



Oil and aid revenue produce equal demands for accountability as taxes in Ghana and Uganda

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Edited by Arild Underdal, University of Oslo, Oslo, Norway, and approved July 23, 2019 (received for review February 21, 2019)

Received wisdom argues that citizens more readily demand accountability from government for taxes than for nontax revenue from oil or foreign aid, giving rise to an important mechanism underlying the “resource curse,” which posits that nontax revenue causes citizen quiescence and hampers government accountability. However, in developing countries, obfuscation through value-added taxes and strong popular feelings of ownership over all revenues may minimize differences across revenue sources. Identical experiments on representative samples of Ghanaians and Ugandans, and similar experiments on members of parliament, probe the effects of different sources and delivery channels of government revenues on citizens’ actions to monitor governments and members of parliament (MPs’) beliefs about accountability pressures. Roughly half of all citizens take action to monitor all 3 sources. However, neither Ghanaians nor Ugandans demand more accountability for taxes than oil or aid when the revenues go to the government. MPs likewise saw no difference. Citizens do differentiate between aid money given to nongovernmental organizations (NGOs) compared with revenues delivered to the government. Findings are robust to numerous alternatives and subgroups. Against strong expectations from prior research, little evidence exists showing that taxes strengthen citizens’ demands for accountability or that MPs perceive differences across revenue sources in these 2 representative African countries. However, aid channeled through NGOs motivates more accountability pressures.

foreign aid | oil revenues | resource curse | accountability | taxes

Social scientists have long believed that taxes have a special power to induce citizens to demand accountability from government over how money from their own pockets is spent (1–3). Taxes are thought to heighten citizens’ attention to government budgets and make political elites more likely to provide public goods or face sanctions (4–8).

Funds from oil and aid, however, are believed to be “windfall revenues” that relieve tax burdens and pacify citizens (9). Because citizens do not pay direct costs, they are less motivated to monitor or demand policies in compensation. Windfalls thus enable elites to divert funds to corruption and clientelism, buy citizen quiescence, or repress would-be monitors (10–13). Oil and aid thus may enable corruption, undermine governance, foster repression, prolong autocratic rule, and increase conflict (9, 14–17).

Despite their compelling logic, the taxation causes accountability argument and its resource curse corollary face challenges in explaining citizens’ and elites’ beliefs and behavior in developing countries as implied by some empirical work on taxation and the resource curse (7, 18–20). In particular, a large share of tax revenue in developing countries comes from value-added taxes, which obfuscate the extent of government extraction (21). Additionally, citizens may feel a strong sense of collective ownership over revenues from both oil and foreign aid (22). These factors may decrease the differences between taxes and windfalls for citizens and officials alike.

Current research on revenue source and accountability rests on mixed findings, many of which are observational and therefore, suffer from well-known shortfalls in causal identification.

We thus need stronger evidence for the claim that alternate types of revenue cause differential taxpayer demands for government accountability. We, therefore, conducted substantively identical large-*N* experiments with attitudinal and behavioral outcomes on nationally representative samples of Ghanaian and Ugandan citizens. In addition, we performed similar experiments on members of parliament (MPs) in both countries.

In 4 randomized treatments, respondents heard a short statement about officially anticipated government and nongovernmental organization (NGO) spending. The statement included truthful information on the amount (held constant) and source (randomly assigned) of future revenue. Our key question was as follows: are citizens more willing to monitor the government when prompted about taxes compared with revenues from oil or aid? We also explore citizen action toward NGO aid compared with government funds. Citizens were invited to sign an anticorruption petition, send supportive short message service (SMS) text messages, and donate money to good government organizations. We also examined perceptions of the revenues’ likelihood of promoting transparency, management effectiveness, public goods provision, and misappropriation.

Our findings suggest that Ghanaians and Ugandans are, on average, no more likely to take political action to monitor future tax revenue than oil or aid funds when directed to the government. The point estimates are small in substantive terms and precisely estimated, suggesting meaningful null findings. The results are robust to numerous alternative specifications.

