing countries with good fiscal, monetary and trade policies, although critics about the robustness of their results are numerous (see Easterly, 2003, Easterly, Levine and Roodman, 2004, Roodman, 2007, Rajan and Subramanian, 2011). In fact, aid has also been argued to be detrimental to growth (see for instance the examples in Easterly, 2006). However, the endogeneity of aid is usually the main concern in all the empirical settings. Lobbying is related to foreign aid, but it is arguably independent of the recipient country economic growth as long as lobbying expenditures do not posse too much strain on the country's finances. Thus, lobbying can be used as an instrumental variable to study the effect of foreign aid on growth. Unfortunately, our data span is not long enough to produce meaningful instrumental variables estimates, but it can be used in the future for this purpose.

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		Table 1	l: Summary	v statisti	cs
Variable	Obs	Mean	Std. Dev.	Min	Max
$ln(Aid)^{(a)}$	1812	16.58	3.68	0	23.45
$ln(Lobby)^{(a)}$	1812	7.14	6.52	0	19.48
ln(GDP)	1812	22.62	2.08	17.85	28.71
ln(POP)	1812	15.59	2.05	9.80	21.01
a gree USA	1635	0.154	0.110	0	0.889
(X+M)/GDP	1803	0.125	.169	0	1.493
$ln(OthersLobby)^{(a)}$	1812	20.02	0.1881	19.64	20.40
$Disaster^{(a)}$	1812	2.98	5.03	0	18.74
ln(ODA)	1795	18.42	3.85	0	23.94
Corrup	1745	-0.438	0.613	-1.965	1.507

Notes: The statistics correspond to the sample of  $GDPpc \leq 10,000$ . (a) A value of 0 is imputed for Aid = 0 and Lobby = 0. The same procedure is applied for the construction of *Disaster*.

Table 2: E	ffect of Lo	obbying on	Total US A	ssistance		
	GD	$Ppc \le US$	5,000	GDI	$Ppc \le US$	10,000
	(1)	(2)	(3)	(4)	(5)	(6)
Model	$\mathbf{FE}$	$\mathbf{FE}$	Sys.GMM	$\mathbf{FE}$	$\mathbf{FE}$	Sys.GMM
$ln(Aid_{i,t-1})$		0.463***	0.408***		0.509***	0.417***
		(0.0643)	(0.133)		(0.0662)	(0.130)
$ln(Lobby_{i,t-1})$	$0.0307^{*}$	0.0194	$0.0408^{*}$	$0.0375^{*}$	$0.0217^{*}$	0.0439**
	(0.0164)	(0.0121)	(0.0243)	(0.0211)	(0.0126)	(0.0211)
$ln(GDP_{i,t-1})$	-1.228	-0.395	-0.263***	-0.888	-0.153	-0.348***
	(0.834)	(0.497)	(0.0976)	(0.619)	(0.408)	(0.0912)
$ln(Pop_{i,t-1})$	-0.233	0.130	$0.695^{***}$	2.453	1.477	$0.763^{***}$
	(2.766)	(1.757)	(0.160)	(2.354)	(1.457)	(0.174)
Observations	1,500	1,500	1,500	1,812	1,812	1,812
R-squared	0.092	0.294		0.074	0.320	
Number of countries	117	117	117	141	141	141
Arellano-Bond $AR(2)$ stat			-1.099			-0.755
AR(2) p-value			0.272			0.450
Hansen stat			30.05			31.18
Hansen p-value			0.148			0.118

Table 2: Effect of Lobbying on Total US Assistance

Notes: Robust standard errors in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Dependent variable  $ln(Aid_{i,t})$ . All specifications include year dummies. Sys.GMM is the Roodman (2009) collapsed instruments System GMM estimator.

·	GDI	$Ppc \le US$ \$ 5	5,000	GDF	$Ppc \le US\$ \ 1$	0,000
	(1)	(2)	(3)	(4)	(5)	(6)
Model	Collapsed	1 lag	Full	Collapsed	1 lag	Full
$ln(Aid_{i,t-1})$	0.408***	0.464***	0.216**	0.417***	0.437***	0.220**
	(0.133)	(0.103)	(0.104)	(0.130)	(0.0952)	(0.0930)
$ln(Lobby_{i,t-1})$	$0.0408^{*}$	$0.0614^{**}$	$0.0646^{**}$	$0.0439^{**}$	$0.0666^{***}$	$0.0608^{**}$
	(0.0243)	(0.0240)	(0.0279)	(0.0211)	(0.0214)	(0.0263)
$ln(GDP_{i,t-1})$	-0.263***	-0.288***	-0.377***	-0.348***	-0.377***	-0.466***
	(0.0976)	(0.103)	(0.140)	(0.0912)	(0.0939)	(0.119)
$ln(Pop_{i,t-1})$	$0.695^{***}$	$0.645^{***}$	$0.941^{***}$	$0.763^{***}$	$0.748^{***}$	$1.025^{***}$
	(0.160)	(0.145)	(0.173)	(0.174)	(0.146)	(0.159)
Observations	1,500	1,500	1,500	1,812	1,812	1,812
Number of countries	117	117	117	141	141	141
Arellano-Bond $AR(2)$ stat	-1.099	-0.984	-1.508	-0.755	-0.690	-1.217
AR(2) p-value	0.272	0.325	0.132	0.450	0.490	0.224
Hansen stat	30.05	55.43	102.1	31.18	52.72	130.7
Hansen p-value	0.148	0.137	1.000	0.118	0.200	0.980
#IV	25	47	168	25	47	168

Table 3: Effect of Lobbying on Total US Assistance: different GMM estimators

Notes: Robust standard errors in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Dependent variable  $ln(Aid_{i,t})$ . All specifications include year dummies. Collapsed is the Roodman (2009) collapsed instruments System GMM estimator. 1 lag is the System GMM estimator where only 1 lag is used in the GMM generation of instruments. Full is the Blundell and Bond (1998) System GMM estimator with all possible instruments.

			ance on Loo	. 0		
	GD	$Ppc \le US$ \$	5,000	GDI	$Ppc \le US$	10,000
	(1)	(2)	(3)	(4)	(5)	(6)
Model	$\mathrm{FE}$	$\mathrm{FE}$	Sys.GMM	$\mathrm{FE}$	FE	Sys.GMM
$ln(Lobby_{i,t-1})$		$0.345^{***}$ (0.0347)	$0.425^{***}$ (0.0730)		$0.361^{***}$ (0.0308)	$0.467^{***}$ (0.0652)
$ln(Aid_{i,t-1})$	0.0480	0.0165	0.0207	0.0857	0.0457	-0.0399
	(0.0465)	(0.0336)	(0.134)	(0.0827)	(0.0588)	(0.134)
$ln(GDP_{i,t-1})$	0.638	0.662	$1.426^{***}$	0.776	0.583	$1.033^{***}$
	(1.362)	(1.045)	(0.314)	(1.058)	(0.800)	(0.236)
$ln(Pop_{i,t-1})$	-1.319	-0.851	$-0.584^{*}$	1.985	1.386	-0.244
	(4.148)	(3.052)	(0.321)	(3.869)	(2.820)	(0.263)
Observations	1,500	1,500	1,500	1,812	1,812	1,812
R-squared	0.006	0.126		0.007	0.138	
Number of countries	117	117	117	141	141	141
Arellano-Bond $AR(2)$ stat			1.604			1.268
AR(2) p-value			0.109			0.205
Hansen stat			34.24			34.99
Hansen p-value			0.0617			0.0521
Natan Dalarat standard and		- <b>⊥</b> l	k <0.01 **		<0.1 11	

Table 4: Effect of Total US Assistance on Lobbying

Notes: Robust standard errors in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. All specifications include year dummies. Sys.GMM is the Roodman (2009) collapsed instruments System GMM estimator.

