Foreign Aid, Oil Revenues, and Political Accountability: Elite and Public Opinion Evidence from Seven Experiments in Ghana and Uganda[*]

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Abstract

Oil revenues in developing countries – as windfalls for which citizens do not pay – may reduce voters' willingness to to demand accountability from their government, enabling corruption, clientelism, and repression. This is an important causal mechanism underlying the resource curse. Prominent scholarship speculates that aid from foreign governments enables the same autocratic practices, but others counter that aid proves more beneficial than oil. Empirical work on the topic employs observational data at the national, macro level, and has left the question unresolved. At the micro level, domestic elites and citizens have experience with oil revenues and aid funds, thus possessing information about the political implications of these different revenues. This paper reports the effects of randomly assigned treatments identifying oil funds compared to aid money on attitudes and behavior of members of parliament and citizens in seven survey and lab experiments in Ghana and Uganda. Few differences in behavior or attitudes of elites or citizens toward accountability appear between oil and foreign aid that goes directly into government accounts. However, some significant differences arise between oil money (and state-to-state aid) versus foreign aid channeled through non-governmental organizations (NGOs). The results suggest that elites and citizens both view oil and state-to-state aid as equivalent but that aid channeled through NGOs is different in its anticipated effects and in its ability to motivate action promoting accountability.

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1 Introduction

A consensus is growing that how governments are funded has a significant impact on democracy and good governance. Some research shows that countries that fund their budgets via taxation, rather than through unearned or "windfall" revenues, exhibit higher levels of democracy and lower levels of corruption (Van der Ploeg 2011; Ross 2001, 2012; Ahmed 2012). In this work, the presumed alternatives to taxation are foreign aid or natural resources such as oil. Other work suggests that public revenue raised from the sale of natural resources, especially oil, undermines democracy and good governance (Sachs and Warner 1997; Ross 1999, 2001; Mehlum, Moene and Torvik 2006; Ross 2012). Likewise, aid is theorized to enable poor governance and retard democratization (Morrison 2009, 2015; Djankov et al. 2008; Bueno de Mesquita and Smith 2009, 2013). This raises a critical question relevant to academic discussion but, perhaps more importantly to policy debates: Do aid funds have the same political effects on political accountability demands as oil revenues and thereby deepen the resource curse?

A related question probes whether aid modality might mediate aid's effect on governance. While some scholars suggest that all non-tax revenues should be treated as the same (Morrison 2009; Smith 2008; Ahmed 2012), other work suggests that aid may have fewer negative accountability effects than oil (Collier 2006; Bermeo 2011). The focus of this debate has been whether donors can either structure aid to reduce fungibility and thus lessen accountability problems or ensure that aid funds are used well through monitoring recipient governments and withdrawing aid from governments that are nondemocratic or corrupt (Bermeo 2016). Donors may also be able to reduce accountability problems involved in aid by channeling aid through non-governmental organizations (NGOs) (Dietrich 2013).

Existing work on whether aid and oil have similar effects on democratic accountability has two limitations. First, most of the empirical studies reflecting on the dispute have drawn on pooled time-series–cross-national statistics. These data are gathered at the macro, country level, and the observational methods the studies employ make causal inferences challenging and limit the types of outcomes studied to very high-level variables (that are difficult to move) such as regime type. Second, the debate has focused almost exclusively around whether external, top-down pressures

differ for aid and oil in ways that can drive accountability outcomes. However, a key proposed mechanism for how revenue source affects accountability relies on differential willingness by citizens to demand accountability at the micro level through bottom-up pressures. Governments that have access to aid or oil may be able to avoid taxing their citizens. And because governments relying on windfalls do not extract money from the people's pockets, citizens are less motivated to hold their governments to account for their actions (Ross 2001, 2012; Brautigam, Fjeldstad and Moore 2008; Moss, Pettersson and Van de Walle 2008). Similarly, although recent evidence suggests that aid may not have negative effects on taxation (Morrissey, Prichard and Torrance 2014), it may still be the case that citizens expect and demand less from governments when tax dollars are not at stake.

Theoretical predictions are mixed regarding whether bottom-up accountability pressures should be equal for foreign aid and oil money. Some studies argue that aid has a positive effect on governance and political accountability by promoting more democratic institutions (Knack 2004; Dunning 2004; Goldsmith 2001; Finkel, Pérez-Liñán and Seligson 2007). Yet none of these studies directly compare aid to natural resource revenues. Collier (2006), however, directly addresses this comparison. He argues that aid has produced better outcomes than resource rents; it has been less subject to clientelism and corruption and has generated more public goods for poor countries. The main reason Collier cites for the difference is that aid can be delivered in different ways; its modalities vary with important implications. According to him, aid is delivered to governments through technical assistance, projects, packages with conditions, and debt relief, each having distinctive effects on the incentives for accountable government. Hence, aid makes governments perform better because it comes with various donor-imposed mechanisms of scrutiny, which can substitute for accountability pressures from citizens. Donors can thus play key roles through the care they take in how they deliver aid.

More recent work has focused on how donor governments can discern governance problems in recipient countries and direct aid intentionally with the aim of reducing inefficiencies, corruption, and other governance failures (Bermeo 2011, 2016). In particular, donors can bypass problematic recipient governments altogether by delivering aid not to national budgets but to non-governmental organizations contracted to provide services directly to recipient citizens (Dietrich 2013, 2016). NGOs may better discern where the services are needed and may face fewer opportunities for

corruption and greater oversight from and dependence on donors. Given that donors deliberately channel aid through NGOs in order to improve its effectiveness, it is possible – and perhaps even likely – that recipient citizens and elites might perceive such NGO bypass aid to be qualitatively different than state-to-state aid delivered by donors directly to government accounts.

This paper provides new evidence on the relationship between foreign aid, natural resource revenues, and government accountability. First, we draw on a set of five survey and two laboratory experiments, conducted on citizens and members of parliament in Uganda and Ghana, to test whether state-to-state aid and oil revenues are perceived as equivalent. These experiments allow clear causal inference on whether aid and oil operate in different ways at the micro level. We measure perceptions of whether state-to-state aid and oil revenues are more likely to be spent on public goods, be subject to clientelism and corruption, or be used transparently. We also measure citizens' willingness to monitor and sanction government officials for their use of aid and oil funds. Across all experiments and all measures, we find no evidence that state-to-state aid and oil are perceived differently or have different effects on citizens' accountability demands in either country.

These results appear to buttress the claims of aid skeptics that aid and oil produce similar accountability demands. But these results treat aid as a single type of revenue, all accruing to the government, and do not distinguish important aspects of aid from one another. In four of the experiments that compare oil and state-to-state aid, we also included a treatment condition about aid channeled through NGOs.In the matched Ghana and Uganda survey experiments, citizens in Uganda were significantly more likely to take action in support of NGO-channeled aid funds compared to state-to-state aid and/or oil revenues, and they anticipated significantly less elite capture for the aid going through NGOs. Likewise, MPs in Ghana believed they would have significantly less influence over the NGO-directed funds than over state-to-state aid and oil money. This evidence lends support to the claims of aid optimists that donors can direct and channel aid in ways that redound to the public's benefit.

Finally, we explore both individual- and country-level variation in the differences between state-to-state aid and NGO aid. Past research notes that donor governments are more likely to channel aid through NGOs and other non-state actors when the recipient government is seen as more corrupt and the state institutions are viewed as weak and unable to control corruption (Dietrich

3

2016; Acht, Mahmoud and Thiele 2015). Donors then rightfully worry their money will be ill spent by the government and they choose to bypass it with their aid. If this is correct, we expect that people who view their government as very corrupt and who have greater trust in NGOs will react to NGO aid differently than state-to-state aid. Moreover, we expect that if countries vary in the extent of corruption and institutional weakness, the amount of NGO aid should vary and people's perceptions of it should also vary. Where institutions are stronger and corruption less prevalent, we should see fewer differences between state-to-state aid and NGO-controlled aid. The evidence from the experiments lends support to these conjectures.

All told, the results suggest that, compared to oil revenues, aid flows are more nuanced and their perceived effects more contingent than research by aid skeptics might indicate. To the best of our knowledge, this study provides the most comprehensive and focused causal evidence to date on the micro foundations underlying the effects of revenue type on accountability demands. And whether oil and aid – or different types of aid – equally curse politics has highly salient implications both for political economy research and for policy prescriptions. In particular, our study differentiates state-to-state aid from bypass aid channeled through NGOs and considers the evidence for the causal mechanisms that distinguish the two types of aid in their accountability effects. As such, this study makes an important contribution in more fully illuminating the differences and lack thereof in the political effects of variations in revenue type and delivery channel. In what follows, we motivate the research question, outline hypotheses, sketch the experiments' research designs, and present and discuss the empirical findings.

2 Prior Research and Hypotheses

Most existing work on revenue source and accountability focuses on the difference between revenue earned from taxes on citizens and "windfall" revenues like foreign aid and oil rents. In general, taxes are thought to promote democratic accountability, while non-earned revenues undermine it. While windfalls from natural resources impair democracy and governance, tax-reliant governments are more likely to be democracies, and increases in taxation are associated with the likelihood of democratization (Wantchekon 2003; Jensen and Wantchekon 2004; Ross 2004; Tsui

4

2010; Aslaksen 2010; Ross 2012; Ramsay 2011; Andersen and Ross 2014; Wiens, Poast and Clark 2014; Ahmadov 2014; Lall 2017; Moore, Prichard and Fjeldstad 2018). There is also evidence that taxation is associated with lower corruption (Baskaran and Bigsten 2013), and government policies often benefit those who have the highest tax burden (Timmons 2005). Analysts argue that taxation promotes good governance because taxed citizens appear to be more willing or able to monitor and sanction governments for how they use tax funds (Bates and Lien 1985; Huntington 1991; Tilly 1990; Levi 1989). This increase in bottom-up accountability pressures occurs because taxation, by removing earned income, makes citizens eager to recover their lost wages and gives taxpayers more ownership over the government budget (Paler 2013; Martin 2014; de la Cuesta et al. 2019).

Windfall resources like aid and oil, in contrast, are seen as enabling corruption, undermining governance, fostering repression, prolonging autocratic rule, and increasing conflict (Bräutigam and Knack 2004; Djankov et al. 2008; Smith 2008; Caselli and Cunningham 2009; Morrison 2009, 2015). Much of the work on this resource curse focuses on oil and other natural resources. The present study pursues the empirical implications of one key claim in this literature: that citizens will be significantly less motivated to monitor and sanction the mismanagement of natural resource windfalls (Ross 2001, 2004, 2012; Robinson, Torvik and Verdier 2006; Morrison 2015). As Huntington (1991, p. 65) articulates, "Oil revenues accrue to the state: they therefore increase the power of the state bureaucracy and, because they reduce or eliminate the need for taxation, they also reduce the need for the government to solicit the acquiescence of its subjects to taxation." Ross (2001, p. 332) adds, "When governments derive sufficient revenues from the sale of oil, they are likely to tax their populations less heavily or not at all, and the public in turn will be less likely to demand accountability from – and representation in – their government." Thus, such governments often become more autocratic and more prone to corruption and clientelism (Collier and Hoeffler 2005; Robinson, Torvik and Verdier 2006).[1]

Critics of aid likewise charge that foreign assistance is also a "sovereign rent" that promotes corruption, undermines governance, increases violence, and stabilizes autocratic regimes (Bräutigam and Knack 2004; Djankov et al. 2008; Smith 2008; Morrison 2009). Moreover, because aid allocations

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[1]Resource rents may also have other effects on the state, including weakening mechanisms for accountability and investment in human capital (Bulte, Damania and Deacon 2005; Dunning 2005); incentivizing rent-seeking (Tornell and Lane 1999); increasing the likelihood of armed competition over the prize (Humphreys 2005); and negative economic impacts such as Dutch disease (Corden and Neary 1982; Sachs and Warner 1997).

from donors fluctuate, governments receiving large amounts of aid can experience economic and political instability, and when aid is suddenly reduced the likelihood of conflict appears to increase (Nielsen et al. 2011). Corruption and clientelism are also associated with foreign aid, as government officials have been known to use foreign funds for political and personal gain (Svensson 2000; Knack 2001). These and other problems with the receipt of foreign aid appear to parallel the problems of over-reliance on resource exploitation.

Thus, according to aid skeptics, funds from both aid and oil are believed to be windfall revenues that relieve tax burdens and pacify citizens (Morrison 2009, 2015). Because citizens do not pay direct costs to furnish nontax revenue, they are less motivated to engage in oversight or demand policies in compensation. Windfalls thus enable elites to divert more funds to corruption and clientelism relatively free from citizen scrutiny or, if needed, the money from the boons can buy citizen quiescence and repress the would-be monitors (Mahdavy 1970; Beblawi and Luciani 1987; Chaudhry 1997; Waterbury 1998).

