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Why foreign aid does (not) improve democracy?

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Abstract

Foreign aid has become closely connected to the development of democracy since the nineties. This paper analyses the democracy effects of aid accounting for this change in donors' criteria. This approach contributes to the literature by analysing how the kind of donor allocating aid flows influences the effect of aid on democracy. I estimate a dynamic panel data model using data from 52 African countries between 1997 and 2008. I find that aid favours democracy. However when considering the kind of donor, I observe that while bilateral aid does not foster democracy, multilateral aid favours democracy. Robustness tests confirm these findings.

Keywords: Democracy; Bilateral aid; Panel data; Endogeneity.

JEL classification: F35, O11, D70, C23

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1 Introduction

Less than half of the world population is living under total or partial democracies. But in Africa, only nine of the 53 countries are at best flawed democracies while 31 of them are authoritarian regimes.[1] Because democratic institutions, which provide checks and balances on elected officials, are prone to decline corruption (see, for example, Bhattacharyya and Haodler (2010)), improving political institutions may be an effective tool in the global fight against corruption in developing countries. Foreign aid donors have become more closely involved in the development of democracy since the nineties. Should foreign donors increase aid funds in order to promote democracy?

Answer to this question is unclear from theory because the theoretical causality from aid to democracy may go in both directions. On the one hand, foreign aid increases the size of the government budget. The control on public resources becomes more attractable, which may stoke political instability (Svensson, 1999). Knack (2001) and Bräutigam and Knack (2004) stated that democratization is a consequence of the monarch's need for tax revenues that enforce the government to be answerable to the citizens and responsive to their needs. Foreign aid may release the need of taxing revenues and hence disconnect the government from its citizens requests. Foreign aid is also potentially fungible. If so, foreign aid may be diverted from its initial targets and committed reforms may be delayed (Feyzioglu et al., 1998).

On the other hand, foreign aid may enable the recipient government to build up institutions, thanks to an increase in the public budget and technical assistance (Knack, 2004). In addition, the growing number of academic research since Burnside and Dollar (2000) and of international agendas focusing on political issues – as the Monterrey Consensus (2002) – have assigned foreign donors to condition their aid on political reforms commitments. The donors have been involved in a greater conditionality since the end of the nineties, which may create greater incentives for the aid recipient government to engage institutional reforms (Dunning, 2004; Brown, 2005).

Hence, the overall effect of aid on democracy has to be determined empirically. This

[1] See the Economist Intelligence Unit report http://graphics.eiu.com/PDF/Democracy_Index_2010_web.pdf

is precisely the role of this paper. There is a vast empirical literature on the consequences of foreign aid, however, only a few of the studies investigates the direct effect of aid on democracy. This sparse empirical literature is not conclusive. While Bräutigam and Knack (2004) found that foreign aid lowers recipient government taxation, which in turn reduces incentives for democracy, Knack (2004) found any statistical association between aid and democracy. Goldsmith (2001), Dunning (2004) and Heckelman (2010) showed that foreign aid foments democracy in Africa or in Eastern Europe countries, particularly after the Cold War.

A strand of literature that examines donors' motives showed that different types of aid donors are expected to behave differently.[2] Multilateral aid is "made to a recipient institution which conducts all or part of its activities in favour of development" (Donor Assistance Committee, 2006) while bilateral aid is still tied to the commercial and strategic closeness between donors and recipients (Brown, 2005). There is only one paper, Kalyvitis and Vlachaki (2011), that took into consideration the relevance of different donors behaviour in determining the aid-democracy relationship. Kalyvitis and Vlachaki (2011) investigated the probability of observing democracy on 64 recipient countries from 1967 to 2002. They found that there is no difference between the democracy effects of the two categories of aid. Both bilateral – measured by the US aid – and multilateral aids are adverse to democracy (either statistically or not).

Similar to these studies, I assess the relationship between aid and democracy to establish the condition under which foreign aid foments democracy. Still, the contribution of this paper to the literature is threefold. First, the paper addresses endogeneity and dynamic issues using Generalised Method of Moments (GMM) methods that were not considered in the previous studies of this literature. Usually, external instruments for foreign aid are used to face its endogeneity. But it is somewhat difficult to find strong instruments for foreign aid that are not themselves affecting democracy (see Roodman (2009)). Instead, GMM methods use the lagged values of the endogenous variable itself as exogenous instruments. Second, the panel data used are based on a recent time period (1997 – 2008) and cover exclusively African recipient countries. Contrary to

[2]See, for instance, Alesina and Dollar (2000) and Headey (2008) for a detailed discussion about the difference between multilateral and bilateral donors.

cross-sectional data, panel data add a temporal dimension that allows accounting for meaningful variations of the political regime and of foreign aid flows. Third, as Kalyvitis and Vlachaki (2011), I recognise that aid donors may behave differently, which may condition the aid-democracy relationship. But instead of focusing on a unique bilateral donor (the United States) I retain an aggregate of all bilateral donors. The research reported here shows that the direction following which aid affects democracy in recipient countries depends on the nature of foreign aid: foreign aid promotes democracy in Africa if, and only if, aid is allocated by multilateral agencies.

I estimate a dynamic panel data model where I disaggregate the overall aid allocation between bilateral aid – accounting for all bilateral donors – and multilateral aid. Using data on 52 African countries over the period 1997 — 2008, I apply two estimation techniques: the dynamic panel "difference" GMM estimator proposed by Arellano and Bond (1991), and the "system" GMM estimator proposed by Blundell and Bond (1998).[3] Both estimators are specifically designed for dynamic panel data with problems of endogeneity and heteroskedasticity, and with individual heterogeneity. Results show that the overall effect of foreign aid is positive on democracy but fairly low. I disaggregated aid between the two aid categories assuming that multilateral aid is less tied to political and strategic issues than bilateral donors, and that multilateral donors focus on the political will of the recipient government to fulfil institutional reforms. The results conform to this assumption: I find that foreign aid promotes democracy when aid is allocated by multilateral agencies. The effect is large. On the contrary, the effect of bilateral aid is generally not significant. Upon multiple robust checks with different estimation procedures, specifications and data, the results hold strongly. The remainder of the paper is organised as follows. Section 2 presents my hypotheses. Section 3 describes the data. Section 4 outlines the estimation procedure. Section 5 presents the empirical results. Section 6 concludes.

