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**DE L'UNIVERSITÉ PSL**

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**Essays on foreign aid and governance**

Soutenue par

**Ana Mie HORIGOSHI  
REIS**

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by

Ana Mie Horigoshi Reis

## Essays on foreign aid and governance

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# General Introduction

Consistent global economic growth over time has raised living standards and lifted people out of poverty at an incredible rate. From 1990 to 2015 the portion of the world's population living in extreme poverty was reduced from nearly 36 percent to about 10 percent, according to [World Bank \(2018\)](#). This is impressive progress, however, that still translated to 736 million living in extreme poverty in 2015. Moreover, while the previous trend on poverty reduction was very encouraging, the Covid-19 pandemic is expected to result in economic contractions worldwide. [Mahler et al. \(2020\)](#) predicts this unprecedented event will push between 71 and 100 million people into extreme poverty in the baseline or downside scenarios, respectively. This would be the first increase in extreme poverty since 1990 and, depending on the poverty line used, would mean a reversal of approximately a decade's worth of gains ([Sumner et al., 2020](#)). Therefore, raising living standards for the poorest of the poor remains a pressing challenge in today's world.

A large part of this challenge is how to finance it, given the high costs of development<sup>1</sup>. Despite the increase in private financial flows, official developmental aid (ODA)<sup>2</sup> remains a useful instrument to support developing countries. The large majority of these aid flows come from the Organization for Economic Co-operation and Development (OECD) members. With limited public resources and the considerable challenges present in developing countries, the effectiveness of aid is a matter of great interest from both the general public and academia.

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<sup>1</sup>This is not a consensual perspective, however. It is most notably contested by [Easterly \(2003, 2006\)](#)

<sup>2</sup>The OECD defines ODA as flows to countries and territories on the Development Assistance Committee's (DAC) list of ODA recipients and to multilateral institutions which are: (i) provided by official agencies, including state and local governments, or by their executive agencies; and (ii) each transaction is administered with the promotion of the economic development and the welfare of developing countries as its main objective and is concessional in character and conveys a grant of a minimum percentage, depending on whether its bilateral or multilateral, and on the recipient's income classification.

Following a surge in international development cooperation during the 1960's (OECD, 2020), interest in aid effectiveness was driven by the recognition that aid to governments that would implement ineffective policies was wasteful (Kaufmann, 2009). The commitment to aid effectiveness can be seen on the Aid Effectiveness High Level Forum (HLF) process initiated in Rome in 2003, followed by the Paris Declaration in 2005, Accra in 2008, and Busan in 2011.

The existing literature initially focused exclusively on the link between foreign aid and economic growth, but has since evolved. The debate, which originally centered on a macro perspective, widened to include a more micro approach in order to reach a clearer picture. Furthermore, the notion of aid effectiveness has expanded, with researchers investigating the effects of aid not only on growth, but also on sectoral outcomes (education, health, agriculture), or on institutions, by examining various dimension of governance issues.

This thesis consists of three essays on the impacts of foreign aid on governance, covering issues related to elections, corruption, and democracy. Below I provide the motivation to focus on these three dimensions, identify the literature gaps, and finally summarize the chapters.

## Motivation

According to United Nations (2012)'s definition of governance, *“governance refers to the exercise of political and administrative authority at all levels to manage a country's affairs. It comprises the mechanisms, processes and institutions, through which citizens and groups articulate their interests, exercise their legal rights, meet their obligations and mediate their differences”*. While this is only one of many definitions of governance, it fits the conceptualization of governance at the core of this thesis. Moreover, while there is no consensus on the definition of governance, the disagreements are largely overstated as *“most definitions appropriately emphasize the importance of a capable state accountable to its citizens and operating under the rule of law”* (Kaufmann and Kraay, 2007).

Considering governance as essentially the traditions and institutions which determine how authority is exercised, it is generally accepted by academics, policy-makers, aid

donors, and aid recipients, that governance is important for development (Kaufmann and Kraay, 2007). Furthermore, the existing research suggests a rather large impact of governance on development. For example, Kaufmann (2005) claims that countries can derive a large “development dividend” from better governance, estimating that a country that improves its governance from a relatively low level to an average level could almost triple the income per capita of its population in the long term. Kaufmann et al. (2000) find that *“a reduction in corruption from the very high level prevalent in Indonesia to the lower level in Korea leads to between a two and fourfold increase in per capita incomes, a decline in infant mortality of similar magnitude, and an improvement of 15-25 percentage points in literacy levels.”* The magnitude of this effect elucidates how necessary good governance is for development.

In this thesis I look into the following aspects of governance: elections, corruption, and democratic government.

Elections are a defining feature of a democracy, but regular fair and clean elections are not always observed, particularly in countries that were in the ‘third wave of democratization’ during the 1980’s and 1990’s when many countries transitioned to electoral democracies (UNDP, 2009). Elections without the legitimacy of the wider institutional context do not result in the expected democratic participation that would support equitable and sustainable development.

Kofi Annan has characterized corruption as *“an insidious plague that has a wide range of corrosive effects on societies. It undermines democracy and the rule of law, hampers the provision of public services and the poor’s access to them, leads to violations of human rights, distorts markets, erodes the quality of life and allows organized crime, terrorism and other threats to human security to flourish”*.<sup>3</sup> Given the plentiful evidence of how damaging it can be to development, it is essential to understand how to effectively curb it.

Finally, a broader aspect of governance, democracy, will be explored in this thesis. While there is an ongoing debate regarding the impact of aid on democratic outcomes, democracy in itself is a generally recognized as a highly desirable outcome. For this reason

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<sup>3</sup>Kofi Annan, former United Nations Secretary-General, in his foreword to the UN Convention against Corruption.

it is critical to understand how democracy interacts with aid.

By what means could aid impact these governance aspects? First, there may be direct effects, such as by having a governance issue as the direct target of an intervention. Additionally, there could be indirect “side-effects” which may or may not be desirable. With respect to corruption, there would be the direct effects of anti-corruption measures, which have the explicit objective of combating corruption, as well as the potential indirect effects from changes in social norms, procurement practices within a project, or simply the income effect from aid as a windfall resource. Regarding elections and democracy, there are the direct effects of aid targeting democratic underpinnings such as elections, freedom of media, and civil society organizations, as well as the inadvertent effects of both developmental aid and aid to those specific activities in the democratic outcomes.

Given the importance of aid as a financing mechanism for development and of governance as a magnifier of development, understanding the connection between aid and governance is critical to supporting development efforts worldwide and alleviating global poverty.

## Literature gaps

While the literature on foreign aid and governance has examined many of the key issues in the past decades, there are still unanswered questions regarding the impacts of aid in governance. The increased availability of sub-nationally allocated or project-level aid data in recent years has expanded the opportunity to address these topics.

Foreign aid has been shown to have potentially positive or negative effects on corruption (See e.g. [Knack \(1999\)](#); [Tavares \(2003\)](#)). [Knack \(1999\)](#) first shows empirical evidence of the potential undesirable effect of aid, finding that higher aid levels erode bureaucratic quality, corruption, and rule of law. [Okada and Samreth \(2012\)](#) argues that foreign aid generally lessens corruption, particularly in large countries with low levels of corruption, while [Asongu \(2012\)](#) finds evidence that those results do not hold for Africa, and in that continent aid fuels corruption.

Regarding democracy, there is a great deal of evidence that aid, under certain

circumstances, promotes democratic pillars (Finkel et al., 2007; Carnegie and Marinov, 2017). However others have found a null or even negative effect (Ahmed, 2012; Knack, 2004).

Moreover, the existing literature largely focuses on the country-level analysis, which limits the potential findings, as it does not capture within-country variations. Within-country variations are highly relevant from a political economy perspective of favoritism. As Hodler and Raschky (2014) shows, sub-national regions have more intense nighttime light—a proxy for economic development—when being the birth region of the current political leader. Furthermore, Dreher et al. (2019) find that Chinese foreign aid is susceptible to political capture in the recipient countries, being more likely to be allocated at the birth region of the political leaders.

The relative lack of sub-national evidence—which is growing but still trails behind the decades of country-level research—might be at least part of the reason behind the predominance of the micro-macro paradox observed on aid effectiveness. The micro-macro paradox refers to the inconsistency in observed effects of aid at the micro and macro levels. It is common to find positive effects of foreign aid at the project-levels, however researchers have had difficulty finding the same evidence with aggregated levels of foreign aid.

Furthermore, when looking into intermediary outcomes, rather than simply economic growth, there is a need for more research on the impacts of foreign aid in specific governance aspects. While the matter of aid and corruption has already been investigated, there are still unexplored aspects. Moreover, there are other equally important aspects of governance that have received much less attention such as elections and democratic outcomes.

Recent literature has embraced the use of geo-localized data, which has greatly increased the possibilities for research (BenYishay, 2017). Parks and Strange (2019) provides an overview of this movement on the matter of democracy and aid.

In this thesis I aim to contribute to these gaps using sub-national data to improve the understanding of the mechanisms linking aid and governance, and, from an econometric point of view, I aim to strengthen the identification strategy with the use of various levels

of fixed effects.

## Chapter Summaries

This thesis is comprised of three essays on foreign aid and governance across the world. These chapters can be considered individually; however, jointly they provide a broader view of how foreign aid can have implications to different aspects of governance and in different levels, such as the country-level, sub-national-level or firm-level.

Each paper takes a novel approach in order to overcome limitations found in previous literature and contribute to a better understanding of the implications of foreign aid on different governance aspects.

The first chapter investigates the potential impact of foreign aid in elections. The second chapter examines whether foreign aid may have an impact on firm-level corruption in recipient countries. The third chapter explores the relationship between democracy aid and democratic outcomes. The remainder of this introduction provides a summary of each chapter.

**Chapter 1**, co-written with Lisa Chauvet (Université Paris 1 - Panthéon Sorbonne) deals with the question of how aid can affect electoral outcomes. Focusing on the impact of local aid in Uganda, we aim to contribute to a better understanding of how semi-democracies or semi-autocracies work, and particularly how these regimes interact with aid. Furthermore, looking into the potential mechanism of administrative unit creation we contribute to a better understating of this phenomenon, which was very noticeable in Uganda in 1990's and 2000's and also observed across Africa.

We examine the creation of new districts as a mechanism through which aid can be used by the incumbent to his/her electoral advantage, combining geolocalized aid data from multiple donors at the county level, information on administrative unit creation from [Grossman and Lewis \(2014\)](#), and electoral outcomes from presidential elections from the Ugandan Electoral Commission.

This chapter aims to answer specifically the following questions: does aid at the local level impact electoral outcomes? If so, is administrative unit creation a mechanism for

that effect?

We use an ordinary least squares (OLS) model with multiple fixed effects in a “difference-in-difference”-like model. This allows us to look into the effect of aid in the following elections and to verify for the non-existence of a previous trend. We find that local aid—at the county-level or lower—has a very small impact on electoral outcomes and that the effect can be amplified when found in combination with administrative unit creation, particularly on counties that move to the newly created unit, rather than those that remain in the former district structure.

**Chapter 2** investigates the potential impact of foreign aid in corruption. There are multiple channels through which aid can impact corruption and ambiguous evidence. Understanding this relationship is fundamental given how corruption has been shown to be detrimental to economic development, which is largely the end goal of foreign aid.

In this chapter I investigate the impact of multilateral aid allocated locally on firm-level reported corruption worldwide. The contribution of this paper relies largely on the investigation being at a lower level of aggregation and on the fact that the survey data used asks for actual reported corruption, rather than corruption perception.

I use sub-national geocoded aid from the World Bank projects and a series of World Bank Enterprise Surveys ranging from 2006 to 2014 and analyse the effect of aid implemented at the sub-national level in firms spread across 67 countries and over an 8 year period. With a 2SLS model that exploits expected project completion dates and project manager’s workload to instrument for project completion Marx (2017), I find evidence that World Bank aid does indeed reduce corruption in firms located in the same administrative unit in which the aid projects were implemented.

**Chapter 3** co-written with Miguel-Ninõ-Zarazúa (UNU-WIDER) and Rachel Guisselquist (UNU-WIDER) looks into democracy aid and democratic outcomes. We use DAC aid data from an OECD database and democracy outcomes from the Varieties of Democracy (V-Dem) project.

We consider different definitions of democracy aid and using a panel of countries from 1995 to 2018 and a ML-SEM dynamic panel model—as well as a fixed-effects model as a robustness check—we find suggestive evidence of a very small effect of democracy

aid on democratic outcomes and strongly rejects any suggestion of a negative impact of democracy aid on democratic outcomes. Moreover, our evidence suggests the effects of aid on democracy stem from aid directed specifically to activities considered as democratic underpinnings.

In order to better understand the dynamics of the relationship between aid and democracy we tackle two more questions. Firstly, we investigate the effects of aid on movements towards democratization (upturns) and democratic backsliding (downturns) using both an OLS fixed effects and a Tobit-Fixed effects models. Secondly, we explore the effect of aid on the likelihood of regime change using a Fixed-effects ordered logit model.

# Chapter 1

## Aid, administrative unit creation, and elections: Evidence from Uganda

*co-written with Lisa Chauvet*

### Abstract

This paper analyzes the potential impact of foreign aid on electoral outcomes of presidential elections in Uganda. We use geocoded aid data and electoral results at the county-level, as well as redistricting data, also at the county-level. A simple ordinary least squares (OLS) model in combination with a series of fixed effects is used to evaluate the impact of foreign aid in counties that were reallocated to a newly created district in the same period in which they received aid. A simultaneous regressions model is used as a robustness check and to understand the mechanisms at play. We find a positive impact of joint aid and redistricting on the share of votes received by the incumbent. Our results suggest that administrative unit proliferation might function as a mechanism through which aid is used by the incumbent to gain electoral support.

### 1.1 Introduction

Africa has experienced an unprecedented wave of democratization since the 1990's. Previously, leaders often lost power violently, however, since then it has become more

common for the change of power to happen through an electoral process. According to the Freedom House, the number of African countries considered “not free” went from 33 in 1990 to 22 in 2018. Nevertheless, the transition is not always directly towards perfect democracies. A large fraction of African countries are still considered only “partly free”, despite holding regular elections. Therefore, it is important to understand factors that might influence electoral outcomes in order to better understand how democracy works in countries considered semi-democratic (semi-authoritarian), such as Uganda.

At the same time that Africa went through this democratization process, it has also been receiving large flows of Official Development Assistance (ODA). According to the OECD, the continent received nearly 50 billion dollars in net ODA in 2016. Uganda was the 8<sup>th</sup> largest recipient in 2016, receiving approximately 1.75 billion dollars in net disbursements. This amount represents over 22 percent of the country’s budget for the 2016/2017 fiscal year, which was of about 7.9 billion dollars. Given the significant reliance of African countries on foreign aid, it is also important to better understand if and how aid can impact these fragile democracies.

On foreign aid and democracy, a strand of the foreign aid literature initiated by [Knack \(2004\)](#) looks into the impact of foreign aid on democracy promotion and finds no evidence of that effect, but on more recent research [Kilby and Dreher \(2010\)](#) finds a significant positive relationship, and presents evidence that donors allocate aid in response to democratization and recipient countries respond to this incentive for democratic reform. Furthermore, [Wright \(2009\)](#) suggests that the promise of higher aid for democratization only works for political leaders that expect to remain in office after the democratization occurs. Those that have a high chance of winning elections respond to aid by democratizing, but for the others, aid helps them hold power.

We investigate the specific link between foreign aid and presidential elections at the local level, particularly whether foreign aid can be used as part of the incumbent’s electoral strategy. We raise the possibility that administrative unit proliferation, which was widespread in Africa during the 1990’s and 2000’s, is one mechanism through which aid affects the incumbent’s share of votes. It is not clear how foreign aid impacts elections. One could expect aid to be provided with support for democratic institutions and to encourage more competitive electoral results. Alternatively, it could be used in the

incumbent's favor as part of their electoral strategy, thus reducing competition. A better understanding of this link would inform donors and policy-makers on ways to ensure that aid contributes to fair elections and therefore to democracy itself. Furthermore, we suggest a sophisticated commitment mechanism that would explain how the explosive administrative unit creation process, joined with higher foreign aid allocated at the local level, impacted electoral results in Uganda.

More globally, this paper contributes to the literature on the impact of foreign aid. Earlier contributions focused primarily on aid effectiveness, measured as the impact of aid on growth, and generated a lot of controversy, with disagreement among esteemed economists. In theory, aid could lead to economic growth, as it reduces the financing gap and relaxes capital constraints (Chenery and Strout, 1966). However, aid can also lead to a 'Dutch disease' problem, due to its macroeconomic impact on the exchange rate and competitiveness; and to a deterioration of political and economic institutions, through its governance impact (Younger, 1992). Disagreement between these positions leads to some economists asking for scaling up of aid (Sachs, 2006), and others warning about its potential disastrous effects (Easterly, 2006).

The empirical literature provided no relief, showing mixed results and adding to the controversy. Results varied from basically a negative or null impact (Rajan and Subramanian, 2008), to positive (Arndt et al., 2015), or heterogeneous (Clemens et al., 2012). Furthermore, the debate on aid effectiveness has linked aid impact with donor's practices (Djankov et al., 2009), motivation (Kilby and Dreher, 2010), and aid type (Clemens et al., 2012), but overall no consensus has been reached on the growth effects of aid in recipient countries.

In an attempt to properly identify a causal relationship between aid and growth, different authors have focused on different types of instruments, such as the size of recipient country (Rajan and Subramanian, 2008), past values of aid (Minoiu and Reddy, 2010), and political connections with donors (Bjørnskov and Schröder, 2013). A more recent approach is the use of interacted instruments, which combine a time-variant variable that affects the amount of aid given by a donor and a time-invariant variable that captures the proximity between the donor country and the recipient country. Nunn and Qian (2014) use US wheat production, interacted with the proportion of years a country receives

a positive amount of US food aid in 1971-2006 as the instrument for the amount of aid received by a country in a given year; [Dreher and Langlotz \(2017\)](#) interact donor country government fractionalization and the probability of receiving aid; and [Chauvet and Ehrhart \(2015\)](#), [Chauvet and Ehrhart \(2018\)](#) interact donor tax revenue with colonial history. Finally, [Galiani et al. \(2017\)](#) use a quasi-experiment approach exploiting IDA's threshold and find a positive, significant, and economically sizable effect of aid on growth.

The literature on aid effectiveness has recently gone through two major revolutions: one political, and the other spatial.<sup>1</sup> When looking into political economy impacts, the aid literature is once again failing to reach a consensus. Some authors have drawn a parallel between oil and aid, which, as non-tax revenues, may reduce government accountability. For example, [Djankov et al. \(2008\)](#) and [Kalyvitis and Vlachaki \(2012\)](#) find that aid tends to decrease the probability of a regime being democratic and reduces accountability. It is also argued that aid may finance inertia, that is, allow dictators to buy political support and remain in power longer than they would have without aid ([Morrison, 2009](#)). [Wright \(2009\)](#) provides more mixed evidence of the impact of aid on the probability of a regime change: aid may increase democratization if the autocrat feels he or she has good prospects for staying in power, while otherwise it may decrease the probability of democratization. Similarly, [Dutta et al. \(2013\)](#) show that aid increases democratization in regimes that are already democratic, while pushing autocratic regimes to become even more dictatorial, a hypothesis they call the amplification hypothesis. Other authors have argued that aid may even have a positive influence on political institutions: aid may notably improve education and contribute to development outcomes that are preconditions for a democracy to function well. In that case, the impact of aid on democracy would then play out over a longer period of time. Such a long-run positive effect of total aid on the quality of political institution was found by [Goldsmith \(2001\)](#), [Heckelman \(2010\)](#) and [Kersting and Kilby \(2014\)](#) using a cross-section of countries. Aid may also increase the probability of

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<sup>1</sup>It has also gone sectoral. The recent literature has provided some initial insights on the effects of sector aid on educational and health outcomes, which are believed to affect growth, but in the long term only. On the education front, [Michaelowa and Weber \(2006\)](#) find a positive, though small impact of aid to the education sector on education outcomes. [Dreher et al. \(2008\)](#) use indicators for governance and child mortality to instrument aid and also find a positive, and larger, impact of aid on growth, with each additional dollar of per capita aid increasing school enrollment by 0.3 percent. On the health front, [Chauvet et al. \(2013\)](#) look into the impacts of health aid on infant mortality instruments from the supply-side, as [Tavares \(2003\)](#). They find that doubling health aid leads to a reduction of child mortality of 3.5 percent.

democratization in the short run, notably by creating incentives through the conditionality setup (Kersting and Kilby, 2014).

From the spatial perspective, Dreher and Lohmann (2015) have recently examined the impact of World Bank aid on growth outcome measured at the sub-national level using nightlights data. Dreher et al. (2019) investigate the use of aid by political leaders for their own political or personal interests by verifying if Chinese aid is allocated to the political leader’s birth regions and regions populated by their ethnic groups; and Marx (2017) estimates the effect of project implementation on electoral outcomes, exploiting variation on portfolio size of World Bank project team leaders as an instrument and finding that the completion of projects coincides with pre-election years.

Our analysis embraces these new trends to examine aid with a political and spatial perspective. We rely on geocoded foreign aid and electoral data at the county-level (ADM2 level) and exploit the panel data to compare counties that received aid and were broken up in sub-districts in the same period with a control group of those that did not receive aid, or did receive aid but did not breakup in the period of interest. We use district-year and county fixed effects as controls. Furthermore, we use a simultaneous equations model as a robustness check and to understand the mechanisms.

The results obtained suggest that aid increases the electoral support to the incumbent, particularly in counties that are part of a district that is divided and are allocated to a newly created district. The administrative unit creation and the aid commitments may work as a joint commitment device to present a strong signal of commitment from the central government to this new administrative unit. We analyze this as potential evidence that aid can impact electoral outcomes through the process of administrative unit division, as it is used to compensate loss of support stemming from being a “splinter” county, signaling that being a “splinter” will not lead to marginalization.

## 1.2 Political Context

Uganda has a largely decentralized political system, which has been implemented since the National Resistance Movement (NRM) came to power in 1986. The Local Councils

(LCs)—originally Resistance Councils (RCs)—were part of a governance system developed when the NRM was still a rebel group. The system has evolved and today exists as a five-tiered system with districts (LC5), counties (LC4), sub-counties (LC3), parishes (LC2), and villages (LC1).

During the 1990's Uganda went through a process of fiscal and political decentralization in which the district governments (LC5) particularly gained much power. On the fiscal side, a series of acts granted the district governments' responsibility for all funds channeled from the central government and greater power to generate revenue as well as to distribute it to the lower local government levels. On the political side, LC executive positions became either locally elected or appointed by local officials.

Additionally, or perhaps in response to it, during the 1990's Uganda has also seen a large proliferation of sub-national administrative units, meaning a political process with several local governments being split into two or more units over a relatively short period. This followed a global trend that was even more emphasized in Sub-Saharan Africa where the number of administrative units increased since the 1990's. In a set of 25 African countries, Grossman and Lewis (2014) find that the number of administrative units was increased by between 25 percent to 100 percent<sup>2</sup>. In the particular case of Uganda, this happened at the district level, which was multiplied by more than three, from mere 34 districts in 1990 to 112 in 2010. Figure 1.1 below shows the split categories of each county for the periods 2002-2006 and 2007-2011. The grey line shows the county boundaries and the thicker black lines show the district boundaries at the beginning of the period. The number of districts evolved from 56 in 2002, to 80 in 2007, and 109 in 2011.

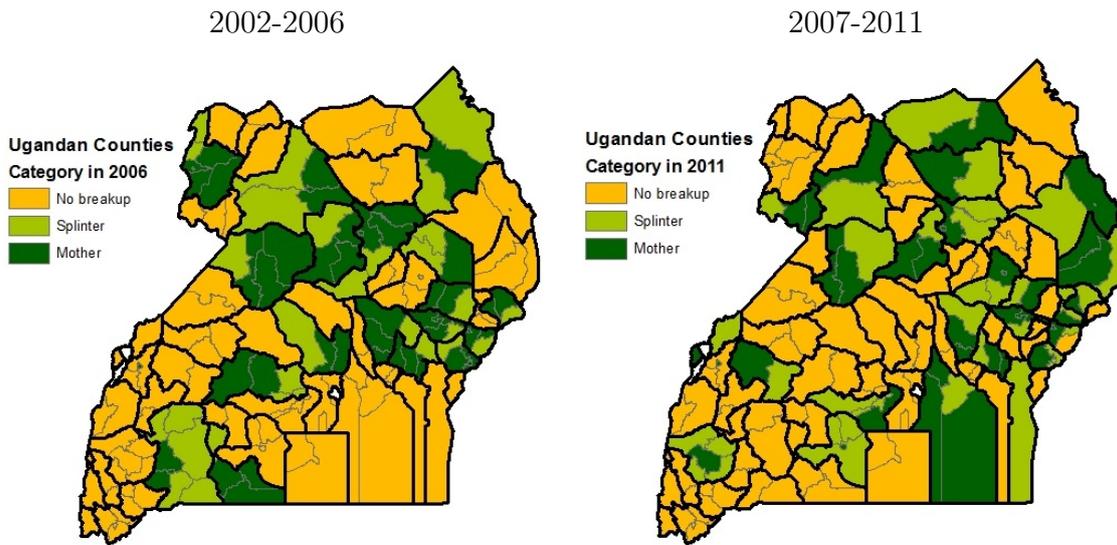
The new districts are created through a political process that is initiated through a vote at the district council for the separation of one or more of its counties, and ends with the Ugandan parliament approving, or not, the separation. Once it is approved a new district is created, receiving a new headquarter complex and several elected and appointed government positions. Each new district has eleven administrative departments that are staffed by numerous civil servants.

Noticeably, district creation in Uganda does not normally involve the drawing of new

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<sup>2</sup>Benin had 6 departments in 1995 and doubled it to 12 departments in 2000

FIGURE 1.1: RE-DISTRICTING IN 2006 AND 2011



boundaries. A new district is created from the separation of a part of its counties to form a new, separate, district. In this paper, following Grossman and Lewis (2014), we call the process of re-districting the “split”, which generates two types of counties. The counties that post-split still belong to the original district are considered part of the “mother” district; and those that post-split belong to the newly created district are considered “splinters”. Essentially, what defines the county as a “mother” or a “splinter” is whether it has maintained the old district headquarters or if it is under the newly created structure. In addition to those two types some counties belong to unmodified districts. On Figure 1.1 the dark green counties represent the “mother” counties, and the light green counties are the “splinter” counties, those that were removed from the original district and reallocated to a newly created one.

The proliferation of districts has been largely explained in the existing literature by the interests of the national government—particularly the president (Green, 2008, 2010; Awortwi and Helmsing, 2014b,a). On the other side, Tabaro et al. (2018); Grossman and Lewis (2014) emphasize the role of local actors, while still recognizing that the central government has the final say in the creation of new districts.

Since we include district-year fixed effects (with the 2001 district division) in all of our specifications, our analysis only compares counties that in 2001 belonged to the same district and that later will be “breakups” or not. When later on we restrict the

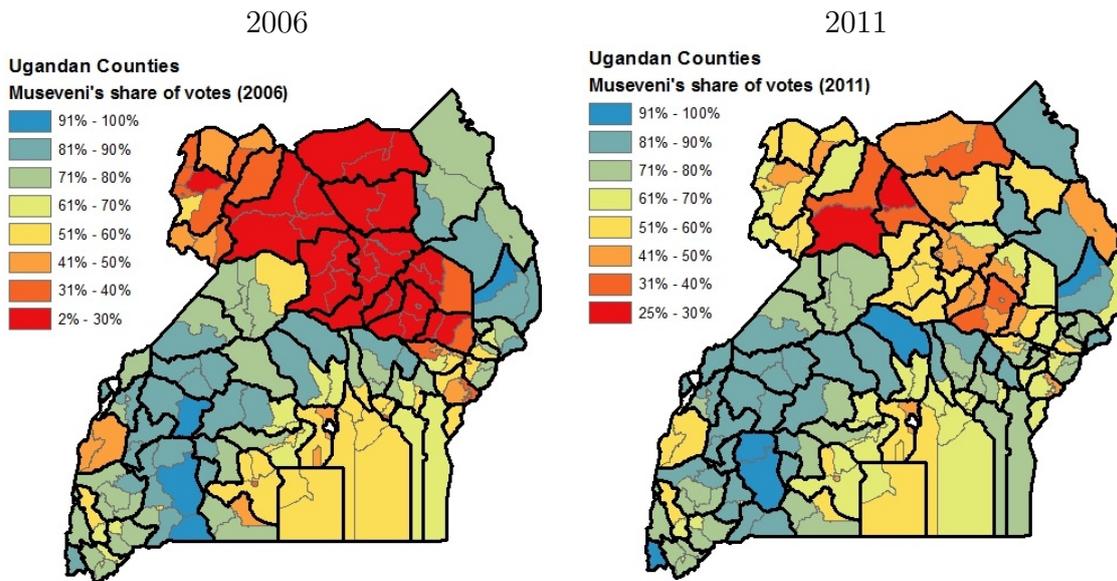
comparison to “splinters” and “no breakups”, we are only comparing counties that again, belonged to the same district in 2001, and this original 2001 district suffered more than one division until 2011. That is because we do not consider counties that were “mothers”, only “splinters” and “no breakups”. In the case of a district division during a certain period, all counties are in this period classified as “mothers” or “splinters”. Therefore, we can only compare the “splinters” of a period, with others that were on the same original 2001 district, but are now already in a different district that did not suffer a division in 2011.

### 1.3 Mechanisms

The creation of a new district could impact electoral results in the “splinter” and “mother” counties in different ways, which also depend on what leads to the creation of new districts itself. Theoretically, administrative unit creation could be beneficial to the counties that are allocated in the new administrative unit because of the establishment of the new bureaucratic apparatus, which citizens link with better access to services. However, another possibility is that the “splinter” counties would be further marginalized if the central government used this process to isolate dissident counties in order to focus their efforts in getting or maintaining support from the “mother” counties. Furthermore, while a new district would likely shorten the proximity to vital services, its impact in the quality of the services is more ambiguous (Grossman and Lewis, 2014). On the “mother” side, redistricting could have a negative effect on public funds and consequently on electoral support if the “mother” counties see the divisions as a loss of political or economic power; or a positive effect, if the population expects to continue receiving the same amount of funds to be distributed to a smaller population.

Grossman and Lewis (2014) suggest that administrative unit creation happens when the interests of the national executive and of local elites in marginalized areas—politically, economically, and ethnically—are aligned, which would imply that administrative unit creation is beneficial for the “splinter” counties, as those would receive more public funds. Focusing on the “splinter” counties, they find that the incumbent president receives an electoral bonus from these counties without penalization from “mother” counties. Gottlieb

FIGURE 1.2: INCUMBENT'S SHARE OF VOTES IN 2006 AND 2011

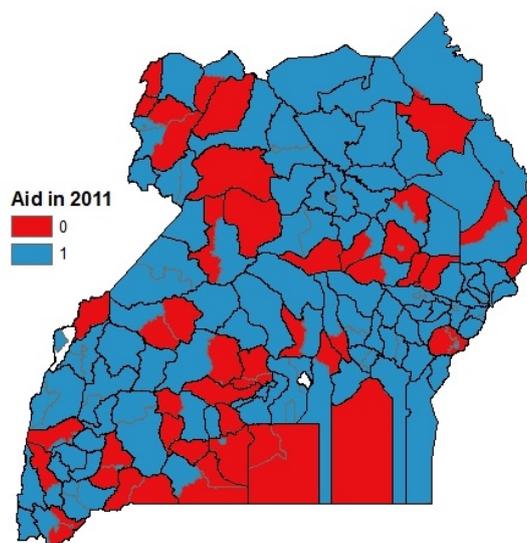


et al. (2019) argue that administrative unit creation could be used as a strong signal of commitment for electoral groups that do not have a history of reciprocal relationships, as the creation of a new administrative unit entails an increase in stable fiscal transfers due to the stickiness of administrative boundaries. They hypothesize that the electoral reward to the incumbent post-split could also benefit “mother” areas, but not as much as splinters. Their argument also supports the idea that “splinter” counties benefit from this process and that could translate in an increase in electoral support for the incumbent.