However, other scholars have maintained that aid and oil are not equally bad for accountability. Bermeo (2016) argues that donor pressures can give recipient governments incentives to use funds well or face sanctions, and that this can mitigate the proposed negative effects of aid. She finds that while oil has consistent negative effects on the level of democracy in a country, aid only appears to have a negative effect during the Cold War. When donors are not acting purely from strategic security concerns, they may seek to give aid in ways that reduce fungibility and support democracy. It is also possible that not all types of aid are the same. Along reinforcing lines, Dietrich (2013, 2016) shows that, when donors are concerned about corruption or low capacity in recipient countries, they are more likely to channel aid through NGOs and other non-state actors, rather than through on-budget support. Collier (2006) argues that aid can prove preferable to oil because donors can deliver aid through different channels and mechanisms that constrain and direct governments more directly, which in turn can lead to better outcomes. Winters (2010) also holds that different aid modalities mean different levels of accountability and hence success for aid projects. This suggests that aid's effects may depend on aid type or delivery channel.

Previous work examining whether aid and oil have similar negative externalities for accountability has several limitations. First, it has relied on cross-national regressions; while this

6

analysis has attempted to account for potential sources of endogeneity, serious concerns with causal identification remain. Second, the outcome variable in this research has typically been a measure of democracy. While regime type is a central element of accountability, it is also a limited one. In particular, it cannot address the outcomes that many citizens in poor countries care about, such as the levels of public goods provision or corruption. Finally, cross-national work has not been able to test many of the mechanisms that may underlie any differences between aid and oil; it has also focused on top-down accountability pressures, ignoring possible differences in citizens' bottom-up demands for accountability.

To better understand the potential differences between state-to-state aid, NGO aid, and oil revenues, we consider three potential sources of variation across each type of windfall revenue. First, we examine one factor that could affect how funds are used: the extent to which citizens exert bottom-up accountability pressures for each revenue type, focusing on their willingness to monitor its use and punish leaders for non-accountable behavior. Second, we examine the degree to which politicians believe they can can actually influence how each funding type is used. Finally, we examine perceptions of how each revenue type is actually used, including who accrues the benefits of spending and the perceived extent of corruption. We anticipate that higher citizen pressures should lead to higher perceived public benefits of spending. Greater politician control of funding could be associated with higher public benefits if politicians are acting in citizens' interests, or lower benefits if citizens are unable to control self-serving politicians effectively. The rest of this section uses these three aspects of accountability to develop testable hypotheses.

2.1 Oil Revenues and State-to-State Aid

We first consider state-to-state aid and oil revenues. Theories of revenue source and bottom-up accountability argue that tax revenues increase citizen monitoring and sanctioning because citizens have a personal stake in the budget; this can increase ownership over government budgets (Paler 2013; de la Cuesta et al. 2019) and make citizens eager to regain utility from tax payments in the form of public goods (Martin 2014). These mechanisms would predict few differences between citizens' willingness to demand accountability for aid and oil funds, as in neither case do citizens directly contribute to the source of funds. However, the ownership mechanism

does suggest that if citizens feel greater ownership over either aid or oil monies, this could drive higher bottom-up demands for accountability (de la Cuesta et al. 2019). Citizens could feel higher ownership over oil if the process of extraction from a country's own land makes citizens view it as theirs. Alternately, citizens could feel higher ownership over aid monies if they view foreign aid as given for their benefit, rather than that of the government. On balance, we expect citizens to be equally willing to demand accountability for state-to-state aid and oil money through monitoring and sanctioning:

> **Hypothesis 1** *Revenue from state-to-state aid and oil will produce equal demands for accountability from citizens on government leaders.*

As oil revenues are not subject to external conditions, we assume that politicians should believe that they have significant leeway regarding how they are used. If donors can effectively place conditions and monitoring on state-to-state aid, this may decrease the extent that politicians believe they can influence their use. Work on foreign aid argues that, at least in some cases, donors will be willing to sanction malfeasant governments by withdrawing aid. For example, in 2012 donors cut over $300 million of aid money to Uganda in response to an aid-related corruption scandal. However, donor threats may not be credible when the recipient is strategically important to the donor, as shown by Bermeo (2016) and Dunning (2004). Conditionality may also not always succeed, especially to the extent the budget is fungible. We therefore expect that:

> **Hypothesis 2** *Members of Parliament will perceive equal levels of control (by the government or themselves) over revenues from state-to-state aid and oil.*

If citizens' accountability demands for aid and oil are equal, then politicians will not face pressures to use a particular type of windfall revenues in ways more in line with citizen preferences. If, likewise, politicians have equal levels of control over each type of funding, then we should expect that state-to-state aid and oil revenues will be equally likely to be subject to misuse and corruption, and thus that citizens should benefit equally from each revenue source. We therefore expect that:

> **Hypothesis 3** *Revenues from state-to-state aid and oil will produce equal perceptions of public benefits and misappropriation for corruption or clientelism.*

2.2 Aid to NGOs

While we expect state-to-state aid and oil to function similarly in developing countries, donors have other forms of aid at their disposal, and may choose strategically which type of aid to use for different types of countries and projects (Bermeo 2016). Dietrich (2013), for example, points out that donor countries should choose to bypass recipient governments with their aid when the country is poorly governed and highly corrupt. This bypass aid is often channelled through NGOs. NGO aid has grown appreciably in its importance to aid flows (Boulding 2012). As Boulding (2012, p. 115-16) points out, "NGOs have become increasingly important middle-men for the delivery of aid in developing countries. Since the 1980s, most foreign aid donor organizations (both governmental and private, multilateral and bilateral) rely on grassroots NGOs in developing countries to help carry out their projects." This section considers whether this type of aid should face different accountability pressures and incentives, compared to state-to-state aid or oil revenues.

Several aspects of NGOs and NGO-funneled aid could affect accountability pressures and outcomes. First, NGOs may be more altruistic and poverty-focused than many donors, who also value strategic concerns (Boulding 2012; Allen and Flynn 2018). Supporting this view, Dreher, Nunnenkamp, Öhler and Weisser (2012) and Dreher, Nunnenkamp, Thiel and Thiele (2012) study the actual distribution of NGO aid in Germany and Switzerland, respectively. They show that German NGOs are more active in poorer countries and where disasters strike; the poverty orientation of NGO aid is predominant even if it weakens somewhat with rising dependence on donor aid contributions. In the Swiss case, they likewise find a strong poverty orientation that is not significantly affected by donor government financing.

In addition to alleviating poverty, many NGOs act as intermediaries between the state and the local population; they enable representation of the public by helping aggregate and communicate public preferences upward to the government while fostering collective action among citizens. Another role NGOs can play is to "act as 'schools of democracy' by providing resources and opportunities for association and collective action, mitigating societal conflicts, expanding political participation and providing channels of interest representation," as numerous studies have shown (Banks, Hulme and Edwards 2015, p. 711).

Second, NGOs may be more efficient at providing donor programs than recipient country governments. Grassroots NGOs are in more direct contact with local people, and they may be seen as having better information and overall as being more effective and efficient means for aid delivery (Bebbington and Riddell 1995; Gilles and Boriana 2006; Koch et al. 2009). One reason for this is that "grassroots linkages and close proximity to [aid] beneficiaries are seen to give NGOs a comparative advantage in providing effective, targeted aid and ensuring that programs are designed in a bottom-up manner reflecting local contexts, needs, and realities and are not subject to commercial or political capture" (Banks, Hulme and Edwards 2015). This orientation makes NGO aid preferred by some types of donor governments, especially left-wing, liberal ones, another sign that this aid differs from other forms (Allen and Flynn 2018; Dietrich, Slapin and Milner 2019).

One reason NGOs may be seen as more efficient because they are believed to be more "virtuous" (Boulding 2012) and less likely to be corrupt or suffer from mismanagement (Dietrich 2013; Acht, Mahmoud and Thiele 2015). Donor countries use aid delivery channels to discriminate between recipient countries with strong and weak governance institutions when allocating foreign aid. Countries with a better quality of governance receive more aid through government channels; while in countries with poor levels of governance, donors bypass state institutions and deliver more aid through NGOs.[2] Thus, in general, NGOs are often in closer touch with local populations than their government is; they are more trusted to represent and support public preferences; and hence they are more likely to benefit the public than their own government often is seen as being able to do.

Finally, another set of studies argues that while NGOs can be better in theory, in practice they may still be inefficient relative to the "first-best" option of provision by an accountable government. This can occur because aid is less efficient when distributed to many NGOs, each of which have their own overhead costs and need to coordinate to avoid inefficient levels of overlap. However, in the contexts in which aid often works, and in particular the contexts studied in this paper, we are interested in citizens' and leaders' actual perceptions of NGO aid, rather than what is theoretically achievable.

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[2]Donors do not give all aid through NGOs because of two reasons: one, they benefit from the political leverage direct aid can give them and two, some projects require the government to carry them out, as Acht, Mahmoud and Thiele (2015) point out.

As with state-to-state aid and oil, we consider three aspects of accountability: citizens' willingness to exert accountability pressures, politicians' perceptions of control over revenue, and overall perceptions of how likely a given revenue source is to be spent efficiently and without misuse. There is evidence that the public in poor countries recognizes the differences and the value of NGO aid above that of state-to-state aid. Boulding (2012, p. 115-116) says that publics view NGOs as service providers who have the capacity can benefit the communities they work in due to their good local knowledge, and their ability to implement projects effectively. Baldwin and Winters (2018) show that because of the insulation of NGO aid from the government, information that aid for a given project bypassed the government had positive effects on respondents' willingness to make donations to the project. Furthermore, in Uganda, more than three-quarters citizens surveyed agreed with the claim that donor money was better spent on projects implemented by NGOs and indicated that they would prefer donors to give money to NGOs rather than to the government. The main reasons for this preference in their study were three: less corruption in an NGO administered project, projects would be implemented more quickly by an NGO, and they would be more accessible to citizens. We thus expect citizens to believe they will get more benefits from NGO aid than state-to-state aid and that they will see less misappropriation of NGO aid.

It is less clear whether citizens will be more likely to monitor and sanction NGO-channeled aid funds, relative to state-to-state aid or oil revenues. Like oil revenues and state-to-state aid, citizens make no direct contribution of funds for aid given to NGOs. It may also be counterintuitive to think that citizens might be more engaged with NGO aid, given that they view it as less corrupt (Baldwin and Winters 2018). However, if citizens have higher expectations of NGOs, they may be more upset if there is any corruption or mismanagement, and this could generate higher political action and willingness to monitor. Furthermore, NGOs themselves may have incentives to encourage citizens to monitor them. NGOs care about their credibility and they want and need the public to view them as good agents (Gourevitch, Lake and Stein 2012). Thus they must do things differently and act to maintain their credibility. In particular, they can seek third party monitoring and verification of their activities. This means NGOs want the public to monitor them and thus might be one more reason we could see more action by public to do so. On balance, then, we expect that citizens will exert higher accountability pressures to ensure NGO aid is used well:

Hypothesis 4 *Aid funds channeled through NGOs will produce stronger accountability pressures relative to oil or state-to-state aid.*

Given that donor countries often channel aid through NGOs because they are concerned about government corruption, we expect that government officials will perceive less control over aid funds that are given through NGOs, compared to oil revenues or aid that is part of the government's budget:

Hypothesis 5 *Aid funds channeled through NGOs will be perceived by Members of Parliament as being less controlled by the government or by the MPs themselves.*

Finally, given previous research on NGO aid, and the fact that aid is channeled through NGOs in part to increase the likelihood that funds are used well, we expect that citizens and politicians will both perceive higher public benefits from NGO aid, compared to other windfalls:

Hypothesis 6 *Aid funds channeled through NGOs will be perceived as producing greater public benefits and less likelihood of diversion to corruption or clientelism than oil or state-to-state aid.*

Between 2014 and 2018, we conducted five survey experiments and two laboratory experiments in Ghana and Uganda that allow us to evaluate these hypotheses. The experimental strategies and data analysis plans for all seven experiments were registered with the Evidence in Governance and Politics network prior to researcher access to the outcome data. The first two survey experiments were conducted in Ghana and Uganda on large area probability samples of citizens and included an array of behavioral outcomes designed to assess citizens' actions demanding accountability for the use of the revenue from oil or foreign aid. In parallel to the survey experiments on representative samples of citizens, we conducted two substantively similar survey experiments on members of parliament in the two countries. After these first four survey experiments, we conducted two laboratory experiments – one in Ghana followed by one in Uganda – that pursued the behavioral effects of revenue sources in more controlled settings. In the lab experiments, the outcome of interest measured citizens' willingness to punish poor performance by elites. In 2018 we conducted an additional survey experiment with behavioral outcomes using a sampling strategy designed to over-represent urban residents, who are both more knowledgeable and more politically

Survey/Experiment	Country	Year	N
1. Lab Experiment	Ghana	June 2016	384
2. Lab Experiment	Uganda	January 2017	381
3. Mass Survey Experiment	Uganda	June 2014	2,385
4. Elite Survey Experiment	Uganda	June 2014	153
5. Mass Survey Experiment	Ghana	June 2015	2,678
6. Elite Survey Experiment	Ghana	June 2015	227
7. Information Experiment	Uganda	June 2018	1,256

Table 1: **Seven Survey, Field, and Lab Experiments.** Total sample size reflects only the data used for estimation. In all experiments, additional subjects were allocated to other treatment conditions not considered here, such that the sample size column represents the number of subjects allocated to a treatment condition related to aid or oil. Reported sample size for the lab games is the number of subjects but, because each subject played multiple rounds, total number of subject rounds is 1,616 and 1,900 in Ghana and Uganda, respectively.

active. Table 1 lists the interventions and their character.