[3]Throughout this article, the "difference" estimator refers to the Arellano and Bond (1991) GMM estimator and the "system" estimator refers to the Blundell and Bond (1998) GMM estimator.

2 Hypotheses

My literature review reveals that the empirical relationship between aid and democracy is not clear-cut. Foreign aid can strengthen as well as weaken democratic institutions in recipient countries. Different hypotheses may explain these empirical discrepancies.

2.1 Estimation procedure

The estimation procedure matters in determining the divergence in the empirical literature. The effect of foreign aid cannot be examined apart from the effect of democracy on the decision to provide foreign assistance. Indeed, the causation between aid and democracy may go in both directions. The state of democracy is likely to affect donors decisions because donors may want to reward changes toward greater democracy or punish recipient countries that make no effort to reform their political system. Democratic recipient countries can also motivate further aid allocations because foreign aid is presumably managed with transparency in democracies and presumably fulfils donors conditions (Santiso, 2001). Svensson (1999) maintained for example that, between 1970 and 1994, aid is conditioned on what donors observe as democracy (namely the extent of political rights and civil liberties). Foreign aid is likely to suffer from a reverse causation, thereby eclipsing the pure direct effect of aid on democracy.

To obtain an unbiased estimate of the effect of foreign aid on the state of democracy, most of studies use external instruments, namely alternative variables that are highly correlated to foreign aid but unaffected by the process of democratization in order to ensure that instruments are exogenous to democracy. It is somewhat difficult to find strong instruments for foreign aid, say instruments that are enough correlated with aid and, at the same time, that affect democracy only through their effect on aid. The colonial history is recurrently used as an exogenous instrument since found to be a core determinant of donors allocations. But the colonial history of a recipient country may as well affect the process of democratization if the colonial heritage is found to affect the current institutions (Roodman, 2009). I address issues about endogeneity applying a GMM procedure. GMM estimators, that provide consistent estimates for

dynamic panel-data model, use the lagged values of endogenous variables themselves as exogenous instruments (see also Djankov et al. (2008) and Wright (2009)).

2.2 Time period

Another point that may explain divergences in empirical results is how the time period is extended (Heckelman, 2010). The last decades have seen a change in the behaviour of political donors. This change is partly due to the end of the strategic Cold war, the growing number of academic researches on the role of policies in determining the aid effectiveness, and various international agendas focusing on democracy in recipient countries (Dunning, 2004). Most of donors have become, at least partly, attentive to the democratic effort of recipient countries. After the end of the nineties, the aid international community has made the promotion of democratic governments a priority. Donors either tend to reward countries that have strengthen their democratic institutions or finance countries that commit on thereafter reforms. For example, Neumayer (2003a) asserts that when the link between aid and human rights (personal integrity, political rights and civil liberties) is statistically observed, this link is quite low. But the link strengthens in the post-Cold war period when aid is allocated by multilateral agencies. Accounting for a recent time period allows capturing the fact that aid conditionality has improved newly.

2.3 All bilateral aid

Finally, the key hypothesis of this study is the idea that the type of foreign aid matters in determining the effects of foreign aid on democracy. Bilateral donors presumably use foreign aid to conduct their own interests while multilateral agencies – that combine diverse bilateral funds – have more difficulties to make show through a unique self-interest. I would have good reasons to conjecture that the aggregation of aid considered in prior research has shaded the potential specific effect of multilateral aid on democracy, especially where the democracy effect of foreign aid appears to be non-existent or closed to zero (see, for example, Alesina and Dollar (2000) and Neumayer (2003b)). Targeting the development of democracy and strengthening citizens rights are officially declared by

many donors to justify their allocations (Alesina and Dollar, 2000). But even so, Brown (2005) asserted that bilateral donors have greater self-interests. Bilateral aid is mostly tied to commercial, economic or security interests. Even if bilateral donors have also committed on a greater attention to democracy, bilateral aid is maybe not enough focused on democracy issue to have a statistical effect on democracy in recipient countries. For instance, the USAID – the U.S. agency responsible for the allocation of foreign aid – declares focusing more and more on democracy. In 2011, the USAID has directly spent about forty four millions dollars in Africa in democracy and human rights issues, which is nevertheless just above 1 per cent of the total aid disbursed in Africa in 2011 by this agency. Twice is disbursed, for example, in the agricultural sector.[4] In order to save their economic relationship with a recipient country, Brown (2005) suggested also that bilateral donors may prefer stability (say that elites remain at the power) than political disorder that might appear when political reforms are undertaken. Pressure or threats are not credibly perceived by the recipient government if this government expects that the donor will still have an interest in granting aid.

The differences between the effects of bilateral aid and multilateral aid on economic outcomes have been pointed out by some scholars. Headey (2008) confirms that multilateral aid, less geo-strategic than bilateral aid, has a positive effect on economic growth while bilateral aid does not during the Cold war. But Kalyvitis and Vlachaki (2011) is the only one study that considers that the donors heterogeneity may affect the aid-democracy relationship. Kalyvitis and Vlachaki (2011) applied a two-stage discrete-response framework using data from 64 developing countries in the world from 1967 to 2002. They conducted a random-effects logit model to estimate the probability of observing democracy using alternatively total aid, bilateral aid and multilateral aid. They did not statistically confirm that multilateral aid performs better than that bilateral aid. They found that both types of aid, exactly as total foreign aid, have a detrimental effect on democracy (either statistically or not). Rather than including alternatively bilateral and multilateral aid in empirical regressions, I include total aid (both bilateral aid and multilateral aid) ; second, I consider all bilateral donors allocations instead of

[4]See the USAID web site (http://www/info.usaid.gov) for more details.

the United States bilateral allocation; third, I have data available up to 2008, which allows accounting for the international focus on democratic issues started in the 2000s; fourth, I measure democracy using a continuous variable, which allows intermediaries in the measure of democracy.

3 Data and variables

I use annual panel data from 1997 to 2008 of 52 African recipient countries. I average the data over three years to reduce large variations in the data, to account for a delayed institutional effect of foreign aid, and to avoid the problem of too many instruments. This section describes the variables and the data. The list of countries is given in Appendix C. The main descriptive statistics of variables are given in Appendix A.