Table 5: Effect of	Lobbying	on Total (	JS Assista	nce. Robi	ustness ch	ecks
$GDPpc \le US$ \$	5,000	10,000	5,000	10,000	5,000	10,000
	(1)	(2)	(3)	(4)	(5)	(6)
$ln(Aid_{i,t-1})$	$0.442^{***}$	0.432***	$0.393^{***}$	$0.412^{***}$	$0.412^{***}$	0.360***
	(0.158)	(0.147)	(0.138)	(0.134)	(0.131)	(0.133)
$ln(Lobby_{i,t-1})$	0.0147	$0.0204^{*}$	$0.0350^{*}$	$0.0403^{*}$	$0.0425^{*}$	$0.0475^{**}$
	(0.0123)	(0.0119)	(0.0276)	(0.0213)	(0.0257)	(0.0226)
$ln(GDP_{i,t-1})$	-0.381**	-0.480***	-0.132	-0.246**	$-0.281^{**}$	-0.444***
	(0.173)	(0.162)	(0.115)	(0.109)	(0.129)	(0.162)
$ln(Pop_{i,t-1})$	$0.782^{***}$	$0.857^{***}$	$0.468^{***}$	$0.624^{***}$	$0.714^{***}$	$0.905^{***}$
	(0.263)	(0.265)	(0.149)	(0.162)	(0.170)	(0.230)
$agreeUSA_{i,t-1}$	$5.041^{*}$	3.936				
,	(2.638)	(2.394)				
$\frac{X_{i,t-1}+M_{i,t-1}}{GDP_{i,t-1}}$	1.743**	$1.666^{**}$				
$GDT_{i,t-1}$	(0.737)	(0.739)				
$Disaster_{i,t-1}$	0.0229	0.0308				
	(0.0494)	(0.0333)				
$ln(ODA_{i,t-1})$	()	()	0.227	0.115		
			(0.143)	(0.0845)		
$ln(OthersLobby_{i,t-1})$			-32.65	-3.939		
			(28.31)	(3.547)		
$Corrupt_{i,t-1}$			× /		0.0842	0.278
1					(0.365)	(0.345)
Observations	1,345	1,629	1,487	1,783	1,424	1,702
Number of countries	114	138	117	141	117	140
Arellano-Bond $AR(2)$ stat	-0.631	-0.305	-1.165	-0.824	-1.117	-0.947
AR(2) p-value	0.528	0.760	0.244	0.410	0.264	0.344
Hansen stat	28.05	30.97	29.15	33.02	28.50	30.06
Hansen p-value	0.139	0.0742	0.176	0.0807	0.198	0.148
Notos: Pobust standard are	· · · · · · · · · · · · · · · · · · ·	1 ***	0 01 ** -	- <0.05 *	<0.1 All	:C

Table 5: Effect of Lobbying on Total US Assistance. Robustness checks

Notes: Robust standard errors in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. All specifications include year dummies. Roodman (2009) collapsed instruments System GMM estimator.

			Lob	Lobbying					Aid	id		
Country	$Total^{a}$	$\operatorname{Rank}$	Mean(/pop)	$\operatorname{Rank}$	$Mean(/GDP)^{b}$	Rank	Total <sup>c</sup>	$\operatorname{Rank}$	Mean(/pop)	$\operatorname{Rank}$	Mean(/GDP)	Rank
AFGHANISTAN	692	$^{49}_{e1}$	0.0017	32	0.0053	42	45500	140 80	115.25	136	0.5961	141
ALGEBIA	1877	10	0.0040	6 14	0.0019	30	076 78	25	0.17	3 11	0,0001	ית דיים
ANGOLA	68000	135	0.3034	121	0.3688	128	2380	114	11.24	66	0.0157	92
ARGENTINA	2187	77	0.0042	43	0.0006	22	124	33	0.24	ъ	0.0000	с
ARMENIA	444	41	0.0103	61	0.0087	57	1950	108	45.23	130	0.0546	128
AZERBAIJAN	5482	98	0.0461	66	0.0348	66	890	78	7.67	83	0.0084	81
BANGLADESH	659	48	0.0003	19	0.0008	23	2480	116	1.21	20	0.0034	54
BELARUS	0	6	0.0000	6	0.0000	6	194	40	1.40	22	0.0010	30
BELIZE	8382	105	2.0999	135	0.5674	134	62	22	15.84	110	0.0047	67
BENIN	966	54	0.0094	58	0.0273	92	955	85	8.83	06	0.0255	105
BHUTAN	0	6	0.0000	6	0.0000	6	33	1	0.30	7	0.0003	16
BOLIVIA	2119	75	0.0179	76	0.0176	80	3400	122	27.97	122	0.0268	108
<b>BOSNIA-HERZEGOVINA</b>	5368	97	0.1028	114	0.0517	110	2660	117	53.52	133	0.0408	119
BOTSWANA	2516	84	0.1023	113	0.0299	95	851	76	32.11	123	0.0078	80
BRAZIL	11100	109	0.0044	46	0.0012	26	567	59	0.22	4	0.0001	4
BULGARIA	6189	101	0.0565	101	0.0285	93	863	77	7.76	84	0.0044	62
BURKINA FASO	930	53	0.0055	48	0.0239	89	1010	88	4.98	62	0.0198	66
BURUNDI	154	$^{28}$	0.0017	31	0.0155	74	548	58	5.36	64	0.0488	124
CAMBODIA	1899	73	0.0108	62	0.0388	101	1150	92	6.06	69	0.0167	95
CAMEROON	2272	80	0.0089	57	0.0130	20	199	41	0.81	17	0.0012	34
	0	6	0.0000	6	0.0000	6	276	49	41.90	128	0.0299	111
CENTRAL AFRICAN REPUBLIC	64	25	0.0012	25	0.0048	39	204	43	3.47	47	0.0152	06
CHAD	48	5.23	0.0003	20	1100.0	27	978	86	6.69 6.59	97 2	0.0254	104
CHILE	576U	99	0.0274	84	0.0057	44	94	000	0.43	×0 7	0.0001	- 0
CHINA	00167	001	0.0040	47	1600.0	00 9 F F	10000	104	0.04 00 <i>6</i> 1	110	0.000	1 1
COMOROS	U	сот 0	0.0000	071	0,0000	0110	14200	101	10.02 0.59	110	0.0016	000
CONGO (BRAZZAVILLE)	19200	121	0.3860	122	0.3219	126	105	31	2.33	385	0.0021	46
CONGO (KINSHASA) (ZAIRE)	1156	29	0.0015	28	0.0163	75	1990	109	2.38	40	0.0265	107
COSTA RICA	2471	83	0.0402	$^{-6}$	0.0085	55	89	28	1.49	24	0.0003	15
COTE D'IVOIRE (IVORY COAST)	9389	107	0.0350	89	0.0642	112	647	65	2.41	41	0.0043	61
CROATIA	10400	108	0.1656	119	0.0345	98	599	60	9.61	92	0.0019	44
CUBA	0	6	0.0000	6	0.0000	6	171	38	1.09	18	0.0003	12
CZECH REPUBLIC	6427	102	0.0445	67	0.0068	49	288	51	2.00	30	0.0003	13
DIBOUT	427	40	0.0382	92	0.0486	109	201	42	17.96	113	0.0224	100
DOMINICA	2132	26	2.0798	134	0.4794	133	5.0	က်း	4.56	<u> 9</u> 6	0.0012	
DUMINICAN REFUBLIC	4048	90	0.0304		0.0096	40	212	5.0	0.24	17	1700.0	4 /
ECUADOR	2000	80	0.0124	702	0.0086	00	100001	190	0.41 11 70	107	0.0044	100
ET SATWADD	0080T	106	0.1005	0,113	0.0427	00 106	423UU	601 611	0/.14 0/.16	110	0.0100	601 603
EOTATORIAL CUINEA	13000	116	1 5075	133	0.2680	195	9	717 9	0.75	13	701000	4 1-
FRITREA	1540	66	0.0251	82	0.1548	121	789	7	13.99	106	102020	135
ESTONIA	586	44	0.0310	87	0.0058	45	165	36	8.65	88	0.0018	43
ETHIOPIA	37000	126	0.0367	91	0.2652	124	7610	133	7.38	80	0.0496	125
FIJI	29	20	0.0026	36	0.0012	27	19	13	1.60	27	0.0007	26
GABON	7070	104	0.4029	123	0.0956	115	47	19	2.63	42	0.0006	25
GAMBIA	328	36	0.0158	73	0.0475	108	80	27	4.06	53	0.0122	84
GEORGIA	4519	93	0.0741	107	0.0679	114	2940	119	46.85	131	0.0522	126
GHANA	1010	0		2								