3 Case Selection

We selected Ghana and Uganda for data collection due to their representativeness among developing countries generally and Sub-Saharan African countries in particular. Compared to other lower-middle-income countries, both Ghana and Uganda are at or near the means for many conventional development indicators, including life expectancy, under-five mortality, adult literacy, unemployment, and poverty (World Bank 2016).

Ghana and Uganda both depend on multiple sources of revenue; they rely on taxes, foreign aid, and natural resource revenues. The two countries, however, provide variation in the relative importance of aid and oil in their budgets: while Ghana relies more heavily on oil, Uganda is more aid-dependent. Ghana started receiving revenues from oil in 2010, and in 2014 oil rents were 5.7% of GDP, placing it in the 81st percentile among developing countries (World Bank 2016).[3] While Uganda's oil is not yet flowing in comparable amounts, newspaper reports suggest hundreds of millions of dollars in oil revenue were present in the Ugandan budget by 2014/15 (Musisi 2017), and our own survey data show that citizens believe that oil revenues are already a significant fraction of

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[3]Ghana is in the 81st percentile among the 137 developing countries reporting data (just seven, six, and five ranks below Yemen, Russia, and Nigeria, respectively, and ahead of other well-known oil producers such as Norway, Bahrain, and Mexico).

the budget. In contrast, foreign aid forms 6.0% of Uganda's GNI, placing it in the 77th percentile among all developing countries; Ghana's aid per GNI of 3.1 percent is roughly half the value of Uganda's.

Additionally, the two countries allow us to test whether aid and oil differ across political and economic systems while while holding constant the geographic region. Ghana is a stable democracy, scoring near the top of political rights and civil liberties scales; Uganda is labeled as an anocracy with worsening rights and liberties, especially recently (Marshall, Gurr and Jaggers 2016; Freedom House 2016). As a middle-income country, Ghana is more than twice as wealthy as low-income Uganda, with Ghana's 2014 GDP per capita adjusted for purchasing power parity at $3,784 compared to Uganda's $1,634 (World Bank 2016).

Ghana and Uganda also differ in other important aspects. Research on bypass aid points out that donors are more likely to give it to countries with weak institutions and severe government corruption problems (Dietrich 2013). Acht, Mahmoud and Thiele (2015) focus on a set of indicators to show that countries with these types of problems get more bypass aid. They show that countries with a better quality of governance receive more aid through state channels because donors use aid delivery channels to discriminate between recipient countries with good and poor levels of governance. In countries with poor levels of governance, indicated by high levels of corruption, high military expenditures, low institutional quality and poor human rights records, donors bypass state institutions and deliver more aid through non-state actors. In Table 2 we examine Uganda and Ghana on these measures. We find that Uganda is considerably worse on each of these indicators than Ghana. We thus expect that Ugandans will be more sensitive to the differences between NGO and state-to-state aid and oil; that they will be more willing to take action for NGO aid and that this will be especially true for people who trust NGOs a lot and see their own government are corrupt and ineffective. And as we expect in table 3 data show that Uganda receives much more NGO aid than does Ghana, roughly double the amount.

Governance Indicator	Year	Uganda	Ghana
Perceptions of Corruption	2015	65.64	55.17
Physical Integrity Rights	2015	-0.30	0.26
Share of Powerless Population	2015	0.18	0
Military Expenditure % GDP	2015	1.92%	0.53%

Table 2: Comparison of Governance Indicators. Perceptions of Corruption is drawn from the Bayesian Corruption Index where an increase in the index (scaled from 0-100) corresponds to a rise in the level of corruption. Physical Integrity Rights measures the physical integrity of citizens from the CIRI Physical Integrity Data, accounting for torture, government killings, political imprisonment, extrajudicial executions, mass killings and disappearances as coded by Fariss (2014) and updated by Roser (2018). Higher values indicate greater rights. Share of Powerless Population is the share of the population who belonged to an ethnic group whose representatives held no political power at the national level of executive power. Military Expenditure as % GDP is drawn from the World Bank's World Development Indicators.

Recipient	Total Disb.	State-to-State	% Total	NGO	% Total
Ghana	1906.58	1235.07	64.78	139.49	7.32
Uganda	1710.07	946.11	55.33	271.76	15.89
sub-Saharan Africa	46919.44	23508.38	50.1	8062.79	17.18
Developing Countries	177722	105337.5	59.27	21515.64	12.11

Table 3: Aid Channels: State-to-State vs. NGO Aid Gross Disbursements (Creditor Reporting System), 2015. Source: OECD DAC Creditor Reporting System, 2019. Total Disb., State-to-State, and NGO provide gross disbursements of aid in constant 2017 U.S. dollars (millions). % Total provide the share of State-to-State/NGO aid over total disbursements. State-to-State refers to aid channels classified as "Public Sector" by the CRS, whereas NGO refers to organizations classified as "NGOs & Civil Society".

4   Aid and Oil: A Meta-Analysis

To test whether state-to-state aid and oil revenue generate different accountability pressures from citizens (Hypothesis 1), different perceived levels of control by politicians (Hypothesis 2), and different perceived levels of public benefits (Hypothesis 3), we use outcomes from seven different experiments, which we conducted. Each experiment is briefly described here, and additional information for each is available in Appendix A.

4.1   Experimental Design

Experiments 1 and 2 consist of a set of laboratory experiments on citizens examining accountability demands based on those in Martin (2014). In the experiments, which resemble an Ultimatum game, a "Leader" has to divide a "group fund" of 10 monetary units (MU) between himself and a "Citizen", who has an endowment of 5 MU. If the Citizen is dissatisfied with the transfer, she can pay 1 MU to force the Leader to pay a fine of 4 MU (no one receives money lost in punishment). The key source of variation in the experiments is the source of the group fund, proxying for the government budget: it is described as coming either from foreign aid, or from oil revenues. These treatments are reinforced multiple times in each single-shot game, both verbally and using visual aids. The main outcome of interest is the lowest transfer the Citizen will accept without punishing the Leader; this is the "punishment threshold" in the analysis.[4] A higher threshold indicates that citizens place higher demands for accountability on leaders. These experiments were conducted in Accra, Ghana in 2016 and Kampala, Uganda in 2017. Appendix A describes each protocol in more detail.

Experiments 3, 4, 5, and 6 examine bottom-up accountability for aid and oil outside of a lab setting. In 2014 and 2015, we ran survey experiments on both citizens and elected officials in Ghana and Uganda. In each country the citizen samples were nationally-representative, and the officials survey consisted of a convenience sample of current and former Members of Parliament (MPs). In all four surveys, respondents were read a statement about government funds. Citizen

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[4]To determine the punishment threshold, respondents randomly assigned to be Citizens were asked whether they would punish each possible allocation of the group fund the Leader could make.

respondents then completed an outcomes module that asked their perceptions of the effects of these funds; how they thought the money would and should be spent; and a series of costly behavior actions that citizens could take to monitor the money. For analysis, these were compiled into three indices measuring perceived *Benefits*, perceived level of *Misappropriation*, and willingness to take *Action*. In the MP surveys, outcome measures included two indices, one based on questions about perceived public benefits from the funding (*Benefit*) and one about the perceived degree of influence the MP has over the funding (*Influence*). In all four surveys, the amount of new revenue coming to the government was held constant and the source of the revenue was chosen randomly. In this section we focus on two treatments: funds from foreign aid to the government, and funds from the development of oil reserves. In Section 5, below, we discuss additional treatments and experimental details; full protocols are available in Appendix A.

Finally, Experiment 7, run on a nationally-representative sample of citizens in Uganda in 2018, tested stronger versions of the aid and oil treatments run in the earlier survey experiments. In the experiment, respondents were randomly assigned to a pure control group, a foreign aid treatment, or an oil treatment. In the aid (oil) treatment group, respondents were given information about past and future aid (oil) revenues that the government of Uganda received or will receive. They then were given detailed information to help them process this information, including how those revenues translate on a per-capita and per-village basis, and information regarding what individual or village-level goods could be purchased with the per-capita amount. Respondents in the treatment and control conditions were then given the opportunity to engage in several costly political behaviors, including donating to an accountability-focused NGO, contacting a public official, and requesting more information about survey results. We combine these into a single *Behavioral Index* of willingness to take action.[5]

4.2   Analysis and Results

The seven experiments introduced above all test whether citizens or MPs in Ghana or Uganda perceive differences between aid and oil revenues in terms of citizens' willingness to take

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[5]To measure treatment strength and uptake, we used a coin allocation task to capture whether our treatments changed respondents' perceptions of the composition of the Ugandan budget. A discussion of this task and the corresponding results is available in Appendix B.

action to monitor or sanction misuse of funds (Hypothesis 1); MPs' perceptions of their control over how each type of funds is used (Hypothesis 2); and citizens' and MPs' perceptions of who benefits from each type of funds or the likelihood they are misused (Hypothesis 3). For each experiment, we use oil as the baseline condition and aid as the treatment condition.

Analysis differed depending on the type of experiment. For the two lab experiments (Experiments 1 and 2), the data was modeled at the subject-round level, such that each subject appears multiple times. As a result, standard errors in the lab experiments are clustered by subject.[6] We also included as a covariate the transfer the subject received in the previous round as well as fixed effects for both round and enumerator. In the Ghana lab experiment, we include additional controls for treatment arms not discussed here. In both lab games the first round of the experiment, which was used as a practice round, is dropped for analysis. For the survey experiments (Experiments 3, 4, 5 and 6), we use enumerator fixed effects and classical standard errors for all estimates.

Figure 1 reports the coefficients and confidence intervals for each experiment. Experiments 1 and 2 (laboratory experiments), show no significant differences in willingness to punish between the state-to-state aid and oil conditions. In experiments 3 and 5 (surveys on citizens in Uganda and Ghana), we find no significant differences between aid and oil for any of the three outcome indices. Similarly, there are no significant differences in either outcome index for MPs. Finally, in Experiment 7, we find no significant differences between aid and oil for any outcome index, despite the use of stronger informational treatments.

The null results suggesting no meaningful differences between oil revenue and state-to-state aid could be due to confounding effects within different groups of people about how they react to the information treatment. Different subgroups might respond very differently. To see if this is the case, we explored a number of politically relevant subgroups for Experiments 3-6. We looked at a number of subgroups that we think are the most likely and important: those who live in oil-producing regions, government supporters and opponents (proxied by support for the ruling party), respondents' self-reported coethnicity with the president, and citizens with different degrees of poverty (above and below the sample median income). There are no consistent patterns of statistical significance across measures and countries for any subgroup, and the few significant

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[6]In the lab experiments, subjects completed 5 single-shot rounds of the assigned treatment. See Appendix for details.
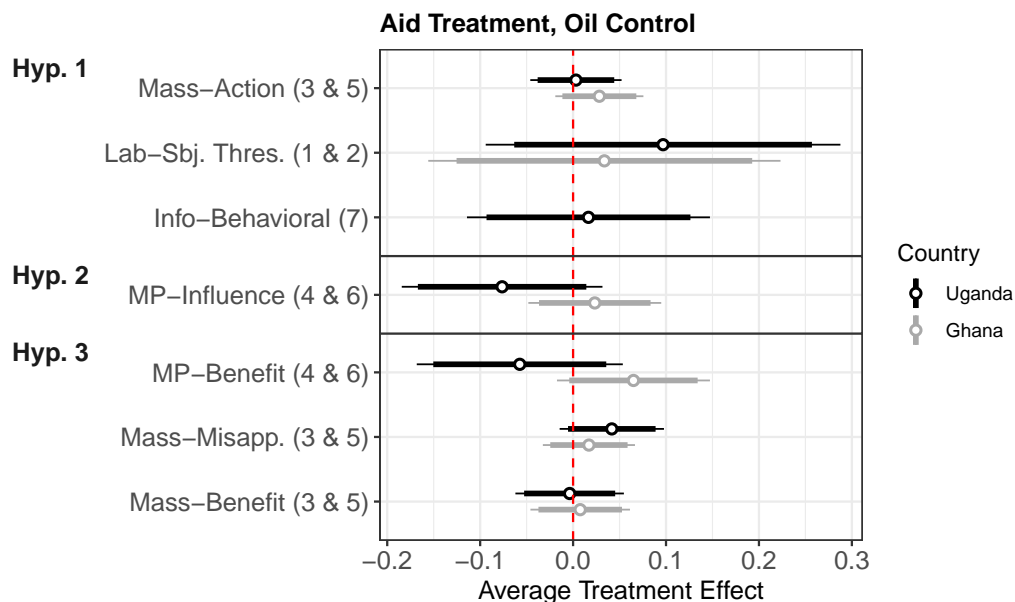
Figure 1: This figure shows the results for the aid-oil comparison across all 7 experiments. The number(s) in parentheses indicate the experiment used for the analysis from Table 1. In all cases the reference category is oil. All effect sizes are in standard deviation units, such that reported ATEs represent the standard-deviation change in the dependent variable of interest when changing the treatment condition from oil to aid. The mass surveys use the full, unimputed samples.

results do not survive a multiple testing correction.