3.1 Variables of interest

3.1.1 The democracy measure

The dependent variable is the degree of democracy. Though democracy is sometimes argued to be a dichotomous concept (Alvarez et al., 1996), democracy may be viewed as a continuous concept, with different degrees of democracy. Dichotomizing democracy amasses countries that have very different degrees of democracy (Elkins, 2000). There is no agreement on a best continuous measure, but the Political Freedom (PF) index is widely accepted as one of the best empirical indicators of political democracy and the most frequently used measure of democracy (see, for instance, Goldsmith (2001); Knack (2004); Djankov et al. (2008); Heckelman (2010)).

I proxy for the dependent variable using the PF measure compiled from the Freedom House, a non-governmental organization that conducts research and advocacy on democracy. The PF index represents a characteristic that all democracies have at least in common, free and fair elections. The PF index is scaled so that lower scores indicate greater political and civil rights. This measure sums a measure of civil liberties (based on 15 indicators) and a measure of political rights (based on 10 indicators). Civil liberties include mainly rights of people, freedom of religion, freedom of speech, freedom of

assembly, rights to a trial, rights to own property, and rights to privacy. Political rights include mainly fair election laws, campaigning opportunity, multiple political parties, significant opposition vote, free of military, and decentralised political power. These indicators of democracy evaluate how citizens can participate to their political power and be involved in their own governance. Civil and political rights give to citizens the opportunity to participate to the political power in favour of the widest interest. The highest value of PF within the sample is 14 for Sudan and Libya, no matter the period, and for Somalia and Equatorial Guinea in the nineties. The lower value, 2, is for Cape Verde since 2002.[5]

Contrary to cross national data set, panel data include temporal variations. Cross-section regressions (as in Knack (2004)) use as dependent variables the variation of the measure of democracy between the beginning and the end of the time period considered. But using the change in the value of the democracy index over large periods may mask meaningful variations of the political regime. For example, the variation of Central African Republic index of democracy – measured by the Freedom House index – from 1997 to 2006 is equal to zero while there have been important variations of the political regime during this period: in 2000 the index is equal to 7, in 2001 to 10, and in 2003 to 12.

3.1.2 The aid measure

To proxy for foreign aid, I use the ODA/GDP measure. Most of the empirical studies use the Official Development Assistance (ODA) measure scaled by GDP, which accounts for the dependence of a recipient country on foreign aid, namely the "aid intensity"(see, for example, Burnside and Dollar (2000), Goldsmith (2001) and Bräutigam and Knack (2004)). ODA refers to the disbursement amount which is grants and loans with a grant element of at least 25 per cent. Multilateral ODA is the ODA amount allocated by an international agency, institution, or organization to an aid-recipient country (see Appendix B). Bilateral ODA is the ODA amount allocated directly by one donor to an aid-recipient country. Annual data of total ODA and multilateral ODA are available

[5] Cape Verde is the only African country that has ever reached the maximum rating.

from the World Development Indicators (WDI) and from the OECD. Bilateral ODA is deduced from the difference between total and multilateral ODA. On average, an African country has received 12.7 per cent of its GDP as total aid (among which 5 per cent is multilateral aid). The highest allocation (144% total aid of GDP) was directed to Liberia in 2008. Again panel data allow to account for important temporal variations that are rubbed out in cross sectional regressions. For example, Central African Republic has received about 9 per cent foreign aid of its GDP in 1997 and 2006 but more than 11 per cent in 1998 and less than 4.5 per cent in 2003. If foreign aid promotes democracy, then countries receiving a higher share of aid should exhibit decreasing ratings on the democracy index, other things equal.

3.2 Control variables

Following the existing literature, control variables are used to capture the determinants of democracy and the recipients' characteristics.[6] Not control for what conditions democracy may partly affect aid estimates. For example, modern countries that have greater education attainment and life expectancy are more likely to promote democracy. But the countries that are in late in terms of modernization are also more likely to attract foreign aid. Do not control for modernization may downward bias the estimated aid coefficient.

The literature on the causes bringing about democracy usually imposes economic growth, modernization, Foreign Direct Investments (FDI), conflict, ethnic heterogeneity, tropical location, oil dependence, and colonial history as determinants of democracy.

3.2.1 Income

I use the annual economic growth rate to control the potential effect of growth on democracy (source: the World Development Indicator, WDI). Gundlach and Paldam

[6]One can use added variables of control to analyse the effect of aid on democracy. Besides using the controls presented in section 3.2, the literature on the determinants of democracy typically includes religion and legal measures in empirical specifications (La Porta et al., 1999; Goldsmith, 2001). Both aspects are country fixed effects, say time-invariant. Thus, using both GMM procedures removes the risk that aid coefficients are biased by the omission of country fixed effects. Preliminary results not reported here have showed that religion and legal measures have any explanatory power in the regressions.

(2009) found that income explains the long-term political regime. Economic growth can lead citizens to ask for institutional changes suitable for investments.

3.2.2 Modernization

To proxy for modernization, I use the log of life expectancy at birth provided by the World Bank (source: WDI). Modernization refers to social changes linked with industrialization and rises, among others, urbanization, education levels and life expectancy (Przeworski and Limongi, 1997). These social changes are likely to increase standards of leaving and to promote the process of democratization (Kalyvitis and Vlachaki, 2011). Data on education levels and literacy are sporadic while data on life expectancy and urbanization are available annually for each country. Not reported results show that using alternatively a measure of urbanization – namely the share of the rural population in total population – does not change at all the results.

3.2.3 Foreign Direct Investments

External factors as FDI may affect political institutions (Bhattacharyya, 2012). To capture the extent of this influence, I use the log of FDI received by aid-recipient countries, measured in US current dollars (source: WDI). I expect a positive association between FDI and democracy because FDI may bring ideas that may result in higher political and civil rights (Eichengreen and Leblang, 2008).

3.2.4 Ethnic heterogeneity

Ethnic fragmentation is shown to affect political regimes (see, for example, La Porta et al. (1999)). I use the Ethno-Linguistic Fractionalisation (ELF) index (source: Alesina et al., 2003) to proxy for social heterogeneity. Lying on the lack of cultural and ethnic cohesion, elites in heterogeneous societies are likely to maintain their political power and to avoid institutional reforms (Alesina et al., 2003; Aghion et al., 2004).

