Pre-Analysis Plan
The Effects of Decentralized Tax Collection on Citizen Engagement

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Abstract

We plan to analyze the effects of provincial versus local (chief) taxation on citizen engagement. Our study is based on a field experiment implemented in Kananga, DRC where 367 neighborhoods were randomly assigned to have property taxes collected by provincial tax collectors versus by local chiefs. We propose to examine whether taxation by different levels of government induces greater citizen engagement directed towards the level of government that collected taxes. Moreover, we probe whether decentralized taxation is accountability enhancing in light of the fact that chiefs might also engage in more ethnic taxation, which could lead to more ethnic-based collective action and deepen ethnic divisions within communities. We measure citizen engagement using a novel behavioral exercise in which citizens have an opportunity to act collectively to demand a community monitoring meeting in the context of a real-world anti-poverty program. Overall, this inquiry aims to shed light on the engagement and accountability implications of taxation at different levels of government in fragile states.

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1 Motivation

A large literature suggests that tax collection enhances the will or ability of citizens to become engaged and hold government accountable (Martin, 2016; Paler, 2013; Ross, 2001; Weigel, 2017). Less is known, however, about how tax collection affects these outcomes when it occurs at different levels of government, i.e. when the responsibility for tax collection lies with the central government versus with local governments.

This is important to consider because numerous developing countries are reforming and strengthening their tax systems, which includes making important decisions about the levels of government responsible for tax collection. For instance, provincial governments in countries like Sierra Leone, Somaliland, and the Democratic Republic of the Congo (DRC), have all chosen to delegate tax collection to local chiefs. In these systems, chiefs undertake all tax collection in their local area and then remit revenues up to the provincial level. Critically, these systems are most prevalent in weakly institutionalized states with low capacity and few accountability mechanisms. Yet, few studies have examined the accountability implications of these decisions about whether to tax at the central versus local levels. This is especially true for cases in which revenue collection is decentralized but authority over spending is retained at a higher level of government (Rodden, 2019).

This paper thus aims to examine the engagement and accountability implications of taxation at higher versus lower levels of government. On one hand, it could be the case that taxation catalyzes engagement directed at whatever level of government collects taxes. Thus, when citizens are asked to pay taxes to the central government they are more likely to demand central government accountability; tax collection by the local government would have similar effects on local level accountability. This could be because taxation in fact fosters the formation of a fiscal contract or sends signals of state capacity that are in fact level-specific.

On the other hand, the link between taxation and engagement could vary depending on the level of government collecting taxes. The decentralization literature often predicts that by bringing the government "closer to the people," decentralized governance should make it easier for citizens to participate and hold officials accountable (Faguet, 2012; Merat, 2004). This logic might well apply in the case of decentralized tax collection. Local chiefs, for instance, live and operate in the neighborhoods in which they collect taxes, unlike tax collectors from higher levels of government.

They have more local knowledge, which could enable them to collect taxes more efficiently, effectively, and fairly, and local residents know where they live and can more easily make complaints and demands. Even though chiefs may remit tax money collected to the provincial government, they are agents of the government whose job it is, in part, to function as a representative of the local community. By making salient their role as intermediaries between the local population and the state, tax collection could increase citizens capacity to hold the government to account.

While decentralization might thus lead to stronger engagement and accountability at the local level, there is also cause for concern, however. In many developing countries with weak institutions, tax collection at the most local levels raises important questions about the extent to which taxes are collected in an impartial or particularistic way. While chiefs might have better local information than their central collector counterparts, they could also use this information to target taxpayers on the basis of non-economic considerations, such as ethnicity or kinship ties. Coethnics and kin are groups within the community who are relatively loyal to the chief and for whom it is likely easier to achieve tax compliance (Kasara, 2007). Chiefs could also prefer coethnic taxation because monitoring and enforcement mechanisms are often stronger within ethnic groups (Habyarimana, Humphreys, Posner and Weinstein, 2009; Miguel and Gugerty, 2005). Conversely, provincial collectors might be more likely to target households on the basis of objective economic conditions and whether or not the household should be paying (and how much the household should be paying) according to the law.