Significance

People ought to care more about how the government spends their taxes compared with oil or foreign aid revenues. Yet, in developing countries, obfuscation by value-added taxes and citizens’ feelings of ownership over all public revenues may equalize distinctions. Four experiments in Ghana and Uganda conducted on citizens and members of parliament indicate no significant differences between taxes, aid, and oil in perceptions that the revenues will provide public goods or leak to corruption. All revenue types equally motivate citizens to demand accountability, prompting reevaluation of the claim that taxes promote greater political action. Citizens do see meaningful differences for aid delivered through nongovernmental organizations, suggesting that the channel of funds matters for accountability.

Author contributions: B.d.l.C., H.V.M., D.L.N., and S.F.K. designed research; B.d.l.C., H.V.M., and D.L.N. performed research; B.d.l.C., H.V.M., and D.L.N. analyzed data; and B.d.l.C., H.V.M., and D.L.N. wrote the paper.

The authors declare no conflict of interest.

This article is a PNAS Direct Submission.

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This article contains supporting information online at www.pnas.org/lookup/suppl/doi:10.1073/pnas.1903134116/-DCSupplemental.

Published online August 21, 2019.

Likewise, tax, aid, and oil revenue all produced similar perceptions among MPs for outcomes related to transparency, public goods provision, and misappropriation.

In contrast, we find significant results when we compare money channeled through NGOs. Aid through NGOs causes greater citizen action and is viewed as more likely to produce public goods, especially in aid-dependent and more corrupt Uganda. Also, Ghanaian MPs reported weaker control over NGO aid than government funds.

Our findings do not result from citizen indifference to bad governance. In both countries, more than half of subjects signed transparency petitions, and roughly half donated money to good government NGOs. Citizens were simply not differentially motivated toward political action across the revenue conditions. These findings should encourage rethinking in developing country contexts the key causal mechanism that taxation induces accountability through citizen demands as well as its resource curse corollary that nontax revenue directly causes citizen quiescence.

Revenue and Accountability Hypotheses

The intellectual history of the idea that taxation causes accountability pressures runs through Schumpeter (3), Huntington (5), North and Weingast (2), Levi (1), Tilly (23), Bates and Lien (4), Collier and Hoeffler (24), and numerous others, forming an important theory of political economy and democratization. Its essence was most famously intoned by the American Revolution's rallying cry: "no taxation without representation." The logic is straightforward. Mobile capital (including human capital) is more able than fixed capital to flee despots, and therefore, leaders are forced to bargain with private citizens to exchange public services for tax payments. Given their credibility problems in enticing creditors or in persuading citizens to pay taxes, successful leaders offered a say in government in return, thus tying their hands against future coercion. Therefore, taxation directly causes accountability pressures through the critical mechanism of citizen action.

The lack of accountability in resource- and aid-rich states follows from these arguments: if citizens are taxed less, accountability pressures will decrease; natural resource rents thus weaken citizens' motivation to monitor and sanction government mismanagement (6, 8, 9). This phenomenon enables the "resource curse" at least in part through the key mechanism explored here by demotivating demands for accountability and undermining good governance and economic development. We emphasize that this is only 1 of multiple causal pathways through which the resource curse might operate, but it is nevertheless a key mechanism.

Foreign aid may be similar in its effects. Critics charge that both natural resource rents and foreign aid promote corruption, undermine governance, increase violence, and stabilize autocratic regimes (14–16, 24, 25). Critically, natural resource and aid windfalls relieve leaders of the need to finance government through taxation (9–11).

A more nuanced argument has developed later in response to mixed empirical findings. Taxation may lead to representation only in particular circumstances that may not hold in developing countries (26, 27). In specific settings, the physical act of paying taxes can trigger negative effects linked to the psychological phenomena of loss aversion and the endowment effect (7, 28), in which people disproportionately fear losses and overvalue possessions (29). By simulating actual tax payments, these studies activate psychological mechanisms related to endowments of income and losses in taxes and suggest that income taxes can motivate some citizen action under the right conditions (7, 28).