3.2.5 Oil dependence

I use the share of oil rents in GDP (source: WDI) to control for the dependence of a recipient country on the rents derived from its oil resources. Oil activities are likely to favour oligarchies and hinder social changes that would have resulted in democratization. Oil activities may also produce high rents that enable elites to avoid taxation and to resist institutional reforms that would impose accountability (Ross, 2001; Djankov et al., 2008).

3.2.6 Tropical location

I use a dummy that equals unity for tropical countries (source: CIA Factbook) to account for that the distance of a country from equator has an effect on the political regime (see, for example, La Porta et al. (1999)). Tropics are shown to slow down social, health and political development (Easterly and Levine, 2003). One reason, according to Acemoglu et al. (2001), is that settlers were not able to build metropolitan institutions where they could not permanently settle. Instead, in the area where they had to face tropical diseases and mortality, they have built extractive institutions.

3.2.7 Colonial history

To proxy for both colonial legacy and the donor-recipient proximity, I use a dummy indicating whether the aid-recipient country is a former colony and, if so, from which settler (source: QOG dataset). Where settlers could permanently live, they exported their institutional outlines that persist, at least in part, to the present (Acemoglu et al., 2001). Besides, donors still tend to favour their former colonies (Alesina and Dollar, 2000). Consequently, donors and former colonies are used to share standards and specific ties, which can affect the institutional development.

4 Estimation procedure and assessment for endogeneity

This section describes the benchmark equation and outlines the estimation procedures.

4.1 Benchmark equation.

I estimate a dynamic panel data model to capture the effect of lagged democracy on current democracy and to account for the direct effect of ODA on democracy over time and across African countries:

$$\begin{aligned} dem_{it} &= \alpha_i + \beta_1 dem_{it-1} + \beta_2 maid_{it} + \beta_3 baid_{it} \\ &+ \phi' X_{it} + \lambda_t + \varepsilon_{it} \end{aligned} \tag{1}$$

where dem_{it} indicates the degree of democracy for the country i at time t; α_i indicates the fixed individual effects on each country; dem_{it-1} is the lagged value of the dependent variable included in the list of explanatory variables; $maid_{it}$ is multilateral aid flows divided by GDP; $baid_{it}$ is multilateral aid flows divided by GDP; X_{it} is a vector of control variables; λ_t indicates temporal dummies; and ε_{it} is the error term. Note that the effect of aid on democracy is rather immediate. Preliminary results show that estimating both short run and long run effects does not alter the results. The coefficients of estimated long run effects (measured by one lag of the aid variable) are not significant, very low, and have the same sign as the coefficients of the estimated short run effects, which match with the benchmark estimation. Likewise, preliminary results show that there quadratic aid terms are not significant at all and the signs of the quadratic terms are the same as the signs of the linear terms.

4.2 Sources of endogeneity.

Using panel data offers a more efficient estimation and allows controlling for the possible bias due to unobserved country heterogeneity on estimated coefficients. A remaining problem, recurrent and largely discussed in the empirical aid literature, is the potential endogeneity of control variables. Endogeneity is a well known econometric problem in the aid literature. Independent variables are treated as strictly exogenous, with the exception of the lagged measure of democracy, ODA, life expectancy at birth, and FDI

entries that are considered to be endogenous.[7] I provide explanations. First, and largely discussed in the literature, the aid-democracy relationship is likely to be subject to reverse causality. Aid allocation decisions may be affected by the recipient political regime (Alesina and Dollar, 2000). Since Burnside and Dollar (2000), donors have tended to condition aid on political issues, specifically based on political and civil rights indicators. Not only multilateral institutions but also bilateral donors have started to focus on democratic countries since the end of the nineties (see, for instance, Neumayer (2003b) and McGillivray (2005) for a discussion on donors' motives). Hence, aid is correlated with the error term. Second, democracy is shown to affect FDI entries. For instance, Asiedu and Lien (2011) found that this causality is either positive or negative depending on the size of natural resources. Third, Besley and Kudamatsu (2006) showed that democracies, being accountable to citizens, are more attentive to health care. Going to a democratic regime would increase life expectancy at birth by 2 or 3 years in average. Finally, I use dynamic panel data to account for the fact that regimes are consolidating over time (Acemoglu et al., 2005). This means that the lagged dependent variable is correlated with the error term because of unobserved country fixes effects.

4.3 Assessment for endogeneity: the GMM estimators.

To confront this issue, I explore the causal relationship between aid and democracy using two GMM estimators that provide consistent estimates for dynamic panel data models facing endogeneity problems. I use the two step estimation procedure and compute the Windmeijer finite-sample correction, which provides asymptotically efficient and robust results when facing endogeneity, dynamics and heteroskedasticity. In particular, the estimated aid coefficients only measure the direct effect of aid on democracy.

The first GMM estimator proposed by Arellano and Bond (1991), also named "difference" GMM estimator, uses the first difference of the data and then uses lags of the endogenous variables as instruments. The second GMM estimator built by Blundell and

[7] One could assume that growth is as well endogenous to democracy. There is no standard result on the effect of institutions – and in particular civil liberties and political rights – on growth, but the causality, if exists, is not direct (Tavares and Wacziarg, 2001). I uphold the hypothesis that economic growth is exogenous to democracy. Preliminary results show that this assumption is reasonable and do not change any result, neither on the economic growth coefficient nor on aid coefficients.

Bond (1998), also named the "system" GMM estimator, uses the same instruments for the difference equation, plus the lagged differences of the endogenous variables as instruments for the level equation. I do not include additional instruments. Both estimators have their own disadvantages. The lagged values of the endogenous variables used in the "difference" GMM estimator are poor instruments (Blundell and Bond, 1998). This problem is attenuated with the "system" GMM estimator thanks to additional moment conditions. However, this one uses too many instruments. The number of instruments has to be limited in order to be lower than the number of countries in the sample. The two estimation procedures can produce different results. To increase the robustness of my results, I follow Asiedu and Lien (2011) and apply both estimation procedures.