Given the large number of experiments, we also conducted a multi-level meta analysis to assess whether there was a discernible overall difference. Because the survey experiments utilized multiple dependent variables, we employ a random-effects model nested by experiment and country. This multi-level structure accounts for dependence in the dependent variables within a given experiment as well as the correlation in effect sizes within each country. Utilizing the standardized beta coefficients from each experiment, we calculate effect sizes using Hedges g statistic.[7] The meta-analysis beta coefficient is 0.034 ($p = 0.061$) is small in substantive terms and marginally insignificant.[8]

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[7]While it is common to calculate effect sizes using Cohen's d, doing so may introduce bias in the estimated effect when some studies have small samples. Hedges' g statistic does not suffer from this problem. Nonetheless, results are robust to the use of Cohen's d.

[8]To account for the fact that the survey experiments are much larger, we also conducted an identical analysis weighting estimates according to the number of subjects in the experiment. This effectively downweights the lab and MP survey experiments, where total sample sizes are comparatively small. The results are nearly identical.

5 Testing Aid Modality

As predicted by Hypotheses 1-3, we find no robust differences between oil and aid that flows directly to governments among either citizens or MPs in Ghana or Uganda, across seven experiments. Hypotheses 3-6 argue that, in contrast to on-budget aid, "bypass aid" to NGOs may be viewed very differently. In particular, aid channeled through NGOs will produce stronger accountability pressures (Hypothesis 4), be perceived as less under the control of MPs (Hypothesis 5), and perceived as more beneficial to citizens (Hypothesis 6). This section uses additional treatment conditions from Experiments 3-6 (national surveys of citizens and MPs in Ghana and Uganda) to test these hypotheses. This section first presents additional details on the research design introduced above, then presents results.

5.1 Design and Implementation

For the survey experiments with citizens as subjects, we drew sizable samples of Ghanaians (n = 2,678) and Ugandans (n = 2,385) that are nationally representative in most respects, except that we oversampled districts that are nearest the sites of oil exploration.[9] We also used large convenience samples of current and past MPs in the two countries.

In in-person interviews with Ghanaian and Ugandan citizens and MPs, enumerators first presented a randomly assigned statement about one of three sources of significant public funds: oil, state-to-state aid, and aid to NGOs.[10] Enumerators then invited subjects to participate in a series of costly actions to monitor the money, and asked a set of questions about what they thought the effects of the funds would be and how they thought the money would and should be spent. Our goal was to examine accountability demands among citizens in principle; that is, what costs they were willing to pay to monitor and demand greater transparency across future revenue. We also probed MP beliefs about differences in institutional control and public-goods targeting across revenue sources. Our analysis first replicates the finding from above comparing state-to-state aid

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[9]We surveyed several hundred more people in Ghana (n=888) and Uganda (n=801) who received a tax treatment and excluded from the current analysis. See Appendix A for discussion of the randomization protocol.

[10]Another set of subjects received a fourth treatment condition with information about taxes; those are analyzed in de la Cuesta et al. (2019).

and oil, then considers NGO-delivered aid versus state-to-state aid; NGO aid vs. oil; and NGO aid vs. pooled state-to-state aid and oil revenues.

In the citizen survey, respondents first completed a demographic module, then were randomly assigned to receive a statement about revenues from one of three sources: oil receipts, aid flows to the government, and aid flows through NGOs. Randomization of treatment assignment allows us to uncover systematic differences in subject actions and responses across conditions. The treatment conditions in the 2014 and 2015 surveys were as follows:

"As part of this survey, we are also providing important information to [Ghanaians/Ugandans] about finances in [Ghana/Uganda]. In next few years, government agencies of [Ghana/Uganda] will receive at least [2.1 billion cedis/5 trillion shillings]. This money will come from [the sale of the oil that was recently discovered in [Ghana/Uganda]/aid given by foreign governments to the government budget/aid given by foreign governments to NGOs]. This money will [become part of the [Ghanaian/Ugandan] government budget/go DIRECTLY to non-governmental organizations, not to the central government.] [Lawmakers and the President/NGOs] are supposed to use the money to improve the lives of [Ghanaians/Ugandans]."

Within each country, the prompts are identical across treatment conditions in terms of the absolute amount of revenue noted. All were based on best estimates of plausible future budget sources given publicly available information; thus, no deception was used in the experiment. This allows us to isolate the effects of revenue source and channel from revenue size. Thus, the treatments prime people to consider the oil funds, state-to-state foreign aid, and bypass foreign aid through NGOs and then probe whether they are willing to take various actions to promote government accountability, as well as their beliefs about how the money would be spent. The treatments underscore that this money is intended to provide them with public goods.

5.2 Outcomes of Interest

Following the experimental condition text, citizens were asked a series of behavioral and attitudinal outcome measures. For analysis, we combined these into the three indices introduced

in Section 4.1: *Action, Benefit,* and *Misappropriation.* Appendix A provides the wording for the individual items used to construct these indices.

Our first index, Action, focuses on the actions citizens might take to monitor and sanction the government for its use of the revenues, and allows us to test Hypothesis 4. This index is built from items that ask citizens whether they would support an independent agency to track the new revenues; whether they would sign a petition, anonymously or with their actual name, that would be sent to their MP asking for the creation of an independent agency to track the revenue in the relevant treatment condition; whether they would be willing to send an SMS text message reinforcing their position to their MP; how willing they would be to contact their village elder, MP, or local opinion lead if the money was not spent how they wished; and, finally, whether they wanted to donate a portion of their compensation for taking the survey to watchdog groups promoting government accountability.[11]

The second index, Misappropriation, measures whether and how much citizens think the revenues are likely to be misappropriated by the government, allowing us to test Hypothesis 6. It includes questions about the probability the funds are used for clientelism, whether subjects can see how the funds are spent (i.e. perceptions of transparency), and whether their MP can see how they are spent. Higher values of the index correspond to beliefs that the revenue is less transparent, and more likely to be misused. The third index, Benefits, tracks whether citizens believe the funds will be used to help the public versus helping political leaders and the government, also testing Hypothesis 6. It includes questions about whether people believe the funds will be spread equally over the districts (versus concentrated in ruling government ones), whether the funds will benefit ordinary people like themselves, whether they will benefit their family, and whether they will benefit their community. Higher values of the index correspond to beliefs in higher citizen benefits from the revenues.

For the MPs, we create two indices from available survey items. The first index parallels the one for the public focusing on benefits from the revenues and whether they serve the public; Benefits includes questions about whether the revenues will help their family, their community,

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[11]Citizens who took the survey received either 6 Ghanaian cedis or 1,000 Ugandan shillings at the start. At the time of the experiment 6 cedis were worth about $2.40 and 1000 shillings were worth about 40 cents at 2014/15 exchange rates, or about $6 and $1 respectively in terms of local purchasing power.

and the economy (Hypothesis 6). The second focuses on how much control and influence over the revenues the MPs believe they have; Influence covers questions about whether the MP thinks tracking the funds is important, if the MP can direct the funds to his district, if the MP feels he has control over how the funds are spent, and if the MP can observe how the funds are spent by the government. This tests Hypothesis 5. The exact wording of individual questions can be found in Appendix A. Higher values of the index indicate higher expections of benefits and higher perceived influence, respectively.

We create both the citizen and MP indexes by calculating the average of the non-missing values for the set of questions in each index. Each constituent variable is standardized prior to the averaging procedure, such that the index measure is given in standard deviation units.

5.3 Data and Method

The citizen sample contains 2,678 in Ghana and 2,385 in Uganda, which were collected using area-probability samples designed to achieve national representativeness. Data collection in Uganda occurred from May to June 2014 and in Ghana during March and April 2015. To enhance the validity of our estimates, we implemented block randomization within each enumerator, resulting in perfect or near-perfect balance in the number of treatments of each type delivered by enumerators. Due to random selection of primary sampling units (PSUs, which were polling stations), this resulted in a form of enumerator-PSU blocking that ensured assignment to our treatment conditions was balanced both across enumerators and across PSUs. See Appendix A for more discussion of the randomization protocol.

Balance at the level of the PSU allows us to exploit not only the spatial correlation between many important respondent characteristics, such as education, wealth, and access to information, but also the strong spatial correlation between respondents' political experiences. In terms of covariate balance, as expected, the block randomization algorithm was successful in randomizing respondents into equally sized treatment groups within polling-station PSUs.[12] The MP sample includes 153 current and former MPs from Uganda and 227 from Ghana.[13] It is a convenience

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[12]This was confirmed through a series of logistic balance tests (not shown).

[13]The full MP sample includes 200 current and former MPs from Uganda and 300 from Ghana. Among the full samples,

sample but is broadly representative of the 9th Parliament of Uganda and of the 6th Parliament in Ghana, as shown in the elite surveys section of Appendix A.2.

We report results below for our main behavioral outcomes, focusing on comparing aid to NGOs to the on-budget aid and oil source conditions. To control for unexplained – but possibly influential – differences across enumerators, we also include enumerator fixed effects. All of these results are estimated using generalized least squares with classical standard errors.

5.4 Results

In Figure 2, we present the mass survey results for Ghana and Uganda. In the left pane we first replicate the comparison of state-to-state aid and oil; there is no significant difference in any of the three indexes for either country. The other three panels compare NGO aid to pooled oil and state-to-state aid, and to oil and state-to-state aid separately. While we find no significant differences in Ghana, in Uganda we find that the NGO aid condition leads people to take more action and to see less likelihood of misappropriation than do the state-to-state aid and oil conditions. In Uganda the NGO condition makes people less likely to fear misappropriation against both the state-to-state aid and the oil conditions. The NGO aid condition sparks the most accountability action against the oil treatment, but also has an impact relative to the state-to-state aid one. There is also some evidence that Ugandans see the NGO aid as providing more public benefits than the oil treatment.

In Figure 3, we present the MP experiments. Again we replicate the null finding when comparing the state-to-state aid and oil conditions, as shown in the left pane. Again we find differences between Uganda and Ghana. In Uganda, MPs believe that NGO aid brings more public benefits than state-to-state aid, but we see no other differences. In Ghana, we see differences in the influence index between NGO aid and both oil and state-to-state aid. MPs there feel that they have less control over and knowledge about NGO aid than state-to-state aid or oil.

These results lend partial support to our main hypotheses. Hypothesis 4 expects differences between NGO-channeled aid and oil or state-to-state aid in terms of accountability action. We find

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47 Ugandan MPs and 73 Ghanaian MPs received a tax treatment and are excluded from the current analysis.