However, even relatively strong information shocks may fail to induce political participation or incumbent sanctioning (7). Indeed, compelling evidence from metaanalysis of jointly designed studies in 5 countries indicates more broadly that information on politician performance does not alter voters' behavior

(30). Other scholars have questioned the inevitability of the resource curse (18, 19), and its empirical evidence is mixed (20). These nuanced findings suggest reservations about taxation's direct effect on accountability pressures.

We thus focus on demands for accountability: that is, are citizens more willing to demand greater transparency and pay higher costs in monitoring tax money than oil or aid funds? The original taxation causes accountability demands argument and its resource curse corollary are founded on the presumption of rational action. Because taxes prove costly to citizens and windfalls do not, taxes are more likely to motivate citizens to take action, which underpins our key hypothesis.

Hypothesis 1. Taxation causes accountability demands. Coercive extraction of taxes will motivate citizens to take more action to monitor public spending compared with oil and aid.

If the arguments linking taxes to citizen action hold, taxes should also produce greater transparency and accountability. Citizens have to know that they are being taxed and should be able to follow the money from their pockets to the public goods; windfalls lack transparency (31). Likewise, the risk of misappropriation for oil or aid should be significantly greater. Ross (6) calls this the "spending effect," which predicts that "oil wealth may lead to greater spending on patronage, which in turn dampens latent pressures for democratization" (ref. 6, p. 333). The foundational bargain of leaders with citizens requires an exchange of tax revenue for influence over public policy (1, 4). Two additional observable implications thus follow.

Hypothesis 2. Misappropriation. Citizens will believe that elites can less readily misappropriate taxes than aid or oil revenues for personal or political gain.

Hypothesis 3. Public goods benefits. Citizens will expect greater public benefits from taxes, because they believe that leaders will use taxes more than oil or aid to provide public goods.

To probe the connection between revenue path and accountability, we ask whether citizens respond differently if revenues are given directly to the government versus channeled through NGOs, which is a common method of delivery to bypass unaccountable and corrupt recipient governments (32). Bypass aid may be more likely to enhance development through public goods provision and therefore, cause more citizen action.

Political leaders are also involved in monitoring and influencing government spending. MPs in Uganda and Ghana play roles in overseeing how the central government uses its resources and in working to direct those resources to their constituencies (33). MPs rarely challenge major elements of the government's budget proposals, but they do monitor the government and make amendments. Because citizens are expected to monitor and sanction more for misuse of taxes, MPs should, therefore, be more careful with tax monies, less likely to misappropriate them, and more likely to use them for public goods. The results for MPs should thus be interpreted as reflecting their beliefs about the accountability pressures that they face from their constituents.

Experimental Design

We evaluated the hypotheses through an experimental strategy and data analysis plan that was registered with the Evidence in Governance and Politics network before researcher access to the outcome data, with deviations reported in *SI Appendix, section 3*. For the experiment with citizens, we used area probability sampling to draw sizable and representative samples of Ghanaians ($n = 3,653$) and Ugandans ($n = 3,186$). *SI Appendix, section 1A* has a discussion of the randomization protocol. We also used large convenience samples of current and past MPs.

Across conventional development indicators, Ghana and Uganda in 2014 and 2015 were near the means for lower middle-income countries (34). The 2 countries also resemble other

developing countries in important ways. Ghana receives significant oil rents at 5.7% of gross domestic product (GDP) (81st percentile among 137 countries). Newspapers report that hundreds of millions of dollars in oil revenue were present in the Ugandan budget by 2014/2015 (35), but oil was not yet flowing in amounts comparable with those in Ghana. Uganda's relatively high aid dependence in 2014 of 6.0% of GNI ranked it in the 77th percentile among developing countries; Ghana's 2014 aid per gross national income (GNI) of 3.1% was half of Uganda's aid. Ghana is a stable democracy; Uganda is an anocracy. In GDP per capita, Ghana is more than twice as wealthy.

