An Empirical Model for U.S. Foreign Aid Allocation

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Abstract

This paper revisits the U.S. foreign aid drivers and addresses two shortcomings in the literature on aid allocation. The first relates to the widespread use of static models for aid allocation, despite of the general recognition that inertia may be a key determinant of donors’ decisions. The second, concerns the divergence between the importance given to merit-based motivations for aid provision in donors’ official declarations, on the one hand, and the poor measurement of such motivations in empirical studies, on the other hand. This paper combines a dynamic modeling that accounts for inertia, a proper treatment of the sample selection problem, and most importantly, uses proxies for the merit-based motivations in the spirit of the “Washington Consensus” requirements. Next, the paper moves beyond existing studies by measuring the relative importance to the U.S. of need, merit-based, and self-interest motivations. Furthermore, the analysis explores the link between the relative importance of the motivation vectors and the geographic distribution of aid recipients. This allows to explain why conditionality, an integral part of most aid contracts, is not enforced with the same rigor by the same donor when dealing with geographically different recipients.

Keywords: development aid, inertia, dynamic panel, aid motivations, merit-based motivation, recipient need, strategic interest

JEL classification: F35, O1, C3.

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1 Introduction

Since the late 60’s, an extensive literature has developed to investigate the effectiveness of development aid. A large part of this literature focuses on characteristics of recipient countries that affect aid effectiveness. In particular, corruption, limited absorption capacity and lack of good governance, are usually identified as the culprits for the failure of aid to promote growth and alleviate poverty. In this paper, I claim that characteristics of recipient countries are not the only sources for such a failure and I show that the behavior of the donor may contribute to it. The reason is basically that the dynamic pattern of aid may be such that current aid is not conditioned on past performance.

Surprisingly, most of the literature on development assistance is cast in a static framework although it is widely understood that there may be inertia in the allocation of aid. According to Wildavsky (1964), the principal influence on the budget for any spending agency in the current year is last year’s budget. Mosley (1985) states that this is, even stronger in the case of aid than of other categories of public expenditure, since most of the aid announced consists of money committed several years in advance to the support of particular projects.\(^1\) Clearly, a static approach cannot identify such inertia.

Despite its importance in determining aid allocation and limiting the variability of aid commitments over time, the inertia effect is accounted for only in few studies. These include Boschini and Olofsgard (2007), Furuoka (2008), Carey (2007), Lai (2003), Apodaca and Stohl (1999) and Fielding (2010).

These papers differ from the present study along several dimensions. First, they consider different time periods and aid dimensions (combined bilateral and multilateral flows as in Furuoka 2008, only humanitarian aid as in Fielding 2010, economic and military aid as in Apodaca and Stohl 1999, etc.). Second, the models above separate the eligibility stage from the allocation stage.\(^2\) The effectiveness of such a procedure

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1. In this context, McGillivray and White (1993) state that a commonly identified influence is the tendency for aid bureaucracies, like other spending agencies, to use the preceding year’s allocation as a benchmark for the current year’s aid allocation in a process of marginal incrementalism or bureaucratic inertia.

2. On the methodological side, virtually most of the studies on aid motivations are based on static models making use of one of three alternatives: a Tobit model, a Heckman method or a two-part procedure. These models proceed in two stages: - the aid eligibility stage, in which the donor country decides whether a potential recipient country receives any aid at all; and - the level stage, in which it is decided how much aid to allocate to the countries that have been selected as eligible in the first stage.

depends on the existence of certain variability in the list of recipient countries across time, rendering operational the eligibility stage. As we will shortly see, this may not be the case for some donors. Modeling aid provision as one stage is crucial for the effectiveness of the estimation technique.

The present paper introduces dynamics in the model to account for inertia in aid decision. I focus on official development assistance (ODA) provided by the United States. The concern for the U.S is driven by its importance as the historical largest donor in absolute terms. In 2009, the U.S. ODA reached U.S. $ 28.3 billion, almost one fourth of the total ODA allocated by the Development Assistance Committee (DAC) and twice as high as the second most important donor (France) with U.S. $ 12.6 billion or the third most generous country (U.K.) with U.S. $ 12.08 billion. Furthermore, the U.S. aid is thought to be the most controversial in the literature on aid motivations. Whether commercial, humanitarian, or strategic motivations dominate the U.S. generosity is still a source of disagreement among researchers.

Considering ODA provided by the United States, I focus on the period 2002-2009 to investigate the drivers of aid policy. It seems that the 9/11 attacks have raised the consciousness of the public in the United States about the potential for problems abroad to harm the interior security of the country. In this context, the National Security Strategy for the United States of America (2002) elevated the objective of development (abroad) to one of the three priorities of the U.S. foreign policy, along with defense and promoting democracy abroad.

Apart from introducing dynamics in the analysis, the other contribution of this paper is to put emphasis on the merit-based motivations of the donor. I follow Berthelemy (2006), Claessens and al. (2009), Fuchs, Nunnenkamp, and Ohler (2013), Hoeffler and Outram (2011) and Nunnenkamp, Dreher and Ohler (2012), among other authors in using the terminology “merit-based motivations” of the donor which refers to the fact that aid is provided to well-deserving recipients, based on criteria designed by the donor. Actually, most of the literature on development aid seems to point donor’s self-interest as the major driver for aid allocation. I claim that the merit-based motivations of the donor are, at least, as important as self-interest in determining which country would receive aid and how much would it receive. This conclusion may come at no surprise.

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3. The OECD defines ODA as those flows of official financing administered with the promotion of the economic development and welfare of developing countries as the main objective, and which are concessional in character with a grant element of at least 25 percent (using a fixed 10 percent rate of discount). By convention, ODA flows comprise contributions of donor government agencies, at all levels, to developing countries (bilateral ODA) and to multilateral institutions.

4. The Development Assistance Committee is a unique international forum of many of the largest donors of aid, including 24 members. The World Bank, IMF and UNDP participate as observers.
to the layperson, it however, challenges much of the aid literature which concludes that at best *merit-based motivations* are a secondary determinant for aid provision and at worst, they may not matter at all.

I claim that such a result is mainly due to an incomplete measurement of the merit-based motivations of donor countries. While these can be evaluated along different lines, the literature focused only on the political dimension as proxied by some good governance indicators. This is the *quality of governance* of a recipient country which translates the perceived performance of the recipient in terms of civil and political rights, democracy, fighting corruption, etc. According to this view, more aid should be allocated to countries that perform better in terms of *quality of governance*.

By contrast, the literature poorly measured the interest of the U.S. for the recipient’s implementation of sound economic policies and market-oriented reforms (market liberalization policies), with the use of the GDP growth rate\(^5\) and/or military expenditure of the recipient country as the only proxy for *economic-merit-based motivations* of the donor. The GDP growth witnesses a healthy economic situation for the country while a lower military expenditure shows a better management of rare financial resources that can then be spent on more productive purposes. With relatively very few exceptions, these were the only quantifiable measures for sound economic policies as perceived by the donor.

Therefore, concluding that donor countries tend to favor their self-interest (whether commercial or geo-political) is surely biased if this claim is based on several complementary proxies of donor interest (bilateral trade, votes in the U.N., military assistance, etc.) compared to incomplete measurements of the donor’s merit-based motivations. This is precisely the pitfall addressed in the first part of the paper. I complement the measurement of merit-based motivations of the donor, by proxies for market liberalization policies, in the spirit of the “Washington consensus requirements”\(^6\) as these were

\(^5\) Some studies have rather interpreted the GDP growth rate as an indicator of need.

\(^6\) Recall that the Washington Consensus refers to a set of broadly free market economic prescriptions developed in 1989 by economist John Williamson and supposed to be in line with policy advices by Washington, D.C.-based international organizations. The ten principles initially stated are:
- Low government borrowing and avoidance of large fiscal deficits relative to GDP;
- Redirection of public spending from subsidies toward broad-based provision of key pro-growth, pro-poor services;
- Tax reform, broadening the tax base and adopting moderate marginal tax rates;
- Interest rates that are market determined and positive (but moderate) in real terms;
- Competitive exchange rates;
- Trade liberalization in the sense of liberalization of imports, with particular emphasis on elimination of quantitative restrictions (licensing, etc.);
- Liberalization of inward foreign direct investment;
- Privatization of state enterprises;
anchored in the missions’ statement of the United States Aid Agency (USAID) and are a cornerstone of official declarations concerning the rational behind aid provision. The proxies for market-oriented policies are *freedom of trade*, *financial freedom* and *freedom from corruption*. To the best of my knowledge, this is the first time that such measures of economic freedom are taken into account to investigate aid allocation decisions. The novelty here is that I analysis the extent at which the donor also values efforts of the recipient in terms of market liberalization.

After identifying aid drivers, the paper investigates the relative importance of aid motivations (need, merit and donor self-interest) and asks whether they balance inertia in aid provision. Finally, the analysis is complemented by examining whether the order of importance changes over the regions of the world. This would give an idea about how does the U.S. value aid drivers depending on the location of the recipient country.

The paper is organized as follows. Section 2 investigates the data and prides descriptive analysis. Section 3 motivates the explanatory variables and classify them into motivation categories. The model is presented in section 4 and the results are discussed in section 5. A robustness analysis is carried out in section 6. Two extensions are presented in section 7 and 8. The first concerns assessing the relative importance of the vectors of motivations while the second deals with the relative importance of such vectors depending on the location of the recipient country. Finally, section 9 provides concluding remarks.

2 Data and Descriptive Analysis

I use data on bilateral aid commitments in constant 2009 U.S. Dollars, from the OECD International Development Statistics on-line database.