Mass Survey Index Measures, Enumerator Fixed Effects (Full Sample, Unimputed)
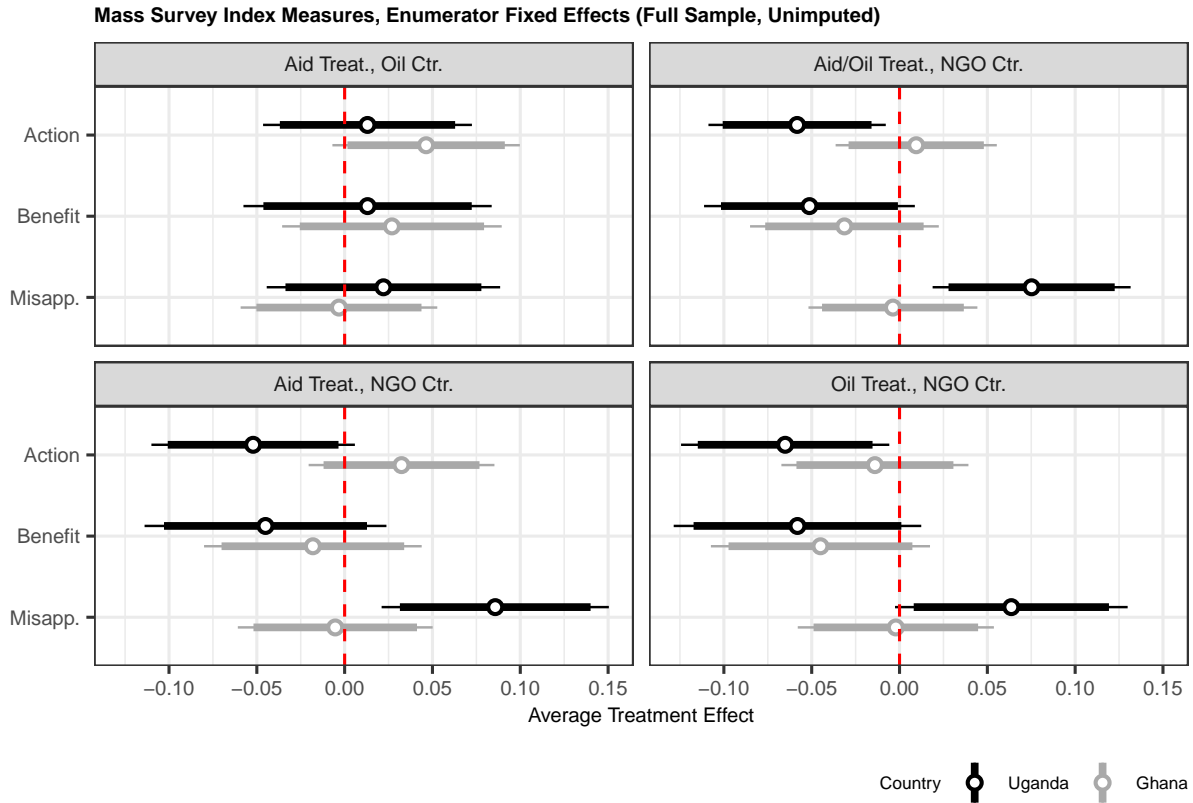
Figure 2: Mass Survey Results. Mass survey main treatment effects for the full samples, unimputed. Effects are in standard deviation (SD) units. Estimates obtained using ordinary least squares with enumerator fixed effects. Lines indicate the upper and lower bounds of 95% and 90% confidence internals. Uganda mass survey 2014 and Ghana mass survey 2015.
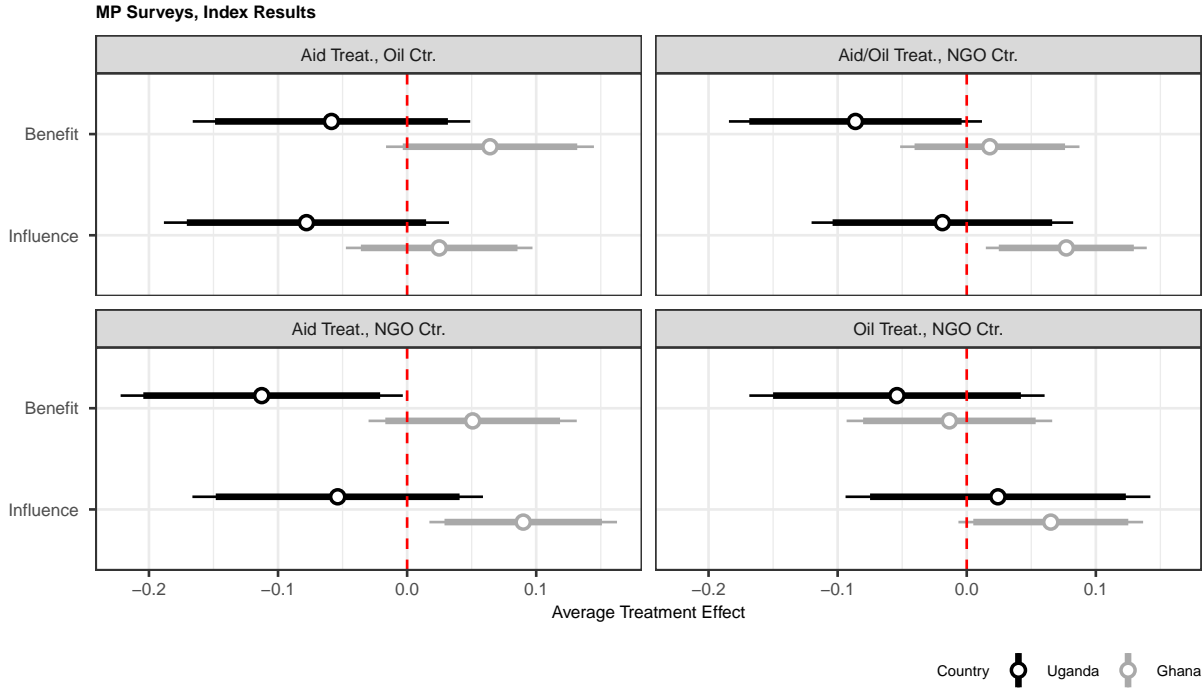
MP Surveys, Index Results

Figure 3: MP Survey Results. MP survey main treatment effects for current and former members of parliament. Effects are in standard deviation (SD) units. Estimates obtained using ordinary least squares with enumerator fixed effects. Lines indicate the upper and lower bounds of 95% and 90% confidence internals. MP Uganda survey 2014 and MP Ghana survey 2015.

support for this claim, most strongly in Uganda. And Hypothesis 5 sees differences in NGO aid from the other two sources for likelihood of corruption and we find support for that as well in Uganda. Hypothesis 3 focuses on MPs and claims that they will view NGO aid and oil and state-to-state aid differently: they will have less control over it and less knowledge of how it is spent. This is supported in Ghana.

6 Why are NGOs different?

The analysis above presents evidence that citizens in Uganda are more likely to monitor aid when it flows through NGOs, and perceive higher benefits from NGO-funneled aid than state-to-state aid or oil. In Ghana, MPs believe they have less control over NGO-channeled aid, compared to the other two revenue sources. This raises two questions. First, *why* are NGOs seen as distinct from governments when delivering aid? Why does the public and why do MPs seem to view aid that

is delivered by NGOs to be different from aid and oil money that flows directly to the government budget? And second, what explains the variation in our results across the Ghana and Uganda samples?

For the results in the mass surveys, the belief that NGO spending is more likely to benefit citizens could have several sources. The discussion in Section 2.2 suggests several ways NGOs could differ: they could be seen as more efficient (perhaps because they have greater knowledge of local needs); less corrupt; more responsive to local needs; or simply more competent than the corresponding government officials. All of these share an empirical implication: NGOs should be viewed more positively than the governments of the countries in which they work, and should trust them more. Data from the Afrobarometer before our studies were conducted suggest that the public in African generally and in Uganda and Ghana specifically think these organizations are very helpful. More than three-quarters of the sample rate them as being somewhat or very helpful in table 4. Table 4 from the Afrobarometer shows that the public views NGOs as much less corrupt than the president or MPs in both Uganda and Ghana.

In our own data we asked numerous questions about NGOs and public trust. Table 5 reveals that in many aspects Ugandans and Ghanaians trust NGOs more than their own government. In Ghana 60% trust NGOs somewhat or a lot and only 40% trust their MPs and 52% trust their president. In Uganda 60% trust NGOs a lot or somewhat, while 30% trust their own MPs. Interestingly, the trust figure for the president is very high at 69%, which may be inflated by political concerns in this increasingly authoritarian context. Overall, we see lots of evidence that NGOs are more trusted than recipient governments.

Our theory above and data suggest that NGO aid will be different and might evoke more political accountability than state-to-state aid or oil. If our conjecture about why is correct, we should find that various subgroups show stronger accountability effects here. Are those who think NGOs are trustworthy—and who think the government is not—more likely to take action, see benefits from NGO aid and believe less misappropriation is likely? We examine various subgroups below in our 2014 and 2015 data. It shows that in Uganda at least there is some effect for these different groups as we might anticipate from our theory. Table 6 uses our full sample and shows that in Uganda those who evince high levels of trust in NGOs are more likely to take accountability

27

Table 4: Afrobarometer Round 4 (2008): NGO Assistance

	Uganda		Ghana		SSA	
	%	Obs	%	Obs	%	Obs
No/Little Help	23.18	433	24.23	199	22.61	4701
Help Somewhat/A Lot	76.82	1466	75.77	627	77.39	14872
Total	100.00	1899	100.00	826	100.00	19573
N	1899		826		19573	

Source: Afrobarometer, Round 4 (2008). Q98d: In your opinion, how much do each of the following do to help your country, or haven't you heard enough to say: Other international donors and NGOs (apart from the United Nations)?. Sub-Saharan Africa includes the percentages across all 20 countries surveyed in Round 4. Within country weights (withinwt) used for Uganda and Ghana; Across country weights (acrosswt) used for sub-Saharan Africa.

Table 5: Uganda and Ghana Mass Surveys (2014/2015): Trust

	President		MPs		NGOs	
	%	Obs	%	Obs	%	Obs
Ghana						
Not at all/A little	48.28	1293	59.78	1601	40.29	1079
Somewhat/A lot	51.72	1385	40.22	1077	59.71	1599
Total	100.00	2678	100.00	2678	100.00	2678
Uganda						
Not at all/A little	30.69	732	70.31	1677	40.80	973
Somewhat/A lot	69.31	1653	29.69	708	59.20	1412
Total	100.00	2385	100.00	2385	100.00	2385

Trust question fielded in the 2014/2015 Citizen Surveys: "How much do you trust the following people?"... 1) The President, 2) Your Member of Parliament, 3) Non-governmental organizations (NGOs). Sample excludes respondents who received the tax treatment. Orginal values were dichomotized so "Not at all" and "Just a little" is equal to zero, and "Somewhat" and "A lot" recoded as 1. "Don't Know This Organization", "Refuse", and "Don't Know" coded as missing.

actions and to see benefits from NGO aid than from state-to-state aid or oil. Those who view government services as particularly poor are also more likely to see more benefits from NGO aid. And finally those who perceive high corruption in their government are more likely to see benefits from NGO aid than from the other two sources. These subgroup effects support the idea that NGO aid is viewed differently and evokes more accountability pressures.

	Action		Benefit		Misappropriation	
	Uganda	Ghana	Uganda	Ghana	Uganda	Ghana
	(1)	(2)	(3)	(4)	(5)	(6)
	b/se	b/se	b/se	b/se	b/se	b/se
Panel A: High Trust in NGOs						
Oil Treatment, NGO Control	-0.116**	-0.042	-0.167**	-0.093	0.087	0.035
	(0.055)	(0.058)	(0.066)	(0.066)	(0.063)	(0.061)
Aid Treatment, NGO Control	-0.041	-0.023	-0.148**	-0.067	0.051	-0.019
	(0.055)	(0.057)	(0.066)	(0.065)	(0.063)	(0.061)
Aid/Oil Treatment, NGO Control	-0.078*	-0.034	-0.158***	-0.080	0.069	0.007
	(0.048)	(0.050)	(0.057)	(0.057)	(0.055)	(0.053)
Observations	2161	2261	2161	2261	2152	2257
Panel B: Low Government Services						
Oil Treatment, NGO Control	-0.052	0.027	0.033	-0.061	0.005	-0.052
	(0.060)	(0.057)	(0.071)	(0.064)	(0.068)	(0.059)
Aid Treatment, NGO Control	-0.008	0.021	0.003	-0.042	-0.000	-0.013
	(0.059)	(0.057)	(0.071)	(0.064)	(0.068)	(0.059)
Aid/Oil Treatment, NGO Control	-0.030	0.024	0.018	-0.051	0.002	-0.032
	(0.052)	(0.049)	(0.061)	(0.056)	(0.059)	(0.051)
Observations	2384	2678	2384	2678	2373	2671
Panel C: Corruption						
Oil Treatment, NGO Control	0.024	0.045	-0.132*	0.074	0.063	-0.030
	(0.063)	(0.058)	(0.075)	(0.065)	(0.071)	(0.061)
Aid Treatment, NGO Control	0.075	0.098	-0.094	0.079	0.051	-0.045
	(0.064)	(0.060)	(0.076)	(0.067)	(0.073)	(0.062)
Aid/Oil Treatment, NGO Control	0.048	0.069	-0.114*	0.077	0.056	-0.038
	(0.055)	(0.051)	(0.065)	(0.057)	(0.062)	(0.053)
Observations	2337	2652	2337	2652	2328	2646

* p<.1, ** p<.05, *** p<.01

Table 6: Subgroup Effects from 2014/2015 Mass Surveys, Full Sample, No Controls and Unimputed.

In Uganda, we find strong citizen-level differences in perceptions of NGO aid and perceptions of windfalls that are channeled through the government; this effect is concentrated among

those who trust NGOs, but do not trust their own government. However, Ugandan MPs do not believe that they have more control over state-to-state aid or oil revenues, compared to NGO aid. In contrast, we find no effects of the NGO treatment among citizens in Ghana, but do find that MPs believe that they have less control over NGO aid, compared to the other two sources. These results show the advantages of replicating studies in multiple countries, but also raise the question of why Ghana and Uganda are different.

The differences across the countries are also consistent with a story about their different institutional structures. Compared to Ghana, Uganda is less democratic, has power more centralized in the office of the president, and has higher levels of corruption. This can help make sense of both the citizen and MP results. In Uganda, MPs are relatively weak compared to the president – thus, perhaps they feel that they have little control over all types of revenue, regardless of whether it is part of the government's budget. In Ghana, MPs are more powerful and so believe that they have some control over state-to-state aid and oil revenues, but less control over NGO aid. In the citizen surveys, high corruption in Uganda makes citizens believe that NGOs will use aid better. Higher overall levels of trust in Ghana mean that citizens see less of a difference between NGO aid and money that is part of the government budget.

If it is true that institutional context mediates the degree to which NGO aid is used differently than windfalls that accrue to government budgets, this has significant implications for when donors should consider funding NGOs. However, our existing data cannot rule out alternative reasons for the differences across country contexts.

7   Discussion

Across seven experiments in two countries, the results suggest general support for the hypotheses. Meaningful differences do not arise in measured outcomes for subjects assigned to state-to-state aid compared to oil revenue conditions. This holds for perceptions of public benefits, anticipation of leakage to corruption or clientelism, and, critically, in the behavior of subjects demanding accountability for the spending of the revenue. In line with the criticisms of aid skeptics, these results suggest that state-to-state aid and oil have similar effects on policy, politics, and

accountability pressures.

However, we do see some meaningful differences in outcomes for subjects assigned to the NGO aid condition compared to both on-budget aid and oil revenues. The differences are not universal – in particular there were few significant effects for citizen subjects in Ghana – but compared to the null results for state-to-state aid vs. oil revenues, the significant results for NGO aid are notable. These results underscore the claims of aid optimists that different types of aid are intended for different purposes and that channels of aid delivery may mitigate some of the anticipated negative effects of aid delivered directly to national accounts.

