

# The Political Economy of Aid Allocation in Africa: Evidence from Zambia

*Takaaki Masaki*

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## **Abstract:**

Does electoral politics influence the allocation of foreign aid within aid-recipient countries? Despite the abundance of studies on the determinants of aid allocation, the existing literature offers little leverage on this question, largely due to the paucity of data on the locations of donor-funded projects. In this essay, I utilize newly available data on the geographical distribution of development projects in Zambia to test whether electoral incentives shape aid allocation at the sub-national level. Challenging a widespread belief in African politics that autocrats reward their own core supporters with more resources, I argue—and find strong evidence—that when they have limited knowledge about citizens' voting preferences, political elites distribute more donor projects to districts where opposition to the ruling party (or incumbent president) is strong. In contrast, I find that fewer projects are allocated to districts where the ruling party (or incumbent president) enjoys greater popularity; and districts where a majority of voters share the ethnicity of the incumbent president.

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**Keywords:** Foreign Aid, Distributive Politics, Development Policy, Swing Voters

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AidData – a joint venture of the College of William and Mary, Development Gateway and Brigham Young University – is a research and innovation lab that seeks to make development finance more transparent, accountable, and effective. Users can track over \$40 trillion in funding for development including remittances, foreign direct investment, aid, and most recently US private foundation flows all on a publicly accessible data portal on AidData.org. AidData's work is made possible through funding from and partnerships with USAID, the World Bank, the Asian Development Bank, the African Development Bank, the Islamic Development Bank, the Open Aid Partnership, DFATD, the Hewlett Foundation, the Gates Foundation, Humanity United, and 20+ finance and planning ministries in Asia, Africa, and Latin America.

# Contents

<b>Abstract</b> . . . . .	<b>1</b>
<b>1. Introduction</b> . . . . .	<b>4</b>
<b>2. Theoretical Background</b> . . . . .	<b>6</b>
2.1 The Political Economy of Foreign Aid . . . . .	6
2.2 The Logic of Aid Allocation . . . . .	8
2.3 The Politics of Aid in Zambia . . . . .	13
<b>3. Data and Models</b> . . . . .	<b>15</b>
<b>4. Results</b> . . . . .	<b>19</b>
4.1 Determinants of the Number of Donor Projects . . . . .	19
4.2 Does Aid Influence Electoral Results? . . . . .	22
<b>5. Conclusion</b> . . . . .	<b>24</b>
<b>Appendix</b> . . . . .	<b>26</b>
1 Descriptive Statistics . . . . .	26
2 Numerical Results Used for Figure 3 . . . . .	28
3 Using Jablonski's Specification of Aid Distribution . . . . .	30
4 Robustness Checks . . . . .	32
5 Numerical Results Used for Figure 5 . . . . .	33
<b>References</b> . . . . .	<b>34</b>

# 1. Introduction

*Workers are finishing the white marble facade of the three-story official residence of President Mobutu Sese Seko, which overlooks a city of 35,000 people that has sprung up in the 24 years since he seized power... Soon a huge dam will provide electricity to the whole complex. It was built over objections by the World Bank that it threatens river navigation vital for the neighboring Central African Republic.*

–July 6, 1989, *Chicago Tribune* Correspondent Tom Masland

Every year, billions of dollars worth of international development assistance flow into Africa with little progress in alleviating poverty. Existing studies are indeed far from conclusive about whether foreign aid has helped growth on the continent.<sup>1</sup> If anything, there is some evidence that foreign aid deteriorates governance, including bureaucratic quality, the rule of law, and state institutions (Knack 2001; Brautigam and Knack 2004; Heller 1975; Cashel-Cardo and Craig 1990; Khan and Hoshino 1992; Svensson 2000; Moyo 2009). As some scholars claim, international aid assistance can prop up leaders (be they democratic or authoritarian), providing them with additional sources of finance to distribute patronage, buy off political support, and consolidate their power (Briggs 2012; Tripp 2013; Morrison 2009; Jablonski 2014). Although this line of argument is sound and has gained currency in the literature, very little is known about how aid actually becomes allocated once it is in the hands of political leaders in Africa. How do African leaders utilize foreign aid to stay in power? What factors affect this aid allocation process at the sub-national level? Do electoral incentives influence the distribution of aid?

I argue that donor-funded projects are public goods that political leaders can allocate to their constituencies to garner electoral support. A widespread belief about African politics is that the government disperses its state resources to reward its core supporters through existing clientelistic or ethnic networks (Kasara 2007; Weghorst and Lindberg 2013). Challenging this conventional wisdom, I argue that the logic of public goods allocation defies this pattern when leaders have only limited knowledge about citizens' voting preferences and/or cannot specifically target distributive goods to individual voters, as exemplified by the allocation of donor projects. Under these conditions, instead of materially rewarding its core supporters, the government

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<sup>1</sup>For instance, although Burnside and Dollar (2000, 847) famously find that "aid has a positive impact on growth in developing countries with good fiscal, monetary, and trade policies but has little effect in the presence of poor policies," their findings are challenged by various other studies (Easterly 2003; Easterly et al. 2004; Roodman 2007).

seeks to have more development projects in those districts where electoral returns to development efforts are expected to be high—that is, districts with many “weak opposers” or swing voters whose political support for opposition parties can be swayed depending on the government’s development rewards. Along the same line, I also claim that autocrats have less incentives to give public goods (or donor projects) to districts with a high concentration of government loyalists or areas where a majority of voters share the ethnicity of the incumbent president. Since they seek to avoid wasting their resources in districts where they already enjoy strong electoral support, political elites instead focus development efforts in opposition strongholds.

To test my arguments and hypotheses, I collected and analyzed geospatial data on donor projects financed by the World Bank, African Development Bank (AfDB), and Japan International Cooperation Agency (JICA) in Zambia for the period between 1991-2010.<sup>2</sup> There are several reasons why I select Zambia for this study. First, the political landscape of Zambia has changed drastically for the past two decades. While the Movement for Multiparty Democracy (MMD) dominated the first two elections, its grip on power slipped since the 2001 election where the MMD lost a majority in parliament and its presidential candidates continued to face formidable opposition thereafter. These political dynamics make Zambia an ideal case for exploring how elections under autocracy have influenced the way the government allocates donor projects. Second, Zambia is highly dependent on foreign aid. Indeed, “[d]uring 2000–05, aid accounted for an average 43 per cent of the total state budget, having peaked at 53 per cent in 2001” (Wohgemuth and Saasa 2008, 3). Due to the government’s limited capacity to cater to its citizens’ needs, political leaders see development assistance as an alternative source of finance to improve the chance of winning elections (Fraser 2009).

By studying the pattern of allocation of donor-funded projects in Zambia, not only does this paper provide insight into the politics of foreign aid at the sub-national level, but it also contributes to the literature on distributive politics in sub-Saharan Africa. As Weghorst and Lindberg (2013, 717) highlight, there is a “near consensus in African politics on clientelism as the only electoral strategy” based on the untenable assumption that African voters are largely not persuadable (as their voting choice is predetermined by “ethnic cleavages” or “entrenched clientelistic ties”). However, as Africa’s multiparty elections have become increasingly competitive (Rakner and van de Walle 2009), this prevailing view fails to capture the sophistication of voters and an important role that opposition parties (or opposition candidates) play in shaping the

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<sup>2</sup>The AidData Center for Development Policy has graciously provided me with its newly available data set on the World Bank projects for the period of 2000-2010. I have expanded it to cover all the donor projects financed by the World Bank, AfDB, and JICA for the period of 1991-2010 in Zambia following the same coding scheme as adopted by the AidData Center.

government's distributive policy. Indeed, a number of empirical studies show how African leaders sometimes choose *not* to reward their own core supporters or voters from their own ethnic group (i.e., Kasara 2007; Green 2010; Banful 2011; Kramon and Posner 2013). Building on these recent studies on distributive politics in Africa, this paper explicates how electoral incentives shape the distributive logic of aid allocation.

In the following section (Section 2), I provide a theoretical overview of the intersection between politics and foreign aid and explain the logic of aid allocation. Section 3 describes data and econometric models used to evaluate the impact of electoral competition on the allocation of aid in Zambia. Section 4 discusses the empirical results of my statistical analysis. Section 5 concludes with some key political and economic implications of the results generated from my analysis.

## 2. Theoretical Background

### 2.1. The Political Economy of Foreign Aid

For the past five decades, sub-Saharan Africa alone received more than 1 trillion dollars worth of foreign aid from rich countries and international financial institutions such as the World Bank and AfDB.<sup>3</sup> The amount of development finance flowing into the continent has been steadily increasing every year. However, there is a growing sense of skepticism among scholars and practitioners surrounding the effectiveness of aid in facilitating economic development in Africa (Knack 2001; Brautigam and Knack 2004; Heller 1975; Cashel-Cardo and Craig 1990; Khan and Hoshino 1992; Moyo 2009). Despite the fact that for the past two decades, African economies have been growing at a pace never seen before, one in every two Africans today still lives in poverty (World Bank 2013). There is a voluminous literature on the effect of foreign aid on economic growth, but empirical support for the relationship between aid and growth is mixed, with some studies (Hansen and Tarp 2001; Dalgaard et al. 2004; Clemens et al. 2011; Arndt et al. 2009) finding a positive relationship between them; and others (Boone 1996; Easterly 2003; Easterly et al. 2004; Roodman 2007; Rajan and Subramanian 2008) showing no significant effect. Still other scholars argue that the effect of foreign aid on growth depends on various other factors—such as good economic policies (Burnside and

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<sup>3</sup>According to the DAC OECD database, roughly 1.3 trillion dollars worth of aid has flowed into the region from 1960-2012.