The paper focuses on yearly flows of bilateral ODA committed by the U.S. in favor of 145 recipient countries, over the period 2002-2009. These are all independent nations that have received ODA from the U.S. at least once during the period under study. I exclude colonies, dependencies and territories under the jurisdiction of another country. 7

I choose aid commitments rather than disbursements, because the former better reflect the donor decisions. By contrast to commitments which are totally under the

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7. The list of colonies, dependencies and territories under the jurisdiction of another country receiving ODA from the U.S. includes: Anguilla, Aruba, Bermuda, Cayman Islands, Gibraltar, Montserrat, Mayotte, Netherlands Antilles, St. Helena, Turks and Caicos Islands, Virgin Islands (UK), Virgin Islands (US), Falkland Islands, Chinese Taipei, Cook Islands, French Polynesia, New Caledonia, Niue, Northern Marianas, Tokelau, Tuvalu and Wallis & Futuna.
control of the donors, disbursements depend partly on the recipients’ willingness and administrative capacity to get the money.\textsuperscript{8}

The investigation of ODA time series for the period under study (Figure 1) shows that all countries receiving ODA from the U.S. are allocated amounts that are significantly smaller than those received by Afghanistan and Iraq. These two recipients have aid distributions that dominate all of the others. Obviously, this can be explained by the direct engagement of the U.S. in the fight against terrorism in these countries, and this military effort may have led to a higher willingness to transfer money for development. Recall that the National Security Strategy for the United States of America (2002) elevated the objective of development (abroad) to one of the three priorities of the U.S. foreign policy, along with defense and promoting democracy abroad. Once I remove Afghanistan and Iraq (Figure 1), ODA distributions over time differ among the other recipients, both in their amounts and also in their pattern.

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{figure1.png}
\caption{ODA time series by individual country}
\end{figure}

An examination of the cumulative ODA received during the period 2002-2009 (Figure 2) shows that Iraq received one fourth (24\%) of the total allocated, followed by Afghanistan (10\%). The “top ten” recipients account for 57\% of the aid allocated by the U.S. during that period. The “big recipients” group includes Iraq (42\% of the share), Afghanistan (17\%), and on a lower scale Colombia (7\%), Pakistan and Sudan (6\% of the share for each), Egypt and Ethiopia (5\% for each) and Jordan, Kenya, and the Palestinian administered areas (4\% for each).

\textsuperscript{8} The question of whether the choice between disbursements and commitments affects empirical results is disputed in the literature. According to McGillivray and White (1993), the patterns of disbursements and commitments differ significantly in most of the cases analyzed. By contrast, Neumayer (2003a) asserts that estimations are unlikely to be affected (significantly) since disbursements and commitments are highly correlated.
Notice that Egypt and Jordan, two historically big recipients with a particular importance for security issues in the Middle-East, ranked low within this group during the period under study (respectively 5% and 4%). Recall that Israel is not ODA eligible during 2002-2009, as per the listing of the OECD. This suggests that the concern for fighting terrorism in Asia seems to take over concerns for the Middle-East and reshapes the priorities of the American administration.

An investigation of the data also reveals two characteristics. On the one hand, the aid flows from the U.S. tend to be allocated among almost all recipient countries that are listed by the OECD as eligible for ODA. All of these countries receive some allocation, although it can be small in size. This pattern does not change over time. On the other hand, the list of countries receiving ODA from the U.S. is constant over time regardless of the economic, social or political performances of these countries.

This is a finding in itself. It shows a tendency for the U.S. to be involved almost everywhere, probably in order to keep bridges for potential cooperation with one or the other developing countries.

Figure 2 – Cumulative ODA 2002-2009

9. The list of countries eligible for ODA is established by the Development Assistance Committee DAC of the OECD. It includes all low-and middle-income countries (as defined by the World Bank, based on gross national income per capita), except for those that are members of the G8 or the European Union (including countries with a firm accession date for EU membership). In addition, the list separately includes all Least Developed Countries (LDCs) as defined by the UN.

10. Alesina and Dollar (2000) made a comment in that direction, while discussing the appropriateness of applying OLS to individual donors versus the usage of a Tobit procedure that accounts for the truncated nature of the aid data.
From an econometric perspective, these characteristics are problematic for the usual estimation techniques used in the literature on aid allocation. As discussed in the previous section, these techniques proceed in two stages, the aid eligibility stage and the level stage. The first stage (called also the gate-keeping stage) may be potentially ineffective, since all the ODA-eligible countries are given a yearly allocation. This translates in a lack of variability in the list of recipient countries, making potentially non-operational the eligibility stage.

3 Explanatory Variables and their Categories

In accordance with the literature, three categories of independent variables are used: variables representing the need of recipient countries, variables translating the donor country self-interest/strategic concerns and variables proxying the merit-based motivation of the donor. As discussed in the introduction, the merit-based variables are broken down into proxies for the quality of governance in the recipient country (democracy, human rights variables, reduced military expenditure, absence of corruption, etc.), and proxies for market liberalization (trade and financial freedom). Furthermore, a variable representing the dependent variable lagged one year is introduced to account for the inertia effect due to pure bureaucracy or to the nature of the aid projects involved.

Lastly, control variables are introduced to take account of the heterogeneity among the recipient countries. These include the population of recipient countries in order to control for the differences in sizes as well as year-specific time dummies in order to account for changes over time that affect equally all recipient countries.

I relate ODA flows from the U.S. to a set of explanatory variables presented below\textsuperscript{11}. As mentioned above, these variables can be grouped into four categories depending on the motivation they are proxying. The correspondence between the independent variables and the motivation behind aid provision is summarized in Table 1.

- \textit{Past ODA}: this is ODA lagged one year. The aid allocation problem entails an inherent dynamic dimension that reflects the idea of inertia in donors’ decisions. This is particularly relevant for projects involving infrastructure building. These projects last by definition more than one year, with a continued flow of aid. The expected sign for the variable is positive.

- \textit{GDP per capita}: measured in purchasing power parity in constant 2009 U.S. Dollars. Although many alternative explanatory variables could be considered to capture recipient’s need, \textit{GDP per capita} is the most commonly used because its availability and

\textsuperscript{11} See the appendix for further details on the explanatory variables used in the model.
Table 1 – Motivation categories and explanatory variables

<table>
<thead>
<tr>
<th>ODA Motivation</th>
<th>Variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inertia</td>
<td>Past ODA</td>
</tr>
<tr>
<td>Need</td>
<td>GDP per capita of the recipient country</td>
</tr>
<tr>
<td>Merit-based</td>
<td>Market liberalization Trade freedom, Financial freedom</td>
</tr>
<tr>
<td>Good governance</td>
<td>Democracy score, Score on PTS, Military expenditure, Freedom from corruption</td>
</tr>
<tr>
<td>Self-interest</td>
<td>Commercial concerns U.S exports</td>
</tr>
<tr>
<td></td>
<td>Geo-political concerns Military assistance, Votes in the U.N</td>
</tr>
</tbody>
</table>

Its strong correlation with other need variables such as life expectancy, infant mortality, or literacy.\(^{12}\) If aid is allocated according to recipient’s need, there should be a negative relationship between aid and GDP per capita.

- **Democracy**: this is an indicator of good governance and the quality of institutions which ranks the political regime of a recipient country from most autocratic (-10) to most democratic (+10). The expected sign for this variable is positive. A more democratic recipient country must receive a higher aid allocation.

- **Political Terror Scale (PTS)**: this is a measure of respect for personal integrity rights in terms of the prevalence of political imprisonment, disappearances, torture, political murder, and other forms of politically motivated violence within a country. I use these scales to build a score on PTS such that 1 means worst and 5 means best human rights performance. If aid is allocated according to recipient’s respect for personal integrity rights, I should expect a positive sign for this coefficient. Notice that this is a measure of extreme forms of state violence and repression. The idea behind introducing it as an explanatory variable along with the “democracy” co-variate is to check whether the U.S. rewards democracies that may be human rights abusers.\(^{13}\)

- **Military expenditure**: these are military expenditure of the recipient country expressed in millions of constant 2009 U.S. Dollars. One could argue that excessive military expenditure goes in hand with a higher risk of aid diversion toward non-developmental uses. The expected sign for this variable is negative.

The three above explanatory variables translate the quality of governance in the

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12. Neumayer (2003a) shows that these other need variables are statistically non-significant once income is controlled for.

13. Lai (2003) suggests that in the post-Cold War period, some states have put on the trappings of democracy to appear more legitimate and continue to abuse human rights. The U.S. aids them because they are strategically important.
recipient country. I also use proxies for market liberalization policies, in the spirit of the “Washington consensus” requirements. The proxies for market-oriented policies are the trade freedom index, the financial freedom index and the freedom from corruption index. These variables translate the weight given by the donor to the implementation of market liberalization policies by the recipient country. Consider, for instance, the freedom of trade index. I examine the institutional aspects of trade openness, namely the measures and reforms toward an open economy. This includes the tariff and non-tariff barriers to trade as well as the free movement of buyers or sellers in the international marketplace. This variable translates the propensity of the recipient to engage in effective market liberalization policies. This contrast with the usual measure of market openness adopted in the literature which considers the ratio of exports to the total trade (import and export) for a particular country and is therefore introduced as a proxy for self-interest of the donor. The trade openness ratio is the outcome of the institutional setup considered and not its driver. As such, it could be influenced by external factors that may affect the trade flows of a recipient country.

- **Trade freedom index:** this is a composite index measuring the absence of tariff and non-tariff barriers that affect imports and exports of goods and services. The trade freedom index reflects the openness of an economy to the import of goods and services from around the world and the citizen’s ability to interact freely as buyers or sellers in the international marketplace.

It is worth noting that in its report "Building Trade Capacity in the Developing World" (2003), the U.S. Agency for International Development (USAID) explicitly expresses its view that trade and investment are the principal mechanisms through which global market forces (competition, human resource development, technology transfer, and technological innovation) generate growth in developing and developed countries. As such, openness to trade, as measured by the trade freedom index, could be a determinant for the volume of development aid allocated.

- **Financial freedom index:** this is a measure of banking efficiency as well as a measure of independence from government control and interference in the financial sector. Financial freedom ensures fairness in access to financing and promotes entrepreneurship. An open banking environment encourages competition to provide the most efficient financial intermediation between households and firms and between investors and entrepreneurs.

- **Freedom from corruption index:** corruption undermines economic freedom by introducing insecurity and uncertainty into economic relationships.

