

Pre-Analysis Plan: Local Public Finance and Unconditional Cash Transfers in Kenya*

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Abstract

In developing countries, informal institutions play an important role in raising revenue for local public goods. Examining the effects of a one-time income shock on the amount of revenue these institutions can raise and how these revenues translate into public goods can shed important light on local public finance. Unconditional cash transfers to households are growing in popularity as a development intervention and offer an ideal opportunity to study the implications for local public finance. This pre-analysis plan describes a two-level randomized controlled trial of an unconditional cash transfer program to poor households meeting a basic means test by the NGO *GiveDirectly* in rural Kenya. The two-level experiment varies treatment status at the village level and treatment intensity at the sublocation level, an administrative unit directly above the village level, for 653 villages in Kenya, which corresponds to over US\$13 million in transfers. Within treatment villages, all eligible households receive a large cash transfer of approximately six months of household expenditures. This study seeks to understand what fraction (if any) of these transfers are captured through informal and formal taxation, whether this contributes to increased public goods-related outcomes and how the Constituent Development Fund, another key source of local development funding, responds to villages that receive transfers. Investment in local public goods can benefit non-recipients and have lasting impacts, important factors in determining future policy design related to cash transfers. The pre-analysis plan outlines main hypotheses on revenues (H1) and local public goods (H2), as well as secondary hypotheses on disputes (S1), interactions with local administrator demographics and intra-tribe diversity (S2), and preferences for redistribution (S3).

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1 Introduction

The presence of informal institutions that tax households and govern contributions to public goods at the local level are widespread in developing countries yet poorly understood (DFID 2013). Olken and Singhal (2011) define informal taxation as “a system of local public goods finance coordinated by public officials but enforced socially rather than through the formal legal system,” and provide evidence that informal taxation is economically important, in terms of its incidence on household and impact on local government spending, in a number of developing countries.¹ Olken and Singhal (2011) provide a theoretical model to illustrate that when local communities may have better information on household income or legally verifying income, and when social sanctions can be enforced, informal taxation can be preferred to formal taxation. Better information about local circumstances also allows for greater fluidity in project initiation and tax rates; for instance, new development projects can be started and financed in “good” years, and put on hold in “bad” years. Examining informal taxation in the context of income shocks offers an opportunity to learn more about their incidence and operation, as well as the processes for and prospects of local development projects.

Unconditional cash transfers, whereby recipients can spend the money on products of their choosing, have been growing in popularity as a tool for economic development and poverty alleviation. An increasing number of countries in sub-Saharan Africa have implemented or are in the process of implementing some type of cash transfer program.² The appeal of unconditional cash transfers lies in fact that i) they allow recipients to spend money as they find most effective; ii) they have low administrative costs because there is no need for procurement, training, or monitoring, so a greater proportion of funds can be provided as direct assistance (Margolies and Hoddinott 2015); and iii) existing evidence finds positive benefits for recipient households (Arnold and Greenslade 2011) and that households do not spend transfers on temptation goods (Evans and Popova 2014). Proponents of unconditional cash transfers have argued for shifting an ever-greater share of development assistance to cash transfers to households (Faye, Niehaus, and Blattman 2015). However, even proponents note that one possible exception to this is funding for public goods, which requires coordination from a wide variety of actors (Blattman and Niehaus 2014). What is the interaction between cash transfers, local public finance and public goods? I argue that a great deal can be learned about the nature of informal taxation and local public good financing by studying the response to a one-time, unanticipated income shock

1. Informal revenue raising with social sanctions for local public goods occurs in many contexts, such as parent-teacher organizations or homeowners’ associations.

2. For instance, Kenya partnered with the World Bank in 2013 to develop the National Social Safety Net Program for Results, which combines and expands cash transfer programs (<http://www.worldbank.org/en/news/press-release/2013/07/23/world-bank-help-kenya-build-national-safety-net>), Liberia is starting a cash transfer program for 10,500 households affected by Ebola (<http://allafrica.com/stories/201502060847.html>) and Ghana announced an expansion of a cash transfer program for pregnant women and young children in March 2015 (<http://allafrica.com/stories/201503051428.html>).

provided by an unconditional cash transfer program.