Dollar 2000), the degree of export price shocks (Collier and Dehn 2001), the experience of past conflicts (Collier and Hoeffler 2004), some exogenous environmental factors (Guillaumont and Chauvet 2001), the strategic importance of an aid-recipient country for donor countries (Bearce and Tirone 2010), or the degree of personalism that characterizes domestic politics in aid-recipient countries (Wright 2010).

Aside from the lack of clear evidence for the link between aid and economic development, some scholars argue that the potential, positive economic dividends of foreign aid are outweighed by their negative effects on aid-recipient countries. Moyo (2009) famously claims that foreign aid has fueled corruption, created market distortions, and perpetuated the vicious cycle of aid dependency in Africa. Indeed, studies attesting to the potential negative effects of aid on governance and state institutions abound. Brautigam and Knack (2004), for instance, argue that an excessive number of development projects commissioned by international donors siphon off qualified workers from the civil service sector, grant political elites “exceptional resources for patronage and many fringe benefits,” and sap the incentive for tax collection (Brautigam and Knack 2004, 263). Svensson (2000) also finds that foreign aid leads to more corruption, particularly in countries where various social groups vie for resources.

Along the same line, Morrison (2007; 2009) and Kono and Montinola (2009) claim that foreign aid helps incumbent political elites by providing them with additional sources of finance to tighten their grip on power. This strand of argument rests on the assumption that aid is fungible, meaning that foreign aid serves purposes that donors do not necessarily intend to support (Feyzioglu et al. 1998; Morrison 2007; McGillivray et al. 2000). As McGillivray et al. (2000, 423) highlight, “[aid] recipients tend to treat aid as general budgetary support, irrespective of whether the donors try to allocate the aid for specific uses.” The existing literature finds that aid fungibility has negative economic implications as aid inflows can allow the recipient government to consume more without raising taxes, thereby undermining fiscal discipline and inflating government consumption without inducing greater investment (Boone 1996; McGillivray and Ouattara 2005). It is important to note, however, that aid fungibility itself does not necessarily imply corruption or patronage because the extra sources of finance made available with external development assistance can be invested in productive sectors whose benefits spread to wide segments of the population (McGillivray et al. 2000).

Perhaps more concerning are some reports suggesting that the distribution of donor finance is subject to political manipulation and biased for that reason. For instance, a report suggests that the Ethiopian government blocked some villages from access to “basic food, seed and fertilizer [financed by international donors] for failing to support Prime Minister Meles Zenawi” (BBC 2011, para. 3). Similarly, there are some

episodes that President Mugabe and his party (ZANU-PF) in Zimbabwe strategically favored their own supporters with food aid and fertilizers (Human Rights Watch 2003). In Kenya, it is reported that the Kikuyu under Daniel arap Moi (1978-2002) and the Kalenjin under Mwai Kibaki (2002-) received disproportionate amounts of public funds, including development assistance from foreign donors (Wrong 2009). All these reports and studies attest to the possibility that political and ethnic dynamics feed into the calculus of governments' decisions about the allocation of development projects.

Despite some anecdotal evidence that the pattern of aid allocation is politically manipulated, there are surprisingly few scholarly efforts to systematically analyze how foreign aid is allocated at the sub-national level. Most of the existing studies on the factors that shape the pattern of allocation of foreign aid are cross-national in nature and provide little leverage on the question of what factors (be they political, economic, or otherwise) explain sub-national variations in the distribution of donor finance. Furthermore, a small, albeit rapidly growing, literature on this theme applies the existing theories of ethnic-based distributive politics to explain the pattern of allocation of aid finance within African countries. For instance, studying the pattern of donor-funded projects in Kenya, Jablonski (2014) finds that the government strategically allocates aid finance to its core supporters, especially those who share the same ethnicity as their presidents. Similarly, Moser (2008) shows that fewer projects are allocated to districts where ethnic groups opposing to the ruling party are dominant.

Although these studies provide useful insight into the mechanism through which political elites use development finance as a source of patronage to garner support, I argue that ethnic politics plays only a partial role in shaping the pattern of allocation of donor projects. In what follows, I posit that instead of rewarding their own supporters or co-ethnic voters, the ruling incumbents allocate donor projects to influence swing voters to buy their votes. Somewhat surprisingly, the existing literature has little to say about the role of African swing voters in shaping the government's decisions over resource allocation. Indeed, swing voting is "an empirical anomaly" in African politics largely due to the prevailing assumption that "voters are rarely considered persuadable" (Weghorst and Lindberg 2013, 717). In Western liberal democracies where elections are assumed to be free and fair and, more crucially, competitive, targeting state resources, such as infrastructure projects, grants, or other types of income transfers, to swing voters is considered a common electoral strategy (i.e., Bickers and Stein 1996; Denmark 2000). Today, sub-Saharan Africa is no different. In particular, my political model of aid allocation argues that when they lack information about their citizens' voting preferences, political elites focus their development efforts in opposition strongholds. In so doing,



they seek to buy votes from potential swing voters who lean towards opposition parties but may support the government depending on its development rewards.

## 2.2. The Logic of Aid Allocation

My theory of aid allocation starts with the assumption that the aid-recipient government has significant discretionary power to decide the beneficiaries (or targeted populations) of donor projects. As Jablonski (2014) highlights, this assumption holds true in most cases. The World Bank, for instance, grants the line ministries of an aid-recipient government the responsibility for deciding the specific details of projects, including project sites and how much aid should be spent in each location.<sup>4</sup> Furthermore, the bureaucratic system in Africa, due to its lack of resources to plan and implement development projects, is often under the control of the executive body and the president (Saasa 2010). The same pattern holds true for bilateral donors. For example, JICA—a development agency financed by the Japanese government—initiates its development projects based on “requests for aid that are submitted by the government of the recipient country through diplomatic channels” (Japan International Cooperation Agency 2001, 114). These requests usually specify the target places of a project. JICA then conducts a basic study to finalize project sites from the list of locations created by the aid-recipient government.<sup>5</sup> These decision making structures leave room for the aid-recipient government to determine and potentially manipulate the distribution of aid in its own favor.

Given that the aid-recipient government has predominant authority over the distribution of aid, what then dictates its logic of aid allocation? Donor projects are public goods that political elites can use as leverage to influence voters’ voting choice. Under the assumption that these political leaders are vote-maximizing, it is of their strategic interest to allocate donor projects in ways that maximize electoral returns to their development efforts. The existing literature on distributive politics offers two strands of competing arguments about how political actors allocate state resources for electoral purposes: the core voter model and the swing voter model. The core voter model posits that the government targets distributive goods to the incumbents’

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<sup>4</sup>A World Bank staff in Tanzania who was working in the water sector, with whom I interviewed in August 2013, explicitly stated that “The World Bank provides financing. And the client, as we call it, or the government then basically decides where they want to spend the money.”

<sup>5</sup>For example, the Project for Groundwater Development in Luapula Province, which was initiated in 2007, the Government of Zambia requested the construction of boreholes for 355 villages in 7 districts. Of these villages, JICA assessed 289 villages to be feasible for project implementation, which then became actual project sites.

strongholds, reflecting the idea of patron-and-client relationships where patrons (or incumbent politicians in this context) seek to provide various types of material rewards to their clients (or their constituencies) in exchange for the latter's loyalty (Cox and McCubbins 1986; Weinstein 2011; Jablonski 2014; Briggs 2012). In contrast, the swing voter model posits that the government targets its distributive goods to swing voters "who [are] not solidly committed to one candidate or the other as to make all efforts of persuasion futile" (Mayer 2007, 309; Lindbeck and Weibull 1987; Magaloni 2006; Moser 2008; Albertus 2012).

While each model has its merits and limitations, it is undeniable that clientelism and ethnicity still dominate so much of academic discourse surrounding African distributive politics (Posner 2005; Kasara 2007; Weghorst and Lindberg 2013). As Weghorst and Lindberg (2013) argue, African voters are often assumed to be non-persuadable based on the conventional wisdom that their voting preference is fixed along ethnic lines or based on clientelistic ties. There are in fact a number of studies on this theme that explicitly test the linkage between ethnicity and the allocation of distributive goods in the African context (i.e., Posner and Simon 2002; Kasara 2007; Franck and Rainer 2012; Kramon and Posner 2013; Jablonski 2014). However, as elections in sub-Saharan Africa have become increasingly competitive over time (Rakner and van de Walle 2009), the political landscape in the region today is much more fluid than decades ago when one party dominated and no viable opposition parties existed. For instance, in roughly one-third of countries in sub-Saharan Africa, no party held a majority of seats in parliament in 2012, attesting to an increasingly contested nature of African politics. Instead of simply playing ethnic cards or relying on clientelistic networks, some opposition parties have successfully adopted populist rhetoric to appeal to urban voters and mobilized their support to challenge the ruling party, as seen in the cases of Zambia, Botswana, Kenya, and South Africa, just to name four (Resnick 2012).