All of the above indexes are collected from the Heritage Foundation database. They
are based on a scale of 0 (worst score) to 100 (best score). If donors value merit as proxied by a higher index, then I should expect a positive relationship between aid provision and each of the above indexes. Moreover, Table 2 below shows that these variable carry enough variability across countries and over the period of study which allows to run the regressions. This is translated by an interval of variation ranging from value of 0 to 94 and a standard deviation around 16 point for each of the variables.

- **U.S. export:** this is the flow of the U.S. exports toward the aid recipient country. This variable describes the economic importance of the recipient to the United States. Data on exports are measured in millions of U.S. Dollars. If aid is allocated according to the strength of the commercial relations (donor interest), then there should be a positive relationship between aid and the U.S. exports.

- **Military aid:** this is the military assistance provided by the U.S. to partner countries. This variable proxies the country’s strategic importance to the U.S. security interests. Data are expressed in millions, constant 2009 U.S. Dollars. The expected result is that the higher the level of military assistance to a given recipient, the greater is its strategic importance to the U.S. and the more aid it will receive.

- **U.N. vote:** this is a variable translating the strategic motivations of the U.S. in terms of the voting allegiance of the recipient country in the the U.N. General Assembly (UNGA). For a given recipient, it represents the percentage of votes in line with the U.S. in the UNGA. Abstentions and absenteeism are discarded. Following Alesina and Dollar (2000), Nunnenkamp and al (2008) and Faye and Niehaus (2012) among others, I use the voting pattern in UNGA as a proxy for geopolitical motivations of the donor. If aid is allocated according to faithfulness of alleys then the expected sign of the coefficient is positive.

Notice that Public Law 101-246 calls for analysis and discussion of votes on issues which directly affected United States interests and on which the United States lobbied extensively. An important basis for identifying such issues is their consistency with the State Department’s Strategic Goals. For every general assembly of the U.N, the State Department identifies and reports on votes and consensus resolutions deemed important to the U.S. interests. The U.S. Agency for International Development (USAID) may also be directed to take into account the voting behavior of recipients when allocating the aid.  

14. Faye and Niehaus (2012) explore the effect of political cycles (existence of executive elections) on aid provision to recipients more or less politically aligned with a donor.

15. It should be acknowledged that on February 2011, a Bill sponsored by Republicans, proposes to punish countries that often take stands contrary to those of the US, in the United Nations General Assembly. The proposal is entitled *The United Nations Voting Accountability Act* and stipulates that a
Notice that unlike most of the literature, I focus on votes defined as important by the U.S. State Department in its annual Report to Congress on Voting Practices in the United Nations. A number of papers, including Dreher & al (2007) and Kuziemko & Werker (2006) considered recipients membership to the Security Council of the U.N. as motivation behind aid provision for the donors. The focus of these papers is on whether aid buys votes in the Security Council (UNSC), i.e., aid is an explanatory variable in the vote equation. In the present paper, I use rather the voting pattern at the General Assembly for two main reasons. The first is that alliances and geopolitical motivations of donors are much wider than relations to few countries (non-permanent members of the Security Council that are aid recipients) that can potentially be strategic in the event of conducting a sanction or a major armed intervention. A such, the behavior in the UNSC is only part of a bigger view referring to the behavior in UNGA (and correlated to it). The second reason for my choice is related to the remark above on the republicans’ proposal at the Congress, which tends to reveal that from the U.S. administration point of view, if the voting in the U.N is to be considered as a signal for proximity, it would be rather the voting in the UNGA.

- **Population**: measures the population size in the recipient country. Data are collected from the World Development Indicators (WDI) on-line database (World Bank). The population variable is introduced as a control to capture differences in recipient-country size. The expected sign for this variable is positive. The greater the population of a country, the more aid it is likely to receive.

All of the explanatory variables considered in the model are lagged one year. The econometric justification of this procedure is to avoid the risk of reversal causality between the aid variable and each of the explanatory variables. On an economic ground, lagging the variables allows to account for the delay necessary to the donor country to acquire the information specific to each potential aid recipient.

In addition, I take the natural log for all variables. Exception is made of *U.N. vote, military assistance* and the qualitative ordinal variables (*Democracy, PTS, etc.*). The reason is that not all recipient countries receive military assistance from the U.S. nor do they vote in line with the U.S interests. As such the existence of zeros prevents from

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16. Neumayer (2003a) argues that if total aid is taken to be the dependent variable, then at least population size must be one of the explanatory variables to account for the fact that, all other things equal, China is likely to receive more aid than, say, Dominica.
using the logarithm. As for the qualitative ordinal scores, taking the log would not have much sense.

Likewise, I take the natural log for the dependent variable in order to have a less skewed distribution. The resulting log-log model would help to reduce the outliers effect and allows interpreting the coefficients as elasticities.

Finally, Table 2 provides descriptive statistics for the main variables considered in the model.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Obs</th>
<th>Mean</th>
<th>Std. Dev</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Past ODA</td>
<td>1078</td>
<td>149.755</td>
<td>556.7407</td>
<td>0.001</td>
<td>10701.06</td>
</tr>
<tr>
<td>GDP per capita</td>
<td>1115</td>
<td>5801.792</td>
<td>5770.812</td>
<td>249.204</td>
<td>31738.23</td>
</tr>
<tr>
<td>Trade freedom</td>
<td>929</td>
<td>64.149</td>
<td>14.526</td>
<td>0</td>
<td>90</td>
</tr>
<tr>
<td>Financial freedom</td>
<td>929</td>
<td>46.307</td>
<td>18.424</td>
<td>0</td>
<td>90</td>
</tr>
<tr>
<td>Freedom from corruption</td>
<td>929</td>
<td>31.449</td>
<td>15.951</td>
<td>4</td>
<td>94</td>
</tr>
<tr>
<td>Democracy</td>
<td>957</td>
<td>2.146</td>
<td>6.248</td>
<td>-10</td>
<td>10</td>
</tr>
<tr>
<td>PTS</td>
<td>1084</td>
<td>3.155</td>
<td>1.022</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>U.S export</td>
<td>1150</td>
<td>2309.082</td>
<td>11281.07</td>
<td>0</td>
<td>15120.1</td>
</tr>
<tr>
<td>Military assistance</td>
<td>988</td>
<td>61.893</td>
<td>436.135</td>
<td>0</td>
<td>6102.2</td>
</tr>
<tr>
<td>UN vote</td>
<td>1152</td>
<td>0.280</td>
<td>0.232</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>
4 The Model

I use a country fixed effect estimation to account for country-specific factors that remain fixed over time. I include a set of year dummies to control for the effect of general changes over time unrelated to the recipients’ policy (for instance, the decision by the donor to reduce the aid budget in a given year, etc.). The aid allocation equation can be written as follows:

\[ \ln OD_{it} = \alpha_i + \delta_t + \rho \ln OD_{it-1} + \ln X_{it-1} \theta + Z_{it-1} \phi + \epsilon_{it} \]  

(1)

The intercept includes a component \( \alpha_i \) that is specific to each recipient country but fixed over time in order to control for time-invariant heterogeneity. I also include a period effect \( \delta_t \) that is common to all countries but varies over time. These variables capture the effects of variations, in each period, that impact all countries in the same way. This includes, for instance, shifts in the total aid budget due to budgetary restrictions.

In order to account for inertia in aid allocation, a lagged dependent variable is introduced in the right hand side of the equation. Since both variables are logged, the coefficient \( \rho \) can be interpreted as the elasticity of aid. It gives the percentage change in current aid commitments due to a 1% change in previous period’s aid. The vector \( X \) contains all the explanatory variables for which we take the natural logarithm (i.e. export, population and real GDP per capita). The parameter \( \rho \) and the vector \( \theta \) describe the effect of the exogenous (and predetermined) variables on aid. \( Z \) is the vector of covariates for which we cannot take the natural logarithm because of the presence of “zeros” in the series (military aid and military expenditure) or because of the nature of the variables (qualitative ordinal variables; i.e. PTS, Democracy, U.N. votes, freedom of trade, etc.). Lastly, \( \epsilon \) is the error term assumed to follow a normal distribution.

The estimation of equation (1) may result in several econometric problems. First, the lagged dependent variable is correlated, by construction, to the error term. Second, the covariates may be correlated to the fixed effect \( \alpha_i \). In addition, some of the dependent variables are suspected of carrying endogeniety, since they can be themselves influenced by the aid level (the causality goes in both directions).

In this particular framework, I use the system-GMM type of estimator. This is a major advantage for at least two important reasons. First, this technique models aid allocation in one stage which is crucial due to the ineffectiveness of the eligibility stage, as discussed above. Second, this technique generates consistent estimates even in the presence of fixed effects in a dynamic panel data (see Arellano 2003). Notice that the econometric technique used is particularly suited to panels with large number of
individuals and few time periods, which is the case for the present study.

Basically, the estimation technique consists in taking first-differences in equation (1) to remove unobserved time-invariant country-specific effects, and then instrumenting the right-hand-side variables in the first-differenced equation using levels of the series lagged two periods or more. To increase efficiency, the equation in level is reintroduced to obtain a system of equations in both first-differences and levels. The instruments used in the first-differenced equations are variables lagged levels and the instruments for the equation in levels are lagged first-differences of the series. These instruments are valid under restrictions on the initial conditions: changes in instrumenting variables (in the equation in levels) are uncorrelated with the fixed effect. Under these conditions, the past differences are valid instruments for the variables in level. By doing so, a system of equation is obtained. This system provides for more moment conditions which will be exploited in a GMM framework in order to give efficient estimates of the parameters.