This has important implications for the nature and extent of accountability arising from central versus local taxation. First, if taxation strengthens the fiscal contract between the chief and loyal subgroups, this could exclude other groups from being party to the fiscal contract, contributing to their marginalization and exacerbating group-based divisions. This is consistent with Lieberman (2001), who describes the formation of a fiscal contract between the Afrikaaner government and Afrikaaner taxpayers in South Africa that perpetuated apartheid and the repression of black South Africans. Second, a fiscal contract between government and its supporters could in fact generate less genuine accountability pressure. Taxation (and the delivery of goods and services in return) might become another avenue by which clientlist relations are perpetuated. Thus while we might see higher levels of engagement in local collection areas, this does not necessarily imply a greater threat of sanctioning the incumbent for bad performance. The central implication is that, insofar

as central taxation is more likely to follow an economic rather than an ethnic logic, more centralized taxation could be important to achieving broad-based citizen engagement, genuine accountability pressures, and mitigating ethnic divisions. This follows on historical evidence that more broad-based, economic-focused taxation can unify diverse social groups and mobilize new constituencies (Tarrow 1998).

Ultimately, given these multiple possibilities, understanding the effects of central versus local taxation on accountability is an empirical question, and one that is of both academic and policy importance. We examine these questions in the context of a large randomized tax collection program in Kananga, DRC. In 2018, the government randomly assigned the 367 neighborhoods of the city to either "central" tax collection (where property taxes were collected by provincial government agents) or "local" tax collection (where property taxes were collected by local bureaucrats known as avenue chiefs). Thus, the only difference between treatment arms is *who* collects the property tax—all other aspects of enforcement and spending authority are held constant. While this experiment will produce several different papers, the one described in this pre-analysis plan will focus on investigating how variation in the level of tax collection affects citizen engagement, collective action, and accountability pressures.[1]

Our primary outcome concerns citizen engagement in the context of an anti-poverty program, which has the advantage of being a real-world program that will be visible and salient in local neighborhoods. Specifically, the Division of Social Affairs of the Provincial Government of Kasai Central is organizing a lottery in each neighborhood of Kananga, in which five winners will receive cash transfers of 10,000 Congolese Francs (about 25% of the median monthly income in Kananga). While this is a provincial government program, avenue chiefs are in charge of distributing lottery tickets to individuals in the community. Thus, both the provincial government and local chiefs share some responsibility for program implementation, which enables us to examine the impact of provincial versus local taxation on engagement and accountability pressures directed at either or both actors in the context of the anti-poverty program.

Specifically, citizens in selected neighborhoods will have a chance to request an audit meeting of

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[1]See Balán, Bergeron, Tourek and Weigel (2019) for the underlying tax experiment. See also Bergeron, Tourek and Weigel (2019) for a study of chief accountability and performance.

the avenue chief and/or the provincial government agent responsible for the anti-poverty program. Invited participants will be informed that only neighborhoods that have the highest demand for such meetings (i.e. the greatest proportion of participants submit audit meeting request forms) will receive them. Residents will therefore have an incentive to return a meeting request form if they believe others will do so as well and to encourage others in their neighborhood to participate. This will enable us to examine not only how chief versus provincial taxation affects engagement levels but also *who* becomes engaged, i.e. the composition of citizens to solve the collective action problem. Specifically, the possibility of ethnic bias in local tax collection—and the seriousness of the implications for accountability—motivate us to investigate the impact of provincial and local taxation on the ethnic/kinship homogeneity of who pays taxes and takes action, as well as group-based divisions, and accountability pressures. In what follows, we describe our research design, main hypotheses, data sources, and estimation strategy.

2 Research Design

The study takes place in the city of Kananga, in the Democratic Republic of Congo (DRC). Kananga, a city of roughly 1 million (the fourth largest in Congo), is the seat of the Provincial Government of Kasai Central. Like many provincial governments in Congo and elsewhere in sub-Saharan Africa, state capacity is weak, and the citizen tax base very small. With nearly 6 million people in the province, one of the poorest in the D.R. Congo, provincial tax receipts from 2010-2015 averaged around $2 million per year. The majority of government revenues instead come from national transfers and resource rents. The great majority of provincial taxes in Kasai Central are paid by firms—such as mobile phone and mining companies–located in downtown Kananga.