Departing from a static view of African politics where voters are assumed to be non-persuadable, I argue that swing voting now plays an increasingly important role in shaping the government's distributive policy in sub-Saharan Africa. Unlike the strategy of clientelism—which rests on the *personalized* networks of interdependence where patrons give private goods to their voters, such as cash, fertilizers, or food, in exchange for the latter's political loyalty (Weghorst and Lindberg 2013, 721)—development projects financed by donors are in most cases not private goods that go directly into voters' pockets. Instead, they provide collective/public goods that affect the welfare or development of a certain community, district, or region, through better access to water, electricity, roads, railroads, ports, the internet, and so forth. Recent studies have revealed that African swing voters place more weight on collective goods than private rewards as

key determinants of their political support. Young (2009), for instance, shows that Zambian voters tend to see the delivery of local public goods, not personal gifts, as one of the core responsibilities of members of parliaments. Sharing this view, Weghorst and Lindberg (2013, 731-2) argue that “even in highly clientelistic environments, incumbents who wish to get reelected should seek to meet voter demands, including delivering collective goods.”

From the rationalist perspectives of distributive politics, there is little theoretical ground to assume that leaders are motivated to provide public/collective goods to their core supporters. First of all, as mentioned above, collective goods, such as those provided by donor projects, cannot be used as patronage to personally reward politically connected individuals. Furthermore, given that state resources are limited, it is not clear why the aid-recipient government desires to waste its resources on core supporters who may vote for their own party regardless of any material or development rewards (Stokes 2005; Casas 2012). Under multiparty electoral systems, if the incumbents seek to expand their political clout, I argue that they distribute their resources in a way that maximizes their votes to further consolidate their power. In this context, one way to do exactly that is to target donor-funded development projects to districts with many “weakly opposed” voters who may switch their allegiance from opposition parties to the ruling incumbents conditional on the government’s development investment in their communities.<sup>6</sup> As defined by Stokes (2005, 320), weak opposers are swing voters who “prefer to vote against [the ruling party] in the absence of a reward, but prefer to vote for [the incumbents] if doing so brings them a reward.”

However, one of the key issues that autocratic leaders face in targeting resources to such weakly opposed voters is that they do not necessarily know where those potential swing voters are located (Albertus 2012). This is particularly true in Africa where most political parties are still young, and “[political elites] are poorly informed about their potential electoral constituencies” (Bleck and van de Walle 2013, 1396). According to Casas (2012, 12), when politicians lack information about the voting preferences of their citizens, as in many African countries where democratic systems are still weak and party affiliations are highly fluid, the optimal strategy for the incumbents is to target distributive goods to “districts with fewer loyalists (i.e. opposition strongholds).” This logic is straightforward and sound. If it is true that the incumbents seek to reward as many weakly opposed voters as possible without deep knowledge about where they are actually located, they strategically allocate more development projects to opposition strongholds or districts with

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<sup>6</sup>See Casas (2012) for the formal treatment of this argument.

more electoral support for opposition parties, which are expected to have more potential weak opposers than electorally “safe” districts with predominant support for the ruling party.

It is important to note that this line of argument somewhat differs from a typical application of the swing voter model, which is often equated to the electoral strategy of distributing targetable goods to swing *districts* in parliamentary elections or U.S. presidential elections. Providing goods to swing districts where the ruling party marginally secure seats is an attractive strategy for the incumbents who seek to maximize the number of seats in parliament. However, parliamentary power is still weak in Africa because an excessive amount of political power is often vested in the presidency. What is at stake in African elections is the total number of popular votes for presidential candidates. In this context, my theory predicts that the vote-maximizing incumbents focus their development efforts in areas where they have many weak opposers whose votes can be bought with material rewards. There are a number of empirical studies supporting the argument that African leaders allocate more goods to opposition strongholds or districts where opposition parties enjoy greater popularity (i.e., Fjeldstad et al. 2010; Banful 2011; Green 2010). Banful (2011, 1175), for instance, finds that in Ghana, “[h]igher numbers of vouchers were targeted to districts that the ruling party had lost in the previous presidential elections, and more so in the districts that had been lost by a higher margin.” Thus, I hypothesize that:

*Hypothesis 1:* the incumbents allocate *more* donor-funded development projects to districts where opposition to the ruling party or its presidential candidate is strong.

It is important to note that this line of argument somewhat differs from a typical application of the swing voter model, which is often equated to the electoral strategy of distributing targetable goods to swing *districts* in parliamentary elections or U.S. presidential elections. Providing goods to swing districts where the ruling party marginally secure seats is an attractive strategy for the incumbents who seek to maximize the number of seats in parliament. However, parliamentary power is still weak in Africa because an excessive amount of political power is often vested in the presidency. What is at stake in African elections is the total number of popular votes for presidential candidates. In this context, my theory predicts that the vote-maximizing incumbents focus their development efforts in areas where they have many weak opposers whose votes can be bought with material rewards. There are a number of empirical studies supporting the argument that African leaders allocate more goods to opposition strongholds or districts where opposition parties enjoy greater popularity (i.e., Fjeldstad et al. 2010; Banful 2011; Green 2010). Banful (2011, 1175), for instance,

finds that in Ghana, “[h]igher numbers of vouchers were targeted to districts that the ruling party had

Along the same line, if the incumbents seek to avoid investing their resources in their own strongholds (because core voters may vote for the ruling party regardless of the incumbents’ performance), districts where the ruling incumbents enjoy greater popularity should receive *less* donor finance than districts where opposition parties hold sway. I also extend this argument to the issues of coethnic voting. As Controy-Krutz (2013) claims, since rural voters often have limited information about their candidates or political parties in terms of their policy positions and qualifications, they often use ethnicity as “informational shortcuts” to assess the credibility of political contestants. In turn, since African leaders can rely on their ethnic origins to garner support from coethnic voters who may vote for the candidates from their own ethnic group regardless of their performance to bring back development investment, these candidates have little incentives to materially reward them (Kasara 2007). These arguments yield the following hypotheses:

*Hypothesis 2:* the incumbents allocate *fewer* donor-funded development projects to districts where they enjoy greater political support.

*Hypothesis 3:* the incumbents allocate *fewer* donor-funded development projects to districts with more coethnic voters.

## 2.3. The Politics of Aid in Zambia

Zambia is an ideal country to explore the political determinants of aid allocation for several reasons. As mentioned earlier, Zambia’s democratic transition started in the early 1990s, and yet the country still vacillates between electoral democracy and autocracy. These situations are reflected in the fact that the Freedom House still rates Zambia as “Partly Free” after two decades since its transition to the multiparty system. Since a peaceful electoral turnover in the 1991 election—which put an end to the one-party rule of the United National Independence Party (UNIP), Zambia has held four parliamentary elections (in 1996, 2001, 2006, and 2011) and five presidential elections (in 1996, 2001, 2006, 2008, and 2011). These elections have become increasingly competitive over time, as shown in Table 1. While the MMD won well over two-thirds of votes in the first two elections held in 1991 and 1996, the party gained less than 30% of popular votes in the 2001 general elections and has failed to secure a majority of seats since then.

Zambia’s political landscape has shifted away from a one-party dominant to a more competitive electoral system over time. As Burnell (2002, 1106) claims, Zambia under the Chiluba regime (1991-2001) was

**Table 1.** Vote Shares by Party for the Past Zambian elections, 1991-2011

Election Year	Presidential Vote Shares by Party (%)				
	MMD	UNIP	ZDC	UPND	PF
1991	75.8	24.2	–	–	–
1996	72.6	–	12.7	–	–
2001	29.2	10.1	–	27.2	3.4
2006	43.0	–	–	25.3	29.4
2008*	40.6	–	–	20.0	38.6
2011	36.2	0.4	–	18.5	42.9
	Parliamentary Seat Shares by Party (%)				
	MMD	UNIP	ZDC	UPND	PF
1991	83.3	16.6	–	–	–
1996	87.3	–	1.3	–	–
2001	46.0	8.6	–	32.6	0.6
2006	48.6	–	–	17.3	28.6
2011	36.6	–	–	18.6	40.0

\*A presidential election was held following the death of President Levy Mwanawasa.

Sources: The Electoral Commission of Zambia, Rakner (2012).

“almost a *de facto* one-party state” where too much power was concentrated in the MMD and the president in particular. Zambian politics took a drastic turn when President Chiluba pursued an unconstitutional third term in office leading up to the 2001 general elections. This political move spurred board-based mass protests and plunged Chiluba’s popularity into abyss. As a result, even the MMD parliamentarians distanced themselves from Chiluba by striking down his pursuit of a third term. Chiluba eventually handpicked Levy Mwanawasa as his successor; however, Mwanawasa captured only “19.45% of the registered electorate” (or roughly 30% of the casted votes) in the 2001 presidential election (Ibid., 1107). Meanwhile, the MMD’s main opposition, the United Party for National Development (UPND), and its presidential candidate, Anderson Mazoka, seized a little less than 30% of the total votes, making the 2001 elections a very close match.

From the 2006 general elections onward, the Patriotic Front (PF), under the leadership of Michael Sata, became the main competitor to the MMD. Sata and his party successfully adopted a populist strategy for appealing to low-income constituencies in urban areas who were disgruntled with a number of anti-urban measures and neoliberal economic reforms adopted by the MMD and Mwanawasa (Resnick 2012). Sata’s popularity expanded rapidly in the Copperbelt or Lusaka provinces, where major cities were concentrated, while he also garnered extensive support from “predominantly Bemba-speaking rural regions, including Luapula and Northern Provinces” (Ibid., 1363). Indeed, as shown in Table 1, Sata obtained a larger share of popular votes in each round of elections, capturing 29.4% in 2006, 38.6% in 2008, and 42.9% in 2011, while the PF also drastically increased its parliamentary seats, further curbing the MMD control.