In interviews with citizens and MPs, native enumerators first asked questions covering many standard demographic characteristics. Then, we randomly assigned subjects to receive a statement about revenues from 1 of 4 sources: domestic taxes, oil receipts, aid flows to the government, and aid flows through NGOs. The amounts of these revenues were held constant across conditions. To avoid deception, amounts were based on estimates of future budget sources from publicly available information.

We incentivized citizens to take the survey by giving them either 6 Ghanaian cedis or 1,000 Ugandan shillings at the start. Later, we invited citizens to donate (parts of these) sums to watchdog NGOs as a behavioral outcome. We estimated the effect of varying the revenue condition on citizens' attitudes and 3 behavioral measures: imposing personal costs by signing a petition calling for an independent resource tracking agency, sending an SMS message to their MP, and donating survey remuneration to watchdog NGOs. We also probed MP beliefs about differences in institutional control and public goods targeting across revenue sources.

The treatment conditions follow (with differences in italics).

As part of this survey, we are also providing important information to [Ghanaians/Ugandans] about finances in [Ghana/Uganda]. In the 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]/taxes on wages and purchases that will be paid by all [Ghanaians/Ugandans]/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 nongovernmental organizations, not to the central government.*] [*Lawmakers and the President/NGOs*] are supposed to use the money to improve the lives of [Ghanaians/Ugandans].

We framed the tax condition so that it included both income taxes and indirect taxes on goods and services. While most citizens in African developing countries do not pay income taxes, the vast majority pay indirect value-added and service taxes (27). Note also that, in the tax, oil, and aid conditions, the revenue accrues to the government, but in the NGO condition, the money bypasses the government altogether. Thus, the treatments prime people to consider their tax money or the oil or aid funds and then, probe whether they are willing to take action to promote government accountability.

Outcomes of Interest

After the experimental conditions, citizens could voice their support to create an independent agency to track the revenue and sign a petition anonymously or in their actual name that would later be sent to their constituency MP stating the respondent's desire for the agency to be created. Subjects were also invited to send an SMS text message reinforcing their position to their MP. Finally, they were invited to donate a portion of the money paid to them for taking part in the survey to watchdog groups promoting government accountability. *SI Appendix, section 1B* provides the donation prompt. Except for the donation, all measures are

binary, and they equal 1 if the respondent acted affirmatively and 0 otherwise.

After the behavioral outcomes, citizens were asked a series of questions about how transparent spending financed by the revenue source was likely to be. They were also asked to report how likely it was that elites would be able to misappropriate the money to themselves, to their families, or for their political advancement (e.g., clientelism). The survey further queried them about the likelihood that the money would be used to supply public goods. Finally, questions probed whether subjects would be willing to pay taxes to finance a transparency agency to monitor the revenue or to contact local or national elected officials in the event that the revenue was misused.

From these questions, we created 3 indices to assess our 3 citizen hypotheses. Action includes questions about supporting the independent agency, signing the petition, sending an SMS, contacting leaders, and donating to a watchdog NGO. Misappropriation involves whether and how much citizens think that the revenues are likely to be misappropriated by the government. Benefits track whether citizens believe that the funds will be used to help the public versus help political leaders and the government. We created parallel indexes for MPs, compiling their perceptions of public benefits and their beliefs about their ability as MPs to influence spending of the money. Exact wording of questions and methods for index aggregation are in *SI Appendix, section 2B*.

Results

A majority of respondents undertook political actions to promote budget transparency and monitor government spending as shown in *SI Appendix, Table S1*. In Ghana and Uganda, 53.2 and 50.7% of participants, respectively, signed the petition in their own name. An additional 8.3% in Ghana and 7.9% in Uganda signed the anonymous petition for a total of 61.6 and 58.6% signing either the named or anonymous petition in Ghana and Uganda, respectively. Also, 48% of Ghanaian participants and 57.5% of Ugandans donated money to the good government NGOs, and on average, they donated 2.1 (of 6) cedis and 386 (of 1,000) shillings.