Table A1: Summary statistics by country,  $GDPpc \leq US$ \$10,000, 141 countries.

$\begin{array}{c c c c c c c c c c c c c c c c c c c $	Mean(/pop) 2.6806 0.0124 0.0024 0.0024 0.0029 0.0079 0.0079 0.0079 0.0079 0.0079 0.0079 0.0079 0.0079 0.0079 0.0079 0.0079 0.0075 0.0075 0.0075 0.0075 0.0071 0.0071 0.0074 0.00112 0.0074 0.00112 0.0074 0.00112 0.0074 0.00112 0.0074 0.00112 0.0076 0.0076 0.0076 0.0076 0.0076 0.0076 0.00775 0.0000000000	Rank Mean(/GDP) <sup>o</sup> 71         0.6536           71         0.6536           35         0.0065           99         0.0078           91         0.0078           92         0.0065           93         0.0436           111         0.2414           111         0.2414           111         0.2414           111         0.2414           111         0.2414           111         0.2414           111         0.2335           112         0.0033           1137         0.0033           1137         0.0033           1137         0.0033           1137         0.0033           1137         0.0013           1137         0.0023           1002         0.0335           102         0.0233           1140         0.0023           1140         0.01764           1140         0.01764	$\begin{array}{c} {\rm Rank}\\ {\rm Rank}\\ 5.4\\ -6\\ -7\\ -9\\ -6\\ -6\\ -6\\ -6\\ -6\\ -6\\ -6\\ -6\\ -6\\ -6$	$\begin{array}{c} {\rm Total}^{c} \\ 9 \\ 9 \\ 825 \\ 825 \\ 80 \\ 80 \\ 80 \\ 80 \\ 810 \\ 810 \\ 810 \\ 810 \\ 811 \\ 80 \\ 812 $	$\begin{array}{c} {\rm Rank} \\ {\rm Rank} \\ 10 \\ 10 \\ 10 \\ 12 \\ 55 \\ 55 \\ 55 \\ 55 \\ 55 \\ 121 \\ 122 \\ 129 \\ 129 \\ 129 \\ 129 \\ 129 \\ 129 \\ 132 $	Me	$\begin{array}{c} {\rm Rank\ N}\\ {\rm Rank\ N}\\ {\rm 74}\\ {\rm 77}\\ {\rm 77}\\ {\rm 74}\\ {\rm 74}\\ {\rm 74}\\ {\rm 74}\\ {\rm 74}\\ {\rm 74}\\ {\rm 73}\\ {\rm 76}\\ {\rm 66}\\ {\rm 72}\\ {\rm 101}\\ {\rm 112}\\ {\rm 112}\\ {\rm 138}\\ {\rm 112}\\ {\rm 112}\\ {\rm 138}\\ {\rm 105}\\ {$	$\begin{array}{c} Mean(/\mathrm{GDP})\\ 0.0016\\ 0.0016\\ 0.0017\\ 0.0015\\ 0.0177\\ 0.0123\\ 0.0153\\ 0.0055\\ 0.0005\\ 0.0015\\ 0.0015\\ 0.0015\\ 0.0015\\ 0.0015\\ 0.0015\\ 0.0015\\ 0.0015\\ 0.0015\\ 0.0015\\ 0.0014\\ 0.00014\\ 0.00014\\ 0.00014\\ 0.0000\\ 0.00$	
3828 3828 3828 12100 4248 270 15100 16100 16100 1577 1577 1577 1577 1577 1577 1577 1	$\begin{array}{c} 2.6806\\ 0.0135\\ 0.0020\\ 0.0038\\ 0.0338\\ 0.0338\\ 0.0437\\ 0.0338\\ 0.0019\\ 0.0019\\ 0.0019\\ 0.0019\\ 0.0019\\ 0.0005\\ 0.0005\\ 0.0031\\ 0.0000\\ 0.0031\\ 0.0000\\ 0.0000\\ 0.0000\\ 0.0000\\ 0.0000\\ 0.00110\\ 0.000\\ 0.0000\\$		$\begin{smallmatrix} 136\\54\\6\\7\\105\\105\\105\\105\\102\\102\\102\\102\\102\\1122\\102\\123\\1122\\122\\122\\122\\122\\122\\122\\122\\1$	$\begin{array}{c} 9\\ 825\\ 825\\ 825\\ 825\\ 826\\ 825\\ 826\\ 825\\ 826\\ 825\\ 826\\ 822\\ 826\\ 822\\ 11200\\$	$\begin{array}{c} 10\\ 10\\ 5\\ 5\\ 5\\ 5\\ 5\\ 5\\ 5\\ 5\\ 5\\ 5\\ 5\\ 5\\ 1\\ 2\\ 5\\ 1\\ 2\\ 5\\ 1\\ 3\\ 2\\ 5\\ 3\\ 3\\ 2\\ 3\\ 3\\ 3\\ 3\\ 3\\ 3\\ 3\\ 3\\ 3\\ 3\\ 3\\ 3\\ 3\\$	6.64 6.64 6.75 6.75 6.75 6.75 3.5.64 2.5.13 15.24 1.34 1.34 1.34 1.34 1.34 1.34 1.34 1.34 1.34 1.33,62 6.36 6.36 1.37,62 6.336 1.37,62 1.37,62 1.37,57 1.71,71 1.71,71 1.71,71 1.71,71 1.71,71 1.75,71 1	974 977 125 120 120 120 120 121 121 121 121 121 121	$\begin{array}{c} 0.0016\\ 0.0016\\ 0.0072\\ 0.0167\\ 0.0259\\ 0.0361\\ 0.0361\\ 0.0363\\ 0.0124\\ 0.0015\\ 0.0005\\ 0.0005\\ 0.0015\\ 0.0005\\ 0.0015\\ 0.0000\\ 0.0015\\ 0.0015\\ 0.0015\\ 0.0015\\ 0.0015\\ 0.0014\\ 0.0014\\ 0.0014\\ 0.0014\\ 0.0014\\ 0.0014\\ 0.0014\end{array}$	