In the present paper, the only variable for which I instrument is “U.N. vote”. Clearly, this variable is likely to be correlated to the fixed effect. However, its past first-differences are not. Indeed, the percentage of vote seems to be constant with respect to factors such as the geographic location, religious affiliation, and the like. As such, the first-differences in the percentage of vote is not correlated to the country fixed effect. To be on the safe side, I run the Hansen test which does not reject the null hypothesis of exogenous instruments at the 5% level (see results in the appendix)

5 The Results

As an inertia story would suggest, my base specification (Model 1 of Table 3) shows that past aid commitments have a substantial impact on current development aid. The coefficient is significant at the 1% level. All else equal, a one percentage change in the amount of aid in the previous year leads to a 0.412 percentage change in aid for the current year. By the mere fact that a country received aid in the previous year, it continues to attract even more aid, in average, the current year. This tendency is independent from all other factors (i.e., need of the country, population size, strategic importance, merit of the recipient, etc.). This means that a country initial level of aid plays a strong role in predicting its future level.

Notice that the moderate value of the coefficient (not very large) may refer to two factors: the first refers to the type of ODA provided as well as the reporting practices by the United States. Actually, ODA is mainly provided as funding for projects whose value is recorded in the same commitment year, as per the OECD’s directives. This
means that if a project lasts more than one period, which is typically the case, the U.S. will report only the part of the project that is planned for the year of commitment. This reporting practice has the potential of smoothing the commitments patterns and reducing the coefficient associated to past ODA.

The second reason for the moderate value of the inertia effect could be the myriad of governmental aid agencies operating in the U.S. (16 agencies), which do not have
necessarily the same bureaucratic process in providing aid. As such, inertia may be less important for relatively narrow-focused agencies targeting specific development sectors and specific recipients. A striking example of such agencies is the African Development Foundation.

With bureaucratic inertia having such an impact on current aid allocation, the question arises on the effectiveness of conditioning aid provision on political, social, or economic reforms\textsuperscript{17}. Kanbur (2003) gives striking examples of real experiences that show how difficult it is for the donors to suspend the release of aid, even if the recipient fails in meeting the conditions for giving funds (see Sraieb 2015 for a model investigating trade-offs between inertia pressure and reputation incentives for a typical donor).

The second variable in the model is the recipient’s need as captured by its level of GDP per capita. Model 1 of Table 3 shows that this variable is found to influence aid commitments. The poorer the country, the higher is ODA committed. All else equal, a one percentage change in GDP per capita leads to a (-0.415) percentage change in ODA the following year. This suggests that the U.S. as an aid donor cares about the well-being of people in the recipient countries\textsuperscript{18}.

Turning to the merit-based motivation of the donor, two sets of variables are examined. The first set refers to recipient’s merit as measured by market liberalization efforts (freedom of trade and financial freedom). The second set refers to good governance as proxied by, on the one hand, military expenditure and freedom from corruption and on the other hand by human rights variables (PTS and democracy scores).

Consider first trade freedom index, the financial freedom index and the freedom from corruption index. The two first indexes have positive and statistically significant coefficients. This suggests that the U.S. privileged those countries that have taken steps toward freeing their economies from government intervention and opened their frontiers to foreign exchanges. These economies more integrated to the international market are allocated more aid than their counterparts that resist to market liberalization. When coupled to the finding on the export coefficient (non-significant), the U.S. seems to reward countries that are open to trade rather than trade partner countries (countries to which they export more).

\textsuperscript{17} Aid conditionality means that donors attach conditions for granting aid. These conditions have to be met by the recipient as a prerequisite for entering into an aid agreement or for keeping up aid.

\textsuperscript{18} In the literature, the relationship between ODA and the level of GDP per capita was controversial both in terms of its sign and its significance. Fielding (2010) studying humanitarian aid provided by the U.S. as well as Apodaca and Stohl (1999) studying U.S. bilateral economic and military aid found a (negative but) non-significant relationship. Furuoka (2008) in a study on ODA from all sources, whether bilateral or multilateral found that relatively wealthy developing countries have received larger amounts of foreign aid.
An economic explanation could be that the U.S. values highly the integration into the global economy which is thought to be a powerful force for economic growth and poverty reduction. Indeed, the U.S. Agency for International Development (USAID) in its 2003 report entitled "Building Trade Capacity in the Developing World" stipulates that the goal of USAID is "to increase the number of developing and transition countries that are harnessing global economic forces to accelerate growth and increase incomes".

Turning to the second set of merit-based variables, I find that the coefficient of freedom from corruption index is negative and significant. This suggests that the U.S. allocates higher aid amounts to more corrupt countries. This finding can be explained along three lines.

First, one could think that more corruption must not necessarily mean lower aid for a need-oriented donor. Indeed, a more efficient strategy for a donor is to continue flowing aid but changing its modality (project aid, or technical cooperation rather than budget support aid) and/or its channel of delivery (through multilateral organizations or NGOs in order to limit the recipient government involvement). A theoretical model on the optimal mix of modalities for aid allocation is provided in Legros and Sraieb (2015).

Second, it could be that for more strategic recipients, the U.S. is less reluctant to give aid despite of a widespread corruption.

A third reason, for which the U.S. appears to favour more corrupt government is that it, presumably, does not do it on purpose. This is the argument made by Alesina and Weder (2002) who state that “the reason for this correlation is probably that the United States pays little attention to corruption, and the other motivations for aid-giving end up favouring more corrupt governments”.

As for military expenditure, the coefficient is statistically significant and displays the expected (negative) sign. Although small in size, this coefficient suggests that the U.S. allocates less aid to countries that tend to increase their military expenditure. The reason could be the donor perception of a higher risk of utilization of this assistance for non-developmental purposes. Notice that the small values of the coefficient and of its estimated standard deviation is due to its expression as a semi-elasticity.

Concerning the Democracy variable, I find that the coefficient is statistically non-significant (although having the expected positive sign) and this remains true for all the models. The result suggests that the United States pays little attention to the score on

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19. The channel of delivery, the type of aid given, and the category for which aid is designated are defined in the Directives for Reporting to the Creditor Reporting System Aid Activity Database from OECD.
democracy when allocating official development assistance. A possible explanation of the result is that it is driven by collinearity between the Democracy variable and the PTS score. However, removing the PTS variable from the model (Model 4 in Table 3) does not change the sign or the significance of the Democracy variable (nor does it alter the magnitude or the significance of the other variables). The same applies for PTS when I rather remove Democracy from the model. Model 4 suggests that Democracy does not seem to be a dimension valued by the U.S. when deciding on aid to allocate among recipient countries.

Turning to human rights, as captured by the PTS score, their effect on ODA is negative (the opposite of the expected result) and statistically significant. This suggests that the U.S. gives more aid to countries with widespread repression (lower score on PTS). A finding that is controversial in the literature, depending on the donor country considered, the time period covered, the recipient countries set, and the estimation technique used.\textsuperscript{20}

In order to explain the coefficient on PTS, Model 2 in Table 3 accounts for the possibility of a non-linear impact of human rights on aid commitments. I introduce a dummy variable for every PTS level. The dummy will take 1 for a particular pair year/country if the considered country has that particular PTS level that year. All of these dummies are introduced simultaneously in the regression.

By decomposing the PTS scale (PTS 5 is the reference), I find that the coefficient of PTS 1 is positive. Moreover, this is the only significant level, at the 5 percent, among the other PTS levels. This suggests that a shift from PTS 1=0\textsuperscript{21} to a PTS 1=1 (wide repressive regime) results in an increase in the amount of ODA received. This finding confirms the result discussed earlier on the negative coefficient of non-desegregated PTS. However, the new insight provided by this exercise can be stated as follows: if the U.S. allocates aid solely on the basis of the PTS score, than all what matters for the U.S. is whether a recipient is a highly repressive country or not (PTS=1 or not). The other PTS levels on the scale are not important.

While checking the data, I find that all countries having PTS=1 for a particular year are also characterized by a certain political instability (due to an internal conflict, a civil

\textsuperscript{20} Apodaca and Stohl (1999), found that a rise in human rights abuses reduced the amount of economic aid the country is to receive from the U.S. While Lai (2003), shows that human rights play no role in the yearly allocation of U.S. aid. Poe and Meernik (1995) reached the same conclusion, though in a static setting. Neumayer (2003 a,b), finds that personal integrity rights are statistically non-significant at best, and exert a negative influence on aid allocation, at worst. Poe and Tate (1994), find a positive relation between human right considerations and U.S. aid allocation in 1980 and 1984.

\textsuperscript{21} Having PTS 1=0 means that PTS 1 is equivalent to PTS 2, 3, 4. They are all non-significant and they are non-significantly different from PTS 5.
war, etc). This is the case for Sudan, Afghanistan, Burundi, Central African Republic, Iraq, Congo Democratic Republic, Sri Lanka, Nepal, etc.

To account for political instability, I introduce a new variable polinstab (Model 3 in Table 3). This is a dummy variable obtained by coding the pairs country/year so as to have 1 for those pairs characterized by a conflict (internal or external, civil war, etc.) and 0 otherwise. The coding is based on information from the Political Instability Task Force Report: PITF Phase IV. This political instability dummy is introduced in interaction with the (non-disaggregated) PTS score in order to assess whether the results are driven by the above mentioned countries.

The results in Model 3 show that the interaction term ptspolinstab has a negative and statistically significant coefficient. The effect of being more repressive (lower PTS score) and less unstable (a move from 1 to 0 on the polinstab scale) is negative (-0.537 = -0.128 - 0.409). This suggests that the U.S. seems to allocate more aid to more repressive but more stable countries. Put it differently, if I consider the pool of repressive countries (those having lower PTS), the U.S. seems to allocate relatively more aid to the more stable recipients (those with a lower polinstab).

Again, political stability of a country seems to be the guiding criteria for the U.S. decision. This may be due to sustaining the effort to get out of the situation of instability (recall that the polinstab variable lags one period behind ODA commitment). Another reason may be that the U.S. is sustaining some political regime and disregards the low PTS level (widespread repression) because of the particular situation of war or conflict. Notice that all the other coefficients have almost the same magnitude, sign and significance level as the base specification (Model 1 of Table 3) comforting more the results just mentioned above.

Let us now investigate the strategic motivations of the donor or self-interest variables. These are proxied by military aid provided by the U.S., the value of its exports to the recipient, and the percentage of (important) votes in line with the U.S. in the United Nations General Assembly.