2.1 Tax collection experiment

For its 2018 property tax campaign, the provincial government in Kananga decided to compare the effectiveness of "central" tax collection, in which agents of the provincial tax ministry act as collectors, and "local" tax collection, in which avenue chiefs act as collectors. Balán et al. (2019) is an evaluation of this tax campaign. The unit of randomization is the neighborhood of Kananga.

In all neighborhoods, collectors complete two steps for the tax campaign. First, they complete a

register of all taxpayers in the neighborhood, during which they distribute tax letters that show the amount due. Second, they collect taxes in the field using portable printers to issue receipts. Central and local collectors have identical training and collection procedures during the campaign; they also receive identical financial compensation. Balán et al. (2019) studies the revenue differences between central and local collection as well as the mechanisms behind any observed differences.[2]

2.2 The collective action opportunity

We measure collective action using a novel behavioral measure set in the context of a government anti-poverty poverty program. Specifically, we are working with the Division of Social Affairs (DIVAS) and the cash transfer lottery mentioned above, in which chiefs in each neighborhood distribute lottery tickets to the neediest individuals in the community.[3]

In the context of this government program, citizens will also have an opportunity to vote for community audits of the chief who worked on the program as well as DIVAS itself. The audits will be conducted by well-known and respected local civil society organizations: RIAC (the Network for Transparency and Anti-corruption), which specializes in promoting transparency and fighting corruption, and SOCICO (the Civil Society of Congo), which focuses on government accountability in the areas of violence, conflict, and elections. RIAC and SOCICO frequently conduct community meetings investigating the comportment of officials in different government programs. For the audits of this antipoverty program, RIAC and SOCICO staff will bring together citizens, the chief, and/or the DIVAS representatives to discuss the details of the antipoverty program: who received the lottery tickets, how many tickets each, who technically won the lottery, who actually received the goods, etc.[4] RIAC and SOCICO will organize audits in the neighborhoods that submit the

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[2]For a detailed description of this experiment, see the pre-analysis plan located on the AEA registry under the reference number AEARCTR-0003308.

[3]More information about the anti-poverty program is available in the pre-analysis plan to Bergeron, Tourek and Weigel (2019) in the AEA registry under reference number AEARCTR-0004532.

[4]Such community meetings are common in the DRC. Although there are few formal avenues of engagement with the state, local meetings at the avenue or quartier level were the principal form of political expression discussed by participants in focus group meetings held in Kananga in 2016.

most votes (as a share of the population).

Thus, before the chief begins distributing lottery tickets, 20% of households will receive informational fliers explaining the program plus community audit meeting request forms.[5] An example of the informational flier is shown in Figure 1 and of the form in Figure 2. This form informs citizens that they have the ability to request an audit meeting to investigate if the program was implemented properly and fairly. They will also be informed that meetings will not occur everywhere and will be based on demand. Communities that submit the most requests (as a share of households that received invitations) will be prioritized for meetings. Meetings will be organized as promised and participation in the meetings and the content of the meetings will be tracked as well. We have structured the collective action incentive in order to minimize free-riding.

Overall, a total of 161 neighborhoods will have the opportunity to vote for community audits, including 45 provincial collector neighborhoods, 111 chief collector neighborhoods, and five 'pure control' neighborhoods in which no property tax collection took place in 2018. We describe below how we will leverage the latter in our hypothesis testing.

Importantly, citizens can separately request audits of the chief or DIVAS, the two key actors involved with the program. They receive two different forms and to vote they must drop these forms in two different drop box located in different locations in the city center. They are also free to submit both meeting request forms. The fact that it is independently costly for citizens to request meetings of both entities means that we will be able to analyze whether chief tax collection increases demand for audits of chiefs and simultaneously erodes demand for audits of the provincial government, implying that demand for local and central government accountability are substitutes.[6]

It is also important that citizens decide whether or not to submit a community audit meeting request form before the actual distribution of lottery tickets—because observed differences in the levels of participation/collective action will reflect the impact of local and central tax collection

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[5]Randomization is done using information on the universe of properties in Kananga from a large survey conducted for Balán et al. (2019).