This study uses a randomized controlled trial of a unique, large-scale unconditional cash transfer program to investigate the relationship between cash transfers and local public finance in rural Kenya. The NGO *GiveDirectly* (GD) makes large unconditional cash transfers to poor households in Kenya. The magnitudes of the transfers are large at just over US\$1,000 per household, corresponding to five to six months of total expenditure for recipient households. GD targets households living in homes with grass-thatched roofs. The intervention involves over US\$13 million in transfers and 653 villages in one Kenyan county. Treatment assignment was randomized at the village level, while treatment intensity was randomized at the sublocation level, an administrative unit directly above the village level comprising of an average of ten villages.³ In high saturation sublocations, two-thirds of villages were assigned to treatment, while in low saturation sublocations, only one-third of villages were assigned to treatment. Within treatment villages, all households meeting GD's eligibility requirement receive the unconditional cash transfer.

This randomization generates exogenous variation in treatment status and intensity that will be used to address the following research questions: What are the effects of unconditional cash transfers to households on local public finance and public goods? How much of this income is captured via informal taxation? Do income shocks improve local public goods? Are household contributions/revenue collection complements or substitutes to funding by other government sources? Secondary hypotheses will explore the effects of cash transfers on disputes, the importance of local administrator characteristics and intra-tribe diversity on the revenue-raising and local public goods effects of cash transfers, and the effect of the transfers on preferences for redistribution.

This is an interesting context and experiment to study for multiple reasons. First, this is a large-scale program; with over US\$13 million in transfers being distributed; at this size, it is analogous to many government programs. Back-of-the-envelope calculations suggest this corresponds to 8 percent of yearly GDP in the study area. Second, while the one-time nature of the transfer differs from some government transfer programs, one-time income shocks are not uncommon in developing countries. Commodity price fluctuations, natural resource revenue and temporary or short-lived government programs can create short-term income fluctuations. Third, investments in local public goods offer one method by which a one-time shock may lead to persistent effects and to positive spillovers to non-recipients (both richer households in treatment villages as well as to households in control villages).

Fourth, the public nature of the income shock (*GiveDirectly* holds village-wide meetings prior to be-

3. In part of the study area where GD had previously worked, in some instances multiple adjacent sublocations were grouped together in order to have sufficient villages to assign treatment status. For ease of explication, I will continue to refer to these as sublocations.

ginning their work in a treatment village, and targets based on publicly-observable housing characteristics) and large amount of money involved (over US\$13 million) offers insight into i) government revenue-raising capacity and ii) the ability of communities to coordinate for local public goods. The fact that the shock is public and large provides a best-case scenario for finding evidence of government capture or local coordination. I will collect demographic information on local administrators to determine traits that may play a role in facilitating revenue-raising in this context, which speaks to state capacity and a growing literature on civil servant effectiveness (Besley and Persson 2013; Dal Bo, Finan, and Rossi 2013).

Fifth, Kenya in particular offers an exciting context to study, with a long tradition of local fundraising for public goods and parallel formal and informal systems for development projects. Historically, public ceremonies known as *harambees* (“let’s all pull together” in Swahili) played a central role in financing local development projects since independence; 90% of respondents in rural central Kenya in 1980 had contributed (Barkan and Holmquist 1986), and Ngau (1987) cites government estimates from 1976 that harambees accounted for 40 percent of rural capital development. While contributions are ostensibly voluntary, Miguel and Gugerty (2005) document the many ways in which social pressure and sanctions are used to elicit contributions. As local administrators do not have a dedicated budget, if they want to implement additional development projects, the funding must be raised locally from household contributions.

More recently, the Constituency Development Fund (CDF) has also served as an important source of development funding for localities in Kenya. The CDF started in 2003 and provides funding for Members of Parliament (MPs) to use on development projects in their constituencies, with the goal that a more decentralized approach will aid in identifying projects that match local preferences and help rectify regional imbalances in development funding (Gutierrez Romero 2009).⁴ The sublocation and village-level randomization allows for an investigation of how CDF funding responds to an exogenous income shocks for certain villages. For some projects, co-funding is required by the CDF, meaning there could be potential for complementarities between CDF funding for projects in a village and fundraising raised from cash transfers. However, if CDF funding is targeted towards villages that did not receive transfers, total funding for development projects may go down in treatment villages.