Starting with military aid, model 1 shows that the coefficient is statistically signif-

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22. The PITF is funded by the Central Intelligence Agency, meaning that if the U.S administration bases its ODA allocations on a political instability score, the PITF would be the most likely candidate.
23. Qian and Nunn (2014) raise the concern for simultaneity in this context since they find that an increase in U.S. food aid (a small part of ODA reaching 7% for the U.S. in 2011), increases the incidence of armed civil conflicts in recipient countries. This concern for reverse causality is addressed here through the lagging of the conflict variable and its nature as a dummy. Notice that not all studies find that aid increases conflict. For instance, Collier and Hoeffler (2004) find that ODA has no effect on conflict globally. The difference in findings across studies is most likely due to either the different empirical strategies or to differences in the types of aid being examined.
icant and positively impacts the amount of aid received, although very small in size.

Notice, first, that the coefficient is a semi-elasticity since military aid is expressed in level (millions) and ODA is logged. Then, an increase in military aid by 1 million, induces an increase by 0.1 percentage in ODA the following year\(^\text{24}\). I conclude that the military importance of a country to the U.S. (proxying strategic alliances and security interests) matters in explaining the aid allocation pattern. In other words, countries that receive higher levels of U.S. military aid (meaning countries that are expected to be of greater importance to the U.S. security interests) are given more aid\(^\text{25}\).

As for the U.N. vote variable, Model 1 shows that it is never significant (although it exhibits the correct sign), suggesting that the voting pattern in the U.N. is not a motivation behind aid giving in the period under study.

Notice that a simultaneity bias couldn’t be ignored. Clearly, the voting pattern may determine aid. The amount of aid, in turn may impact the voting behaviour as shown by Dreher and al (2008) for the case of the United States. This potential problem has been raised by Alesina and Dollar (2000) and Berthelemy (2006) who shed a doubt on the validity of using such variable as an explanatory variable. Dealing with this problem, Alesina and Dollar (2000) instrumented for the voting variable and used it as an indicator of similar geopolitical interests without inferring a causal relationship.

One of the advantages of using the system-GMM type of estimator is precisely to deal directly with predetermined variables. Thus, the vote allegiance variable is not taken as “strictly exogenous”, but rather predetermined or potentially endogenous\(^\text{26}\) because of countries expectations.\(^\text{27}\)

Turning to the U.S. exports, I find that the corresponding coefficient is non-significant in all the models suggesting that the U.S. does not segregate among countries when allocating ODA. The U.S. does not allocate more aid to trading partners.\(^\text{28}\)

\(\text{24. It is because of the semi-elasticity nature, that the values of the coefficient and that of the associated standard deviation are low.}\)

\(\text{25. The literature has provided other measures of strategic importance. They all point to the military dimension. Appodaca (1999), uses the number of U.S. military personnel stationed within that country. Lai (2003) proxies strategic importance by a dummy indicating whether a state houses 100 or more U.S. troops or not. Of course, physical presence of U.S. troops within a country is an extreme form of strategic importance of a country. Nevertheless, most of U.S. allies are countries that benefit from arms transfers and/or technical assistance rather than direct involvement through presence of military troops. This is the reason for adopting U.S. military aid in this paper rather than any other proxy for the strategic importance of a recipient country.}\)

\(\text{26. In econometrics, predetermined variables are those variables for which the error terms are uncorrelated with their current and lagged values but correlated with their future values (Arellano (2003); pp. 149-150).}\)

\(\text{27. This is the situation when a country current vote is determined strategically so as to give a signal to the donor and attract its ODA for following periods.}\)

\(\text{28. The literature finds mitigated results mainly due to the content of aid examined (ODA vs human-}\)
As discussed in the literature (Berthelemy 2006, Burnside and Dollar 2000 and Neumayer 2003a,b), when aid is tied, a simultaneity bias may arise (i.e. increased aid may cause increased exports and vice-versa). However, this risk is limited since I am working on aid commitment flows, and aid disbursements usually lag behind commitments. In order to ensure being on the safe side, I lag the trade variable by one year.

The last variable examined is the population size. Its coefficient is positive and highly significant, suggesting that the more populous a country is, the more aid it tends to receive from the U.S. Because the population variable is also logged, its coefficient can be interpreted as an elasticity. For every percentage change in population, there is a corresponding 0.255 percentage increase in aid for the recipient country.  

6 Robustness Analysis

In order to check the robustness of the above results, I start by substituting some variables for others and examine whether the results obtained so far are still valid. First, I replace the Democracy variable by the combined political rights and civil liberties index (Pol and Civ.rights). This index is obtained by adding the score of political rights to the score of civil liberties developed by the Freedom House. The result obtained (Model 2 of Table 4) confirms the finding on the variable Democracy. The Pol and Civ.rights index is statistically non-significant (although having the expected positive sign). Substituting this index for the variable Democracy does not alter the magnitude or the significance of the remaining variables in the model. This confirms the above finding that the U.S. does not take into account the democracy dimension when allocating aid among recipient countries.

A second issue involves the use of the affinity of nations index in replacement of the U.N. vote variable (Model 3 in Table 4). The affinity index assigns values to pairs of countries depending on their affinity level. This level ranges from -1 (least similaritarian aid) and to the difference in the time period considered as well as the econometric method used. Indeed, Fielding (2010) finds that the U.S. tends to favour trading partners in terms of the amount of aid allocated. Lai (2003) and Appodaca (1999), both find an opposite result. For Lai (2003), the export variable is significant but negative suggesting that the more a country imports from the United States, the less aid it is likely to receive. Appodaca (1999) does not find a relation between the two variables at all.

29. This confirms the findings in Alesina and Dollar (2000) and Neumayer (2003a), both using static models. In a dynamic setting the results are rather mitigated. Lai (2003) finds a significant positive effect of population on aid, while Furuoka (2008) and Fielding (2010) found that the population is non-significant suggesting that the size of country has no effect on the yearly allocation of aid.

30. The affinity index is developed by Erik Gartzke (2006) and "attempts to measure state preferences, or more precisely, the interest similarity among pairs of states” (E. Gartzke 2000).
interests) to 1 (most similar interests). The coefficient of the *affinity index* is non-significant (although having the correct sign). It confirms the finding on the *U.N. vote* variable suggesting that the voting behaviour does not impact aid allocation decisions.

The magnitude and the significance of the remaining variables in the model are not altered.

<table>
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<tr>
<th>Variables</th>
<th>Model (1)</th>
<th>Model (2)</th>
<th>Model (3)</th>
<th>Model (4)</th>
<th>Model (5)</th>
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Robust standard errors in parentheses (*** *p < 0.01, ** *p < 0.05, * p < 0.1)

A third concern in the robustness check is the lag length and the data availability at the time of the decision making. One may think that the aid committed this year was decided last year using data of the year before. I then use a two years lag in the regression (Model 4 of Table 4). The results are substantially unchanged compared to the base specification using a one year lag (Model 1 of Table 4), suggesting that the effect of the variables remains the same in two years time.

The fourth issue is the assessment of whether the results are affected by the nature of
the data and the econometric method used. It should be highlighted that until 1993, the list of eligible countries to ODA included all low-income and middle-income countries. In 1993, with new aid requirements in the transition economies of Eastern Europe and reduced aid needs in East Asia, the initial list was divided into two parts:

- Part I: only aid to ‘traditional’ developing countries are reported as ODA,
- Part II: aid to ‘more advanced’ developing and eastern European countries were recorded separately as ‘official aid’ (OA).

Starting from 2005, the Part II of the DAC List was abolished since the need for aid in transition countries declined as they became more prosperous. Data on official aid (OA) to less needy countries are no longer collected.

The split and reversion to a single list of recipient countries resulted in a serious econometric problem for models of aid allocation. Indeed, a country that is not anymore ODA-eligible but that still receives aid (Official Aid) will not appear in the list. Assigning a zero value for ODA received by this country from 2005 onward would cause a misleading estimates of the regression coefficients. The same applies if the country was not an ODA eligible country before 2005 but entered the list after that date. Dropping these observations from the data would cause sample selection problem.

In order to check whether this problem has any impact on the results, I proceed along two lines: - First, I exclude the set of countries causing truncation in the data (Model 5 of Table 4). This set comprises Belarus, Ukraine and Libya for the years 2002, 2003, and 2004 because they weren’t eligible for ODA during that period. I also exclude Slovenia and Bahrain for the entire period 2005-2009 as they both weren’t anymore ODA-eligible after 2005. These countries/years observations cause a sample selection problem, and this is exactly the reason for their exclusion.

Notice that in addition to the sample selection issue, data for some of these countries, were missing for one or the other of the explanatory variables. Would the truncation problem be non-existent, these observations wouldn’t be taken into account in the regression, anyway. By doing so, I loose 9 observations (for 3 countries). I then run checks for the estimation used to assess whether the procedure has given unbiased results with respect to the base specification.

Model 5 suggests that dropping these countries does not impact the magnitude or the significance of the parameters. This means that the sample selection issue did not have an impact on the estimation. This could be explained by the fact that eliminating the mentioned countries entails a loss of very few observations for very few countries.

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31. The classification of countries as low-income or middle-income countries is defined by the World Bank, based on gross national income GNI per capita
compared to the base specification (the dilution effect).

- Second, I drop the observations before the year 2005 (Model 6 of Table 4). This provides us with an additional means to check the effect of the econometric model on the result obtained, knowing the truncated nature of the data. Again, the results confirm the finding in the base specification. The magnitude and the significance of the coefficients are not substantially changed (except for the \textit{PTS} score\textsuperscript{32}). This supports the finding that including the countries/years responsible for the sample selection issue does not result in biased estimations.

7 Relative Importance of the Motivations

My objective in this section is to assess the relative importance of the motivation vectors (need, merit and self-interest). The idea is to check which of the vectors is the most valued by the U.S. when allocating aid to recipient countries. The exercise must be carried with due caution since the models considered have different numbers of observations and different number of covariates.