Awortwi and Helmsing (2014a) conduct qualitative research on the motivations behind administrative unit creation in Uganda, concluding that the main reason is patronage and a variant of gerrymandering. Anecdotally, they mention the case of Ngora county in Kumi district, a stronghold of the opposition that demanded district status. Museveni signaled the possibility of district status in a political rally in 2008 and following that local politicians pledged to support his fourth term bid in exchange for district status. As a result, Ngora was given district status in 2010 and in the 2011 elections Museveni won the majority of votes in the district. This evidence supports the idea of administrative unit creation as a vote-buying instrument.

In this context, aid flows come as an additional external source of revenue that could be used by the incumbent. Theories of political agency suggest that politicians prioritize

FIGURE 1.3: DUMMY FOR COUNTIES THAT RECEIVED AID BETWEEN THE 2006 AND 2011 ELECTIONS



policies that voters are most likely to reward in the polls and aid, as a windfall resource, is a potential tool for this process. Figure 1.2 shows the distribution of the share of votes for the incumbent on the 2006 and 2011 elections. In the first period the share of votes on the Northern region is very low in comparison with other parts of the country, and in the 2011 elections the results are much closer to those of other regions, while remaining the region with lowest support.

Marx (2017) finds evidence that project completion leads to electoral benefits and that consequently completion is expedited around election dates in response to these incentives. Jablonski (2014) argues that governments successfully influence the distribution of aid in favor of strategically important voters hence increasing the probability of reelection of the incumbent. Furthermore, Briggs (2015) claims that aid changes can influence the odds of incumbents winning reelections, but only when the change happens in the year immediately before the election.

Combining these two effects, namely the administrative unit creation and the receipt of foreign aid commitments, one could expect that aid would increase support for the incumbent, and this effect could be stronger or weaker in “splinter” counties or “mother” counties, depending on whether the redistricting process is accompanied by efforts to gain support or by further marginalization of “splinters”. More specifically, the combination

of aid and administrative unit creation could be seen as a signal of strong commitment from the side of the central government. While splintering by itself could be negative to the county if it is neglected by the central government, aid commitments could signal that this would not be the case.

It is important to notice that whether the central government really has all this leeway to allocate foreign aid is critical to our argument. According to [Dreher et al. \(2019\)](#) in the case of Chinese aid this would be true, but not so much for World Bank aid. We argue that the national government does have that power, as our foreign aid data contains all donors, with a majority of bilateral donors which are potentially more vulnerable to this type of influence than multilateral aid—such as World Bank aid. From the total number of projects over 71 percent are from bilateral donors.

Figure 1.3 shows the counties that did received an aid project between the 2006 and 2011 elections in blue and those counties that did not receive any aid project in red. Approximately 70 percent of the counties received at least one project in the period and those are well distributed between the regions.

## 1.4 Empirical Strategy

We estimate the effect of aid received by constituencies on their electoral outcomes using Uganda as a case study. However, whether or not a constituency receives aid is not random and is the outcome of a negotiation between the government and the donors. Hence aid may target constituencies depending on the previous electoral outcomes in order to ensure the incumbent with more votes. To deal with the endogeneity bias stemming from reverse causality and potential confounding factors, we will adopt a sequential empirical strategy.

The initial model is an Ordinary Least Squares (OLS) with a series of fixed effects in an effort to isolate the effects in which we are interested, namely receiving or not aid, being or not a “breakup” county, and the interaction of these two variables. Despite the inclusion of district-year and county fixed effects, the model is still susceptible to endogeneity at the county-year level. Equation 1.1 estimates our main electoral outcome,

the share of votes received by the incumbent ( $VoteShare_{c,d,t}$ ) in constituency  $c$  of district  $d$  in election  $t$  as a function of the following variables:

- $Aid_{c,d,(t,t-1)}$ , aid received in the five years preceding the election  $t$ —which comprises the entire “between elections” period, measured as commitments per capita or disbursements per capita);
- $Breakup_{c,d,(t,t-1)}$ , a binary variable on whether the county was a “breakup” county (mother or splinter) in the five years preceding the election  $t$ ;
- and an interaction term of these two variables.

Additionally, we control for nightlights, county fixed effects, and district-year fixed effects, with the district division in place in 2001; and we cluster the standard errors at the county-level, which is the level of the treatment.

$$VoteShare_{c,d,t} = \alpha + \beta Aid_{c,d,(t,t-1)} + \gamma DBreakup_{c,d,(t,t-1)} + \delta Aid_{c,d,(t,t-1)} * DBreakup_{c,d,(t,t-1)} + \zeta_c + \eta_{d,t} + \varepsilon_{c,d,t} \quad (1.1)$$

In a second step, we distinguish the effects of being a “mother” county or a “splinter” county. In order to do so, we adjust the sample to ensure we compare “mother” or “splinters” exclusively with “no breakups” to avoid confounding the effects of “mother” or “splinter” with each other. Therefore, when focusing on “splinters” we run a similar regression but exclude all counties that were mothers either in 2006 or in 2011, and when focusing on “mother” counties we exclude from the sample counties that were “splinters” either in 2006 or 2011. This reduces the sample from 322 observations to 182 observations when focusing on “splinters” and to 164 when focusing on “mothers”. Equations 1.2 and 1.3 are listed below.

$$VoteShare_{c,d,t} = \alpha + \beta Aid_{c,d,(t,t-1)} + \gamma DSplinter_{c,d,(t,t-1)} + \delta Aid_{c,d,(t,t-1)} * DSplinter_{c,d,(t,t-1)} + \zeta_c + \eta_{d,t} + \varepsilon_{c,d,t} \quad (1.2)$$

$$VoteShare_{c,d,t} = \alpha + \beta Aid_{c,d,(t,t-1)} + \gamma DMother_{c,d,(t,t-1)} + \delta Aid_{c,d,(t,t-1)} * DMother_{c,d,(t,t-1)} + \zeta_c + \eta_{d,t} + \varepsilon_{c,d,t} \quad (1.3)$$

This model resembles a difference-in-differences model, and as such, the identifying assumption requires that the treated constituencies would have followed a trend in electoral outcomes similar to that observed in their non-treated counterparts, had they not had any aid or district division. We provide indirect evidence on this parallel trend assumption by testing whether treated and control constituencies were already experiencing different trends in terms of electoral outcomes before the treatment occurrence (i.e., between 2001 and 2006). When running the parallel trend we use a very similar set of equations, but exclude the interaction term and run it on the past values of the electoral outcome, as seen on equations 1.4, 1.5, and 1.6, below<sup>3</sup>.

$$VoteShare_{c,d,t-1} = \alpha + \beta Aid_{c,d,(t,t-1)} + \gamma DBreakup_{c,d,(t,t-1)} + \zeta_c + \eta_{d,t} + \varepsilon_{c,d,t} \quad (1.4)$$

$$VoteShare_{c,d,t-1} = \alpha + \beta Aid_{c,d,(t,t-1)} + \gamma DSplinter_{c,d,(t,t-1)} + \zeta_c + \eta_{d,t} + \varepsilon_{c,d,t} \quad (1.5)$$

$$VoteShare_{c,d,t-1} = \alpha + \beta Aid_{c,d,(t,t-1)} + \gamma DMother_{c,d,(t,t-1)} + \zeta_c + \eta_{d,t} + \varepsilon_{c,d,t} \quad (1.6)$$

Our main dependent variable,  $VoteShare_{c,d,t}$ , is the share of votes for President Yoweri Museveni during the presidential elections calculated as the number of votes received by Museveni divided by the number of total votes. Furthermore, we run the same three models described above on a second electoral outcome variable, the winning margin -  $WinMargin_{c,d,t}$ , which is the distance between the first and second runners divided by the sum of the votes of both candidates. This can be considered a measure of competitiveness of the elections, which would be higher when the winning margin is lower—the first two candidates were close in terms of votes, or lower if the winning margin is higher—there is a larger gap between the first and second candidates. The descriptive statistics comparing

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<sup>3</sup>Alternatively we also run the same model including both “mother” and “splinter” dummies as well as both interactions simultaneously, however, our preferred strategy is to separate the samples

TABLE 1.1: DESCRIPTIVE STATISTICS - OUTCOMES IN 2006

	Breakup <sub>11</sub>	No Breakup <sub>11</sub>	Diff.	Std. Error	Obs.
<i>VoteShare</i> <sub>c,2006</sub>	0.5110	0.5983	0.0873**	0.0390	161
<i>WinMargin</i> <sub>c,2006</sub>	0.4828	0.4989	0.0161	0.0415	161
	Splinter <sub>11</sub>	No Breakup <sub>11</sub>	Diff.	Std. Error	Obs.
<i>VoteShare</i> <sub>c,2006</sub>	0.5348	0.5983	0.0635	0.0497	123
<i>WinMargin</i> <sub>c,2006</sub>	0.5241	0.4989	-0.0253	0.0519	123
	Mother <sub>11</sub>	No Breakup <sub>11</sub>	Diff.	Std. Error	Obs.
<i>VoteShare</i> <sub>c,2006</sub>	0.4897	0.5983	0.1087**	0.0468	127
<i>WinMargin</i> <sub>c,2006</sub>	0.4457	0.4989	0.0531	0.0517	127
	Splinter <sub>11</sub>	Mother <sub>11</sub>	Diff.	Std. Error	Obs.
<i>VoteShare</i> <sub>c,2006</sub>	0.5348	0.5658	0.0310	0.0482	161
<i>WinMargin</i> <sub>c,2006</sub>	0.5241	0.4830	-0.0412	0.0505	161

these outcomes in 2006 between counties in the three “split” categories in 2011 are shown on Table 1.1.

The electoral data used was obtained directly from the Ugandan Electoral Commission website and covers three waves of presidential elections: 2001, 2006, and 2011. The data was initially available in PDF format, which was transferred to excel and matched to the ArcGIS shapefile with the administrative divisions at the county level<sup>4</sup>.

The literature on the impacts of aid at sub-national level is still in its early stages due to the limited data below the country-level. In order to conduct this analysis, we use the database AidData 3.0. AidData, managed by AidData Center for Development Policy, a research lab at William and Mary College that partners with multiple international organizations to provide more comprehensive data on foreign assistance projects. This dataset represents the most accessible and complete database to study and evaluate foreign aid at the sub-national level.

For our main independent variable,  $Aid_{c,d,(t,t-1)}$ , we use a subset of data covering all

<sup>4</sup>The county-level shapefile used was obtained from the Stanford Geospatial Center and consisted of the division in 2006

TABLE 1.2: DESCRIPTIVE STATISTICS - AID IN 2011

	Breakup <sub>11</sub>	No Breakup <sub>11</sub>	Diff.	Std. Error	Obs.
<i>AIDComPc<sub>c,(06,11)</sub></i>	7.7153	5.2966	-2.4187	2.5068	161
<i>AIDDisbPc<sub>c,(06,11)</sub></i>	1.8009	2.3000	0.4991	1.7271	161
	Splinter <sub>11</sub>	No Breakup <sub>11</sub>	Diff.	Std. Error	Obs.
<i>AIDComPc<sub>c,(06,11)</sub></i>	1.7517	5.2966	3.5449	2.3288	123
<i>AIDDisbPc<sub>c,(06,11)</sub></i>	0.4552	2.3000	1.8448	2.3310	123
	Mother <sub>11</sub>	No Breakup <sub>11</sub>	Diff.	Std. Error	Obs.
<i>AIDComPc<sub>c,(06,11)</sub></i>	13.0511	5.2966	-7.7545**	3.3294	127
<i>AIDDisbPc<sub>c,(06,11)</sub></i>	3.0049	2.3000	-0.7049	2.3731	127
	Mother <sub>11</sub>	Splinter <sub>11</sub>	Diff.	Std. Error	Obs.
<i>AIDComPc<sub>c,(06,11)</sub></i>	13.0511	1.7517	-7.7545**	3.3294	127
<i>AIDDisbPc<sub>c,(06,11)</sub></i>	3.0049	0.4552	-0.7049	2.3731	127

geocoded data from the Aid Management Platform (AMP) for Uganda. The version used in this paper<sup>5</sup> was published in 2016 and tracks 565 geocoded projects across 2,426 locations, running from 1987 to 2014. We keep only aid projects that started between 1996 and 2010, since we use five-year averages from the years before each of the election waves<sup>6</sup>. Overall 181 different projects representing 1,235 project location points remain<sup>7</sup>.

In order to treat the data we first extract from this dataset the projects that are geocoded with precision equivalent to ADM2 (county-level). We have information on the number of projects, commitments, and disbursements. When considering projects that are allocated to more than one location point, we weight the aid variable by the population share in the county out of the total population impacted by that project, following Dreher and Lohmann (2015) nation-wide levels of aid are accounted for through the district-year fixed effects that we include in all estimations. Table 1.2 shows the summary statistic of aid in 2011, according to the category of the county in 2011.

The data tracking the division of districts in smaller ones and the creation of “mother” and “splinter” counties,  $DMother_{c,d,(t,t-1)}$  and  $DSplinter_{c,d,(t,t-1)}$  respectively, is obtained

<sup>5</sup>Uganda AIMS Geocoded Research Release, Version 1.4.1

<sup>6</sup>Elections are held early in the year, in February or March, depending on the year

<sup>7</sup>We do not include budget support in our measure of aid, as that type of aid is generally allocated at the country level, while our analysis is at the ADM2-level

from Grossman and Lewis (2014)<sup>8</sup>. They constructed a county-level dataset to track the district proliferation, following the districts to which these counties belonged from 1996 to 2011, structuring the temporal dimension around the election cycles.

Since there is no income data available at the county-level, we use nightlights as a proxy for income. The use of nightlights as a proxy for income has been studied in several articles and has shown promising results<sup>9</sup>.

There are digital archives available since 1992 of the intensity of Earth-based lights obtained from satellites from the United States Air Force Defense Meteorological Program (DMSP) through their Operational Linescan System (OLS). This data is processed by the National Oceanic and Atmospheric Administration’s (NOAA) National Geophysical Data Center (NGDC), which removes natural anomalies<sup>10</sup> and leaves mostly man-made light. After that, the data from all orbits of a satellite in a given year are averaged and a satellite-year dataset is produced.<sup>11</sup> These satellite-year datasets report the intensity of lights for every 30 arc-second output pixel (approximately 0.86 square kilometers) with a digital number between 0 (no light) and 63. This small resolution allows this data to be used for spatial analysis of economic activity in small geographical areas.

Despite many shortfalls in the use of nightlights as a proxy for economic development it is still a very useful proxy for sub-national level of income Chen and Nordhaus (2010). In order to attenuate the instability of nightlights in Uganda<sup>12</sup> we use averages of the mean nightlight intensity on the five years previous to the election year analyzed and average that within each ADM2 unit. It is easy to see that Uganda has a very low level of development, with the most lit county, Kampala City, never surpassing the low-forties. Furthermore, approximately half of the counties are completely unlit, and the average of all counties is under one. Table 1.3 shows the summary statistics of the variables from 2001 to 2011.

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<sup>8</sup>The data is available at <https://dataverse.harvard.edu/dataset.xhtml?persistentId=doi:10.7910/DVN/26937>

<sup>9</sup>See Henderson et al. (2012), Elvidge et al. (1997), Doll et al. (2006), Sutton et al. (2007), and Michalopoulos and Papaioannou (2013)

<sup>10</sup>Ephemeral events such as fires are discarded and then the background noise identified is replaced with values of zero. For more see Lowe (2014).

<sup>11</sup>Following best practices, we average the nightlight intensity captured by the different satellites for years when there is more than one satellite active.

<sup>12</sup>In Elvidge et al. (2011), Uganda is identified along with other 33 countries as having “erratic lightning”. This might be related to its unstable electricity grid.

TABLE 1.3: DESCRIPTIVE STATISTICS

	mean	sd	count
$VoteShare_{c,t}$	0.6294	0.2280	483
$WinMargin_{c,t}$	0.5126	0.2706	483
$Lights_{c,(t,t-1)}$	0.7620	2.5314	483
$Aid_{c,d,(t,t-1)}$ = project count	0.2464	0.4313	483
$Aid_{c,d,(t,t-1)}$ = commitments per capita	2.1972	9.6446	483
$Aid_{c,d,(t,t-1)}$ = disbursements per capita	0.7330	6.3736	483
$N$	483		

## 1.5 Results

Firstly, Table 1.4 presents the results from equation 1.1 on columns (1) and (2). The results show that being a “breakup” county increases the vote share of the incumbent for both our measures of aid—commitments per capita and disbursements per capita, but there is no impact of aid by itself nor of the interaction of aid with “breakup”. This would suggest that the administrative unit creation does seem to be linked with increased support to the incumbent, but aid has no identifiable impact. Columns (3) and (4) show no effect of any of the variables of interest on the winning margin at the 10 percent significance level.

In the sequence, we try to separate the effects of “mother” or “splinter” counties, to verify if those are distinct effects. When separating the effects to consider only the effect of being a “splinter” or only the effect of being a “mother”—instead of bundling both categories together, we drop all counties that were “mother” counties in either 2006 or 2011 for equation 1.2 and drop all counties that were “splinter” counties in 2006 or 2001 for equation 1.3. The results are presented on Tables 1.5 and 1.6, respectively<sup>13</sup>. Columns (1) and (2) of Table 1.5 show that while being a “splinter” county before an elections decreases the share of votes to the incumbent, this effect is partially offset when the county receives aid<sup>14</sup>. Our interpretation of these results is that the creation of a new

<sup>13</sup>Table 1.8 in Appendix 1.7 shows the results for when include both “mother” and “splinter” dummies and interactions in the same equation

<sup>14</sup>The inclusion of district-year fixed effects supports the argument that the observed effect is from aid and not from any other resources because central government transfers are mainly channelled through the districts and therefore absorbed by these fixed effects

TABLE 1.4: OLS MODEL - BREAKUP

Panel A:				
	(1)	(2)	(3)	(4)
	VoteShare <sub>06,11</sub>	VoteShare <sub>06,11</sub>	WinMargin <sub>06,11</sub>	WinMargin <sub>06,11</sub>
$DBreakup_{c,d,(t,t-1)}$	0.040** (0.019)	0.033* (0.019)	-0.014 (0.064)	-0.021 (0.059)
$Aid_{c,d,(t,t-1)} * DBreakup_{c,d,(t,t-1)}$	-0.001* (0.001)	-0.000 (0.001)	-0.001 (0.002)	-0.001 (0.001)
$Lights_{c,(t,t-1)}$	-0.026 (0.022)	-0.019 (0.018)	-0.020 (0.052)	-0.012 (0.046)
$Aid_{c,d,(t,t-1)} = \text{Comm per capita}$	0.001 (0.000)		0.001 (0.001)	
$Aid_{c,d,(t,t-1)} = \text{Disb per capita}$		-0.000 (0.000)		0.000 (0.000)
Panel B: Parallel Trend				
	(1)	(2)	(3)	(4)
	VoteShare <sub>01,06</sub>	VoteShare <sub>01,06</sub>	WinMargin <sub>01,06</sub>	WinMargin <sub>01,06</sub>
$DBreakup_{c,d,(t,t-1)}$	-0.029 (0.021)	-0.028 (0.021)	0.002 (0.040)	0.005 (0.040)
$Lights_{c,(t,t-1)}$	-0.020*** (0.006)	-0.018*** (0.006)	-0.016 (0.026)	-0.007 (0.026)
$Aid_{c,d,(t,t-1)} = \text{Comm per capita}$	0.000 (0.000)		0.001 (0.001)	
$Aid_{c,d,(t,t-1)} = \text{Disb per capita}$		-0.000 (0.000)		-0.000 (0.000)
$N$	322	322	322	322
County FE	Yes	Yes	Yes	Yes
District-year FE	Yes	Yes	Yes	Yes

Standard errors in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

administrative unit is not perceived as beneficial from the electorate, and therefore there is no retribution in the form of support unless there is an additional signal - namely the aid commitments -suggesting the new administrative unit will be receiving more funds. Furthermore, we find a positive impact of aid on the vote share when using commitments per capita as a measure of aid, but the effect is insignificant when using disbursements per capita. In an attempt to show a common trend with respect to aid, we run the same model on the lagged outcomes, the results are presented on Panel B and columns (1) and (2) show that there is no significant effect of receiving aid in 2006-2011 on the the incumbent's vote share in 2001-2006, suggesting that there was no pre-existent trend on the outcome on these counties that received aid.

On columns (3) and (4) we observe the results when using the winning margin as the electoral outcome. We find that in this case, being a “splinter” county is associated with a decrease in the winning margin, suggesting the elections are somewhat more competitive in these counties, and the interaction with aid is positive, suggesting that when counties are “splinters” and receive aid in the same period elections are less competitive. Moreover, aid is positively linked to the winning margin when the measure used is disbursements per capita. However, the parallel trend estimation presented on Panel B does not hold on column (3), suggesting that commitments per capita in 2011 is associated with a higher winning margin in the 2006 elections.

More specifically, being a “splinter” county reduces Museveni's vote share by 11.7 percentage points and this effect is countered by 1.5 percentage points for each additional dollar per capita in commitments. Additionally aid by itself has a positive impact of 0.1 percentage points of the vote share per dollar of commitments per capita. The average amount of aid commitments per capita in 2011 was 2.19 dollars, so an increase of 1.5 percentage points is equivalent to an increase of almost 70 percent in aid. Note however, that when we consider only the counties that did receive positive aid in 2011, the average commitments per capita is 8.92 dollars, which would make an increase of 1.5 percentage points the equivalent of a about 17 percent in aid.

In the case of disbursements being a “splinter” reduces the incumbent's vote share by 11.5 percentage points, and aid compensates by 3.4 percentage points per additional dollar per capita in disbursements.

TABLE 1.5: OLS MODEL - SPLINTER

Panel A:				
	(1)	(2)	(3)	(4)
	VoteShare <sub>06,11</sub>	VoteShare <sub>06,11</sub>	WinMargin <sub>06,11</sub>	WinMargin <sub>06,11</sub>
$DSplinter_{c,d,(t,t-1)}$	-0.117*** (0.000)	-0.117*** (0.003)	-0.257*** (0.003)	-0.240*** (0.005)
$Aid_{c,d,(t,t-1)} * DSplinter_{c,d,(t,t-1)}$	0.015*** (0.003)	0.034*** (0.005)	0.026*** (0.006)	0.036** (0.017)
$Lights_{c,(t,t-1)}$	0.019*** (0.004)	0.018** (0.007)	0.086*** (0.025)	0.062*** (0.012)
$Aid_{c,d,(t,t-1)} = \text{Comm per capita}$	0.001*** (0.000)		-0.000 (0.001)	
$Aid_{c,d,(t,t-1)} = \text{Disb per capita}$		0.002 (0.003)		0.014*** (0.004)
Panel B: Parallel Trend				
	(1)	(2)	(3)	(4)
	VoteShare <sub>01,06</sub>	VoteShare <sub>01,06</sub>	WinMargin <sub>01,06</sub>	WinMargin <sub>01,06</sub>
$DSplinter_{c,d,(t,t-1)}$	0.030*** (0.002)	0.032*** (0.003)	0.247*** (0.005)	0.238*** (0.011)
$Lights_{c,(t,t-1)}$	-0.025*** (0.004)	-0.029*** (0.005)	-0.081*** (0.020)	-0.077*** (0.027)
$Aid_{c,d,(t,t-1)} = \text{Comm per capita}$	0.001 (0.001)		0.004** (0.002)	
$Aid_{c,d,(t,t-1)} = \text{Disb per capita}$		0.003 (0.003)		0.001 (0.010)
$N$	182	182	182	182
County FE	Yes	Yes	Yes	Yes
District-year FE	Yes	Yes	Yes	Yes

Standard errors in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

TABLE 1.6: OLS MODEL - MOTHER

Panel A:				
	(1)	(2)	(3)	(4)
	VoteShare <sub>06,11</sub>	VoteShare <sub>06,11</sub>	WinMargin <sub>06,11</sub>	WinMargin <sub>06,11</sub>
$DMother_{c,d,(t,t-1)}$	0.211*** (0.021)	0.176*** (0.039)	-0.401*** (0.055)	-0.462*** (0.065)
$Aid_{c,d,(t,t-1)} * DMother_{c,d,(t,t-1)}$	-0.001 (0.001)	0.005 (0.010)	-0.002 (0.002)	0.015 (0.019)
$Lights_{c,(t,t-1)}$	-0.023 (0.026)	-0.018 (0.021)	-0.005 (0.060)	0.011 (0.053)
$Aid_{c,d,(t,t-1)} = \text{Comm per capita}$	0.000 (0.001)		0.001 (0.002)	
$Aid_{c,d,(t,t-1)} = \text{Disb per capita}$		-0.000 (0.000)		-0.000 (0.000)
Panel B: Parallel Trend				
	(1)	(2)	(3)	(4)
	VoteShare <sub>01,06</sub>	VoteShare <sub>01,06</sub>	WinMargin <sub>01,06</sub>	WinMargin <sub>01,06</sub>
$DMother_{c,d,(t,t-1)}$	-0.315*** (0.012)	-0.300*** (0.019)	0.546*** (0.163)	0.595*** (0.115)
$Lights_{c,(t,t-1)}$	-0.023*** (0.006)	-0.019*** (0.006)	-0.031 (0.027)	-0.016 (0.026)
$Aid_{c,d,(t,t-1)} = \text{Comm per capita}$	0.000 (0.000)		0.001 (0.001)	
$Aid_{c,d,(t,t-1)} = \text{Disb per capita}$		-0.000** (0.000)		-0.001*** (0.000)
$N$	164	164	164	164
County FE	Yes	Yes	Yes	Yes
District-year FE	Yes	Yes	Yes	Yes

Standard errors in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Next, we observe in Table 1.6 that being a “mother” county is associated with a higher share of votes for the incumbent and with a smaller winning margin, but there is not effect from aid or from the interaction between aid and mother.

## 1.6 Robustness check

As the evidence suggests that the observed effect from aid is derived from the “splinter” rather than the “mother” counties, we continue the analysis focusing on this group. As a robustness check and to better understand the mechanisms at play, we run a simultaneous equations model to concomitantly determine the electoral results, aid, and split category. The model is based on the set of equations below.

The first equation in the model regresses the vote share of the incumbent ( $VoteShare_{c,d,t}$ ) on: an interaction term of aid received and the dummy of being a “splinter” or not  $AID_{c,d,(t,t-1)} * DSplinter_{c,d,(t,t-1)}$ ; an instrument for aid ( $GovtTrans_t * ProbAid_{c,d}$ ) constructed through the interaction of government transfers to the local governments as a percentage of GDP and a measure of the probability of a county receiving aid; the dummy for splinter,  $DSplinter_{c,d,(t,t-1)}$ ; the nightlights variable ( $Lights_{c,d,(t,t-1)}$ ), and a year dummy ( $Year11_t$ ). The second equation regresses the aid variable ( $AID_{c,d,(t,t-1)}$ ) on the “splinter” dummy ( $DSplinter_{c,d,(t,t-1)}$ ), the instrument for aid ( $GovtTrans_t * ProbAid_{c,d}$ ), the lagged share of votes for the incumbent ( $VoteShare_{c,d,t-1}$ ), nightlights ( $Lights_{c,d,(t,t-1)}$ ), and a year dummy ( $Year11_t$ ). The last equation regresses the “splinter” dummy ( $DSplinter_{c,d,(t,t-1)}$ ) on the lagged electoral results ( $VoteShare_{c,d,t-1}$ ), nightlights ( $Lights_{c,d,(t,t-1)}$ ), a variable of political marginalization constructed by Grossman and Lewis (2014) ( $PolMarg_{c,d,t}$ ) that works as an instrument for being a splinter, and a year dummy ( $Year11_t$ ). Similarly to the OLS model, we include county and district-year fixed effects and cluster the standard errors at the county level.

$$\left\{ \begin{array}{l}
VoteShare_{c,d,t} = \alpha + \beta AID_{c,d,(t,t-1)} * DSplinter_{c,d,(t,t-1)} * Post \\
+ \zeta Lights_{c,d,(t,t-1)} + \kappa Year11_t + \mu_c + \tau_{d,t} + \varepsilon_{c,d,t} \\
\\
AID_{c,d,(t,t-1)} = \alpha + \beta DSplinter_{c,d,(t,t-1)} + \zeta AID\_INST_{c,d,(t,t-1)} + \eta VoteShare_{c,d,t-1} \\
+ \theta Lights_{c,d,(t,t-1)} + \kappa Year11_t + \mu_c + \tau_{d,t} + \varepsilon_{c,d,t} \\
\\
DSplinter_{c,d,(t,t-1)} = \alpha + \beta VoteShare_{c,d,t-1} + \eta PolMarg_{c,d,t} \\
+ \zeta Lights_{c,d,(t,t-1)} + \kappa Year11_t + \mu_c + \tau_{d,t} + \varepsilon_{c,d,t}
\end{array} \right. \tag{1.7}$$

The instrument for aid,  $GovtTrans_t * ProbAid_{c,d}$ , is an interaction between a time-variant county-invariant variable and a time-invariant county-variant variable. The former is the share of transfers from the central government of Uganda to the local governments as a share of GDP, which is obtained from the Ugandan Ministry of Local Government, and the latter is the number of years between 1996 and 2011 in which the county received positive aid, capturing the proximity between donor and recipient counties. We believe the instrument is relevant because foreign aid and government transfer are substitutes - so they would be negatively related - and the aid is likely to be somewhat “sticky”, so receiving aid more frequently in the past is likely to increase the likelihood of receiving aid in the future. The exclusion restriction would imply that central government transfers and aid probability would only impact the electoral outcomes through aid.

The instrument for being a “splinter” county is the ratio of the county’s share of seats on a district-level council to its population share. This measures the extent to which a county is represented on the key’s resource allocation body with respect to its population, and the assumption here is that county that is under-represented at the district-level council is more likely to be unsatisfied in its position and push for the creation of a new district in which it would be absorbed and likely have better representation. The exclusion restriction would imply that the level of representation of the county at the district-level

TABLE 1.7: SIMULTANEOUS EQUATION

Dependent variable: Incumbent's share of votes			
	$VoteShare_{c,d,t}$	$AID_{c,(t,t-1)}$	$DSplinter_{c,d,(t,t-1)}$
$AID_{c,(t,t-1)} =$ Commitments per capita			
$Lights_{(t,t-1)}$	-0.00560 (-0.62)	12.12*** (7.76)	-0.00724 (-0.09)
$AID_{c,(t,t-1)} * DSplinter_{c,(t,t-1)}$	0.232*** (5.90)		
$Year11_t$	0.156*** (4.42)	-3.532 (-0.57)	0.293 (0.89)
$GovtTrans_t * ProbAid_{c,d}$	-0.0372 (-0.34)	-46.48** (-2.05)	
$DSplinter_{c,d,(t,t-1)}$	0.0667*** (3.64)	3.594 (1.03)	
$VoteShare_{c,d,t-1}$		38.00** (2.17)	-3.256*** (-4.43)
$DEC\_rep_{c,d,t}$			-0.285*** (-5.39)
$N$	245		
County FE	Yes		
District-year FE	Yes		

$t$  statistics in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

council only affects the electoral outcomes through the administrative unit creation.