While enumerators delivered the prompt with emphasis on the revenue source, not all respondents passed the posttreatment manipulation check recalling the assigned revenue type. We report results here on those who passed the manipulation check, which occurred at significantly lower rates in the tax condition compared with aid and oil. We note that any selection bias introduced by analyzing the subset of passers should work against the null hypothesis of no difference between revenue conditions. The selected subset was the group most attentive to the mention of taxes and thus, should also be the very set most likely to demand accountability for tax revenue. Nevertheless, in *SI Appendix*, we report the results for the entire sample as well as results for the individual components for the indexes (*SI Appendix, sections 5–8*). The results in the full sample do not differ materially from those for subjects passing the manipulation check.

Fig. 1 presents the results from our comparison among citizens of aid, oil, and taxes going to the government. Hypothesis 1 expects positive treatment effects for taxes compared with oil or aid on the action index. This figure shows that, for this index, there are no meaningful differences between conditions for tax and oil, tax and aid to government, or oil and aid to government.

Hypothesis 2 implies a negative treatment effect for the misappropriation index for taxes compared with oil and aid, since taxes should be less likely to be misappropriated. Again, there is no evidence for this effect. Hypothesis 3 expects a positive treatment effect for the securing of public goods benefits from taxes compared with aid and oil. Fig. 1 shows no evidence for this hypothesis either. Confidence intervals are narrow and suggest precisely estimated null results. *SI Appendix, section 7*,

Index Measures, Enum FE (Imputed)

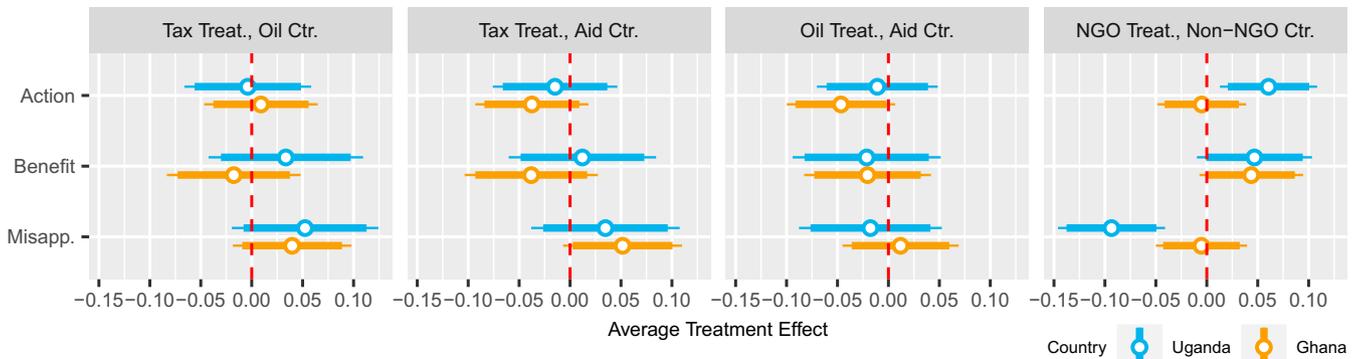


Fig. 1. Mass survey main treatment effects for respondents who passed the manipulation check. Effects are in standard deviation (SD) units and pooled across 5 imputed datasets. Estimates obtained using ordinary least squares with enumerator fixed effects (FEs). Lines indicate the upper and lower bounds of 95% and 90% CIs.

which contains results for each question individually, supports the conclusions here. The few marginally significant results go against expectations but are consistent with random chance in the context of multiple testing.