This exercise shouldn’t be seen as a comparison between models in terms of their goodness of fit. It is rather an appreciation of how close to the observations is the prediction of each of the model. This gives a rough idea about the contribution of the concerned vector of motivation in the fit of the model. That is, its contribution to the precision of the prediction on observed aid. It is in this sense that I can conclude about the importance given by the U.S. to each of the merit, need or self-interest vectors. The results of such an exercise are reported in Table 5.

To proceed, I start first, with the basic model (containing only the time dummies, \textit{past ODA} and the \textit{population} variable). I then add sequentially the different motivation vectors to the basic model. I therefore consider the following specifications:

- the basic model augmented by the need variables (\textit{GDP per capita});
- the basic model augmented by the merit variables (\textit{military expenditure, democracy, PTS, trade freedom, financial freedom, and freedom from corruption});
- the basic model augmented by the self-interest variables (\textit{U.S export, military assistance and U.N. vote}).

\textsuperscript{32} After checking data, it turned out that very few countries having \textit{PTS}=1 (most repressive) remains for the regression when I restrict my attention to the period 2005-2009. These are Central African Republic in 2007, Chad in 2008, Congo Dem. Rep. 2009, Nepal 2008 and 2009 and Uganda 2005. I believe that this is the reasons for the shift in the significance of the \textit{PTS} score. Recall that the significance of this variable in the base model was due to the set of countries having \textit{PTS}=1. The most repressive countries drove the result on \textit{PTS}. 

24
Second, I compare each of the models with the basic specification in terms of the Bayesian Information Criterion (BIC). I also compute the Akaike Information Criterion (AIC). The model having the lowest BIC or AIC is the one fitting better the observations in hand.

Table 5 – Assessing the relative importance of the vectors of motivations

<table>
<thead>
<tr>
<th>Model</th>
<th>Basic model</th>
<th>Basic model &amp; need vector</th>
<th>Basic model &amp; merit vector</th>
<th>Basic model &amp; self-interest vector</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIC</td>
<td>403.166</td>
<td>340.824</td>
<td>125.91</td>
<td>186.862</td>
</tr>
<tr>
<td>AIC</td>
<td>354.933</td>
<td>288.233</td>
<td>55.720</td>
<td>126.527</td>
</tr>
</tbody>
</table>

Table 5 states that the basic model (past ODA, population and time dummies) returns a BIC of 403.166 (AIC: 354.933). Introducing the need vector, decreases the BIC to 340.824 (the AIC decreases to 288.233) suggesting that the resulting model fits better the data. Alternatively, adding the self-interest vector reduces further the BIC to 186.862 (the AIC further decreases to 126.527). I obtain a model with a higher explanatory power. Finally, introducing the merit vector to the base specification gives an even better model in terms of explanatory power. The BIC drops to 125.91 (while AIC decreases to 54.829). It is in this sense that I can claim that the merit-based motivation of the donor country has more weight in the decision to allocate aid than any of the other motivation vectors.

This is a finding that contrasts with the literature. In most models on aid allocation, the donor’s self-interest motivation has a prominent role in the aid allocation decision. I argue here that the merit dimension is the dominant vector of motivation for allocation and that the bias found in the literature toward the self-interest motivation of the donor seems to be mainly due to a poor measurement of the merit dimension in most of the cases.

I am not claiming the merit-based motivation is the only important motivation for aid giving, but rather that when properly measured the merit of a recipient seems to be a very important determinant for the allocation decision.

Alesina and Dollar (2000) use a similar logic by introducing different variables into the regression sequentially, as a way to look at their relative importance. The difference here, is that Alesina and Dollar (2000) compare the coefficients of determination (they are using the OLS technique) and they are interested in the contribution of individual variables to the explanatory power of the model. I am interested rather in the
different vectors of motivations (need, merit, self-interest). Moreover, the coefficient of
determination cannot be of help as I use a different set of covariates for each model.

The results found so far are aggregated for all recipients. My objective in what
follows is to check the presence of differences in the motivation valuation across recipient
countries.

8 Motivations and Geographic Location

This section investigates the drivers of ODA allocation for different locations of the
recipient countries. This allows to check whether the U.S. values differently the vectors of
covariates depending on the geographic location of the recipient of aid. Such analysis may
help evaluate the extent at which the U.S. was successful in enforcing its conditionality.
Recall that enforcement of conditionality is weaker because of pure bureaucratic inertia,
excessive altruism (warm glow effect), or when self-interest of the donor dominates its
motivations.

To start with, I classify the countries according to the continent of location. I then
run different regressions, one for each and every continent. The output is reported in
Table 6.

Notice that the number of observations will differ substantially from a regression to
the other (40 for Europe and 229 for Africa). This means that I cannot compare directly
the goodness of fit of the models. The exercise is rather to compare the sets of the
relevant explanatory variables in each case.

The first remark concerns the only relevant common variable among all continents;
past ODA. The previous year’s aid allocation is highly significant. This suggests that
inertia plays a determinant role in the amount of ODA allocated to a country regardless
of its geographic location.

However, the order of importance of inertia varies substantially across regions. It is
the lowest for Europe (0.256) and is more than the double for Latin America (0.621). This
suggests that the U.S. tends to be less yielding to bureaucratic inertia when allocating
aid to developing European countries. This is expected since these countries naturally
belong to the influence sphere of their developed European pairs. The U.S. seems to
rely on these later donors to take their “responsibilities”, either directly or through
international financial institutions (IFIs). This may explain why the variation in

33. The results for Europe must be interpreted with due caution since the number of observations
is particularly low (40 observations). This may lead to very imprecise results and a misleading model
(correlation coefficient: 0.258).
Table 6 – Assessing the relative importance of the regions of the world

<table>
<thead>
<tr>
<th>Variables</th>
<th>Europe</th>
<th>Asia</th>
<th>Africa</th>
<th>Latin America</th>
</tr>
</thead>
<tbody>
<tr>
<td>Past ODA</td>
<td>0.256**</td>
<td>0.389***</td>
<td>0.535***</td>
<td>0.621***</td>
</tr>
<tr>
<td></td>
<td>(0.118)</td>
<td>(0.151)</td>
<td>(0.083)</td>
<td>(0.087)</td>
</tr>
<tr>
<td>GDP per capita</td>
<td>0.110</td>
<td>-0.703**</td>
<td>-0.208</td>
<td>-0.469***</td>
</tr>
<tr>
<td></td>
<td>(0.081)</td>
<td>(0.289)</td>
<td>(0.262)</td>
<td>(0.161)</td>
</tr>
<tr>
<td>Democracy</td>
<td>-0.217*</td>
<td>-0.005</td>
<td>0.022</td>
<td>0.015</td>
</tr>
<tr>
<td></td>
<td>(0.125)</td>
<td>(0.017)</td>
<td>(0.022)</td>
<td>(0.027)</td>
</tr>
<tr>
<td>PTS</td>
<td>-0.199</td>
<td>0.034</td>
<td>-0.133</td>
<td>-0.249**</td>
</tr>
<tr>
<td></td>
<td>(0.213)</td>
<td>(0.089)</td>
<td>(0.148)</td>
<td>(0.117)</td>
</tr>
<tr>
<td>Military expenditure</td>
<td>4.36e-05</td>
<td>-1.15e-05*</td>
<td>-4.08e-05</td>
<td>-1.85e-05</td>
</tr>
<tr>
<td></td>
<td>(7.65e-05)</td>
<td>(6.70e-06)</td>
<td>(0.000185)</td>
<td>(1.69e-05)</td>
</tr>
<tr>
<td>Trade freedom</td>
<td>0.029*</td>
<td>0.010</td>
<td>0.009</td>
<td>0.023***</td>
</tr>
<tr>
<td></td>
<td>(0.016)</td>
<td>(0.009)</td>
<td>(0.006)</td>
<td>(0.008)</td>
</tr>
<tr>
<td>Financial freedom</td>
<td>0.015***</td>
<td>0.019***</td>
<td>0.010</td>
<td>0.011</td>
</tr>
<tr>
<td></td>
<td>(0.004)</td>
<td>(0.007)</td>
<td>(0.007)</td>
<td>(0.007)</td>
</tr>
<tr>
<td>Corruption freedom</td>
<td>0.003</td>
<td>-0.009</td>
<td>-0.003</td>
<td>-0.010</td>
</tr>
<tr>
<td></td>
<td>(0.012)</td>
<td>(0.011)</td>
<td>(0.005)</td>
<td>(0.006)</td>
</tr>
<tr>
<td>U.S. export</td>
<td>-0.048</td>
<td>0.126</td>
<td>0.004</td>
<td>0.118*</td>
</tr>
<tr>
<td></td>
<td>(0.216)</td>
<td>(0.082)</td>
<td>(0.141)</td>
<td>(0.067)</td>
</tr>
<tr>
<td>Military aid</td>
<td>0.037</td>
<td>0.002***</td>
<td>0.000</td>
<td>0.008***</td>
</tr>
<tr>
<td></td>
<td>(0.036)</td>
<td>(0.001)</td>
<td>(0.000)</td>
<td>(0.002)</td>
</tr>
<tr>
<td>U.N. vote</td>
<td>4.944*</td>
<td>1.431**</td>
<td>-0.331</td>
<td>-0.276</td>
</tr>
<tr>
<td></td>
<td>(2.560)</td>
<td>(0.701)</td>
<td>(0.680)</td>
<td>(0.464)</td>
</tr>
<tr>
<td>Population</td>
<td>0.080</td>
<td>0.187</td>
<td>0.351*</td>
<td>0.106</td>
</tr>
<tr>
<td></td>
<td>(0.333)</td>
<td>(0.147)</td>
<td>(0.184)</td>
<td>(0.085)</td>
</tr>
<tr>
<td>Constant</td>
<td>-3.762</td>
<td>2.893</td>
<td>-2.744</td>
<td>1.771</td>
</tr>
<tr>
<td></td>
<td>(3.370)</td>
<td>(2.934)</td>
<td>(3.991)</td>
<td>(1.762)</td>
</tr>
<tr>
<td>Time dummies</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Observations</td>
<td>40</td>
<td>153</td>
<td>229</td>
<td>115</td>
</tr>
<tr>
<td>Number of countries</td>
<td>7</td>
<td>26</td>
<td>42</td>
<td>20</td>
</tr>
<tr>
<td>Coefficient of correlation</td>
<td>0.258</td>
<td>0.843</td>
<td>0.882</td>
<td>0.764</td>
</tr>
</tbody>
</table>

Robust standard errors in parentheses (*** p < 0.01, ** p < 0.05, * p < 0.1)

Aid following a change in the previous year’s allocation relatively small (0.256). This is confirmed by data analysis which shows that Eastern and Central Europe is the least destination for U.S. ODA, far below Africa, Asia and Latin America\(^{34}\) (Figure 3, left). This ordering stay unchanged if I do not account for those countries that receive disproportionately high amounts of ODA (these are mainly Afghanistan, Iraq and Pakistan).