While the results from our seven different interventions all suggest the same conclusions, there are a number of potential criticisms this study faces. First, we are examining perceptions and behavior of individual citizen and elite subjects in controlled laboratory or survey settings, not actual governance outcomes. We believe as others do that such perceptions and micro-level behavior are necessary first steps in producing aggregated, macro patterns in politics and policy. So they are important to understand in their own right. Though we concede that the evidence does not reflect directly on macro outcomes. Second, our data from four experiments focuses more on one country, Uganda, which may raise concerns about generalizability. But our efforts in three experiments in Ghana, which like Uganda depends on aid and oil as well as taxes for the majority of government revenues, nevertheless support our findings and thus lend further credence to the broader claims we make: while state-to-state aid and oil revenues may be indistinguishable in terms of their political effects, foreign aid – if channeled through NGOs – need not be a curse like other natural resources.

Third, the treatment in the 2014 Uganda and 2015 Ghana surveys may appear weak. The revenue sources were merely identified in a short prompt and not elaborated at length. Similarly, the 2014-15 surveys lacked a pure control condition in which subjects received no information. Sensitive to these concerns, in our 2018 survey we revised the instrument to address both treatment strength and controlled comparison. We used a pure control condition in which subjects received no additional information about revenue source and we fortified the treatment substantially. Even with this stronger treatment we achieve very similar results in the more recent 2018 Uganda survey, suggesting that weak treatment is unlikely to be the cause of the null results in 2014 and 2015. The results for four behavioral measures and a summary index are available in appendix table A.3.

Moreover, the information provided is designed to approximate the form in which actual voters would learn about government budgets, such as through a newspaper or radio report.

In this paper we show that certain types of aid and oil are indistinguishable in terms of public and elite perceptions of their political ramifications. So called state-to-state aid, i.e., that which goes directly into the recipient government's budget, is viewed similarly by citizens and elites alike. Aid delivered to NGOs comes with different perceptions. But is it perceived to be similar to tax revenues in its accountability impact or still far less desirable than taxes? Similar research de la Cuesta et al. (2019) has shown that NGO-channeled aid is seen as preferable in Uganda in terms of willingness to take action against misuse and belief in less misappropriation relative to taxes, and this is somewhat true again in Ghana. Surprisingly, we find that NGO aid may even generate greater accountability prospects than tax revenues.

8   Conclusion

Our study investigates the perceived political ramifications of foreign aid and oil revenues for democratic accountability in poor countries. We use seven different experiments to inquire into the perceived effects of oil revenues and foreign aid on political accountability in two African nations. Does aid demobilize the public from demanding accountability in a similar fashion as oil revenues? In our micro-level studies we probe the perceptions and behavior of nationally representative samples of Ghanaians and Ugandans over the course of four years (2014-2018). At the individual level do we see the same outcomes for the two different revenue sources? Given that both of these countries depend on a blend (a different one in each case) of aid and oil funds for the government budget, we believe both the public and elected representatives have experience with these different revenue sources and therefore the information they hold ought to prove relevant in assessments of the political effects of revenue type.

Our surveys draw on nationally representative samples of citizens being asked about and treated with common questions in typical settings; our lab experiments are more abstract and less natural environments but occur in much more controlled conditions. We also focus on both ordinary citizens and political elites in the form of national members of parliament. All types of our

evidence point in the same direction, however, which is reassuring. Our findings show that the mass public does not perceive much difference between oil revenues and foreign aid that goes directly to the government. They are not willing to take greater action to monitor or punish leaders for the (mis)use of these funds compared to one another. But when the channel of aid is changed and taken out of the government's hands, then the public is no longer indifferent. NGO aid is preferred and evokes more action on the part of citizens in Uganda. Likewise, MPs see a difference: in Ghana they feel much less in control of NGO aid, and in Uganda, MPs believe NGO aid brings more benefits to the public than state-to-state aid. Finally, in Uganda those in the public who trust NGOs a lot and those who believe the government is corrupt are the ones more likely to take action and see less misappropriation in NGO aid, thus supporting our claim that NGO aid is viewed and treated differently.

It is interesting to note that these differences in institutional channels for controlling aid are similar to those found for oil revenues. Jones Luong and Weinthal (2010, 6) noted that the ownership institutions for oil production also mattered for whether oil revenues were a curse or blessing. In environments where oil was produced by domestic private firms and not state-owned monopolies the resource curse was not evident. "Our central claim is that mineral-rich states are cursed not by their wealth but rather by the structure of ownership they choose to manage their mineral wealth." [14] Our evidence suggest the this may also be true for foreign aid: the institutional structure for delivering aid may condition how it affects politics.

Foreign aid has been criticized extensively in the past few decades (e.g., Moyo 2009; Deaton 2013; Collier 2007; Easterly 2001). Much of this criticism has been about the economic consequences of aid, but increasingly the political effects have been singled out as especially pernicious. It is these political effects that our study was intended to focus on, and in particular the ways in which aid, like oil revenues, might undermine democratic accountability in developing countries. Institutions that provide aid have acknowledged and searched for new methods and new ideas to overcome the problems identified by various studies. DFID is an important case here; the institution has been at the forefront of trying new ways to deal with aid using new methods to study its effects (Ireton 2013;

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[14] They go on to clarify: "which form of ownership structure a country adopts is arguably the first and the most important choice that mineral-rich states make because it shapes incentives for subsequent institution building. In particular, it affects the type of fiscal regime that emerges and hence the prospects for building state capacity an achieving long-term growth." (9)

Morrissey 2002; Killick 2005). One way that these institutions tried was the employment of non-government organizations to implement aid projects rather than using the governments (Molenaers, Gagiano and Renard 2015). USAID has often channelled the majority of its aid through NGOs for reasons its critics have identified.

Our study suggests that the public and political elites in recipient countries have noticed this method of bypassing the government and recognize that it may have a distinct impact on aid effectiveness. This point is important because it suggests that the efforts of donor institutions to adjust to political problems with aid have been noticed and may well be perceived to have the intended effects. By bypassing governments, donors may prevent aid from reducing the public's willingness to demand political accountability. This mechanism for delivering aid may render aid unlike revenues from oil and other natural resources in terms of its political consequences. Aid may bring more benefits like taxes for citizens and be less of a resource curse (de la Cuesta et al. 2019). This finding about aid may also have ramifications for all non-tax public revenues. Changing the structure for managing and overseeing non-tax revenues, especially natural resource rents, similar to the way NGO aid works, may enable greater public benefits from all these sources of public spending.

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Appendix

Contents

A Implementation and Design

A.1 Uganda and Ghana Survey Experiments (2014/2015)

A.1.1 Assignment to Treatment

Subjects were randomly assigned to treatment and control conditions in which they were provided with information about government revenue. While simple randomization would not lead to biased estimates in expectation, the presence of non-trivial differences in respondent experience with local government at the constituency-level presented an opportunity to improve the efficiency of the differences estimator through the use of a block randomization algorithm. This algorithm was designed such that, within our primary sampling unit and thus at all higher-level geographic units—including, importantly, the constituency—there was perfect (or, when the number of respondents was not divisible by four, near-perfect) balance between our experimental conditions.

The donation measure prompt was as follows:

A.1.2 Donation Prompt for 2014 Uganda and 2015 Ghana surveys

"There are several organizations in [Ghana/Uganda] that work to make it easier for ordinary [Ghanaians/Ugandans] to see how development funds are spent. At the beginning of the survey, we gave you [6 cedis/1,000 shillings] to compensate you for the time it has taken to answer our questions. Now, we would like to know if you would like to donate to one of those organizations. You may choose to donate to [Action Aid Ghana/Uganda, Transparency International Ghana/Uganda, or IMANI, a research organization that analyzes government budgets, policies and initiatives/a third organization of your choosing]. If you would like to donate, please give me the amount of money you would like to donate and which organization you would like to donate to. If you do donate, your money will be used to help reduce corruption and improve the lives of ordinary Ghanaians/Ugandans."

A.1.3 Index Construction

To investigate the effects of government revenues, we construct three separate indexes for the mass surveys, behavior, action, and expected benefits, and two indexes for the MP surveys, influence and expected benefits.

Our first index focuses on the actions citizens might take to monitor and sanction the government for its use of the revenues; Action includes questions about supporting and paying for an independent agency to monitor the government, signing a petition to create

such an agency, sending an SMS about this petition, contacting their village elder or MP or local official if funds are used badly, and donating part of their incentive money for this agency. The second index involves whether and how much citizens think the revenues are likely to be misappropriated by the government; Misappropriation includes questions about the probability the funds are used for clientelism, whether subjects can see how the funds are spent, and whether their MP can see how they are spent. The third index tracks whether citizens believe the funds will be used to help the public versus helping political leaders and the government; Benefits includes questions about whether people believe the funds will be spread equally over the districts (versus concentrated in ruling government ones), whether the funds will benefit ordinary people like themselves, whether they will benefit their family, and whether they will benefit their community. We include the exact wording of individual questions in Section A 1.4 of the appendix.

For the MPs, we create two indexes since their survey had to be much shorter. The first index parallels the one for the public focusing on benefits from the revenues and whether they serve the public; Benefits includes questions about whether the revenues will help their family, their community, or the economy. The second focuses on how much control and influence over the revenues the MPs believe they have; Influence covers questions about whether the MP thinks tracking the funds is important, if the MP can direct the funds to his district, if the MP feels he has control over how the funds are spent, and if the MP can observe how the funds are spent by the government. The exact wording of individual questions can be found in Section A 2.2 of the appendix. These indexes then form our main dependent variables.

A.1.4 Dependent Variables

We provide below the exact question wording for individual questions in each index:

Action Index

1. **Create Agency (post_createagency)**: An agency to do this could be created, but it would require all Ghanaians to pay special taxes in order to create it. Would you be willing to, HYPOTHETICALLY, pay a SMALL TAX so that this agency could be created? **1=Yes, 0=No**

2. **Willing to Send SMS (post_sms)**: Would you be willing to send an SMS saying that you would like to create an agency to track how the money from 0 will be spent? Your message will be presented along with other messages to your Member of Parliament. Standard SMS fees apply. You may send this message at your earliest convenience. Sending the message is entirely voluntary. ENUMERATOR: If they don't have a phone themselves, you can tell them that they can use a friend's phone. The

important thing is that THE MESSAGE INCLUDE THE NUMBER YOU WROTE ON THE PAPER FOR THEM. Remember that you are only asking if they are willing to send the message, you are not forcing them to send it or standing there until they send it? **1=Yes, 0=No**

3. **Sent SMS (sms_sent)**: Indicator after post_sms for sms sent.

4. **Donated Binary (post_donate_bin)**: There are several organizations in Ghana that work to make it easier for ordinary Ghanaians to see how development funds are spent. At the beginning of the survey, we gave you 6 cedis to compensate you for the time it has taken to answer our questions. Now, we would like to know if you would like to donate to one of those organizations. You may choose to donate to Action Aid Ghana, Ghana Integrity Initiative (also known as Transparency International Ghana), IMANI, a research organization that analyzes government budgets, policies and initiatives. If you would like to donate, please give me the amount of money you would like to donate and which organization you would like to donate to. ENUMERATOR: How much money did the respondent GIVE you? You are to enter ONLY how much money the respondent has actually GIVEN you, not how much they say they are willing to donate. If they do not donate any money, type "0" as the answer. Also, make sure to let them know this is entirely voluntary. **1= donation greater than zero, 0 otherwise**

5. **Taxes Willing to Commit (Binary) (post_wtp_bin)**: How much would you be willing to pay PER MONTH in new taxes for this agency to be created? **1= donation greater than zero, 0 otherwise**

6. **Signed Petition (any) (post_sign_any)** ENUMERATOR: If the respondent signed the petition, how many signatures were on the petition when this respondent signed it? EUMERATOR: Enter -5 if the person did not sign the petition

7. **Pr(Contact Village Elder) (post_contact_elder)**: If the money is not spent on the things you think are most important, how likely are you to do each of the following...Contact local opinion leader. **1=Yes, 0=No**

8. **Pr(Contact Local Official) (post_contact_local)** If the money is not spent on the things you think are most important, how likely are you to do each of the following...Contact local opinion leader. **1=Yes, 0=No**

9. **Pr(Contact MP) (post_contact_mp)** If the money is not spent on the things you

think are most important, how likely are you to do each of the following…Contact local opinion leader. **1=Yes, 0=No**

Expected Benefits Index

1. **Funds Benefit Family (post_help_family)**: How much do you think the money from 0 will help the following people? … **Your Family** (1=Not at all, 4 = A Lot)

2. **Funds Benefit Community (post_help_community)**: The money we mentioned before may be spent in many different ways. We are now going to ask you some questions about the revenue. After each, we would like to know if you think they are very likely to happen, somewhat likely to happen, not very likely to happen, or not at all likely to happen. … **The money will be spent on projects that will make ordinary people's lives better.** (1 = Very Likely, 5 = Likely)

3. **Funds Benefit Ordinary People (post_helppub)**: The money we mentioned before may be spent in many different ways. We are now going to ask you some questions about the revenue. After each, we would like to know if you think they are very likely to happen, somewhat likely to happen, not very likely to happen, or not at all likely to happen. **The money will be spent on projects that will make ordinary people's lives better** (1 = Very Likely, 5 = Likely)

4. **Funds Split Equally (post_where_spend_equal)** Now, we would like to ask you some questions about WHERE you think the money will be spent. Do you think it will spent: (1 == Equally among all Ghanaian / Ugandan districts). Binary variable.