In Fig. 1, we display the results from our experiment comparing revenues directed to the government versus funds channeled through NGOs. Since there are no significant differences among the sources going to the government, we pool the data for aid, oil, and tax revenues channeled through the government budget into 1 group called non-NGO revenue, which increases the efficiency of our tests. Here, the public does recognize differences between the 2 channels of delivery. In terms of willingness to take action, Ugandans are significantly more likely to do so for NGO-channeled funds than for the government-directed revenues. In terms of misappropriation, Ugandans believe that aid, taxes, and oil revenues going to the government budget are significantly more at risk than development money through NGOs. The belief among Ugandans that NGO-sourced funds are more beneficial than government funds just misses conventional levels of significance, suggesting weakly that NGO funds better provide public goods. Finally, Ghanaians believe that there are more public benefits from NGO-directed funds than from those that go through the government budget, though this result is significant only at the 0.1 level.

In Fig. 2, we show the results for the MPs. In terms of the 3 sources that go directly to the government budget, MPs report some belief that aid brings more benefits than oil does for Ghanaians. However, there is no evidence that taxes provide more public goods benefits than aid or oil. If taxes induce greater accountability, the central government should (i) spend a greater proportion of tax-based revenues on public goods or (ii) delegate some authority over spending tax-based revenues to local elites. The former behavior should increase MPs' belief that revenues will benefit their constituents. The latter should increase MPs' influence over tax-based revenues. Yet, neither seem to be the case: MPs do not see taxes as bringing more public benefits or being subject to greater political influence than oil or aid. In contrast, in terms of control and the ability to direct the funds, Ghanaian MPs believe that they have more control over government revenue than NGO-directed aid.

The null findings are not contingent on countervailing effects for different subgroups, which we test extensively in *SI Appendix, sections 9 and 13*. Treatment effects remain null even for wealthier subjects who live in cities, pay income taxes, or support opposition parties. Likewise, results are not contingent on country region, coethnicity with the president, trust in or approval of government, or corruption perceptions. All subgroup types

in our representative samples seem to react the same way: they monitor or sanction at relatively high rates regardless of the revenue source.

Discussion

Our findings are not consistent with the claim that different revenue sources cause variation in citizen's beliefs about monitoring the government: there was no significantly different willingness to take action to increase the likelihood of transparency or accountability among those who received the tax treatment relative to the oil and aid conditions. In Uganda, we do see significant differences in willingness to take action and in beliefs about misappropriation for NGO funds versus government-directed money; in Ghana, the public sees more benefit from NGO funds. Respondents in both countries take political action to monitor and sanction spending behavior of politicians but not differentially when the monies all go into the government budget. When funds are directed to NGOs, however, beliefs and actions change, and Ugandan citizens become more willing to act, because they see less likelihood of misappropriation. Overall, citizens showed a strong desire for accountability for all revenue sources entering the government budget; moreover, this did not vary significantly by subgroups, several of which were identified by the more nuanced version of the taxation–accountability relationship.

Our study is also notable in that we examine political elites as well as citizens. Accountability is an interaction between leaders and voters. Each side's beliefs and actions should affect the other's beliefs and actions. If citizens are monitoring and sanctioning more for taxes than for aid and oil, then MPs should understand this and adjust their beliefs and actions in consistent ways. The fact that we find that both citizens and MPs do not treat taxes differentially suggests that both groups perceive all government revenues to be similar. The fact that MPs, at least in Ghana, think that they have more control over government funds reinforces why citizens may believe more in the public goods benefits of NGO-directed funds. Examining both MPs and the public allows us to build a more complete picture of how taxes and other revenues affect both sides of the accountability picture.

Our project focuses on the original argument that taxation causes accountability pressures made in seminal works of political economy (1–5, 23, 24). This claim is connected to the resource curse, which argues that citizens' accountability demands for the misappropriation of government revenues are weaker for windfalls than for taxes (9, 14–17). Our project does not explore all mechanisms suggested by the broader resource curse