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	0.0024 0.0000 0.0000 0.0038 0.0038 0.0038 0.0038 0.0035 0.0055 0.0055 0.0055 0.0036 0.0036 0.0036 0.0000 0.0000 0.0000 0.00110 0.00100 0.00110 0.00110 0.00100 0.00110 0.00100 0.00110 0.00100 0.00010 0.00010 0.00010 0.00010 0.00010 0.00010 0.00010 0.00010 0.000000		$\begin{array}{c} 47\\ 47\\ 105\\ 105\\ 105\\ 105\\ 20\\ 105\\ 102\\ 102\\ 1122\\ 102\\ 102\\ 102\\ 102\\ 10$	$\begin{array}{c} 825\\ 825\\ 80\\ 3240\\ 3240\\ 11420\\ 11420\\ 319\\ 3500\\ 622\\ 11200\\ 11200\\ 11200\\ 11200\\ 11200\\ 1120\\ 112\\ 112$	$\begin{array}{c} 7.4\\ 2.6\\ 2.6\\ 2.6\\ 2.6\\ 2.6\\ 2.6\\ 2.6\\ 2.6$	6.755 6.475 7.175 7.152 15.24 15.24 1.34 1.34 1.34 1.35 1.35 1.356 1.356 1.1.71 1.71 1.71 1.71 1.71 1.71 1.71 1	777 125 125 120 120 120 120 121 121 121 121 121 121	$\begin{array}{c} 0.0172\\ 0.0259\\ 0.0361\\ 0.0361\\ 0.0361\\ 0.0036\\ 0.00124\\ 0.0005\\ 0.0005\\ 0.0015\\ 0.0015\\ 0.0015\\ 0.0015\\ 0.0015\\ 0.0015\\ 0.0023\\ 0.0023\\ 0.0024\\ 0.0014\\ 0.0014\\ 0.0014\\ 0.0014\\ 0.0014\\ 0.0014\\ 0.0014\\ 0.0014\\ 0.0016\\ 0.0014\\ 0.0016\\ 0.0014\\ 0.0005\\ 0.0014\\ 0.0005$	
$\begin{array}{c} & & & & & & & & & & & & & & & & & & &$	$\begin{array}{c} 0.0000\\ 0.0388\\ 0.0388\\ 0.0388\\ 0.0019\\ 0.0019\\ 0.0039\\ 0.0005\\ 0.0003\\ 0.0005\\ 0.0000\\ 0.0003\\ 0.0001\\ 0.0000\\ 0.0000\\ 0.0000\\ 0.0000\\ 0.00112\\ 0.0000\\ 0.0000\\ 0.00112\\ 0.0000\\ 0.0000\\ 0.00112\\ 0.0000\\ 0.000\\ 0.0000\\ 0.000$		$\begin{array}{c} 9\\ 105\\ 105\\ 20\\ 20\\ 20\\ 20\\ 20\\ 20\\ 20\\ 112\\ 20\\ 112\\ 20\\ 112\\ 23\\ 112\\ 23\\ 112\\ 23\\ 112\\ 121\\ 121$	80 380 380 380 380 319 375 375 375 37 37 37 37 37 37 37 37 37 37 37 37 37	255 555 555 555 555 555 552 121 125 125 125	4.17 3.5.64 2.5.13 2.2.4 1.3.24 1.3.4 1.3.62 1.3.62 1.3.62 1.5.1 1.78 1.81.78 1.81.78 1.81.78 1.81.78 1.81.78 1.81.78 1.81.78 1.51 1.55 1.55 1.55 1.55 1.55 1.55 1.5	$\begin{array}{c} 5.5\\ 5.4\\ 125\\ 125\\ 125\\ 125\\ 123\\ 123\\ 132\\ 132\\ 132\\ 132\\ 132\\ 132$	$\begin{array}{c} 0.0259\\ 0.0361\\ 0.0631\\ 0.0633\\ 0.0005\\ 0.0005\\ 0.0000\\ 0.0000\\ 0.0000\\ 0.0039\\ 0.0039\\ 0.0039\\ 0.0039\\ 0.0039\\ 0.0044\\ 0.0014\\ 0.0014\\ 0.0014\\ 0.0014\\ 0.0014\\ 0.0014\\ 0.0014\\ 0.0014\\ 0.0014\\ 0.0018\\ 0.0085\\$	
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	0.0388 0.0379 0.0477 0.0019 0.0039 0.0035 0.00555 0.0031 0.0575 0.0031 0.0575 0.0031 0.0031 0.0031 0.0031 0.00110 0.00110 0.0010 0.0010 0.0010 0.0010 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.000000		$\begin{array}{c} 105\\ 123\\ 97\\ 56\\ 123\\ 56\\ 119\\ 112\\ 112\\ 112\\ 112\\ 112\\ 123\\ 112\\ 123\\ 112\\ 121\\ 121$	$\begin{array}{c} 380\\ 3240\\ 3240\\ 319\\ 319\\ 3560\\ 37\\ 37\\ 37\\ 37\\ 37\\ 37\\ 5010\\ 511\\ 15\\ 1180\\ 11200\\ 1$	$\begin{array}{c} 55\\ 55\\ 121\\ 28\\ 52\\ 52\\ 129\\ 129\\ 129\\ 129\\ 128\\ 129\\ 123\\ 232\\ 332\\ 332\\ 332\\ 332\\ 332\\ 332$	35.64 25.13 25.24 15.27 2.24 1.34 1.34 1.34 1.34 1.34 1.34 1.34 1.3	$\begin{array}{c} 125\\ 120\\ 100\\ 6\\ 120\\ 6\\ 120\\ 120\\ 122\\ 123\\ 122\\ 123\\ 122\\ 123\\ 121\\ 121$	$\begin{array}{c} 0.0361\\ 0.0633\\ 0.0063\\ 0.0005\\ 0.0005\\ 0.0005\\ 0.00015\\ 0.00015\\ 0.0015\\ 0.0039\\ 0.0039\\ 0.0039\\ 0.0039\\ 0.0039\\ 0.0044\\ 0.001$	
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	0.0979 0.00437 0.0039 0.0055 0.0055 0.0055 0.00575 0.0031 0.0575 0.0575 0.0031 0.0031 0.0031 0.0036 0.0031 0.00110 0.00110 0.00110 0.0100 0.0100 0.0100 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.000000		$\begin{array}{c} 123\\ 250\\ 550\\ 122\\ 122\\ 122\\ 122\\ 122\\ 123\\ 122\\ 123\\ 122\\ 121\\ 121$	$\begin{array}{c} 3240\\ 1420\\ 1420\\ 3560\\ 37\\ 37\\ 37\\ 37\\ 37\\ 37\\ 37\\ 37\\ 11200\\ 11200\\ 11200\\ 1120\\ 112\\ 1180\\ 121\\ 122\\ 112\\ 122\\ 122\\ 122\\ 122\\ 12$	$\begin{array}{c} 121\\55\\52\\125\\125\\125\\128\\128\\136\\136\\132\\132\\132\\32\\32\\32\\32\\32\\32\\32\\32\\32\\32\\32\\32\\3$	25.13 15.27 15.27 1.5.24 1.34 1.34 0.04 1.81.78 1.81.78 1.6.99 1.5.71 1.71 1.71 1.71 1.55 1.3.57 1.3.57 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1	$\begin{array}{c} 120\\ 120\\ 36\\ 6\\ 138\\ 138\\ 138\\ 138\\ 138\\ 138\\ 138\\ 138$	$\begin{array}{c} 0.0633\\ 0.0124\\ 0.0005\\ 0.0005\\ 0.0005\\ 0.0015\\ 0.0015\\ 0.0016\\ 0.0030\\ 0.0771\\ 0.0771\\ 0.0771\\ 0.0771\\ 0.0771\\ 0.0771\\ 0.0146\\ 0.0146\\ 0.0146\\ 0.0146\\ 0.0148\\ 0.0014\\ 0.0005\\$	