[6]Testing this substitution issue involves comparing levels of audit meeting request submission for both actors with the pure control group, which as noted consists of only five neighborhoods and will thus be one of our less powered analyses.

rather than the outcomes of chief lottery ticket distribution.[7]

2.3 Tax prime

Although there is no explicit link between taxation and the anti-poverty program, in collaboration with the government we also introduce a tax prime among randomly selected citizens. Specifically, we randomly vary on the individual level whether citizens are referred to as 'citizens' or 'taxpayers' in the community audit request form (see Figure 2). This in essence functions as a tax prime. We will use the tax prime to examine whether the hypothesized effects are stronger in locations where the collective action decision is explicitly framed as an appeal to taxpayers.

3 Main Hypotheses

This section summarizes our main hypotheses. Appendix A specifies how we will test these hypotheses using the data described in Section 4 and estimation strategy described in Section 5.

In what follows, we specify which comparison group we anticipate using. For instance, in some cases, the comparison group will be "places with no tax collection" (pure control group) while in others it may be "places with provincial tax collection" or "places with chief tax collection"

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[7]It is of course possible that forward-looking citizens will base their collective action decisions on the expected distribution of the chief, who in turn will decide how to distribute as a function of anticipated citizen collective action. Under strong rationality assumptions, one could also argue that chiefs would have conducted tax collection in order to minimize the threat of collective action, and so in equilibrium we should observe no citizens holding chiefs to account (or indeed no taxes being collected). We note here that the antipoverty program (and associated audit meetings) had not been announced at the time of tax collection. Moreover, although avoiding citizen pressure and collective action could theoretically explain low collection of direct taxes in non-democratic and weak states in sub-Saharan Africa, such states still obviously also face revenue imperatives that require risking citizen pressure or bargaining with citizens until an implicit taxes-for-public goods contract is reached. In partial equilibrium, then, we expect to observe citizens responding to tax collection as hypothesized below, even without seriously relaxing the (strong) assumptions how rational and forward looking these actors are.

(which refer to the main tax collection treatment arms). We do this because we anticipate using the pure control group to help adjudicate null results, as described below in Section 3.5. For instance, it is possible that provincial tax collection induces more collective action directed at the provincial government and that chief tax collection catalyzes more collective action targeting both the chief and the provincial government. In a comparison of provincial to chief collector locations, it might appear as if there were no treatment effect on provincial action. By comparing demands for provincial government accountability in provincial tax locations and chief tax locations relative to a pure control, we can determine whether such effects are truly null.

3.1 Tax collection and levels of engagement

We will first examine the impact of central and local tax collection on willingness to hold these different levels of government to account. Specifically, we will test the hypotheses that provincial government collection will increase participation and accountability demands directed towards the center while taxation by local government (here chiefs) will result in higher levels of engagement and accountability demands directed towards chiefs.

> [**H1**] Tax collection by the provincial government will result in more engagement directed at the provincial government (relative to neighborhoods with no tax collection and/or chief tax collection).

> [**H2**] Tax collection by the chief will result in more engagement directed at the local government (relative to places with no tax collection and/or provincial tax collection).

We also will consider a number of possible mechanisms behind the above hypotheses. As mentioned, tax collection could catalyze the formation of a fiscal contract between citizens and the state. In return for their taxes, citizens come to expect benefits in return, motivating them to make demands focused on the level of government that undertakes taxation. Tax collection could also send signals of state capacity, which could increase expectations about what the state has competency to provide in return (Weigel, 2017). To shed more light on the mechanisms, we will test the hypotheses below, which are symmetrical for provincial versus chief tax collection. We emphasize that we do not necessarily expect to find support for both of these; evidence for H1 or

H2 could be driven by either or both of these mechanisms (or other mechanisms that might be uncovered through exploratory analysis).

[**H3a**] Provincial tax collection will increase expectations of receiving benefits from the provincial government (relative to places with no tax collection and/or chief tax collection).