Lastly, the results will have important policy implications given the growing number of governments and international NGOs providing cash transfers. If there is a particular subsistence income level being targeted for recipients of cash transfers as a social safety net program, it is important to factor in the amount that may be captured via informal taxation. If cash transfers do result in an increase in public good

4. In practice, MPs have historically played an outsized role in project selection; however, in 2013 the CDF Act was tightened to limit their power over these funds.

provision at the local level, it offers an additional avenue for funding these types of projects. Funding raised locally could also be either a complement or substitute for government funding. The study will add to the growing body of evidence on unconditional cash transfers in developing countries (such as Haushofer and Shapiro 2013; Blattman, Fiala, and Martinez 2014; Cunha, Giorgi, and Jayachandran 2014; Duflo 2003)

This remainder of this pre-analysis plan provides background on the intervention and setting (Section 2), discusses the data sources and collection methods (Section 3), outlines the empirical specifications and main hypotheses (Sections 4 and 5), the secondary hypotheses (6), and concludes by discussing next steps. This investigation is part of a larger study on the general equilibrium effects of cash transfers (Miguel, Niehaus, and Walker 2014). Key outcomes of the general equilibrium study include household welfare, psychological well-being, wages, prices, enterprise creation and profits. Additional pre-analysis plans will be registered for these hypotheses.

2 Background

2.1 GiveDirectly

The NGO *GiveDirectly* (GD) provides unconditional cash transfers to poor households in rural Kenya, targeting households living in houses with thatched roofs, a basic means-test for poverty. In treatment villages, GD enrolls all households in treatment villages meeting its thatched-roof eligibility criteria, approximately 35 percent of all households. Before starting work in a treatment village, GD holds a meeting (*baraza*) of all households in the village to inform villagers of their upcoming activities; to prevent gaming, the exact eligibility criteria is not disclosed. However, it is not hard to deduce, especially after the transfers are made, as it is publicly observable. To identify eligible households, GD conducts household censuses of treatment villages and collects information on household name, contact information and housing materials. GD staff then initiate the enrollment process, comprising of registration of eligible households and an additional check by a separate team to confirm eligibility. To emphasize that the cash transfer is unconditional, households are provided with a brochure emphasizing the many potential ways that they could use the transfer and that they are free to spend the transfer as they wish.

Eligible households that are ultimately enrolled receive a series of 3 transfers totaling about US\$1,000 via the mobile money system M-Pesa. The token transfer of \$80 ensures the system is working properly; two months afterwards, the first large transfer of \$475 is distributed, and six months after this, the second and final large transfer of \$475 is sent. This is a one-time program and no additional financial assistance

is provided to these households after their final large transfer. Haushofer and Shapiro (2013) conducted an impact evaluation of GD's program in 2012 and found positive benefits for recipient households: an increase in assets (58%), expenditures (23%), income (28% implied annual return) and well as improved psychological well-being.