MP Surveys, Index

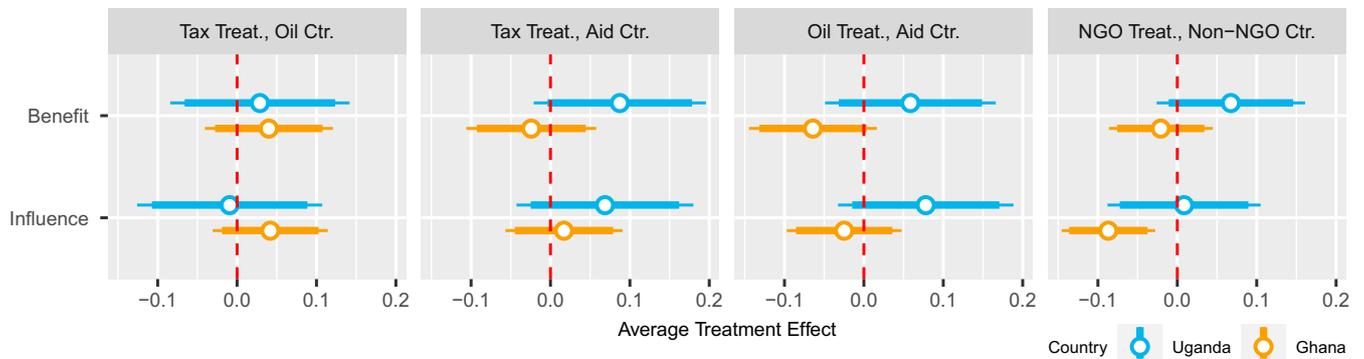


Fig. 2. MP survey main treatment effects for current and former members of parliament. Effects are in standard deviation (SD) units. Estimates obtained using ordinary least squares with enumerator fixed effects. Lines indicate the upper and lower bounds of 95% and 90% CIs.

phenomenon, many of which may well be active. It explores the single resource curse implication that windfalls accruing to the government cause citizen quiescence relative to taxes. Notably, windfalls bypassing the government may not cause quiescence; citizens may have greater hope for making sure that they are well used and thus, be willing to take more action. The channels through which nontax revenues are distributed may matter as much as or more than the revenue source.

It is possible that the treatment that we used was too weak and failed to elicit the taxation causes accountability effect. However, our approach has the dual advantage of being both clear and realistic. The revenue source was stated in a straightforward manner, and the vast majority of subjects understood it and recalled it in the manipulation check. The taxation as representation literature suggests that identification of the revenue source as taxes should be sufficient to provoke the expected effect. Yet, subjects who passed the manipulation check also did not act to monitor taxes in greater proportions than aid or oil.

Moreover, the differential behavior of citizens when contemplating NGO-directed funds versus government revenues suggests that 1 treatment was strong enough to cause greater action. Furthermore, the majority of subjects undertook monitoring actions after each revenue condition, although we do not know if these proportions are different from what baseline actions would have been in the absence of any revenue prompt. Yet, unlike for NGO-targeted aid, no differential accountability demands appear when revenues—whether they are from taxes, aid, or oil—accrue directly to the government.

Our interpretation of the null findings focuses on tax instruments and citizen ownership. Indirect taxes, such as value-added and excise taxes, may obfuscate citizens' payments to government and may further decrease any distinctions between taxes and windfalls (21). Furthermore, citizens in poor countries may act, because any public resource may induce feelings of ownership. Strong ownership over nontax revenues—which are often seen as a collective good—may thus produce an endowment effect similar to that caused by taxation, a finding seen elsewhere (22). The results could also reflect the fact that, unlike in many developed democracies, political rhetoric around revenues tends to focus on corruption regarding any source of revenue rather than the government's use of taxes. Given that nontax revenues are a much larger share of total revenues in developing countries, this alternative frame is a natural response to the importance of nontax revenue sources.

However, funds being directed to an NGO may not be seen as suffering so much from these problems. Like the donor governments that turn to bypass aid when recipient governments are deemed unaccountable, citizens may also view

these organizations as more likely to benefit them, and thus, they may be more willing to support them and hold them accountable. Our findings suggest that citizens' accountability behavior is driven by inferences about the likely fate of revenues as well as their ability to meaningfully influence outcomes.