Throughout these dynamic political changes, international donors have maintained strong presence in Zam-

bia. Although the country's reliance on external financial support has diminished significantly in recent years, foreign aid has accounted for a significant proportion of the national budget (Wohlgemuth and Saasa 2008). It is also well-documented that the decision-making process surrounding the allocation of aid in Zambia is highly politicized. Line ministries plan and determine the specific details of development projects, which are later examined, approved, and financed by the donors (United Nations 2002). However, "most Zambian ministries lack the financial and human resources to adequately research, analy[z]e, plan and implement policies," and they are ultimately subject to policy decisions made by the executive body (Saasa 2010, 9). The informal neopatrimonial system of the Zambian bureaucracy blurs the distinction between the public and private interests and allows domestic politics to directly influence policy decisions surrounding the allocation of donor-funded development projects.

There is indeed some anecdotal evidence that politics has shaped the way state resources, including donor finance, have been distributed in Zambia. For instance, during his one-party rule, Kenneth Kaunda had strategically allocated development projects to areas where the ruling party was unpopular (Bates 1976, 245). Furthermore, Whitfield (2009, 355) notes that the MMD used "famine relief programmes" and "rural development programs, both heavily dependent on donor support," as a political instrument to counter populist opposition forces. These episodes attest to the possibility that the allocation of aid in Zambia can be politically manipulated. However, it is not at all clear from these anecdotal stories to what extent political incentives skew the distribution of aid. In what follows, I carefully explore how electoral politics has influenced the government's strategy of aid allocation.

### **3. Data and Models**

To examine the impact of electoral competition on aid allocation, I use district-level data on development projects and electoral outcomes in Zambia for the 15-year period of 1996-2010. Strandow et al. (2011) have recently compiled a data set on the geographical locations of World Bank projects approved between 2000 and 2010 and AfDB projects that were active as of 2010. Following their coding scheme, I have expanded this newly available dataset by geocoding all donor projects financed by the World Bank, AfDB, and JICA in Zambia for the period of 1991-2010. These donors are selected based on data availability, which makes it possible to geocode their projects. Each of these three donors has been one of the largest aid contributors

in Zambia, altogether accounting for 24% of the total aid budget committed to the country for the period between 1996 and 2010.<sup>7</sup>

Based on project appraisal documents, completion reports, or other types of project documents, which are available online, I have identified geographical coordinates of each project.<sup>8</sup> It is important to note that these geographical locations correspond to areas where projects are *targeted*, meaning that project documents identify them as potential beneficiaries of the projects.<sup>9</sup> Only those projects whose targeted locations can be identifiable at the district level are included in my sample.<sup>10</sup> I use the date of project approvals as a point of reference to code when donor projects are targeted to certain areas.

Following Ohler and Nunnenkamp (2013) and Moser (2008), I estimate Poisson regression models where the dependent variable of interest is  $P_{i,t}$  which denotes the total number of donor-funded projects that district  $i$  receives in each five-year electoral cycle  $t$  (1996-2000, 2001-2005, and 2006-2010).<sup>11</sup> Poisson regressions are commonly used to analyze count data where the dependent variable takes only the values of positive integers.<sup>12</sup> Since preparations for donor projects usually take a few years before they become approved, I use the 5-year average panel data to allow for electoral outcomes to have any meaningful impact on the allocation of development finance. Given that there were 72 districts in Zambia during the period under study,<sup>13</sup> my panel data include 216 observations ( $3 \times 72 = 216$ ).<sup>14</sup>

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<sup>7</sup>This number is computed based on the AidData data set on aid commitment amounts, which is available at <http://aiddata.org/aiddata-research-releases> (Strandow et al. 2011).

<sup>8</sup>See Strandow et al. (2011) for details on how donor projects are geo-referenced. A project can cover multiple areas or districts. I code all those districts that the project crosses or covers as its potential beneficiaries. For instance, when an infrastructure project builds a road that goes through two or three different districts, each of these districts is coded in my sample to capture the geographical scope of the project.

<sup>9</sup>It is possible that some of these targeted areas may actually end up not benefiting from the projects at all either because the project plans have changed or funding has run out before completion. My data do not reflect these possibilities. However, the interpretations of my empirical findings remain the same because my research question has to do with how electoral incentives may skew the government's decisions over where to target donor finance.

<sup>10</sup>For all my analyses, I also exclude all those projects whose geographical coverage is nationwide because including them in my sample does not add any useful variation that either changes or improves my statistical inference.

<sup>11</sup>Jablonski (2014) uses the total committed amounts of aid at the constituency-level as the key dependent variable of his analysis. In most cases, however, it is not possible to compute from donors' documents or reports how much aid money actually went to each administrative unit when the given project covers multiple such units. Jablonski assumes that the total amount of aid committed to a project is distributed according to the population or land size of administrative units that it covers or equally across those units. However, such assumptions are practically unrealistic and likely to introduce significant measurement errors. That said, I estimate my empirical results using Jablonski's operationalization of allocation of aid finance in Appendix 3. Most of my main findings remain unchanged.

<sup>12</sup>Poisson regressions rely on the assumption that the conditional variance does not exceed the conditional mean (the assumption of over-dispersion). The likelihood ratio test fails to reject the null hypothesis that the errors do not exhibit over-dispersion, which assures me that Poisson regressions are appropriate models.

<sup>13</sup>In 2013, 17 new districts were created. During the whole period under study (1996-2010), the total number of districts and the administrative boundaries remained unchanged.

<sup>14</sup>I use district-level, not constituency-level, panel data in my analysis because most of the data used for this study are available only at the district level. For instance, the precision level of geospatial information on donor projects is often only available at the district level.



To test Hypothesis 1, I use the district-level share of votes for presidential candidates from the second-running opposition party in the last election as a measure of opposition support (which I label as OPPOSITION SUPPORT).<sup>15</sup> I focus on presidential electoral outcomes instead of parliamentary results because the former tend to carry much heavier weight than the latter in the African context (Weinstein 2011; Rakner and van de Walle 2009). This is based on the fact that a disproportionate amount of political power is vested in the president, as in the case of Zambia (Saasa 2010).<sup>16</sup> It is also important to note that I focus on the vote shares of the *leading* opposition candidates because these candidates pose the most immediate threat to the incumbents' grip on power. My theory predicts that given limited donor finance, MMD leaders used information from the last election to target their development efforts in areas that are expected to buy votes away from the main opposition candidates. More specifically, I hypothesize the effect of OPPOSITION SUPPORT on the number of projects to be positive, indicating that districts with a greater share of votes for the leading opposition candidate receive more donor projects.

Turning to Hypothesis 2, I use the share of votes for the MMD presidential candidates in the past election to measure the level of support for the incumbents (MMD SUPPORT). OPPOSITION SUPPORT and MMD SUPPORT are highly correlated but not perfectly collinear because there are always more than just two presidential candidates contesting popular votes. I expect the effect of MMD SUPPORT to be negative as I hypothesize that MMD leaders avoided investing donor resources in districts where they already enjoyed significant support. Finally, to test Hypothesis 3, I follow Jablonski (2014) in generating a binary variable (COETHNIC) that is coded 1 if the estimated proportion of coethnic voters in district  $i$  exceeds 50%, and zero otherwise.<sup>17</sup> According to Hypothesis 3, the effect of COETHNIC is expected to be negative. The incumbents have little incentives to distribute development resources to those districts where a majority of voters are part of the same ethnic group as the incumbent president because coethnic voters are likely to be non-persuadable, meaning that they would vote for candidates from their own ethnic group regardless of any development rewards brought by the government.

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<sup>15</sup>Thus, OPPOSITION SUPPORT refers to vote shares for Dean Mungomba (ZDC) in the 1996 election, Anderson Mazoka (UPND/UDA) in the 2001 election, and the average vote shares of Michael Sata (PF) in the 2006 and 2008 presidential elections.

<sup>16</sup>I also replicate my models using parliamentary electoral outcomes. See the Appendix for more details.

<sup>17</sup>To generate this variable, I use data from the 1990, 2000, and 2010 censuses and compute the average proportion of respondents in each district who identify themselves as part of the same ethnic group as the incumbent president. Following Kramon and Posner (2013), I generated COETHNIC based on language groups. More specifically, Frederick Chiluba is coded as a Bemba while Levy Mwanawasa is identified as a Lenje/Tonga. Mwanawasa died in June 2008 before completing his term in office, and Rupiah Banda, then Vice President, became acting President after his passing. Since Banda stayed in office only for three years, it is unlikely that his term in office drastically changed the government's distributive policy of aid allocation. For simplicity, I use Mwanawasa's ethnic background (Lenje/Tonga) to code COETHNIC for the post-Chiluba period (2001-2010).