Both instruments used here present considerable weaknesses, but the estimation of the simultaneous equations models is still relevant as it allows us to better explore the potential mechanisms at play.

The results presented in Table 1.7 show the set of equations for aid measured as commitments per capita. The results presented here confirm the previous results showing a positive impact of the interactive term of “splinter” and aid on the incumbent’s share of votes. The coefficient of  $DSplinter_{c,d,(t,t-1)}$  on the equation that defines  $AID_{c,d,(t,t-1)}$  is positive, in line with the proposed mechanism that aid increases in response the county being a splinter, but not significant. Finally, the lagged share of votes has a negative effect on the “splinter” dummy, suggesting that counties that voted less for the incumbent previously are more likely to become a splinter.

## 1.7 Conclusion

Given that many developing countries are neither fully democratic nor fully autocratic either, it is pertinent to investigate how semi-democracies or semi-autocracies operate. The consequences of foreign aid might be different in such countries, particularly with regards to elections. Using geocoded sub-national data on ODA and three presidential election waves in Uganda, we find that aid has a potential positive impact on the incumbent's vote share, particularly when combined with administrative unit divisions, suggesting that aid could be used by the incumbent for his own electoral benefit. The magnitude of the effect is small but non-negligible.

Working at the local level allows us to focus on within country variation and to a certain extent to control for potential confounding effects through the inclusion of county and district-year fixed effects. However a major caveat is that we do not completely remove the endogeneity and the model is still susceptible to endogeneity at the county-year level. Furthermore, using the simultaneous equations model, we explore the mechanisms that could be behind our results. We find evidence that counties that voted less for the incumbent in previous elections are more likely to become “splinter” counties, which suggests these counties are targeted for splitting. Our approach contributes to an understanding of the how aid could impact elections and provides an important link with the phenomenon of administrative unit division, which is widespread in Africa. The Ugandan evidence presented here could provide insights to other African countries.

Overall, we contribute to the expanding literature on the effects of aid at the local level and to the literature on the governance impacts of aid. We provide initial evidence of a potential unintended effect of aid. Further research on different countries and other types of elections (e.g., parliamentary elections) could clarify other mechanisms through which aid can impact the electoral outcomes in the recipient countries and further inform donors.

# Appendix A

TABLE 1.8: OLS MODEL - MOTHER AND SPLINTER

Panel A:				
	(1)	(2)	(3)	(4)
	VoteShare <sub>06,11</sub>	VoteShare <sub>06,11</sub>	WinMargin <sub>06,11</sub>	WinMargin <sub>06,11</sub>
$DSplinter_{c,d,(t,t-1)}$	0.043** (0.020)	0.030 (0.020)	-0.009 (0.063)	-0.021 (0.060)
$Aid_{c,d,(t,t-1)} * DSplinter_{c,d,(t,t-1)}$	0.003 (0.002)	0.035 (0.024)	0.008* (0.004)	0.010 (0.046)
$DMother_{c,d,(t,t-1)}$	0.057** (0.027)	0.044* (0.024)	0.015 (0.079)	-0.012 (0.071)
$Aid_{c,d,(t,t-1)} * Mother_{c,d,(t,t-1)}$	-0.001** (0.001)	-0.000 (0.001)	-0.002 (0.002)	-0.001 (0.002)
$Lights_{c,(t,t-1)}$	-0.025 (0.022)	-0.019 (0.019)	-0.019 (0.053)	-0.012 (0.047)
$Aid_{c,d,(t,t-1)} = \text{Comm per capita}$	0.001 (0.000)		0.001 (0.001)	
$Aid_{c,d,(t,t-1)} = \text{Disb per capita}$		0.000 (0.000)		0.000 (0.000)
Panel B: Parallel Trend				
	(1)	(2)	(3)	(4)
	VoteShare <sub>01,06</sub>	VoteShare <sub>01,06</sub>	WinMargin <sub>01,06</sub>	WinMargin <sub>01,06</sub>
$DSplinter_{c,d,(t,t-1)}$	-0.032 (0.020)	-0.031 (0.020)	0.003 (0.040)	0.006 (0.041)
$DMother_{c,d,(t,t-1)}$	-0.022 (0.020)	-0.020 (0.020)	0.025 (0.048)	0.032 (0.047)
$Lights_{c,(t,t-1)}$	-0.021*** (0.006)	-0.019*** (0.006)	-0.018 (0.027)	-0.007 (0.026)
$Aid_{c,d,(t,t-1)} = \text{Comm per capita}$	0.000 (0.000)		0.001 (0.001)	
$Aid_{c,d,(t,t-1)} = \text{Disb per capita}$		-0.000 (0.000)		-0.000 (0.000)
$N$	322	322	322	322
County FE	Yes	Yes	Yes	Yes
District-year FE	Yes	Yes	Yes	Yes

Standard errors in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$



## Chapter 2

# Can aid reduce corruption?: Evidence from World Bank aid and firm-level corruption

### Abstract

This paper analyzes the link between foreign aid and reported firm-level corruption across a large set of developing countries. I use geocoded aid data (AidData) and a series of World Bank Enterprise Surveys between 2006 and 2014. The methodology used is a 2SLS that explores the variation on the portfolio size of project managers and expected completion dates to predict actual completion of projects. The results suggest that World Bank aid might indeed contribute to a reduction in corruption reported by firms.

## 2.1 Introduction

For decades, foreign aid has been used as a tool to address numerous development challenges. However, its actual impact has been controversial, with proponents claiming it promotes growth (Sachs, 2006) and opponents suggesting it might not foster economic growth and possibly even hinder it (Easterly, 2006). The empirical evidence is also contradictory, with some finding a positive link between aid and growth (Clemens et al.,

2012), and others finding a null or negative link (Rajan and Subramanian, 2008, 2011). Beyond economic growth, governance is one of the areas that has recently received more attention, with studies looking into the impacts of aid on government accountability, democratization, and elections (Djankov et al., 2008; Kalyvitis and Vlachaki, 2012; Marx, 2017). Moreover, while the early literature largely focused on macroeconomic impacts, contemporary research has evolved to consider microeconomic effects, as well as lower levels of aggregation such as sub-national administrative units (Michaelowa and Weber, 2006; Chauvet et al., 2013; Isaksson and Kotsadam, 2018).

Corruption is one governance aspect that is of particular interest for developing countries. According to the Corruption Perception Index 2018 (Transparency International, 2018), developing countries have an average index under 36, compared an average of 67 in developed countries<sup>1</sup>. Although from a theoretical perspective corruption could have an ambiguous effect on economic growth, leading to either more or less growth (Hodge et al., 2011), the empirical literature largely suggests that corruption aggravates poverty. Mauro (1995) was the first to show evidence of a negative relationship between corruption and growth in a cross-country analysis suggesting causality. Since then, Mo (2001) and Gyimah-Brempong (2002) have obtained similar results. Others such as Méon and Sekkat (2005) and Attila (2008) found more ambiguous effects, with the impact of corruption on growth depending on the institutional setting.

The link between foreign aid and corruption has been partially addressed at the macro level from two different angles. One looks at aid allocation, essentially asking whether donors aim to select less corrupt countries. The other explores aid effectiveness by investigating if aid hinders or fosters corruption in recipient countries. This paper contributes to the latter strand of the literature.

The argument for how foreign aid could potentially foster corruption is as follows: countries become more aid dependent, that aid dependence could make aid recipients less accountable for their own actions, that would in turn encourage domestic corruption through the conflict over aid funds, and that aid would compensate for poor economic policies and weak government institutions as a “crutch” (Knack, 2001, 2004). Conversely,

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<sup>1</sup>The corruption perception index ranges from 0 top 100, with 0 being highly corrupt and 100 being very clean.

the argument for aid hindering corruption is that international organizations and bilateral donors can bring certain expertise to developing states, increasing accountability through international oversight and conditionality measures (Charron, 2011).

On the theoretical side, Svensson et al. (2000) builds a rent-seeking game theoretical model and suggests that an increase in government revenues may reduce public goods provision under certain circumstances. His preliminary empirical results suggest that foreign aid and windfall resources are on average associated with higher corruption in countries more likely to suffer from competing social groups. On the empirical side, Alesina and Weder (2002) use the International Country Risk Guide (ICRG) corruption indicator to measure the impact of foreign aid on future corruption and find no evidence that aid decreases corruption; Tavares (2003) uses geographical and cultural distance to the donor countries as instrumental variables to assess causality and finds that aid decreases corruption; Knack (1999) uses cross-country data to show evidence that higher aid levels erode the quality of governance, measured by indexes of bureaucratic quality, corruption, and the rule of law; and lastly Bräutigam and Knack (2004) find a robust statistical relationship between high levels of aid in sub-Saharan Africa and deterioration in governance. Overall the results are mixed, which could partially be explained by the high level of aggregation of the analysis, at the country-level. Specifically looking into within-country variation the literature is much more restricted, largely due the limited availability of within-country data. Recently, however, Isaksson and Kotsadam (2018) investigated the effect of Chinese foreign aid on local corruption and found that Chinese aid increases petty corruption in Africa, while World Bank aid decreases it, and they suggest this happens through the transmission of social norms. Furthermore, Brazys et al. (2017) investigate the dynamics when both World Bank and Chinese aid are present, finding that while World Bank projects are associated with a lower level of corruption, the effect disappears when Chinese projects that are not “aid-like” are present.

The mixed results are worrisome, given the faith that donors place on foreign aid as a tool to support better governance in developing countries. Much of the discrepancy in findings is likely related to the endogeneity of aid. Although this presents a significant challenge, the field has developed several methods used to tackle the endogeneity issue. Initially aid was instrumented with recipient characteristics closely linked to aid allocation

(Burnside and Dollar, 2000), which then evolved to the use of supply-side instruments (Tavares, 2003; Dietrich and Wright, 2014; Rajan and Subramanian, 2008). More recently, Nunn and Qian (2014) used a quasi-experimental approach, with fluctuations in U.S. wheat production, weighted by a proxy for a country's likelihood of receiving food aid, as an instrument for food aid.

In this paper I investigate the relationship between World Bank aid implemented at the sub-national level and firm-level corruption. So far there has been limited research on the impacts of foreign aid on firms and, to the best of my knowledge, no research specifically on the link between foreign aid and firm-level corruption on a global scale. In the previous literature, Chauvet and Ehrhart (2018) investigate foreign aid and growth using firm-level data and find a positive impact of foreign aid on growth. Rajan and Subramanian (2011) examine the effect of aid on the growth of value added measured at the industry-level, finding that aid inflows have systematically adverse effects on a country's competitiveness.

Analyzing the firm-level could provide new mechanistic insights on the relationship between aid and corruption. Firms can be affected through three different channels: first, directly by aid inflows through the procurement practices used in a project if the firm takes a contract directly within a development project; second, indirectly by the change in social norms within the business community; or third, by an income effect as foreign aid increases the overall availability of resources and that could lead to increase the relative price of a bribe.

The first channel would imply a negative relationship between foreign aid projects and corruption, as it could be expected that foreign aid would come attached to certain requirements that could limit the opportunities for corruption, such as stricter procurement rules to ensure competition. This is in a sense a specific case of what has been mentioned in the literature as the "direct experience" mechanism (Brazys et al., 2017). The second channel also presumably leads to a negative impact of foreign aid on corruption. Again, one could expect that foreign aid, particularly that of multilateral institutions, comes with a set of social norms that are embedded in its corporate culture and that would limit corruption. Isaksson and Kotsadam (2018) find evidence that this is the case for World Bank aid on petty corruption in Africa measured at the individual

level with the use of Afrobarometer data <sup>2</sup>. Lastly, the third channel could lead to either a positive or a negative impact on corruption, depending on whether or not foreign aid works as a typical windfall resource. Through this channel aid could lead to an increase in corruption if it behaves as a typical windfall resource, as development projects would come with contracts for a diverse set of activities potentially coupled with demand for bribes<sup>3</sup>. Alternatively, if the presence of the development projects is replacing or improving existing infrastructure and the donors implement transparency and accountability mechanisms previously missing, aid could reduce corruption (Brazys et al., 2017).

Firm-level data has the advantage of being likely to capture more nuance about the specific conditions in which aid impacts growth, such as sector differences, and firms are more likely to be directly affected by corruption than individuals. Additionally, the use of foreign aid at the sub-national level allows for the within-country analysis, controlling for all country-specific time-varying characteristics that are likely to influence corruption too.

In order to tackle the endogeneity problem that is pervasive in the aid literature, I use an instrumental variable strategy that exploits the workload of World Bank project managers to estimate project completion, following Marx (2017).

In summary, my research question is: how does aid impact firm-level actual corruption? Through the use of both firm-level data and an identification strategy that makes use of instrumental variables, I aim to provide insights on the mechanisms at play. The present paper seeks to contribute to the literature on the effects of foreign aid on recipient countries by moving beyond economic growth and country-level analysis. Furthermore, I contribute to the literature on the determinants of corruption. The next sections are organized as follows: section 2.2 details the data used; section 2.3 describes the empirical strategy; section 2.4 shows the results; and section 2.5 concludes.

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<sup>2</sup>More specifically, Isaksson and Kotsadam (2018) compare the corruption experiences of people who live close to a site where a Chinese aid project is being implemented with those of people who live close to a site where a project is about to be implemented but has not been initiated yet

<sup>3</sup>Knutsen et al. (2017) use this logic when referring to the link between mining and local corruption

## 2.2 Data

I construct the dataset combining information on official development aid with numerous firm surveys, as well as GIS data on nightlights.

### 2.2.1 Aid data

The foreign aid data is obtained from AidData, and contains all projects from the International Bank for Reconstruction and Development (IBRD) and International Development Association (IDA) approved between 1995 and 2014. This includes 5,881 projects, over 95 percent of which are geocoded, or the equivalent of 97.83 percent of all commitments and 98.86 percent of all disbursements from IBRD and IDA. Overall there are 61,243 project location points, covering US\$630 billion in commitments and US\$389 billion in disbursements.

The dataset contains detailed information on each project’s timeline including the expected closing date (as anticipated at the preparation phase of the project), information on the project manager or team leader, and internal evaluation ratings. All projects are coded in a manner that lists the locations where a project was implemented, and I reduce it to include only project-location points geolocalized with precision at the ADM1 level or lower<sup>4</sup>.

Each project involves between one and five major sectors, with an average of 2.6. The most common sectors are “Government and Civil Society” and “Economic infrastructure and services”, with 3,874 projects and 2,834, respectively. The majority of projects are in Africa, almost 30 percent of the total. Regarding the lending instrument type, less than 20 percent of the projects are “Development Policy Loans” and approximately 80 percent are “Investment Loans”<sup>5 6</sup>.

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<sup>4</sup>Approximately 10 percent of the project-location points are at a level of aggregation higher than ADM1 but those are captured by the country-year fixed effects

<sup>5</sup>Development Policy Loans (DPO) have a short term focus and are a quick-disbursing financing to support policy and institutional reforms, while Investment Loans have a longer term focus and finance goods, works, and services (World Bank, 2009)

<sup>6</sup>In the empirical analysis only DPO’s that are allocated at the ADM1 level or lower are included, while the majority of DPO’s are implemented at the country-level and therefore not localized enough to be used in this analysis

## 2.2.2 Firms surveys

The firm data combines 187 World Bank Enterprise Surveys from 107 different countries. Of those, 40 countries have only one survey wave, and the others have 2 or 3 surveys conducted between 2006 and 2018. The surveys are harmonized and contain questions on corruption generally and in specific services, as well as many characteristics of the firms.

The firm characteristics used in the empirical strategy include: percentage of the firm that is foreign owned; percentage of the firm that is government owned; percentage of sales exported; and size in terms of number of employees (medium-sized is the default)<sup>7</sup>. The main corruption variable used measures the percentage of sales spent on bribes - as reported by managers of the firm, and therefore, measures actual reported corruption, not only perception. It is important to highlight this as a major difference in comparison with previous studies on aid and corruption, which generally rely on surveys regarding corruption perception rather than actual reported corruption. This measure of corruption is still susceptible to biases to the extent to which the survey respondents could be hesitant to report the payment of bribes. The risks and potential costs to survey respondents of honestly reporting their answers are called the “threat of disclosure” (Tourangeau and Yan, 2007), and are particularly concerning in the context of highly sensitive issues, as corruption might be, since respondents may relate a more positive perception in an effort to avoid potential reprisal (Calvo et al., 2019). However, the literature in this area usually focuses on government-related institutions, such as National Statistic Offices, and this effect could be attenuated depending on the respondent’s view of the institution conducting the survey. Despite these concerns, the use of Enterprise Surveys still represents a potential improvement over the existing studies.

Furthermore, I also use measures of corruption in the provision of specific services, such as electricity connection, water provision, and construction licenses. Table 2.1 shows the descriptive statistics of aid, firm corruption variables and overall characteristics used

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<sup>7</sup>More specifically, firm size is a composite measure of permanent and temporary workers, with the number of temporary workers adjusted by the average number of months worked in a year. Small firms have between 5 and 19 employees, medium firms have between 20 and 99 employees, and large firms have 100 or more employees

as controls.

Overall, the baseline sample is composed of 38,617 firms from 67 different countries: 27 African countries, 15 Asian countries, 16 Latin American and Caribbean countries, and 9 European countries.

TABLE 2.1: DESCRIPTIVE STATISTICS - FIRMS AND AID

<b>variable</b>	<b>N</b>	<b>mean</b>	<b>sd</b>	<b>min</b>	<b>max</b>
<b><i>Aid</i></b>					
AidCompleted	441	0.49	0.50	0	1.00
ExpectedCompletion	441	0.51	0.50	0	1.00
LeaveoutAvg	441	2.40	1.78	0	11.00
LeaveoutYrAvg	441	0.02	0.07	0	0.50
<b><i>Corruption</i></b>					
Bribes paid (% of sales)	38,617	1.56	6.28	0	100
% of a contract paid to secure it	10,918	2.98	7.89	0	100
Electricity bribe (dummy)	6,341	0.16	0.36	0	1
Water bribe (dummy)	2,569	0.16	0.37	0	1
Telephone bribe (dummy)	4,639	0.07	0.25	0	1
Construction license bribe (dummy)	5,351	0.20	0.40	0	1
After tax officer visit bribe (dummy)	22,868	0.15	0.36	0	1
Import License bribe (dummy)	5,848	0.12	0.33	0	1
Operating license bribe (dummy)	10,133	0.16	0.37	0	1
<b><i>Firm controls</i></b>					
Foreign (% owned)	38,617	8.75	26.23	0	100
Exports (% of sales)	38,617	9.57	24.60	0	100
Govt (% owned)	38,617	0.54	5.63	0	100
Small firm (dummy)	38,617	0.49	0.50	0	1
Large firm (dummy)	38,617	0.18	0.39	0	1

### 2.2.3 Nightlights

Given the difficulty of obtaining income information globally at the subnational level, I also use satellite data on nightlights as a proxy for income, a strategy that has shown promising results. The satellites from the United States Air Force Defense Meteorological Program (DMSF) through their Operational Linescan System (OLS) track the intensity of Earth-based lights, and there are archives with this data from 1992 until 2012. This data is processed by the National Oceanic and Atmospheric Administration's (NOAA) National Geophysical Data Center (NGDC), which removes natural anomalies and leaves

mostly man-made light.

## 2.3 Empirical Strategy

I estimate the effect of a project completion in a given sub-national administrative units (ADM1 or lower) on corruption reported by firms.

In order to match the enterprise survey data with the aid data an extensive effort of data cleaning and harmonization was conducted. Firstly, it was necessary to ensure the consistency of the ADM1 names over time<sup>8</sup>. Secondly, the geocoded aid data was merged with an ADM1 shapefile. And lastly, the names of the ADM1 regions on the Enterprise Survey data and the shapefile needed to be harmonized (also in terms of spelling and language) to ensure that the firms matched with aid properly.

The idea of using project completion is due to the fact that in any of the channels suggested, be it directly, through norms, or through an income effect, an aid project would impact corruption once the money starts to be disbursed, which does not happen immediately at the start of the project. However, it is clear from the literature that the allocation of foreign aid is not random and depends on various factors, such as the relationship between donors and recipients, actual needs, foreign policy interests, etc. Therefore, aid could be targeted to less corrupt areas, or conceivably, more corrupt areas could be more successful in capturing aid. As the potential reverse causality and confounding factors could lead to endogeneity bias, I use a sequential empirical strategy.

The first method used is a simple OLS model with a series of fixed effects. The dependent variable here is  $Corrup_{isdct}$ , and the main variable of interest is  $Aid_{dct}$ —where  $i$  refers to the firm,  $s$  to the sector of the firm,  $d$  to the ADM1,  $c$  to the country, and  $t$  to the year. On the main specification aid is measured as a dummy on whether a project was completed on the year of the firm’s survey, and corruption is measured as the percentage of sales spent on bribes. Equation 2.1 shows the most extensive combination of fixed effects used here, which includes country-year fixed effects,  $\gamma_{ct}$ , sector-year fixed effects,  $\delta_{st}$ , and ADM1 fixed effects  $\zeta_d$ . The standard errors are clustered at the ADM1-year level,

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<sup>8</sup>There was considerable inconsistency on the original dataset both in terms of spelling of the names and in terms of the language in which the ADM1 name was inserted

which is the level in which aid is allocated, and I use the enterprise survey firm weights.

$$Corrup_{isdct} = \alpha + \beta Aid_{dct} + X_{isdct} + \delta_{st} + \gamma_{ct} + \zeta_d + \varepsilon_{iscdt} \quad (2.1)$$

Once I observe the general relationship between the variables of interest, I address the expected endogeneity of aid using an instrumental variable model, 2SLS. With this model, a set of instruments exploit the variation in project managers' workload and expected project completion, similarly to Marx (2017). The main instrument used interacts a dummy for expected project completion with a constructed variable that aims to capture the variation in the workload of project managers. Unlike Marx (2017) though, I also include the separate elements of the interaction as instruments in the first stage of the 2SLS, instead of controlling for them in the second stage.

More specifically, the instruments are constructed in three steps. Firstly I build a dummy variable that indicates whether each ADM1-year unit has an expected project completion or not. Secondly, I identify each team leader (or project manager)<sup>9</sup> and calculate how many other projects he/she is responsible for. The leaveout is the number of projects (other than the one in the current ADM1-year) that the team leader is responsible for. If there is only one project on the ADM1, the leaveout for the team leader of that project is the leaveout number for that ADM1. If not, I calculate the average of the leaveouts of each team leader that has a project in that ADM1<sup>10</sup>.

These two variables separately are two out of the three instruments. Finally, I construct the last instrument by interacting these two variables. The intuition behind it is that this interaction would be negatively linked to the actual aid completion because a team leader with a large workload while many projects are expected to be completed would decrease the likelihood of these projects actually being completed.

The exclusion restriction requires that all three instrumental variables — expected

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<sup>9</sup>All World Bank projects have a project manager, internally called Team Task Leaders, to which I will refer as team leaders from here on

<sup>10</sup>Another main difference with Marx (2017) is that I consider the leaveout from the entire period. In other words, I consider the cumulative workload of the project manager, rather than the workload on that specific year. I do run the same set of regressions with the instrument with the leaveout average by year, and those are presented on Appendix 2.5

project completion, project manager’s portfolio size, and the interaction of these two variables — affect firm-level corruption exclusively through its effect on project completion. This assumption seems plausible for the interaction, as it is unlikely that other factors that could influence corruption would also impact the team leader’s workload and the expected completion date of a project (relative to the actual completion date). A concern regarding this instrument is that the corruption level could impact the project manager’s workload by making regular oversight procedures more burdensome. I argue that the corruption at the country-level is accounted for with the fixed effects, and corruption at the firm-level would be unlikely to impact a project manager’s work to the extent to accelerate or decelerate a project’s completion and in turn the workload.

Equation 2.2, below, shows the IV model. The top equation represents the first stage of the instrumental variable model, which I run with two slight variations of the instrument. In one version I build the leaveout considering the number of projects the team leader oversees over the entire period of analysis, and the other considers the leaveout specifically for the year in question. And immediately below is the second stage, in which the corruption variable is regressed on the predicted value of aid.

$$\left\{ \begin{array}{l} Aid_{dct} = \alpha + \beta ExpComp_{dct} + \gamma LeaveoutAvg_{dct} + \\ \zeta ExpComp_{dct} * LeaveoutAvg_{dct} + X_{isdct} + \gamma_d + \mu_s + \tau_{ct} + \varepsilon_{isdct} \\ \\ Corrup_{isdct} = \alpha + \beta Aid_{dct} + X_{isdct} + \gamma_d + \mu_s + \tau_{ct} + \varepsilon_{isdct} \end{array} \right. \quad (2.2)$$

## 2.4 Results

The OLS results indicate a negative relationship between aid and corruption, shown in Table 2.2. These results are consistent and robust to the different combinations of fixed effects. Furthermore, the results are also robust to the inclusion of nightlights in the specifications that include ADM1 fixed effects, but that largely reduces the sample size since these are only available until 2012 (see Table 2.9, in Appendix 2.5).

Table 2.3 presents the results for the main specification, the IV model. The first

TABLE 2.2: OLS MODEL

	(1)	(2)	(3)	(4)	(5)	(6)
Corruption: bribes as percentage of sales						
<i>Aid<sub>d,c,t</sub></i> : Project Completion dummy	-8.233*** (0.000)	-8.144*** (0.000)	-7.863*** (0.000)	-9.850*** (0.000)	-9.787*** (0.000)	-9.430*** (0.000)
N	38617	38617	38605	38617	38617	38605
r2	0.088	0.096	0.136	0.122	0.130	0.167
Firm Controls	Yes	Yes	Yes	Yes	Yes	Yes
FE Country-year	Yes	Yes	Yes	Yes	Yes	Yes
FE Sector	No	Yes	No	No	Yes	No
FE Sector-year	No	No	Yes	No	No	Yes
FE ADM1	No	No	No	Yes	Yes	Yes

OLS with standard errors clustered by ADM1-year

*p*-values in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

panel shows that the conclusion of a World Bank project in a given year decreases the reported percentage of sales spent on bribes for the firms in the ADM1 unit on that year, and the result is robust to all different specifications. With respect to the first stage, the interaction variable is significant and negative, as expected, and all specifications have high enough F-statistics to pass the weak identification test. The reported effect is rather large, with the coefficient of interest ranging between -9.2 and -9.6. In column (1), for example, reported bribes decrease by approximately 9.6 percentage points when there is a completed project in the same period in which the survey was taken when in comparison to when there was no completed project in the period. The results remain in the same order of magnitude for all combinations of fixed effects. It is worth noting that the coefficients of interest remain in the same order of magnitude and very similar to the coefficients found with the OLS method, which is quite reassuring as to the validity of the results.

Controlling for nightlights the coefficients for aid remain negative and significant, although with a considerable reduction in size. The instrument does not work as well, but still maintains the joint significance of the instruments (see Table 2.10 in Appendix 2.5)

Finally, Tables 2.11 and 2.12 in Appendix 2.5 show the IV models with a slight variation of the instrument, as explained on Section 2.3. Instead of including the leaveout

TABLE 2.3: 2SLS (IV) - EXPECTED PROJECT COMPLETION X PROJECT MANAGER'S WORKLOAD

	(1)	(2)	(3)
<i>Aid</i> <sub><i>d,c,t</i></sub> : Project Completion dummy	-9.603*** (0.008)	-9.604*** (0.007)	-9.276*** (0.007)
<i>foreign</i> <sub><i>i,d,c,t</i></sub>	-0.011 (0.112)	-0.010 (0.108)	-0.010 (0.146)
<i>exports</i> <sub><i>i,d,c,t</i></sub>	-0.013 (0.371)	-0.013 (0.355)	-0.013 (0.395)
<i>gout</i> <sub><i>i,d,c,t</i></sub>	0.014 (0.109)	0.013 (0.140)	0.013 (0.120)
<i>small</i> <sub><i>i,d,c,t</i></sub>	0.079 (0.916)	0.100 (0.895)	0.205 (0.791)
<i>large</i> <sub><i>i,d,c,t</i></sub>	-0.036 (0.948)	-0.050 (0.927)	0.033 (0.956)
Firm Controls	Yes	Yes	Yes
FE Country-year	Yes	Yes	Yes
FE Sector	No	Yes	No
FE Sector-year	No	No	Yes
FE ADM1	Yes	Yes	Yes
First stage:			
<i>Interaction</i> <sub><i>1</i></sub> <sub><i>d,c,t</i></sub>	-0.110* (0.078)	-0.109* (0.077)	-0.107* (0.074)
<i>DummyExpComp</i> <sub><i>d,c,t</i></sub>	1.208*** (0.000)	1.206*** (0.000)	1.192*** (0.000)
<i>LeaveoutAvg</i> <sub><i>d,c,t</i></sub>	0.167* (0.058)	0.166* (0.057)	0.164* (0.054)
N	38617	38617	38617
r <sup>2</sup>	0.032	0.031	0.029
Underidentification LM stat (p-value)	0.001	0.000	0.000
Kleibergen-Paap rk Wald F statistic	270.385	269.590	243.914

*p*-values in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

average for each team leader for the entire period, the leaveout is calculated for each year<sup>11</sup>. The second stage results are very similar, but the sign of the interaction term on the first stage becomes positive, in contradiction with the intuition behind the instrument, which is why I opt for the first version of the instrument, with the leaveout calculated for the entire period. The change of sign may indicate that project managers could try to accelerate the completion of projects when their workload is too heavy. In other words, instead of delaying a project completion, having many other ongoing projects would make the project manager try to “push through” in order to reduce the number of projects in their portfolio.

As a robustness check I limit the sample to only investment projects, dropping all development policy projects (approximately 20 percent of the total amount of projects), which are quick disbursing external financing to support policy and institutional reforms. The same main specification is presented on Table 2.4, and the results with the alternative instrument are on Table 2.13 in the Appendix 2.5. The results maintain significance and are of similar order of magnitude.

Lastly, I attempt to use Isaksson and Kotsadam (2018)’s method, which compares corruption in locations that have an ongoing Chinese development project to locations that will have one in the near-future. However, this method is not compatible with my aid data because the World Bank has far more project coverage than China. Therefore, it lacks locations that do not have an active project but will have one in the near-future.

Furthermore, in the case of the World Bank aid, it is likely that the countries in which the projects are located are same that have Enterprise Surveys being conducted, as the Enterprise Survey is a World Bank survey.