4248 4248 5271 16100 16100 54700 84700 84700 84700 1577 1577 1577 1577 1577 1577 1577 1	$\begin{array}{c} 0.0437\\ 0.0437\\ 0.0019\\ 0.0055\\ 0.0005\\ 0.1300\\ 0.1300\\ 0.1300\\ 0.0575\\ 0.0036\\ 0.0362\\ 0.0362\\ 0.0031\\ 0.0362\\ 0.0031\\ 0.0011\\ 0.0000\\ 0.00110\\ 0.00110\\ 0.00110\\ 0.00110\\ 0.0110\\ 0.0110\\ 0.0110\\ 0.0110\\ 0.0110\\ 0.0001\\ 0.0001\\ 0.0001\\ 0.0001\\ 0.0001\\ 0.0001\\ 0.0000\\ 0.000\\ 0.000\\ 0.000\\ 0.000\\ 0.0000\\ 0.0000\\ 0.0000\\ 0.0000\\$		97 50 50 112 112 112 112 99 99 99 99 141 120	$\begin{array}{c} 1420\\ 319\\ 3560\\ 4020\\ 37\\ 37\\ 37\\ 37\\ 37\\ 37\\ 37\\ 1120\\ 1120\\ 1360\\ 1360\\ 1360\\ 1360\\ 15\\ 122\\ 1122\\ 1510\\ 1510\end{array}$	$\begin{array}{c} 98\\ 122\\ 125\\ 125\\ 141\\ 141\\ 141\\ 136\\ 132\\ 132\\ 322\\ 332\\ 332\\ 332\\ 332\\ 332$	15.27 2.24 0.24 1.34 1.34 1.34 1.336 1.3.62 1.3.62 1.3.62 1.3.62 1.3.62 1.3.57 1.71 1.71 1.71 1.71 1.71 1.71 1.71 1.71 1.71 1.75 1.55 $1.551$	$\begin{array}{c} 109\\ 6\\ 2\\ 2\\ 2\\ 2\\ 2\\ 2\\ 2\\ 2\\ 2\\ 2\\ 2\\ 2\\ 2\\$	$\begin{array}{c} 0.0124\\ 0.0005\\ 0.0005\\ 0.0005\\ 0.0015\\ 0.0015\\ 0.0047\\ 0.00771\\ 0.0771\\ 0.0771\\ 0.0146\\ 0.0146\\ 0.0126\\ 0.0126\\ 0.0146\\ 0.0014\\ 0.0014\\ 0.0014\\ 0.0014\\ 0.0014\end{array}$	
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{c} 0.0019\\ 0.0039\\ 0.0035\\ 0.0005\\ 0.0005\\ 0.1300\\ 0.0575\\ 0.0575\\ 0.0362\\ 0.0362\\ 0.0362\\ 0.0031\\ 0.0362\\ 0.0031\\ 0.0362\\ 0.00112\\ 0.0001\\ 0.00112\\ 0.0001\\ 0.00112\\ 0.0001\\ 0.0000\\ 0.000\\ 0.0000\\ 0.000\\ 0.0000\\ 0.0000\\ 0.0000\\ 0.0000\\ 0.000$		$\begin{array}{c} 20\\ 20\\ 46\\ 19\\ 135\\ 51\\ 122\\ 51\\ 102\\ 51\\ 122\\ 334\\ 334\\ 334\\ 334\\ 141\\ 120\\ 141\\ 121\\ 141\\ 141\\ 122\\ 141\\ 122\\ 141\\ 122\\ 141\\ 122\\ 141\\ 122\\ 141\\ 122\\ 141\\ 122\\ 141\\ 122\\ 141\\ 122\\ 142\\ 14$	$\begin{array}{c} 319\\ 3560\\ 3560\\ 4020\\ 37\\ 37\\ 73800\\ 622\\ 11200\\ 11200\\ 11200\\ 1510\\ 15\\ 1510\\ 1510\end{array}$	52 125 129 129 129 1297 132 132 132 84 101 102 84 84 102 85 102	2.24 0.24 1.34 1.34 1.6.9 16.92 15.52 11.71 11.71 11.71 11.71 13.57 13.57 1.55 1.55 1.55 1.55 1.55 1.55 1.55 1	36 36 21 138 138 137 137 137 137 137 137 137 137 137 137 137 138 138 138 138 138 138 138 138 138 137 138 137 138 137 138 137 138 137 138 137 138 137 138 137	$\begin{array}{c} 0.0005\\ 0.0005\\ 0.00015\\ 0.0015\\ 0.0000\\ 0.2938\\ 0.0238\\ 0.02771\\ 0.0771\\ 0.0239\\ 0.0250\\ 0.0146\\ 0.0146\\ 0.0014\\ 0.0014\\ 0.0014\\ 0.0014\\ 0.0014\\ 0.0014\end{array}$	
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	0.0039 0.0055 0.0055 0.0055 0.0575 0.0575 0.0575 0.0031 0.0031 0.0031 0.00112 0.00112 0.0110 0.0110 0.0110 0.0110 0.0110 0.0110		$ \begin{array}{c} 50\\ 50\\ 50\\ 51\\ 52\\ 51\\ 52\\ 51\\ 52\\ 52\\ 52\\ 52\\ 52\\ 52\\ 52\\ 52\\ 52\\ 52$	3560 4020 37 37 37 622 11200 1500 15 15 15 15 15 1510 152	$\begin{array}{c} 125\\ 125\\ 129\\ 129\\ 128\\ 128\\ 136\\ 123\\ 122\\ 123\\ 332\\ 332\\ 332\\ 332\\ 332$	0.24 1.34 0.04 181.78 181.78 163.62 6.36 6.36 9.81 11.77 11.77 58.93 13.57 1.55 5.51 3.55 1.55 5.51 3.55 1.55 5.51 3.55 1.55 5.51 5.55 1.55 5.51 5.55 1.55 5.55 1.55 5.55 1.55 5.55 1.55 5.55 1.55 5.55 1.55 5.55 1.55 5.55 1.55 5.55 1.55 5.55 1.55 5.55 1.55 5	$egin{array}{c} 6 \\ 2 \\ 2 \\ 1 \\ 3 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 2 \\ 5 \\ 5 \\ 1 \\ 2 \\ 1 \\ 2 \\ 1 \\ 2 \\ 1 \\ 2 \\ 1 \\ 2 \\ 1 \\ 2 \\ 1 \\ 2 \\ 1 \\ 2 \\ 1 \\ 2 \\ 2$	$\begin{array}{c} 0.0005\\ 0.00015\\ 0.0015\\ 0.0015\\ 0.0038\\ 0.00711\\ 0.0771\\ 0.0039\\ 0.0039\\ 0.0039\\ 0.0044\\ 0.00146\\ 0.0014\\ 0.0014\\ 0.0014\\ 0.0014\\ 0.0014\\ 0.0014\end{array}$	
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	0.0055 0.0055 0.1300 0.1300 0.0574 0.0575 0.0331 0.0000 0.0362 0.03110 0.00110 0.01110 0.00000 0.00000 0.00000 0.00000 0.00000 0.000000		$ \begin{array}{c} 146\\ 122\\ 122\\ 122\\ 122\\ 122\\ 122\\ 122\\ 12$	4020 37 37 3800 622 11200 1360 1500 1440 953 152 122 150 1510	$129 \\ 129 \\ 129 \\ 128 \\ 122 \\ 122 \\ 122 \\ 123 \\ 232 \\ 332 $	1.34 0.04 181.78 16.99 153.62 6.36 6.36 6.336 1.3.57 1.55 1.55 1.55 5.51 2.551	21 38 112 137 137 101 101 101 101 25 25 25 121	$\begin{array}{c} 0.0015\\ 0.0015\\ 0.0000\\ 0.2938\\ 0.0771\\ 0.0771\\ 0.0771\\ 0.0226\\ 0.0146\\ 0.0226\\ 0.0146\\ 0.0153\\ 0.0146\\ 0.0014\\ 0.0014\\ 0.0014\\ 0.0056\end{array}$	