A battery of control variables are included in my models. First, various demographic and economic factors may influence the destinations of donor projects. To account for this possibility, I control for the log of population density (POPULATION (Log)), literacy rate (LITERACY), and poverty rate (POVERTY).<sup>18</sup> These variables are also included to capture the impact of needs-based factors on the pattern of aid allocation. If donor projects are intended to alleviate poverty, more impoverished districts—characterized by a higher rate of poverty and a lower rate of literacy—should receive more aid. Further, since geographical accessibility may strongly influence the capability of the government (and international donors) to deliver projects, I include distance from the country’s capital (Lusaka) as an additional control (DISTANCE). I expect that the effect of DISTANCE to be negative given that it is usually more costly to deliver projects in peripheries. Additionally, the past experience of receiving aid is also likely to affect the number of future projects committed to a given district. Thus, I control for the sum of the number of past projects (lagged one period) allocated to each district.<sup>19</sup> Also included are province and electoral cycle dummies as controls for province-specific and temporal effects. Details on the specification of each variable and descriptive statistics are available in Tables A1 and A2 in the Appendix.

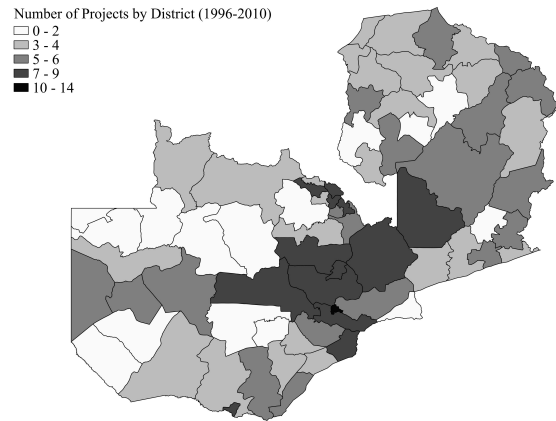
Figures 1 and 2 show the total number of donor projects approved between 1996 and 2010 and spatial variation in the average share of votes for the MMD presidential candidates over the past four elections during the same period, sorted by district. While it is difficult to infer anything conclusive from these figures, three patterns are worth highlighting. First, donor projects seem to be concentrated in urban districts where major cities are located—such as Kitwe, Ndola, Lusaka, and Livingston. Lusaka alone received the total of 14 projects, which is well above the national mean of 1.48 and makes the capital by far the largest recipient of donor projects across all 72 districts in Zambia. This pattern is consistent with Le and Winters (2001) who argue that aid tends to be biased towards urban areas where its expected impact is more direct, visible, and pronounced for facilitating growth. Greater demands for investment in infrastructure and other services, such as water and electricity, may also explain why a disproportionate number of projects are located in more densely populated urban areas.

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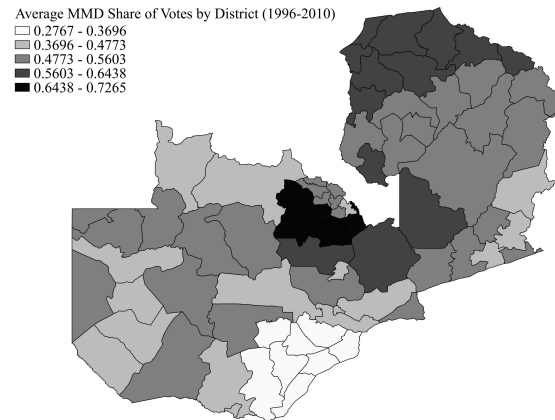
<sup>18</sup>Data on population density and literacy derive from the 1990, 2000, and 2010 censuses conducted in Zambia. I estimate the district-level proportion of literate citizens by computing the average proportion of “literate” respondents in each district in those surveys. For these two variables, I assume constant-yearly changes in the interval years from one census to the next and compute the 5-year averages for each electoral cycle.

<sup>19</sup>As described above, I have collected data on donor projects from 1991-2010 to track the flow of aid since Zambia’s official transition to a multiparty system. Since the lagged sum of the number of past projects is included in my regression models, the first 5-year period (1991-1995) is dropped from my sample.

**Figure 1.** Number of Donor-Funded Projects (1996-2010)



**Figure 2.** Vote Shares of MMD Presidential Candidates (1996-2010)



Second, Figure 1 also shows that development projects are concentrated in the Copperbelt province where major mines are located. These visible characteristic patterns of aid allocation accord with the fact that there are a number of donor projects specifically designed to build infrastructure for the mining industry, including the World Bank-financed Mine Township Service Project. Third, in Figure 2, the MMD presidential candidates on average held strong support in the Luapula and Northern provinces while their popularity had been comparatively low in the Eastern and Southern provinces. This spatial variation is explained partly by the popularity of former president Chiluba, a Bemba, among Bemba-speaking constituencies in the Luapula and Northern provinces. In contrast, many voters in the Tonga-dominant Southern Province turned their back on the MMD and instead overwhelmingly supported the UPND, which is often labeled as a “Tonga-party” (Erdmann 2007, 14). These regional-ethnic political dynamics are clearly reflected in Figure 2.

## 4. Results

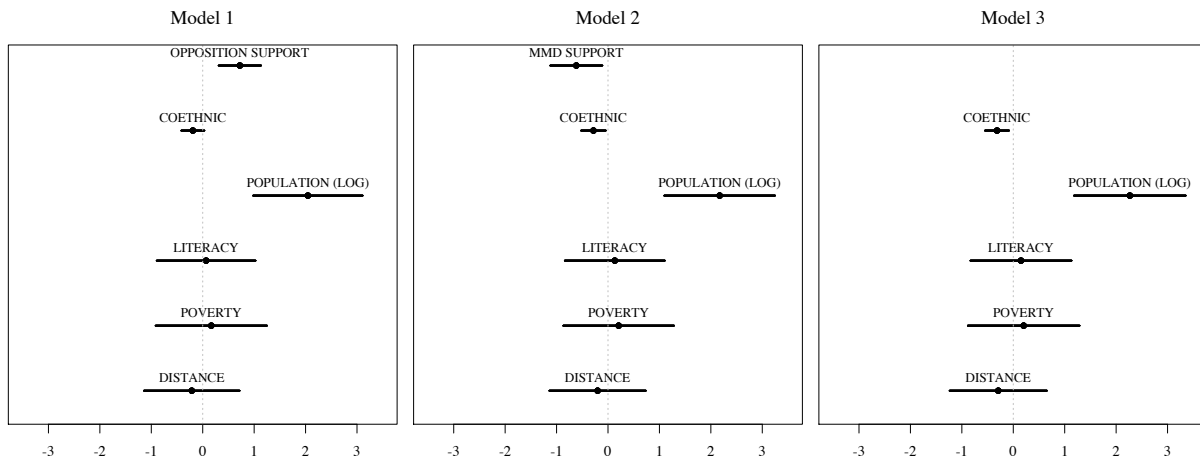
### 4.1. Determinants of the Number of Donor Projects

Figure 3 summarizes the main results.<sup>20</sup> I find strong evidence for the three hypotheses as laid out above. Model 1 tests the validity of Hypothesis 1 by evaluating whether OPPOSITION SUPPORT is positively

<sup>20</sup>Numerical results used to generate Figure 3 are reported in Table A3 in the Appendix.

correlated with the number of projects. As Hypothesis 1 predicts, the estimated effect of OPPOSITION SUPPORT on the number of donor-funded projects is positive and statistically significant, showing that support for the main opposition candidates *increases* the expected number of projects that a given district receives. Figure 4 shows the substantive effects of OPPOSITION SUPPORT on the number of donor projects. The upward slope indicates that the predicted number of donor projects increases as support for the leading opposition candidate rises. These results support my hypothesis that the incumbents have an incentive to allocate more donor projects to districts with a greater share of opposition votes.

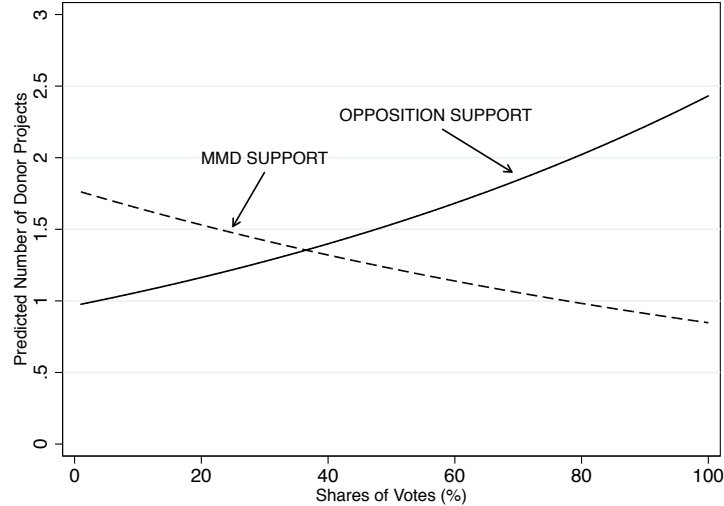
**Figure 3.** Poisson Regression Estimates: Determinants of the Number of Projects



Notes: The black dots denote the Poisson regression estimates for each variable. The black horizontal lines correspond to the 95% confidence intervals for each of the point estimates. All variables are standardized from zero to one.