### 2.4.1 Heterogeneous effects

The analysis so far has observed the overall effect of foreign aid on all types of firms. This approach may hide potential heterogeneous effects between firms that operate in different sectors. I try to disentangle these effects by sector by running the OLS model from Section 2.3 in sub-samples of the firms. Here I include only country-year fixed

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<sup>11</sup>this instrument is closer to the one used by Marx (2017)

TABLE 2.4: 2SLS (IV) - ONLY INVESTMENT PROJECTS

	(1)	(2)	(3)
<i>Aid</i> <sub><i>d,c,t</i></sub> : Project Completion dummy	-10.596*** (0.009)	-10.624*** (0.008)	-10.216*** (0.009)
<i>foreign</i> <sub><i>i,d,c,t</i></sub>	-0.011 (0.114)	-0.010 (0.109)	-0.010 (0.147)
<i>exports</i> <sub><i>i,d,c,t</i></sub>	-0.013 (0.370)	-0.013 (0.355)	-0.013 (0.403)
<i>gouv</i> <sub><i>i,d,c,t</i></sub>	0.014 (0.107)	0.013 (0.141)	0.013 (0.127)
<i>small</i> <sub><i>i,d,c,t</i></sub>	0.066 (0.929)	0.085 (0.911)	0.190 (0.807)
<i>large</i> <sub><i>i,d,c,t</i></sub>	-0.026 (0.962)	-0.038 (0.944)	0.046 (0.939)
Firm Controls	Yes	Yes	Yes
FE Country-year	Yes	Yes	Yes
FE Sector	No	Yes	No
FE Sector-year	No	No	Yes
FE ADM1	Yes	Yes	Yes
First stage:			
<i>Interaction1</i> <sub><i>d,c,t</i></sub>	-0.024 (0.678)	-0.023 (0.683)	-0.021 (0.704)
<i>DummyExpComp</i> <sub><i>d,c,t</i></sub>	0.892*** (0.000)	0.890*** (0.000)	0.878*** (0.000)
<i>LeaveoutAvg</i> <sub><i>d,c,t</i></sub>	0.142* (0.096)	0.141* (0.095)	0.139* (0.090)
N	38617	38617	38617
r <sup>2</sup>	0.033	0.032	0.030
Underidentification LM stat (p-value)	0.003	0.003	0.002
Kleibergen-Paap rk Wald F statistic	209.750	206.479	196.938

*p*-values in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

effects and ADM1 fixed effects, as the sector is restricted in the sample. I focus on the OLS results because the similar results between the OLS and IV models for the full sample suggest the endogeneity is not too large. The 2SLS results with the preferred instrument are presented on Tables 2.16 and 2.17 in the Appendix 2.5.

The sector classification used on the fixed effects includes 22 categories, which I re-aggregate to reduce them to 12 categories, namely: (i) food and tobacco; (ii) textiles, garments, and leather; (iii) wood and furniture; (iv) paper and publishing; (v) refined petrol and chemicals; (vi) rubber and plastics; (vii) metallic and non-metallic mineral products and fabricated metal products; (viii) machinery and motor vehicles; (ix) wholesales; (x) retail; (xi) hotels; and (xii) transport and construction.

As can be observed in 2.5, the only regressions that present a positive coefficient, meaning that aid would increase corruption, are (5) refined petrol and chemicals, and (12) transport and construction. This is in line with expectations, as both these sector are “high ticket” sectors and likely have more opportunity for embezzlement.

All the other regressions present a negative coefficient of interest—whether significant or not—and regressions (2) textile, garments, and leather; (4) paper and publishing; (8) machinery and motor vehicles; (9) wholesales; and (11) hotels; show a significant coefficient. Therefore, we can conclude that these are the sectors driving the negative results in the full sample.

TABLE 2.5: OLS BY SECTOR

	(1)	(2)	(3)	(4)	(5)	(6)
	food & tobacco	textile & garments & leather	wood & furniture	paper & publishing	refined petrol & chemicals	rubber & plastics
$Aid_{d,c,t}$	-0.736 (0.828)	-1.086* (0.057)	-5.985 (0.237)	-43.180*** (0.000)	2.446 (0.382)	-10.214 (0.215)
N	5865	5679	2224	1351	2077	1307
r2	0.478	0.148	0.479	0.654	0.129	0.152
	(7)	(8)	(9)	(10)	(11)	(12)
	mineral & fabricated metal products	machinery & motor vehicles	wholesales	retail	hotels	transport & construction
$Aid_{d,c,t}$	-0.422 (0.697)	-1.301** (0.014)	-12.103*** (0.000)	0.305 (0.206)	-0.559* (0.051)	0.900** (0.036)
N	3736	1030	5328	2659	1862	2712
r2	0.219	0.708	0.187	0.588	0.395	0.282

*p*-values in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

The sector breakdown suggests that whether the mechanism is through procurement practices, income effect, or social norms, the impact of aid is heterogeneous. Given the nature of the sectors in which aid fosters corruption—those sectors usually would award few and large contracts—this could indicate that the procurement channel might be at play. The procurement rules may differ depending on the type of contract. It is also conceivable that strict rules on the World Bank’s side to avoid corruption may be more effective in certain sectors rather than others. More specifically, it is likely more difficult to curb corruption in ‘big ticket’ sectors, where the payoff to engage in corruption is higher. Therefore, anti-corruption efforts may spillover to other sectors yet not be effective in their main target.

## **2.4.2 Service provision effects**

In order to better understand how foreign aid may influence corruption in service provision, I regress foreign aid on a series of questions from the Enterprise Survey that ask whether a bribe or informal payment was expected in the provision of a specific service. Here the dependent variable is binary and only captures whether a bribe was requested, making the interpretation of the coefficient less straightforward. Additionally, the sample is reduced due to missing data. Despite these drawbacks, the results presented on Tables 2.6 and 2.7—which present the models in OLS and 2SLS, respectively—show consistency in the direction of the coefficient. Foreign aid is found to significantly reduce corruption in the provision of electricity, telephone connection, imports license, and operations license. In the cases of water the sign is also negative, but not significant, and in the case of construction permits or requests for bribes after a visit of the tax official the sign is consistently negative, but only significant with the 2SLS model.

TABLE 2.6: OLS MODEL - CORRUPTION IN SERVICE PROVISION

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Electricity	Water	Telephone	Construction	Tax	Import	Operations
<i>Aid</i> <sub><i>d,c,t</i></sub> : Project Completion dummy	-0.128* (0.072)	-0.031 (0.655)	-0.102** (0.033)	-0.026 (0.672)	-0.034 (0.335)	-0.197** (0.015)	-0.287*** (0.008)
<i>foreign</i> <sub><i>i,d,c,t</i></sub>	0.000 (0.758)	-0.001** (0.024)	-0.000 (0.244)	0.000 (0.618)	-0.000** (0.031)	0.000 (0.957)	-0.000** (0.033)
<i>exports</i> <sub><i>i,d,c,t</i></sub>	0.000 (0.900)	-0.000 (0.765)	0.001 (0.198)	-0.000 (0.990)	0.000 (0.629)	0.000 (0.965)	-0.000 (0.859)
<i>gouv</i> <sub><i>i,d,c,t</i></sub>	-0.003** (0.023)	-0.000 (0.923)	-0.001 (0.407)	-0.002* (0.067)	-0.000 (0.647)	0.000 (0.722)	-0.000 (0.536)
<i>small</i> <sub><i>i,d,c,t</i></sub>	-0.087** (0.035)	-0.020 (0.622)	-0.018 (0.395)	-0.044 (0.335)	-0.017 (0.335)	0.006 (0.747)	-0.046* (0.072)
<i>large</i> <sub><i>i,d,c,t</i></sub>	0.001 (0.975)	0.034 (0.465)	0.001 (0.962)	-0.011 (0.757)	0.001 (0.907)	-0.014 (0.310)	0.005 (0.843)
N	6298	2487	4605	5305	22846	5796	10099
r2	0.323	0.617	0.532	0.385	0.250	0.484	0.300

*p*-values in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

TABLE 2.7: 2SLS (IV) - CORRUPTION IN SERVICE PROVISION

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Electricity	Water	Telephone	Construction	Tax	Import	Operations
<i>Aid</i> <sub><i>d,c,t</i></sub> : Project Completion dummy	-0.134** (0.049)	-0.037 (0.567)	-0.093** (0.041)	-0.084** (0.032)	-0.075* (0.052)	-0.199** (0.012)	-0.109** (0.035)
<i>foreign</i> <sub><i>i,d,c,t</i></sub>	0.000 (0.749)	-0.001** (0.014)	-0.000 (0.228)	0.000 (0.640)	-0.000** (0.031)	0.000 (0.955)	-0.000** (0.028)
<i>exports</i> <sub><i>i,d,c,t</i></sub>	0.000 (0.894)	-0.000 (0.745)	0.001 (0.182)	0.000 (0.989)	0.000 (0.660)	0.000 (0.963)	-0.000 (0.791)
<i>govt</i> <sub><i>i,d,c,t</i></sub>	-0.003** (0.017)	-0.000 (0.918)	-0.001 (0.391)	-0.002* (0.054)	-0.000 (0.656)	0.000 (0.711)	-0.000 (0.496)
<i>small</i> <sub><i>i,d,c,t</i></sub>	-0.087** (0.028)	-0.020 (0.592)	-0.018 (0.379)	-0.044 (0.318)	-0.016 (0.337)	0.006 (0.737)	-0.046* (0.070)
<i>large</i> <sub><i>i,d,c,t</i></sub>	0.001 (0.974)	0.034 (0.427)	0.001 (0.961)	-0.011 (0.747)	0.002 (0.894)	-0.014 (0.290)	0.006 (0.830)
N	6341	2569	4639	5351	22868	5848	10133
r2	0.020	0.006	0.007	0.004	0.001	0.007	0.011
Underidentification LM stat (p-value)	0.000	0.000	0.032	0.001	0.000	0.003	0.017
Kleibergen-Paap rk Wald F statistic	1991.132	832756.703	2613.349	17545.322	933.253	7645.898	212.691
<i>Interaction1</i> <sub><i>d,c,t</i></sub>	0.002 (0.603)	0.000 (0.799)	0.023* (0.068)	-0.003 (0.518)	-0.032* (0.073)	-0.001 (0.693)	-0.006 (0.844)
<i>DummyExpComp</i> <sub><i>d,c,t</i></sub>	0.962*** (0.000)	0.999*** (0.000)	0.878*** (0.000)	0.996*** (0.000)	1.020*** (0.000)	0.991*** (0.000)	0.937*** (0.000)
<i>LeaveoutAvg</i> <sub><i>d,c,t</i></sub>	0.001 (0.496)	0.000 (0.445)	-0.005 (0.167)	0.015 (0.263)	0.047* (0.054)	0.001 (0.323)	0.036 (0.150)
<i>N</i>	6341	2569	4639	5351	22868	5848	10133

*p*-values in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

## 2.5 Conclusion

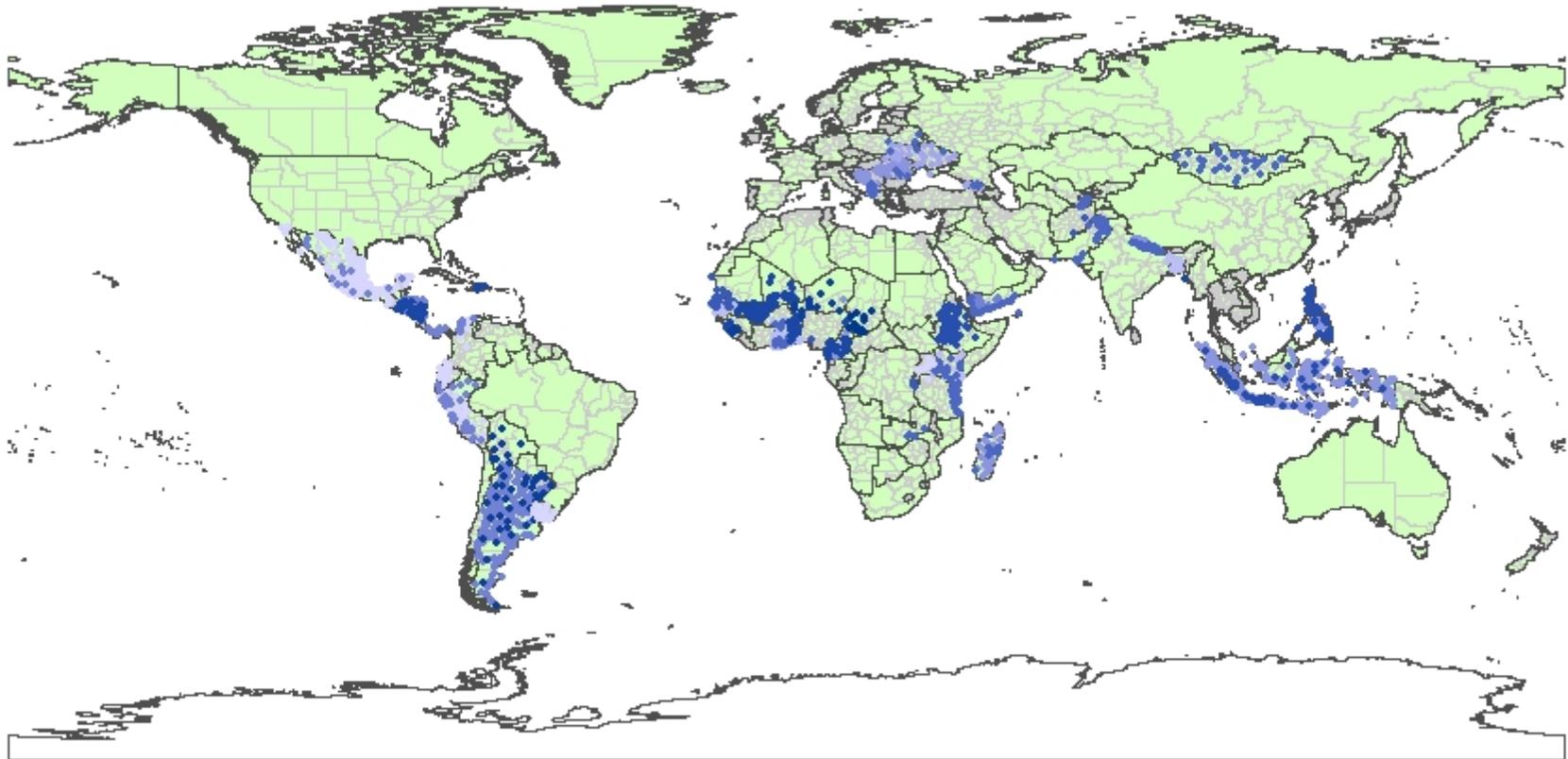
Corruption remains a major concern in the foreign aid community. It has been shown to have considerable negative impact on development and also hinders the ability of donors and policy makers to successfully implement policies in developing countries. Therefore a better understanding of how aid may or may not contribute to corruption is crucial.

The availability of micro data, both on the aid side, with geocoded data, and on the corruption side, with firm-level surveys, allows for a more sophisticated analysis than was previously possible. Specifically, the use of the Enterprise Survey, which asks questions on actual corruption rather than corruption perception, provides an important contribution to the discussion. Most of the existing literature considers corruption perception rather than actual corruption which makes the results more vulnerable to the biases of the respondent.

Overall, the negative relationship between World Bank aid and firm-level corruption provides a reason for cautious optimism with regards to the potential side-effects of aid. Aid may not necessarily always be successful in hindering corruption in recipient countries, but the results presented here suggest that in some cases it is. Moreover, there is an indication that the effect of aid is heterogeneous and therefore any efforts to ensure that aid contributes to reducing corruption should take this into consideration. Further research is required to better understand the impacts of aid in order to avoid potential negative outcomes.

# Appendix

FIGURE 2.1: FOREIGN AID PROJECTS COMPLETED (2006-2014) - BASE SAMPLE



Note: The dots mark project-location points, and the color represents the year of completion, with lighter being earlier on and darker later on

TABLE 2.8: LIST OF COUNTRIES IN THE SAMPLE

Country	Frequency	Percentage	Country	Frequency	Percentage
Afghanistan	587	1.52	Liberia	103	0.27
Albania	328	0.85	Lithuania	83	0.21
Angola	361	0.93	Madagascar	66	0.17
Argentina	1,950	5.05	Mali	526	1.36
Bangladesh	515	1.33	Mauritania	147	0.38
Belarus	331	0.86	Mexico	754	1.95
Benin	143	0.37	Mongolia	176	0.46
Bhutan	277	0.72	Myanmar	999	2.59
Bolivia	828	2.14	Namibia	336	0.87
Bosnia and Herzegovina	356	0.92	Nepal	728	1.89
Botswana	329	0.85	Nicaragua	479	1.24
Burundi	211	0.55	Niger	173	0.45
Cambodia	38	0.1	Nigeria	2,487	6.44
Cameroon	519	1.34	Pakistan	1,020	2.64
Chad	224	0.58	Panama	212	0.55
Chile	1,506	3.9	Paraguay	678	1.76
Colombia	1,179	3.05	Peru	1,933	5.01
Congo, Dem. Rep.	376	0.97	Philippines	1,309	3.39
Cote d'Ivoire	248	0.64	Romania	99	0.26
Dominican Republic	269	0.7	Rwanda	246	0.64
Ecuador	968	2.51	Senegal	682	1.77
El Salvador	844	2.19	Sierra Leone	99	0.26
Ethiopia	1,274	3.3	Slovak Republic	54	0.14
Georgia	200	0.52	Tajikistan	282	0.73
Ghana	721	1.87	Tanzania	606	1.57
Guatemala	840	2.18	Togo	199	0.52
Guinea	170	0.44	Uganda	627	1.62
Honduras	527	1.36	Ukraine	84	0.22
Indonesia	2,168	5.61	Uruguay	888	2.3
Kenya	770	1.99	Venezuela	188	0.49
Kosovo	183	0.47	Yemen	427	1.11
Kyrgyz Republic	187	0.48	Zambia	880	2.28
Lao PDR	545	1.41	Zimbabwe	837	2.17
Latvia	238	0.62			
			<b>Total</b>	<b>38,617</b>	<b>100</b>

TABLE 2.9: OLS MODEL - INCLUDING NIGHTLIGHTS

	(1)	(2)	(3)	(4)	(5)	(6)
Corruption: bribes as percentage of sales						
<i>Aid<sub>d,c,t</sub></i> : Project Completion dummy	-0.138 (0.688)	-0.109 (0.756)	-0.080 (0.805)	-1.617** (0.023)	-1.650** (0.017)	-1.556** (0.015)
<i>Nightlights</i>	-0.000 (0.514)	-0.000 (0.609)	-0.000 (0.582)	-0.000** (0.041)	-0.000** (0.046)	-0.000** (0.050)
N	20728.000	20728.000	20720.000	20722.000	20722.000	20714.000
r2	0.168	0.172	0.195	0.195	0.199	0.224
Firm Controls	Yes	Yes	Yes	Yes	Yes	Yes
FE Country-year	Yes	Yes	Yes	Yes	Yes	Yes
FE Sector	No	Yes	No	No	Yes	No
FE Sector-year	No	No	Yes	No	No	Yes
FE ADM1	No	No	No	Yes	Yes	Yes

OLS with standard errors clustered by ADM1-year

*p*-values in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

TABLE 2.10: 2SLS (IV) - EXPECTED PROJECT COMPLETION X PROJECT MANAGER'S WORKLOAD - CONTROLLING FOR NIGHTLIGHTS

	(1)	(2)	(3)
<i>Aid</i> <sub><i>d,c,t</i></sub> : Project Completion dummy	-1.909*** (0.004)	-1.949*** (0.003)	-1.825*** (0.002)
<i>foreign</i> <sub><i>i,d,c,t</i></sub>	-0.008** (0.031)	-0.008** (0.034)	-0.007** (0.015)
<i>exports</i> <sub><i>i,d,c,t</i></sub>	-0.001 (0.741)	-0.001 (0.734)	-0.001 (0.788)
<i>govt</i> <sub><i>i,d,c,t</i></sub>	0.010 (0.278)	0.008 (0.426)	0.010 (0.286)
<i>small</i> <sub><i>i,d,c,t</i></sub>	0.196 (0.545)	0.188 (0.563)	0.160 (0.607)
<i>large</i> <sub><i>i,d,c,t</i></sub>	-0.341 (0.109)	-0.283 (0.163)	-0.275 (0.179)
<i>lights</i> <sub><i>d,c,t</i></sub>	-0.000** (0.041)	-0.000** (0.046)	-0.000** (0.049)
Firm Controls	Yes	Yes	Yes
FE Country-year	Yes	Yes	Yes
FE Sector	No	Yes	No
FE Sector-year	No	No	Yes
FE ADM1	Yes	Yes	Yes
First stage:			
<i>Interaction1</i> <sub><i>d,c,t</i></sub>	0.036 (0.181)	0.036 (0.181)	0.037 (0.178)
<i>DummyExpComp</i> <sub><i>d,c,t</i></sub>	0.749*** (0.000)	0.748*** (0.000)	0.746*** (0.000)
<i>LeaveoutAvg</i> <sub><i>d,c,t</i></sub>	-0.013* (0.095)	-0.013* (0.094)	-0.013* (0.088)
N	20728	20728	20728
r2	0.005	0.004	0.004
Underidentification LM stat (p-value)	0.010	0.010	0.010
Kleibergen-Paap rk Wald F statistic	178.142	178.218	179.179

*p*-values in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

TABLE 2.11: 2SLS (IV) - ALTERNATIVE INSTRUMENT (LEAVEOUT AVERAGE CALCULATED BY YEAR)

	(1)	(2)	(3)
<i>Aid</i> <sub><i>d,c,t</i></sub> : Project Completion dummy	-8.959* (0.060)	-8.995* (0.054)	-8.811* (0.053)
<i>foreign</i> <sub><i>i,d,c,t</i></sub>	-0.011 (0.110)	-0.010 (0.105)	-0.010 (0.145)
<i>exports</i> <sub><i>i,d,c,t</i></sub>	-0.013 (0.378)	-0.013 (0.366)	-0.013 (0.403)
<i>gouv</i> <sub><i>i,d,c,t</i></sub>	0.014 (0.109)	0.014 (0.120)	0.013 (0.121)
<i>small</i> <sub><i>i,d,c,t</i></sub>	0.081 (0.914)	0.035 (0.961)	0.205 (0.791)
<i>large</i> <sub><i>i,d,c,t</i></sub>	-0.040 (0.940)	-0.074 (0.888)	0.031 (0.959)
Firm Controls	Yes	Yes	Yes
FE Country-year	Yes	Yes	Yes
FE Sector	No	Yes	No
FE Sector-year	No	No	Yes
FE ADM1	Yes	Yes	Yes
First stage:			
<i>Interaction2</i> <sub><i>d,c,t</i></sub>	0.262 (0.175)	0.278 (0.164)	0.272 (0.169)
<i>DummyExpComp</i> <sub><i>d,c,t</i></sub>	0.936*** (0.000)	0.934*** (0.000)	0.925*** (0.000)
<i>LeaveoutAvg</i> <sub><i>d,c,t</i></sub>	-0.195 (0.192)	-0.198 (0.187)	-0.203 (0.181)
N	38617	38617	38617
r <sup>2</sup>	0.032	0.031	0.029
Underidentification LM stat (p-value)	0.002	0.001	0.001
Kleibergen-Paap rk Wald F statistic	551.664	555.315	433.472

*p*-values in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

TABLE 2.12: 2SLS (IV) - ALTERNATIVE INSTRUMENT - CONTROLLING FOR NIGHTLIGHTS

	(1)	(2)	(3)
<i>Aid</i> <sub><i>d,c,t</i></sub> : Project Completion dummy	-1.894*** (0.006)	-1.931*** (0.004)	-1.805*** (0.004)
<i>foreign</i> <sub><i>i,d,c,t</i></sub>	-0.008** (0.031)	-0.008** (0.034)	-0.007** (0.015)
<i>exports</i> <sub><i>i,d,c,t</i></sub>	-0.001 (0.741)	-0.001 (0.734)	-0.001 (0.789)
<i>govt</i> <sub><i>i,d,c,t</i></sub>	0.010 (0.278)	0.008 (0.426)	0.010 (0.286)
<i>small</i> <sub><i>i,d,c,t</i></sub>	0.196 (0.545)	0.188 (0.563)	0.160 (0.607)
<i>large</i> <sub><i>i,d,c,t</i></sub>	-0.341 (0.109)	-0.283 (0.163)	-0.275 (0.179)
<i>lights</i> <sub><i>d,c,t</i></sub>	-0.000** (0.042)	-0.000** (0.047)	-0.000** (0.050)
Firm Controls	Yes	Yes	Yes
FE Country-year	Yes	Yes	Yes
FE Sector	No	Yes	No
FE Sector-year	No	No	Yes
FE ADM1	Yes	Yes	Yes
First stage:			
<i>Interaction2</i> <sub><i>d,c,t</i></sub>	-0.014 (0.787)	-0.014 (0.789)	-0.015 (0.794)
<i>DummyExpComp</i> <sub><i>d,c,t</i></sub>	0.875*** (0.000)	0.875*** (0.000)	0.874*** (0.000)
<i>LeaveoutYrAvg</i> <sub><i>d,c,t</i></sub>	0.005* (0.058)	0.005* (0.064)	0.006** (0.033)
N	20728	20728	20728
r2	0.005	0.004	0.004
Underidentification LM stat (p-value)	0.011	0.011	0.012
Kleibergen-Paap rk Wald F statistic	190.105	185.644	200.116

*p*-values in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

TABLE 2.13: 2SLS (IV) - ONLY INVESTMENT PROJECTS - ALTERNATIVE INSTRUMENT

	(1)	(2)	(3)
<i>Aid</i> <sub><i>d,c,t</i></sub> : Project Completion dummy	-9.659* (0.052)	-9.699** (0.046)	-9.488** (0.046)
<i>foreign</i> <sub><i>i,d,c,t</i></sub>	-0.011 (0.111)	-0.010 (0.105)	-0.010 (0.145)
<i>exports</i> <sub><i>i,d,c,t</i></sub>	-0.013 (0.380)	-0.013 (0.368)	-0.012 (0.412)
<i>gout</i> <sub><i>i,d,c,t</i></sub>	0.014 (0.106)	0.014 (0.121)	0.013 (0.127)
<i>small</i> <sub><i>i,d,c,t</i></sub>	0.070 (0.926)	0.022 (0.977)	0.192 (0.805)
<i>large</i> <sub><i>i,d,c,t</i></sub>	-0.033 (0.951)	-0.065 (0.902)	0.042 (0.944)
Firm Controls	Yes	Yes	Yes
FE Country-year	Yes	Yes	Yes
FE Sector	No	Yes	No
FE Sector-year	No	No	Yes
FE ADM1	Yes	Yes	Yes
First stage:			
<i>Interaction2</i> <sub><i>d,c,t</i></sub>	1.059** (0.018)	1.076** (0.015)	1.060** (0.013)
<i>DummyExpComp</i> <sub><i>d,c,t</i></sub>	0.848*** (0.000)	0.845*** (0.000)	0.839*** (0.000)
<i>LeaveoutYrAvg</i> <sub><i>d,c,t</i></sub>	-0.284 (0.160)	-0.286 (0.155)	-0.283 (0.145)
N	38617	38617	38617
r <sup>2</sup>	0.033	0.032	0.030
Underidentification LM stat (p-value)	0.003	0.003	0.002
Kleibergen-Paap rk Wald F statistic	294.873	295.288	261.737

*p*-values in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

TABLE 2.14: OLS BY SECTOR - FULL TABLE, PART A

	(1)	(2)	(3)	(4)	(5)	(6)	
	food & tobacco	textile & garments	& leather	wood & furniture	paper & publishing	refined petrol & chemicals	rubber & plastics
<i>Aid</i> <sub>d,c,t</sub>	-0.736 (0.828)	-1.086* (0.057)	-5.985 (0.237)	-43.180*** (0.000)	2.446 (0.382)	-10.214 (0.215)	
<i>foreign</i> <sub>i,d,c,t</sub>	0.012 (0.253)	-0.004 (0.157)	-0.005 (0.486)	0.037 (0.280)	0.000 (0.914)	-0.005 (0.364)	
<i>exports</i> <sub>i,d,c,t</sub>	-0.046 (0.189)	-0.005 (0.152)	-0.007 (0.300)	-0.357 (0.133)	0.004*** (0.000)	0.007 (0.303)	
<i>gouv</i> <sub>i,d,c,t</sub>	0.076 (0.300)	0.009 (0.548)	0.023 (0.319)	0.036 (0.462)	0.077 (0.436)	-0.040 (0.636)	
<i>small</i> <sub>i,d,c,t</sub>	2.548 (0.117)	-0.255 (0.454)	-0.118 (0.647)	7.520 (0.163)	-0.006 (0.976)	-0.610 (0.199)	
<i>large</i> <sub>i,d,c,t</sub>	1.311 (0.195)	-0.125 (0.599)	0.489 (0.489)	6.261 (0.220)	-0.250 (0.548)	-0.163 (0.614)	
N	5865	5679	2224	1351	2077	1307	
r <sup>2</sup>	0.478	0.148	0.479	0.654	0.129	0.152	

*p*-values in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

TABLE 2.15: OLS BY SECTOR - FULL TABLE, PART B

	(1)	(2)	(3)	(4)	(5)	(6)
	mineral & fabricated metal products	machinery & motor vehicles	wholesales	retail	hotels	transport & construction
<i>Aid</i> <sub>d,c,t</sub>	-0.422 (0.697)	-1.301** (0.014)	-12.103*** (0.000)	0.305 (0.206)	-0.559* (0.051)	0.900** (0.036)
<i>foreign</i> <sub>i,d,c,t</sub>	0.015 (0.257)	-0.003 (0.152)	-0.059 (0.210)	-0.010 (0.189)	-0.007 (0.148)	-0.003 (0.317)
<i>exports</i> <sub>i,d,c,t</sub>	0.011 (0.323)	0.001 (0.897)	-0.070 (0.218)	0.010 (0.276)	0.009 (0.479)	0.007* (0.054)
<i>govt</i> <sub>i,d,c,t</sub>	0.128 (0.317)	0.002 (0.699)	0.013 (0.474)	0.022 (0.193)	-0.006 (0.609)	-0.008 (0.196)
<i>small</i> <sub>i,d,c,t</sub>	0.294 (0.262)	0.117 (0.651)	-1.661 (0.441)	0.654** (0.049)	-0.762 (0.232)	0.101 (0.697)
<i>large</i> <sub>i,d,c,t</sub>	-0.623 (0.108)	0.042 (0.886)	-1.434 (0.361)	-0.120 (0.565)	-0.747* (0.087)	-0.097 (0.642)
N	3736	1030	5328	2659	1862	2712
r <sup>2</sup>	0.219	0.708	0.187	0.588	0.395	0.282

*p*-values in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

TABLE 2.16: 2SLS (IV) BY SECTOR - FULL TABLE, PART A

	(1)	(2)	(3)	(4)	(5)	(6)
	food & tobacco	textile & garments & leather	wood & furniture	paper & publishing	refined petrol & chemicals	rubber & plastics
<i>Aid</i> <sub>d,c,t</sub>	-1.665 (0.600)	-1.758*** (0.003)	-9.367 (0.147)	-30.102*** (0.005)	-0.681 (0.532)	-15.235* (0.077)
<i>foreign</i> <sub>i,d,c,t</sub>	0.012 (0.240)	-0.004 (0.147)	-0.005 (0.500)	0.040 (0.197)	0.000 (0.920)	-0.004 (0.374)
<i>exports</i> <sub>i,d,c,t</sub>	-0.046 (0.176)	-0.005 (0.134)	-0.008 (0.249)	-0.345 (0.115)	0.004*** (0.001)	0.005 (0.500)
<i>govt</i> <sub>i,d,c,t</sub>	0.077 (0.283)	0.009 (0.537)	0.025 (0.266)	0.041 (0.371)	0.079 (0.406)	-0.038 (0.634)
<i>small</i> <sub>i,d,c,t</sub>	2.547 (0.107)	-0.256 (0.439)	-0.123 (0.613)	8.183 (0.103)	-0.017 (0.933)	-0.585 (0.180)
<i>large</i> <sub>i,d,c,t</sub>	1.299 (0.186)	-0.123 (0.596)	0.476 (0.451)	6.643 (0.160)	-0.251 (0.526)	-0.211 (0.480)
First stage:						
<i>Interaction1</i> <sub>d,c,t</sub>	-0.031 (0.218)	-0.133* (0.066)	-0.101 (0.118)	-0.461*** (0.007)	-0.045 (0.305)	-0.054 (0.300)
<i>DummyExpComp</i> <sub>d,c,t</sub>	1.033*** (0.000)	1.307*** (0.000)	1.252*** (0.000)	2.085*** (0.000)	1.105*** (0.000)	1.112*** (0.000)
<i>LeaveoutAvg</i> <sub>d,c,t</sub>	0.043 (0.235)	0.251* (0.052)	0.125 (0.110)	0.042* (0.088)	0.062 (0.257)	0.076 (0.259)
<i>N</i>	5865	5679	2224	1351	2077	1307
<i>r2</i>	0.027	0.003	0.013	0.220	0.002	0.039
Underidentification LM stat (p-value)	0.003	0.000	0.002	0.005	0.001	0.089
Kleibergen-Paap rk Wald F statistic	2448.244	163.042	410.982	41.243	947.057	374.994

*p*-values in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

TABLE 2.17: 2SLS (IV) BY SECTOR - FULL TABLE, PART B

	(1)	(2)	(3)	(4)	(5)	(6)
	mineral & fabricated metal products	machinery & motor vehicles	wholesales	retail	hotels	transport & construction
$Aid_{d,c,t}$	-0.313 (0.789)	-0.831 (0.261)	-10.737*** (0.006)	-0.160 (0.395)	-0.481 (0.237)	1.633*** (0.001)
$foreign_{i,d,c,t}$	0.015 (0.239)	-0.003 (0.103)	-0.059 (0.199)	-0.010 (0.169)	-0.007 (0.122)	-0.003 (0.276)
$exports_{i,d,c,t}$	0.012 (0.303)	0.001 (0.870)	-0.070 (0.208)	0.010 (0.242)	0.009 (0.452)	0.008** (0.030)
$govt_{i,d,c,t}$	0.128 (0.298)	0.002 (0.635)	0.013 (0.461)	0.022 (0.171)	-0.006 (0.588)	-0.008 (0.178)
$small_{i,d,c,t}$	0.294 (0.243)	0.109 (0.649)	-1.649 (0.433)	0.660** (0.037)	-0.760 (0.204)	0.091 (0.714)
$large_{i,d,c,t}$	-0.623* (0.095)	0.029 (0.912)	-1.424 (0.353)	-0.120 (0.548)	-0.747* (0.067)	-0.105 (0.598)
First stage:						
$Interaction1_{d,c,t}$	-0.023 (0.275)	0.002 (0.941)	-0.115 (0.132)	0.055 (0.166)	-0.113 (0.198)	-0.022 (0.624)
$DummyExpComp_{d,c,t}$	1.029*** (0.000)	0.883*** (0.000)	1.198*** (0.000)	0.809*** (0.000)	1.196*** (0.000)	0.960*** (0.000)
$LeaveoutAvg_{d,c,t}$	0.030 (0.296)	0.083 (0.112)	0.199* (0.083)	0.054 (0.161)	0.132 (0.149)	0.091 (0.152)
$N$	3736	1030	5328	2659	1862	2712
$r^2$	0.011	0.003	0.030	0.021	0.007	0.003
Underidentification LM stat (p-value)	0.001	0.030	0.013	0.008	0.008	0.003
Kleibergen-Paap rk Wald F statistic	2199.287	63.473	116.479	2704.954	1418.203	185.091

*p*-values in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

# Chapter 3

## Effects of international democracy support

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### Abstract

This paper investigates the impact of democracy assistance on democratic outcomes using a panel of countries for the period between 1995 and 2018. We use OECD-CRS data on foreign aid and V-Dem indices with a combination of an ML-SEM model and fixed effects models and find suggestive evidence of a small positive impact of developmental aid driven by democracy aid on democratic outcomes.