Misappropriation Index

1. **Pr(Used for Clientelism) (post_rent)** The money we mentioned before may be spent in many different ways. We are now going to ask you some questions about the revenue. After each, we would like to know if you think they are very likely to happen, somewhat likely to happen, not very likely to happen, or not at all likely to happen … **Politicians will use the money to get people to vote for them.** (1 = Very Unlikely, 6 = Very Likely)

2. **Pr(Spending Hidden) (post_opaque)** This is the transformation of post_transparent that makes higher = less transparent, done to harmonize for misappropriation index. The money we mentioned before may be spent in many different ways. We are now going to ask you some questions about the revenue. After each, we would like to know if you think they are very likely to happen, somewhat likely to happen, not very likely

to happen, or not at all likely to happen.... **People like me will be able to learn how it was spent**. (1 = Very Unlikely , 6 = Very Likely) (We inverse this coding for analysis)

3. **Pr(MP Observes Spending) (post_mpknow)** The money we mentioned before may be spent in many different ways. We are now going to ask you some questions about the revenue. After each, we would like to know if you think they are very likely to happen, somewhat likely to happen, not very likely to happen, or not at all likely to happen.... **My MP will know how this money is spent**. (1 = Very Unlikely, 6 = Very Likely)

A.2 Uganda and Ghana Elite Surveys (2014/2015)

A.2.1 Sampling Strategy

We attempted to conduct a census of all current MPs in Uganda and Ghana. Moreover, we also contacted as many former MPs as possible in both countries from the previous parliaments. We solicited MP participation through phone calls which then, if they were willing, lead to appointments to meet them at Parliament. Former MPs were interviewed at a place of their choosing, although that often was in the capital cities because many of them still lived there. Enumerators were assigned to a MP by a project manager based in Kampala and Accra, respectively. Once contact was made, an enumerator would be matched for that MP to set up appointments and make follow up phone calls. If an appointment was canceled, the interview was rescheduled. If several cancellations occurred, the MP would be put back in the pool or, if they asked, labeled "not to be contacted again."

The Uganda sample includes 200 MPs (133 current MPs from the ninth parliament and 66 former MPs from the eighth parliament). In the table below, we compare our sample in Uganda to the demographic characteristics of the actual ninth parliament in Uganda. Due to enumerator error, we lacked identifying characteristics for 12 MPs in Uganda. While the Uganda MP sample is broadly comparable in terms of its regional distribution, the sample has more men and more independents than the real parliament. We strove to interview only constituency MPs, but some MPs in seats reserved for women were inadvertently interviewed as well.

In Ghana, we surveyed 300 current and former MPs. We find that are sample is broadly comparable to the current MPs in terms of gender, political party affiliation, and region. In our sample, we have fewer MPs from the Greater Accra region than the sixth parliament. Due to enumerator error, we lack identifying characteristics on political party and region for nine MPs.

Table A.1: Uganda Former and Current MPs

	Sample	9th Parl.
Gender		
% Male	84	65
% Female	16	35
Party		
% NRM	62.5	73.5
% Independents	14.5	11.2
% FDC	9.5	8.8
% DP	4	3.4
% UPC	3	2.6
% CP	0.5	0.3
% Unknown	6	n/a
Region		
% from Central	25	25
% from Eastern	28.5	27
% from Northern	21.5	22
% from Western	25	26
MP Type		
% Constituency MPs	89.5	62
% District Women MPs	4.5	29
% Special Interest MPs	.	7
% Ex-Officio MPs	.	2
% Unknown	6	n/a

Table A.2: Ghana Former and Current MPs

	Sample	6th Parl.
Gender		
% Male	89.0	89.5
% Female	11.0	10.5
Party		
% NDP	50.7	53.1
% NPP	44.0	45.1
% PNC	0.7	0.4
% CPP	0.3	0.4
% IND	1.3	1.1
% Unknown	3.0	n/a
Region		
% Ashanti	17.0	17.1
% Brong Ahafo	11.3	10.5
% Central	7.7	8.4
% Eastern	11.3	12.0
% Greater Accra	9.0	12.4
% Northern	12.0	11.3
% Upper East	6.0	5.5
% Upper West	4.3	4.0
% Volta	9.0	9.5
% Western	9.3	9.5

A.2.2   Dependent Variables

We provide below the exact question wording for individual questions in each index. We dichotomized the original ordinal values for the construction of the indexes and analysis, but the main findings for both the benefit and influence indexes are robust to using the original values.

Benefit Index

1. **Funds benefit family (post_help_family)** How much do you think that 0 will use the money from 1 to help the following things/people: ... **Your family** (1=Not at all, 4 = A Lot)

2. **Funds benefit community (post_help_community)** How much do you think that 0 will use the money from 1 to help the following things/people: ... **Your community** (1=Not at all, 4 = A Lot)

3. **Funds benefit economy (post_help_economy)** How much do you think that 0 will use the money from 1 to help the following things/people: ... **The Ghanaian/Ugandan Economy** (1=Not at all, 4 = A Lot)

Influence Index

1. **Important to Track Funds (post_trackimp)** Some people have said that they would like to create a special government agency in charge of tracking how the five trillion shillings in 0 money is spent by 1. How important do you think it is to track how this money is spent? (1 = Not at all important 4 = Very important)

2. **Bring Projects to District (post_funds_work)** When the 0 money arrives, I will be able to work with the 1 to bring projects to my constituency? (1=Strongly Disagree, 4 = Strongly Agree)

3. **Influence Funds (post_funds_influence)** When the 0 money arrives, I will be able to influence how the money is spent? (1=Strongly Disagree, 4 = Strongly Agree)

4. **Observe Spending (post_funds_see)** When the 0 money arrives, I will be able to see how the money is spent? (1=Strongly Disagree, 4 = Strongly Agree)

A.3   Laboratory Games in Ghana and Uganda (2016/2017)

To test whether aid and oil generate different accountability pressures from citizens (Hypothesis 1), we designed a set of laboratory experiments based on those in Martin (2014).

These lab experiments took place in Ghana in 2016 and in Uganda in January and June of 2017.[1] All games were single-shot and took place between one "citizen" and one "leader," with both roles played by ordinary Ghanaian or Ugandan citizens. The games all share the same basic structure. First, the Citizen receives an endowment of 5 monetary units (MU).[2] The Leader is then given a group fund of 10 MU that he must allocate between his own salary and the Citizen.[3] We interpret the group fund to be the government budget; hence, we are focusing on revenues that go directly to the government. Before the Citizen observes this decision, she must choose whether, for each possible allocation, she wishes to pay to punish the Leader. If punishment takes place, the Citizen pays 1 MU and the Leader loses 4 MU (no one gets the money lost in punishment). The Leader's allocation decision is then revealed, and any punishment is enacted. Following Martin, we make citizens perfectly efficacious; if they decide to punish, punishment occurs with certain probability. Citizens' willingness to punish is our measure of demand for accountability.

The key source of variation in the experiments is the source of the "group fund" given to the Leader; that is, the different types of revenues going directly to the government. The Aid and Oil conditions are our main treatments; each explicitly identifies the group fund as coming from "a foreign donor" or "oil." These source treatments are repeatedly emphasized in the the game scripts used by the enumerators as well as illustrated on game boards. During enumeration, enumerators place real coins representing the group fund on a source tile on the game board, and verbally state the source, before moving the group fund to the Leader's tile. Note that the games are structurally equivalent; the only difference is the framing effect of describing the group fund as coming from aid or oil and illustrating the sources visually on the game board. Note also that the aid goes directly into the government budget, so the experiment focuses on Citizens' views about state-to-state aid exclusively.

As this is a single-shot game, a citizen who is perfectly economically rational will never punish, as it is strictly costly. The unique subgame-perfect Nash equilibrium is thus for the Leader to offer 0 MU to the Citizen, who never punishes. If we observe positive levels of punishment, it must therefore be that respondents receive some kind of non-economic, expressive benefit from punishment.

A.3.1 Lab Outcome of Interest

Game Outcome. Our primary outcome in the experiments is the Citizen's punishment threshold; this allows us to test citizens' willingness to punish low transfers across revenue

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[1] The Uganda experiment took place over two periods, but all reported conditions were identical, so results are pooled here. No significant differences in results occurred across the two study periods.

[2] One MU was set to 100 shillings (UGX) in Uganda, and 0.5 cedis (GHC) in Ghana.

[3] Calling the Leader's endowment the group fund signals that it is a shared resource.

treatments. In each round, before seeing the Leader's allocation decision, each Citizen was asked – for each possible allocation of the group fund – whether he would pay the fee to punish the leader. Enumerators began by asking subjects playing the role of Citizen, "If the Leader kept 10 MU and passed you 0 MU," would they pay to punish? If the Citizen indicated he would punish, the enumerator proceeded to the next possible increment of transfer. Once the Citizen indicated he would no longer punish the leader for a given anticipated transfer, that transfer value was recorded as the Citizen's punishment threshold. For example, if the Citizen would punish when he was given 3 MU but not 4 MU, the punishment threshold is 4 MU. Following Martin (2014), our key outcome of interest is the punishment threshold. Higher thresholds indicate a higher willingness to punish, as Leaders must make larger transfers to avoid punishment. We interpret this as meaning the government must provide more public goods to avoid citizen punishment.

A.3.2   Implementation of Lab Experiments

Enumeration followed the same structure in Ghana and Uganda. In each location, we recruited subjects for sessions of approximately 16 respondents. Assignment to treatment was at the session level. At each session, subjects first saw a group training on the assigned treatment; this described the rules of the game and walked through examples using set visual illustrations. Respondents then met one-on-one with enumerators for a practice round, then completed five single-shot rounds of the game. Within each game session, we randomly assigned subjects to the role of citizen or leader at a ratio of 4-5 citizens per leader. In the first round, each citizen was randomly assigned to a play with a leader. During the game, each citizen received the transfer decided by the leader to whom he or she was assigned. Because each leader played with multiple citizens, one was selected to serve as the leader's pair, and his or her punishment threshold determined whether or not the leader was punished. In each proceeding round, the subjects' roles remained the same, but citizen-leader pairs were re-randomized. We repeatedly emphasized that pairs changed in between each round to ensure subjects understood that these were single-shot games.

In Ghana, subjects were recruited from 8 constituencies in the Greater Accra region and transported to a laboratory in Adabraka, a central zone in Accra. Subjects were recruited from randomly-chosen polling stations via random walk. Subjects were recruited one day prior to their participation and were transported from a central meeting place near the polling station to the field site at a time specified by the recruiters. In Uganda, subjects were recruited from two high-density, lower-income areas in urban Kampala. In each area an enumeration site was rented, typically in a hotel or guest house.[4] Each day, a local political

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[4]Areas used in Martin 2014 were excluded from consideration.

("LC1") unit was identified by the enumerators for mobilization from which 48 subjects were recruited for 3 sessions of 16 participants. A convenience sample was recruited from the LC1 unit.

A.4 Information Experiment in Uganda (2018)

One possibility for the null results in the 2014 and 2015 survey experiments is that the information treatments given were too weak to move behavior. Treatments were designed such that they closely mirrored the type and amount of information that subjects are likely to receive in the real world—through newspapers or radio, for example. Nonetheless, to explore the possibility that a stronger treatment could produce differences between aid and oil, we conducted a much stronger intervention in Uganda in 2018. Importantly, this intervention also included a pure control condition in which subjects received no information, enabling estimation of source-specific effects relative to a baseline condition.

A.4.1 Implementation and Design

We sampled 1,256 Ugandans in June 2018. Our sampling strategy is a modified area probability sample in which we intentionally oversampled urban areas. We did so because our population of interest is those Ugandans who are the most likely to take political action. This choice makes our test harder since we pick a more knowledgeable and politically involved sample. We split our sample between municipalities—a special administrative designation reserved for urban areas—and non-municipalities. In each of ten districts, split across Uganda's four regions proportional to their respective shares of total population, we sampled one municipality and one non-municipality, both of which are considered counties, a mid-level administrative unit also referred to as LC4.

We included a pure control condition here. This treatment provided no information to respondents: they went straight from the pre-treatment questions to the outcome measures described below. Our two treatments for foreign aid and oil revenues were designed to test whether giving citizens more information about each revenue source, and helping them process the information, affects behavior.[5] We focused on state-to-state aid here, indicating to people that the aid was going directly to the government to spend. These information treatments have four steps. First, each of the two information treatments gives respondents information about the inflation-adjusted amount of [OIL/AID] money Uganda has received in the past 10 years. Second, these absolute amounts are broken down by village and by household, with the amount determined by the average village and average household

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[5]We had a third condition evoking tax revenues, but it is not included in this study.

size throughout all Uganda. This breakdown is presented as how much the government could have given to the average village/household if they had divided the money among all Ugandans, rather than spending it through the main budget. In this calculation, we assume a 15% overhead cost. Then, information is given about the projected amount of future [OIL/AID] revenues Uganda will receive. Finally, this information is gone over once verbally and then again using a board to help respondents understand and process the amounts. This makes the treatments much stronger than in our earlier surveys, reiterates their size and the government's control over them, and compares them to a pure control.