Turning to the effect of MMD SUPPORT on aid allocation, I find that districts with a greater share of MMD support are expected to receive *fewer* projects. As shown in Model 2 in Figure 3, the estimated effect of MMD SUPPORT is negative and statistically significant. The dashed black line in Figure 4 shows the predicted number of donor projects at different values of MMD SUPPORT. It demonstrates that as the share of votes for the MMD candidates increases, the expected number of donor projects decreases. These results run counter directly to a key prediction of the core voter model that the incumbents provide more distributive goods—in this context, donor projects—to their strongholds or districts with a greater concentration of core supporters of the ruling incumbent. Lastly, to test the relationship between ethnicity and aid allocation (Hypothesis 3), I estimate the effects of COETHNIC on the number of donor projects in Models 1-3. As predicted by Hypothesis 3, the effects of COETHNIC are negative across all the models tested in Figure 3 and significant at the .10 level in Model 1 and at the .05 level in Models 2-3. More substantively, a shift from 0 to 1 in COETHNIC is expected to induce a 0.35 decrease in the expected number of donor projects

**Figure 4.** Estimated Number of Donor Projects



*Notes:* This figure is generated based on Models 1 and 2 in Figure 3. The black solid (or dashed) line represents the predicted number of projects at different values of OPPOSITION SUPPORT (or MMD SUPPORT). All other variables are set at means.

allocated to a given district (from 1.29 to 0.94) with everything else held at means. Overall, my empirical analysis finds that districts where a majority of voters share the ethnicity of the incumbent president receive *fewer* projects.

A few other important findings are in order.<sup>21</sup> POPULATION (Log) is the only demographic factor that positively impacts the number of projects. There is a clear indication that donor projects are concentrated in districts with a higher population density. In contrast, the effects of LITERACY and POVERTY are not significant across all the model specifications tested in Figure 3.<sup>22</sup> These results are concerning because they show little to no evidence that aid is targeted to poverty-stricken districts. One explanation for these results is that development efforts are focused on urban areas where literacy (or poverty) tends to be higher (or lower) than rural areas (Le and Winters 2001). The urban bias of resource allocation is well-documented in the literature on African politics (i.e., Bates 1981; Majumdar et al. 2004). The distribution of aid seems to follow the same pattern.

<sup>21</sup> See the full set of results reported in Table A3 in Appendix 2.

<sup>22</sup> Needless to say, LITERACY and POVERTY are both highly correlated ( $\hat{\rho}=-0.59$ ). This may explain why each of these variables turns out to be non-significant in my models. However, including each of them separately still finds no significant effect, thus showing that the needs-based factors play limited role in shaping the distribution of aid.

I subject my main findings to a number of different robustness tests.<sup>23</sup> I first re-estimate Models 1-3 reported in Figure 3 by including district-fixed dummies to account for the possibility that the time-invariant characteristics of districts confound the relationships between the vote variable and ethnicity, on the one hand, and the pattern of allocation of donor projects, on the other. The main findings remain unchanged with the inclusion of district dummies. Second, I exclude the Copperbelt and Lusaka provinces and check if my results hold in the subset of my sample. In Zambia, just like elsewhere in sub-Saharan Africa, opposition strongholds tend to be concentrated in urban areas. Indeed, the electoral success of Sata and his party in the 2006 and 2011 general elections was very much a derivative of their populist strategy that resonated with “the growing frustrations of the urban poor,” particularly in the Copperbelt and Lusaka provinces (Resnick 2010, 9). At the same time, these two provinces, as highlighted above, justifiably have a higher concentration of aid from the government and the donors, most likely due to their larger population sizes and the presence of key mining sites in the Copperbelt province. For these reasons, it is worth checking if my empirical findings are an artifact of political dynamics specific to these two provinces. The exclusion of the Lusaka and Copperbelt provinces does not change the main results.

Lastly, I test whether my results are robust to the disaggregation of donor projects by donor type. It is plausible that multilateral and bilateral donors may differ in the way they allocate their donor projects. Multilateral donors’ decisions to finance development projects are free from domestic pressures or geopolitical concerns unlike bilateral donors whose policy decisions are subject to Congressional or parliamentary scrutiny (Dollar and Levin 2006; Weaver 2007; Bueno de Mesquita and Smith 2009; Youngs 2010). Thus, one should not assume that these two different types of donors allocate their development finance in the same way. With these considerations in mind, I run separate models for the World Bank and AfDB (multilateral donors), on the one hand, and JICA (bilateral donor), on the other. Disaggregating the dependent variable by donor type, however, does not significantly change my main findings. All the key variables of my interest keep their expected signs although the effects of COETHNIC are no longer significant at the conventional level for the World Bank and AfDB, and the effects of MMD SUPPORT are not significant for JICA. The effects of OPPOSITION SUPPORT are statistically significant for both the multilateral and bilateral donors when analyzed separately. Overall, I do not observe any systematic difference between multilateral and bilateral donors in terms of the way their projects are allocated.

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<sup>23</sup>Results from the robustness tests are reported in Appendix 4.

The empirical data used for my analysis exclude projects financed by some of the major donors in Zambia, such as Germany, EU, and the United Kingdom. The exclusion of these donors is solely due to data limitations. Many donor agencies do not make their documents or reports publicly available, which makes it difficult for researchers to geocode their projects.<sup>24</sup> While the data limitation certainly is a concern, I am skeptical that it introduces any systematic bias in my results. The decision-making process surrounding aid allocation is similar across multilateral and bilateral donors whereby the recipient government ultimately takes the lead in deciding the details of donor-financed development projects. My robustness tests partially support this claim, demonstrating that my main findings are largely not sensitive to the disaggregation of donor projects by donor type. Unless there are strong theoretical reasons to believe that different political incentives are at work for differing donors, selection bias does not pose a significant inferential problem.

## 4.2. Does Aid Influence Electoral Results?

If the allocation of aid is politically driven, it is also of interest to scholars and policymakers whether the strategy of targeting aid to politically salient districts may actually influence electoral results. Jablonski (2014) finds that the amount of aid allocated to each constituency determines its support level for the ruling party. I examine if a similar pattern is observed in Zambia. The dependent variable of interest is the district-level share of votes for the MMD presidential candidates in the past five elections (1996, 2001, 2006, 2008, and 2011) (MMD SUPPORT). I operationalize my key explanatory variable of donor projects in two different ways: a dummy variable that is coded 1 if a given district receives any donor project between election years, and zero otherwise (PROJECT DUMMY); and the average number of donor projects allocated to each district in every electoral cycle (AVE. NUMBER OF PROJECTS).<sup>25</sup> To alleviate the issues of endogeneity, I lag MMD SUPPORT one period and include it in my models because, as indicated by the earlier analyses, the level of electoral support for the MMD presidential candidates turns out to be a strong predictor of the number of projects that a given district receives in the current electoral cycle. Also included are controls for all the economic and demographic variables used in my earlier models in Figure 3: COETHNIC, POPULATION (Log), LITERACY, POVERTY, DISTANCE, as well as province- and

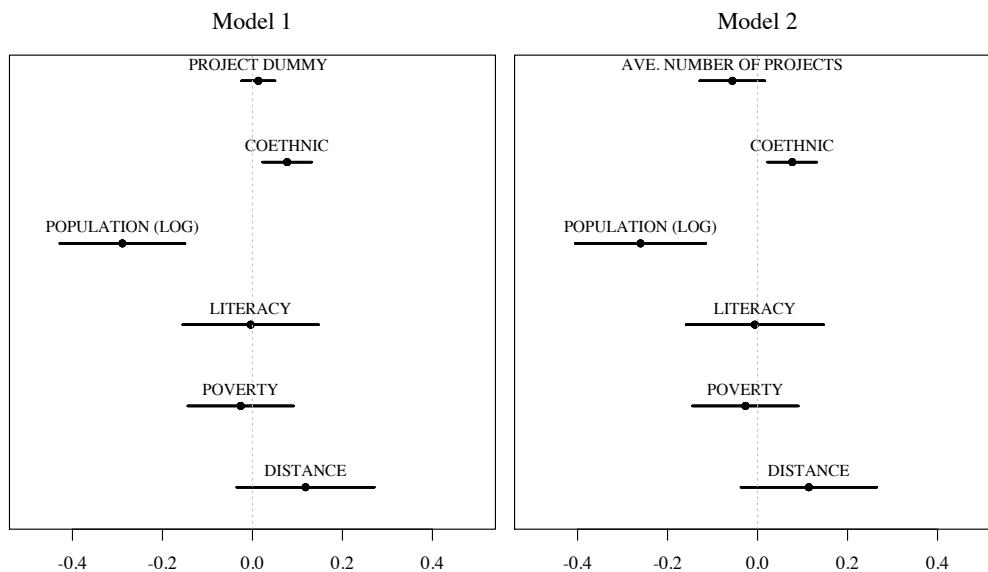
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<sup>24</sup>In fact, this is precisely the reason why I selected the World Bank, AfDB, and JICA for my study as they all have made it relatively easy for researchers to track the records and details of their projects.

<sup>25</sup>Thus, I now have 5 periods (1991-1995, 1996-2000, 2001-2005, 2006-2007, and 2008-2010). I compute the average number of projects allocated to each district at each one of these time periods and regress the upcoming presidential electoral outcomes on it. Since there were 72 districts in Zambia during the period under study, my panel data consist of 360 observations (5×72).

electoral cycle dummies.<sup>26</sup> I lag all these variables one period (except for the region and electoral cycle dummies) under the assumption that they only affect the outcomes of upcoming or future elections. If the strategy of buying off votes from swing voters (or weak opposers in particular) is truly effective, the impact of donor projects on the MMD shares of votes should be positive, which indicates that the receipt of donor projects bolsters support for the MMD candidates.

**Figure 5.** OLS Regression Estimates: Determinants of Votes



*Notes:* The black dots denote the OLS regression estimates of the effect of each variable, and the black horizontal lines correspond to the 95% confidence intervals for each of the point estimates.