The two estimation procedures presume that there is no first or second order autocorrelation in the error terms (the AR(1) and AR(2) tests[8] and Hansen J test[9]) and that the instrumentation strategy is valid. The statistics always indicate that there is no second serial correlation and that instruments are not correlated with residuals. Note that when the number of instruments used for endogenous variables is higher that the number of countries, the Hansen J test for over-identifying restrictions loses power and the estimator might produce significant results where there is no real statistical association (Roodman, 2009). For almost all regressions, the number of instruments is never exceeding the country sample size. Computing three-year averages of all variables leaves me with five periods of three years, which reduces inherently the number of instruments available for the regression. But if the number of instruments becomes larger than the number of countries, I reduce the number of lagged used for endogenous variables up to this problem vanishes. I always verify that the results are robust to the reduction in the instrument count.

[8]The null hypothesis are that the errors in the first difference regression exhibit respectively no first and second order serial correlation.

[9]The null hypothesis is that the instruments are not correlated with the residuals. This statistic is robust but can be weakened by too many instruments.

5 Empirical results

This section presents empirical results. Recall that lower numbers for the measure of democracy indicate greater democracy.

5.1 Does foreign aid affect democracy?

To answer the question, I provide estimation without differentiating the type of the aid donor. The results are reported in Table 1. The parameter of interest is hence total ODA divided by GDP, where total ODA is the sum of bilateral and multilateral ODA. In both regressions, the estimated aid coefficient is significant and negative but rather low, which means that the effect of foreign aid on democracy is slightly beneficial. For example, consider two countries with the same GDP size – Burkina Faso, which has received 12.6 per cent foreign aid of its GDP (the average amount of aid in the sample in 2008), and Chad, which has received 5 per cent foreign aid of its GDP. Then the "system" GMM regression results show that if Chad would have received the same amount as Burkina Faso, its PF indicator (equal to 11) would have decrease by about 0.6 ($\partial dem/\partial maid = -0.081 \times (12.6 - 5) = -0,6$). This first result corroborates a recent strand of the empirical literature that found that, in the post Cold War period, the association between foreign aid and democracy is positive although low (Goldsmith, 2001; Dunning, 2004).

The small size of the total aid coefficient has been noted by some studies as Dunning (2004). Some factors may potentially pull down the positive effect of aid on democracy. In particular, different aid types may have different effects on democracy in aid-recipient countries. Following the literature on the aid donor allocations, one may expect a positive association between multilateral aid and democracy while not between bilateral aid and democracy.[10] I assume that this first result lends support to the hypothesis that the low effect of global aid on democracy is due to donors heterogeneity. A strong association between the multilateral ODA variable and Freedom House scores is driving the positive effect of total ODA on democracy in African countries from 1997 to 2008. The statistical aid-democracy relationship is conversely reduced because bilateral ODA fails to have a

[10] See, for instance, Alesina and Dollar (2000), Headey (2008).

statistical significant effect on democracy.

I now turn my attention to control variables. The estimated coefficient of lagged democracy is positive, suggesting that the current level of political rights and civil liberties is negatively correlated with future political freedom. As expected, FDI and GDP growth promotes democracy. The colonial history has a also positive effect on the current political regime while tropical location does not. Surprisingly, while heterogeneous countries are more likely to be democratic, a higher life expectancy at birth has a negative effect on democracy. In some cases, fragmentation may lead citizens to choose representative institutions (Aghion et al., 2004). More widely, La Porta et al. (1999) and Alesina et al. (2003) found that ethnic fractionalisation does not have the same explanatory power once latitude and income are included in the regression. The measure of health status, life expectancy, may be a proxy for economic growth and then has a different explanatory power for democracy. This result corroborates Kalyvitis and Vlachaki (2011) who showed that the association between literacy (their modernization measure) and democracy tends to be negative.

5.2 How do bilateral and multilateral aid affect democracy?

I estimate equation (1) with the parameters of interests β_2 and β_3 to evaluate the effects of both multilateral aid and bilateral aid on democracy. The results are reported in Table 1. As expected, β_2 is negative and significant at the 1 per cent level, and β_3 is positive and not significant in the two regressions. Multilateral aid improves the state of democracy while bilateral aid does not. These results draw an important inference: the effect of aid on the type of regime differs according to the type of the donor. The small association between total foreign aid and democracy reported in Table 1 is apparently driven by the strong positive effect of multilateral aid on democracy. The fact that different aid types affect democracy in opposite directions may explain why the overall effect of aid on democracy is such low and random. The overall effect of foreign aid is apparently conditioned by the respective shares of bilateral and multilateral aid received by the country.

To illustrate this inference, consider two countries with the same GDP size in 2008,

Table 1: The democracy effect of total, bilateral and multilateral foreign aid.

	System GMM	Difference GMM	System GMM	Difference GMM
	Total aid		Disaggregated aid	
Democracy$_{t-1}$	0.681**	0.490**	0.766***	0.521***
	(2.53)	(2.37)	(6.39)	(2.82)
Total aid	-0.081*	-0.060***		
	(-1.91)	(-2.71)		
Multilateral aid, β_2			-0.264***	-0.204***
			(-4.18)	(-4.93)
Bilateral aid, β_3			0.071	0.029
			(1.62)	(1.19)
Economic growth	-0.040*	-0.023	-0.018	-0.008
	(-1.81)	(-1.18)	(-0.72)	(-0.46)
FDI entries	-0.417	-0.142	-0.209	-0.181
	(-1.47)	(-1.39)	(-1.41)	(-1.64)
ELF	-3.047		-3.887**	
	(-1.25)		(-2.22)	
Life expectancy	4.373*	-2.736	2.883***	-0.984
	(1.67)	(-0.85)	(2.82)	(-0.34)
Oil rents	0.042	-0.007	0.015	-0.013
	(1.44)	(-0.58)	(0.75)	(-1.30)
Colonial history	-0.758		-0.639*	
	(-1.51)		(-1.90)	
Tropical location	1.120		1.935***	
	(1.09)		(2.88)	
Observations	181	133	181	133
Hansen J test (prob)	0.300	0.904	0.499	0.286
AR(2) test (prob)	0.348	0.342	0.306	0.250
Lag restriction?	No	No	No	No
Ratio instruments/countries	24/47	35/47	29/47	44/47

Notes: Table 1 reports the GMM estimation results of 3-years averages between 1997 and 2008 of the democracy effect of foreign assistance. The measure of democracy, political and civil rights, is provided by the Freedom House. A lower number implies more democracy. t statistics in parentheses. * p<0.1, ** p<0.05, *** p<0.01.