Our results provide a more optimistic picture of nontax revenues. Windfalls may be less of a curse than is conventionally believed, at least in the minds of citizens who experience their effects. Our results do not rule out other channels by which aid and resource revenues might constitute a development "curse," but they do suggest that, at the individual level, there may not be a direct relationship between taxes and greater accountability demands. Finally, our results provide reinforcement for donors' rationale in using aid channeled through NGOs as a way of bypassing governments, at least in terms of how such bypass aid is perceived by the public and to a lesser degree, by political elites.

Materials and Methods

The citizen sample contains 3,653 observations in Ghana and 3,186 in Uganda, and it was collected using an area probability sample to achieve national representativeness. Data collection occurred in Uganda from May to June 2014 and in Ghana during March and April 2015. Our primary sampling unit (PSU) was the polling station drawn from the official electoral returns. 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. The block randomization algorithm was successful in randomizing respondents into approximately equally sized treatment groups within PSUs (*SI Appendix, section 4*). This procedure accounts for spatial correlation between many important respondent characteristics, such as education, wealth, access to information, and location-specific political experiences. The MP sample includes 200 current and former MPs from Uganda and 300 from Ghana. It is a convenience sample but is representative of the 9th Parliament of Uganda and the 6th Parliament in Ghana (*SI Appendix, section 11*). Institutional Review Board approval was obtained from Princeton University (#6368) and Brigham Young University (#X120097), and all subjects gave oral consent after a description of the study's goals and methods.

We report results for all subjects using a traditional difference in means between the reference and comparison groups across the 4 conditions: (i) tax treatment, aid control; (ii) oil treatment, aid control; (iii) tax treatment, oil control; and (iv) NGO treatment, non-NGO (tax/aid/oil) control. To control for unexplained differences across enumerators, we include enumerator fixed effects. All of these results are estimated using ordinary least squares with classical standard errors. We consider potential bias from missing values for the mass surveys by imputing 5 datasets. We report estimates for the unimputed sample in *SI Appendix, sections 5 and 6* and nonparametric results using randomization inference in *SI Appendix, sections 10 and 14*.

ACKNOWLEDGMENTS. We thank Shannon Carcelli, Lindsay R. Dolan, and Thi Dong Quynh Nguyen for helpful comments.

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Correction

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Correction for “Oil and aid revenue produce equal demands for accountability as taxes in Ghana and Uganda,” by Brandon de la Cuesta, Helen V. Milner, Daniel L. Nielson, and Stephen F. Knack, which was first published August 21, 2019; 10.1073/pnas.1903134116 (*Proc. Natl. Acad. Sci. U.S.A.* **116**, 17717–17722).

The authors wish to note the following: “Due to a server-side software error in the export of the citizen sample, the citizen results (Fig. 1 and, in the *SI Appendix*, Tables S1–S83 and S106–S109) were produced using an incorrect version of the Uganda and Ghana data. Estimates obtained with the correct dataset are nearly (and in some cases exactly) identical to the original estimates and have no effect on the article’s substantive or statistical conclusions. The only changes to the text are those relating to 2 descriptive statistics from Table S1 and to the reported sample size. The *SI Appendix* and online replication materials (1) have been updated.”

A related error appears both on page 11718, right column, eighth full paragraph, line 7, and also on page 17721, right column, second full paragraph, line 1: “3,653” should instead appear as “3,566.” Additionally, on page 11719, right column, third full paragraph, lines 3–4, “53.2 and 50.7%” should instead appear as “52.7 and 49.9%”; and, in the same paragraph, line 6, “61.6 and 58.6%” should instead appear as “61 and 57.8%.”

The *SI Appendix* has been corrected online.

1. B. de la Cuesta, H. V. Milner, D. L. Nielson, S. F. Knack, Replication data. <https://scholar.princeton.edu/hvmilner/data/PNAS-replication-data>. Accessed 26 November 2019.

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First published December 16, 2019.

www.pnas.org/cgi/doi/10.1073/pnas.1920067116