[**H3b**] Chief tax collection will increase expectations of receiving benefits from chiefs (relative to places with no tax collection and/or provincial tax collection).

[**H4a**] Provincial tax collection will increase perceptions of provincial capacity (relative to places with no tax collection and/or chief tax collection).

[**H4b**] Chief tax collection will increase perceptions of chief capacity (relative to places with no tax collection and/or provincial tax collection).

3.2 Ethnic taxation

We will examine the impact of chief versus provincial collection on ethnic favoritism in tax collection. This hypothesis will actually be tested in Balán et al. (2019) but is summarized below for completeness because it informs our subsequent hypotheses about taxation and collective action.

[**H5**] Local tax collection (by avenue chiefs) will result in more 'ethnic' targeting of tax visits (relative to places with provincial tax collection). We therefore expect that reported visits from tax collectors and tax compliance will be higher among property owners who are coethnics with the chief.[8]

3.3 Taxation and collective action

Our hypotheses on the relationship between central and local tax collection and collective action are conditional on finding empirical support for the above hypotheses. Based on the theory described above as well as on preliminary data, we believe that relatively more economic targeting

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[8]For a full elaboration of our hypothesis around targeting in local versus central, see the pre-analysis plan for Balán et al. (2019). The central idea is that chiefs have more local information, which they will use to differentially visit households which view them as more legitimate.

by central tax collectors and relatively more ethnic targeting by chiefs is most likely, yielding our main hypotheses:

[**H6a**] Chief tax collection will result in relatively more participation by coethnics of the chief in collective action and less participation by non-coethnics (relative to places with no tax collection and/or provincial tax collection). In other words, chief tax collection will result in more ethnically homogeneous collective action relative to places with no tax collection and/or provincial tax collection.

[**H6b**] Chief tax collection will result in more salient ethnic identities and social divisions (relative to places with no tax collection and/or provincial tax collection).

3.4 Linking taxing and spending

One concern is that taxing and spending are not closely linked in the minds of many citizens. We therefore expect that treatment effects on our main outcomes of interest will be greater in places where people perceive a close link between taxing and the implementation of the anti-poverty program. Specifically:

[**H7a**] Tax collection by the provincial government will result in more engagement directed at the provincial government (relative to neighborhoods with no tax collection and/or chief tax collection) among individuals primed to think about taxation compared to those who are not.

[**H7b**] Tax collection by the chief will result in stronger demands for chief accountability (relative to places with no tax collection and/or provincial tax collection) among individuals primed to think about taxation compared to those who are not.

[**H7c**] Chief tax collection will result in relatively more participation by coethnics of the chief and less participation by non-coethnics (relative to places with no tax collection and/or provincial tax collection) among individuals primed to think about taxation compared to those who are not.

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3.5 Alternative explanations and explanations for null results

While we will test the hypotheses outlined above, the discussion at the outset underscores that theoretical predictions could go in multiple directions. It is therefore possible that we observe null results or results in the opposite direction. If this is the case, we plan to conduct further tests outlined below to shed light on these results.

First, it is possible that provincial and/or chief tax collection could enhance fears about the coercive capacity of the state, dampening the desire to engage in collective action. Either of these could result in null results for H1 and H2. We thus plan to examine the effects of provincial and chief tax collection on trust in government at different levels and fears of government coercive capacity using measures outlined in Appendix 5. Alternatively, chief tax collection might not result in more collective action if people feel that the chief has been coopted by the provincial government (Mamdani 1996), which would produce a null result for H2. We will thus also check the effect of chief tax collection on perceptions of chief independence vis-a-vis higher levels of government.

We note that H1 and H2 imply that provincial tax collection increases province-oriented collective action relative to chief tax collection and vice versa for chief tax collection. It is possible, however, that provincial or chief tax collection affects collective action at multiple levels of government. In other words, it could be that chief tax collection increases both chief and province-oriented collective action. This would be the case, for instance, if people know that chiefs are remitting taxes to the province-level and this increases their motivation to engage with both levels of government. This would result in a null result for H2 in the comparison of province versus chief tax collection. We will thus compare treatment arms to outcomes in the pure control group to shed further light on whether chief collection had such effects.