A.4.2 Dependent Variables

For our key outcomes, we used five measures. First, we invited subjects to write a message to a government official, Sent Message to Official. As part of our government approval to run the survey, we are required to send a report to district-level officials. We asked respondents if they would like to include an anonymous message in the report. If they wished to leave the message, we then gave them a chance to pick which official they wanted to receive their message, from a list of options. The higher the official was placed in government, from local to national, the greater the value for the outcome Sent Message to Official. Second, we asked them to sign up to get our survey results, Requested Report. Third, we gave them the ability to send an SMS message, Sent SMS. We told respondents that we were partnering with a local NGO that runs an SMS budget information platform. We gave them the option of sending an SMS to a number that we control; if they signed up we enrolled them in the SMS platform. Our fourth measure involved a Donation. We invited them to donate money to a humanitarian or good-governance NGO. We informed subjects that we would donate 1,000 UGX on their behalf to one of two possible NGOs. The good-governance NGO was coded "1" and the humanitarian NGO "0." The voluntary choice avoided the possibility minor coercion that subjects would feel pressured to donate money we had recently given them by telling them we will donate on their behalf. Our fifth measure is an inverse covariance-weighted (ICW) index of the four measures above; we call this the Behavioral Index.

While our treatment is significantly stronger than in the 2014 and 2015 experiments, we nonetheless included an additional outcome designed to measure whether and to what extent our treatment is changing subjects' beliefs about the relative size and importance of the revenue source that is the subject of their treatment condition. As part of the post-treatment survey module, subjects engaged in a coin-based allocation task in which they were asked to distribute 10 coins into four baskets, each representing a major source of government revenue in Uganda (aid, oil, taxes and debt). The outcome of interest is the number of coins that subjects allocate to the revenue source that is the subject of the informational treatment.

For ease of interpretation, we then normalize this value by 10 (the number of coins) such that the measure can be interpreted as subjects' belief about the relative size of each source as a proportion of the government budget. This measure allows us to assess whether subjects are updating their beliefs about the amount of revenue derived from the source given in the treatment. If they are doing so, any null results are unlikely to be the result of weak treatment.

A.4.3 Sampling strategy

Our sampling strategy was a modified area probability sample in which we intentionally oversampled urban areas. We did so because our population of interest is those Ugandans who are the most likely to take political action. The characteristics of this population have countervailing effects on their responsiveness to treatment. On the one hand, city-dwellers are more likely to be informed about government behavior, meaning that the informational content of the treatment will be less valuable. They may also have stronger feelings of ownership, making our ownership treatments less effective. On the other hand, urban citizens tend to be wealthier, better-educated and more efficacious, making it more likely that they are willing to take costly political action and that they would believe it is valuable to do so.

The effect of the treatment on more rural respondents is also of interest. As such, we split our sample between municipalities—a special administrative designation reserved for urban areas—and non-municipalities. In each of ten districts, split across Uganda's four regions proportional to their respective shares of total population, we sample one municipality and one non-municipality, both of which are counties. In the urban county (e.g. the municipality), our sampling frame is the universe of polling stations present in the 2016 elections. We then bin polling stations into quartiles according to the number of registered voters.10 In municipalities, we draw 8 polling stations, taking 2 from each quartile to ensure that we cover the polling-station size distribution, which is highly correlated with an area's level of urbanization. In non-municipalities we draw 4 polling stations, one from each quartile. Sampling at the PSU level is random walk starting from the polling station.

Respondents were selected according to their head-of-household status, with the goal of an approximately equal split between head of households and non-head of households. We define head of households for our purposes to be the male or female that is responsible for making financial decisions and/or handles household expenditures. Actual sampling is done using respondent cards, which are one of these two types and are shuffled at the start of each day. The remaining one-half of the sample is non-household heads, which are selected randomly after a full enumeration of all qualified residents of the household.

B   Additional Results and Descriptive Statistics

B.1   Uganda Information Experiment (2017)

To estimate the behavioral and informational effects of our treatment, we use the conventional difference-in-means estimator with Neyman-Rubin standard errors. The top panel in Table A.3 reports treatment effects for our four behavioral measures and corresponding index. The bottom panel reports effects on subjects' posterior beliefs about each source's share of total government revenues; we also report the average proportion in the control conditions to facilitate substantive interpretation.

Despite the strengthened information treatments and more nuanced outcome measures, we find no significant differences between state-to-state aid and oil revenues in citizen's willingness to take action to make their leaders more accountable. And we find no differences from the control condition for either treatment, oil or aid. The one difference that shows up (but does not survive the multiple testing correction) is for sending an SMS, which is more likely for state-to-state aid than oil revenues.

Importantly, however, the lack of significant results on our behavioral measures is not due to a weak treatment. In the bottom panel, we report the change in subjects' beliefs about the share of the treatment source as a proportion of all government revenues. Examining the effects of the aid and oil treatments relative to the pure control condition (Columns 1 and 3, respectively), we find that subjects' posterior beliefs about each source's relative contribution to the budget increases by 3.1% in the aid condition and 3.9% in the oil condition. Compared to the average proportion in the no-information condition, this represents an increase of 11.3% and 16.5% respectively. As a robustness check, prior to the coin allocation task we also asked subjects to indicate, without prompting, which sources they believed the government of Uganda relied on. Subjects were coded as a 1 if they chose the source mentioned in the treatment and 0 otherwise. These results are reported in Table A.4 and show an identical pattern of updating as those presented here. Thus, even though subjects are not differentially willing to act as a result of treatment, they do update their beliefs about the relative importance of the treatment source.

B.2   Ghana and Uganda Laboratory Games (2016/2017)

To estimate the effect of revenue source, we take the subject's threshold as our dependent variable of interest. Our primary comparison of interest is the difference between subject thresholds when the government budget was derived from oil relative to when it was derived from aid that goes directly to the government budget. Because subjects played multiple rounds, we estimate our effect at the round level and cluster standard errors by subject.

Table A.3: Difference-in-means Estimates for 2018 Uganda Information Treatments

	Comparison:		
	Aid Treat-No Info Ctr	Aid Treat-Oil Ctr	Oil Treat-No Info Ctr
	(1)	(2)	(3)
Behavioral Measures			
Behavioral Index	−0.003	0.017	−0.021
	(0.065)	(0.067)	(0.066)
Sent SMS	0.050*	0.072**	−0.022
	(0.030)	(0.030)	(0.030)
Sent Message to Official	0.017	0.032	−0.016
	(0.029)	(0.030)	(0.030)
Donation	−0.009	−0.009	−0.002
	(0.033)	(0.033)	(0.033)
Request Report	−0.042	−0.050	0.009
	(0.033)	(0.033)	(0.033)
Information Updating			
Aid as Share of Budget	0.031***	0.054***	−0.025***
	(0.009)	(0.009)	(0.008)
Oil as Share of Budget	−0.018**	−0.060***	0.045***
	(0.009)	(0.009)	(0.009)
Taxes as Share of Budget	−0.035***	−0.011	−0.025**
	(0.010)	(0.010)	(0.010)
Debt as Share of Budget	−0.026***	0.003	−0.030***
	(0.009)	(0.009)	(0.009)

Notes: Column 1 of the top panel gives the treatment effect of receiving information about past and future aid revenues compared to subjects who receive no information of any kind. Column 2 compares the Aid and Oil conditions. Column 3 compares the Oil condition with subjects who received no information. In the second panel, we estimate the effect of each information treatment on subjects' beliefs over each source's share of the government budget. The results are strongly significant and in the expected direction, suggesting that subjects are updating their beliefs in light of the information they receive.

Table A.4: Difference-in-means Estimates for Additional Information Treatments

	Comparison:		
	Aid Treat-No Info Ctr	Aid Treat-Oil Ctr	Oil Treat-No Info Ctr
	(1)	(2)	(3)
Aid Selected	0.089***	0.118***	−0.029
	(0.018)	(0.019)	(0.022)
Oil Selected	0.011	−0.173***	0.184***
	(0.029)	(0.025)	(0.025)
Taxes Selected	0.006	0.026**	−0.020*
	(0.008)	(0.010)	(0.010)
Debt Selected	0.018	0.018	0.001
	(0.025)	(0.025)	(0.025)

Notes: Coefficients for Aid Selected and Oil Selected give the increase in the proportion of subjects who select that source relative to the control condition in which no information was given. Column 1 of the top panel gives the treatment effect of receiving information about past and future aid revenues compared to subjects who receive no information of any kind. Column 2 compares the Aid and Oil conditions. Column 3 compares the Oil condition with subjects who received no information. For additional information see Section A.4.1. The results are strongly significant and in the expected direction, suggesting that subjects are updating their beliefs in light of the information they receive..

To improve precision, we also include additional experimental and subject-level covariates that control for enumerator effects, over-time changes in subject thresholds, and the transfer the subject received from the Leader in the previous round of the game. We also include measures of subjects' age, education, wealth and the quality of local public services.[6]

All effects are estimated via OLS with list-wise deletion. In both countries, the first round of data was reserved as a practice round in order for subjects to acclimate for the game and is dropped for analysis. Their inclusion, however, does not meaningfully change our estimates. Data from this round enters the model only through the inclusion of the transfer that subjects received from the Leader in the previous round. Results are reported in Table A.5 below.

The coefficient of interest is Aid, which represents the change in subjects' thresholds when the source of the group fund is derived from foreign aid that goes directly to the government budget compared to when it is derived from oil revenues. In both Ghana and Uganda, the substantively small and statistically insignificant coefficient demonstrates that subjects do not behave differently when the budget over which the Leader makes an allocation is derived from state-to-state aid rather than oil revenues. This result is robust to various specifications, including those with and without enumerator and round fixed-effects. This evidence then supports our first hypothesis that action toward accountability by the public does not differ when they are faced with oil revenues or state-to-state aid.

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[6]In Ghana, two other features of the games were varied in addition to source. First, subjects were randomized (with equal probability) into a variant of the game in which punishment was only successful 50% of the time. In these conditions the punishment outcome was determined by a draw of a colored marble from a fabric bag. Subjects could also receive an additional prime during the training phase that encouraged them to think about the money they received from the leader as being like public goods such as education or infrastructure. These conditions are the subject of other work and are not discussed here. However, because of mild imbalance across these additional dimensions, we include controls for them here but their inclusion does not alter the substantive or statistical significance of the estimates reported here.

Table A.5: Effect of Revenue Source on Accountability Demands in the Lab.

	Dependent variable:	
	Subject Threshold	
	Ghana 2016	Uganda 2017
	(1)	(2)
Aid	0.034	0.097
	(0.097)	(0.097)
Punishment Draw	−0.092	
	(0.094)	
Training Prime	−0.138	
	(0.100)	
Previous Transfer	0.028	0.037***
	(0.019)	(0.014)
Observations	1,050	1,259
R^2	0.221	0.116
Adjusted R^2	0.209	0.106

Notes: The coefficient of interest (Aid) gives the change in subject thresholds when the government budget over which the Leader makes an allocation is derived from foreign aid revenues instead of oil revenues. The substantively small and statistically insignificant coefficient suggests that subjects do not demand more from Leaders when the budget is derived from aid that goes directly into the government budget revenues relative to when it is derived from oil. Observations are subject-round who passed the manipulation check. Standard errors clustered by subject. Additional covariates included for purposes of comparison.

B.3   Descriptive Statistics

Table A.6: Frequencies and Percentages of Respondents for Each Treatment.

	Aid	*%*	*Oil*	*%*	*NGO*	*%*	*Grant*	*%*	*N*
Uganda 2014 Mass Survey	799	25.02	791	24.77	800	25.05	n/a	n/a	2,385
Ghana 2015 Mass Survey	893	25.01	890	24.93	899	25.18	n/a	n/a	2,678
Uganda 2014 MP Survey	60	30	48	24	45	22.5	n/a	n/a	153
Ghana 2015 MP Survey	74	24.67	77	25.67	76	25.33	n/a	n/a	227
Ghana Jul 2016 Lab Game	135	35.1	128	33.3	n/a	n/a	121	31.5	384
Uganda Jan 2017 Lab Game	127	33.33	127	33.33	n/a	n/a	127	33.33	381
Uganda 2018 Info Experiment	419	33.33	424	33.33	n/a	n/a	n/a	n/a	1,256

Table A.7: Summary Statistics for Behavioral Measures in 2018 Uganda Survey Experiment.

Statistic	N	Mean	Min	Max
Behavioral Index	1,256	-0.013	-1.582	2.023
SMS Platform	1,256	0.336	0	1
Report Participation	1,256	0.607	0	1
Donated	1,256	0.372	0	1
Sent Message	1,256	0.447	0	1

Notes: Behavioral index is constructed using inverse-covariance weighting from four binary behavioral measures. SMS Platform takes 1 if subjects signed up for additional information about the revenue source. Request Information takes 1 if subjects asked to be given a summary of the study's findings on key topics. Donated takes 1 if the subjects donated to a good governance NGO as opposed to a health NGO. Sent Message takes 1 if subjects chose to send a message to his or her MP or another national politician and 0 otherwise.

References

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