Figure 5 shows the main results.<sup>27</sup> I find little evidence that donor projects influence electoral outcomes in favor of the MMD. The effects of donor projects on the shares of MMD votes are not significant regardless of whether PROJECT DUMMY (Model 1) or AVE. NUMBER OF PROJECTS (Model 2) is used as a measure of donor projects. Instead, the figure shows that COETHNIC is one of the key determinants of voting patterns in Zambia. As predicted, COETHNIC has a statistically significant positive effect on the shares of votes for the MMD presidential candidates. These results show strong evidence that coethnic voters vote in favor of the incumbent president who comes from their own ethnic or language group. Another important finding is that POPULATION (Log) is negatively correlated with MMD SUPPORT. These results are consistent with the fact that the MMD lost power in urban districts where Michael Sata and his party increasingly performed

<sup>26</sup> I compute the average values of these control variables for every electoral cycle.

<sup>27</sup> See Appendix 5 for numerical results used to generate Figure 5.



well, particularly in the Lusaka and Copperbelt provinces.

There are several reasons for why one might not see any significant effects of donor projects on voting behaviors. First, there are a multitude of other electoral strategies and resources that the government can employ to buy votes. For instance, politicians in Africa often rely on village-level networks to channel private rewards to rural voters and garner their support (Kasara 2007). The same political dynamic is seen in Zambia. Due to the limited capacity of the government bureaucracy to deliver goods and services, political leaders work with local patrons to provide such resources to rural voters in exchange for their political allegiance (Baldwin 2013). It is also important to note that the scope of donor projects is often very limited and it sometimes takes years before these projects produce any visible development outcomes (if any), which may impact citizens' voting behaviors. Lastly, since leaders often have difficulty monitoring the voting behaviors of their own citizens, swing voters may simply "renege, accepting benefits and then voting as they choose" (Stokes 2005, 315). In sum, my empirical results call into question the effectiveness of using the allocation of donor projects as a vote-buying strategy.

## 5. Conclusion

This paper analyzes a hitherto understudied aspect of foreign aid—the determinants of aid allocation within aid-recipient countries. The literature suggests that aid-recipient governments use foreign aid as a source of patronage to buy off political support and tighten their grip on power. These potential political effects are perhaps more pronounced in Africa where a majority of countries still rely on external financial assistance to keep themselves afloat. Despite the fact that the potential and negative political implications of foreign aid are well documented, however, few scholarly efforts have been made to actually investigate how aid is dispersed within an aid-recipient country. This is the question of interest that this paper seeks to explore. To examine the political economy of aid allocation at the sub-national level, I use a novel data set on the geographical allocation of donor projects in Zambia during the period between 1996 and 2010. These newly available data enable me to quantitatively test the determinants of allocation of donor-funded projects at the sub-national level.

Challenging the prevailing view in African politics that African leaders simply reward their own core supporters with more resources, my analysis shows that districts where opposition parties enjoy greater popularity

receive *more* donor projects. In contrast, districts with a higher concentration of core supporters (of the ruling incumbents) or coethnic voters receive *fewer* projects. These results are consistent with several other studies (Banful 2011; Green 2010; Kasara 2007), which all cast doubt on the validity of the core voter model in the African context.

When having limited information about the voting preferences of its own citizens, the aid-recipient government seeks to put more development efforts in districts where there are relatively more opposition supporters. In so doing, political elites attempt to sway as many weak opposers as possible and further consolidate their power. While my study focuses exclusively on the distribution of donor-funded projects, I may extend the core arguments of this paper to other types of public/collective goods that the government may distribute as an instrument to buy votes. Thus, this paper calls for a more nuanced analysis of distributive politics in sub-Saharan Africa by focusing on the role of swing voters in shaping the government's distributive policy.

Another important finding of this study is that needs-based factors have limited impact aid allocation. In fact, political incentives seem to carry more explanatory power for aid allocation than the demographic or economic factors such as literacy or poverty. These findings accord with an earlier study by Ohler and Nunnenkamp (2013), which also finds no clear impact of poverty, maternal health, or malnutrition on the allocation of donor projects. The results thus call into question the effectiveness of aid in reaching those who are in most need. When decisions on the allocation of aid are driven by political concerns, rather than the actual demand of the people, there is little theoretical ground to believe that aid is allocated efficiently to address the issues of poverty. Thus, I suspect that the politically driven allocation of aid may jeopardize the overall effectiveness of aid in poverty reduction.

# Appendix

## 1. Descriptive Statistics

**Table A1.** Descriptive Statistics

Variable Names	N	Mean	Std. Dev.	Min	Max
NUMBER OF PROJECTS	216	1.482	1.430	0.000	6.000
OPPOSITION SUPPORT (PRESIDENTIAL)	216	0.230	0.228	0.011	0.794
OPPOSITION SUPPORT (PARLIAMENTARY)	216	0.187	0.184	0.000	0.734
MMD SUPPORT (PRESIDENTIAL)	216	0.506	0.232	0.080	0.913
MMD SUPPORT (PARLIAMENTARY)	216	0.454	0.192	0.094	0.880
POPULATION (Log)	216	2.800	1.337	0.717	8.196
LITERACY	216	0.453	0.106	0.225	0.707
POVERTY	216	0.683	0.096	0.406	0.916
DISTANCE	216	408.185	211.183	0.000	803.580
COETHNIC	216	0.176	0.382	0.000	1.000

**Table A2. Descriptions of the Variables**

Variable Name	Description	Sources
NUMBER OF PROJECTS	The number of projects that a given district receives in each 5-year electoral cycle.	Strandow et al. (2011); Various reports from the World Bank, JICA, and AfDB
MMD (or OPPOSITION) SUPPORT	The aggregate share of votes for candidates (presidential or parliamentary) from the MMD (or the leading opposition party).	The Electoral Commission of Zambia (2014), available at <a href="http://www.elections.org.zm/election_results.php">http://www.elections.org.zm/election_results.php</a>
VICTORY MARGIN	The absolute value of a percent difference in the share of votes between the MMD and the second-running opposition party.	The Electoral Commission of Zambia (2014), available at <a href="http://www.elections.org.zm/election_results.php">http://www.elections.org.zm/election_results.php</a>
POPULATION DENSITY	The number of population per km <sup>2</sup> (log) (constant yearly change assumed in the interval years)	Central Statistical Office of Zambia, available at <a href="http://www.zamstats.gov.zm/about_us/abt_publications.htm">http://www.zamstats.gov.zm/about_us/abt_publications.htm</a>
LITERACY	The average proportion of "literate" respondents in each district in the 1990, 2000, and 2010 censuses (constant yearly change assumed in the interval years)	Minnesota Population Center (2014), available at <a href="https://international.ipums.org/international/">https://international.ipums.org/international/</a>
POVERTY	The proportion of the population whose consumption per adult equivalent is below the poverty line	Simler (2007)
DISTANCE	Distance of the centroid of a district in kilometers from the centroid of the Lusaka District	Computed based on geographical data from the Food and Agricultural Organization of the United Nations available at <a href="http://www.fao.org/geonetwork/srv/en/main.home">http://www.fao.org/geonetwork/srv/en/main.home</a>
COETHNIC	The average proportion of respondents in each district who are in the same ethnic (or language) group as the president in office, based on the 1990, 2000, and 2010 censuses	Minnesota Population Center (2014), available at <a href="https://international.ipums.org/international/">https://international.ipums.org/international/</a>

## 2. Numerical Results Used for Figure 3

Table A3 shows numerical results used to generate Figure 3. In Models 4 and 5, I add the squared terms of the vote variables as an attempt to account for the possibility that the effects of OPPOSITION SUPPORT or MMD SUPPORT on the number of donor projects may be non-linear. As shown in Table A3, including the squared term does not improve the model fit and make the estimated effects of the vote variables much less precise (most likely due to collinearity). For this reason, I only report the empirical results from Models 1 and 2 in the text. I also replicate the same models estimated in Figure 3 using the parliamentary electoral outcomes. The results based on the parliamentary data are reported in Table A4. The main findings do not change significantly regardless of whether presidential or parliamentary data are used. The effects of the key variables of my concern all have expected signs across all the models reported in the tables although the effects of MMD SUPPORT are no longer significant at the conventional level in Model 2 in Table A4.