$\begin{array}{c} 474\\ 474\\ 54400\\ 84700\\ 3828\\ 12200\\ 1577\\ 0\\ 35\\ 368\\ 613\\ 613\\ 613\\ 613\\ 613\\ 613\\ 613\\ 1681\\ 11800\\ 638\\ 558\\ 2388\\ 2388\\ 2388\\ 2388\\ 2388\\ 2388\\ 2388\\ 613\\ 613\\ 613\\ 613\\ 613\\ 613\\ 613\\ 613$	$\begin{array}{c} 0.1005\\ 0.1300\\ 2.3190\\ 0.0575\\ 0.0575\\ 0.0001\\ 0.0001\\ 0.0001\\ 0.0000\\ 0.00112\\ 0.00110\\ 0.000\\ 0.0110\\ 0.000\\ 0.0$		122 122 1335 122 122 231 120 122	37 73800 622 11200 1360 5010 15 1440 953 122 122 180 1510	18 $141$ $62$ $123$ $132$ $132$ $324$ $101$ $323$ $322$	0.04 161.78 163.62 6.36 6.36 6.36 1.51 1.55 1.55 5.51 1.55 5.51 2.551 1.55 5.51 1.55 5.51 1.55 5.51 1.55 5.51 1.55 5.51 1.55 5.51 1.55 5.51 1.55 5.51 1.55 5.51 1.55 5.51 1.55 5.51 1.55 5.51 1.55 5.51 1.55 5.51 1.55 5.51 1.55 5.51 1.55 5.51 1.55 5.51 1.55 5.51 1.55	2 138 137 137 137 137 137 137 137 137 137 137	$\begin{array}{c} 0.0000\\ 0.2938\\ 0.0771\\ 0.0771\\ 0.0771\\ 0.0239\\ 0.0146\\ 0.0146\\ 0.0146\\ 0.0146\\ 0.0044\\ 0.0014\\ 0.0014\\ 0.0014\\ 0.0050\end{array}$	
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	2.3.1300 2.3.1300 0.0575 0.0575 0.0031 0.0031 0.0031 0.0031 0.00112 0.00112 0.0112 0.0112 0.0110 0.0112 0.0110 0.0110 0.0110		$122 \\ 122 \\ 122 \\ 122 \\ 122 \\ 121 $	$\begin{array}{c} 73800\\ 622\\ 11200\\ 5010\\ 15\\ 1440\\ 953\\ 122\\ 122\\ 180\\ 1510\end{array}$	141 126 1236 122 122 122 322	$\begin{array}{c} 181.78\\ 161.78\\ 153.62\\ 6.36\\ 9.81\\ 9.81\\ 11.71\\ 13.57\\ 1.55\\ 5.51\\ 2.51\\ 2.51\\ 2.51\end{array}$	138 132 94 131 131 131 132 138 138 138 138 138 138 138 138 138 138	$\begin{array}{c} 0.2938\\ 0.0047\\ 0.0711\\ 0.0711\\ 0.0226\\ 0.0226\\ 0.0550\\ 0.0453\\ 0.0044\\ 0.0014\\ 0.0014\\ 0.0014\end{array}$	
24700 38700 1577 1577 1577 1577 0 0 368 1681 1681 1681 1800 13800 1913 1800 1913 1800 1933 1800 1933 1800 1933 1800 1933 1800 1933 1800 1933 1800 1933 1800 1933 1930 1930 1930 1930 1930 1933 19300 1930 1930 1930 1930 1930 1930 1930 1930 193	2.2.190 0.0575 0.0575 0.0031 0.0036 0.0000 0.0110 0.0110 0.0110 5.5485 5.5485 5.5485 0.0110		133 102 102 120 1120 1120 1120 1120	622 11200 1360 5010 15 1440 953 122 180 1510	$ \begin{array}{c}     62 \\     97 \\     97 \\     138 \\     101 \\     32 \\     332 \\   $	10,99 1.5,93 6.36 9.81 11.71 58.93 13.57 1.55 1.55 5.51	112 72 137 101 105 65 121 121 121	0.004/ 0.073 0.0739 0.0226 0.0226 0.0226 0.0146 0.0550 0.044 0.0014 0.0014 0.0014 0.0050 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.000000 0.00000 0.00000 0.00000 0.000000 0.000000 0.000000 0.000000 0.000000 0.000000 0.0000000 0.0000000 0.00000000000000000000000000000000000	
28228 13528 1577 0 0 0 35 35 35 35 1681 1681 1681 1681 1681 1681 1681 168	0.0504 0.0575 0.0000 0.00362 0.0004 0.0112 0.0112 0.0110 0.0110 5.5485 5.5485 0.0110 0.0110		288 551 990 31 120 1120 24 211 211 24 211 24 24 24 211 22 24 211 22 24 211 22	$\begin{array}{c} 11200\\ 1360\\ 5010\\ 15\\ 1440\\ 953\\ 122\\ 180\\ 1510\end{array}$	$136 \\ 97 \\ 112 \\ 101 \\ 32 \\ 339 \\ 339 \\ 339 \\ 53 \\ 53 \\ 53 \\ 53 \\$	153.62 6.36 9.81 11.71 58.93 13.57 1.55 5.51 26.51	137 94 101 134 135 65 65 121 121	0.0771 0.0039 0.0256 0.0146 0.0453 0.0044 0.0014 0.0014 0.0014	
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	0.00313 0.0031 0.0000 0.0000 0.00112 0.0112 0.0110 0.0110 0.0110 0.0110 0.1340		$\begin{array}{c} 51 \\ 51 \\ 9 \\ 24 \\ 33 \\ 120 \\ 120 \\ 121 \\ 120 \\ 121 \\ 120 \\$	1360 5010 15 1440 953 122 180 1510	9/ 1132 112 84 32 39 39 30 83 30 83	$\begin{array}{c} 0.30\\ 0.81\\ 11.71\\ 58.93\\ 13.57\\ 1.55\\ 5.51\\ 5.51\end{array}$	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	$\begin{array}{c} 0.0039\\ 0.0226\\ 0.0146\\ 0.0550\\ 0.0453\\ 0.0044\\ 0.0014\\ 0.0050\\ 0.0487\end{array}$	
137. $137.$ $900$ $900$ $900$ $35.$ $368$ $368$ $368$ $368$ $368$ $1681$ $1681$ $11800$ $11800$ $5388$ $5388$ $53838$ $538300$ $11800$ $1139$ $608$ $1139$ $1139$ $1139$ $1139$	0.0001 0.0000 0.0362 0.0004 0.0112 0.0112 0.0112 5.5485 5.5485 0.1340 0.1340		$ \begin{array}{c}     3 \\     3 \\     1 $	15 15 1440 953 122 180 1510	$101 \\ 101 \\ 32 \\ 32 \\ 32 \\ 32 \\ 32 \\ 32 \\ 33 \\ 32 \\ 32 \\ 33 \\ 32 \\ 33 \\ 32 \\ 33 \\ 32 \\ 33 \\ 32 \\ 33$	9.81 11.71 58.93 13.57 1.55 5.51 5.51	$     \begin{array}{c}             94\\             101\\             134\\             25\\             121\\             121\\           $	0.0220 0.0146 0.0550 0.0453 0.0044 0.0014 0.0050 0.0487	