and that have received different multilateral aid amounts but both aid amounts are fairly low, namely Gabon and Zambia. The regression results provided by the "difference" GMM estimator show that an increase in the multilateral allocation from the amount received by Gabon (0.11%) to the amount received by Zambia (2.6%) will decrease the measure of democracy by 0.56 unit ($\partial dem/\partial maid = -0.20 \times (2.6 - 0.1) = -0,55$); the regression results provided by the "system" GMM estimator show that such an increase will lead to a reduction of -0.65 unit. The increase in democracy is substantially important because the average increase in democracy between 2007 and 2008 for all African countries is -0.20 point. Consider now two countries with comparable GDPs but that have received extremely different multilateral aid amount in 2008, namely Burundi(PF = 5) and Djibouti (PF = 11). Then the regression results show that an increase in the multilateral allocation from the amount received by Djibouti (5.2%) to the one received by Burundi (21.8%) will decrease the PF indicator by at least 3.3 points ($\partial dem/\partial maid = -0.20 \times (21.8 - 5.2) = -3,32$) according to the estimation procedure. To determine whether disaggregating foreign aid between its two components is relevant, I test the hypothesis H0: $\beta_2 = \beta_3$, which gives a p-value equal to zero in both regressions. I reject H0 (as it will be done in all the further regressions), suggesting that the type and the composition of foreign aid matters in determining the aid-democracy relationship. Disaggregating aid between bilateral and multilateral aid indicates which kind of aid is propitious to democratization.

The regression results are in contrast with Kalyvitis and Vlachaki (2011), who are the first to consider a potential difference between the bilateral and multilateral aid effects on democracy. Using a two-stage discrete-response framework over 64 countries up to 2002, they found that multilateral aid is particularly adverse to democracy in aid-recipient countries. A potential explanation for such a difference in the results is that, from the 2000 decade, international agencies allocating multilateral aid have committed on greater aid conditionality, in particular toward African countries.

5.3 Robustness checks

Results in Table 1 show a propitious effect of aid on democracy, in particular when aid is allocated by multilateral agencies. I perform sensitivity tests to assess the validity of this result. I focus on the variables of interests reporting a summary of the results in Tables 2 and 3. Below, I provide a brief discussion of the robustness estimations.

5.3.1 Alternative measures of democracy.

As discussed in Section 2, measuring democracy is subject to partiality and indicators do not necessarily cover identical information. Given the existence of alternative measures of democracy, a concern is whether the aid results depend on the measure of democracy. All main measures of democracy are highly correlated – as presented in Asiedu and Lien (2011) – suggesting that there is a high degree of commonality between all indicators. The lowest correlation is between the FH and the Vanhanen's indicators (equal to 0.56 and is significant at the 1 per cent level in the sample). The Vanhanen index measures the degree of democratization combining two dimensions of democracy: competition and participation. Competition is measured by the share of votes gained by the smaller parties in parliamentary or executive elections. Participation is measured by the share of the population that voted in the same elections. The index of democratization is the product of both measures divided by 100. A country is considered a democracy if participation rates are at least 10 per cent and if the share of the opposition party is at least 30 per cent (Vanhanen, 2000).

I run regressions using the Vanhanen's indicator of democracy instead of the PF indicator. The regression shows that the results are robust to the alternative measure of democracy: multilateral aid is positively and significantly associated to democracy while bilateral aid is not.

5.3.2 The measure of bilateral aid.

The variable of bilateral aid may possibly be questioned. Recall that bilateral aid is computed from the difference between total aid and multilateral aid. I re-estimate equation (1) using specifically the aid amount allocated by the 24 bilateral OECD-DAC

donors scaled by GDP, both measured in US current dollars (source: WDI). As shown in Table 2, β_2 is negative and significant at the 1 per cent level, and β_3 is positive. Plus, the magnitudes of both coefficients are stable across specifications, which is straightforward because both bilateral aid and DAC aid are highly correlated (0.98) and their mean and variance are not significantly different from each-other.

Table 2: Robustness regressions (1).

	Vanhanen		Freedom House	
	System GMM	Difference GMM	System GMM	Difference GMM
Democracy$_{t-1}$	0.619***	0.524***	0.762***	0.504***
	(3.25)	(3.16)	(6.51)	(2.75)
Multilateral aid, β_2	0.739***	0.432**	-0.272***	-0.209***
	(2.66)	(2.53)	(-4.49)	(-5.40)
Bilateral aid, β_3	-0.180	-0.058		
	(-1.62)	(-0.94)		
OECD-DAC aid			0.079*	0.033
			(1.77)	(1.43)
Observations	182	133	181	133
Hansen J test (prob)	0.087	0.373	0.460	0.197
AR(2) test (prob)	0.757	0.609	0.312	0.238
Lag restriction?	No	No	No	No
Instruments/countries	29/48	44/48	21/47	28/47

Notes: Table 2 reports a summary of the robustness regressions results where alternative measures of the variables of interests are used. Freedom House and Vanhanen are measures of democracy from Freedom House and the Vanhanen database, respectively. A lower number of Free but a higher number of Vanhanen implies more democracy. Columns (3) and (4) report the GMM estimation results. using the OECD-DAC aid as an alternative measure of bilateral aid. t statistics in parentheses. * p<0.1, ** p<0.05, *** p<0.01.

5.3.3 Sample selection.

The results may be driven by outliers or specific countries. I turn to examine the effect of aid on democracy in three sub-samples, listed in Appendix C. First, according to Bräutigam and Knack (2004), the effect of aid on democracy may be lower in sub-Saharan African countries because these countries, aid-dependent, are highly depending on foreign aid funds. I test this hypothesis by running a regression on sub-Sahara Africa only. Second, the factors that drive democracy may differ according to the existing political regime. I run a regression where Botswana, Cape Verde, Benin, and South Africa – ranked as having fair and free elections according to Freedom House in 1997 –

Table 3: Robustness regressions (2).