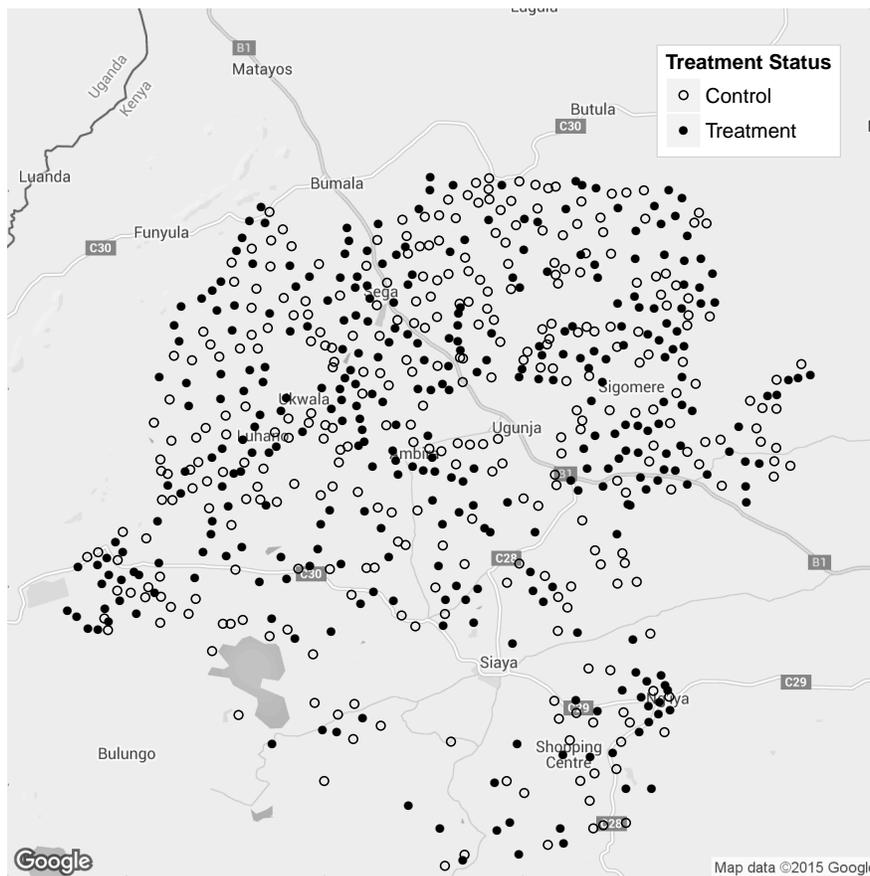
2.2 Study Setting

This study takes place in Siaya County, Kenya, a rural area in western Kenya bordering Lake Victoria. Siaya County is predominately Luo, the second largest ethnic group in Kenya. GD selected both Siaya County and a region within Siaya County⁵ based on its high poverty levels and identified target villages for expansion; in practice, these were all villages within the region that a) were not located in peri-urban areas and b) were not part of a previous GD campaign. The total number of villages meeting this description (and thus a part of the study sample) is 653, spread across 68 sublocations, the administrative unit above a village, and 3 constituencies. We randomly assigned sublocations to high or low treatment status in order to create additional variation in treatment intensity that could be used to identify spillover effects. Within high saturation sublocations, we assigned 2/3 of the villages to treatment status and 1/3 of the villages to control status, while in low saturation sublocations, 1/3 of villages were assigned to treatment status. Figure 1 displays the spatial variation in treatment and treatment intensity; each point is the mean latitude and longitude of all households censused in each village, with treatment villages as filled circles and control villages as open circles.

The average village includes 100 households, with 33 percent of these households meeting GD's eligibility criteria of non-permanent housing. 63 percent of households are married (either one couple or polygamous) and 31 percent of households are widows. Household survey respondents have 5.9 years of education and an average age of 44. Almost all households are involved in agriculture, with about one-fifth of households involved in self-employment and a quarter of households working for pay (this includes casual agricultural labor). Households walk a median of 30 minutes to reach the nearest weekly market center. 42 percent of households report having participated in a harambee in the last 12 months.

5. This selection was based on the 2009 Population Census, which occurred prior to devolution and the creation of county governments. Based on 2009 administrative boundaries, the study area consists of 5 of the 7 divisions in Siaya District: Boro, Karemo, Ugunja, Ukwala and Uranga.

Figure 1: Map of Study Villages



Notes: This figure plots the mean latitude and longitude coordinates from household census data for the 653 villages in the study sample; this displays the variation in treatment intensity that can be used to identify effects. The areas with fewer study villages around Siaya, Ugunja and Ukwala reflect the peri-urban nature of towns, which were not included in the study. The extra sparseness around Siaya is due to the fact that *GiveDirectly* previously worked in some villages in these areas.

2.3 Local Institutions and Informal Taxation

The relevant local administrators for this study are assistant chiefs and village elders. Assistant chiefs administer sublocations, and are the lowest-level administrator that is salaried by the national government. Village elders are not on the government payroll, but report to assistant chiefs on all matters in their village. Neither position is elected, there are no set term limits and there is no dedicated budget for either position to administer, so funds for any projects must be raised locally. Revenue collection can take a variety of forms. This could include regular collections at a monthly frequency for cleaning a health clinic; each village surrounding the health clinic would be expected to contribute a set amount per month, and village elders would in turn select households to visit to collect this amount. In other cases, this may involve responding to a pressing need, such as collecting money to help fix a well or a labor contribution for clearing and maintaining a road.