### 3.1 Introduction

Democracy aid has long been a significant component of development cooperation<sup>1</sup>. Support for fundamental freedoms, the role of democracy in promoting development<sup>2</sup>, and strategic foreign policy considerations all play a role in democracy assistance.

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<sup>1</sup>Following Dahl (1971), we define democracy as a set of values, rules and institutions that constitute a form of government, in which the supreme power is vested in the people and exercised directly by them or by their elected agents under a free electoral system.

<sup>2</sup>A significant, but not uncontested, body of research argues that democracy supports socioeconomic development, with democracy aid then a means to support development (see Bishop (2016); Doorenspleet (2018); Kraay and Kaufmann (2002); UNDP (2002))

As a share of total aid, democracy aid has increased steadily since the mid-1990s, in the post-Cold War era. In 2018, countries in the OECD Development Assistance Committee (DAC) devoted roughly 10 percent of overseas development assistance (ODA) to this area. In a number of countries, the share is notably higher: about 36 percent in Sweden, 26 percent in Denmark, and 21 percent in Norway. This trend of increase in democracy aid has continued in real values, even as overall ODA exhibited a decline in 2018.

Democracy has shown dramatic historical growth, to which external democracy support, at least since the 1970s, has arguably contributed (Huntington, 1993). In 1816, according to Roser (2013)'s estimates, less than 1 percent of the world's population lived in a democracy. By 1900, it was 12 percent, by 1950 31 percent, and by 2000 56 percent<sup>3</sup>. Recent years, however, show concerning trends in democratic backsliding. Freedom House reports that democracy has been in decline since 2005 (Repucci, 2020). The Varieties of Democracy (V-Dem) Institute finds that the majority of the world's population (54 percent) now live in autocracies for the first time since 2001 (Lührmann et al., 2020, p.6). The CIVICUS Monitor shows that twice as many people lived in countries where civic freedoms are being violated in 2019 than in 2018 (Gilbert and Benedict, 2018).

Such trends have concerning implications for civil and political rights around the world, as well as for development and international stability. Thus, for many, there is a strong case for continued and even increased democracy aid in the current period (see Carothers (2020)). However, as budgetary pressures mount, others argue for curtailing foreign assistance.

The questions of whether democracy assistance is effective in supporting democratic outcomes and how it could work better are crucial to current discussion about foreign aid and democracy aid. In other words, it is essential to better understand not only whether democracy aid in fact has demonstrable positive impact on democratic outcomes, but also in what contexts it may work better and how it may be more effectively distributed. Relatedly, should we think of aid monies as promoting democracy by facilitating transitions from authoritarianism, or in terms of helping infant democracies avoid democratic backsliding?

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<sup>3</sup>Roser's calculations are based on Polity IV data, and data from Wimmer and Min (2006), Gapminder.org, the UN Population Division (2015 Rev), and Our World In Data.

To date, the evidence base on these questions remains highly controversial. Existing reviews and analyses of democracy aid paint an ambiguous picture (see, e.g., [Bader and Faust \(2014\)](#); [Bratton and Van de Walle \(1997\)](#); [Burnell \(2007\)](#); [Carothers \(2015\)](#); [Dietrich and Wright \(2015\)](#); [Dunning \(2004\)](#); [Hackenesch \(2019\)](#)). This is not surprising given the diverse contexts and periods considered across studies, as well as the technical complexities of identifying and isolating the effect of democracy aid from democracy itself, tackling the likely endogeneity of aid.

Moreover, the existing literature has not adequately examined, in our assessment, the effect of different types of democracy assistance. In particular, more intensive analysis is needed on the effect of (what we will call) democracy aid and its subcomponents.

This paper aims to contribute to the literature on democracy support in two important ways: first, it adopts a quantitative approach to provide a new assessment of the impact of international democracy aid on democratic outcomes. More specifically, it examines the effect of democracy aid on levels of electoral democracy as measured in the Varieties of Democracy (V-Dem) dataset. This analysis builds upon a simple analytical framework that situates the potential impact of democracy assistance within the context of core theories of democratization.

Secondly, we further consider the effect of four key subcategories of democracy assistance on components of electoral democracy. This contributes to a scant literature providing such disaggregated analysis of, for instance, elections (see e.g. [Gibson et al. \(2015\)](#); [Uberti and Jackson \(2020\)](#)), or legislatures and political parties (see e.g. [Nielsen and Nielson \(2008\)](#)).

Our simple message is a modest but positive one for democracy aid. At a minimum, democracy aid contributes to sustaining democracy progression and possibly to its survival. Democracy aid is associated with a small yet positive effect on democracy, and we do not find any evidence of a negative impact.

## 3.2 Analytical Framework

### 3.2.1 Theories of democratization

Scholarly work has employed a variety of definitions of democracy. In Dahl (1971)'s approach, which we use in this paper, democracy (or 'polyarchy') is defined both in terms of the degree of public contestation (the presence of competitive elections) and the degree of inclusiveness (who votes)<sup>4</sup>. Notably, for Dahl (1971, p.2), democracy requires—beyond procedures—institutional guarantees that citizens may formulate their preferences and signify those preferences to others, and that those preferences will be weighted equally by government.

In the remaining of this paper we consider that 'democracy' refers to electoral democracy, while more substantive practice is highlighted through reference to 'liberal democracy'. The defining characteristics of democracy in our approach link with Dahl's eight institutional guarantees: freedom to form and join associations, freedom of expression, the right to vote, eligibility for public office, the right of political leaders to compete for support, alternative sources of information, free and fair elections, and institutions that tie government policy to votes and public preferences. By contrast, strong rule of law, which is essential for liberal democracy, is not a defining characteristic of democracy in our approach. Similarly, effective bureaucracy and the absence of corruption, for instance, may indeed contribute to better functioning democratic states, but states lacking them may still be democracies.

Democratization, in turn, refers to the process of movement from an authoritarian to a democratic regime. Several stages are regularly distinguished. Democratic transition refers to the adoption of democratic institutions in place of authoritarian ones, marked for instance by constitutional change and the holding of 'free and fair' elections; democratic 'survival' to the continued practice of democracy; and democratic consolidation to when democracy has become 'the only game in town'.

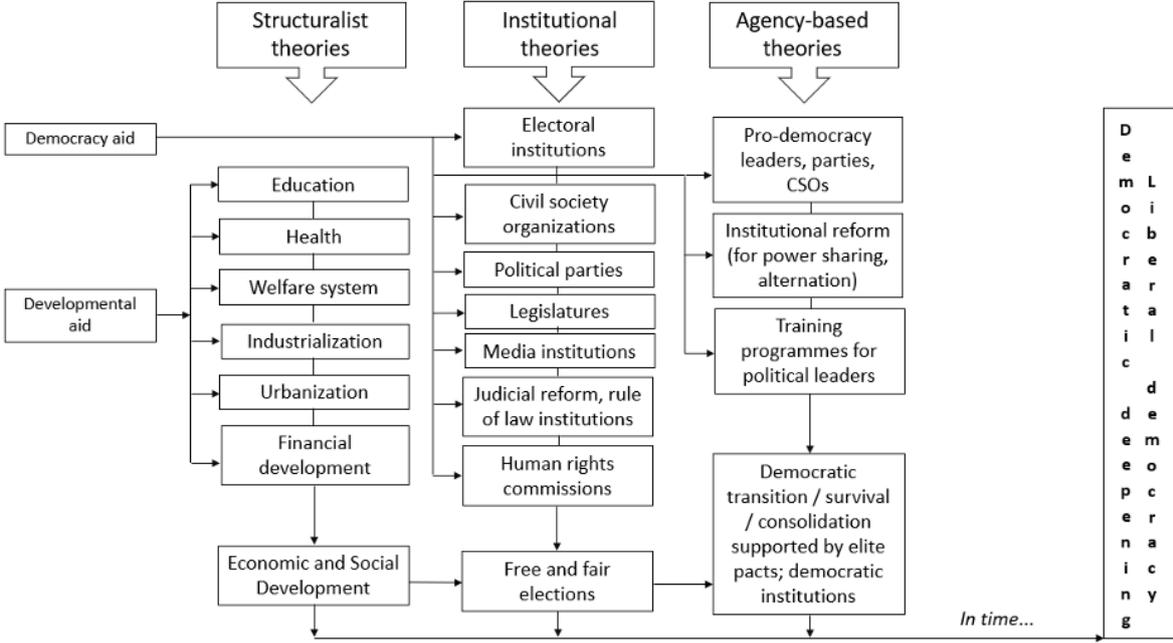
Theories of democratization can traditionally be grouped into three broad camps:

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<sup>4</sup>Dahl reserves the term 'democracy' for an ideal, hypothetical system that is 'completely or almost completely responsive to all its citizens' (p. 2).

one emphasizes the importance of macro-level structural factors; a second focuses on the effect of institutions, both formal and informal; and a third highlights the role of individuals and agency (see Figure 3.1). Roughly speaking, these approaches disparately consider democratization either as an endogenous process emerging from economic and social development, or as an exogenous process stemming from the strategic interactions of institutions and actors. Many arguments cut across these camps, showing democratization to result from a mix of structural and institutional factors, as well as individual agency.

FIGURE 3.1: AID AND DEMOCRATIZATION. AN ANALYTICAL FRAMEWORK



Source: Authors

### 3.2.2 Democracy aid and democratization

We consider the role of aid within the context of these three broad camps of theory on democratization. Carothers (2009) outlines two overall approaches to democracy support (see also Carothers (2011, 2015)). On the one hand, the political approach, associated traditionally with U.S. democracy assistance, proceeds from a relatively narrow conception of democracy—focused, above all, on elections and political and civil rights—and a view of democratization as a process of political struggle in which democrats work to gain the upper hand over nondemocrats in society. It directs aid at core political processes and

institutions—especially elections, political parties, and politically oriented civil society groups—often at important conjunctural moments and with the hope of catalytic effects.

Operationally, this ‘political’ approach speaks closely to the concepts that are covered by what we refer to hereafter as democracy aid, which seeks to support the ‘right’ pro-democracy institutions, including civil society organizations, electoral institutions, political parties, legislatures, media organizations, judiciary reform and rule of law institutions, and human rights commissions, and which are commonly highlighted by institutional theories of democracy, as discussed above. Democracy aid can also include the support of pro-democracy leaders, training for political leaders or funding to institutional reforms that facilitate power sharing or alternation during regime transitions, and which are underscored by agency-based theories of democracy.

On the other hand, the developmental approach, more associated with European democracy assistance, rests on a broader notion of democracy, one that encompasses concerns about equality and justice and the concept of democratization as a slow, iterative process of change involving an interrelated set of political and socioeconomic developments. It favours democracy aid that pursues incremental, long-term change in a wide range of political and socioeconomic sectors, frequently emphasizing governance and the building of a well functioning state (Carothers, 2009, p.5)<sup>5</sup>.

The distinction between these two approaches can be linked not only with different donors and conceptions of democracy, as emphasized above, but also with different underlying and implicit (occasionally explicit) theories of democratization.

Bringing together in this way Carothers’ two approaches to democracy support and the three broad camps in theories of democratization gives us an analytical framework for considering whether and how democracy aid ‘works’. In other words, given our theories of democratization, what should we expect the relationship between aid and democracy to be? Figure 3.1 summarizes this analytical framework.

Comparative analysis of the relationship between aid and democracy is complicated by a variety of factors, but at a minimum we want to know whether aid, whether it

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<sup>5</sup>This analytical framework focuses on traditional donors. Emerging donors—such as China and Russia—have been increasing their participation in global aid, however they do not necessarily report their aid activities in the same standardized manner as DAC countries do. Therefore we opt to focus our analysis on traditional donors

is of the ‘democracy’ or ‘developmental’ type, has an impact on democracy outcomes. Is there evidence that democracy and/or developmental aid has positive impacts on democratization? Perhaps more importantly, what are the impacts of specific types of democracy assistance, such as aid to political parties, the media, and judicial institutions?

The literature on democracy and democratization also provides insight into what we might expect such ‘impacts’ to look like in international comparative studies. In the simplest terms, a positive impact on democratization is often considered to be equivalent to an increase in democracy ‘scores’. But the discussion above underscores the flaws in this approach: democratization should be understood to involve several stages. ‘Democratic transition’ would be measured by a shift in scores from ‘authoritarian’ to ‘democratic’, whereas ‘democratic survival’ implies a ‘holding’ of scores, i.e. no change or at least no decline in scores below the democratic range. Democratic transition in turn might be followed by authoritarian breakdown and political liberalization, during which democracy scores show improvement but remain in the authoritarian range. ‘Democratic consolidation’, meanwhile, should manifest itself in democracy scores being maintained for multiple years. Theories of democratization in turn also point to the fact that processes may be slow moving, thus showing changes year to year may be unlikely. Moreover, the size of aid flows relative to the size of the aid-recipient economies also implies modest expectations, at least in terms of showing year-to-year impact.

Taking all these points into consideration, we take stock in the next section of the literature to date that has quantitatively assessed the impact of democracy aid and developmental aid on democracy.

### **3.3 Literature Review**

The existing literature linking democracy aid and democratic outcomes shows mixed results, with researchers finding positive, negative, or null results in different studies. A potential underlying cause for the mixed results lies in the high heterogeneity of the definitions of aid and democracy used throughout the literature<sup>6</sup>.

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<sup>6</sup>For an extensive systematic review of this literature, see [Gisselquist et al. \(2021\)](#)

Regarding the conceptualization and measurement of ‘aid’, those vary considerably across the studies. For the purpose of aid some studies are specific in their definitions and explicitly make reference to DAC purpose codes (Fielding, 2014; Tan, 2016), while the majority of others either assume total developmental aid or are vague. As Gisselquist et al. (2021) describe, very few studies seem to identify ‘democracy aid’ specifically (see e.g. Finkel et al. (2007); Jones and Tarp (2016); Scott and Steele (2011)), and even fewer specify the disaggregated categories of aid. Those that do use to disaggregated aid refer to: election aid (Gibson et al., 2015; Uberti and Jackson, 2020); participation & civil society aid (Heinrich and Loftis, 2019); media aid (Kalyvitis and Vlachaki, 2010); legislature & political party aid (Nielsen and Nielson, 2008); or aid targeted at human rights (Shyrokykh, 2017).

Regarding democracy outcomes, the majority of papers does not consider the impact of aid on disaggregated components of democracy (such as media freedom, strength of civil society, etc.). Instead they generally focus on the most common measures of democracy, Polity IV scores and Freedom House rankings, and often using both as robustness checks (see e.g. Bermeo (2016); Cornell (2013); Knack (2004)). Finkel et al. (2007) is an exception and disaggregate the Polity index into six measures of democratization—free and fair elections, civil society, respect for human rights, free media, rule of law, and government effectiveness. Disaggregated measures may help researchers distinguish specific components of democracy that are most impacted by democracy aid, but this has not been a consistent trend.

Furthermore, certain studies avoid using regime typology and favor other measures such as government turnover, multi-party transitions, electoral performance, electoral outcomes, corruption, quality of institutions, or other governance indicators. For example, as mentioned in Gisselquist et al. (2021), Ahmed (2012) measures incumbent years in office and whether or not turnover occurred; Moreno-Dodson et al. (2012) similarly use a binary variable of whether an incumbent was reelected or not; Marinov and Goemans (2014) identify the onset of an election after a coup as an indicator of democratic consolidation; Dietrich and Wright (2015) examine whether an opposition party was elected to a legislature or not; and Heinrich and Loftis (2019) examine incumbent electoral performance. All in efforts to capture levels of democratization. Other studies take extra

steps to identify regime typologies when assessing the impact of foreign or democratic aid (Cornell, 2013; Lührmann et al., 2017; Wright, 2009), and others even assess the impact of aid upon particular regimes, for example the relationship between aid and patronage politics (Gibson et al., 2015), personalist politics (Wright, 2010), or autocratic rule (Dutta et al., 2013; Yuichi Kono and Montinola, 2009).

Linking back to the analytical framework presented in Section 3.2, we can separate the empirical literature according to the theory of democratization underlying each study. On one side, studies that conceptualize developmental aid as ‘total aid’ (also called ‘economic aid’ or ‘general aid’) show ambiguous results. Some find developmental aid to have a positive impact on democratic outcomes (Altunbaş and Thornton, 2014; Bratton and Van de Walle, 1997; Heckelman, 2010), and others find developmental aid to have a negative impact on these outcomes (Ahmed, 2012; Asongu, 2012; Knack, 2004). Moreover, many studies condition the effect of developmental aid on democracy by a variety of factors, such as: geopolitics and when timing of the aid (Bancalari, 2015; Bermeo, 2016; Dunning, 2004); whether the aid is bilateral or multilateral (Charron, 2011; Menard et al., 2012); the size of the distributional coalition or level of personalism within the recipient state (Wright, 2009, 2010); the level of institutional quality (Asongu, 2012); and whether the recipient country is a democracy or an autocracy (Dutta et al., 2013; Yuichi Kono and Montinola, 2009; Kosack, 2003).

On the other side, the studies that specify ‘democracy aid’, the direction of the effect is more evident. In those studies the positive impact of aid in democratic outcomes is common (Finkel et al., 2007; Heinrich and Loftis, 2019; Kalyvitis and Vlachaki, 2010; Scott and Steele, 2011; Ziaja, 2020) and few studies find a negative impact (Bosin, 2012; Dietrich and Wright, 2012; Fielding, 2014; Scott and Steele, 2011). Similarly, when we consider the sub-categories of democracy aid—participation and civil society aid, election aid, legislative and political parties aid, media and information aid, and human rights aid—most studies find a positive impact (Uberti and Jackson, 2020; Von Borzyskowski, 2019), and fewer studies find a negative impact (Beaulieu and Hyde, 2009).

Overall, it seems like aid is more likely to generate a positive effect on democratic outcomes when said aid explicitly targets democratic underpinnings, indicating the importance of directed and purposeful aid. There is evidence that targeted democracy aid

could help ease autocratic tendencies (Nieto-Matiz and Schenoni, 2020), but the impact of democracy aid may also be conditional on other factors, as is the case for developmental aid. Such factors include regime type (Cornell, 2013; Lührmann et al., 2017); military size at the recipient country (Savage, 2017), and the country's capacity (Shyrokykh, 2017). Nevertheless, targeted democracy aid does appear to be more likely to positively impact specified democratic outcomes.

Another important aspect in this discussion are donor characteristics, as those may also influence the effect of aid on democracy. The comparison between multilateral and bilateral aid has proponents on either side. Charron (2011); Menard et al. (2012) conclude that multilateral aid is more effective, while Kersting and Kilby (2016) reaches the opposite conclusion, and Kalyvitis and Vlachaki (2010) finds that both bilateral and multilateral aid have negative effects. While there is an extensive literature on how donor characteristics affect aid allocation (see e.g. Alesina and Dollar (2000); Dietrich (2013); Dreher et al. (2011); Hoeffler and Outram (2011); Scott and Carter (2019); Winters and Martinez (2015)), there is not enough evidence on the effects of these characteristics on aid effectiveness.

In summary, the evidence on the literature of aid and democracy suggests that the institutions in recipient countries play an important role in the positive outcomes of aid in democracy. Democracy aid, which targets electoral institutions, civil society organisations, the free media, human rights and other key dimensions also seem to be critical channels of sustaining democratization worldwide. Ultimately, the findings are consistent with theories of exogenous democratization, in the sense that economic development may be important for sustaining institutional stability, but is not itself the driver of democratization. This aligns with our results, which suggest that aid targeted to few select activities more closely linked to democracy is really the driver behind the effect of aid in democracy outcomes.

## 3.4 Data

### 3.4.1 Aid

Foreign aid is broadly defined as the “*transfer of concessional resources from one government to another government, nongovernmental organization, or international organization to promote long-term beneficial change*” (Lancaster, 2009, p.799). Meanwhile, democracy aid, sometimes referred to as governance or political aid, has diverse definitions in the literature (see Dijkstra (2018)). Finkel et al. (2007, p.411) define it “*as an externally driven, agent-based influence on democratization*”. The OECD defines it as flows that are meant to develop pluralism and political participation (of Economic Co-operation and Development (2007) cited in Savun and Tirone (2011)). It is also often specified as efforts to support “*institutions and processes crucial to democratic contestation, the strengthening and reform of key state institutions, and support for civil society*” (Carothers, 2015, p.1).

Building on the analytical framework presented above (see Figure 3.1), we adopt three definitions of aid that are expected to impact democracy via distinct channels. The first, developmental aid, captures developmental approaches of aid interventions, following a vast literature (Ahmed, 2012; Altunbaş and Thornton, 2014; Asongu, 2012; Bratton and Van de Walle, 1997; Charron, 2011; Haass, 2019; Heckelman, 2010; Knack, 2004). It is measured by the sum of total aid allocated to the sectors and activities listed in the first column of Table 3.1.

The second definition of democracy aid has been widely used by a scatter literature (e.g. Finkel et al. (2007); Heinrich and Loftis (2019); Kalyvitis and Vlachaki (2010); Scott and Steele (2011); Ziaja (2020)). It considers an extensive set of activities that fall under the purpose classification code 150 in the OECD DAC 5 code system ‘government and civil society organizations’ (see Table 3.1). While this extensive definition of democracy aid clearly captures important dimensions that are highlighted by institutional theories of democratization (e.g. electoral institutions, legislatures, civil society organizations, judiciary reforms, and rule of law institutions), it suffers, in our assessment, from imprecision, as it includes activities that are arguably not meant to

strengthen democracy, such as meteorological services, fire and rescue services, and police and prisons management.

Therefore, we adopt a third limited definition of democracy aid that measures a set of activities which are in our assessment more precisely targeted at supporting dimensions of democracy that are highlighted by institutionalist and agency-based theories of democracy, and which are operationally linked to [Carothers \(2009\)](#)'s notion of democracy aid discussed in [Section 3.2](#). These dimensions include assistance to democratic participation and civil society; elections; legislatures and political parties; media and the free flow of information; and human rights (see [Table 3.1](#)).

In addition to these composite aid measures, we focus on key sub-components of the limited definition of democracy aid to assess whether, and the extent to which, these specific aid activities achieve their intended democratic outcomes (see [Table 3.1](#)).

The main source of aid definitions is the OECD's Creditor Reporting System (CRS). We focus on aid commitments in deflated prices for total ODA grants, ODA loans, and other official flows (non-export credit). We rely on commitments data since their annual coverage is more complete (about 70 percent in 1995, over 90 percent in 2000, and nearly 100 percent from 2003 to date) and because disbursements data cannot be regarded as a reliable source before 2002. Nonetheless, the correlation between commitment and disbursement data is strong and consistent over time.

Interestingly, we observe in [Table 3.2](#) that regardless of the definition of democracy aid that is adopted, the share of global aid distributed to support democracy has followed a relatively smooth pattern since the mid-1990s, when records began, with a big jump in 2000 and then a marginal decline in 2015.

TABLE 3.1: ACTIVITIES UNDER DEVELOPMENTAL AND DEMOCRACY AID DEFINITIONS

Developmental aid	Extensive definition of democracy aid	Limited definition of democracy aid
<p>Education</p> <p>Health</p> <p>Population policies</p> <p>Water and sanitation</p> <p>Government and Civil Society (the activities under this classification are equivalent to our extensive definition of democracy aid)</p> <p>Conflict, Peace and Security</p> <p>Social Infrastructure and services</p> <p>Transport</p> <p>Communications</p> <p>Energy</p> <p>Banking and Financial Services</p> <p>Business development</p> <p>Agriculture</p> <p>Forestry</p> <p>Fishing</p> <p>Industry, mining and construction</p> <p>Trade policy</p> <p>Tourism</p> <p>Environmental Protection</p> <p>Urban and Rural Development</p> <p>General budget support</p> <p>Food Aid</p> <p>Debt Relief</p> <p>Emergency response</p> <p>Reconstruction Relief</p> <p>Disaster Prevention</p> <p>Refugees in donor countries</p>	<p>Public sector policy and administrative management</p> <p>Foreign affairs</p> <p>Diplomatic missions</p> <p>Administration of developing countries' foreign aid</p> <p>General personnel services</p> <p>Other general public services</p> <p>National monitoring and evaluation</p> <p>Meteorological services</p> <p>National standards development</p> <p>Executive office</p> <p>Public finance management (PFM)</p> <p>Budget planning</p> <p>National audit</p> <p>Debt and aid management</p> <p>Decentralisation and support to subnational government</p> <p>Local government finance</p> <p>Other central transfers to institutions</p> <p>Local government administration</p> <p>Anti-corruption organisations and institutions</p> <p>Domestic revenue mobilisation</p> <p>Tax collection</p> <p>Tax policy and administration support</p> <p>Other non-tax revenue mobilisation</p> <p>Public Procurement</p> <p>Legal and judicial development</p> <p>Justice, law and order policy, planning and administration</p> <p>Police</p> <p>Fire and rescue services</p> <p>Judicial affairs</p> <p>Ombudsman</p> <p>Immigration</p> <p>Prisons</p> <p>Macroeconomic policy</p> <p>Democratic participation and civil society</p> <p>Elections</p> <p>Legislatures and political parties</p> <p>Media and free flow of information</p> <p>Human rights</p> <p>Women's equality organisations and institutions</p> <p>Ending violence against women and girls</p> <p>Facilitation of orderly, safe, regular and responsible migration and mobility</p> <p>Security system management and reform</p> <p>Civilian peacebuilding, conflict prevention and resolution</p> <p>Participation in international peacekeeping operations</p> <p>Reintegration and SALW control</p> <p>Removal of land mines and explosive remnants of war</p> <p>Child soldiers (prevention and demobilisation)</p>	<p>Democratic participation and civil society</p> <p>Elections</p> <p>Legislatures and political parties</p> <p>Media and free flow of information</p> <p>Human rights</p>

TABLE 3.2: DEMOCRACY AID BY TYPE OF DONOR AND AID DEFINITION

		1995	2000	2005	2010	2015	2018
Global aid	Aid (USD millions)	78,314	90,624	145,801	185,926	229,654	238,014
	Extensive democracy aid (%)	5.88	10.62	10.87	11.11	8.2	9.35
	Limited democracy aid (%)	0.72	1.52	1.71	1.41	0.97	1.12
USA aid	Aid (USD millions)	6,172	9,604	27,548	24,860	21,110	22,130
	Extensive democracy aid (%)	31.18	7.32	17.14	22.99	14.19	18.13
	Limited democracy aid (%)	6.01	2.33	1.98	3.44	2.67	4
Top5 donors aid	Aid (USD millions)	27,141	30,529	67,908	55,244	62,168	63,471
	Extensive democracy aid (%)	8.81	5.14	8.87	13.67	8.12	11.57
	Limited democracy aid (%)	1.44	1.24	1.21	2.12	1.4	1.93
Multilateral aid	Aid (USD millions)	37,345	38,696	45,878	91,431	115,081	120,338
	Extensive democracy aid (%)	3.83	15.24	11.89	8.55	6.87	7.61
	Limited democracy aid (%)	0	0.92	0.78	0.15	0.12	0.19
Bilateral aid	Aid (USD millions)	40,968	51,928	99,923	94,018	113,161	114,381
	Extensive democracy aid (%)	7.75	7.18	10.4	13.64	9.62	11.28
	Limited democracy aid (%)	1.38	1.97	2.14	2.65	1.85	2.04
DAC aid	Aid (USD millions)	40,968	51,928	99,923	92,320	105,338	102,979
	Extensive democracy aid (%)	7.75	7.18	10.4	13.88	9.88	12.42
	Limited democracy aid (%)	1.38	1.97	2.14	2.69	1.98	2.27

Source: Authors' calculations based on OECD's Creditor Reporting System (CRS).

### 3.4.2 Democracy

Democracy, whether defined in minimal or maximal terms, has been measured in a variety of ways in the literature, and [McMahon and Kornheiser \(2010\)](#) finds significant variance across democracy measures, the choice of which may influence findings. Furthermore, democratization is not always measured in terms of regime type; it is also often operationalized as a measure of democratic accountability, level of corruption, legislative and political party competitiveness, or some other measure of institutional or bureaucratic quality.