**Table A3.** Poisson Regression Estimates: Determinants of the Number of Donor Projects (PRESIDENTIAL)

Models	(1)	(2)	(3)	(4)	(5)
OPPOSITION SUPPORT	0.722*** (0.210)			2.427*** (0.916)	
OPPOSITION SUPPORT <sup>2</sup>				-1.866* (0.989)	
MMD SUPPORT		-0.616** (0.258)			1.084 (1.007)
MMD SUPPORT <sup>2</sup>					-1.676* (0.976)
COETHNIC	-0.192* (0.114)	-0.283** (0.122)	-0.316*** (0.119)	-0.061 (0.135)	-0.116 (0.166)
POPULATION (Log)	2.045*** (0.543)	2.171*** (0.549)	2.267*** (0.554)	1.992*** (0.533)	2.115*** (0.544)
LITERACY	0.066 (0.490)	0.132 (0.496)	0.150 (0.501)	0.031 (0.489)	0.165 (0.497)
POVERTY	0.167 (0.552)	0.207 (0.549)	0.202 (0.554)	0.200 (0.548)	0.265 (0.560)
DISTANCE	-0.213 (0.474)	-0.202 (0.478)	-0.292 (0.482)	-0.352 (0.480)	-0.304 (0.478)
Log-likelihood value	-292.293	-294.637	-296.686	-290.999	-293.728
AIC	2.892	2.913	2.923	2.889	2.914
BIC	-468.968	-464.280	-465.557	-466.181	-460.724
N	216	216	216	216	216

Notes: Standard errors reported in parentheses are all clustered by district. All these models include the number of past projects, province dummies, as well as electoral cycle dummies, although the coefficients for these variables are not reported to save space. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

**Table A4.** Poisson Regression Estimates: Determinants of the Number of Donor Projects (PARLIAMENTARY)

Models	(1)	(2)	(3)	(4)	(5)
OPPOSITION SUPPORT	0.568** (0.245)			1.678* (0.860)	
OPPOSITION SUPPORT <sup>2</sup>				-1.427 (1.094)	
MMD SUPPORT		-0.197 (0.316)			-1.027 (1.131)
MMD SUPPORT <sup>2</sup>					0.811 (1.068)
COETHNIC	-0.230* (0.121)	-0.319*** (0.121)	-0.316*** (0.119)	-0.143 (0.139)	-0.371*** (0.143)
POPULATION (Log)	2.140*** (0.546)	2.214*** (0.557)	2.267*** (0.554)	2.035*** (0.536)	2.262*** (0.557)
LITERACY	0.065 (0.493)	0.126 (0.504)	0.150 (0.501)	0.031 (0.496)	0.121 (0.501)
POVERTY	0.183 (0.564)	0.201 (0.548)	0.202 (0.554)	0.104 (0.558)	0.220 (0.537)
DISTANCE	-0.258 (0.483)	-0.250 (0.471)	-0.292 (0.482)	-0.262 (0.491)	-0.284 (0.469)
Log-likelihood value	-294.461	-296.498	-296.686	-293.816	-296.260
AIC	2.912	2.931	2.923	2.915	2.938
BIC	-464.632	-460.559	-465.557	-460.547	-455.660
N	216	216	216	216	216

Notes: Standard errors reported in parentheses are all clustered by district. All these models include the number of past projects as well as province dummies and electoral cycle dummies, although the coefficients for these variables are not reported to save space. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

### 3. Using Jablonski's Specification of Aid Distribution

In the text, the key dependent variable of interest is the number of donor projects that each district receives. In this section, I replicate my models using the amount of aid, instead of the number of donor projects. To compute how much aid goes to each district, I need to make some assumptions about how the amount of aid committed to a donor project that covers more than two districts is distributed across those districts. Following Jablonski (2014, 307), I assume that when a project spans across two or more districts, "aid is distributed to each [district] by that [district]'s share of the population." Using the log of aid per capita that each district receives as a dependent variable, I replicate Tables A3 and A4. The results are presented in Tables A5 and A6. Consistent with Hypothesis 1 and 2, these tables show that support for the main opposition parties (or the MMD) increases (or decreases) the amount of aid that a given district receives. The effects of COETHNIC are no longer significant and the signs of the effects turn positive in some models. It is difficult to know whether these somewhat less precise results are driven by measurement errors that are introduced due to imposing some unrealistic assumptions about how the amount of aid committed to a certain project is distributed across districts.

**Table A5.** The Effect of Votes (Presidential Elections) on Aid Per Capita

Models	(1)	(2)	(3)	(4)	(5)
OPPOSITION SUPPORT	0.594** (0.253)			2.471*** (0.849)	
OPPOSITION SUPPORT <sup>2</sup>				-2.136** (0.937)	
MMD SUPPORT		-0.636** (0.297)			0.379 (0.922)
MMD SUPPORT <sup>2</sup>					-1.025 (0.875)
COETHNIC	0.033 (0.097)	0.013 (0.105)	-0.003 (0.103)	0.181 (0.132)	0.129 (0.154)
POPULATION (Log)	0.791* (0.427)	0.777* (0.397)	0.970** (0.411)	0.795* (0.428)	0.813** (0.401)
LITERACY	-0.420 (0.455)	-0.405 (0.467)	-0.383 (0.455)	-0.484 (0.456)	-0.380 (0.472)
POVERTY	-0.124 (0.376)	-0.133 (0.367)	-0.102 (0.375)	-0.090 (0.381)	-0.091 (0.375)
DISTANCE	0.286 (0.402)	0.344 (0.402)	0.267 (0.403)	0.203 (0.408)	0.294 (0.402)
Adjusted R <sup>2</sup>	0.469	0.458	0.447	0.479	0.458
N	216	216	216	216	216

*Notes:* Standard errors reported in parentheses are all clustered by district. All these models include the number of past projects as well as province dummies and electoral cycle dummies, although the coefficients for these variables are not reported to save space. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

**Table A6.** The Effect of Votes (Parliamentary Elections) on Aid Per Capita

Models	(1)	(2)	(3)	(4)	(5)
OPPOSITION SUPPORT	0.662** (0.281)			2.428*** (0.798)	
OPPOSITION SUPPORT <sup>2</sup>				-2.273** (1.011)	
MMD SUPPORT		-0.552* (0.315)			-0.898 (1.036)
MMD SUPPORT <sup>2</sup>					0.342 (0.989)
COETHNIC	0.017 (0.102)	-0.006 (0.106)	-0.003 (0.103)	0.166 (0.139)	-0.032 (0.138)
POPULATION (Log)	0.797* (0.432)	0.793* (0.412)	0.970** (0.411)	0.679 (0.444)	0.785* (0.416)
LITERACY	-0.420 (0.460)	-0.436 (0.453)	-0.383 (0.455)	-0.499 (0.470)	-0.439 (0.451)
POVERTY	-0.124 (0.390)	-0.129 (0.360)	-0.102 (0.375)	-0.236 (0.391)	-0.126 (0.357)
DISTANCE	0.289 (0.405)	0.380 (0.405)	0.267 (0.403)	0.316 (0.406)	0.367 (0.406)
Adjusted R <sup>2</sup>	0.468	0.454	0.447	0.479	0.451
N	216	216	216	216	216

*Notes:* Standard errors reported in parentheses are all clustered by district. All these models include the number of past projects as well as province dummies and electoral cycle dummies, although the coefficients for these variables are not reported to save space. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .



## 4. Robustness Checks

Table A7 shows the main results from the robustness tests as mentioned in the text. I replicate Models 1-3 as reported in Figure 3 by including additional controls or limiting my analysis to a subset of my whole sample. A discussion on the results from these robustness tests is in the text.

**Table A7.** Robustness Checks

Robustness Test 1	Including District Dummies		
OPPOSITION SUPPORT	0.768*** (0.193)		
MMD SUPPORT	-0.761*** (0.278)		
COETHNIC	-0.207*	-0.296**	-0.383***
	(0.120)	(0.135)	(0.119)
Log-likelihood value	-134.319	-136.234	-138.700
N	210	210	210
Robustness Test 2	Excluding Copperbelt and Lusaka Provinces		
OPPOSITION SUPPORT	0.995*** (0.220)		
MMD SUPPORT	-0.907*** (0.280)		
COETHNIC	-0.307**	-0.461***	-0.455***
	(0.135)	(0.156)	(0.139)
Log-likelihood value	-226.002	-229.194	-232.623
N	174	174	174
Robustness Test 3	Multilateral Donors (World Bank + AfDB)		
OPPOSITION SUPPORT	0.645*** (0.246)		
MMD SUPPORT	-0.636** (0.280)		
COETHNIC	0.027	-0.042	-0.084
	(0.129)	(0.124)	(0.129)
Log-likelihood value	-249.614	-250.329	-251.902
N	216	216	216
Robustness Test 4	Bilateral Donor (JICA)		
OPPOSITION SUPPORT	0.762** (0.380)		
MMD SUPPORT	-0.362 (0.532)		
COETHNIC	-1.297**	-1.414**	-1.394**
	(0.602)	(0.618)	(0.587)
Log-likelihood value	-135.977	-137.348	-137.507
N	216	216	216

Notes: Standard errors reported in parentheses are all clustered by district. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

## 5. Numerical Results Used for Figure 5

Table A8 show numerical results used to generate Figure 5.

**Table A8.** The Effects of Donor Projects on the Vote Shares of MMD Presidential Candidates

Models	(1)	(2)
MMD SUPPORT <sub><i>t-1</i></sub>	0.520*** (0.049)	0.520*** (0.051)
PROJECT DUMMY <sub><i>t-1</i></sub>	0.013 (0.019)	
NUMBER OF PROJECTS <sub><i>t-1</i></sub>		0.013 (0.037)
COETHNIC <sub><i>t-1</i></sub>	0.077*** (0.028)	0.077*** (0.028)
POPULATION (Log) <sub><i>t-1</i></sub>	-0.289*** (0.071)	-0.260*** (0.074)
LITERACY <sub><i>t-1</i></sub>	-0.004 (0.077)	-0.006 (0.078)
POVERTY <sub><i>t-1</i></sub>	-0.026 (0.060)	-0.027 (0.060)
DISTANCE <sub><i>t-1</i></sub>	0.118 (0.078)	0.114 (0.077)
Adjusted R <sup>2</sup>	0.604	0.605
N	360	360

*Notes:* Standard errors reported in parentheses are all clustered by district. These models also include controls for province- and electoral-cycle dummies although coefficients for these variables are not reported.\*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

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