Village elders and assistant chiefs can also arrange harambees for larger projects. The process for local officials to conduct a harambee generally operates as follows: a member of the community or a local administrator will decide to initiate the process of holding a harambee for a community development project. Depending on the size of the event, the chief, assistant chief or village elder must grant approval. Events are held at a local school or community center, and local officials typically attend. Contributions are made in public, so they are highly visible, and events have a master of ceremonies whose job it is to elicit the greatest amount of contributions possible. In addition to these larger fundraisers, there can also be bereavement or wedding harambees to benefit specific households. These are organized by the village elder and committee, and prior to granting approval for holding this type of harambee, the contribution records of the household are scrutinized.

In addition to revenue collection, village elders and assistant chiefs are also responsible for dispute resolution. Examples of disputes that would be taken to local administrators include cases of theft, crop destruction (by, say, livestock), land disagreements or domestic arguments. For disputes between members within a village, the village elder would first work to develop a solution; if he was unable to resolve the dispute, he could then escalate it to the assistant chief. The assistant chief is also consulted for disputes between villages or regarding village boundaries. The village elder or assistant chief often receives a small amount of money as an appreciation for their work. Assistant chiefs can also levy fines. While fine recipients can appeal to the formal judicial system, anecdotally many households in rural areas are either unaware of this right or worried about additional consequences (such as jail time) or expenses (such as legal fees) for taking matters to the courts, and thus often submit to local authority.

For households with children in school, another key expense is school fees and school development contributions. While primary education was ostensibly made free in 2003, schools still charge a variety of fees to attend, and children can be sent home for non-payment. School activity fees are charged on a yearly or per-term basis. In addition to these, the school board can determine the need for a development project and set an additional expected contribution per student or household for the specified project.

Formal taxes are unlikely to be relevant for many of the households eligible for GD's transfers. For households, the main formal taxes are pay-as-you-earn taxes for individuals in formal employment and licenses and fees for individuals running enterprises. Informal enterprises may still pay fees for selling in markets or in roadside stands, and many enterprises that may not be registered with the national government still obtain business permits from the county government. Kenya charges a value-added tax that may apply to some goods purchased by households.

3 Data Collection

Data for this project is collected from four main sources: household surveys; local leader surveys; school administrators and school records; and CDF records.

3.1 Household Data

In each study village, we conducted a census of households and enterprises.⁶ We determined household eligibility based on the census data and selected 12 households per village for inclusion in the study: 8 eligible households and 4 ineligible households. Endline data collected will include household rosters, income hours worked and economic activity by source (agriculture, self-employment, employment), assets, consumption and expenditure, education (own and children's), migration and remittances/transfers, contributions to public goods and local officials, and psychological well-being. Baseline data includes all of these outcomes except consumption and expenditure and migration and remittances/transfers.

For local public finance data, household surveys collect data on the number of times households participated in harambees or were asked for contributions by a local official, direct taxes paid, harambee contributions and other informal tax payments (in money and labor).

6. The household census was designed to be comparable to GD's census, but to ensure there was no systematic bias between their censusing methods and ours, we conducted our own censuses in all villages.

3.2 Local Leader Data

All of the assistant chiefs and village elders in study area are surveyed to collect information on local public goods, fundraising and disputes. Survey questions include cash, in-kind and labor contributions to constructing, improving and maintaining water points, roads, health clinics, market centers and other public facilities.⁷ We collect details on the characteristics of the public good in 2010 and any spending, improvements (include the type of improvement) and regular maintenance activity done since then. We also collect the year in which the spending took place in order to create a five-year retrospective panel to check for pre-trends and to improve statistical power.

To augment our data on local public goods, we also collect information on any additional harambees that have been held in the village/sublocation since 2010; the number and type of disputes; and demographic information for ACs and VEs in order to test for heterogeneous responses in public good administration by AC education level, years of leadership experience, previous occupation, and tribal/clan affiliation.