$\begin{array}{c} 9 & 0 \\ 0 & 0 \\ 1 & 35 \\ 3 & 35 \\ 3 & 36 \\ 3 & 36 \\ 1681 \\ 1681 \\ 1681 \\ 11800 \\ 11800 \\ 11800 \\ 11800 \\ 11800 \\ 1139 \\ 1000 \\ 1139 \\ 1$	$\begin{array}{c} 0.0000\\ 0.0362\\ 0.0000\\ 0.0112\\ 0.0110\\ 0.0110\\ 0.0110\\ 0.01340\\ 5.5485\\ 5.5485\\ 5.5485\\ 0.110\\ 0.0110\end{array}$		$ \begin{array}{c}     9 \\     9 \\     3 \\     1 $	$13 \\ 1440 \\ 953 \\ 122 \\ 180 \\ 1510 $	12 101 32 39 63 63	11.71 58.93 13.57 1.55 5.51 26.51	101 134 25 65 121 811	$\begin{array}{c} 0.0140\\ 0.0550\\ 0.0453\\ 0.0044\\ 0.0014\\ 0.0050\\ 0.0487\end{array}$	
$\begin{array}{c} & 0 & 0 \\ & 0 & 35 \\ & 35 & 368 \\ & 368 & 613 \\ & 1681 \\ & 1681 \\ & 1681 \\ & 1681 \\ & 1681 \\ & 1681 \\ & 25900 \\ & 1388 \\ & 2388 \\ &$	$\begin{array}{c} 0.0000\\ 0.0000\\ 0.00112\\ 0.0110\\ 0.0590\\ 0.55485\\ 5.5485\\ 5.5485\\ 0.110\\ 0.0110\\ 0.0110\end{array}$		90 24 34 1120 141	122 122 1510 1510	$ \begin{array}{c} 101\\ 84\\ 32\\ 102\\ 63\\ 63\\ 63\\ 63\\ 63\\ 63\\ 63\\ 63\\ 63\\ 63$	13.57 1.55 5.51 26.51	104 25 65 121 121	$0.0000 \\ 0.00453 \\ 0.0014 \\ 0.0014 \\ 0.0050 \\ 0.0487 $	
35 368 368 368 1681 1681 1800 11800 5388 538 538 39300 77 77 77 1139 610 8137000	$\begin{array}{c} 0.0000\\ 0.00112\\ 0.01112\\ 0.01110\\ 0.0590\\ 0.1340\\ 0.1110\\ 0.0110\end{array}$		24 34 31 120	$122 \\1510 \\1510$	64 32 102 63	1.55 5.51 26.51	25 65 121 138	0.0044 0.0014 0.0050 0.0487	
$\begin{array}{c} 3.53\\ 3.63\\ 6.13\\ 6.13\\ 6.13\\ 1.1800\\ 5.38\\ 5.38\\ 2.388\\ 2.388\\ 2.388\\ 2.388\\ 2.338\\ 3.9300\\ 5.3300\\ 1.1800\\ 0 \\ 0 \\ 0 \\ 1.139\\ 6.08\\ 6.08\\ 1.37000\\ 0 \\ 0 \\ 0 \\ 0 \\ 1.37000\\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 $	0.0004 0.0112 0.0110 0.0590 5.5485 0.1340 0.110		34 34 120 141	$122 \\ 180 \\ 1510 $	39 39 63	5.51 26.51	65 121 118	$0.0044 \\ 0.0014 \\ 0.0050 \\ 0.0487$	
613 613 1681 1580 1580 538 2388 2388 2388 2388 2388 2388 239300 553200 1139 608 613 1139 610 1139	0.0110 0.0590 5.5485 0.1340 0.110		31 120 141	1510	102 63	26.51	121	0.0050 0.0487	
$\begin{array}{c} 1681\\ 1681\\ 259000\\ 11800\\ 5388\\ 2388\\ 2388\\ 2388\\ 2388\\ 2388\\ 2388\\ 2389\\ 553200\\ 1139\\ 610\\ 1139\\ 610\\ 1139\end{array}$	0.0590 5.5485 0.1340 0.110		120 141		63		118	0.0487	
259000 11800 11800 5388 2388 2388 2388 2388 2388 2388 2388	5.5485 0.1340 0.1110		141	643		22.54			
11800 538 538 2388 2388 2338 39300 77 0 55200 1139 608 613 137000	0.1340		c i	2380	115	52.50	132	0.4060	
538 538 2388 2388 239300 39300 77 77 77 77 1139 6108 6108 1137000	0.0110		79	99	23	0.76	15	0.0001	
2388 0 0 204 333004 77 7 7 7 7 0 0 1139 608 1139 1139	0.110.0		35	213	44	4.34	55	0.0012	
0 204 39300 77 0 55200 1139 608 137000	0.0838	109 0.0427	104	932	81	32.93	124	0.0184	
204 39300 77 0 55200 1139 608 137000	0.0000		6	936	82	3.93	51	0.0157	
39300 77 0 1139 608 137000	0.0012		61	1230	95	6.69 6.59	75	0.0462	
55200 55200 1139 608 137000	0.1106		91	167	37	0.45	o ;	0.0001	
55200 1139 608 137000	0.0000	67 00.00 67	7.0	× 1	101	2.04	31	0.0260	
1139 608 137000	70.4944	9 U.UUUU 141 33 0383	9 140	1/10	104 61	20 022	90 140	0.03683	
608 137000	0.0290	-	113	100	45	5.51	99	0.0125	
137000	0.0347		53	35	17	2.16	34	0.0006	
	0.0972	110 0.0164	76	2040	110	1.42	23	0.0002	
A 2053	1.3567		137	1260	96	830.21	141	0.4041	
×	0.0001		21	674	66	12.16	102	0.0322	
	0.0015		33	206	68	19.73	115	0.0326	
5303	0.5930		129	50	$21 \\ -21 \\$	5.78	68	0.0029	
	0.0620		100	1740	105	4.04	52	0.0025	
NUZAMBIQUE IIUS 56	0.0043	45 0.0181	7 c	3570	120	12.40	104 196	0.0421	
	0,0000		n 0	0/11	000	80.04 08 C	120	01100	
	0.0000		л о о	1440	100	10.2	64 111	6110.0	
	0.0019	33 0.0111	99	385	26	2.11	33	0.0240 0.0123	
11600	0.0059		71	3110	120	1.55	26	0.0035	
12900	0.0059		63	9850	135	4.48	58	0.0074	
PALAU 770 50	2.7059	139 0.4322	131	141	35	516.53	139	0.0841	