	System GMM		Difference GMM	
	β_2	β_3	β_2	β_3
Panel A: sub-samples				
Sub-Saharan Africa	-0.210**	0.007	-0.167***	-0.005
	(0.082)	(0.033)	(0.040)	(0.013)
Exclude oil rich countries	-0.230***	0.028	-0.122**	-0.020
	(0.054)	(0.021)	(0.051)	(0.019)
Exclude total democracies	-0.270***	0.076*	-0.204***	-0.027
	(0.063)	(0.043)	(0.042)	(0.026)
Panel B: sub-periods				
1982-2008, no averages	-0.033***	0.004	-0.023***	-0.002
	(0.011)	(0.008)	(0.008)	(0.010)
1982-2008, averages	-0.098**	-0.011	-0.082*	-0.014
	(0.043)	(0.0220)	(0.047)	(0.033)
1997-2008, no averages	-0.043**	0.014*	-0.034***	0.000
	(0.018)	(0.008)	(0.012)	(0.012)
Panel C: Time fixed effects (FE)				
1997-2008, no averages and include FE	-0.049***	0.009	-0.027*	0.004
	(0.013)	(0.009)	(0.014)	(0.012)
1997-2008, averages and include FE	-0.275***	0.059	-0.214***	0.027
	(0.058)	(0.039)	(0.034)	(0.023)

Notes: Table 3 reports a summary of the robustness regressions results using alternatively sub-samples, sub-periods and time fixed effects. Political and civil rights measure the level democracy provided by the Freedom House. A lower number implies more democracy. The number of instruments is exceeding the number of countries available in the sample in almost all regressions (excepted for the regression estimated over 1997-2008 and including time fixed effects), the number of lags used as instruments is reduced until the ration instruments/countries becomes lower than one, if possible. For example, without data averages and with an extended time period, the number of instruments initially available increases dramatically. No averages means that data are not an averaged value over three years periods. The Hansen-J and AR(2) statistics always indicate that there is no overidentification and that there is no serial correlation in the error terms. t Statistics in parentheses. * p<0.1, ** p<0.05, *** p<0.01.

are removed. Third, I run a regression where the countries whose rents derived from oil exceed 10 per cent of their GDP (on average over the whole period) are excluded. North Africa and Middle East is the most repressive region in the world: 16 over the 20 countries are authoritarian – Israel is the only democracy in the region. Oil rents, that relieve tax pressure and support patronage, are a determinant mean by which governments anchor autocratic rules. I expect that excluding these countries from the sample may increase the size of the multilateral aid coefficient. Results are reported in Panel A of Table 3. Clearly, across all regressions, the result is robust: β_2 is always significant at the 1 or 5 per cent levels and β_3 is never statistically significant at the 1 or 5 per cent levels. The size of estimated multilateral aid coefficients are also fairly similar to the benchmark results.

5.3.4 Time fixed effects and time periods.

Another relevant question is whether the results hold when I include data from the 1980s. Up to the end of the nineties, conditioning aid on political issues has been shown to be largely ineffective, partly because only a few of aid flows were assigned to conditionality (Dunning, 2004). After the middle of the nineties and the end of the Cold war, international commitments on political issues and academic research on the need for improved political institutions grew in number. Starting at about that time, international donors were more and more oriented to developmental issues Dollar and Levin (2006). Bilateral donors and multilateral agencies started programs to promote democratization in recipient countries and tended to allocate aid with greater selectivity. To see whether the results hold for a larger time period, I extend the time period so that regressions are run from 1982 to 2008. I conduct multiple regressions where I include or not time fixed effect and where I average or not the data over three years periods. Results are reported in Panel B of Table 3. No matter the specification, the results hold in all the regressions. Multilateral aid has a positive effect on democracy, even since 1982, while bilateral aid is at best not significant. The estimate of multilateral aid is however three times bigger between 1997 and 2008 than between 1982 and 2008, which lends support to the aid-conditionality hypothesis.

Benchmark results may possibly be influenced by time fixed effects. I include in the benchmark regression time dummies to control for time variance. Results are reported in Panel C of Table 3. The time dummies are not jointly significant and do not change at all the explanatory power of the multilateral aid variable, significant at the 1 per cent level. The estimate of multilateral aid is not sensitive to time periods and to sample selections, though the democracy effect of multilateral aid is found to be higher in the Post-Cold war period.

6 Conclusion

This paper has investigated empirically the effects of foreign aid on democracy. In a dynamic framework covering 52 African countries between 1997 and 2008, I used GMM estimators that provide robust and reliable results when facing endogeneity, dynamics and heteroskedasticity. The overall effect of foreign aid is found to be statistically positive but really low. Disaggregating foreign aid between bilateral aid and multilateral aid reveals that multilateral aid is sensibly beneficial for democracy while bilateral is not. The democracy effect of multilateral aid is much more larger than the whole effect of foreign aid and significant. This result is robust to the definition of democracy, the choice and treatment of the variables set, and the sample selection. The democracy effect of multilateral aid is even higher – albeit very slightly – in initially non or weak democratic countries.

These results have important implications for countries in Africa where improving democracy is at stake for the international community. A distinction between different types of aid may shed light on the causal effect of foreign aid on democracy. This study informs the discussion about optimal disbursements.

One possible explanation for the overall negative association between bilateral aid and democracy is that bilateral aid, tied to politics and strategies, is more likely to sustain oligarchic power and maintain self-appropriation. When aid is multilateral, conditionality in allocating aid may prevail. Credible conditionality towards "good" political will may make aid effective. Aid agencies may require that aid-recipient governments

establish multiple parties elections and freedom of speech. For instance, in Malawi, the suspension of the new aid program from April 1992 to June 1993 by all donors was credible enough to influence President Banda to hold a referendum that has driven democratization (Crawford, 1997). Maybe more audited, multilateral aid acts presumably less like a windfall and is more prone to foment collective action and democracy (see, for example, Alesina and Dollar (2000) and Headey (2008)). The role of audit, targeting developmental sectors (as education or health) and conditioning foreign aid could be very important in carrying out aid programs that ensure the sustainability of democracy. To verify these assumptions, the theoretical and empirical investigation of the mechanisms through which aid either increases or decreases political and civil liberties remains open.[11]

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[11] See, for example, Crawford (1997); Dunning (2004); Knack (2004).