3.3 School Data

As primary schools are arguably the most important local public good and one for which the majority of local expenditure is spent, a specific data collection exercise was designed to ensure comprehensive data on primary schools. School enrollment, national funding, number of government teachers, test scores and, in for some schools, school building characteristics comes from the Ministry of Education. We augment this with a survey of school head teachers to collect information on activity fees, school development contributions and other sources of local fundraising. This also allows us to collect information on teachers hired by the school board and PTA to get a fuller picture of school quality.

3.4 CDF Data

The Kenya CDF website contains records of approved projects by constituency. Each project contains information on the project name (generally the location, such as the name of the primary school), the project activity (such as tree planting or construction of a new classroom), the project amount, and whether the project is new or ongoing. The project names can be matched to primary schools, market centers, health clinics and villages (in the case of roads) in order to construct village and sublocation-level measures of CDF funding.

7. This does not include schools; information about schools will be collect directly from head teachers.

4 Empirical Specifications

There are three main regression specifications that will be used to estimate the effects of unconditional cash transfers, and these vary by the level at which data is collected.

At the village level, the data collected from local administrators will be used to estimate panel regressions of the form:

$$y_{vst} = \beta_0 + \beta_1 T_v + \beta_2 Post_t + \beta_3 T_v \cdot Post_t + \beta_4 H_s + \beta_5 H_s \cdot T_v + \beta_6 H_s \cdot Post_t + \beta_7 H_s \cdot T_v \cdot Post_t + \epsilon_{vst}, \quad (1)$$

where y_{vst} is the village-level outcome of interest T_v is indicator for treatment status of village v , H_s is an indicator for sublocation saturation status and $Post_t$ is an indicator for post-treatment years. $T_v \cdot H_s$ is the interaction term that serves as an indicator for being in a treatment village in a high-saturation sublocation. Standard errors are clustered at the sublocation level, the highest level of randomization.

At the household level, I will use the following regression:

$$y_{ivst} = \beta_0 + \beta_1 T_v + \beta_2 EligHH_i + \beta_3 T_v \cdot EligHH_i + \beta_4 H_s + \beta_5 T_v \cdot H_s + \epsilon_{ivst}, \quad (2)$$

where y_{ivst} is the outcome of household i in village v in sublocation s at time t . T_v is an indicator for household residing in a treatment village, $EligHH_i$ is an indicator for household meeting GD's eligibility criteria (grass-thatched roof), and $T_v \cdot EligHH_i$ is the interaction term for eligible households in treatment villages, which indicates the household's treatment status.⁸ H_s is an indicator for the household residing in a high saturation sublocation, whereby a greater number of surrounding households also received treatment, and $T_v \cdot H_s$ is an interaction term between village treatment status and saturation status. The error term ϵ_{ivst} is clustered at the sublocation level.

One challenge when estimating effects for schools is that schools themselves were not randomized into treatment or control status. I make use of treatment density measures to characterize the effects of cash transfers on schools. In particular, I calculate the proportion of treated households within a certain radius of the school, which can be constructed from GPS coordinates for schools and households. I will use baseline household data to calculate the distribution of distances that children travel to primary school to help determine the relevant radius of households to include.

8. Since some eligible households in treatment villages drop out during the enrollment process, this provides an Intention-to-Treat estimate, as we are unable to see which households would have dropped out in control villages.

I will then estimate a panel regression of the form:

$$y_{st} = \beta_0 + \beta_1 Post_t \cdot P_{sd}^T + \beta_2 Post_t + \beta_3 P_{sd}^T + \beta_4 P_{sd}^E + \beta_5 X_{sd} + \epsilon_{st} \quad (3)$$

where y_{st} is outcome y in school s in year t , P_{sd}^T is the proportion of treatment students within distance d of school s , P_{sd}^E is the proportion of eligible households within d distance of school s (as a proxy for poverty rates in each area), and X_{sd} is the a vector of school controls, including the total number of households within distance d of school s , as a control for population density.