With respect to our collective action hypotheses, it is possible that chief tax collection will result in higher levels of collective action by non-coethnics as well as co-ethnics. This would be the case if, for instance, chiefs target co-ethnics for taxation, which has the effect of mobilizing non-coethnics who did not want to be excluded from the fiscal contract. This scenario still suggests a strong ethnic logic to taxation, but we might find that chief tax collection did not in fact fuel participation by coethnics relative to non-coethnics. We might still reasonably expect heightened ethnic social divisions in such instances. We will therefore still interpret no evidence for H6a but

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evidence for H7a as evidence of ethnic-based collective action.

Finally, it is possible that even if we observe more coethnic taxation and higher levels of coethnic engagement (consistent with H2), this might not be indicative of greater accountability pressure. While coethnics might use the meetings to communicate preferences, this will not necessarily reflect a greater willingness to hold the chief accountable. We will collect data on what is discussed in the meetings to explore this descriptively.

4 Data

Data will come from several sources. The specific data sources and survey questions that will be used to test hypotheses are detailed in Appendix A.

- Baseline survey of Balán et al. (2019). This survey contains pre-tax collection treatment data on household and neighborhood level variables that can be used to show balance and could function as covariates.

- Endline survey of Balán et al. (2019). This survey contains several outcomes of interest, including citizens' attitudes about the provincial government, chief, tax collection, and the role of citizens in politics / interest in participation and collective action. It also has measures of ethnicity and ethnic identification/preferences.

- Data on the actual submission of meeting request forms. These data will come from the drop boxes in downtown Kananga for audits of the chief and of the DIVAS agents working on the program.

- Endline survey for this project, which will occur after the distribution of lottery tickets but before the community audit meetings. This survey contains a number of questions that will help interpret the reduced form results: knowledge of and rumors about the community audit meetings, self-reported reasons for submitting a form or not, beliefs about others' participation and the probability of meetings being held in citizens' own neighborhoods, beliefs about the outcomes of the community audit meetings (i.e. the magnitude and probability of sanctions over the chief and/or DIVAS officials).

- Data from community audit meetings on attendance and proceedings. These data will be used to characterize the forms of engagement among citizens and the chief and/or provincial government agents under audit. Participants will also have a chance to write questions/topics they would like to be raised in an anonymous or non-anonymous fashion, providing another source of data regarding the reasons individuals are choosing to participate.

4.1 Key measures

Our hypotheses pertain to the extent to which chief versus provincial collectors engage in ethnic versus economic taxation and engage in collective action that is ethnically homogeneous versus heterogeneous. Here we describe how we plan to measure these.

Ethnic bias in tax collection

We define ethnic taxation as either including or excluding individuals from tax collection (or over or under-taxing them) based on their ethnicity rather than on legal or economic considerations. So including or over-taxing coethnics (regardless of whether and what they should be paying by law) would be ethnic taxation. Similarly, excluding or under-taxing coethnics who should be paying would constitute ethnic taxation.

Following Balán et al. (2019), we will characterize the ethnic nature of tax collection by examining if coethnics of tax collectors are disproportionately likely to receive tax visits and/or to pay the property tax. Ethnicity measures will be self-reported, as will be data on the number of visits from tax collectors. Compliance will be measured using administrative data, using unique compound tax ID codes to match with household surveys.

Ethnic collective action

In addition to testing H6a at the individual level (the propensity for coethnics and non-coethnics to submit a meeting request form), we will create community level measures of the ethnic homogeneity or heterogeneity of collective action. Specifically, we want to assess whether the ethnic homogeneity of those who submitted forms is greater (or less) than the homogeneity of the neighborhood itself. We will thus construct a measure of the share of coethnics who submitted a form / share of coethnics

in a neighborhood. We will explore the same measures of ethnicity as specified above, measured as self-reported tribe, territory, or subtribe.