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Appendices

A. Data Summary Statistics

Table A.1: Summary statistics

Variable (3-year average)	Mean	Median	Standard deviation	Min.	Max.
Democracy (Freedom House)	9.16	9.67	3.11	2	14
Democracy (Vanhanen)	7.05	6.53	5.46	0	26.83
Total foreign ODA /GDP	12.08	9.28	12.99	0.02	93.76
Multilateral ODA /GDP	5.06	3.66	5.81	-0.22	41.38
Bilateral ODA	7.03	4.77	7.71	0	52.96
OECD-DAC ODA/GDP	6.92	4.63	7.60	0	51.47
Economic growth	4.68	4.30	5.79	-8.53	52.97
FDI entries (log)	20.31	20.48	2.20	13.91	25.41
ELF	0.62	0.71	0.27	0.03	0.92
Life expectancy at birth (log)	3.97	3.97	0.17	3.17	4.31
Oil rents /GDP	6.83	0	16.51	0	76.54
Colonial history	5.29	6	1.71	0	8
Tropical location	0.77	1	0.42	0	1

B. Data sources and definitions

Table B.1: Data sources and definitions

Variable	Definition	Source
Bilateral ODA	"Bilateral transactions are those undertaken by a donor country directly with an aid recipient. They also include transactions with national and international non-government organizations active in development and other internal development-related transactions such as interest subsidies, spending on promotion of development awareness and administrative costs. Bilateral ODA includes project and programme aid, technical cooperation, developmental food aid, debt relief and humanitarian aid" (World Bank definition).	Total ODA minus Multilateral ODA
Colonial history	The dummy indicates whether a country is a former colony, and, if so, which country was its metropolis. It takes the value of 1 for Dutch, 2 for Spain, 3 for Italy, 4 for the United States, 5 for the United Kingdom, 6 for France and the United Kingdom, 10 for Australia and 0 otherwise.	The Quality of Government (QoG) datasets
Democracy (Freedom House)	The Freedom House measure of democracy combine a measure of civil liberties and a measure of political rights. The democracy index scales 1-7 where 7 is total autocracy.	The QoG datasets
Democracy (Vanhanen)	The Polyarchy dataset is compiled by Tatu Vanhanen and covers 187 countries since 1810. The current version of the dataset is Version 2.0. The democracy index is based on two measures (one of competition and one of participation) and ranges between 0 and 100.	The Macro Data Guide – Polyarchy dataset

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Table B.1 – *Continued from previous page*

Variable	Definition	Source
Foreign direct investment	FDI are "the net inflows of investment to acquire a lasting management interest (10 percent or more of voting stock) in an enterprise operating in an economy other than that of the investor. It is the sum of equity capital, reinvestment of earnings, other long-term capital, and short-term capital as shown in the balance of payments. This series shows net inflows (new investment inflows less disinvestment) in the reporting economy from foreign investors. Data are in current U.S. dollars" (World Bank definition).	WDI
Economic Growth rate	"Annual percentage growth rate of GDP (...). Aggregates are based on constant 2000 U.S. dollars" (World Bank definition).	WDI
Ethno-linguistic fractionalisation	"Probability that two randomly drawn individuals from the population belong to two different [ethnic or linguistic] groups" (Alesina et al. 2003, p.5).	Alesina et al. (2003)
Life expectancy	"Life expectancy at birth indicates the number of years a newborn infant would live if prevailing patterns of mortality at the time of its birth were to stay the same throughout its life" (World Bank definition).	WDI
Multilateral ODA	Aid is multilateral assistance if aid is " made to an international institution whose members are governments and which conducts all or a significant part of its activities in favour of development ; and [if aid is] pooled with other amounts received so that [aid loses its] identity and become[s] an integral part of the institution's financial assets (OECD definition).	WDI.

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Table B.1 – *Continued from previous page*

Variable	**Definition**	**Source**
Net official development assistance (ODA)	"ODA consists of disbursements of loans made on concessional terms (net of repayments of principal) and grants by official agencies of the members of the Development Assistance Committee (DAC), by multilateral institutions, and by non-DAC countries to promote economic development and welfare in countries and territories in the DAC list of ODA recipients. It includes loans with a grant element of at least 25 per cent (calculated at a rate of discount of 10 per cent)" (World Bank definition).	World Development Indicator.
OECD-DAC ODA	Bilateral ODA allocated by the Development Assistance Committee members (Australia, France, Korea, Spain, Austria, Germany, Luxembourg, Sweden, Belgium, Greece, Netherlands, Switzerland, Canada, Ireland, New Zealand, United Kingdom, Denmark, Italy, Norway, United States, Finland, Japan, Portugal, Commission of the European Communities).	WDI
Oil rents	"Oil rents are the difference between the value of crude oil production at world prices and total costs of production divided by GDP" (World Bank definition).	WDI
Tropical location	Dummy taking 1 if the country is within the tropics.	CIA-Factbook

C. Datasets

Table C.1: List of recipient countries – all data set – 52 countries

Algeria	Ivory Coast	Liberia	Senegal
Angola	Djibouti	Libya	Seychelles
Benin	Egypt	Madagascar	Sierra Leone
Botswana	Eritrea	Malawi	Somalia
Burkina Faso	Ethiopia	Mali	South Africa
Burundi	Gabon	Morocco	Sudan
Cameroon	Gambia	Mauritania	Swaziland
Cape Verde	Ghana	Mozambique	Tanzania
Central African Republic	Guinea	Namibia	Togo
Chad	Equatorial Guinea	Niger	Tunisia
Comoros	Guinea-Bissau	Nigeria	Uganda
Republic of Congo	Kenya	Rwanda	Zambia
Democratic Republic of Congo	Lesotho	Sao Tome et Principe	Zimbabwe

Data set "Sub-Sahara Africa" (45 countries) includes Data set "all data set" minus: South Africa, Algeria, Morocco, Equatorial Guinea, Libya, Sao Tome et Principe, and Tunisia.

Data set "Africa minus oil-rich countries" (44 countries) includes Data set "all data set" minus: Angola, Cameroon, Democratic Republic of Congo, Ivory Coast, Gabon, Equatorial Guinea, Libya, Nigeria.
This grouping of countries gathers oil-rich countries that depend on oil resources rents for 10 per cent or more of GDP in average during the whole period.

Data set "Africa minus democratic countries" includes Data set "all data set" minus: South Africa, Botswana, Cape Verde, Ghana.
This grouping of countries gathers countries that are democratic in 2008 (ranked 1 and 2 according to the Freedom House measure of democracy).

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