Some of the most widely used measures of democracy in previous cross-country analyses are drawn from Freedom House's Freedom in the World, Polity IV, the International Country Risk Guide (ICRG), and the Varieties of Democracy (V-Dem) project. Other measures, such as the Unified Democracy Scores (UDS), Boix-Miller-Bosato dichotomous coding of democracy (BMR), and the Democracy-Dictatorship index (DD) created by [Alvarez et al. \(1996\)](#) and revisited by [Cheibub et al. \(2010\)](#), have also been influential.

In this study we rely on a set of indices from Varieties of Democracy (V-Dem). Our choice relies on a rigorous comparative analysis of the most widely used democracy indices in the literature. More generally, the indices provided by the V-Dem project – specifically the index of electoral democracy and its component parts – are well suited to considering the impact of aid within our analytical framework for several reasons. First, as outlined above, democratization in our approach is not an either/or process and thus dichotomous measures of democracy, such as BMR and DD, are not well suited to our analysis. Second, our framework suggests that aid in particular sectors may have an impact on particular institutions or components of democracy; thus, our framework requires decomposable measures of democracy, as also provided by V-Dem.

V-Dem uses a concept of democracy that involves seven principles, extracted from the literature: electoral, liberal, majoritarian, consensual, participatory, deliberative, and egalitarian ([Coppedge et al., 2020](#)). The database then includes separate indices for five of the elements, excluding majoritarian and consensual, as those were deemed impossible to operationalize.

We focus on the electoral democracy index, which is an interval index on a scale between 0 and 1 made of annual continuous indicators. The degree of sensitivity to small gradations of democracy is important for our analysis, as the period under which democracy aid is observed is rather short to capture significant changes in the dimensions of democracy that can be influenced by democracy aid allocations.

The electoral principle is at the heart of V-Dem’s conceptualization of democracy:

*“The electoral principle of democracy seeks to embody the core value of making rulers responsive to citizens, achieved through electoral competition for the electorate’s approval under circumstances when suffrage is extensive; political and civil society organizations can operate freely; elections are clean and not marred by fraud or systematic irregularities; and elections affect the composition of the chief executive of the country. In between elections, there is freedom of expression and an independent media capable of presenting alternative views on matters of political relevance” (Coppedge et al., 2020, p. 42)*

In brief, the electoral democracy index can be understood to speak to the *de facto* existence of Dahl’s polyarchy, including both dimensions of contestation and inclusiveness. Overall, the index includes five underlying lower-level indices, the four indices described below, in addition to the share of the population with suffrage.

### **3.4.3 Lower-level democracy indices**

Since the core activities underpinning our limited definition of democracy aid deal with key dimensions that are highlighted by institutionalist (and to a lesser degree agency-based) theories of democracy, as depicted in Figure 3.1, we resort to lower-level indices of the electoral democracy index that are, in our judgement, more closely associated with these aid activities, namely: (1) the freedom of association index, (2) the clean elections index, and (3) the freedom of expression and alternative sources of information index. We also consider (4) a civil liberties index, which is not part of the V-Dem electoral democracy index (see Table 3.2).

TABLE 3.3: SUBCOMPONENTS OF DEMOCRACY AID AND THEIR ASSOCIATED LOWER-LEVEL INDICES OF ELECTORAL DEMOCRACY.

<b>Activities under the limited definition of democracy aid</b>	<b>V-Dem sub-indices of Democracy</b>
Democratic participation and civil society	Freedom of association
Free and fair elections	Clean elections
Media and free flow of information	Freedom of expression and alternative sources of information
Human rights	Human Rights and Civil liberties

Source: Authors, based on V-Dem

The freedom of association index aims to capture the extent to which parties are allowed to form and participate in elections, as well as the extent to which civil society organizations are able to form and operate freely. The index is composed by six indicators: (i) party ban; (ii) barriers to parties; (iii) opposition parties autonomy; (iv) multiparty elections; (v) civil society organizations (CSO) entry and exit; and (vi) CSO repression.

The clean elections index measures the extent to which elections are clean and fair, which is clarified as an absence of registration fraud, systemic irregularities, government intimidation of the opposition, vote buying, and election violence. The index is composed of eight indicators: (i) election management board (EMB) autonomy; (ii) EMB capacity; (iii) election voter registry; (iv) election vote buying; (v) election other voting irregularities; (vi) election government intimidation; (vii) election other electoral violence; and (viii) election free and fair.

The freedom of expression and alternative sources of information index measures the extent to which the government respects press and media freedom, the freedom of ordinary people to discuss political matters at home and in the public sphere, as well as the freedom of academic and cultural expression. The index includes the following nine indicators: (i) government censorship effort—media; (ii) harassment of journalists; (iii) media self-censorship; (iv) media bias; (v) print/broadcast media perspectives; (vi) print/broadcast media critical; (vii) freedom of discussion for men; (viii) freedom of discussion for women; and (iv) freedom of academic and cultural expression.

Finally, the civil liberties index, which is not a component of the electoral democracy index, measures the freedoms that protect individuals from government, including the

absence of physical violence committed by government agents and the absence of constraints on private liberties and political liberties by the government. Protection of civil liberties is not strictly part of electoral democracy as defined above, and extends our focus towards liberal democracy. That said, some level of protection of civil liberties is arguably necessary for both inclusiveness and participation within an electoral democracy – in addition to the political rights highlighted in the other lower-level indices considered. The index is itself composed of three lower-level indices: (i) the physical violence index, (ii) the political liberties index, and (iii) the private civil liberties index. Some of the underlying indicators of the political civil liberties index overlap with those of the indices described above, such as CSO entry and exit, and harassment of journalists.

Focusing on the recent trends of these four lower-level indices is also informative, as they help us identify the dimensions that are likely to be driving the observed changes in the scalar of electoral democracy.

### **3.4.4 Controls**

An extensive list of controls is used on different specifications of the models. The basic specification includes: (i) the rate of economic growth; (ii) the log of income per capita lagged one period; (iii) the share of the urban population with respect to total population; (iv) population density; and (v) natural resource rents as a share of GDP.

Furthermore, we include military spending measured as share of GDP; and the average electoral democracy index of neighbouring countries.

In alternative specifications, we include, as part of the robustness checks, additional controls that are highlighted by the literature, namely: the level of fractionalization of parties in opposition that captures the strength of political competition and the balance of power in the legislative branch; a measure of all current non-tax revenues as an indicator of state autonomy; a dummy for a regime in which the chief of the executive is a military officer; a measure of internal conflict to capture the degree of state fragility; a measure of ethnic tensions; the Gini coefficient as a measure of inequality, in linear and quadratic version; and a measure political dissent in the form of anti-government movements.

## 3.5 Empirical Strategy

Three distinct research questions are addressed. The first considers the effect of aid on democratic outcomes; the second asks whether aid has a different effect in the processes of democratization and democratic backsliding; and the third question asks what is the effect of aid by regime type.

### **Does democracy aid support democracy?**

The empirical strategy is threefold and aims to reflect the dominant theories in this area. One strategy relies on a model that measures the effect of developmental aid on democracy, where democracy is captured by V-Dem's electoral democracy index, and developmental aid is the sum of total aid allocations as described in Table 3.1. This empirical strategy follows a vast literature that adopts a developmental perspective on democracy assistance and which can be associated directly, although not exclusively, with the assumptions underpinning structuralist and institutional theories of democratization.

The second approach focuses on the impact of our two definitions of democracy aid: the extensive definition, which follows previous studies that consider assistance to government and civil society organizations as the channels for directly influencing democracy, and the limited definition, which measures the set of activities listed in Table 3.3, which are specifically funded with the aim of promoting democracy.

The third empirical approach focuses on a model that assesses the individual effects of key sub-components of the limited definition of democracy aid outlined above, on lower-level indices of V-Dem's electoral democracy index. For example, we measure the effect that aid distributed to support democratic participation and civil society may have on dimensions underpinning the freedom of association index. Similarly, we measure the effect that support to elections may have on the dimensions that constitute the clean elections index (see Table 3.2).

Since we suspect trend effects in democratic achievements, and the contemporaneous decisions by donors on the levels of democracy aid and its components to be correlated with time-varying errors at previous levels of democracy, we adopt a dynamic framework

to model the three empirical strategies outlined above. Our baseline model takes the following form:

$$Dem_{it} = \alpha_{it} + \theta Dem_{it-1} + \beta X_{it} + \varphi Aid_{it} + \eta_i + v_t + \epsilon_{it} \quad (3.1)$$

$$E(\epsilon_{it} | Dem_i^{t-1}, Aid_i^t, \eta_i) = 0, (t = 1, \dots, T)(i = 1, \dots, N) \quad (3.2)$$

where the subscripts  $i$  and  $t$  denote country and time period respectively. We implement the model with five-year averages to reduce electoral-cycle effects and measurement error.  $Dem_{it}$  is the level of democracy proxied by V-Dem's index of electoral democracy;  $Dem_{it-1}$  captures the persistence of democracy in country  $i$ ;  $Aid_{it}$  is the amount of developmental (total) aid, or democracy aid—the latter based on our limited or extensive definitions—that goes to country  $i$ , in period  $t$ . Our model assumes that aid is predetermined, meaning that equation 3.1 allows for feedback effects or reverse causality from lagged democracy levels to the contemporaneous level of aid allocations.

Note that when we adopt our third empirical approach to investigate the individual effects of core sub-components of the limited definition of democracy aid,  $Dem_{it}$  measures these specific aid activities, while  $Aid_{it}$  measures now the corresponding lower-level indices of electoral democracy described in Table 3.2.

$X_{it}$  is a vector of country-level covariates that capture key determinants of democratization as highlighted by structural and institutional theories of democracy, and which are related to the level of economic development in country  $i$ . This model (which we refer hereafter to as Model 1) includes the following controls: the rate of economic growth that measures the dynamism of the economy; the log of income per capita lagged one period to measure the stock of physical capital and capture the rate of economic convergence in these countries; the share of the urban population that captures the level of urbanization and is expected to positively impact democratization; population density, measured as the number of people per squared kilometre of land area, and which captures the level of conglomeration and the ability of countries to achieve economies of scale. Higher population density is expected to have a positive effect on democratization via

economies of scale in the provision of public goods, and a reduction in the unit costs for civil society organizations (Newton, 1982). We also include as controls the availability of natural resource endowments, measured as a percentage of GDP, and which are expected to support economic diversification but also potentially undermine democratization via state capture (see Caselli and Cunningham (2009); Caselli and Michaels (2009); Currie and Gahvari (2008))

In an extended model (Model 2), we include two additional controls: military spending measured as share of GDP, to capture the financial resources dedicated to defence and security, and which may have both positive or negative effects depending on the level of state fragility, conflict, and the regime type in control of spending (Brauner, 2015; Rota, 2016), and the average electoral democracy index of neighbouring countries, to control for the existence of regional diffusion effects of democratic capital that are expected to positively impact democratization (Persson and Tabellini, 2009).

In alternative specifications<sup>7</sup>, we include, as part of the robustness checks, additional controls that are highlighted by the literature. In what we refer to as Model 3, we include the level of fractionalization of parties in opposition, which captures the strength of political competition and the balance of power in the legislative branch, and which is expected to negatively impact democratization; a measure of all current non-tax revenues as an indicator of state autonomy, which may influence state transition negatively (Alemán and Yang, 2011); a dummy for a regime in which the chief of the executive is a military officer, as military dictatorship types may have direct implications for the resilience of the regimes; a measure of internal conflict to capture the degree of state fragility, and which is expected to negatively impact democratization efforts; a measure of ethnic tensions, as ethnic fractionalization may influence the regime type in diverse ways, for instance, impeding substantially democratic transition (Dahl, 1971; Rustow, 1970), or narrowing the regime's support coalition in autocratic societies. Finally, in what we refer to as Model 4, we add the following controls to the vector of covariates in Model 3—the Gini coefficient as a measure of inequality, in linear and quadratic version, which captures the negative concavities in the relationship between high income inequality and democracy, as highlighted by theoretical models of democracy and political regimes (Boix and Stokes,

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<sup>7</sup>These specifications, Models 3 and 4, are used on the fixed effects models

2003; Acemoglu and Robinson, 2006), and a measure of political dissent in the form of anti-government movements, which may be a catalyst to liberalization.

$\eta_i$  denotes unobserved country-specific and time-invariant effects;  $v_t$  is a vector of time dummies capturing universal time trends, whereas  $\alpha_{it}$ ,  $\theta$ ,  $\beta$ ,  $\varphi$ , and  $\epsilon_{it}$  are the intercept, the parameter estimates and the idiosyncratic error term, respectively.

The type of dynamic panel model that is derived in equation 3.1, with unobserved heterogeneity and a predetermined regressor, is usually estimated using generalized method of moments (GMM) estimators. Particularly, the system GMM estimator proposed by Blundell and Bond (1998) works around the weak instrument problem present on the regular GMM model<sup>8</sup> by solving a system of level and difference equations. Lagged differences of the endogenous variables are used as instruments in the level equations, while lagged levels of the endogenous variables are used as instruments in the first-differenced equations. System GMM improves the accuracy of estimates by exploiting additional moment conditions that are informative even with persistent data (Blundell and Bond, 1998)).

Nevertheless, this method relies on a stringent identifying assumption that requires that the variables in the model observe a mean stationary (or a long-term dynamic) process that is not easily satisfied in international comparative analysis, such as ours. Furthermore, recent analyses have shown that the instruments for the level equations of the system GMM estimators are valid as long as they are orthogonal to the country fixed-effects, and they may in fact suffer from the weak instrument problem (Bun and Windmeijer, 2010; Bazzi and Clemens, 2013).

Therefore, we resort to a maximum likelihood estimation and structural equation modelling (ML-SEM) approach proposed by Moral-Benito (2013) and Moral-Benito et al. (2019), which is significantly more efficient than GMM methods, and suffers less from finite sample biases, especially when the number of units in the panel is small. The ML-SEM method relaxes several constraints that are symptomatic in dynamic panel models;

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<sup>8</sup>The Arellano and Bond (1991) first-differenced GMM estimator yields consistent estimates in panels with limited times series, although it suffers from finite sample bias, especially when having panels with small samples in the cross-section dimension and persistent time series data. In such cases, the lagged levels of the time series are weakly correlated with the lagged first differences, thereby making the instruments for the first-differenced equations ‘weak’ (Hsiao et al., 2002; Moral-Benito, 2013)

and unlike most related fixed effects methods, it allows for the inclusion of time-invariant controls. ML-SEM models are very computationally demanding, so our choice inevitably came at the cost of convergence issues with variants of our models, which in the end limited our analytical options.

Under such circumstances, and in the absence of valid instrumental variables, we estimate alternative fixed effects (FE) models to mitigate the potential threat of omitted variables bias. The FE model takes the following form:

$$Dem_{it} = \alpha_{it} + \beta X_{it} + \varphi Aid_{it} + \eta_i + v_t + \epsilon_{it} \quad (3.3)$$

where the subscripts  $i$  and  $t$  denote country and year, respectively;  $Dem_{it}$  measures the indices of democracy discussed above;  $Aid_{it}$  measures the adopted definitions of democracy aid, as discussed above, while  $X_{it}$  is a vector of covariates included in Models 1 to 4.  $\eta_i$  denotes unobserved country-specific and time-invariant effects;  $v_t$  is a vector of time dummies capturing universal time trends, whereas  $\alpha_{it}$ ,  $\beta_{it}$ ,  $\varphi_{it}$ , and  $\epsilon_{it}$  are the intercept, the parameter estimates, and the idiosyncratic error term, respectively.

We consider two alternative specifications to equation 3.3. One specification enters democracy aid lagged one period to capture possible delayed feedback effects of aid on contemporaneous levels of democracy, and also mitigate the possibility of an endogenous relationship of aid on democracy, since contemporaneous levels of democracy cannot determine aid allocations in  $t - 1$ . The other specification enters aid in per capita terms to account for the effect of aid after accounting for the size of the recipient countries' populations.

The presence of country fixed effects (FE) in equation 3.1 suggests that the preferred approach would be the FE model, which allows to mitigate heterogeneity-induced bias and control for fixed-effects-related endogeneity. In order to test whether equation 3.3 would be adequately modelled using random-effects (RE), we compute the Durbin–Wu–Hausman test. The results indicate that we can reject the null hypothesis that the individual country-specific effects are uncorrelated with the independent variables, thus favouring the use of the FE model.

We estimated equation 3.3 using two functional forms: one adopts a linear-log specification, where  $Dem_{it}$  is linear and  $Aid_{it}$  is logarithmic, whereas the other adopts a log-log specification. The linear-log specification is preferable because it provides the absolute change in V-Dem’s electoral democracy indices associated with a percent change in democracy aid allocations. The log-log specification has the advantage of smoothing the data and allowing coefficients to be interpreted as elasticities. In order to make the logarithmic relationship more reasonable, we rescaled V-Dem’s democracy indices to run from values close to zero to values close to 100.

**Does democracy aid support democratization (upturns) or help avoid democratic backsliding (downturns)?**

In order to investigate the question of whether democracy aid enhances transitions to greater democracy (upturns) or mitigates political downturns, we follow Knutsen et al. (2019) and Teorell (2010) and adopt an equation that takes the form:

$$D_{it}^* = \alpha_{it} + \beta X_{it} + \varphi Aid_{it} + \eta_i + \nu_t + \epsilon_{it} \tag{3.4}$$

Equation 3.4 is similar to equation 3.3, however, in this case,  $D_{it}$  takes the form of two indicators that capture instances of positive (or negative) changes in V-Dem’s electoral democracy index by taking the first difference of the index, and setting all cases of no change or negative (or positive) values to zero. Thus,  $D_{it} = D_{it}^*$  if  $D_{it}^* > 0$ , and  $D_{it} = 0$  if  $D_{it}^* \leq 0$ , while the error term,  $\epsilon_{it}$ , follows a left-censored at zero distribution,  $N(0, \sigma_{u|v}^2)$

The parameter  $\varphi$  from equation 3.4 yields a fixed-effects estimate of the impact of democracy aid on *democratization* (upturns) or *democratic backsliding* (downturns).

Given the left-censored distribution of  $D_{it}$ , the use of OLS leads to biased and inconsistent estimates. Therefore, we resort to Honoré (1992)’s semiparametric method to obtain fixed-effect Tobit estimators.

## The effect of democracy aid on regime type

In this section, we adopt an empirical strategy that addresses the question of whether democracy aid is more or less effective at supporting democracies or autocracies. We do so by following Baetschmann et al. (2015) and fitting fixed-effects ordered logit estimators. The model takes the following form:

$$R_{it}^* = \beta X_{it} + \varphi Aid_{it} + \eta_i + \epsilon_{it} \quad (3.5)$$

where our measures of democracy aid,  $Aid_{it}$ , and the vector of covariates in  $X_{it}$  do not include an intercept because the time-invariant, country-specific part of the unobservables in  $\eta_i$  acts in this models as individual-specific intercepts (Baetschmann et al., 2020).

We implement the FE ordered logit in equation 3.5 using the regime classification proposed by Lührmann et al. (2018), which separates political regimes into four  $k$  categories:  $k = 1$  for closed autocracies,  $k = 2$  for electoral autocracies,  $k = 3$  for electoral democracies, and  $k = 4$  for liberal democracies.

In this sense, the latent variable  $R_{it}^*$  becomes the ordered regime indicator  $R_{it}$  via the thresholds  $\tau_{ik}$ . Therefore,  $R_{it} = k$  if  $\tau_{ik} < R_{it}^* \leq \tau_{(i)(k+1)}$  with  $k = 1, \dots, K$

We estimate equation 3.5 by applying the conditional maximum likelihood (CML) estimator proposed by Chamberlain (1980) and using the set of controls variables described previously as Models 3 and 4.

## 3.6 Results

First we present the results for our main specification, the ML-SEM model. Table 3.4 summarizes the coefficients for all types of aid, and the full results for limited democracy aid, extended democracy aid, and developmental aid are presented in Tables 3.17 and 3.22 in Appendix 3.8.

TABLE 3.4: THE IMPACT OF DEMOCRACY AID BY TYPE OF DONOR (SUMMARY) - ML-SEM

	ML-SEM (log-linear)			ML-SEM (log-log)		
	Developmental aid	Democracy aid (extensive definition)	Democracy aid (limited definition)	Developmental aid	Democracy aid (extensive definition)	Democracy aid (limited definition)
Global aid						
Model 1	0.319	0.747	1.486*	0.030	0.037*	0.053**
Model 2	0.317	0.389	0.697	0.036***	0.035**	0.035**
DAC-countries aid						
Model 1	0.517	0.960	1.273	0.031*	0.047**	0.043
Model 2	0.248	0.538	1.251*	0.038***	0.039**	0.048**
Multilateral aid						
Model 1	0.311	0.829	0.886*	0.028	0.008	0.026*
Model 2	0.473	0.650	1.108**	0.039***	0.047*	0.036**
Bilateral aid						
Model 1	0.505	0.964	1.276	0.031*	0.047**	0.044
Model 2	0.265	0.543	1.258*	0.037***	0.039**	0.048**
Top 5 DAC donors						
Model 1	0.587	1.527*	1.680**	0.042**	0.075***	0.060***
Model 2	0.248	0.504	1.019*	0.036**	0.044**	0.041***

Note: Model 1 includes the rate of economic growth, the log of income per capita lagged one period, the share of the urban population, population density, and natural resource rents. Model 2 adds to Model 1 military spending, measured as share of GDP and the average polyarchy index of neighbouring countries, to control for the existence of regional diffusion effects of democracy.

Top 5 DAC donors are: United States, Germany, Japan, United Kingdom and France.

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

TABLE 3.5: THE IMPACT OF LIMITED DEMOCRACY AID ON DEMOCRACY, 2013–2018

Top recipient countries	Average aid allocations in constant USD millions	Average democracy score	Effect of 1% increase in democracy aid	Effect of 5% increase in democracy aid	Effect of 10% increase in democracy aid
<b>International democracy aid</b>			<b>0.02</b>	<b>0.07</b>	<b>0.14</b>
Afghanistan	141	38.02	38.03	38.09	38.16
Turkey	131	41.4	41.41	41.47	41.54
Pakistan	79.3	44.6	44.61	44.67	44.74
Ukraine	76.5	41.77	41.78	41.84	41.91
Brazil	59.7	82.25	82.26	82.32	82.39

The results indicate that the impact of international democracy aid on democracy is small but positive and statistically significant, albeit not with perfect consistency. Notably, the log-log models are more consistently positive and significant across the definitions of democracy aid, while the linear-log results are only significant in the stricter definition of democracy aid. The most notable result is that the more limited definitions of democracy aid broadly perform better, showing more consistent significance and a larger coefficient.

The effect is in a similar order of magnitude for the top five DAC donors (United States, Germany, Japan, United Kingdom, and France), multilaterals and bilaterals, although in the case of the DAC and bilaterals, the effect is only significant after controlling for the effect of military spending in aid-recipient countries and the existence of regional diffusion effects of democracy (Model 2). This indicates that bilateral democracy seems to be more strongly influenced by broader geopolitical considerations than multilateral democracy aid.

To illustrate the findings, we show in Table 3.5 that—when looking at the limited definition of democracy aid—a 10 percent increase in international democracy aid leads to an average 0.14 points increase in the scalar of the V-Dem electoral democracy index. Furthermore, we show the effect on the top five recipient countries of international democracy aid over the five-year period 2013–2018. Our calculations indicate that a 10 percent increase in limited democracy aid to these countries would lift the electoral democracy scores of these countries only marginally.

While the log-log models are more consistently significant, both linear-log and log-

log models show a pattern of coefficients that are generally positive for all definitions of democracy aid but smaller for democracy aid under the extensive definition than under the limited definition of aid, and the strength of the association weakens when developmental aid is considered in the analysis, which indicates that the results are driven by activities that fall under the limited concept of democracy aid. This goes in line with the rationale that the select activities under our limited democracy aid are likely the main driver behind the effect of aid in democracy outcomes. This is also relevant given the marked differences between democracy aid definitions, in terms of activities, budgets and resources.

Consistent with previous literature, the composition of aid type and finance type also matters in our analysis, as there is considerable variation in terms of how aid money is distributed, and by which type of financial instruments it is channelled. Project aid interventions have been the dominant aid modality among donors, at least in the most recent years, regardless of the definition of aid that is adopted. Roughly speaking, the most recent data shows that 74 percent of democracy aid interventions under our limited definition were distributed via project aid, 19 percent via core contributions and pooled programmes and funds, and only 2 percent via budget support. Most of these funds were channelled in the form of grants (95%) and debt instruments (5%) (see Table 3.14 Appendix 3.8).

In contrast, when the extensive definition of democracy aid is considered, we observe that about 23 percent of aid money was allocated via budget support, 62 percent was distributed through project aid interventions, and about 11 percent via core contributions and pooled programmes. The structure of aid finance is also markedly different: 55 percent of the budgets were channelled in the form of grants and the remaining 44 percent as debt instruments (see Table 3.15 in Appendix 3.8).

This is important because the channels of democracy aid—whether issued via governments or through non-state development actors—can influence aid effectiveness. Table 3.14 shows that donors have favoured non-state actors to deliver democracy aid within aid-receiving countries, probably because of the high risk of aid capture, particularly when operating in autocratic political environments, as suggested by Dietrich (2013) and Bush (2015), and also because of weak institutional capacity or state fragility in those countries, or both.

Our results arguably point to the significance of non-state actors—supported by project aid interventions—in democratization processes in recent years. Some previous analyses, by contrast, have highlighted the importance of government-led political reforms, arguing that these are more adept at generating institutional strengthening and, ultimately, regime change (see, e.g., [Dietrich and Wright \(2015\)](#)). We find no clear support for such claims given the relatively low share of limited democracy aid provided through budget support. We note, however, that any conclusions drawn from consideration of types of aid interventions are highly speculative given the historical incompleteness of the data. Indeed, before 2010, the amount of missing information on the OECD’s CRS was above 90 percent (see [Table 3.14](#) in [Appendix 3.8](#)). Thus, our analysis casts serious doubts over any conclusion from previous comparative studies that make a case for either budget support or project aid interventions as effective modalities for allocating democracy assistance.

### **Aid activities and lower-level indices of democracy**

In order to better understand how effective the sub-components of democracy aid have been at promoting democracy, we estimate separate models that measure their individual effects on the corresponding lower-level indices of democracy as described in [Table 3.3](#). A summary of the results is presented in [Table 3.6](#) and the full results are in [Tables 3.24](#) and [3.25](#) on [Appendix 3.8](#). Overall, we find positive effects for most of the sub-components of democracy aid on relevant lower-level indices of democracy.

The results are generally consistent with our expectation that specific sub-components of democracy aid, channelled to support freedom of association and participation, freedom of expression and the press, and human rights and civil liberties, have a positive effect in these areas. This further supports the notion that these are the channels through which democracy aid affects democracy.

### **Democratization and democratic backsliding**

Looking at the countries in which OECD DAC country donors have been most actively involved in democracy assistance over the past 25 years, electoral autocracies and fragile

TABLE 3.6: THE IMPACT OF INDIVIDUAL AID ACTIVITIES ON LOWER-LEVEL DEMOCRACY INDICES

	Freedom of association and participation	Free and fair elections	Freedom of expression and the press	Civil liberties
<b>ML-SEM</b>				
Model 1	2.356***	0.948	1.988***	1.565***
Model 2	1.247**	0.88	1.317**	0.407
<b>FE</b>				
Model 1	0.373***	0.163**	0.146**	0.147**
Model 2	0.320***	0.193***	0.244***	0.067

TABLE 3.7: EFFECT OF DEMOCRACY AID ON DEMOCRATIZATION - UPTURNS AND DOWNTURNS

<b>FE</b>						
Upturns			Downturns			
	Dev. Aid	Dem. Aid (ED)	Dem. Aid (LD)	Dev. Aid	Dem. Aid (ED)	Dem. Aid (LD)
Model 1	0.072**	0.124***	0.121***	0.050**	0.039	0.028
Model 2	0.092**	0.148***	0.120***	0.050**	0.046*	0.032
<b>FE-Tobit</b>						
Upturns			Downturns			
	Dev. Aid	Dem. Aid (ED)	Dem. Aid (LD)	Dev. Aid	Dem. Aid (ED)	Dem. Aid (LD)
Model 1	0.435*	0.498**	0.398	0.287	0.152	0.088
Model 2	0.548**	0.632***	0.396	0.252	0.199	0.151

Notes: (1) Fixed-effect estimates, based on ordinary least squares  
(2) Fixed-effects Tobit estimators, based on Honoré (1992)'s semiparametric method  
(3) ED stands for extensive definition while LD stands for limited definition.  
(4) We reverse the signs on the FE-Tobit model for comparability, as this model is calculated with the absolute value of the change in democracy  
Standard errors in parentheses \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$   
Source: Authors

electoral democracies seem to figure most strongly in recent years.

Thus, we investigate the question of whether democracy aid enhances transitions to greater democracy (upturns) or mitigates political downturns. The results, presented in Table 3.7 reveal an asymmetric relationship between democracy aid and the dynamics of political processes. Democracy aid appear to be more effective at supporting democratization (upturns) than at preventing democratic backsliding (downturns). However, the significance of the results is very sensitive to the method used—fixed effects or Tobit-fixed effects—and to the combination of controls included.

The analysis also indicates that the channels through which democratization effects

materialize are via the support of democratic participation and civil society, free media, and human rights. The absence of a significant effect of aid on elections and the fact that aid is ineffective at stopping ‘downturns’ could be consequences of the modest contribution of democracy aid in contexts where the power and resources available to political machines that support undemocratic regimes can be very significant.

While the analysis so far provides relevant information on the impact of democracy aid on democracy and its asymmetric dynamics, we still cannot answer the question of whether democracy aid is more effective at supporting democracies or autocracies. This distinction is important, as it can guide policy and pro-democratic policy strategies in donor countries. We address this question in the next section.

### **The effect of democracy aid on regime type**

In this section, we investigate the question of whether democracy aid is more or less effective at supporting democracies or autocracies.

We adopt an econometric method that accommodates the regime classification proposed by Lührmann et al. (2018), which classifies political regimes in four categories: (1) closed autocracies, (2) electoral autocracies, (3) electoral democracies, and (4) liberal democracies.

The results presented in Table 3.8 can be interpreted as changes in the probabilities of an aid-recipient country remaining in the current political regime if democracy aid is increased by 10 percent, holding other things constant.

Consistent with previous results, the effect of democracy aid is positive but very small. The strength of the association is nonetheless not significant across all models. The effect is consistently positive (or negative) and statistically significant only for our extended democracy aid definition. Nevertheless, the signs are consistent with our expectation for both models and all three definitions of aid

TABLE 3.8: EFFECT OF DEMOCRACY AID ON THE LIKELIHOOD OF REMAINING IN A POLITICAL REGIME (FIXED-EFFECTS ORDERED LOGIT ESTIMATES)

Model	Regime	Dev. aid	Dem. Aid (ED)	Dem. Aid (LD)
Model 3	CA	-0.031	-0.023**	-0.011**
	EA	-0.092	-0.066**	-0.033**
	ED	0.061	0.044**	0.022**
	LD	0.062	0.044**	0.022**
Model 4	CA	-0.02	-0.016**	-0.008
	EA	-0.082	-0.064**	-0.031
	ED	0.048	0.038**	0.018
	LD	0.053	0.042**	0.02

(1) CA = closed autocracy, EA = electoral autocracy, ED = electoral democracy, LD = liberal democracy

(2) ED stands for extensive definition while LD stands for limited definition.