\(^{34}\) This ranking does not account for Oceania, since ODA allocated therein is particularly non-significant during all the period under study.
Despite this fact, the U.S. is still one of the most generous bilateral donors for Eastern and Central Europe (Figure 4). Actually, the U.S. was the most generous donor until 2006 when it was surpassed by Germany. Notice, however, that most of the flows going to European developing countries are provided by multilateral donors; that is, IFIs, including the European Union.

Going back to the regression results, Table 6 shows that the allocation of aid by the U.S. in Europe seems to be motivated essentially by concerns for market liberalization. This may be interpreted as an effort toward supporting and consolidating the transition process, given the relatively recent and fragile status of these countries as market oriented economies. Official declarations and reports by U.S. most influential aid agencies (see USAID report 7/24/2013) point to the necessity to continue supporting the transition to vibrant, free-market democracies in Central and Eastern Europe and the former Soviet Union states. The transitional measure targeted include a strong, stable and free financial sector that ensures an efficient system of financial intermediation including an independent central bank and real financial institutions. This may provide an explana-
tion for the coefficient of financial freedom. In the same vein, the coefficient of trade freedom may be explained by the willingness of the United States to support measures that promote free markets in the recipient countries. This is further highlighted in the Congressional Research Service report for Congress R-40213 of 2011, which explicitly states that among the key rationales for foreign aid, there are commercial interests calling to promote U.S. exports either by creating new customers for U.S. products or by improving the global economic environment in which U.S. companies compete.

Turning to Asia, the amounts of ODA allocated to countries in this region seem to be well predicted by the model (correlation coefficient: 0.8426). The relevant determinants of aid for Asia are past ODA (as expected), GDP per capita, military aid, financial freedom, U.N. vote allegiance, and at a lower significance level (10%), military expenditure of the recipient country. All of the coefficients have the expected sign. The need motivation (GDP per capita) is significant, at the contrary of Africa and Europe. Moreover, the U.S. seems to favour its strategic allies (those that the U.S. provides with military assistance as well as those that vote more in line with the U.S. interests).

These findings can be explained by geopolitical considerations given the proximity of Russia and China as well as the U.S. direct implication in the region (Iraq, Afghanistan, and Pakistan) in addition to the increasing Iranian threat. Notice that most of ODA directed to Asia is provided by multilateral donors, Japan and the United States (see Figure 5, left). However, recall that the bulk of aid committed by the U.S. is directed to Afghanistan, Iraq, and at a lower extent to Pakistan. When these hot spots are not accounted for, the distribution of ODA provided by the U.S. shifts far below that of Japan and IFIs which both stay at the same level with substantially less fluctuations (Figure 5, right).

Figure 5 – ODA to Asia by Major Donors
As for Africa, the results are rather surprising. They suggest that the U.S. is only concerned with the population size of the recipients (only at the 10% significance level). The inertia effect clearly drives most of the results. This finding may be explained by the "aid fatigue" experienced by most donors. Indeed, the 90’s have witnessed a general decrease in the aid budgets directed to Africa after the statement that aid policies were inefficient in improving the economic situation in most of the targeted countries.

An investigation of the data shows two interesting features. The first relates to the fact that Africa ranks second in U.S. ODA destinations, just after Asia and far above Latin America and Eastern Europe (see Figure 3, left). However, the discussion in section 2 showed that most of the aid to Asia is directed to hot spots (Afghanistan, Iraq and Pakistan). If these countries are not accounted for, the distribution of U.S. aid provided to Asia shifts downward, making of Africa the most favorite destination for U.S. ODA (Figure 3, right). This is coupled with the observation that the U.S. became, after 2006, the most generous donor with an aid twice as high as aid provided by France, the second most important donor or the UK, the third most generous donor (Figure 6).

The second remark is that the U.S. provides aid to 54 African recipient countries. However, most of these countries receive rather small amounts. Only few big recipients (including Egypt, Congo, Rep. Dem, Kenya, Nigeria, Sudan and Uganda) receive substantial flows (a share between 4% and 10% of cumulative aid). This may have resulted in a “dilution effect” that can explain why aid seems to be driven only by bureaucratic inertia. Notice again that the highest share received by Africa comes from multilateral donors, which have their own drivers behind aid allocation but also translate the motivations of their shareholders (Figure 6), bringing the discussion back to the influence of the United States.
Another explanation as to why pure inertia seems to be the only motivation for the U.S. aid in Africa may point to the change in the U.S. priorities in the post 9/11 era. During last decade, the bulk of aid budget allocated by the U.S. seemed to be directed to reconstruction efforts in Iraq and Afghanistan. Recall that since the 9/11 terrorist attacks, policymakers in the U.S. frequently have cast foreign assistance as a tool in the global war on terrorism, increasing aid to partner states in the terrorism war and funding the substantial reconstruction programs in Afghanistan and Iraq. Global development has been featured as a key element in U.S. national security strategy. Nevertheless, further tests must be carried out in order to disentangle a potential structural change in the allocation criteria for Africa, before and after 2001.

Notice that the correlation coefficient returns a high value (0.8813) suggesting that the model (predicted values) explains well the observed behaviour.

The regression for Latin America was conducted on 115 observations (for 20 countries). The relevant variables for ODA allocation decision are past ODA followed by GDP per capita, U.S. exports, military aid, freedom of trade and PTS. This suggests that the U.S. seems to care about poverty but also seems to favor trading partners within Latin American countries (this variable is significant at the 1% level exclusively for these countries). The reason could be the special relations the U.S. has with its trading neighbours and the different free trade agreements set specifically to sustain these countries (North American Free Trade Agreement (NAFTA), U.S.-Central America Free Trade Agreement (CAFTA), in addition to a number of agreements negotiated with neighbour countries including Chile, Peru, etc.). For the period under study (2002-2009), Hornbeck (2010) reports that Latin America was among the fastest growing regional trade partner for the U.S. with a total merchandise trade (exports plus imports) growing by 82% compared to 72% for Asia (driven largely by China), and 51% for the European Union. This can also explain the sign of the trade freedom coefficient.

Moreover, Latin American countries have made sustained efforts to liberalize their trade, reducing tariffs significantly and entering into their own regional agreements. The coefficient of trade freedom suggests that the U.S. rewarded these efforts and valued deeper regional integration. More openness and more integration are also considered as good economic and political opportunities for the U.S. (recall that trade liberalization means encouraging trade flows in general and not particularly with the U.S. However, since the U.S. is the natural trading partner for its neighbours, both variables point almost to the same direction).

Notice that Latin America is the fiefdom of U.S in terms of aid provision (Figure 7),
by contrast to all other locations where other major donors seems to be more present or even competing for ODA provision. Recall that Asia is the stronghold of Japanese aid (after cleaning for the hot spots) and the U.S. ranks far below in terms of generosity. Likewise for Europe where the U.S. is surpassed by Germany (after 2006) and provides ODA flows that equate those given by France. The same applies to the position of U.S. in Africa where France and U.K. are taking over their responsibilities.

These findings suggest that the image of major donors sharing the world largely echoed in policy analysis does not seem to be valid for the period under study.\(^{35}\) Exception made for the United States position in Latin and South America, and at a lower extent Japan in Asia, the major donors are rather present on almost all the locations making competition for aid very likely.

Notice that for Oceania, due to the lack of sufficient number of observations, the regression couldn’t be run.

Finally, let me comment on the differences among regions of the world in terms of conditionality enforcement. The low coefficient of Past ODA for Europe shows that the U.S. is relatively less constrained by bureaucratic concerns when allocating aid. The non-significance of the self-interest variables (U.S. export, Military aid, etc.) on the one hand and the significance of the market liberalization requirements (trade freedom and financial freedom) suggest that the U.S was more credible in imposing its conditionality in Eastern Europe than anywhere else. This is because the U.S. is more easily inclined to

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\(^{35}\) It should be duly acknowledged that this pattern relies on the analysis of the aggregate aid volumes as opposed to sectoral aid. Unfortunately a comparison of the sectoral allocations among donors based on recipients location can not be reliable given the parsimonious and speckled nature of data. For instance, the U.S. reporting on sectoral allocations for a certain continent is much more populated that does the French or the German reports. As such, a comparison of the donors specialization (sector/continent) cannot be efficiently carried out.
commit to its conditionality with non-strategically important recipients. The reasoning is particularly relevant for Europe where the U.S. relies both on IFIs and the European developed allies to support their developing pairs and maintain their geo-political interests (which are aligned with those of the U.S. most of the time). By contrast, aid allocation to Latin American countries is driven by a strong inertia coupled to geopolitical and commercial interests. This is translated by the size and the significance of the coefficients of “U.S. export” and “military assistance”. Geographic proximity has forged strong linkages between the United States and Latin America, with critical U.S. interests in the region encompassing economic, political, and security concerns, both in the short and the long term. As such, enforcement of conditionality is likely to be weak in these recipient countries.

Interestingly, this shows that conditionality does not seem to be enforced in the same way when providing aid to the same recipient. Both inertia, and the importance of a recipient country to the strategic interest of the U.S. makes its conditionality non-credible and could threaten the effectiveness of aid. This is further investigated in a formal model Sraieb (2015) showing that reputation signaling is an efficient commitment device that can mitigate the time inconsistency problem and reestablish aid effectiveness.