(continued on next page)

Table A1 (cont.): Summary statistics by country,  $GDPpc \leq US$ \$10,000, 141 countries.

			Tob	Lobbying					Aid	q		
Country	$Total^{a}$	$\operatorname{Rank}$	Mean(/pop)	Rank	$Mean(/GDP)^{b}$	$\operatorname{Rank}$	$Total^{c}$	$\operatorname{Rank}$	Rank Mean(/pop)	$\operatorname{Rank}$	Rank Mean(/GDP)	$\operatorname{Rank}$
PANAMA	22400	123	0.5042	126	0.1148	119	379	54	8.62	87	0.0020	45
PARAGUAY	271	32	0.0038	38	0.0026	32	370	53	4.56	59	0.0033	53
PERU	4503	92	0.0117	67	0.0048	41	4210	130	11.25	100	0.0051	70
PHILIPPINES	20100	122	0.0176	74	0.0170	78	2740	118	2.36	39	0.0022	48
POLAND	708000	141	1.3077	130	0.3248	127	1180	94	2.19	35	0.0005	19
ROMANIA	6179	100	0.0203	80	0.0094	62	947	83	3.07	44	0.0016	40
RUSSIA	35700	125	0.0179	75	0.0066	48	17700	138	8.76	89	0.0041	60
RWANDA	1611	69	0.0126	69	0.0464	107	1580	103	14.07	107	0.0567	130
SAMOA	0	6	0.0000	6	0.0000	6	23	15	9.27	91	0.0060	71
SAO TOME AND PRINCIPE	0	6	0.0000	6	0.0000	6	10	11	4.67	61	0.0076	79
SENEGAL	1127	57	0.0075	56	0.0153	72	1070	90	6.98	78	0.0140	88
SERBIA	13600	117	0.1317	117	0.1107	117	458	57	4.43	56	0.0038	58
SEYCHELLES	86	27	0.0793	108	0.0115	67	6	6	7.57	82	0.0010	31
SIERRA LEONE	226	30	0.0039	39	0.0227	87	711	69	11.22	98	0.0588	131
SLOVAKIA	773	51	0.0103	60	0.0017	29	237	47	3.14	46	0.0006	22
SOUTH AFRICA	43700	130	0.0663	105	0.0194	83	3740	127	5.71	67	0.0017	42
SRI LANKA	1555	67	0.0055	49	0.0048	40	849	75	3.11	45	0.0032	52
ST. KITTS & NEVIS	274	34	0.4393	125	0.0603	111	ю	5 2	8.50	86	0.0011	32
	4572	94	2.0518	133	0.4492	132	6	œ	3.79	50	0.0008	29
ST. VINCENT AND THE GREN.	656	47	0.4302	124	0.1098	116	ŝ	2	1.99	29	0.0006	$^{24}$
SUDAN	2234	79	0.0043	44	0.0109	65	9160	134	16.51	111	0.0358	116
SURINAME	4680	95	0.7204	128	0.4033	130	49	20	7.49	81	0.0037	57
SWAZILAND	375	38	0.0247	81	0.0180	81	72	$^{24}$	4.47	57	0.0030	51
TAJIKISTAN	0	6	0.0000	6	0.0000	6	920	79	10.31	95	0.0615	132
TANZANIA	1013	55	0.0017	30	0.0045	38	3480	124	6.18	70	0.0187	98
THAILAND	61900	134	0.0678	106	0.0296	94	693	67	0.76	14	0.0003	14
TOGO	28	19	0.0004	$^{21}$	0.0015	28	91	29	1.18	19	0.0046	65
TONGA	0	6	0.0000	6	0.0000	6	21	14	14.58	108	0.0073	76
TUNISIA	1453	63	0.0109	63	0.0055	43	230	46	1.69	28	0.0008	28
TURKEY	39400	129	0.0402	95	0.0092	60	1870	107	2.04	32	0.0005	21
TURKMENISTAN	0	6	0.0000	6	0.0000	6	243	48	3.75	49	0.0048	68
UGANDA	2520	85	0.0062	53	0.0203	84	3900	128	9.78	93	0.0327	114
UKRAINE	12500	114	0.0187	78	0.0222	86	3430	123	5.04	63	0.0069	74
URUGUAY	32	21	0.0007	$^{24}$	0.0001	18	26	16	0.57	10	0.0001	9
UZBEKISTAN	2435	82	0.0069	55	0.0119	68	800	72	2.25	37	0.0037	56
VANUATU	6492	103	2.2278	136	1.5256	139	130	34	42.02	129	0.0292	110
VENEZUELA	16200	120	0.0456	98	0.0091	59	277	50	0.79	16	0.0002	10
VIETNAM	1514	65	0.0014	27	0.0034	37	773	70	0.67	12	0.0013	36
YEMEN	1498	64	0.0062	52	0.0121	69	992	87	3.51	48	0.0065	73
ZAMBIA	1738	71	0.0125	68	0.0404	103	2040	111	12.34	103	0.0347	115
ZIMBABWE	1188	60	0.0068	54	0.0153	73	1420	66	8.16	85	0.0070	75

Table A1 (cont.): Summary statistics by country,  $GDPpc \leq US$ \$10,000, 141 countries.

Notes: (a) /1000; (b)  $\times 1000;$  (c) /1000000.