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$  Source: Authors

### 3.7 Robustness check

Given the flaws of the ML-SEM approach, which does not fully consider the endogeneity of aid, we test two different FE and RE models with an extensive set of controls as a robustness check.

We present those results in Tables 3.9 and 3.10. Furthermore, a summary of the fixed effects results for all types of aid and three different aid specifications—contemporaneous aid, lagged aid, and aid per capita—is presented on Table 3.23 on Appendix 3.8. The results show a consistent positive effect of aid on democracy, which reassures us of the validity of the results found on the ML-SEM models.

### 3.8 Conclusion

Investigating the complex relationship between democracy aid and democracy over the past 25 years, we find compelling evidence of a small but positive contribution of international efforts to support democracy as a political system around the world. The size of the effect reflects the modest contribution of international democracy aid, relative to the financial needs of pro-democratic actors in autocracies and evolving democracies.

The positive direction of the effect is broadly consistent with previous work on

TABLE 3.9: MODEL 3 – THE IMPACT OF GLOBAL AID ON DEMOCRACY (LINEAR-LOG SPECIFICATION, BASED ON DEFLATED AID COMMITMENTS)

VARIABLES	Dev aid		Dem aid (ED)		Dem aid (LD)	
	(1) FE	(2) RE	(3) FE	(4) RE	(5) FE	(6) RE
Aid	0.263*** (0.096)	0.116 (0.092)	0.372*** (0.102)	0.260*** (0.100)	0.302*** (0.106)	0.214** (0.105)
GDP growth	0.019 (0.039)	0.045 (0.039)	0.014 (0.039)	0.040 (0.039)	0.023 (0.039)	0.045 (0.039)
L.GDP	-3.320** (1.465)	0.128 (1.182)	-3.018** (1.444)	0.300 (1.182)	-2.642* (1.443)	0.409 (1.184)
Urban pop	0.001 (0.086)	0.087 (0.065)	-0.004 (0.085)	0.087 (0.065)	-0.001 (0.086)	0.085 (0.065)
Pop density	0.004 (0.011)	0.000 (0.008)	0.005 (0.011)	0.000 (0.008)	0.005 (0.011)	0.000 (0.008)
Natural resources	-0.009 (0.047)	-0.092** (0.046)	-0.004 (0.047)	-0.089* (0.046)	-0.004 (0.047)	-0.090* (0.046)
Military spending	0.151 (0.305)	-0.460 (0.300)	0.131 (0.305)	-0.463 (0.300)	0.145 (0.305)	-0.462 (0.300)
Neighbors democ	6.198 (4.102)	18.715*** (3.834)	6.098 (4.094)	18.626*** (3.827)	5.926 (4.101)	18.565*** (3.827)
Non-tax revenues	0.095 (0.069)	0.062 (0.068)	0.078 (0.069)	0.050 (0.068)	0.081 (0.069)	0.050 (0.068)
L.Military regime,	-7.549*** (0.948)	-7.868*** (0.957)	-7.455*** (0.947)	-7.778*** (0.956)	-7.562*** (0.947)	-7.847*** (0.957)
Opposition fractionalization	-0.000*** (0.000)	-0.000*** (0.000)	-0.000*** (0.000)	-0.000*** (0.000)	-0.000*** (0.000)	-0.000*** (0.000)
Ethnic tensions index	0.209 (0.371)	0.258 (0.370)	0.242 (0.369)	0.259 (0.368)	0.237 (0.370)	0.256 (0.369)
Internal conflict index	0.567*** (0.197)	0.679*** (0.200)	0.589*** (0.197)	0.694*** (0.200)	0.619*** (0.198)	0.715*** (0.200)
Constant	65.211*** (13.573)	25.533*** (9.876)	63.359*** (13.426)	24.229** (9.894)	60.523*** (13.410)	23.816** (9.892)
Observations	1,641	1,641	1,641	1,641	1,641	1,641
R-squared	0.145		0.149		0.146	
Number of cowcode	90	90	90	90	90	90
Hausman chi2		107.4		107		106.6
p-value		4.39e-10		5.22e-10		5.96e-10

Standard errors in parentheses  
\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

TABLE 3.10: MODEL 4 – THE IMPACT OF GLOBAL AID ON DEMOCRACY  
(LINEAR-LOG SPECIFICATION, BASED ON DEFLATED AID COMMITMENTS)

VARIABLES	Dev aid		Dem aid (ED)		Dem aid (LD)	
	(1) FE	(2) RE	(3) FE	(4) RE	(5) FE	(6) RE
Aid	0.284*** (0.107)	0.128 (0.101)	0.361*** (0.106)	0.251** (0.103)	0.272** (0.107)	0.183* (0.106)
GDP growth	-0.097** (0.048)	-0.091* (0.048)	-0.101** (0.048)	-0.094* (0.048)	-0.094* (0.048)	-0.090* (0.048)
L.GDP	-2.796* (1.498)	0.148 (1.224)	-2.530* (1.484)	0.282 (1.225)	-2.259 (1.485)	0.348 (1.226)
Urban pop	0.064 (0.086)	0.130** (0.065)	0.055 (0.086)	0.128** (0.065)	0.058 (0.086)	0.127* (0.065)
Pop density	-0.044*** (0.012)	-0.024*** (0.009)	-0.043*** (0.012)	-0.025*** (0.009)	-0.043*** (0.012)	-0.024*** (0.009)
Natural resources	0.014 (0.047)	-0.040 (0.046)	0.019 (0.047)	-0.037 (0.046)	0.017 (0.047)	-0.039 (0.046)
Military spending	-0.077 (0.329)	-0.497 (0.323)	-0.109 (0.328)	-0.510 (0.323)	-0.104 (0.329)	-0.513 (0.323)
Neighbors democ	5.391 (3.996)	12.763*** (3.761)	5.344 (3.990)	12.677*** (3.756)	5.267 (3.998)	12.676*** (3.757)
Non-tax revenues	0.080 (0.087)	0.030 (0.084)	0.070 (0.087)	0.024 (0.084)	0.078 (0.087)	0.028 (0.084)
L.Military regime	-7.044*** (0.996)	-7.147*** (0.995)	-6.960*** (0.995)	-7.070*** (0.994)	-6.994*** (0.997)	-7.086*** (0.996)
Opposition fractionalization	-0.000*** (0.000)	-0.000*** (0.000)	-0.000*** (0.000)	-0.000*** (0.000)	-0.000*** (0.000)	-0.000*** (0.000)
Ethnic tensions index	-0.745** (0.373)	-0.663* (0.369)	-0.682* (0.372)	-0.639* (0.367)	-0.687* (0.373)	-0.640* (0.368)
Internal conflict index	0.413** (0.203)	0.528*** (0.204)	0.424** (0.202)	0.540*** (0.203)	0.433** (0.203)	0.544*** (0.204)
Inequality	-7.638 (26.772)	-22.728 (26.611)	-8.278 (26.728)	-24.222 (26.545)	-6.307 (26.763)	-22.223 (26.548)
Inequality2	8.961 (25.919)	20.228 (25.893)	9.491 (25.872)	21.643 (25.829)	7.460 (25.903)	19.832 (25.838)
Anti-system movements index	-1.981 (3.746)	-1.572 (3.734)	-1.837 (3.733)	-1.152 (3.719)	-2.451 (3.730)	-1.633 (3.714)
Movements * inequality	-11.790 (15.421)	-13.590 (15.403)	-12.851 (15.388)	-15.582 (15.360)	-10.353 (15.376)	-13.588 (15.339)
Movements * inequality2	14.445 (15.364)	16.484 (15.380)	15.948 (15.349)	18.683 (15.356)	13.454 (15.337)	16.676 (15.334)
Constant	69.159*** (15.724)	39.243*** (13.097)	67.843*** (15.641)	38.663*** (13.098)	65.574*** (15.647)	38.107*** (13.096)
Observations	1,576	1,576	1,576	1,576	1,576	1,576
R-squared	0.204		0.206		0.203	
Number of cowcode	88	88	88	88	88	88
Hausman chi2		77.87		76.62		76.78
p-value		1.72e-05		2.53e-05		2.41e-05

Standard errors in parentheses  
\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

democracy aid. This holds across both our ‘extensive’ and ‘limited’ definitions of democracy aid, but is clearer under the limited definition. Findings suggest that aid has a stronger positive effect when it explicitly targets the building blocks of democracy, via the support of civil society, free and fair elections, free media, and human rights.

Importantly, we do not find any evidence of a negative impact of targeted democracy aid (or developmental aid) on democracy, as some studies have reported in the past.

While the results reflect complex and dynamic interactions at the ‘mean’ occurrence of a large number of countries, which may indeed vary depending on specific contexts, they give us the confidence to assert that (1) democracy aid does good, not bad, for democracy building around the world, and (2) targeted democracy aid is more likely, at least in the short and medium term, to positively impact democratic outcomes than developmental aid, because democracy aid targets the very agents of democratic change.

Developmental aid interventions, although positively associated with democracy, are contingent upon a number of factors that underpin democracy, such as a more educated population or the enlargement of the middle class—factors that can take much longer to materialize.

Nevertheless, the analysis does not find strong evidence that the factors underpinning economic development are strongly associated with democratization, as structural theories suggest. In fact, the effect of economic development on democracy is largely insignificant across models and specifications. Considerations related to state capabilities, military spending, population density, and regime type, which are in the domain of institutions, seem to be stronger predictors for democratization.

An important question posed by the literature is whether democracy aid enhances the transition to (greater) democracy or mitigates democratic backsliding. Our results clearly reveal an asymmetric relationship between democracy aid and the dynamics of political processes. Democracy aid is more effective at supporting ongoing democratization (upturns) than at halting ongoing democratic backsliding (downturns).

A related question is whether developmental and democracy aid props up dictators, as suggested by previous studies. While we find evidence indicating that democracy aid strengthens the position of working democracies, albeit marginally, we do not find any

evidence that democracy aid reinforces autocratic rule.

The literature has emphasized a distinction between bilateral and multilateral aid, whereby bilateral aid is found to be more amenable to aid-for-policy deals than multilateral aid (De Mesquita and Smith, 2009). Bilateral aid has also been associated with positive democratic outcomes in the short run, whereas multilateral aid appears to be ineffective alongside autocracies (Kersting and Kilby, 2016). There are a few exceptions, as in the case of Moreno-Dodson et al. (2012), which finds that only multilateral aid is beneficial for democratization.

Our analysis, however, does not agree with this literature. We find no evidence that multilateral (or bilateral) aid is more effective than bilateral (or multilateral) aid at advancing democracy, although the effect is clearly stronger when aid is targeted at supporting pro-democracy actors and institutions.

While our results indicate that aid from democratic donors (bilateral or multilateral) sustains democracy, international comparative analysis of the influence of emerging authoritarian donors remains limited due to data constraints. This underscores the need to improve the informational basis for future international comparative research on emerging donors if we are to better understand how these actors impact the effectiveness of democracy aid across the world.

Our results have important policy implications. Clearly, the provision of democracy aid in low-income and autocratic states has a merit in its own right. It is also associated with modest impact on democracy. However, on average, the likelihood of democracy aid alone triggering democratization in autocratic states is very slim. At a minimum, this suggests the value of careful strategic consideration by policy-makers of the objectives of democracy aid and the identification of situations in which it is most likely to have positive impacts.

# Appendix A

TABLE 3.11: DATA SOURCES

Variable	Definition	Source
Democracy index	Electoral democracy index	V-dem, version 10
Association index	Freedom of participation and association index	V-dem, version 10
Elections index	Clean elections index	V-dem, version 10
Media index	Freedom of expression and the press	V-dem, version 10
HR/Civil liberties index	Civil Liberties index	V-dem, version 10
Aid (various definitions)	Commitments deflated in millions US\$	OECD's Creditor Reporting System
GDP per capita	GDP per capita in constant US\$ (PPP)	World Development Indicators (WDI), World Bank
GDP growth	GDP growth (%)	World Development Indicators (WDI), World Bank
Urban population	Total urban population (% total population)	World Development Indicators (WDI), World Bank
Natural resource rents	Total natural resources rent (%GDP)	World Development Indicators (WDI), World Bank
Population density	Population density (people per sq. km of land area)	World Development Indicators (WDI), World Bank
Military spending	Military spending (% GDP)	World Development Indicators (WDI), World Bank
Neighbors democracy	Average electoral democracy indicator of the neighboring countries	Author's using V-dem, version 10
Non-tax revenue	Consolidated non-tax revenue	ICTD/UNU-WIDER Government Revenue Dataset (GRD)
Military regime	Dummy for a military regime	Database of Political Institutions (DPI)
Opposition fractionalization	Herfindahl index for opposition parties -	Database of Political Institutions (DPI)
Ethnic tensions	Ethnic tensions index	International Country Risk Guide (ICRG)
Internal conflict	Internal conflict index	International Country Risk Guide (ICRG)
Inequality	Gini index	UNU-WIDER
Anti-system movements	CSO anti-system movements index	V-dem, version 10

TABLE 3.12: SUMMARY STATISTICS

Variable	Obs	Mean	Std. Dev.	Min	Max
Electoral democracy index	3,602	0.473	0.239	0.018	0.922
Regime (RoW)	3,602	1.402	0.875	0.000	3.000
Association index	3,602	0.637	0.278	0.021	0.954
Elections index	3,602	0.476	0.301	0.000	0.978
Media index	3,602	0.640	0.274	0.014	0.978
HR/Civil liberties index	3,602	0.643	0.246	0.020	0.966
Developmental aid	3,602	994.36	1741.00	0.00	22889.37
Extended democracy aid	3,602	100.82	239.87	0.00	3057.29
Limited democracy aid	3,602	12.78	24.71	0.00	364.30
Developmental aid (DAC)	3,602	524.07	999.27	0.00	22775.26
Extended democracy aid (DAC)	3,602	56.19	169.54	0.00	3055.47
Limited democracy aid (DAC)	3,602	11.51	23.17	0.00	363.31
Developmental aid (multilateral)	3,602	454.11	970.44	0.00	9738.42
Extended democracy aid (multilateral)	3,602	44.27	154.29	0.00	2659.48
Limited democracy aid (multilateral)	3,602	1.22	6.66	0.00	183.64
Developmental aid (bilateral)	3,602	536.06	1027.56	0.00	22775.26
Extended democracy aid (bilateral)	3,602	56.42	169.92	0.00	3055.47
Limited democracy aid (bilateral)	3,602	11.51	23.17	0.00	363.31
Developmental aid (top 5 donors)	3,602	323.43	756.65	0.00	19495.63
Extended democracy aid (top 5 donors)	3,602	30.04	138.71	0.00	2976.26
Limited democracy aid (top 5 donors)	3,602	5.17	14.46	0.00	335.65
Aid to democratic participation and civil society	3,602	7.02	14.64	0.00	231.61
Aid to elections	3,602	1.94	10.08	0.00	245.14
Aid to media and free flow of information	3,602	0.69	2.96	0.00	108.23
Aid to human rights	3,602	2.83	6.79	0.00	190.81
GDP growth (%)	3,325	4.359	6.326	-62.076	149.973
GDP per capita	3,234	9923.97	9414.61	469.14	49439.07
Urban population (%)	3,430	50.087	20.646	7.211	95.334
Population density (pp per sq km)	3,417	129.819	223.908	1.479	2017.274
Natural Resources (%GDP)	3,205	9.253	12.328	0.000	86.453
Military spending (%GDP)	2,860	2.122	2.133	0.000	34.378
Neighbors democracy	3,131	0.471	0.187	0.019	0.885
Non-tax revenue	2,833	5.005	7.065	0.000	76.780
Military regime dummy	3,148	0.173	0.379	0.000	1.000
Opposition fractionalization	3,170	187.824	18279.820	-999.000	998002.000
Ethnic tensions	2,622	3.886	1.287	0.000	6.000
Internal conflict	2,622	8.808	1.793	0.417	12.000
Gini index	3,089	0.474	0.107	0.221	0.811
Anti-system movements	3,602	-0.490	1.184	-2.701	3.164

TABLE 3.13: CORRELATIONS BETWEEN DISBURSEMENTS AND COMMITMENTS BY AID DEFINITION (IN MILLIONS OF US DOLLARS) – YEARLY AVERAGES

	Commitments	Disbursements	Correlation coefficient
Developmental aid	119,938.90	87,791.20	0.9038*
Extended democracy aid	12,142.40	9,109.46	0.8356*
Limited democracy aid	1,536.50	1,326.18	0.8182*
Developmental aid (DAC)	63,324.33	51,806.03	0.9472*
Extended democracy aid (DAC)	6,771.21	5,482.07	0.9322*
Limited democracy aid (DAC)	1,383.63	1,188.44	0.8210*
Developmental aid (multilateral)	54,666.92	32,912.33	0.7951*
Extended democracy aid (multilateral)	5,327.30	3,578.71	0.6547*
Limited democracy aid (multilateral)	146.15	131.26	0.6791*
Developmental aid (bilateral)	64,768.46	54,374.17	0.9292*
Extended democracy aid (bilateral)	6,798.99	5,516.03	0.9318*
Limited democracy aid (bilateral)	1,383.99	1,188.86	0.8210*
Developmental aid (top 5 donors)	39,047.07	32,056.28	0.9299*
Extended democracy aid (top 5 donors)	3,610.42	3,006.14	0.9219*
Limited democracy aid (top 5 donors)	621.24	501.66	0.7681*
Aid to democratic participation and civil society	843.57	681.72	0.6740*
Aid to elections	232.77	213.12	0.8086*
Aid to media and free flow of information	82.88	76.2	0.8414*
Aid to human rights	340.72	316.97	0.7638*

TABLE 3.14: DISTRIBUTION OF INTERNATIONAL DEMOCRACY AID BY TYPE AND DEFINITION (%)

<b>Aid definition</b>	<b>Aid type</b>	<b>1995</b>	<b>2000</b>	<b>2005</b>	<b>2010</b>	<b>2015</b>	<b>2018</b>
Developmental aid	Budget support	0.00	2.84	1.83	4.78	14.38	7.81
	Core contributions and pooled programmes and funds	0.06	0.05	0.19	5.49	5.73	5.97
	Project-type interventions	0.67	7.84	6.54	60.28	70.69	78.16
	Experts and other technical assistance	0.01	0.02	0.01	2.78	1.72	1.32
	Scholarships and student costs in donor countries	0.00	0.00	0.00	1.54	1.10	1.25
	Debt relief	0.00	0.02	0.16	2.18	0.26	0.11
	Administrative costs not included elsewhere	0.00	0.00	0.04	0.17	0.23	0.71
	Other in-donor expenditures	0.00	0.00	0.00	0.02	0.01	0.12
	Missing information	99.27	89.24	91.23	22.77	5.89	4.54
Extensive democracy aid	Budget support	0.00	9.13	5.66	4.68	34.61	23.26
	Core contributions and pooled programmes and funds	0.00	0.00	0.00	9.70	12.59	10.92
	Project-type interventions	0.00	10.01	3.63	63.65	47.74	62.15
	Experts and other technical assistance	0.00	0.02	0.01	6.77	4.59	2.85
	Scholarships and student costs in donor countries	0.00	0.00	0.00	0.05	0.08	0.20
	Debt relief	0.00	0.00	0.00	0.00	0.00	0.00
	Administrative costs not included elsewhere	0.00	0.00	0.00	0.01	0.00	0.02
	Other in-donor expenditures	0.00	0.00	0.00	0.00	0.00	0.00
	Missing information	100.00	80.84	90.71	15.14	0.38	0.60
Limited democracy aid	Budget support	0.00	0.12	0.07	0.68	1.65	2.68
	Core contributions and pooled programmes and funds	0.00	0.00	0.00	24.47	22.05	18.96
	Project-type interventions	0.00	14.08	3.03	69.95	72.40	74.14
	Experts and other technical assistance	0.00	0.00	0.00	4.80	3.87	4.01
	Scholarships and student costs in donor countries	0.00	0.00	0.00	0.00	0.02	0.07
	Debt relief	0.00	0.00	0.00	0.00	0.00	0.00
	Administrative costs not included elsewhere	0.00	0.00	0.00	0.08	0.00	0.15
	Other in-donor expenditures	0.00	0.00	0.00	0.01	0.00	0.00
	Missing information	100.00	85.80	96.91	0.00	0.00	0.00

TABLE 3.15: DISTRIBUTION OF DEMOCRACY AID BY FINANCIAL INSTRUMENT AND DEFINITION (%)

<b>Aid definition</b>	<b>Financial instrument</b>	<b>1995</b>	<b>2000</b>	<b>2005</b>	<b>2010</b>	<b>2015</b>	<b>2018</b>
Developmental aid	Grants	30.12	46.07	58.22	40.40	34.38	35.02
	Guarantees and other unfunded contingent liabilities	0.00	0.00	0.00	0.00	0.00	0.04
	Debt Instruments	69.64	53.45	37.19	56.70	62.92	64.25
	Mezzanine finance instruments	0.00	0.00	0.00	0.00	0.00	0.07
	Equity and shares in collective investment vehicles	0.25	0.46	0.94	0.73	2.44	0.51
	Debt relief	0.00	0.02	3.65	2.17	0.26	0.11
	Missing information	0.00	0.00	0.00	0.00	0.00	0.00
Extensive democracy aid	Grants	62.69	37.96	69.52	65.03	59.46	55.15
	Guarantees and other unfunded contingent liabilities	0.00	0.00	0.00	0.00	0.00	0.00
	Debt instruments	37.31	61.73	30.48	34.97	40.54	44.85
	Mezzanine finance instruments	0.00	0.00	0.00	0.00	0.00	0.00
	Equity and shares in collective investment vehicles	0.00	0.32	0.00	0.00	0.00	0.00
	Debt relief	0.00	0.00	0.00	0.00	0.00	0.00
	Missing information	0.00	0.00	0.00	0.00	0.00	0.00
Limited democracy aid	Grants	100.00	74.59	87.78	99.52	98.52	94.67
	Guarantees and other unfunded contingent liabilities	0.00	0.00	0.00	0.00	0.00	0.00
	Debt instruments	0.00	25.41	12.22	0.48	1.48	5.33
	Mezzanine finance instruments	0.00	0.00	0.00	0.00	0.00	0.00
	Equity and shares in collective investment vehicles	0.00	0.00	0.00	0.00	0.00	0.00
	Debt relief	0.00	0.00	0.00	0.00	0.00	0.00
	Missing information	0.00	0.00	0.00	0.00	0.00	0.00

TABLE 3.16: EFFECT OF DEMOCRACY AID ON DEMOCRATIZATION - UPTURNS AND DOWNTURNS (LAGGED AID)

<b>FE</b>						
	Upturns			Downturns		
	Dev. Aid	Dem. Aid (ED)	Dem. Aid (LD)	Dev. Aid	Dem. Aid (ED)	Dem. Aid (LD)
Model 1	0.066**	0.088**	0.149***	0.023	0.029	0.02
Model 2	0.085**	0.095**	0.123***	0.031	0.041	0.034
Model 3	0.053	0.078*	0.145***	0.045	0.051	0.054
Model 4	0.03	0.049	0.134***	0.066*	0.057	0.064*

<b>FE-Tobit</b>						
	Upturns			Downturns		
	Dev. Aid	Dem. Aid (ED)	Dem. Aid (LD)	Dev. Aid	Dem. Aid (ED)	Dem. Aid (LD)
Model 1	0.396*	0.390*	0.829**	-0.146	-0.122	-0.062
Model 2	0.437	0.397*	0.704*	-0.174	-0.192	-0.139
Model 3	0.176	0.287	0.681	-0.172*	-0.193*	-0.163**
Model 4	0.101	0.171	0.595	-0.181	-0.188*	-0.16

Notes: (1) Fixed-effect estimates, based on ordinary least squares

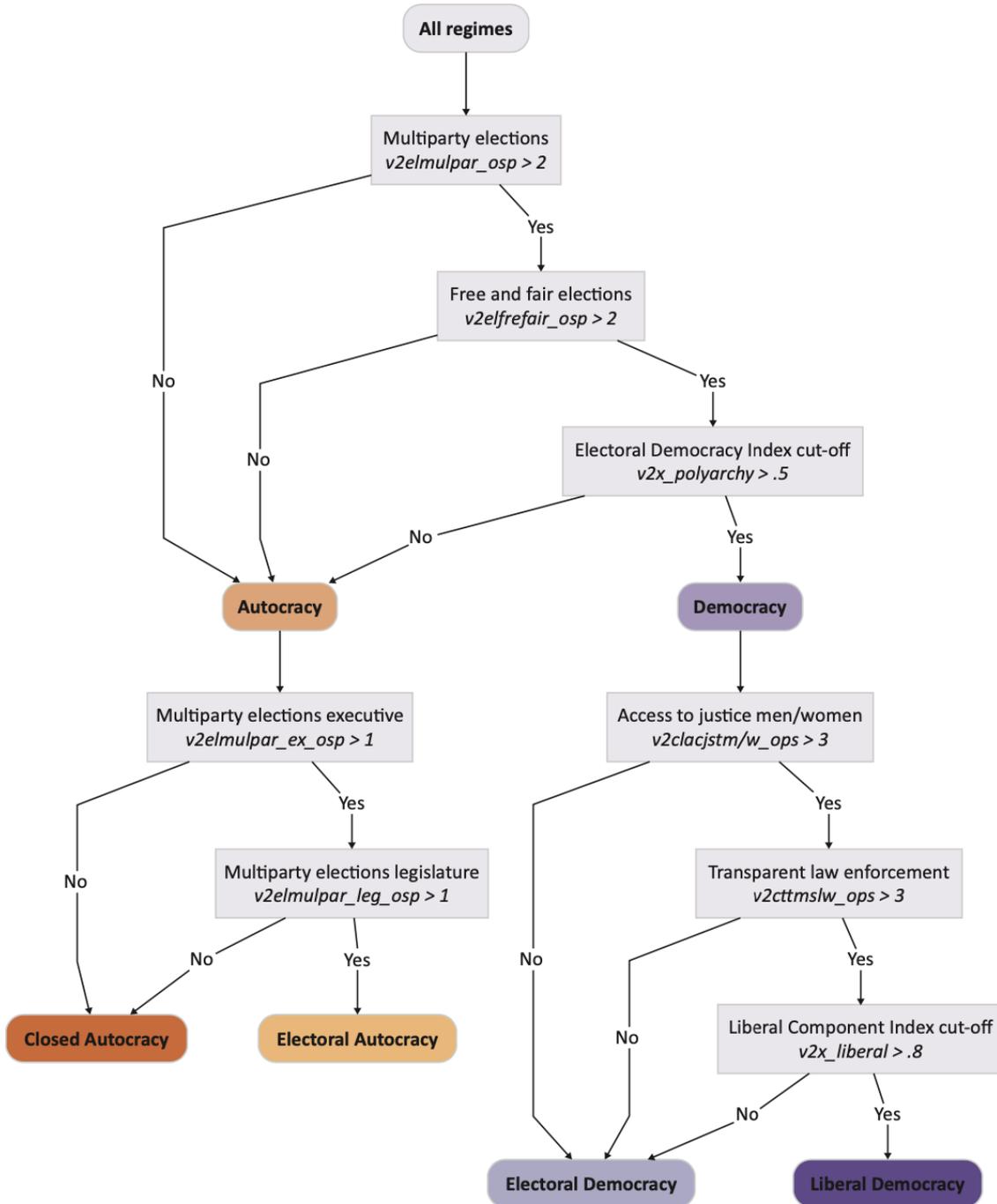
(2) Fixed-effects Tobit estimators, based on Honoré (1992)'s semiparametric method

(3) ED stands for extensive definition while LD stands for limited definition.