The geocoded nature of the data allows for more detailed spatial analysis at both the household and village level that will be further explored in the future. One potential approach is to use specifications similar to those used for schools to look for spillover effects. This approach does not restrict effects to follow village or sublocation boundaries. The relevant radii for effects is unclear, but I could begin by exploring a non-parametric approach to identify the range in which spillovers are estimated to some level of precision, and then impose a functional form in order to improve statistical power.

5 Main Hypotheses

5.1 H1: Revenue

For all of the following household outcomes, I will construct an indicator for participation in each category, as well as the total expenditure per category:

- Informal taxes
 - Separate variables for cash, labor and in-kind contributions to local public goods
 - Harambee contributions
 - Primary school activity fees and school development contributions
 - Fines or other payments to chiefs, assistant chiefs or village elders
- Formal taxes and fees
 - National gov't: pay-as-you-earn taxes for formal workers, permits from ministries for certain enterprises (butchers, chemists, etc)
 - County gov't: business licenses, market fees

I will construct formal and informal tax rates by dividing the total tax amount in the last year by the household's total income in the last year in order to look at changes in tax burden by eligibility and village treatment status.

In addition to household-level outcomes, I will also look at village- and school-level outcomes. At the village level, I will construct outcome variables for the number of harambees by year and the total amount raised by harambees per year. At the school level, I will construct outcomes for the amount collected in school activity fees per year and the amount collected in school development contributions per year. I will also construct outcomes for the average amount that households were expected to contribute to these types of fees per year, to see if schools respond to the transfers by adjusting their fees. For cases where these fees may vary by class, I take the overall average across classes.

5.2 H2: Local Public Goods

I will construct the following village-level outcomes

- Expenditure on local public goods: total expenditure per village, constructed by summing the value of monetary, labor and in-kind contributions for each year.
- Indicator for at least one public project during the course of the year
- Number of public facilities by type (i.e. number of water points, number of health clinics, number of market centers, number of roads)

School outcomes:

- Number of teachers, both from the national government and locally-provided
- Enrollment per year
- Average test scores on the Kenya Certificate of Primary Education (KCPE) per year

I collect information on materials used in public goods projects. As a robustness check, I will combine these materials with price data and use standardized values for common types of improvements and construction projects.

5.3 Are cash transfers and CDF funding complements or substitutes?

The interaction between cash transfers and CDF funding is an empirical one, as one could imagine CDF funding increasing, decreasing or staying the same for different reasons. CDF funding to villages that received cash transfers could increase if projects required co-funding that treatment villages were more able to provide, or the added income in treatment villages increased their political clout. In the first scenario we would expect funding provided by the village to also increase, while in the second this need not be true. CDF funding to a village could decrease after the village receives cash transfers if the CDF is concerned about poverty alleviation, so that treatment villages are now less poor. Lastly, CDF funding could remain unchanged if the decisions of the CDF are orthogonal to the cash transfers.

Household eligibility status, available for all households in treatment and control villages, can serve as a proxy for village poverty status. If the CDF is targeting poorer villages for assistance, we would expect villages with a higher share of eligible households to receive more CDF development funding. I can include indicators for villages with schools, market centers and health clinics, as these types of institutions may be more likely to receive CDF funding as well.

To determine if CDF funding is complementary to local village fundraising, I will include indicators for treatment status as well as the total amount of (non-CDF) funding raised by the village in each year. I will use data starting in the 2013-14 fiscal year.

$$CDF_{vt} = \beta_0 + \beta_1 T_v + \beta_2 Fund_{vt} + \beta_3 Post_t + \beta_4 T_v \cdot Post_t + \beta_5 Fund_{vt} \cdot Post_t + X_v \gamma + \epsilon_{vt}, \quad (4)$$

where T_v captures the village's treatment status, $Post_t$ captures post-treatment years (to be conservative, I will consider any fraction of a year that includes treatment to be a treatment year), $Fund_{vt}$ represents the funding raised by the village, and X_v is set of village-level controls, as described above. The main coefficients of interest are β_4 , which indicates whether treatment villages receive more CDF funding after treatment and β_5 , which captures whether CDF funding depends on the amount of funding raised by the village.