A last remark concerns the coefficient of “freedom from corruption” which is not significant for any of the regions although it was for the basic specification (Model 1 in Table 3). This comforts the interpretation made in section 5, first developed by Alesina and Weder (2002), according to which the reason for the positive correlation between aid and corruption (in the base specification) “is probably that the United States pays little attention to corruption, and the other motivations for aid-giving end up favouring more corrupt governments”.

9 Concluding Remarks

This paper argues that donors’ policy in terms of aid allocation contributed significantly to the stated failure of aid in alleviating poverty and promoting growth.

By contrast to most studies on aid allocation that build on static models, this paper accounts for administrative inertia in aid which brings me to consider a dynamic specification. Properly taking into account this inertia delivers substantially different results from the standard literature. On the methodological side, I make use of the System-GMM type of estimator which models aid eligibility and allocation in a single stage and allows for treating pre-determined variables. This is a major advantage in my context since on the one hand there is lack of variability in the list of beneficiary form
ODA provided by the U.S. rendering inadequate the use of a two-stage method, and on the other hand, a number of standard covariates considered in the literature cannot be considered as totally independent from ODA without being endogenous as well. Treating them as predetermined generates consistent estimates even in the presence of fixed effects in a dynamic panel.

Another contribution of this paper is to bring at the heart of the analysis the relation between aid, on the one hand, and market liberalization (and democracy) on the other hand. The results show that factors such that market liberalization performance explain more the distribution of aid than the need of the recipient or human rights concerns. Most striking here is that a non-democratic recipient that is highly repressive tend to receive more aid, if it is more stable (no conflicts or wars, be they internal or external). Moreover, I find that democratizers are not allocated more aid. Economic liberalizers, however are rewarded by the U.S. in terms of aid received. This puts a limit on what a particular recipient country can expect as it promotes democracy and human rights. These are among the few factors over which the recipient has easy command in the short to medium term.

In this paper, I have also uncovered some striking differences among aid drivers, when recipients are grouped according to their geographic location. This analysis provides evidence as of the tendency for the U.S. to value differently the same vector of covariates depending on the geographic location of the recipient country. Inertia plays an important role in all equations (i.e., all regions), although its influence varies substantially from a region to the other. Bilateral aid is selectively sensitive to the need of the recipients or self-interest of the donor. For Africa, for instance, the only significant determinant for aid is inertia (aid fatigue phenomenon). By contrast, the U.S. seems to favour heavily its Latin American trading partners. This is the only geographic location where exports of the U.S. have a significant coefficient.

Such analysis contributes to evaluate the extent at which the U.S. was successful in enforcing its conditionality, which does not seem to be enforced in the same way by the same donor. The importance of a recipient country to the strategic interests of the U.S. makes its conditionality non-credible and could threaten the effectiveness of aid.

Ultimately, the main message behind the investigation of U.S. aid motivations is twofold. For recipients, the results suggest that the best way to attract aid is to go for market liberalization (trade freedom and financial freedom). As for the donor, the conclusion is that there is no reason for aid to be effective if it is based on pure inertia, on excessive altruism, or on self-interest (if it disregards democratization and rewards highly repressive regimes). This creates a time inconsistency problem on the side of the
donor which destroys incentives for efforts on the side of the recipient. One efficient way to address the problem and retrieve effectiveness is for the donor to invest in reputation. The extent to which this may solve the problem and the conditions under which the solution is beneficial to the agents are questions investigated in Sraieb (2015).
Appendix

List of main explanatory variables

- **GDP per capita**: measured in purchasing power parity in constant 2009 U.S. Dollars. Data are taken from the World Development Indicators (WDI) of the World Bank. Although many alternative explanatory variables could be considered to capture recipient’s need, *GDP per capita* is the most commonly used because its availability and its strong correlation with other need variables such as life expectancy, infant mortality, or literacy.\(^\text{36}\) If aid is allocated according to recipient’s need, there should be a negative relationship between aid and income per capita.

- **Democracy**: this is an indicator of the quality of institutions which ranks the political regime of a recipient country from most autocratic (-10) to most democratic (+10). The data are collected from the polity2 variable of Polity IV project (Marshall & Jaggers 2002). The expected sign for this variable is positive. A more democratic recipient country must receive a higher aid allocation.

- **PTS**: it is based on the two Purdue Political Terror Scales (PTS). One of these scales is based on Amnesty International annual human rights report. The other scale is based on information from the U.S. Department of State Country Reports on Human Rights Practices. Both reports use a scale from 1 (best) to 5 (worst) to score countries regarding respect for personal integrity rights. Unlike Neumayer (2003b,c) where the simple average of the two indexes was taken, I consider here, the index assigned by the U.S. Department of State. If that index was unavailable for a particular year, the one provided by Amnesty International was taken over for replacement. The resulting index was then reversed.

The coding rules are described on the PTS website, and can also be found in Gibney and Dalton (1996). Also, see Neumayer (2003 c), and Stohl and Carleton (1985). The scale can be described as follows:

Level 1: “Countries... under a secure rule of law, people are not imprisoned for their views, and torture is rare or exceptional... political murders are extremely rare.”

Level 2: “There is a limited amount of imprisonment for non-violent political activity. However, few persons are affected, torture and beating are exceptional... political murder is rare.”

Level 3: “There is extensive political imprisonment, or a recent history of such imprisonment. Execution or other political murders and brutality may be common.

\(^\text{36}\) Neumayer (2003a) shows that these other need variables are statistically non-significant once income is controlled for.
Unlimited detention, with or without trial, for political views is accepted...

Level 4: “The practices of (Level 3) are expanded to larger numbers. Murders, disappearances are a common part of life... In spite of its generality, on this level terror affects primarily those who interest themselves in politics or ideas.”

Level 5: “The terrors of (Level 4) have been expanded to the whole population... The leaders of these societies place no limits on the means or thoroughness with which they pursue personal or ideological goals.” (quoted from Poe (1992)).

- **Military expenditure**: these are military expenditure of the recipient country expressed in millions of constant 2009 U.S. Dollars. The data are obtained from SIPRI (Stockholm International Peace Research Institute) Database. One could argue that excessive military expenditure goes in hand with a higher risk of aid diversion toward non-developmental uses. The expected sign for this variable is negative.

- **Trade freedom index**: The trade freedom score is based on two inputs, the trade-weighted average tariff rate and non-tariff barriers (NTBs). actually, different imports entering a country can, and often do, face different tariffs. The weighted average tariff uses weights for each tariff based on the share of imports for each good. Weighted average tariffs are a purely quantitative measure and account for the basic calculation of the score. The extent of NTBs in a country’s trade policy regime is determined using both qualitative and quantitative information. Restrictive rules that hinder trade vary widely, and their overlapping and shifting nature makes their complexity difficult to gauge. Data on "Trade freedom index" are collected from the Heritage Foundation published in collaboration with “the Economist”.

- **Financial freedom index**: the Heritage Foundation methodology scores an economy’s financial freedom by looking into five broad areas. Namely, the extent of government regulation of financial services, the degree of state intervention in banks and other financial firms through direct and indirect ownership, the extent of financial and capital market development, government influence on the allocation of credit, and the openness to foreign competition. These five areas are considered to assess an economy’s overall level of financial freedom that ensures easy and effective access to financing opportunities for people and businesses in the economy. An overall score on a scale of 0 to 100 is given to an economy’s financial freedom through deductions from the ideal score of 100. The deductions are based on the extent to which a government intervenes in the financial system. These interventions go from negligible government interference to repressive government where supervision and regulation are designed to prevent and prohibit private financial institutions.

- **Freedom from corruption index**: The index is derived primarily from Trans-
parency International’s Corruption Perceptions Index (CPI). In scoring freedom from corruption, the Index converts the raw CPI data to a scale of 0 to 100 by multiplying the CPI score by 10. For countries that are not covered in the CPI, the freedom from corruption score is determined by using the qualitative information from internationally recognized and reliable sources.

- **Military aid**: this is the military assistance provided by the U.S. to partner countries. This variable proxies the country’s strategic importance to the U.S. security interests. Data are collected from the U.S. Overseas Loans & Grants [Greenbook] database and are expressed in millions, constant 2009 U.S. Dollars. The expected result is that the higher the level of military assistance to a given recipient, the greater is its strategic importance to the U.S. and the more aid it will receive.

**Hansen test for the Base Model (Model 1, Table 3)**

<table>
<thead>
<tr>
<th>Test Description</th>
<th>Chi-Squared</th>
<th>Prob &gt; chi2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sargan test of overid. Restrictions</td>
<td>chi2(52) = 75.12</td>
<td>0.020</td>
</tr>
<tr>
<td>(Not robust, but not weakened by many instruments.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hansen test of overid. restrictions</td>
<td>chi2(52) = 47.58</td>
<td>0.648</td>
</tr>
<tr>
<td>(Robust, but weakened by many instruments.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Difference-in-Hansen tests of exogeneity of instrument subsets:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>* GMM instruments for levels</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Hansen test excluding group:</td>
<td>chi2(40) = 40.93</td>
<td>0.430</td>
</tr>
<tr>
<td>- Difference (null H = exogenous):</td>
<td>chi2(12) = 6.65</td>
<td>0.880</td>
</tr>
<tr>
<td>* iv(L.logdpkr L.milas L.milexp L.logusexp L.pts L.democ L.tradfree L.finfree L.freecorrup L.logpop)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Hansen test excluding group:</td>
<td>chi2(36) = 34.90</td>
<td>0.521</td>
</tr>
<tr>
<td>- Difference (null H = exogenous):</td>
<td>chi2(16) = 12.68</td>
<td>0.696</td>
</tr>
</tbody>
</table>

**References**


39


Heritage Foundation *Economic Freedom Index Database*


[37] **OECD International Development Statistics On-line Database.**

[38] **OECD Directives for Reporting to the Creditor Reporting System Aid Activity Database**


[54] World Bank Development Indicators Database.