5 Estimation and Hypothesis Testing

We will estimate effects using an intent-to-treat framework. For outcome Y_{ijk} (such as the whether a meeting request form was returned), where i indexes the individual, j the neighborhood, and k the randomization stratum we will estimate the following equation(s):

$$Y_{ijk} = \beta_1 TREAT_{jk} + \alpha_k + X_{ijk}\Gamma + X_{jk}\Phi + \epsilon_{ijk} \tag{1}$$

where $TREAT_{jk}$ is an indicator for either provincial or chief tax collection, depending on the hypothesis. For instance, we will use an indicator of provincial tax collection to test H1, H3a and H4a and an indicator of chief tax collection to test H2, H3b, H4b, H5, H6a and H6b (see Appendix A for a complete list). α_k is randomization strata fixed effects, where as noted in the pre-analysis plan to Bergeron, Tourek and Weigel (2019) we stratified on average neighborhood-level tax compliance in the 2018 tax campaign as well as the geographic location of the neighborhood in Kananga (which grid cell on a satellite map). X_{ijk} is a vector of individual controls, X_{jk} is a vector of polygon-level controls, and ϵ_{ijk} is the error term. We will cluster at the neighborhood level (the level at which the tax collection program was randomized).

To test the interaction effect of the tax collection and tax prime treatments (H7a-c), we will estimate a second regression of the following form:

$$Y_{ijk} = \beta_1 TREAT_{jk} + \beta_2 TREAT_{jk} * PRIME_{ijk} + \beta_3 PRIME_{ijk} + \alpha_k + X_{ijk}\Gamma + X_{jk}\Phi + \epsilon_{ijk} \tag{2}$$

where $PRIME_{ijk}$ is an indicator for whether an individual within a neighborhood received the tax prime described in Section 2.3. In this equation, β_2 captures whether the effect of a given tax collection treatment on the corresponding outcome of interest is greater for those who receive the tax prime. Here randomization was at the individual-level so standard errors will not be clustered at a higher level.

Finally, one of the ways in which we will test H6a is by considering heterogeneous effects on engagement by coethnicity status with the chief. We will do so by implementing the general equation below where HET_{ijk} now refers to a pre-treatment covariate—such as an indicator of coethnicity with the chief—by which we want to assess whether treatment effects vary. Here the key coefficient of interest is again β_2 which captures whether the effect of the treatment indeed varies for different subgroups defined by HET.

$$Y_{ijk} = \beta_1 TREAT_{jk} + \beta_2 TREAT_{jk} * HET_{ijk} + \beta_3 HET_{ijk} + \alpha_k + X_{ijk}\Gamma + X_{jk}\Phi + \epsilon_{ijk} \qquad (3)$$

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Appendices

Appendix A: Summary of Hypothesis Tests

The table below summarizes our main hypotheses, estimation strategy, and measures for each hypothesis test. The first column corresponds to the hypotheses described above in Secton 3. The second column denotes the estimation equation specified in Section 5 while the third column specifies the treatment assignment indicator (see the discussion in that section). The fourth column summarizes the main prediction in the hypothesis. The fifth column clarifies the samples that will be used to test each hypothesis, specifically whether we will use neighborhoods assigned to the provincial tax collector, chief tax collector, and/or pure control. The final column lists the measures that will be used to test each hypothesis and whether they come from the first or second endline.