(4) We reverse the signs on the FE-Tobit model for comparability, as this model is calculated with the absolute value of the change in democracy

Standard errors in parentheses \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$  Source: Authors

FIGURE 3.2: CODING SCHEME FOR THE POLITICAL REGIME CLASSIFICATION



Source: Lührmann et al. (2018) based on data from Coppedge et al. (2017)

## Appendix B. ML-SEM full tables

TABLE 3.17: ML-SEM MODEL – DEVELOPMENTAL AID (LINEAR-LOG SPECIFICATION, BASED ON DEFLATED AID COMMITMENTS)

	Global aid		DAC aid		Multilateral aid		Bilateral aid		Top 5 aid	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Basic controls	Extended controls								
Dev. Aid	0.319 (0.575)	0.317 (0.446)	0.517 (0.586)	0.248 (0.499)	0.311 (0.570)	0.473 (0.449)	0.505 (0.584)	0.265 (0.501)	0.587 (0.640)	0.248 (0.517)
L.Democracy	0.948*** (0.194)	0.514*** (0.144)	0.948*** (0.188)	0.511*** (0.145)	0.944*** (0.193)	0.513*** (0.142)	0.870*** (0.161)	0.510*** (0.145)	0.951*** (0.189)	0.512*** (0.145)
Natural resources (% GDP)	-0.131 (0.129)	0.068 (0.133)	-0.139 (0.130)	0.067 (0.134)	-0.132 (0.129)	0.071 (0.132)	-0.133 (0.125)	0.066 (0.134)	-0.142 (0.130)	0.067 (0.134)
GDP growth (% annual)	-0.044 (0.228)	-0.055 (0.201)	-0.048 (0.227)	-0.053 (0.202)	-0.032 (0.226)	-0.051 (0.200)	-0.010 (0.220)	-0.053 (0.201)	-0.042 (0.227)	-0.052 (0.202)
L.GDP per capita (log)	-0.410 (4.706)	0.094 (4.843)	-0.563 (4.621)	0.392 (4.885)	-0.021 (4.557)	-0.150 (4.791)	1.353 (4.458)	0.361 (4.856)	-0.434 (4.593)	0.485 (4.829)
Urban Population (% total)	-0.072 (0.279)	-0.067 (0.287)	-0.080 (0.279)	-0.066 (0.291)	-0.072 (0.279)	-0.082 (0.286)	-0.046 (0.270)	-0.064 (0.290)	-0.081 (0.279)	-0.067 (0.290)
Population Density	-0.037** (0.015)	0.003 (0.036)	-0.037** (0.015)	0.004 (0.037)	-0.037** (0.016)	0.002 (0.036)		0.004 (0.037)	-0.037** (0.015)	0.003 (0.037)
Military spending (% GDP)		1.356** (0.687)		1.356** (0.689)		1.357** (0.684)		1.356** (0.688)		1.357** (0.689)
Neighbors avg democ		1.134 (14.435)		1.176 (14.545)		1.298 (14.355)		1.066 (14.529)		1.338 (14.497)
Observations	132	102	132	102	132	102	133	102	132	102
BIC	16476.477	12270.172	16436.191	12228.109	16502.949	12247.293	12242.122	12234.490	16406.191	12202.145
AIC	15799.019	11312.057	15758.732	11269.994	15825.490	11289.178	11710.298	11276.375	15728.733	11246.655
Wald test	25.140	16.955	26.215	16.493	25.709	17.751	29.725	16.575	25.933	16.487
p-value	0.001	0.049	0.000	0.057	0.001	0.038	0.000	0.056	0.001	0.057

Model 7 excludes population density due to convergence issues

Standard errors in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

TABLE 3.18: ML-SEM MODEL – DEVELOPMENTAL AID (LOG-LOG SPECIFICATION, BASED ON DEFLATED AID COMMITMENTS)

	Global aid		DAC aid		Multilateral aid		Bilateral aid		Top 5 aid	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Basic controls	Extended controls	Basic controls	Extended controls	Basic controls	Extended controls	Basic controls	Extended controls	Basic controls	Extended controls
Dev. Aid	0.030 (0.018)	0.036*** (0.012)	0.031* (0.016)	0.038*** (0.013)	0.028 (0.017)	0.039*** (0.012)	0.031* (0.016)	0.037*** (0.013)	0.042** (0.020)	0.036** (0.014)
L.Democracy	0.928*** (0.167)	0.687*** (0.141)	0.785*** (0.122)	0.676*** (0.143)	0.933*** (0.164)	0.669*** (0.132)	0.779*** (0.121)	0.669*** (0.142)	0.956*** (0.172)	0.661*** (0.143)
Natural resources (% GDP)	-0.005 (0.004)	0.000 (0.004)	-0.005 (0.003)	-0.000 (0.004)	-0.005 (0.004)	0.002 (0.004)	-0.005 (0.003)	-0.000 (0.004)	-0.005 (0.004)	0.001 (0.004)
GDP growth (% annual)	-0.003 (0.006)	0.001 (0.006)	-0.001 (0.006)	0.001 (0.006)	-0.002 (0.006)	0.002 (0.006)	-0.001 (0.006)	0.001 (0.006)	-0.002 (0.006)	0.001 (0.006)
L.GDP per capita (log)	-0.026 (0.130)	0.038 (0.131)	0.071 (0.123)	0.047 (0.131)	0.012 (0.126)	0.031 (0.131)	0.073 (0.123)	0.049 (0.130)	-0.010 (0.129)	0.050 (0.130)
Urban Population (% total)	-0.007 (0.008)	-0.006 (0.008)	-0.004 (0.007)	-0.005 (0.008)	-0.007 (0.008)	-0.007 (0.008)	-0.004 (0.007)	-0.005 (0.008)	-0.007 (0.008)	-0.005 (0.008)
Population Density	-0.002*** (0.000)				-0.002*** (0.000)	-0.001 (0.001)			-0.002*** (0.000)	-0.001 (0.001)
Military spending (% GDP)		0.071*** (0.019)		0.070*** (0.018)		0.077*** (0.019)		0.070*** (0.018)		0.074*** (0.019)
Neighbors avg democ		-0.347 (0.389)		-0.362 (0.389)		-0.282 (0.394)		-0.365 (0.388)		-0.301 (0.392)
Observations	132	103	133	103	132	102	133	103	132	102
BIC	12654.517	6620.446	8449.101	6577.918	12689.855	9247.723	8455.307	6583.079	12588.805	9199.424
AIC	12005.887	5793.141	7917.276	5750.613	12041.225	8318.483	7923.482	5755.774	11940.174	8270.184
Wald test	33.098	40.629	43.035	38.987	34.190	45.577	43.165	38.884	32.807	40.171
p-value	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Models 2, 3, 4, 7, and 8 exclude population density due to convergence issues

Standard errors in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

TABLE 3.19: ML-SEM MODEL – DEMOCRACY AID, EXTENDED DEFINITION (LINEAR-LOG SPECIFICATION, BASED ON DEFLATED AID COMMITMENTS)

	Global aid		DAC aid		Multilateral aid		Bilateral aid		Top 5 aid	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Basic controls	Extended controls	Basic controls	Extended controls	Basic controls	Extended controls	Basic controls	Extended controls	Basic controls	Extended controls
Dem. Aid (ED)	0.746 (0.672)	0.389 (0.543)	0.960 (0.643)	0.537 (0.569)	0.829 (0.648)	0.650 (0.782)	0.964 (0.643)	0.543 (0.566)	1.527* (0.806)	0.504 (0.618)
L.Democracy	0.920*** (0.179)	0.494*** (0.139)	0.915*** (0.171)	0.497*** (0.142)	0.868*** (0.166)	0.483*** (0.135)	0.915*** (0.171)	0.497*** (0.141)	0.931*** (0.174)	0.506*** (0.143)
Natural resources (% GDP)	-0.127 (0.125)	0.076 (0.131)	-0.136 (0.125)	0.064 (0.132)	-0.108 (0.121)	0.108 (0.135)	-0.136 (0.125)	0.064 (0.131)	-0.159 (0.127)	0.062 (0.132)
GDP growth (% annual)	-0.037 (0.222)	-0.060 (0.198)	-0.029 (0.220)	-0.061 (0.199)	-0.021 (0.216)	-0.078 (0.200)	-0.029 (0.220)	-0.061 (0.198)	0.022 (0.224)	-0.052 (0.198)
L.GDP per capita (log)	-0.180 (4.491)	0.295 (4.680)	-0.212 (4.403)	0.211 (4.702)	1.223 (4.381)	0.437 (4.606)	-0.207 (4.402)	0.203 (4.634)	0.126 (4.409)	0.587 (4.563)
Urban Population (% total)	-0.077 (0.277)	-0.064 (0.282)	-0.074 (0.269)	-0.056 (0.285)	-0.036 (0.264)	-0.055 (0.282)	-0.075 (0.269)	-0.056 (0.280)	-0.086 (0.269)	-0.069 (0.276)
Population Density	-0.037** (0.015)	0.005 (0.036)	-0.038*** (0.015)	0.004 (0.036)	-0.034** (0.014)	0.011 (0.036)	-0.038*** (0.015)	0.004 (0.036)	-0.039*** (0.015)	0.004 (0.035)
Military spending (% GDP)		1.300* (0.684)		1.246* (0.690)		1.301* (0.674)		1.244* (0.689)		1.262* (0.694)
Neighbors avg democ		0.830 (14.265)		0.508 (14.296)		0.204 (14.289)		0.482 (14.223)		0.497 (14.238)
Observations	132	102	132	102	132	102	132	102	132	102
BIC	16351.379	12173.708	16330.691	12161.955	16453.891	12167.131	16330.203	12161.267	16346.149	12153.268
AIC	15673.921	11218.218	15653.233	11203.840	15773.550	11211.641	15652.745	11203.152	15671.573	11197.778
Wald test	27.902	17.127	30.469	17.387	32.815	17.711	30.490	17.523	30.040	17.046
p-value	0.000	0.047	0.000	0.043	0.000	0.039	0.000	0.041	0.000	0.048

Standard errors in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

TABLE 3.20: ML-SEM MODEL – DEMOCRACY AID, EXTENDED DEFINITION (LOG-LOG SPECIFICATION, BASED ON DEFLATED AID COMMITMENTS)

	Global aid		DAC aid		Multilateral aid		Bilateral aid		Top 5 aid	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Basic controls	Extended controls	Basic controls	Extended controls	Basic controls	Extended controls	Basic controls	Extended controls	Basic controls	Extended controls
Dem. Aid (ED)	0.037* (0.020)	0.035** (0.014)	0.047** (0.019)	0.039** (0.015)	0.008 (0.020)	0.047* (0.025)	0.047** (0.019)	0.039** (0.015)	0.075*** (0.022)	0.044** (0.017)
L.Democracy	0.876*** (0.139)	0.604*** (0.130)	0.880*** (0.137)	0.619*** (0.136)	0.753*** (0.124)	0.837*** (0.129)	0.880*** (0.137)	0.620*** (0.136)	0.945*** (0.154)	0.645*** (0.142)
Natural resources (% GDP)	-0.004 (0.003)	0.002 (0.004)	-0.005 (0.003)	0.000 (0.004)	-0.004 (0.003)	-0.004 (0.003)	-0.005 (0.003)	0.000 (0.004)	-0.006* (0.004)	-0.000 (0.004)
GDP growth (% annual)	-0.002 (0.006)	0.001 (0.005)	-0.001 (0.006)	0.001 (0.006)	0.000 (0.006)	-0.004 (0.006)	-0.001 (0.006)	0.001 (0.006)	0.001 (0.006)	0.002 (0.006)
L.GDP per capita (log)	0.016 (0.120)	0.057 (0.126)	0.016 (0.120)	0.073 (0.128)	0.131 (0.121)	0.021 (0.121)	0.016 (0.120)	0.074 (0.128)	0.039 (0.127)	0.096 (0.128)
Urban Population (% total)	-0.006 (0.007)	-0.005 (0.007)	-0.006 (0.007)	-0.006 (0.008)	-0.003 (0.007)	-0.003 (0.008)	-0.006 (0.007)	-0.006 (0.008)	-0.006 (0.008)	-0.006 (0.008)
Population Density	-0.002*** (0.000)	-0.000 (0.001)	-0.002*** (0.000)			-0.001 (0.001)	-0.002*** (0.000)		-0.002*** (0.000)	
Military spending (% GDP)		0.071*** (0.018)		0.063*** (0.018)				0.063*** (0.018)		0.062*** (0.018)
Neighbors avg democ		-0.301 (0.381)		-0.313 (0.377)		-0.157 (0.424)		-0.315 (0.377)		-0.332 (0.382)
Observations	132	102	132	103	133	115	132	103	132	103
BIC	12537.260	9174.753	12515.666	6519.353	8474.647	9519.092	12515.153	6518.613	12533.493	6515.432
AIC	11888.630	8248.137	11867.036	5692.048	7942.822	8742.276	11866.522	5691.308	11887.746	5688.127
Wald test	42.423	41.553	43.895	38.865	45.321	48.704	44.056	38.887	39.997	38.121
p-value	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Models 4, 5, 8, and 10 exclude population density and model 6 excludes military spending due to convergence issues

Standard errors in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

TABLE 3.21: ML-SEM MODEL – DEMOCRACY AID, LIMITED DEFINITION (LINEAR-LOG SPECIFICATION, BASED ON DEFLATED AID COMMITMENTS)

	Global aid		DAC aid		Multilateral aid		Bilateral aid		Top 5 aid	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Basic controls	Extended controls	Basic controls	Extended controls	Basic controls	Extended controls	Basic controls	Extended controls	Basic controls	Extended controls
Dem. Aid (LD)	1.486* (0.800)	0.697 (0.669)	1.273 (0.883)	1.251* (0.672)	0.886* (0.491)	1.108** (0.529)	1.276 (0.882)	1.258* (0.671)	1.679** (0.689)	1.019* (0.568)
L.Democracy	0.910*** (0.158)	0.496*** (0.140)	0.908*** (0.162)	0.849*** (0.147)	0.867*** (0.154)	0.511*** (0.144)	0.908*** (0.162)	0.849*** (0.147)	0.897*** (0.153)	0.518*** (0.143)
Natural resources (% GDP)	-0.141 (0.124)	0.075 (0.131)	-0.120 (0.123)	-0.122 (0.121)	-0.137 (0.121)	0.074 (0.132)	-0.120 (0.123)	-0.122 (0.121)	-0.138 (0.121)	0.042 (0.133)
GDP growth (% annual)	0.021 (0.221)	-0.071 (0.199)	0.054 (0.227)	-0.009 (0.218)	-0.007 (0.216)	-0.070 (0.200)	0.054 (0.227)	-0.009 (0.218)	0.097 (0.224)	-0.064 (0.201)
L.GDP per capita (log)	0.826 (4.383)	0.220 (4.649)	1.323 (4.452)	1.326 (4.501)	0.428 (4.298)	-0.565 (4.615)	1.322 (4.451)	1.328 (4.501)	2.360 (4.420)	1.654 (4.646)
Urban Population (% total)	-0.099 (0.268)	-0.074 (0.281)	-0.105 (0.270)	-0.061 (0.284)	-0.040 (0.263)	-0.027 (0.278)	-0.105 (0.270)	-0.060 (0.284)	-0.262 (0.276)	-0.137 (0.283)
Population Density	-0.037*** (0.014)	0.005 (0.036)	-0.037** (0.014)	-0.012 (0.032)	-0.035** (0.014)	0.004 (0.036)	-0.037** (0.014)	-0.012 (0.032)	-0.037*** (0.014)	0.004 (0.036)
Military spending (% GDP)		1.240* (0.685)				1.250* (0.678)				1.036 (0.701)
Neighbors avg democ		0.098 (14.309)		1.593 (15.181)		-1.515 (14.345)		1.574 (15.183)		2.660 (14.188)
Observations	132	102	132	115	132	102	132	115	132	102
BIC	16260.405	12119.936	16320.476	12809.537	16265.931	12058.035	16319.990	12809.274	16442.989	12261.524
AIC	15585.829	11164.446	15645.900	12005.272	15591.355	11105.169	15645.414	12005.009	15762.648	11300.784
Wald test	35.313	18.180	33.372	36.262	36.885	19.980	33.380	36.299	36.719	18.657
p-value	0.000	0.033	0.000	0.000	0.000	0.018	0.000	0.000	0.000	0.028

Standard errors in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

TABLE 3.22: ML-SEM MODEL – DEMOCRACY AID, LIMITED DEFINITION (LOG-LOG SPECIFICATION, BASED ON DEFLATED AID COMMITMENTS)

	Global aid		DAC aid		Multilateral aid		Bilateral aid		Top 5 aid	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Basic controls	Extended controls								
Dem. Aid (LD)	0.053** (0.023)	0.035** (0.018)	0.043 (0.027)	0.048** (0.020)	0.026* (0.014)	0.036** (0.014)	0.044 (0.027)	0.048** (0.020)	0.060*** (0.020)	0.042*** (0.015)
L.Democracy (log)	0.858*** (0.126)	0.555*** (0.131)	0.860*** (0.130)	0.876*** (0.132)	0.832*** (0.125)	0.573*** (0.134)	0.860*** (0.130)	0.876*** (0.132)	0.871*** (0.129)	0.606*** (0.133)
Natural resources (% GDP)	-0.005 (0.003)	0.002 (0.004)	-0.004 (0.003)	-0.005 (0.003)	-0.005 (0.003)	-0.005 (0.003)	-0.004 (0.003)	-0.005 (0.003)	-0.005 (0.003)	0.001 (0.004)
GDP growth (% annual)	0.001 (0.006)	0.000 (0.005)	0.002 (0.006)	-0.002 (0.006)	-0.001 (0.006)	0.001 (0.005)	0.002 (0.006)	-0.002 (0.006)	0.003 (0.006)	0.001 (0.006)
L.GDP per capita (log)	0.058 (0.121)	0.065 (0.126)	0.074 (0.124)	0.063 (0.129)	0.041 (0.119)	0.062 (0.126)	0.074 (0.124)	0.063 (0.129)	0.115 (0.125)	0.137 (0.128)
Urban Population (% total)	-0.006 (0.007)	-0.006 (0.007)	-0.006 (0.007)	-0.007 (0.008)	-0.004 (0.007)	-0.005 (0.007)	-0.006 (0.007)	-0.007 (0.008)	-0.012 (0.008)	-0.009 (0.008)
Population Density	-0.002*** (0.000)	-0.000 (0.001)	-0.002*** (0.000)	-0.001 (0.001)	-0.002*** (0.000)		-0.002*** (0.000)	-0.001 (0.001)	-0.002*** (0.000)	-0.000 (0.001)
Military spending (% GDP)		0.069*** (0.019)				0.066*** (0.018)				0.062*** (0.019)
Neighbors avg democ		-0.267 (0.382)		-0.070 (0.432)		-0.267 (0.371)		-0.070 (0.432)		-0.151 (0.387)
Observations	132	102	132	115	132	102	132	115	132	102
BIC	12459.928	9127.352	12520.305	9491.980	12468.976	9063.687	12519.794	9491.668	12649.483	9276.810
AIC	11811.298	8200.737	11871.674	8717.910	11817.463	8137.072	11871.164	8717.597	11995.087	8344.945
Wald test	50.231	40.298	47.133	50.353	53.404	44.083	47.117	50.321	49.359	40.775
p-value	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Standard errors in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

## Appendix C. Fixed Effects tables

TABLE 3.23: THE IMPACT OF DEMOCRACY AID ON DEMOCRACY – FIXED-EFFECTS ESTIMATES

	Aid			Aid lagged one period			Aid per capita		
	Dev. Aid	Dem. Aid (ED)	Dem. Aid (LD)	Dev. Aid	Dem. Aid (ED)	Dem. Aid (LD)	Dev. Aid	Dem. Aid (ED)	Dem. Aid (LD)
Global aid									
Model 3	0.263***	0.372***	0.302***	0.300***	0.456***	0.435***	1.748***	0.984***	0.589***
Model 4	0.284***	0.361***	0.272**	0.261**	0.368***	0.335***	1.998***	1.005***	0.625***
DAC-countries aid									
Model 3	0.290***	0.481***	0.234**	0.328***	0.529***	0.376***	1.904***	1.802***	0.408*
Model 4	0.325***	0.470***	0.210**	0.305***	0.438***	0.303***	2.288***	1.855***	0.462**
Multilateral aid									
Model 3	0.168**	0.220***	0.298***	0.215***	0.178***	0.316***	0.567***	0.226*	0.297**
Model 4	0.125	0.191***	0.228***	0.166**	0.162***	0.248***	0.633***	0.238**	0.290**
Bilateral aid									
Model 3	0.293***	0.481***	0.236**	0.326***	0.531***	0.378***	1.919***	1.802***	0.419*
Model 4	0.328***	0.469***	0.213**	0.297***	0.440***	0.305***	2.339***	1.855***	0.474**
Top 5 DAC donors									
Model 3	0.290***	0.325***	0.182**	0.337***	0.356***	0.291***	1.204***	1.086***	0.691***
Model 4	0.349***	0.262***	0.155**	0.322***	0.229**	0.212***	1.485***	1.114***	0.778***

Source: Authors

Top 5 DAC donors are: United States, Germany, Japan, United Kingdom and France.

**Appendix D. Specific Outcomes tables**

TABLE 3.24: SPECIFIC OUTCOMES FE MODEL (LINEAR-LOG SPECIFICATION, BASED ON DEFLATED AID COMMITMENTS)

	Freedom of association		Clean elections		Freedom of Expression		Civil liberties	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Basic controls	Extended controls	Basic controls	Extended controls	Basic controls	Extended controls	Basic controls	Extended controls
Aid to specific outcome	0.373*** (0.072)	0.320*** (0.082)	0.163** (0.070)	0.193*** (0.072)	0.146** (0.062)	0.244*** (0.066)	0.147** (0.057)	0.067 (0.067)
GDP growth	0.026 (0.029)	0.064* (0.037)	0.028 (0.042)	-0.023 (0.051)	0.059* (0.031)	0.070* (0.039)	0.110*** (0.023)	0.135*** (0.030)
L.GDP,	-2.646** (1.072)	-4.172*** (1.261)	-0.686 (1.526)	-5.657*** (1.729)	-4.685*** (1.122)	-6.216*** (1.331)	-0.614 (0.839)	-0.920 (1.037)
Urban pop	0.228*** (0.072)	-0.078 (0.079)	0.356*** (0.102)	0.248** (0.109)	0.168** (0.075)	-0.081 (0.084)	0.188*** (0.056)	0.059 (0.065)
Pop density	0.028*** (0.004)	0.016* (0.010)	0.011** (0.005)	0.011 (0.014)	0.008** (0.004)	-0.019* (0.010)	-0.009*** (0.003)	-0.015* (0.008)
Natural resources	0.012 (0.032)	-0.025 (0.038)	0.091** (0.045)	0.010 (0.053)	-0.028 (0.033)	0.036 (0.040)	-0.007 (0.025)	0.003 (0.032)
Military spending		0.491** (0.204)		-0.396 (0.280)		0.783*** (0.214)		0.325* (0.168)
Neighbors democ		16.412*** (3.984)		7.587 (5.471)		2.187 (4.200)		8.708*** (3.283)
Constant	73.191*** (9.615)	93.605*** (11.751)	34.564** (13.715)	79.120*** (16.142)	95.630*** (10.129)	120.410*** (12.504)	61.837*** (7.556)	64.820*** (9.713)
Observations	2,903	2,263	2,903	2,263	2,903	2,263	2,903	2,263
R-squared	0.076	0.075	0.060	0.088	0.059	0.083	0.093	0.117
Number of cowcode	135	114	135	114	135	114	135	114

Standard errors in parentheses  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

TABLE 3.25: SPECIFIC OUTCOMES ML-SEM MODEL (LINEAR-LOG SPECIFICATION, BASED ON DEFLATED AID COMMITMENTS)

	Freedom of association		Clean elections		Freedom of Expression		Civil liberties	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Basic controls	Extended controls	Basic controls	Extended controls	Basic controls	Extended controls	Basic controls	Extended controls
Aid to specific outcome	2.356*** (0.541)	1.247** (0.519)n	0.948 (0.754)	0.880 (0.677)	1.988*** (0.562)	1.317** (0.603)	1.565*** (0.579)	0.407 (0.616)
[1em] L.outcome	1.023*** (0.127)	0.914*** (0.140)	0.820*** (0.133)	0.708*** (0.189)	1.190*** (0.189)	1.102*** (0.202)	0.646*** (0.136)	0.567*** (0.144)
[1em] Natural resources	-0.153 (0.126)	-0.019 (0.142)	-0.028 (0.174)	0.013 (0.204)	-0.196 (0.149)	0.035 (0.169)	-0.146 (0.094)	0.044 (0.108)
GDP growth	0.071 (0.216)	0.321 (0.213)	0.256 (0.329)	0.197 (0.320)	-0.034 (0.257)	0.360 (0.266)	0.202 (0.152)	0.260* (0.157)
L.GDP	3.856 (4.525)	6.391 (4.813)	7.068 (6.422)	9.153 (6.862)	4.257 (5.515)	6.908 (5.715)	4.193 (3.414)	1.917 (3.587)
Urban Pop	-0.358 (0.276)	-0.385 (0.278)	-0.095 (0.382)	-0.210 (0.416)	-0.419 (0.328)	-0.408 (0.320)	-0.296 (0.207)	-0.450** (0.215)
Pop Density	-0.073*** (0.016)	-0.035 (0.037)	-0.065*** (0.020)	-0.034 (0.053)	-0.093*** (0.020)	-0.094** (0.043)	-0.026** (0.011)	-0.011 (0.029)
Military spending		2.261*** (0.734)		0.871 (1.088)		3.315*** (0.874)		1.545*** (0.562)
Neighbors avg democ		5.933 (14.575)		-20.335 (20.866)		-3.376 (17.212)		-5.843 (11.094)
Observations	132	102	132	102	132	102	132	102
BIC	16324.205	12143.731	16965.467	12641.656	16556.826	12367.218	16103.068	11984.690
AIC	15649.629	11190.866	16285.125	11680.916	15876.485	11409.103	15428.492	11026.575
Wald test	81.310	62.283	58.723	17.487	61.617	55.658	28.000	28.788
p-value	0.000	0.000	0.000	0.042	0.000	0.000	0.000	0.001

Standard errors in parentheses

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

## Appendix E. Downturns and upturns tables

TABLE 3.26: THE IMPACT OF GLOBAL AID ON UPTURNS - FE (LINEAR-LOG SPECIFICATION, BASED ON DEFLATED AID COMMITMENTS) - MODEL 1

	FE			Tobit-FE		
	(1)	(2)	(3)	(4)	(5)	(6)
	Dev. Aid	Dem. Aid (ED)	Dem. Aid (LD)	Dev. Aid	Dem. Aid (ED)	Dem. Aid (LD)
	upturn	upturn	upturn	upturn	upturn	upturn
Aid	0.072** (0.034)	0.124*** (0.035)	0.121*** (0.033)	0.435** (0.217)	0.498** (0.210)	0.398* (0.212)
GDP	-0.212 (0.418)	-0.177 (0.415)	-0.072 (0.415)	-1.983 (1.631)	-2.154 (1.861)	-2.203 (1.812)
GDP growth	0.028** (0.012)	0.028** (0.012)	0.029** (0.012)	0.056 (0.039)	0.054 (0.064)	0.058 (0.037)
Natural resources	-0.002 (0.013)	-0.002 (0.013)	-0.003 (0.013)	0.013 (0.109)	0.012 (0.089)	0.010 (0.095)
Pop density	-0.001 (0.002)	-0.001 (0.002)	-0.001 (0.002)	-0.008 (0.016)	-0.010 (0.013)	-0.010 (0.013)
Urban pop	0.006 (0.029)	0.003 (0.029)	0.003 (0.029)	-0.027 (0.075)	-0.051 (0.105)	-0.053 (0.102)
_cons	3.492 (3.714)	3.634 (3.702)	3.175 (3.696)			
N	3024	3024	3024	3024	3024	3024

Standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

TABLE 3.27: THE IMPACT OF GLOBAL AID ON UPTURNS - FE (LINEAR-LOG SPECIFICATION, BASED ON DEFLATED AID COMMITMENTS) - MODEL 2

	FE			Tobit-FE		
	(1)	(2)	(3)	(4)	(5)	(6)
	Dev. Aid upturn	Dem. Aid (ED) upturn	Dem. Aid (LD) upturn	Dev. Aid upturn	Dem. Aid (ED) upturn	Dem. Aid (LD) upturn
Aid	0.092** (0.040)	0.148*** (0.042)	0.120*** (0.039)	0.548** (0.256)	0.632* (0.365)	0.396 (0.332)
GDP	-0.473 (0.514)	-0.402 (0.507)	-0.284 (0.507)	-2.679 (1.808)	-2.810 (1.963)	-2.606 (2.097)
GDP growth	0.041*** (0.016)	0.039** (0.016)	0.039** (0.016)	0.057 (0.072)	0.050 (0.058)	0.063 (0.045)
Natural resources	0.010 (0.017)	0.010 (0.017)	0.009 (0.017)	0.073 (0.080)	0.080 (0.117)	0.081 (0.093)
Pop density	0.002 (0.004)	0.002 (0.004)	0.002 (0.004)	0.006 (0.026)	0.007 (0.027)	0.008 (0.028)
Urban pop	-0.017 (0.033)	-0.020 (0.033)	-0.020 (0.033)	-0.108 (0.110)	-0.150 (0.136)	-0.135 (0.122)
Military spending	0.074 (0.089)	0.058 (0.090)	0.063 (0.090)	0.276 (0.590)	0.262 (0.554)	0.303 (0.484)
Neighbors democ	-1.387 (1.706)	-1.519 (1.704)	-1.502 (1.705)	-5.161 (7.378)	-6.464 (8.183)	-6.574 (11.049)
_cons	7.120 (4.692)	7.066 (4.664)	6.395 (4.658)			
N	2355	2355	2355	2355	2355	2355

Standard errors in parentheses  
\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

TABLE 3.28: THE IMPACT OF GLOBAL AID ON DOWNTURNS - TOBIT-FE (LINEAR-LOG SPECIFICATION, BASED ON DEFLATED AID COMMITMENTS) - MODEL 1

	FE			Tobit-FE		
	(1) Dev. Aid	(2) Dem. Aid (ED)	(3) Dem. Aid (LD)	(4) Dev. Aid	(5) Dem. Aid (ED)	(6) Dem. Aid (LD)
	upturn	upturn	upturn	upturn	upturn	upturn
Aid	0.050** (0.023)	0.039 (0.024)	0.028 (0.023)	-0.287 (0.211)	-0.152 (0.126)	-0.088 (0.083)
GDP	0.302 (0.285)	0.348 (0.284)	0.378 (0.284)	0.892 (1.011)	0.606 (1.075)	0.564 (1.364)
GDP growth	0.026*** (0.008)	0.026*** (0.008)	0.026*** (0.008)	-0.154 (0.094)	-0.152* (0.089)	-0.153* (0.088)
Natural resources	-0.004 (0.009)	-0.004 (0.009)	-0.004 (0.009)	0.001 (0.034)	0.004 (0.051)	0.004 (0.037)
Pop density	-0.002 (0.001)	-0.002* (0.001)	-0.002* (0.001)	0.012** (0.005)	0.013** (0.006)	0.012** (0.006)
Urban pop	-0.020 (0.020)	-0.019 (0.020)	-0.019 (0.020)	0.158* (0.087)	0.156 (0.104)	0.155 (0.108)
_cons	-2.431 (2.532)	-2.645 (2.528)	-2.822 (2.524)			
N	3024	3024	3024	3024	3024	3024

Standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

TABLE 3.29: THE IMPACT OF GLOBAL AID ON DOWNTURNS - TOBIT-FE (LINEAR-LOG SPECIFICATION, BASED ON DEFLATED AID COMMITMENTS) - MODEL 2

	FE			Tobit-FE		
	(1) Dev. Aid upturn	(2) Dem. Aid (ED) upturn	(3) Dem. Aid (LD) upturn	(4) Dev. Aid upturn	(5) Dem. Aid (ED) upturn	(6) Dem. Aid (LD) upturn
Aid	0.050** (0.025)	0.046* (0.027)	0.032 (0.025)	-0.252 (0.250)	-0.199 (0.135)	-0.151 (0.096)
GDP	0.627* (0.329)	0.693** (0.326)	0.730** (0.325)	0.615 (1.347)	0.369 (1.054)	0.367 (1.063)
GDP growth	0.024** (0.010)	0.023** (0.010)	0.024** (0.010)	-0.087** (0.044)	-0.085* (0.046)	-0.086 (0.056)
Natural resources	-0.015 (0.011)	-0.014 (0.011)	-0.015 (0.011)	0.030 (0.031)	0.031 (0.034)	0.033 (0.041)
Pop density	-0.003 (0.003)	-0.003 (0.003)	-0.003 (0.003)	0.014 (0.010)	0.014 (0.011)	0.013 (0.010)
Urban pop	-0.016 (0.021)	-0.017 (0.021)	-0.017 (0.021)	0.238** (0.100)	0.244*** (0.094)	0.246** (0.112)
Military spending	-0.143** (0.057)	-0.145** (0.058)	-0.143** (0.058)	0.532 (0.510)	0.515 (0.471)	0.483 (0.477)
Neighbors democ	-0.975 (1.094)	-1.018 (1.095)	-1.008 (1.095)	0.697 (2.795)	0.890 (3.114)	1.187 (2.926)
_cons	-4.597 (3.009)	-4.916 (2.997)	-5.150* (2.992)			
N	2355	2355	2355	2355	2355	2355

Standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

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## RÉSUMÉ

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Cette thèse propose une analyse empirique des effets de l'aide étrangère sur différents aspects de la gouvernance dans les pays bénéficiaires, à savoir les élections, la corruption et la démocratie. Le premier chapitre se concentre sur les résultats électoraux en Ouganda, le deuxième chapitre se concentre sur l'aide de la Banque mondiale et la corruption dans les firmes, et le dernier chapitre se concentre sur l'aide et la démocratie au niveau des pays dans le monde. Les résultats ont montré que l'aide a des impacts différents sur différents aspects de la gouvernance. Je trouve des preuves de l'utilisation de l'aide comme mécanisme d'achat de votes au profit du titulaire en Ouganda, mais l'aide multilatérale semble réduire la corruption au niveau de l'entreprise, et l'aide semble également favoriser la démocratie, bien qu'avec un très petit effet.

## MOTS CLÉS

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Aide internationale, gouvernance, élections, vote, corruption, démocratie, firme, international, développement, pays en développement

## ABSTRACT

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This thesis aims to empirically investigate the effects of foreign aid on different aspects of governance in recipient countries, namely elections, corruption, and democracy. The first chapter focuses on electoral outcomes in Uganda, the second chapter focuses on World Bank aid and corruption in firms, and the last chapter focuses on aid and country-level democratic outcomes globally. The results shown that aid has different impacts on different aspects of governance. I find evidence of aid used as a vote-buying mechanism to benefit the incumbent in Uganda, but multilateral aid seems to reduce corruption at the firm-level, and aid also seems to foster democracy albeit with a very small effect.

## KEYWORDS

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Foreign aid, governance, elections, voting, corruption, democracy, firms, subnational, development, developing countries