6 Secondary Hypotheses

6.1 S1: Disputes

A key responsibility of village elders and assistant chiefs involves dispute resolution. Do cash transfers increase disputes, both within and between villages? Does this depend on the density of treatment? Haushofer and Shapiro (2013) did not find significant evidence of within-village social conflict, but between-village conflict may also be a potentially important source of disputes that may be exacerbated by village treatment status. I will use village and sublocation level regressions to investigate effects this. At the village level, the outcome will be the number of disputes. At the sublocation level, I will use the total number of disputes, the number of within-village disputes and the number of between-village disputes. If I find effects on the overall number of disputes, I will then investigate the number of disputes by type (such as land, theft, domestic violence, or boundary lines).

6.2 S2: Key Interactions: Local Administrator Characteristics and Clan/Subtribe Diversity

There are two key interactions that I am especially interested in exploring: characteristics of local administrators and clan/subtribe diversity.

Are there certain characteristics of local administrators that allows them to more effectively raise revenue? As part of the surveys to collect information on local public goods, I am also collecting demographic information on assistant chiefs and village elders, including age, gender, education level, previous occupation and years of experience in their position. I will include an interaction term between these characteristics and village/sublocation treatment status. I will run separate regressions for assistant chiefs versus village elders since the salaried nature of the assistant chief position makes it much more competitive.

I will also explore whether clan and/or subtribe diversity matters for the funding of local public goods. The study area is historically Luo, and there is less diversity across tribes; however, in an area of with a common tribe, clan and/or subtribe may be more salient and relevant for enforcing social sanctions, which may be important for the ability to raise funds for local projects (Miguel and Gugerty 2005; Olken and Singhal 2011). This could also be important when investigating the number of disputes within a village and/or sublocation. I will construct diversity variables based on the number of subtribes per village, the number of clans per village, and the number of unrelated clans per village (related clans are not able to intermarry). I will also explore the feasibility of constructing measures of ethno-linguistic fractionalization

with the data available.⁹

7 S3: Preferences for Redistribution

I included a series of questions on preferences for redistribution adapted from the World Values Survey and European Social Survey on whether incomes should be made more equal, whether government should work to make incomes more equal, whether local administrators should work to make incomes more equal, and how much individuals at different income levels should be paying in taxes. These are similar to questions used in Singhal (2013), Luttmer and Singhal (2011). The goal is to address how preferences for redistribution change based on one's own absolute versus relative income. However, disentangling the mechanisms behind these changing preferences may be challenging. For instance, if in aggregate households prefer less redistribution, is this due to unhappiness over the transfers or due to a decline in poverty that thus requires less redistribution? Additional work will be needed to determine if there are questions or games that could be used to disentangle these effects.

8 Next Steps

The first round of data collection from assistant chiefs and village elders began in July 2015 and, along with data collection from schools, will conclude in November 2015. Baseline household and enterprise data collection concluded at the end of August 2015 and data cleaning is ongoing; once it is complete, this data can be explored to determine baseline patterns in case this leads insight into additional household or enterprise outcomes.

Additional work to further develop and refine hypotheses will be ongoing. Several anticipated areas of focus include determining if there are any types of public goods that are more or less likely to be affected by the cash transfers and whether this should be pre-specified; determining a way to pre-specify the spatial analysis for households and villages; and further developing CDF-related research questions. Another area of focus will be on determining the multiple-testing adjustments to use. My current thinking is that I will adjust the main hypotheses H1 and H2 for multiple testing by calculating FDR q-values within each hypothesis. For secondary hypotheses, I will construct FDR q-values taking into consideration the full number of primary and secondary hypotheses, rather than only looking within each family.

Endline data collection is targeted to begin in early 2016. This offers an opportunity to add additional

9. If needed, I can also explore the feasibility of collecting information to aid the development of this at endline.

questions or modules to test or explore new hypotheses. In addition to the outcomes outlined here, the endline survey will include questions on support for politicians, political knowledge and engagement. Once endline surveys have been finalized in late 2015 or early 2016, an updated version of the pre-analysis plan will be filed, which will detail the exact mapping of survey questions into outcome variables as well as any new hypotheses, being sure to distinguish hypotheses that occur after any midline data has been analyzed versus those developed in advance.

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