HYP	EQUATION	TREAT	PREDICTION	SAMPLE*	MEASURES
Panel A: Main and mechanisms					
H1	1	Prov	B1>0	1, 2	Meeting request form
H2	1	Chief	B1>0	2, 4	Meeting request form
H3a	1	Prov	B1>0	1, 2	endline II: tax_service_gov
H3b	1	Chief	B1>0	2, 4	endline I: chef10-chef12; endline II: tax_service_chef
H4a	1	Prov	B1>0	1, 2	endline I: statecapacity1_survey_e; endline II: capacity_gov
H4b	1	Chief	B1>0	2, 4	endline II: capacity_chef
H5	1	Prov	B1>0	2	See PAP for Balan et al 2019
H6a	1	Chief	B1>0	2, 4	Community-level measure (ethnic homogeneity of participants/ethnic homog. Of community)
H6a	3	Chief	B2>0 (if HET=coethnic)	2, 4	endline II: chef_fam_nuclear, chef_fam_ext, same_groupement, same_tribe, same_terr
H6b	1	Chief	B1>0	2, 4	endine I: civ_info_yes, all, rich, mid, poor, tribe, notribe, pay, nopay, close_tribe, close_notribe, comfort0-4, social1_tribe, social2_tribe, social3_tribe, social3_otribe; endline II: identity, close_econ_tribe
Panel B: Interaction					
H7a	2	Prov	B2>0	Same as above	Same as above
H7b	2	Chief	B2>0	Same as above	Same as above
H7c	2	Chief	B2>0	Same as above	Same as above
Panel C: If Null Results					
Trust prov	1	Prov	Descrip	1, 2	endline I: trust3_survey_e ; endline II: gov_eval, divas_eval
Trust chief	1	Chief	Descrip	2, 4	endline I: trust1_survey_e, chef_eval, spend_chef_2018, steal_chef_2018; endline II: chef_responsive, chef_eval
Afraid prov	1	Prov	B1>0	1, 2	endline II: nervous_das
Afraid chief	1	Chief	B1>0	2, 4	endline II: nervous_chef
Chief coopted	1	Chief	B1>0	2, 4	endline II: chef_coopt

*Sample key: 1 = prov + local + pure control (all neighborhoods); 2 = prov + local (no pure control); 3 = prov + pure control (no chief); and 4 = chief + pure control (no prov)

Table 1: Summary of Main Hypothesis Tests

Appendix B: Informational Fliers

REPUBLIQUE DEMOCRATIQUE DU CONGO
PROVINCE DU KASAÏ OCCIDENTAL
MINISTERE DES AFFAIRES SOCIALES, ACTION HUMANITAIRE ET
SOLIDARITE NATIONALE (DIVAS)

Announcement : Development Program

The Ministry of Social Affairs of the Provincial Government of Kasaï
Central has the honor of announcing a development program that will
take place in this avenue in the coming weeks. For this program, several
residents will receive cash transfers with the aim of boosting local
development. Unfortunately, there is not enough for everyone. Thus,
there will a lottery to choose 5 winners on this avenue.

[Chief] will distribute lottery tickets to inhabitants of this avenue from **[date
training]** to [**date_draw**]. See the chief for more information.

Informational flier for property owner **[name]** in the compound
[compound]. Note : this flier does not guarantee receipt of a ticket.

Figure 1:   Example informational flier (translated into English).

Do you want an audit and verification meeting?

As part of this program, you and other people in your avenue can **request an audit and verification meeting** organized by a civil society organization in Kananga. This is an opportunity for you as a [citizen/taxpayer] to learn more about this program and whether it was implemented properly and fairly. The meeting can focus on the actions taken by the **Division of Social Affairs**, by your **avenue chief**, or **both** in this development program.

IMPORTANT : The civil society organization will only organize a meeting for your avenue if many residents request one.

➤ To **request an audit meeting of [Actor1]**, submit the [COLOR] form to the [COLOR] drop box located at [ADDRESS1].
➤ To **request an audit meeting of [Actor2]**, submit the [COLOR] form to the [COLOR] drop box located at [ADDRESS2].

To request meetings involving **both** actors, submit both forms to the correct boxes. Everything you write will be kept confidential from the concerned parties. All forms must be submitted by **[date]**.

The avenues that submit the most requests (as a share of all households) will get top priority to receive an audit meeting. Your action is important!

REQUEST MEETING of the **[DIVAS/Chef].**	**REQUEST MEETING** of the **[DIVAS/Chef].**
To request a meeting of the [DIVAS/Chef], please **deposit this form into the locked box at :**	To request a meeting of the [DIVAS/Chef], please **deposit this form into the locked box at :**
[LOCATION].	**[LOCATION]**.
The box will have show this colored stamp:	The box will have show this colored stamp:
[COLOR STAMP]	[COLOR STAMP]
Request of the compound: [Code]	Request of the compound: [Code]

Figure 2:   Example community audit meeting request form (translated into English).